

Investigation Of The Vertical Dimension Restricted Real Estates In Land Consolidation Projects

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Key words: Land, Land Consolidation, Grading, Easement Right

SUMMARY

Similar to the earth, the population in our country also has been increased but the agricultural lands not. For fulfilling the sustainable nutrition needs of the society, per area should be used effectively to have the maximum efficiency. Land consolidation is one of the methods; for getting the efficient use from per area. Land consolidation: generally means gathering the scattered and formless lands and creating proper areas and in addition to these; it accomplishes irrigation, road and farm development services.

In the land consolidation studies: after the arrangement, the property structure has been different than before. For protecting the property rights of the real estate owners, for the sake and acceptability of the arrangement; the fair distribution is needed. For a fair distribution; the grading works must be done rightfully.

In the land consolidation project areas; there may be established easement lands which have limitations on the vertical dimension of the real estate because of the electric transmission, oil, gas and etc. lines. In easement lands; while paying the easement fee to the owner or the owners, there can be restricted areas. In the land consolidation areas, at the end of the distribution; the easement lands and the owners can stay at the same location or while the lands are fixed at their place, the location of the owners may be changed. With the distribution, the owner of the land which has no easement rights before has been restricted without any financial benefit and an unfair distribution in land consolidation may happen. This situation may cause the not protection of the owner's easement rights and prolongation of the land consolidation process.

In this study, the situation of the established easement lands before and after the land consolidation projects were investigated. Some suggestions were done on grading stage of the easement lands.

1. INTRODUCTION

Land consolidation (LC); It's called that parcels which are scattered and situated in different places, owned by persons, and are not suitable for agricultural activities due to their shape are combined by being gathered in such a manner and size that will increase agricultural activities (Çay, Erkan 1985, Kara 1980).

Land Consolidation according to the law of Soil Conservation and Land use numbered 5403 (RG: 19.7.2005/25880) and the regulation related to Conservation and Use of Agricultural Land and Land Consolidation (RG:24.7.2009/27298) : It states that preventing lands from being destroyed and fragmentation due to natural and artificial affects,creating more functional new parcels in economical and social way by paying regard to natural features, integrity of use,right of property in scattered lands and determining usage of them by evaluating features and square of these parcels, providing development services of village and land.

City maps, grading maps, interviews of farmers, and block maps need to have been prepared well in order to be achieve LC projects succesfully. To make grading works best and accurately with ground will make parcelling processes being planned more reliable,accurate and the least objection (Sert 2011).

According to the 23rd article of the regulation related to Conservation and Use of Agricultural Land and Land Consolidation(RG:24.7.2009/27298)

1) The lands in which situated the consolidation areas are graded by paying regard to soil and fertility surveys which determine permanent and changeable features of soil, distance to residential areas and company offices and other land features by the comission of Land Grading with the aim of giving new lands that have same value by done by project unit or having it done. Of by multiplying determined coefficients with cadastral parcel areas, values in units are acquired. By using this value, new parcelling is done.

(2) In land grading, stationary plant on the land is not taken into consideration.

(3) Land grading boundaries are done through the map showing features of soil and land according to principles specified in the first article by not paying attention to possession limits. To make owners inform easily, land grading maps are prepared in suitable scale.

2. GRADING APPROACHES IN LAND CONSOLIDATION PROJECTS

LC studies in our country are done according to two laws basically:

1.Agricultural Reform Law regarding land arrangement in Irrigation Aregas numbered 3083 (RG: 01.12.1984/18592).

2.Soil Conservation and Land Use Law numbered 5403 (RG: 19.7.2005/25880).

2.1. Grading According To Soil Conservation And Land Use Law Numbered 5403

In LC studies, rules about grading processes are explained in the regulations of Land Consolidation (RG: 7.5.1982/17687). The land to which LC project will be applied is graded according to activities of factors specified under 6 main headings. These are:

1. Soil Index
2. Fertility Index
3. Location of Parcels
4. Parcel Index
5. Share of Collective Plants
6. Determination of Grading Conversion Factor

2.1.1. Soil Index

A- Soil Profile Group

B- Top-soil Body

C- Slope of Land

X- Other Features (Salinity, Alkalinity, PH, drainage, erosion, microrelief)

Soil Survey Engineer searches detailed soil surveys by using 1/5000 scaled STK map and analyze examples taken from soil punctiliously and primarily in lab. He determines soil index of every parcel in the project area and different parts in parcel when required and give it to the assessing authority.

$$\text{Soil Index (TE)} = A \times B \times C \times X$$

Soil Index is calculated through the formula above. *Soil Index is determined between 0 and 100.*

2.1.2. Fertility Index

Grading Institution chooses sample parcels such as to represent dominant vegetation and sufficient number of plants with different sizes and distances and proper distribution of them on the project area. Agriculture Engineer : If there are researches that are made previously in that region, he informs the members of institution by applying its result to sample parcels. If there is no researches that are made previously and members of institution find it necessary, Fertility Analysis is done in examples which will be taken from parcels having been chosen earlier according to principles specified.

Fertility Index Points are determined between 0 and 100 depending upon observations that will be made on parcels and according to the results of fertility analysis by the members of institution. These values found in sample parcels are extendable to the other parcels.

2.1.3. Location of Parcels

The distance of parcels to the residential areas, its shape and road condition are given. Written instructions arranged this subject such as :

- a- The distance of parcel to the company offices
- b- Transportation Condition between parcel and company office
- c- Irrigation Condition of parcel at present state
- d- Parcel's situating on the side of stream, watercourse and river
- e- Parcel having energy, PTT transmission line or pipelines
- f- Parcel's situating in settling area or urban area
- g- Geometrical Figure of Parcel etc.

The members of institution determine the factors above with a report in what way they evaluate for a project area. The location of parcels is determined between 0 and 20.

2.1.4. Parcel Index

% 70 of the index (TE) obtained from soil surveys is taken. Parcel index is determined by adding specified index points for fertility index (V) and location index (K). Grading of Parcels (Table 1) is done according to parcels index of them.

$$\text{Parcel Index (PE)} = TE * \%70 + V + K$$

Table.1 Rating of Grading according to Parcel Index

Grade	Parcel Index	Grade	Parcel Index
1	91-100	6	41-50
2	81-90	7	31-40
3	71-80	8	21-30
4	61-70	9	11-20
5	51-60	10	0-10

Lands between 1 and 7 are consolidated among themselves and the ones between 8 and 10 are consolidated among themselves.

Parcel Value Number (PDS): Index figure found according to index of soil fertility and location is multiplied with parcel area, divided by 100 and the figure found is parcel value number.

$$\text{PDS} = \frac{\text{PE}}{100} \times \text{AREA}$$

2.1.5. Share of Collective Plants (OTKP)

The area covering roads, drainage canals in project area is met by external places not resigned. The ones which are not met are reduced from total land to be given to owners in proportion to land sizes of companies. After planning of parcel, the rest of lands and villages is registered in the name of legal entity.

2.1.6. Determination of Grading Conversion Factor (DDKT)

a) After determined parcels which are in the project area, weighted mean of the parcels which are in the same degree is found according to the grading table.

b) After calculated mean of index figures for each degree determined in the project area, coefficients of them are found by means of dividing each other and arranged in a table. These coefficients found are drawn on the side of the map as scaled. In grading, (1) soil index and (2) market value index are made use of. At the end of grading process, one parcel unit value for each parcel is found (Çay, Demirel 2005, Sert 2011).

2.2.Grading According To The Agricultural Reform Law Regarding Land Arrangement In Irrigation Areas Numbered 3083

2.2.1. Soil Index (TE)

It's determined depending upon soil surveys performed by expert agriculture engineers in the project region.

$$TE= A*B*C*D$$

A: Soil Profile Group

B: Body of top-soil

C: Slope of Land

D: Other Features (Salinity, Alkalinity, PH, drainage, erosion, microrelief etc)

The parcels which are in the application take soil index point between 0 and 100 according to the results of surveys. Index values are imprinted on the index maps.

2.2.2. Market Value Index (R B E)

The comission determines market values of the parcel's unit area by taking the factors below into consideration and asking the commission members. By giving 100 point to the highest price determined, the rest is scored proportionately according to this.

These are the factors taken into consideration in valuation:

- Natural Fertility of the Land
- Kind of Crops being grown and will be grown
- Soil Features
- Condition of Irrigation
- The distance to road and irrigation canal
- The distance to the village and market
- Transportation facilities

The parts having same soil index in the parcel is given same market value point. However, Different market value point may be given to the parcel whose parts showing different soil features.

2.2.3. Parcel Unit Value And Calculation Of Parcel Mean Value

Parcel unit values of parcels or each section having different soil index and market value point is calculated like this:

$$PBD=(TE+RBE)/2$$

Parcel unit value in parcels which have more than one soil index and market value point becomes more than one. For these kinds of parcels, weighted mean of parcel unit values is calculated. Calculated indexes are shown on the index map with their borders (Çay, Demirel 2005).

$$POD=[(PBD_1 *PA_1)+(PBD_2*PA_2)]/(PA_1+PA_2)$$

3. EASEMENT

When property owner allows corresponding real property to be used by another person or other institutions, the emerging right of usufruct and/or right of use is called as easement(URL-1 2015).

Easement is a limited real right prohibiting being used some of authorities of the real property's owner related to possession on behalf of owner of easement. In other words, they are limitations over real property which is a subject of private ownership (Gül 2012).

In the article 4 of expropriation law(RG:08.11.1983/18215) numbered 2942, expropriation of constitution of servitude states as “ Instead of expropriation of real estate ownership, as long as it's enough for the purpose certain easement is can be founded over certain part, heighth, depth of the real estate or source”.

Easement can be founded over real estate on behalf of government without changing the owner of real estate. According to this: The moment when decision of public utilities is taken, It's not a must to expropriate the ownership of real estate. Easement will be able to be founded over sufficient part, heighth, depth of it or sources by means of expropriation. So, the government by paying less will be able to also make saving over real estate.

According to the article I of the article 11 indicating determination principles of expropriation's price of expropriation law numbered 2942; In the constitution of servitude by means of expropriation, loss in value that will happen on real estate and source due to expropriation is indicated with reasons. This loss in value is determined as expropriation price. Together with easement founded on real estates, various difficulties happen. These are the factors affecting adversely value of the real estate at the same time:

- 1- Thrashing of pylon places and other transmission lines happening because of heavy construction vehicles working on land
- 2- Limitation of market depth and disorder of drainage,

- 3- Limiting vegetation that will be planted and raised and alterations in production pattern,
- 4- While pipe lines are being installed, decrease and depletion of fertile top-soil on field,
- 5- Work force, inputs and passage of animals with equipment and machines from one part to another occupying much time relatively and besides danger probability during passages
- 6- Because of shapeless parcels' creation and generation of more borderline compared to before, of the areas which are not planted with machines and harvested remaining, these causing thrashing at business management and increasing of business expenses
- 7- The stones rising to the surface of the field during excavation works and firm ground soil making soil cultivation, care and harvest difficult,
- 8- Construction of road, water canal and pipes, investment of land improvement like pit and fence, operation buildings and some part of the barnyard causing destruction and requirement of some expenses in order to make these become functional
- 9- Psychological reasons (putting an annotation buying and selling due to easement) and decrease of labor productivity of workers
- 10- Other risks (4).

Constitution of servitude is divided into half in terms of period. It's founded as permanent and temporary constitution of servitude:

- a) Temporary constitution of servitude: Its period is 2-10 years.
- b) Permanent constitution of servitude: Its period is 11-99 years. It's generally taken as 49-99 years.

3.1. Temporal Constitution Of Servitude

In the area where temporal easement is founded, net income decrease that will happen in the specified year is calculated. In the event that temporal constitution of servitude is founded, loss in value is not calculated as if there was permanent constitution of servitude on real estate: By taking lost incomes damages and rent into consideration during the period of constitution of servitude on that part of real estate, loss is determined (Gül 2012).

This calculation ;

$So = S * (qn - 1) / fq$ It's found by being used this formula.

So = Present value of income loss will happen in the specified period (n) year

S = net income loss of the year

$q = 1 + f$

f = It states real interest rate

3.2. Permanent Easement

If set up time of easement is long, It is defined as indefinite easement like 49-99 years. The difference between former and next value of constitution of servitude of the land constitutes of easement price. Constitution of servitude price is impairment happening in the price of the land (Gül 2012).

According to easement price, expropriation law and supreme court practices : At constitution of servitude, loss in value that will happen on real estate due to expropriation is expropriation price. While determining this price, It's determined by taking kind of real estate (land or field), its usage, its size, the location of sharing area, its surface area, its geometrical condition and quality and route of sharing into consideration (Gül 2012).

$D = R / f$ It's calculated by using this formula.

D: Easement Price

R: Net income decrease of the year

f : Capitalisation interest rate

4. CONDITION OF REAL ESTATES WHOSE CONSTITUTION OF SERVITUDE FOUNDED IN THE LAND CONSOLIDATION PROJECTS

In order to perform public services such as electric, water, natural gas and oil transmission lines etc., easement is acquired by making limitations in a vertical way on real estates. Because of this limitation, loss in value at real estates happen. The money is paid to owners of real estate in return by calculating loss in value happened.

When real estates on which easement was founded encounter the areas where LC projects are done, either it's left at the scene or the owners of parcels on which easement was founded may change. For this reason, owners of the real estates on which easement was founded may move to the area on which easement has not been founded yet or the owners of real estates on which easement has been founded may be renewed. So loss of a right may happen.

In this study, LC projects that are done in the various regions of Turkey and easement has been founded on field of application. These are the projects to be studied:

1. Manyas Right Beach LC Project Kulak village
2. Burdur County of Tefenni Seydiler and Yuvalak LC Project

4.1. Manyas Right Beach Lc Project Kulak Village

In Kulak Village, Manyas County, Balıkesir city, works of land consolidation have been done by general directorate of state hydraulic works. In the area where LC study is done and energy transmission line is placed, there are real estates on which easement has been founded (Figure 1a).

Former and next conditions of the real estates on which easement has been founded before regulation were studied. The real estates on which easement has been founded, its owners, its areas are searched in their new locations whether there is constitution of servitude or not after LC is applied. It is examined that the real estates having constitution of servitude before LC projects is done and new locations of these real estates after LC project is done and whether their constitution of servitude continues or not (Table 2). In the land consolidation project borders;

- The number of real estates on which easement has been found is 38.
- The number of firms affected from constitution of servitude is 63.
- The number of parcel on which easement has not been founded in the places after regulation is 8.
- After regulation the number of firms getting rid of constitution of servitude is 17

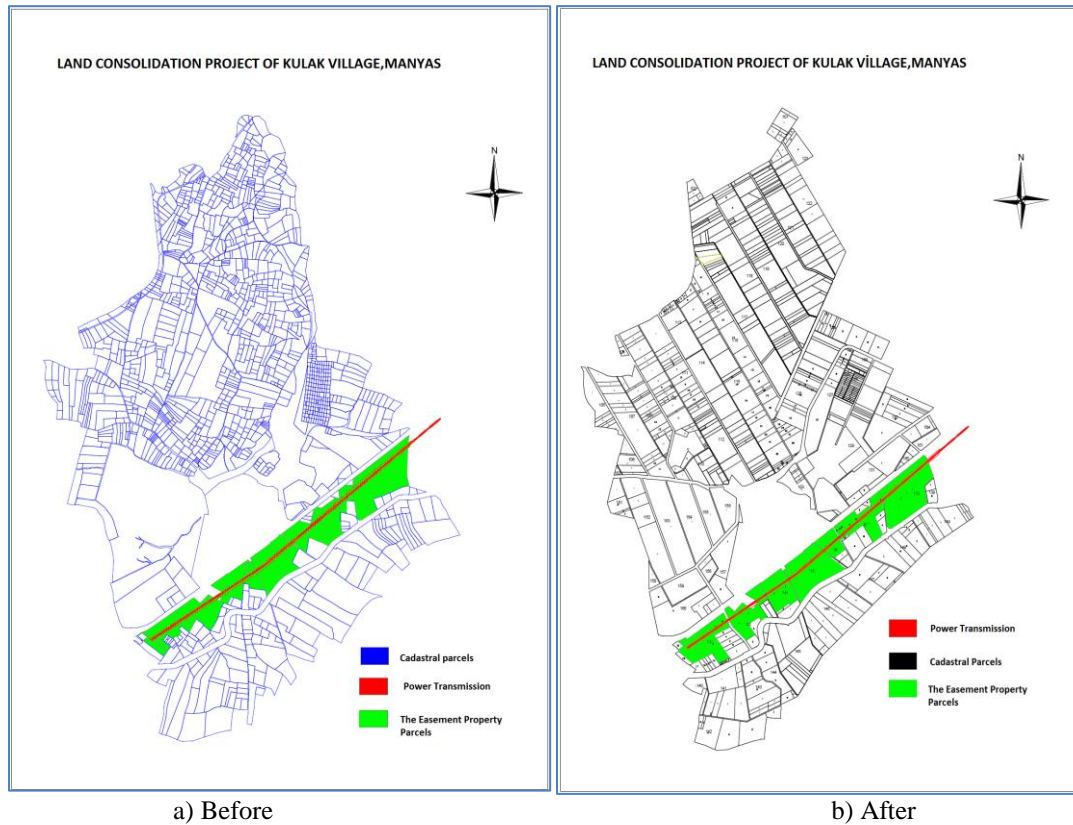


Figure 1. The real estates on which easement has been founded and cadastral map before and after Kulak Village LC Project

17 firms earned income due to constitution of servitude before LC works. But It got rid of constitution of servitude with the application of LC project (Figure 1b).

After LC project, examinations were made based upon new parcelling plan. According to new parcelling plan it is examined that the real estates having constitution of servitude, owners of real estates, its areas and whether they have constitution of servitude or not (Table 3). In Kulak village where LC project is applied;

- The number of parcels on which easement has been founded after land consolidation project is 28.
- The number of firms affected from constitution of servitude is 58.
- The number of parcels on which easement has been found after regulation is 4.
- The number of firms affected from constitution of servitude after regulation is 8.

Table 2. The real estates on which easement has been founded

Düzenlemeden Önce İrtifak Hakkı Tesis Edilmiş Parseller					
S.NO	İşletme No	Parsel	Alan	Yeni Ada/Parsel	İrtifak Hakkı Tesisi
1	407	1443	5701.06	137/2	Var
2	338	1444	5440.83	137/3	Yok
3	271	1446	6133.67	136/2	Yok
4	36	1447	5744.22	137/7	Var
5	24	1499	3337.07	137/15	Var
6	613	1500	15757.09	137/8	Yok
7	40	1504	6455.99	137/11	Var
8	408-410-411-412-484	1739	19472.51	132/15	Yok
9	566	1740	5669.53	133/4	Yok
10	234-239	1798	1488.11	132/5	Yok
11	234-239	1799	4753.74	132/5	Yok
12	208	2045	28863.41	138/4-139/1	Var
13	59-67-318-329-536	2047	25162.48	138/2	Var
14	443	2051	5312.36	137/1	Var
15	644	2055	17644.91	137/11	Var
16	186-188-190-401	2067	20826.01	134/2	Var
17	186-188-190	2069	6764.74	134/2	Var
18	590	2071	10312.91	132/22	Var
19	176-237-243-246-365-645	2073	9699.82	132/6	Var
20	437-438	2075	38457.60	133/8	Var
21	529-532	2091	7142.46	132/21	Var
22	131-278-279-280-281-282	2103	4241.84	132/19	Var
23	131-279-280-282	2105	20408.90	136/3	Var
24	44	2107	8663.78	138/6	Var
25	278-281	2109	19949.24	136/4	Var
26	29	2115	18558.71	133/1	Var
27	440	2117	34127.84	134/4	Var
28	142	2123	45741.42	138/7	Var
29	27	2129	27249.71	135/3	Var
30	469-470-471	2131	28289.24	132/8	Var
31	624	2133	13640.56	132/7	Var
32	562-564	2135	27527.80	138/3	Var
33	156-216-341-442-636-638	2165	21604.17	137/9	Yok
34	118	2225	25808.16	138/1	Var
35	102	2227	36297.40	135/2	Var
36	118	2230	25643.38	138/1	Var
37	105-142-485	2233	33710.73	135/1-146/6	Var
38	102	2236	25047.89	135/2	Var

There isn't constitution of servitude at 4 parcels belonging to 8 firms that have land in the region before application of LC project. But easement has been founded on these real estates without paying a price after LC project applied.

Table 3. Farm Firms that are exposed to constitution of servitude after application of LC project

Düzenlemeden Sonra İrtifak Hakkı Tesisine Maruz İşletmeler					
S.No	İşletme No	Parsel	Alan	Ada/Parsel	İrtifak Hakkı Tesis
1	365-176-237-243-246-645	2073	9079.17	132/6	Var
2	624	2133	12858.86	132/7	Var
3	471-469-470	2131	37407.83	132/8	Var
4	131-282-280-279-281-278	2103	28126.05	132/19	Var
5	529-532	2091	6747.17	132/21	Var
6	594-64-593-590	1715-1719	13114.41	132/22	Yok
7	129	2115	17811.13	133/1	Var
8	412-484-411-410-408	1739	18281.86	133/7	Var
9	437-438	2075	35648.94	133/8	Var
10	190-188-186-401	2069-2067	30324.79	134/2	Var
11	400	2186-2184	43223.69	134/4	Yok
12	142-485	2233	22125.03	135/1	Var
13	101-102	2173-2175	90254.92	135/2	Yok
14	27	2129	25385.67	135/3	Var
15	131-282-280-279	2105	19075.43	136/3	Var
16	281-278	2109	18876.40	136/4	Var
17	443	2051	5008.97	137/1	Var
18	407	1443	14200.44	137/2	Var
19	41-36	1447	35956.87	137/7	Var
20	40	1504	5924.67	137/10	Var
21	644	2055	17829.83	137/11	Var
22	24	1499	3103.40	137/15	Var
23	118	2225	48096.46	138/1	Var
24	536-67-319-59-318	2047	25092.14	138/2	Var
25	562-564	2135	25570.00	138/3	Var
26	208	2045	20277.21	138/4	Var
27	369	2145-2147	8219.00	138/5	Yok
28	44	2107	42742.56	138/6	Var

4.2. Burdur City Tefenni County Yuvalak Seydiler LC Project

LC studies have been performed in Tefenni County, Burdur City by general directorate of agricultural reform. The real estates by which power lines pass have been expropriated for pylon places. The real estates by which electric wires pass have constitution of servitude. In the borders of LC project of Tefenni county, there are 128 real estates on which constitution of servitude has been founded (Figure 2a).

When the former and next conditions of real estates on which easement has been founded on were examined before LC project applied;

- The number of real estates having constitution of servitude is 128,
- The number of real estates on which easement has been founded on after regulation is 71,
- The number of real estates on which easement has been founded on after LC project is 97
- Before and after LC project, the number of real estates on which easement has been founded is 60
- The number of real estates on which easement has been not founded before regulation but after regulation founded is 37
- It is understood that the number of real estates on which easement has not been founded after regulation is 57.



Figure 2. Cadastral map and real estates on which easement has been founded before and after LC project of Tefenni County

In these premises; the owners of 57 real estates earned income due to constitution of servitude before LC studies but they got rid of constitution of servitude thanks to application of LC project. The owners of 37 real estates; they encountered constitution of servitude after application of LC project. While restrictions are placed on their real estates, It doesn't make income against great expense (Figure 2b).

“Instead of expropriation of real estate ownership, as long as it's enoug for the purpose, certain easement is can be founded over certain part, heighth, depth of the real estate or source.”

5.RESULTS AND SUGGESTIONS

According to our legislations; restrictions can be placed on real estates for the public weal in return for its price by state institutions and organizations. Registrations of restrictions on height and depth of real estates happen as constitution of servitude.

There can be real estates on which easement has been founded application fields of LC projects. The real estates on which easement has been founded and the owners of real estates by which power lines etc. pass can remain same or change when LC projects are applied. This situation causes loss of a right.

In this study, LC projects done according to 2 different laws, the conditions of real estates on which easement has been founded placing restrictions on real estates in a vertical way were examined.

There is not a detailed regulation related to regions having constitution of servitude at LC projects done according to two different laws numbered 3083 and 5403. The owners of real estates which do not have constitution of servitude before regulation of LC projects own real estates on which easement has been founded after regulation. This situation causes loss of a right from the point of owner of real estates. The owners of real estates that are situated in the area on which easement has been founded before regulation have acquired illegally by being given real estates which do not have constitution of servitude after regulation.

According to Soil Conservation and Land Use Law numbered 5403, there is “ Power, PTT transmission line or pipe line being on the parcel “between factors affecting location index during grading. According to the law, location index of the region having constitution of servitude during grading should be given lower than their similars.

While easement is founded, by calculating decrease on parcel price, it’s paid to right holder. During grading of LC projects, the ratio of this price to parcel price should be reduced from location index point.

$$\text{Location Index (KE)} - \frac{\text{Easement Price}}{\text{Parcel Price}}$$

According to the Agricultural Reform Law regarding land arrangement in Irrigation Aregas numbered 3083, during grading of LC projects, wealth point is given. Wealth point of real estates on which easement has been founded should be given lower than their similars.

$$\text{Wealth Point} - \frac{\text{Easement Price}}{\text{Parcel Price}}$$

So, If real estates from different places will be given to the owners of real estates on which easement has been founded during grading, the field will be able to be given dwindlingly as areal. If the real estates by which power etc. lines pass will be given to the owners of real estates on which easement has not been founded, the field will be able to be allocated extensionally as areal. The acquired income while easement is being founded will be delivered fairly by giving real estates to the places which do not have constitution of servitude after regulation decreasingly. At the same time, when other similar regions come to the region on which easement has been founded, It will come extensionally as areal. The price of restrictions caused by constitution of servitude will be compensated as areal. So, It will be able to enable more righteous parcelling plan.

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BIOGRAPHICAL NOTES

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