

## A COAST TOWN, THE CHANGES IN LAND USAGE IN KOCAHASANLI (TURKEY)

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Shores are highly potential places where land meets the sea, suitable for agriculture, fishing, industry, trading which are essentials of human life and also for tourism.

A limited part of country is suitable for our nourishment, for supporting raw material to agricultural industry, agricultural activities which might cause exportation.

The flat and semi-sloping lands between 0-250 m. are only 10% of the whole. Today in the coast area agricultural activities, tourism activities and industrial activities are in a mess and cause the mis-usage of coasts away from protection-usage balance. Our country which is surrounded by seas from three sides, and has a long coast line experiences big problems caused mis-usages. It is observed that, there is no proper land usage and especially the first quality lands which should be in the use of agriculture are not serving their characteristic.

### THE GEOGRAPHICAL CHARACTERISTICS OF KOCAHASANLI CONCERNING LAND USAGE

Kocahasanli is 4 km.s to the district and is on the west to Erdemli district's center. The narrow coast which is the west extent of Çukurova is at the end of plain. These narrow coast plains end with Laras brook, Toros mountains which surround the plain from the north like a shield some to an and on the coast.

### ABSTRACT

Today agriculture activities, tourism and industrial activities are colliding with each and lead to the mis-usage of shores far from protection-usage balance. Our country with its 8333 kms of shore length has great problems concerning shore usage. The fertile agriculture fields, with rare geographical conditions, which cover a limited space in our country are under siege of tourism foundations, inhabitings and especially secondary residences. Plains in and around Mersin, including industrial plants experiences the dominant problems, and displays a rapid change especially under the siege of secondary residences. It is clear that Kocahasanli has experienced an important change in this environment when we examine specific historical sections. The former types of usage and outer factors which will support the main work and emphasize the change are brought into daylight. The physical factors like land characteristics and climate can be clearly seen in this district, how does it effect land usage and more over how is it effected by anthropologic factors (human beings, technology, market-marketing, transportation, credit).

### RÉSUMÉ

*A l'heure actuelle, la situation conflictuelle entre les activités agricoles, touristiques et industrielles entraîne une utilisation impropre des côtes et on est loin de l'équilibre souhaité entre protection et usages. La Turquie, avec ses 8333 kilomètres de littoral, présente de graves problèmes d'utilisation du littoral. Les terres agricoles fertiles, qui couvrent une petite superficie du pays, sont assiégées par les structures touristiques, les établissements humains et surtout par les résidences secondaires. Les plaines à l'intérieur et à proximité de Mersin, y compris les établissements industriels, vivent les problèmes majeurs et manifestent un changement rapide surtout sous le siège des résidences secondaires. D'après les documents historiques, on constate que le Kocahasanli a subi un changement important de cet environnement. Dans ce travail on fait ressortir les types d'usage du passé et d'autres facteurs qui décèlent les changements survenus. Les facteurs physiques, tels les caractéristiques des terres et le climat, sont très évidents dans le district analysé, ainsi que l'influence réciproque entre l'utilisation des terres et les facteurs anthropologiques (humain life, technologie, commercialisation, transport, crédit).*

Just behind the flat lands which are not wide, there are small peaks peperated by valleys formed by the rivers flowing down the slope of hills.

One of the important factors that effect the land's fertility is climate.

Kocahasanli, in Mediterranean climate, summer time is hot and rainless, winters are warm and rainy. The average temperature through the year is 18 °C. Temperatures below zero is almost never seen through the year.

The orescence of the mountains just like a shelter beneath Kocahasanli, protects these lands from the probable cold north winds, and the temperature is higer compared to the other places around as a result of the wind and warmth with Fhon characteristics and this leads to advanced agriculture.

For example, tomatoes are grown 20 days earlier than Erdemli which is just near by. This land has the most part of rainfalls during winter,

and in summer as a result of insufficient rainfalls, the irrigation is done by the help of present rivers and spring waters. Thus, the land utilization in agriculture under positive climate conditions and irrigation is maximized and agricultural activities continue during the whole year, and crops are collected two-three times a year. Kocahasanli is highly potential in vegetable and lemon production. The fields around Kocahasanli are famous for growing the earliest produce.

When we examine the fertility of earth in Kocahasanli lands, we can see the Regosels beside the sand-dunes. These areas are very sufficient for watery agriculture. The north west of Regosels are Koluvyal earth. There

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can be problems of topography and earth which sometimes restrict sowing and plough in agriculture. In the north east of Regosels, flat and nearly flat and nearly flat rocky, organic earth can be observed with ground water problem. The reddish brown Mediterranean earth can be seen on the north of these earth, over Konglomeratic limestones. This kind of earth is vast the land.

The area with reddish brown mediterranean earth is very rocky and erosian is intense. The fertile lands which are approximately the 1/3 of the land are not wast in the research area. The most part of the land is barren. They can only become fertile with the utilization methots and protection. In fertile places where the land is ineffective because of limestones, the land is hardly transformed into useful places despite the suitable climate of Kocahasanli. One of the other important factors. Of land utilization in Kocahasanli is population. The rising population searched for lands of survival, the usage of new lands acted as a receiver of more population and besides in the summer time the population becomes the five or ten times of its population. The statistics of Kocahasanli show that in 1940 the population was 545 people but in 1990 this number reached to ten times of it and became 5504 (D.I.E.(<sup>1</sup>), 1990) The population density of agriculture is 1298 per km<sup>2</sup>. This shows that 1298 people can benefit from planted-sown land of km<sup>2</sup>. In 1990, number of people benefiting from 1 km<sup>2</sup> is 1298, whereas this number was 955 in 1965. When we compare the agricultural population density of Kocahasanli (1990- 1298 per km<sup>2</sup>) we can see that it is considerably dense. The intensive agricultural activity of Kocahasanli, two or three times of product in a year, lessens with pressure. Even share-croppers from villagers around come to work in greenhouses, they come to work for short periods, however they settle in Kocahasanli. Around the world, especially in Turkey, the rapid rise of population leads to need of big amount of food. Pressure of population, the utilization of transportation within last years, the rise in the number of vehicles, the formation of airlines, roads and railways, technological, cultural and social developments lead to the maximum usage of unit area in such places with suitable climate.

These factors effected the land utilization, the rocky and stony places are turned into earth, and living became based on commercial agriculture. It is going to be useful to have a look at the former periods before we examine the change in land utilization during ten years of time between 1986-1996.

#### THE LAND USE IN KOCAHANSLI IN 1963 AND 1969

The land use between 1963 and 1969 can be seen in the first table 1.300% of rise is observed in the vegetable planted fields between 1963 and 1969. Fields and fallow lands which were 500 one-tenth of hectare each lost their width and vegetable fields became 800 one-tenth

**Table 1 Land use in Kocahasanli at 1963 and 1969 (Balcy, Süheyla, 1987).**

	Area 1963 (Dekar)	Area %	Area (Dekar)1969	Area %
Field	500	3.4	400	2.6
Fallow land	500	3.4	400	2.6
Vegetable Garden	200	1.3	800	5.2
Fruits Garden	500	3.4	800	5.2
Meadow	2,500	16.5	2,800	18.3
Non-cultural land	10,800	72	10,100	66.1
Total	15,000	100.0	15,300	100.0

of hectare. During these years early product in vegetable planting developed and vegetable planting became important. And 60% of rise is seen in the number of vineyards and gardens. The present sown and planed fields in 1963 rised 29% in 1969. The utilization of transportation, the easy way of contacting markets, the rise in the demand of vegetable and lemon, technological developments, lead to the new formations of vegetable and lemon fields (**table 1**).

#### THE LAND USE IN KOCAHANSLI IN 1986

When we examine the second table showing the land use in 1986, the first thing we realize is that the present land width is two times larger than former years. The enlargement seen in the fields, scrub and unsuitable lands for agriculture is a result of the village's spread of towards north and the rise seen in the number of fruit gardens, citrus fruits and vegetable fields resulted from the changes in agriculture towards these products. Citrus fruit fields has reached to 1240.3 on tenth hectare of area. Within these numbers the rise in the area of under cover green grocery is very important considering that products has been collected two of three times a year. During these years, the effort of village people to benefit from the present fields in the maximum level has increased. The partial improvement in market conditions, the rise of demand parallel with the rising population, the improvement in transportation day by day have united with economical, social and psychological characteristics of young population and lead to the development of agricultural activities, also the number of vegetable and lemon fields rised, and undercover green grocery developed besides early produce.

If we look at the types of products we can see that wheat-corn and ground nut are field products, in summer time tomatoe takes the place of wheat. Green bean, lettuce, green pepper are other vegetables. Also in the young lemon fields, vegetables are planted periodically. Kocahasanli is the seller of early produce with tomatoe and bean which is 10-20 days earlier than other places and this ensures a profit. Other important sub-

(<sup>1</sup>) D.S.I. = Statistical Enstitute of Governent.

sistance for the village is lemon growing. Banana and grape are other by-products. In the north over 15.310 one-tenth hectare of land; locust bean, olive and pistachio is being planed (**table 2**).

In this period, the flat lands which are by the coast began to be occupied by sites. Some villagers give their lands to contractor and become the owner of various flats, and the built sites became secondary residences. Most of these sites are empty during the year instead of one or two months.

#### THE LAND USE IN KACAHASANLI IN 1996

The lands and utilization within the year 1996 can be seen in the third table. The shrinkage of lands can be explained by the lands being out of the village limits which were in the village limits in the former years. Some results can be obtained (which are not exact results) by considering the changes between 1986 and 1996 according to statistics by the help of former informations, present status of the land, because an important part of the land is now out of Kocahasanli's borders when compared to former year. The lands out of Kocahasanli are generally the bushy lands, scrub or unsuitable lands for agriculture on the north.

In order to show the dispersion of land utilization styles or changes which are formed by the works in the land and stabilized in the land utilization maps of 1986 and 1996; in the map of 1986, the serving lands are maximum 650 m. from the coast through the inner part. This is the length between east and west borders. One of the center of populations is placed just on the north of Mersin-Silifke motorway which is on the south, almost on the east border of the village. The other is just placed at the end of the road. In these dates, instead of residences on the south of the road, it is observed that agriculture areas cover a big place and only one or two sites are seen around. The empty areas on the south of the road become full with tents during summer. On the north, in proper lands with strip-like scenery; vegetable gardens, lemon hardens and greenhouses are generally seen, in addition with banana gardens. Lemon gardens are frequently seen on the west, by Lamas village. Towards the east, greenhouses become dense. On the north border of these areas, fruit gardens, olive groves and fields are present from place to place (**table 3**).

When we have a look at the land use map of 1996, it is clear that the land utilization limits has become 3 times wider than it was in 1986.

The utilization land which could only cover up to 650 m. of area from the coast toward 2-3 km. towards north in 1996. Agriculture land on the south of Mersin-Silifke road has disappeared. In this region one center of population and secondary residences are present and these changes still continue.

When we consider the space between Mersin-Silifke road and first irrigation canal as the primary zone, the

**Table 2 Land use in Kocahasanli at 1986.**

	Irrigated (Dekar)	Dry (Dekar)	Total (Dekar)	%
Field		6,000	6,000	15.4
Fruits Garden	306	300	606	1.5
Citrus	845	-	845	2.2
Maquis			15,310	39.2
Vineyard			2.5	
Vegetable			1,240.3	3.17
Open Vegetable				
Garden	757	-	757	
Greenhouse	483.3	-	483.3	
Meadow	-	2,000	2,000	5.12
Non-cultural land			13,000	33.3
Total			39,003.8	100.0

**Table 3 Land use in Kocahasanli at 1996 (DSI, Kocahasanli, 1996).**

	Area (Dekar)	Area (%)
Vegetable	1,580.5	19.7
Greenhouse (plastic cover)	1,365	17
Open Vegetable Garden	215	2.7
Citrus (Lemon)	2,595	32
Lemon Sapling	48	0.6
Fruits Garden	13	0.16
Vineyard	3.5	0.04
Meadow-olives	1,200	14.8
Residence area	2,000	24.7
Non-cultural land	660	8
Total	8,160	100.0

space between the first irrigation canal and the second irrigation canal as the secondary zone, the space between the second irrigation canal and the third irrigation canal as the third zone, the primary zone is the busiest zone of usage.

The density is lower in the secondary and third zones. The fact is that these regions take this shape in a short period of time and the rise in used areas still has a dynamism. The open vegetable garden, greenhouses and lemon gardens on the south of the primary zone almost have the same sight as it is in the land use map of 1986. However, the banana gardens which were there in 1986 are no more present and greenhouses and lemon gardens have taken the place of open vegetable fields. Greenhouses are very common, together with open vegetable fields, greenhouses and lemon garden. The rise in the number of lemon gardens is seen towards the west. On the north of the zone, lemon gardens are frequently seen. A striking fact is that multi-stony constructions are seen here and there around this region. It is seen that greenhouses are common in the secondary zone.

As seen in the map, lemon gardens are seen in some regions. And in this zone a house is near almost by every garden and greenhouse. In this zone, shelters with plastic covers are common belongings to share-croppers from hill villages, or new greenhouse owners. In the third zone, greenhouses are almost everywhere. Lemon

gardens are not frequent. Instead of these, there are open vegetable growing fields, which are thought to be turned into greenhouses afterwards.

Increase in the vegetable fields between 1986 and 1996 is 27.5%. However the 182.5% rise of undercover in this area shows the real increase, the lemon fields show a 213% of increase. These values partially show the utilization of unsuitable fields into productive fields.

The land width is usually between 2-7 one tenth hectare. The plot of lands get smaller day by day as a result of inheritance.

The owners of 20-30 one tenth hectare of land is no more than 7-8 people, and there are only one or two people who own 70 one tenth hectare of land (only 40 one tenth hectare can be irrigated). For these reason, the maximum benefit from the unit area is vital. In this point, irrigation is very important. The irrigation canals which surround Kocahasanli from three sides become active in 1980. The establishment of irrigation canals are important for agricultural activities and for increasing the fields of agriculture. Especially the act of allocating the fertile fields by the coast to residences and the presence of irrigation canals made people turn rock into earth. However, the increase in these agriculturing fields is limited within the limits of primary canal when we examine the land utilization map of 1986.

Within the years the increase in the number of gained agriculture fields from rocky lands into fertile lands has become rapid. When we compare the land use maps of 1996 and 1986 we can see that agriculture area has moved up to the third irrigation canal. This rapid work of utilization process has not ended. It still continues.

#### CONCLUSION

It is very obvious that the desire of people to benefit from the land in the maximum level in 1980's has increased considerably after 10 years when we roughly examine the land. The land is almost like a work site. Instead of already formed greenhouses and lemon gardens, many others are being formed. On the other hand, the formation of these are much more complex than the formation of only one field for lemon and vegetable growing. The fields which will be left for greenhouses and lemon gardens are not areas with fertile earth, flat or semi-flat areas which are suitable for agriculture. These areas are inclined areas with limestone rocks. They are separated by valleys and are low hills. The fields are cultivated by their owners or share-croppers from mountain villages like Çağda, Tapureli, Kayacy, Sarykaya, Kyzylin of Erdemli.

The share-croppers come to this region in September, they stay almost 9 or 10 months of the year. Working in greenhouses or growing lemon, build up shelters with plastic covers. Some of these share-croppers own a rocky land, utilize it, cultivate it, then they transform their plastic covered shelters into houses of briquettes

and bricks after a year or two. A series of process is to be followed during the formation of a greenhouse or a lemon garden. These process is both expensive, hard and the demand of forming these gardens is excessive. First step in formation of a green house or a lemon garden is the assurance of an area. If the person does not already own one, he has to assure one. Afterwards this area has to be cultivated in order to be turned into a field suitable for agriculture. The rocks and stones over the area are being destroyed by the help of diggers, machines or dynamites and the land is terraced. The land is utilized both by the sand from the sands from the shore and by the fertile earth taken from the base of the constructions along the coast between Kocahasanli or Mersin-Kocahasanli. The number of green houses which are formed by credit with established principals around the land is excessive. For greenhouses wood or steel constructions are made to plastic covered houses. 1/4 acres of greenhouse costs 800 million TL. Including the improvement of the land and all kinds of expenditures.

Here, the important fact is that big investments are done in order to form a field for agriculture. One of these processes in order to make field gain productivity is mostly the transportation of earth from the plains with first quality earth from Mersin. Among this plain area many sites are being constructed instead of agricultural activities. These region show an enormous change in a very short time; the citrus gardens, vegetable fields and the banana gardens from Erdemli left their places to sites. This change in the highly suitable lands for agriculture made people fight with rocky and stony land. Human beings who destroy the fertile, suitable lands of agriculture fight in order to turn the unsuitable, unproductive lands into fertile lands.

A part of the sites which built are used for permanent residence. They are used by people coming from Ankara, Istanbul, Adana for very short periods during summer time. The rest of the year they are left empty. The activities related with tourism and residence make people destroy the agricultural areas and afterwards they struggle with various difficulties in order to turn unsuitable lands into lands of production. A strife of both destroying and producing; the two important questions of argument. ●

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