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Changing Sub-Urban Land Uses to Urban

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1 ABSTRACT

The constant population increase of big cities has led to their sprawl towards areas that are close to the big centers. Places that used to be sub-urban or they were used as recreation places are through time changing and are mutating to urban areas as they accommodate increasing population.

The initial planning for these areas was based on their small population that was estimated to be increasing with slow pace. The rapid increase that was not predicted by planning found these areas not prepared for these changes. The arbitrary constructions combined with the lack of recent plans have led to the creation of unplanned areas were land uses are allocated randomly.

The aim of the current paper is to investigate the land uses kinds and posts in the sub-urban areas of the Athenians basin, that have during the past ten years mutating in urban areas. The paper will focus on the kind and the way new land uses have been allocated in these areas where planning does not exist. Finally it will evaluate if these land uses unplanned changes through time have covered the needs of the "new urban" population.

2 THE CREATION OF THE SUBURBS

The word suburb derives from the Latin word suburbium that means under the city. It is not recent, as in Rome, the capital of the Roman Empire; rich people moved to the hills of the city, away from the poor and there they constructed their luxury villas. Today, the word suburb is used to describe an area that is separate and in a commuting distance from the existing urban area but co-functions with it. This happens because suburbs are mainly residential areas that have not been developed autonomously, but are functionally connected with the urban core that concentrates the majority of functions.

Suburbs are the answer to the constant land demand versus the urban sprawl. They first emerged in the 19th and the 20th century because of the rapid population increase in the big cities taking advantage of the improved road and rail transport. They are organized, low-density areas that are designed in order to contain the urban sprawl and the exurbia development that is taking place particularly in the United States.

The creation and the development of the suburbs is taking place in three distinct stages. It begins as a residential phenomenon, encouraged by government expenditures on highways, favourable mortgage policies, and mass-produced suburban housing allowed for greater affordability. The fact that lower than in the city land values and easy automobile access exist, leads in the second stage when large-scale enterprises move in the suburbs. This second phase of suburbanization is also characterized by the relocation of manufacturing establishments to the suburbs, driven both by availability of cheap land and proximity to an increasingly suburbanized workforce. In the third stage, administrative functions begin to relocate to suburban office space and begin to spread beyond the urban cores. The three stages have been accomplished in the suburbs of the United States in the last years. In addition, many similar cases of three stages suburban development have been recorded in Europe.

In Greece, suburbs were initially planned cores that were distant from the central area and were intended for high-income class as vacation areas. Through the years the intermediate areas were constructed so the suburban areas became parts of the urban continuous, that is constantly sprawling in the big urban centers of Greece. The case of Kifisia is characteristic as it was the vacation area of rich Athenians and today is a part of the urban continuous of the Athens capital. Today the trend of the capital's population is to move to areas of the Mesogia plain that are connected with new infrastructures network and have the advantages of low-density development.

The research will focus on this new kind of suburbs that used to be villages or recreation areas distant from the urban centers but in the last twenty years are mutating to urban areas with the allocation of new functions and the arrival of new residents that are encouraged by the newly created infrastructures.

3 SUBURBAN DEVELOPMENT IN GREECE

Greece is a 130.100 km2 country that presents a wide variety as its geomorphology is concerned. The rapid movement of population towards the big urban centers that took place in the last century with intensity that varied according to the economic, political and other circumstances led to the dissertation of the mountainous areas and the gigantism of the urban areas. The framework for the urban policies in Greece began in 1920 with legislation that influenced in a big decree the cities of today. According to this decree, the areas around the existing cities could be constructed with some restrictions that were most of the times ignored, with the tolerance of the state and the inefficiency of the controlling mechanisms. This fact, for almost a century, has led to urban sprawl, which today is the main way for cities extension. Today, the existing legislative urban framework that is based on incrementalism has worsened the cities expansion. It is characteristic that the two largest urban centers of Greece are expanded in the way that is shown in Figure 1 (Athens expansion) and Figure 2 (Thessaloniki's expansion).
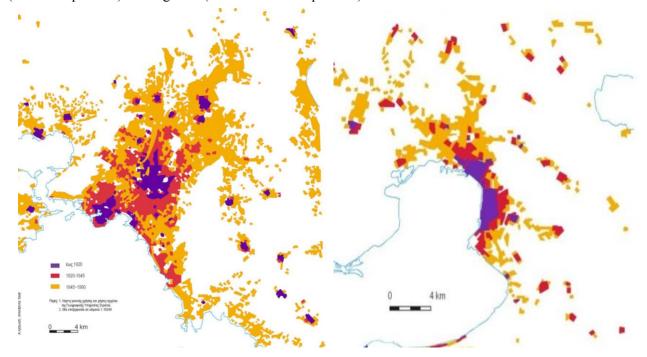

Figure 1 (left): Athens expansion. Figure 2 (right): Thessaloniki's expansion.

As it is shown in the above figures, except from the areal continuous that is presented, new suburban poles were since 1920 created. The research will focus on two types of suburban areas.

The first type is the villages that were distant from the urban core that were autonomous settlements isolated from the then shaped urban areas. The need for new urban land gradually mutated these areas that today function as suburbs of the central core.

The second type that will be examined is the coastal suburban areas, which were developed as recreation areas. These coastal areas today have mutated in urban areas that are constantly attracting new residents.

4 THE CASE STUDY

The case study of the current research is the settlements-suburbs that are developed in the Mesogia plain (Figure 3). They are divided in two types. The interior areas, that used to be small villages of Athens and their economy was based on agriculture and livestock-farming and the coastal settlements that were developed as recreation areas, where Athenians residents used to go for their vacation. These areas used to have a steady pace of development until the 21st century when infrastructures were developed. The new airport that was constructed and was supplemented by a new rail connection and a highway that served the basin with the wider area, led in a rapid population increase that was not expected. So, as planning was lacking, land uses followed a "laiser faire", for their allocation.

The current research will evaluate the changes of land uses in these two types of settlements and investigate if they have mutated to urban areas or they still have their initial functional character. The records from the 1991 and the 2001 population and employment censuses will be used are. The statistical technique that will

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be used is Principal Components Analysis, which will reveal if land uses structures have been developed or if functions kind and allocation are random. This is possible because for these areas, informed plans still do not exist and the existing urban legislative framework provides the freedom to the majority of land uses to be allocated wherever they prefer.
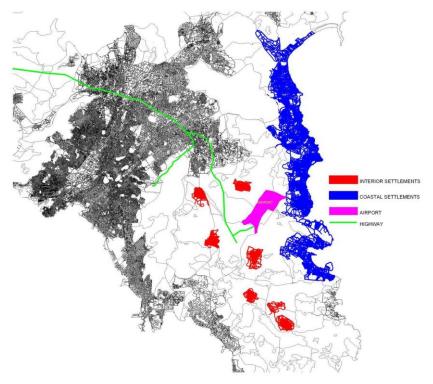

Figure 3: The areas of the case study.

4.1 The interior suburbs

The six interior suburbs that will be examined are Spata, Koropi, Peania, Markopouloo, Kalivia and Keratea (Figure 4). These settlements used to be small villages with economy based on the production of goods that intended for the big city.
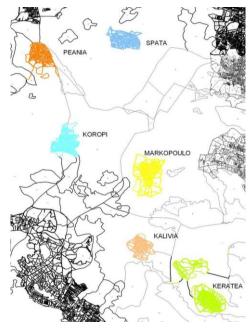

Figure 4: The interior suburbs.

These areas population has rapidly increased in the last twenty years and the employment on the tertiary sector on some of them has doubled during the examined decade. The fact that the Greek state had not

predicted this rapid increase is shown by the lack of flood preventing and sewerage network while illegal constructions are constantly created around these settlements without planning.

The detailed changes of population and employment in the six areas are shown in Table 1. The changes that have been recorded show that in all sectors the employment has increased. It is the tertiary sector where more new employees are recorded. A more detailed investigation shows that this increase is not caused by big enterprises but from small new activities that are allocated in these areas. As for their kind, the new activities are mainly public infrastructures as schools and administrative units but also retail trade services. Therefore, supralocal activities have not been developed but the majority of functions aims to the satisfaction of these areas residents needs.

SETTLEMENTS	DATES	POPULATION	EMPLOYEES	MANUFACTURE AND INDUSTRIES	TERTIARY SECTOR
SPATA	1991	7.796	2.355	597	1.758
	2001	10.203	3.119	883	2.236
	2001 - 1991	2.407	764	286	478
PEANIA	1991	9.727	2.532	592	1.940
	2001	13.013	4.337	1.502	2.835
	2001 - 1991	3.286	1.805	910	895
KOROPI	1991	16.813	3.407	1.515	1.892
	2001	25.325	4.766	2.067	2.699
	2001 - 1991	8.512	1.359	552	807
MARKOPOULO	1991	6.716	2.330	775	1.555
	2001	7.614	2928	840	2.088
	2001 - 1991	898	598	65	533
KALIVIA	1991	7.357	2.611	800	1.811
	2001	12.202	4.235	1.519	2.716
	2001 - 1991	4.845	1.624	719	905
KERATEA	1991	6.712	2.134	840	1.294
	2001	7.430	2.430	902	1.528
	2001 - 1991	718	296	62	234

Table 1: The changes in the six interior settlements.

Kalivia settlement has the biggest population increase while Koropi (Figure 5) is the most populated area. The execution of Principal Components Analysis in Koropi, the settlement where the majority of employment is concentrated, shows that in 1991, a date when still planning did not exist, 18 groups of functions are recorded.

Figure 5: Koropi settlement

The first and most frequently faced grouping of functions is composed by incompatible functions that are allocated in Koropi's centre. It is a phenomenon of many small Greek settlements, the majority of urban

activities that are not compatible, are concentrated in the centre, while in the rest areas, houses and other small activities are allocated.

One decade later, the groupings that are shaped are not different. Still incompatible groupings are composed and are allocated in the settlements core with a random way as regulations in the kind and post of functions have not revealed. The fact that new activities are allocated in the settlement and restrictions do not exist has led to an erratic development that is characterizing the majority of the Greek cities and is through time incrementally controlled.
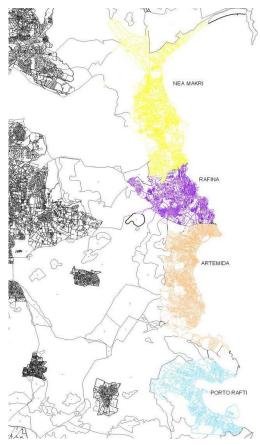

Figure 6: The coastal suburbs

COASTAL SETTLEMENT	DATE	POPULATION	EMPLOYEES	MANUFACTURE AND INDUSTRIES	TERTIARY SECTOR
ARTEMIDA	1991	9.485	3.151	946	1.777
	2001	17.391	6.751	2.070	3.968
	2001 - 1991	7.906	3.600	1.124	2.191
PORTO RAFTI	1991	3.293	1.196	322	702
	2001	7.131	2.757	683	1.677
	2001 - 1991	3.838	1.561	361	975
RAFINA	1991	8.611	2.669	659	1.672
	2001	11.909	4.613	1.197	3.012
	2001 - 1991	3.298	1.944	538	1.340
NEA MAKRI	1991	13.009	4.533	1.051	2.689
	2001	14.809	5.315	1.229	3.494
	2001 - 1991	1.800	782	178	805

Table 2: The changes in the four coastal settlements.

4.2 The coastal suburbs

The four coastal suburbs that are examined, have diachronically shaped a continuous in the east coast of the basin (Figure 6). Initially they were cores that are sprawled in the coastal area taking advantage of the freedom that has been provided. They are preffered because of their adjacency with the sea and they have gradually mutated to main residence areas.

It is characteristic that on the contrary with the interior suburbs, a more intense population increase is realised, while the employment has increased in a slower pace (Table 2). The settlement that will be examined is Artemida which concentrates the majority of population.

The biggest increase is recorded in the tertiary sector, as uses of trade and services have been allocated. The manufacture and the industrial sectors have also increased but with a slower pace. The examination of the structures of land uses that have been shaped will be revealed with the use of Principal components analysis on Artemida's recorded employment of 1991 and 2001.

Figure 7: The Artemida sprawl

The Principal Components Analysis that is realised in the 1991 employment shows that the allocation of functions is completely random (as 23 groupings have revealed from 49 activities) and they are allocated in a scattered form with small concentrations in the coastal zone.

The corresponding Analysis in the 2001 employment shows that a grouping of tertiary activities has been shaped but is still allocated in a scattered form. So, it seems that some activities tend to create cores of similar or related functions but they still have not shaped areas with specific functional character. If we take into consideration that the majority of constructions were illegal and planning for this area is recent, the fact that functions tend to auto-regulate is a sign of urban development.

5 THE EVALUATION OF THE MUTATION OF SUBURBAN TO URBAN DEVELOPMENT.

The process of urbanization is a complicated procedure that is influenced by many factors. The research tried to examine if areas that have recently concentrated new residents, have mutated to urban or if they still have their initial character. It focused on the areas that accept pressures on land demand and searched for the changes that have been realised in them.

The research examined two types of areas, the interior and the coastal. The interior areas were closer to the urban centre, the capital of Greece and they were functioning for two centuries with economies based on rural and livestock-farming activities. The coastal areas were distant from the centre and they were exclusively recreation areas with very small permanent population.

It is concluded that it is more difficult for the interior areas to mutate to urban than the coastal, as land uses are concerned. The interior areas have concentrated a variety of new activities that are randomly allocated in the total of the area. They have also not shaped groupings of uses. This can be explained by the fact that it is more difficult for areas that have been functioning in a certain way for years to adjust in new conditions.

This phenomenon is overloaded by the fact that urban plans do not exist so a regulative framework that would manage the kind and the allocation of the new activities is lacking.

On the contrary, the coastal areas have concentrated not only new residents but also activities that tend to auto-regulate as during a decade they have shaped groupings of activities that are still randomly allocated. They have the characteristics that make them more attractive for new residence areas and they are more easily adjusted in the new conditions, as they have not yet been shaped.

Therefore, in the Greek suburbs the first stage of development, the population's increase has been achieved, while the second and the third stage have been accomplished up to a point, as land uses still have not shaped the structures and the areas that would mutate their suburban functional character to urban.

6   REFERENCES

Hellenic Statistical Authority, Population and employment census, 1991, 2001.
National Centre of Social Research, The areal development of four big Greek cites. Available from:
        http://arxeio.gsdb.gr/wp/WP_21.pdf, [Accessed 20 January 2012].