46th Congress of the European Regional Science Association
August 30th –September 3rd 2006, Volos, Greece
Enlargement, Southern Europe and the Mediterranean

TRANSFORMATION OF RURAL PATTERNS IN GREECE IN A EUROPEAN REGIONAL DEVELOPMENT PERSPECTIVE (The Case of Crete)

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Abstract

Rural space in Greece is experiencing a significant transformation. During the last four decades the traditional urban-rural dichotomy has given its place to complex spatial patterns which are in a process of continuous change. This change is the result of a variety of factors such as the international economic environment, the emergence of new economic activities in rural areas, mainly the service sector and tourism, the changing urban-rural relations as well as the implementation of national and European policies for the agricultural sector and for rural development. In addition, rural development is not any longer dependent solely on the agricultural sector but also on the rural- urban relationships and the presence of a large variety of economic activities in rural areas.

In this paper data concerning demographic, economic and infrastructure characteristics of rural areas are analyzed, describing the transformation of rural space in Greece. A case study for the region of Crete will be presented. A number of typologies of rural areas in Greece are presented for different time periods which demonstrate the significant changes of rural patterns in the last two decades. These typologies are employed in order to suggest policy guidelines for rural development in Crete. The results will be presented in a GIS environment and when appropriate will be compared to similar studies in Europe. Finally policies for agricultural and rural development, in the context of European regional and spatial development, will be examined in relation to rural patterns in Crete and the development perspectives of rural areas.

Keywords: rural development, typologies of rural areas, Greece, Crete, Community Support Framework, cluster analysis

1. THE TRANSFORMATION OF RURAL SPACE

Greece has been considered for several decades to be a predominantly rural country. Employment in the primary sector is still higher than the European average, although it has significantly decreased in the last decades. Employment and income resulting from activities in the tertiary sector, mainly services and tourism, have increased to the extent that the tertiary sector has become dominant in most Greek regions. Manufacturing activities demonstrated significant development in the 60's, but for a long period of time the sector has been stagnant. Together with economic transformations social transformations are very important for the evolution of rural space in Greece. Actually in the last forty years the 'urban way of life' has been gradually dominant in both urban and rural areas in Greece (Burgel and Demathas 2001).

During the years after World War II and until the '80s, the traditional dichotomy between the city and the region or between urban and rural areas was characteristic in the Greek territory. This distinction appeared in all analyses of demographic, economic and social indicators, and it was also apparent in urban and rural landscapes and the way of everyday life. In the 60's and 70's internal and external migration resulted to the demographic decline of rural areas, often accompanied by the abandonment of agricultural land, especially in the mountainous and island regions. Since the '80s, which may be considered a new historical period both in political and economic terms, and was also the time of the country's entrance to EEC, the above dichotomy gradually gave its place to more complex spatial patterns. Demographic stabilization has been the first clear indicator of this process. In addition incomes in rural areas experienced a significant increase, which was attributed both to the agricultural sector and increased Common Agricultural Policy (CAP) subsidies and to tertiary activities, especially tourism. Since 1989 the construction of infrastructure in rural areas was accelerated through the structural funds of the Community Support Frameworks (CSFs). Small and medium-sized towns present functions similar to those in large cities, especially when retail and recreational activities are considered, while the urban lifestyle is diffused into rural areas. However, these developments do not apply to all rural areas.

Rural areas which have successfully assimilated structural change present quite satisfactory incomes and standards of living, while rural areas in remote areas without significant agricultural capacity tend to decline.

Thus, in the present time rural areas in Greece are characterized by complexity and uniformity at the same time. This process is evident in many European and OECD countries (European Commission 1997, 1999, OECD 1993, 1995). In several studies of rural areas a series of important questions arise in an effort to formulate effective development plans. The delineation of rural space, the significance of the agricultural sector in rural development and the other factors of rural development are some of these issues.

Concerning the delineation of rural space, most countries as well as international organizations employ demographic criteria for the statistical definition of rural areas, such as population size and population density. In Greece, rural areas are the municipalities in which the largest settlement has less than 2000 inhabitants, while in urban areas the largest population center has 2000 or more inhabitants (National Statistical Service of Greece 2004). Up to the 1991 Census there was also the distinction between urban areas (10000 inhabitants and more) and semi-urban areas (2000-10000 inhabitants). In the 2001 Census, the category of semi-urban areas was incorporated into the one of the urban areas, so that the only distinction is currently between urban and rural areas. OECD defines rural areas in terms of population density (150 inh/sq.km). According to this definition rural areas in Greece should include the former semi-urban Greek regions and in that case it is estimated that 95% of the Greek territory is rural (Hellenic Ministry for the Environment, Physical Planning and Public Works 1998).

The primary sector is not a criterion for delineating rural space; however its contribution to rural economies is considerable. While in the past decades rural areas in Greece were identified in terms of the size of agricultural employment, the tendency in recent years is the reduction of employment in the primary sector and the development of other economic sectors, so that rural areas cannot be identified any more in the traditional way. Consequently, rural development is the result of a variety

of economic activities and does not depend solely on the primary sector. Such activities refer mostly to the tertiary sector and to a lesser degree to manufacturing. In Greece, previous research has shown that the proximity to urban services is more important as a factor of rural development when compared to the effects of the agricultural sector (Agricultural University of Athens 1991).

The recent developments concerning the factors contributing to rural development have led to a series of typologies of rural areas in an effort to formulate appropriate rural development policies. In Greece, the new way that rural development is perceived has been evident in the CSF 2000-06.

2. TYPOLOGIES OF RURAL AREAS

The first typologies of rural areas were formulated in the late 80's and early 90's (European Commission 1988, 1992, 1994, OECD 1993, 1995, Agricultural University of Athens 1991). Some of the more characteristic ones are briefly presented below.

European Commission presented a typology of rural areas in the study "The future of the rural society". In this study it was pointed out that 80% of European territory is considered to be rural according to the population density criterion. Rural areas include small towns as well, which play the role of service centers for the surrounding rural regions. The high share of rural areas in the European territory alone justifies an increased interest for rural areas. On the other hand, the differences observed in the level of development of rural areas and the increased attention for issues of environmental protection led to a classification of rural areas in groups of similar characteristics, problems and development perspectives. The proposed typology was stated as follows (European Commission 1988):

1. Rural areas which are close to major urban centers and they are ecologically at risk
2. Declining rural areas, mostly Mediterranean, facing problems of development and economic differentiation

3. Remote and non-accessible areas, e.g. mountainous zones and islands, where rural decline, desertification and the abandoned agricultural land are prevailing and the possibilities for economic differentiation are extremely limited

The proposed solutions for the above-mentioned types of rural areas are: emphasis on environmental protection for the first type, reinforcement of economic activities for the second type and social policy aiming to demographic stabilization for the third type.

OECD (1993, 1995) also proposed rural areas typologies such as the one presented below which is based on the degree of their access to major urban centers:

1. *Remote rural areas* which are usually sparsely populated and are often located on or near mountains or islands, experience poor transportation, low incomes, ageing and declining population, high dependence on agriculture and lack of high quality services.
2. *Intermediate rural areas* which have developed traditionally on the basis of a prosperous agricultural sector and their economic structure has been gradually diversified into such sectors as manufacturing, trade, tourism and other service activities. These areas are in a process of economic integration, while remaining demographically stable with a relative low population density. These areas are fairly distant from surrounding urban areas but with relatively easy access to urban centers.
3. *Economically integrated areas* which are prosperous rural areas which are often located near an urban center and present growing population, above average rural incomes and access to cultural and educational resources.

In Greece, research on the typology of rural areas was carried out in the early 90's (Agricultural University of Athens 1991). It was the first time that non-agricultural factors were considered to be of importance for rural development in Greece. According to this research there are two main factors contributing to the growth differences of rural regions: agricultural potential and distance from urban centers. Three main types of rural settlements were identified:

1. Dynamic rural settlements which combine profitable agricultural activity and proximity to urban centers
2. Rural settlements with intermediate development which have satisfactory agricultural potential, but they are at relatively great distances from urban centers
3. Rural settlements which do not possess sufficient agricultural production capability and in combination with the lack of alternative economic opportunities are in a process of continuous decline.

According to the results of this research, the major contributing factor to rural development in Greece was proved to be proximity to urban centers, in terms of the access of rural population to a wide range of services.

Research involving rural typologies has continued since (European Commission 1997, 1999, Hellenic Ministry for the Environment, Physical Planning and Public Works 1998, Iliopoulou 2001, 2005), in an attempt to understand the perspectives of rural areas and formulate appropriate policies, especially in the European regional development context. Some of the most interesting results of this research is that rural patterns are changing over time and regions do not belong into the same type of rural regions for a long period of time. Actually they have changed significantly in the last decade (Iliopoulou 2001, 2005). One of the suggestions of this research for more reliable results is that analysis should be performed in smaller spatial units.

In this paper an analysis of rural patterns is presented focusing on the island of Crete which was found to belong in two types of rural regions in previous research. Three of the administrative departments of Crete were classified in the type of "The periphery" and one (the department of Rethymnon) in the type of "Tourism-oriented regions" (Iliopoulou 2005). In this study, the analysis will be performed at the municipal department (former communes) level which is the subdivision of the municipality.

3. CLASSIFICATION OF RURAL AREAS IN GREECE: The Case of Crete

3.1. The Study area

Crete, the fifth largest island in the Mediterranean and the largest Greek island, consists one of the thirteen development regions (NUTSII) of Greece. It is an island which combines a variety of activities such as market-oriented agricultural production, tourism but also technological research. In 2001 population was 601131 inhabitants, 42% of which rural population. The most developed part of the island is the northern coastal area, which concentrates population and economic activities, while a great part of Crete is mountainous (49.4%) populated by a large number of small settlements.

3.2. The choice of indices

The analysis employs 13 indicators which describe demographic characteristics, agricultural potential, non-agricultural employment and infrastructure and refer to the 571 municipal departments of Crete. The choice of indices is based on previous research (Agricultural University of Athens 1991, Iliopoulou 2001, 2005); however it is also determined by the availability and reliability of data at the municipal department level. Some of the indices reflect changes for the last two decades. The indices employed in this analysis are presented in Table 1.

Table 1. Indices for the classification of rural regions in Crete, Greece

1. Population density 2001
2. Population change 1981-2001
3. Population ageing 2001
4. Altitude
5. Percent of active population in the primary sector 2001
6. Percent change of employment in the primary sector 1991-2001
7. Percent of utilized agricultural land 2000

8. **Percent of irrigated land 2000**
9. **Agricultural land per holding 2000**
10. **Percent of market-oriented agricultural land 2000**
11. **Percent of active population in the secondary sector 2001**
12. **Percent of active population in hotels and restaurants 2001**
13. **Construction activity per inhabitant 2000-05**

Demographic indices are very important in order to describe social and economic development. **Population density** is one of the main criteria for delineating rural areas. **Population change** is crucial for assessing the development perspectives of regions in Greece, since the consequences of the depopulation of rural areas in the 70's are still evident. In the same way **population ageing**, expressed by the ratio of old people (more than 65 years old) over young people (less than 14 years old), is an important characteristic of rural areas.

Employment in the primary sector is one of the basic indices to describe agricultural potential in Greek regions, although dependence on agriculture might be a characteristic of declining regions. **The percent change of employment in the primary sector** over the period 1991-2001 is very important in order to describe the tendency in the employment structure of rural areas. The **percent of utilized agricultural land, the average area per holding,** the **percent of irrigated land** and the **market-oriented agricultural land** are indicators of agricultural potential.

Employment in the tourist sector is the main alternative employment opportunity in the rural areas of Crete, where tourism is well developed especially along the northern coast of the island. The **percent of active population in hotels and restaurants** is the index used to express employment in the tourist sector, although several tourism-related activities, such as retail and handicraft activities are not included. The **percent of active population in the secondary sector** also expresses alternative employment opportunities. **Construction activity per inhabitant** is an index of infrastructure related to economic growth. Finally, the differentiation of rural areas according to their **altitude** is related to demographic, agricultural and social development in Greece.

Most of the indices presented in the analysis are the result of elaborations on unpublished data derived from the Population Censuses and other statistical researches carried out by the National Statistical Service of Greece (NSSG).

3.3. Description of indices

The analysis was carried out for 551 municipal departments with population of less than 2000 inhabitants. These are the rural areas according to the criterion of the Statistical Service of Greece. The number of the municipal departments of Crete which are characterized as urban is 26 and they were excluded from the analysis.

A general remark is that all indices present a great variation in their values which can be attributed to the small size of the area units employed in the analysis and to the small size of population in several municipal departments.

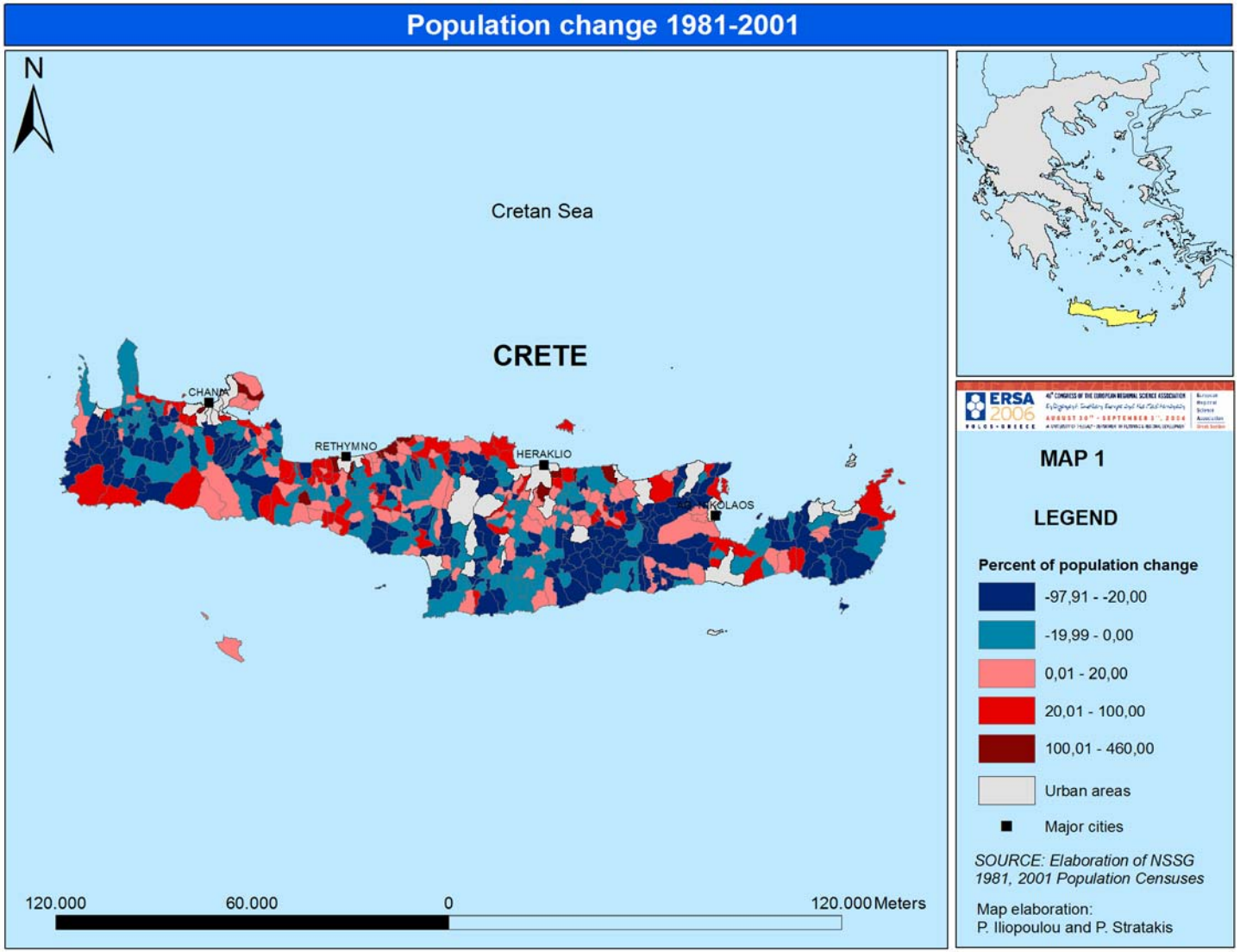
Population density for the year 2001 in the rural areas of Crete is low with an average of 45 inhabitants per km^2. However, the maximum reaches 690 inh./km^2 and the minimum is close to 1 inh./km^2.

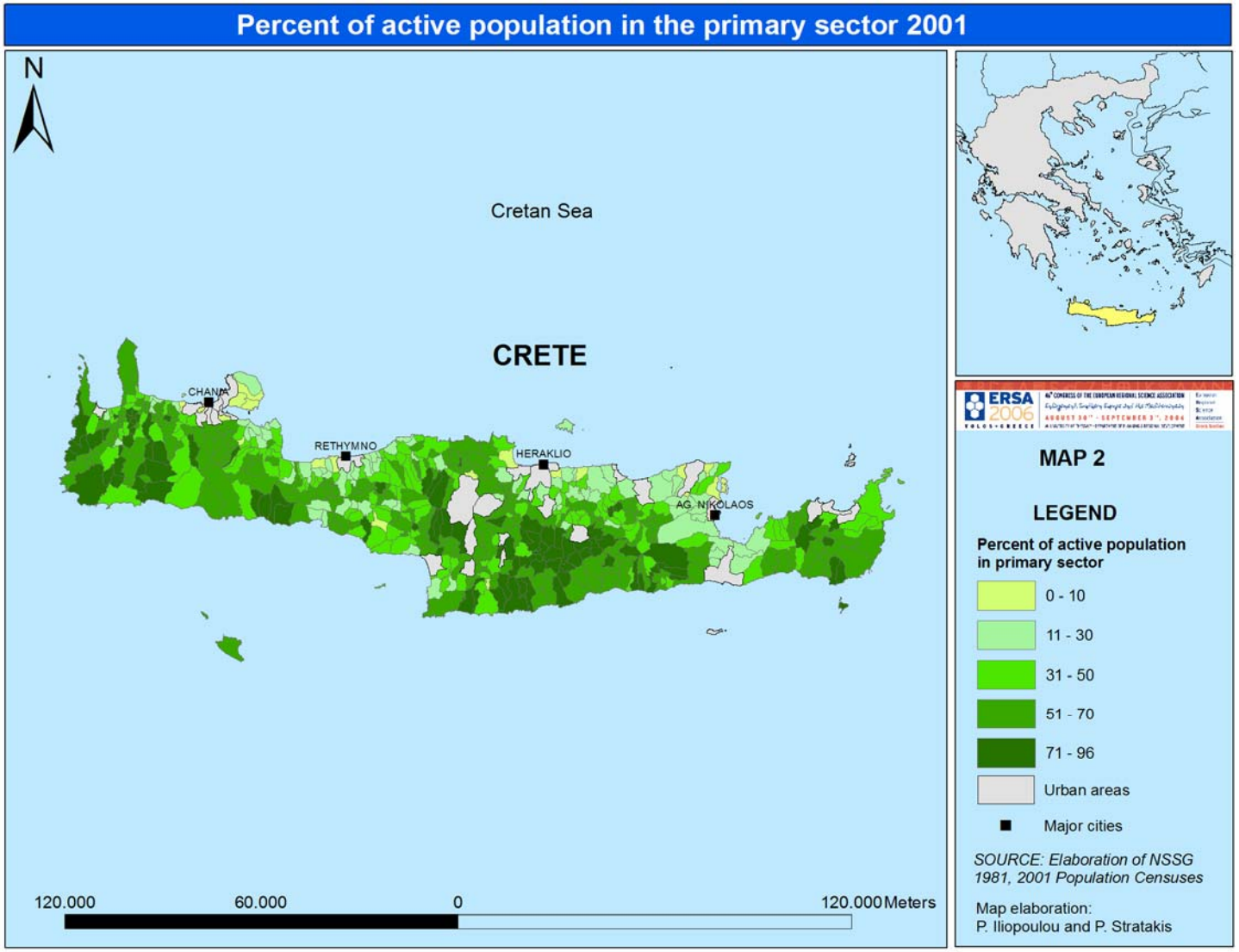
Population change in the period 1981-2001 is in general negative (on average -5%), but the maximum is 460%, while the minimum is -98%. In map 1 population change is presented and it is evident that positive change is observed mostly in the municipal departments along the northern coast of Crete, where tourist development is intense and also the highway passes through.

Population in the region of Crete is ageing. The **ageing index** for the year 2001, i.e. the ratio of old over young people, was on average 243%, while the maximum reached 5200% and the minimum was 31%.

The mean a**ltitude** is 308 meters, with a minimum of 10m. and a maximum of 870m.

The percentage of **active population in the primary sector** for the year 2001 was 50% on average, which is quite high, ranging from 0 to 96% (map 2). The percent **change of employment in the primary sector** for the period 1991-2001 was on average -25%, which is a rather large decrease for a decade.


Population change 1981-2001
N
Cretan Sea
CRETE
CHANIA
RETHYMNO
HERAKLIO
AGIOS NIKOLAOS
120.000
60.000
0
120.000 Meters
ERSA 2006
MAP 1
LEGEND
Percent of population change
-97,91 - -20,00
-19,99 - 0,00
0,01 - 20,00
20,01 - 100,00
100,01 - 460,00
Urban areas
Major cities
SOURCE: Elaboration of NSSG 1981, 2001 Population Censuses
Map elaboration:
P. Iliopoulou and P. Stratakis


Percent of active population in the primary sector 2001
N
Cretan Sea
CRETE
CHANIA
RETHYMNO
HERAKLIO
AG. NIKOLAOS
120.000
60.000
0
120.000 Meters
ERSA 2006
MAP 2
LEGEND
Percent of active population in primary sector
0 - 10
11 - 30
31 - 50
51 - 70
71 - 96
Urban areas
Major cities
SOURCE: Elaboration of NSSG 1981, 2001 Population Censuses
Map elaboration:
P. Iliopoulou and P. Stratakis

However there are municipal departments in Crete where employment in the primary sector increased (with a maximum increase of 515%), while the maximum decrease reached -100%.

The percentage **of utilized agricultural land** was 51% in 2000 with a minimum of 0% and a maximum of 1232% (map 3). Values exceeding 100% can be explained by the fact that utilized agricultural land refers to holdings, whether or not they are within the boundaries of the municipal departments in question. Therefore this index is an expression of the wealth of these municipal departments, given the fact that they possess agricultural land in other municipal departments. In map 3 is shown that municipal departments with values for this index over 100% are found mostly in the central and to a lesser extent in the western part of Crete.

The area of **agricultural land per holding** is on average 7.4 stremmas, with a minimum of 1.1 and a maximum of 84 stremmas.

The average percentage of **irrigated land** was 32% in 2000 and ranged from 0 to 100%.

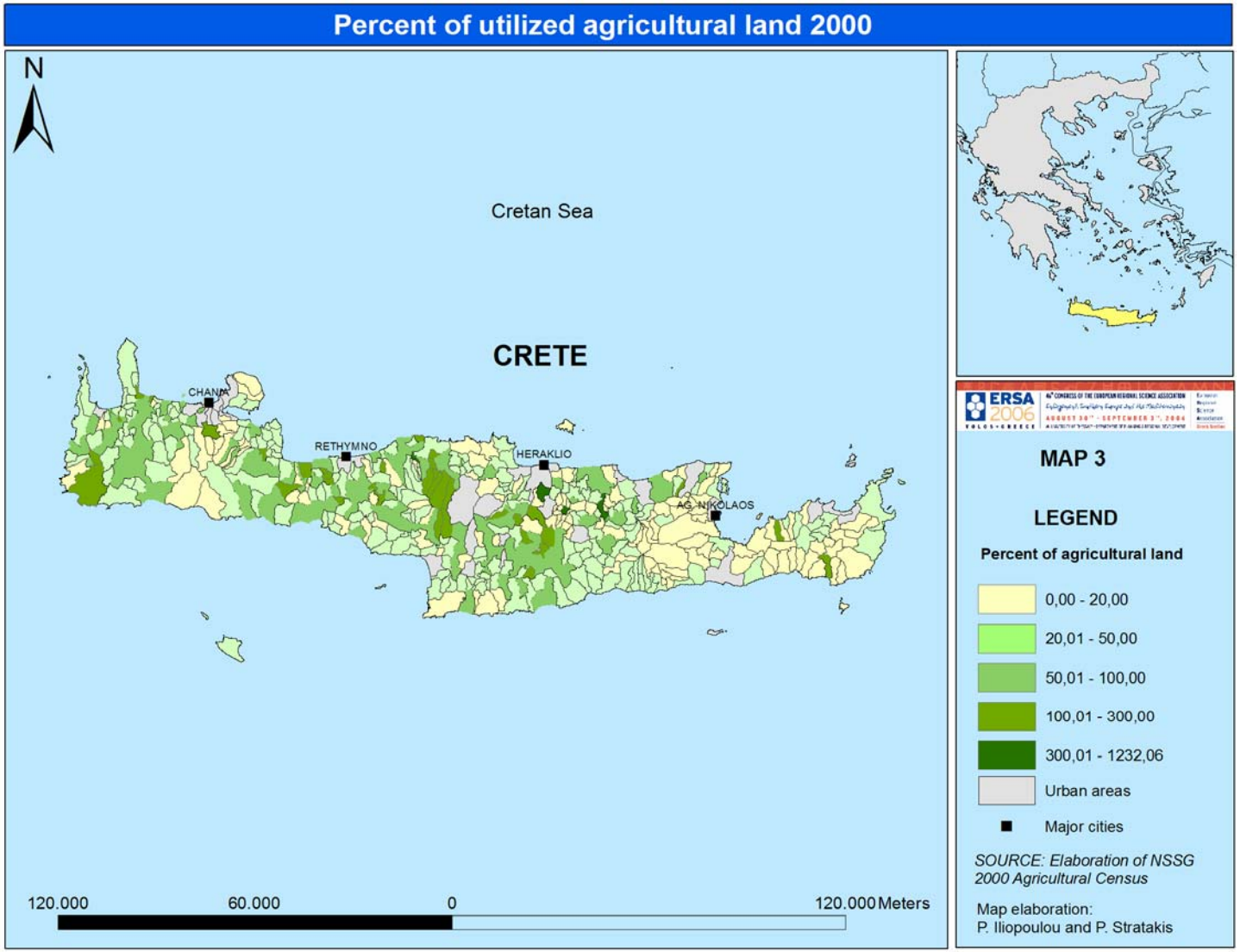
The percentage of **market-oriented agricultural land** is on average 90% and ranges from 0 to 100%.

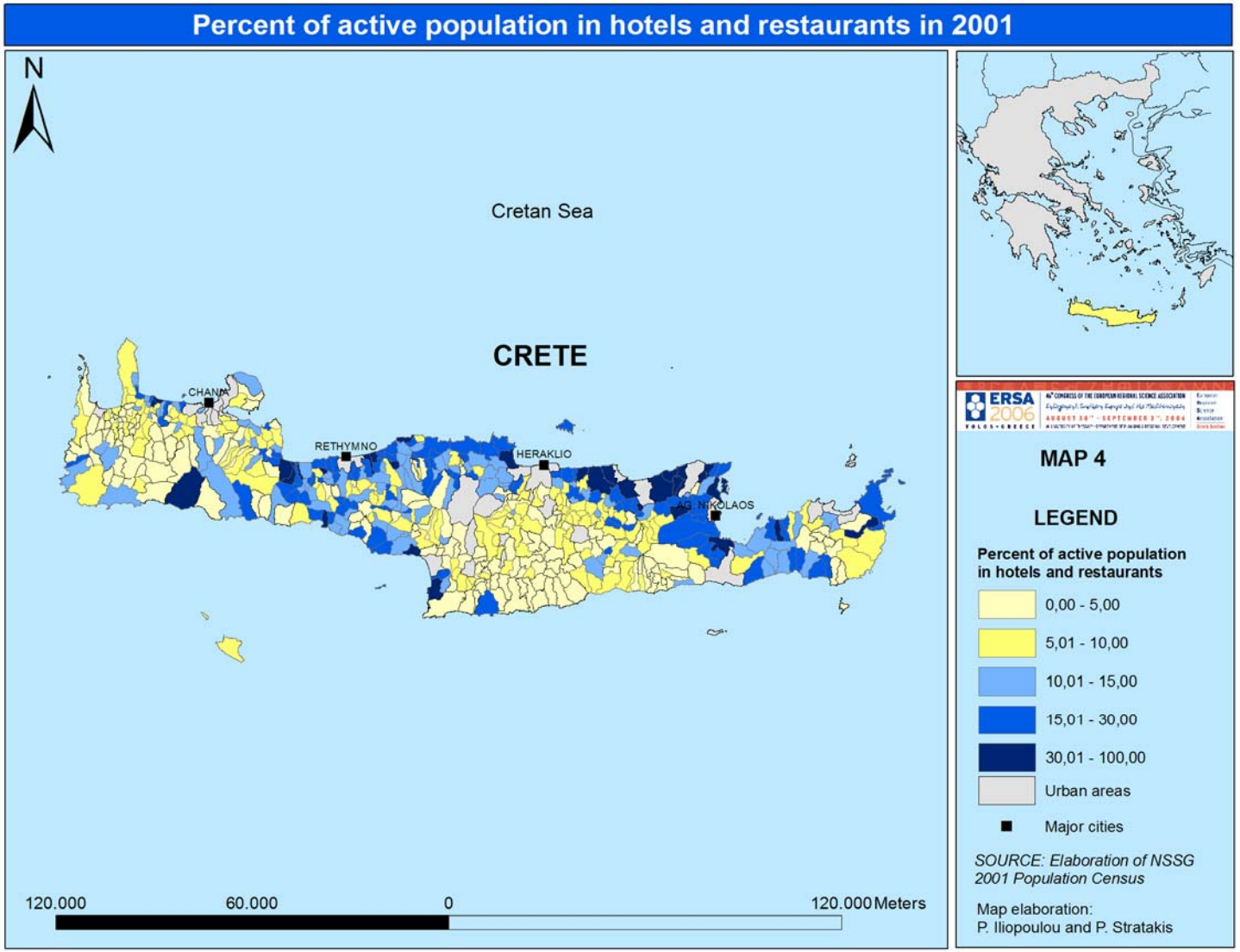
The percentage of active population in the secondary sector is on average 11% and ranges between 0 and 50%.

The percentage of **active population in hotels and restaurants** for the year 2001 is on average 11% and ranges between 0 and 100% (map 4). As mentioned before, this index represents employment in tourism. In map 4 employment in hotels and restaurants is presented and it is evident that there is a concentration of tourist activity along the northern coast and to a lesser extent in the southern coastal areas.

Construction activity per inhabitant for the period 2000-05 was on average 40m^3 per inhabitant, ranging from 0 to 1626m^3/inh.

From the above description, it is obvious that the characteristics of the rural areas in Crete present a great variation and the initial remark in this paper that rural space presents in recent years a great complexity has become evident. Rural areas according to their characteristics, referring to demographic, economic, infrastructure and location attributes, experience different problems and possess different potential. The identification of rural patterns is not obvious and for that reason a multivariate classification technique will be employed in an attempt to identify such patterns.


Percent of utilized agricultural land 2000
N
Cretan Sea
CRETE
CHANIA
RETHYMNO
HERAKLIO
AG. NIKOLAOS
120.000
60.000
0
120.000 Meters
ERSA 2006
MAP 3
LEGEND
Percent of agricultural land
0,00 - 20,00
20,01 - 50,00
50,01 - 100,00
100,01 - 300,00
300,01 - 1232,06
Urban areas
Major cities
SOURCE: Elaboration of NSSG 2000 Agricultural Census
Map elaboration:
P. Iliopoulou and P. Stratakis


Percent of active population in hotels and restaurants in 2001
N
Cretan Sea
CRETE
CHANIA
RETHYMNO
HERAKLIO
AG. NIKOLAOS
120.000
60.000
0
120.000 Meters
ERSA 2006
MAP 4
LEGEND
Percent of active population in hotels and restaurants
0,00 - 5,00
5,01 - 10,00
10,01 - 15,00
15,01 - 30,00
30,01 - 100,00
Urban areas
Major cities
SOURCE: Elaboration of NSSG 2001 Population Census
Map elaboration:
P. Iliopoulou and P. Stratakis

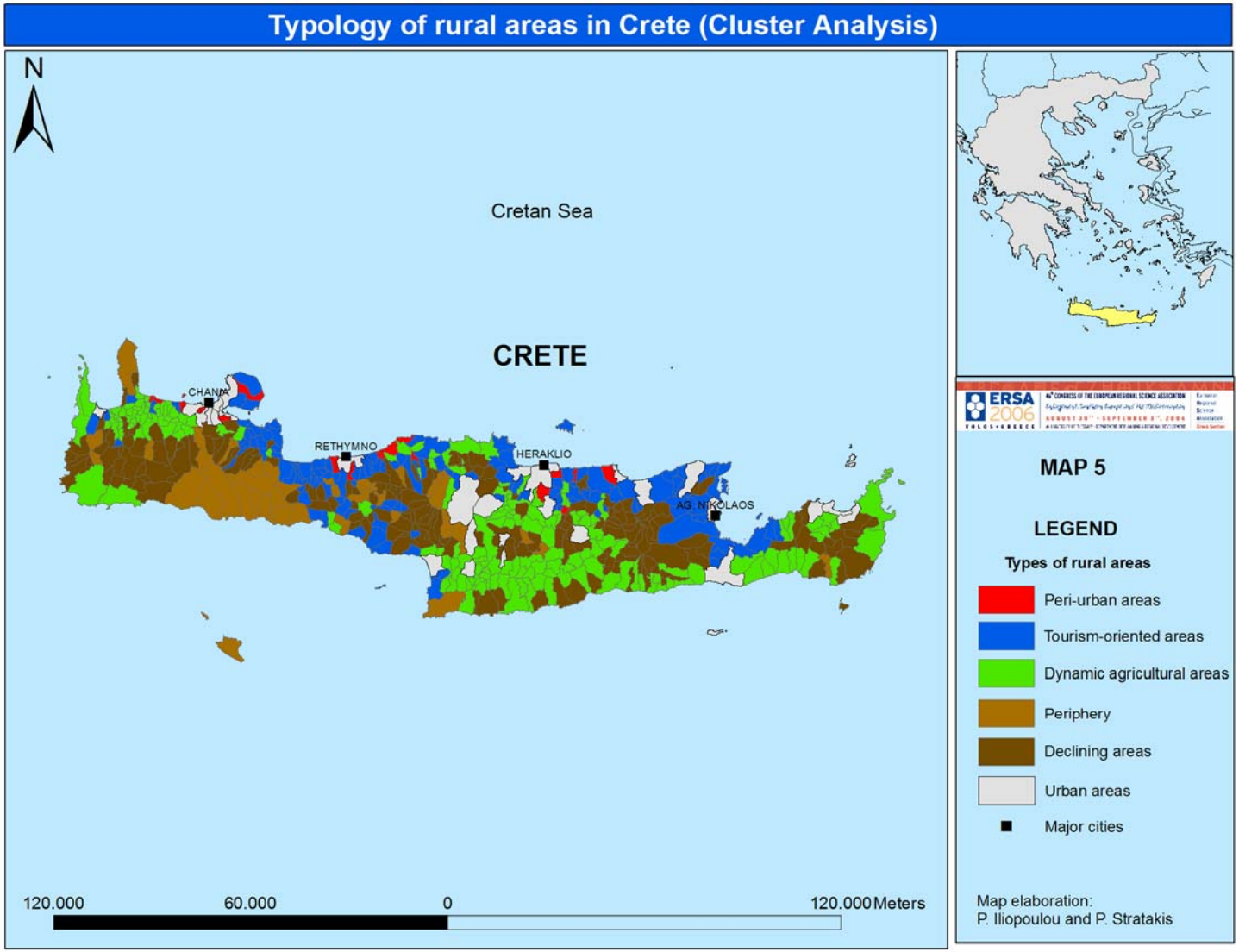
3.4. Cluster Analysis

The description of individual indices indicated that they result into different spatial patterns and it is very difficult to formulate a classification of rural areas based on their comparison. In order to propose a typology of rural areas the method of cluster analysis was employed. Due to the great number of observations the k-means method was employed, in order to minimize the Euclidean distance between the observations and the cluster centers (Ross 1995). After several trials of cluster analysis, a solution of five clusters was selected. The results are presented in map 5.

Cluster 1: Rural areas in close proximity to urban areas (Peri-urban areas)

This cluster consists of 18 municipal departments which are located mostly along the northern coast of Crete and they are in close proximity to major urban centers. This is a cluster of municipal departments in level areas with an average altitude of 96 meters, which is the lowest value among clusters. Population density is the highest among cluster means (212 inhabitants per km^2). Population change is positive, 148% in the period 1981-2001, the highest positive change among clusters. Population is the youngest among clusters with the average ageing index being 66%. Employment in the primary sector is low (16%), the lowest among clusters, while the decrease in this employment is moderate (-32%). Average employment in hotels and restaurants is the second highest among clusters (19%), while employment in the secondary sector is the highest (21%). The average percentage of agricultural land is the highest among clusters (185%) indicating that agricultural holdings in the municipal departments of this cluster possess areas of agricultural land in other municipal departments. The average area per holding is rather low, while the percent of irrigated land is the second highest among clusters (48%). The average market oriented agricultural land is not very high (82%). Finally construction activity is the highest among clusters ($189m^3$ per inhabitant).

In conclusion, this cluster experiences demographic growth, economic diversification with all economic sectors being developed and quite remarkable agricultural potential. This dynamism can be attributed to the location of the municipal departments which is characterized by the proximity to urban centers and the coast as well as their low altitude.


Typology of rural areas in Crete (Cluster Analysis)
N
Cretan Sea
CRETE
CHANIA
RETHYMNO
HERAKLIO
AG. NIKOLAOS
120.000
60.000
0
120.000 Meters
ERSA 2006
MAP 5
LEGEND
Types of rural areas
Peri-urban areas
Tourism-oriented areas
Dynamic agricultural areas
Periphery
Declining areas
Urban areas
Major cities
Map elaboration:
P. Iliopoulou and P. Stratakis

Cluster 2: Tourism-oriented areas

This cluster consists of 142 municipal departments which are located mostly along the northern coast of the island and towards the interior, while some of them are located in the south-east part of Crete. They are located in rather low altitude (240 m. on average). Population density is moderate (51 inh./km^2) and population change is positive (3.4%). Population ageing is high (203%). Employment in the primary sector is low (28%) and it has decreased dramatically in the period 1991-2001 (-59%). This decrease is the greatest among clusters. Employment in hotels and restaurants is the highest among clusters (20%), while employment in the secondary sector is also high (18%). The average percentage of agricultural land is the second lowest among clusters (45%), while the average area per holding is rather small (6 stremmas). The percentage of irrigated land is also low (26%), while the average market-oriented agricultural land is not very high (83%). Finally construction activity is the second highest among clusters (71m^3 per inhabitant).

In conclusion, this cluster consists of municipal departments which are oriented towards tourist activity. Actually some of the most famous tourist destinations are found in this cluster (e.g. Elounta). The agricultural sector is not very strong, while the secondary sector appears developed, probably in relation to tourism. Consequently economic diversification is evident resulting to quite stable demographic conditions.

Cluster 3: Dynamic agricultural areas

This cluster consists of 175 municipal departments which are located in three major regions in central, western and eastern Crete. These municipal departments are found in rather low altitude (on average 216m.). Population density is moderate (54 inh./km^2), while population change is negative (-6.7%) and population ageing quite high (192%). Employment in the primary sector is high (58%), however this is the only cluster where employment in this sector increased significantly in the decade 1991-2001 (22%). Employment in the secondary sector is rather low (9%), while employment in hotels and restaurants is the lowest among clusters (7%). The average percentage of agricultural land is moderate (50%), while the average area per holding is rather low (4.7 stremmas). The average percentage of irrigated land is the highest among clusters (58%), while the average market-oriented agricultural land is the

highest among clusters (96%). Finally construction activity is rather low (34m^3 per inhabitant).

In conclusion, this cluster consists of municipal departments which are oriented to agricultural production. Some of the most productive agricultural regions of Crete (e.g. the Messara Valley) belong to this cluster. Probably the most interesting feature of this cluster is the increasing employment in the primary sector. However, agricultural development is not related to demographic growth, since population change in this cluster is negative and population ageing is high.

Cluster 4. The periphery

This cluster consists of 37 municipal departments, which are located mostly in the western part of Crete. They are mountainous municipal departments, with an average altitude of 404 m. Population density is the lowest among clusters (15 inh./km^2), while population change is negative (-4%). Population ageing is not very high compared to the rest of the clusters but it is well over 100% (132%). Employment in the primary sector is the highest among clusters (65%) and it experienced a moderate decrease (-15%) in the period 1991-2001. Employment in the secondary sector is the lowest among clusters (7.9%), while employment in hotels and restaurants is the second lowest (8.6%). The average percentage of agricultural land is the rather high (89%), while the average area per holding is the highest among clusters (29 stremmas). The average percentage of irrigated land is the lowest among clusters (5%), while the average market-oriented agricultural land is quite high (92%). Finally construction activity is low (24m^3 per inhabitant).

In conclusion, this cluster consists of municipal departments most of which belong to a mountainous region (Lefka Ori) in western Crete. The main characteristic of this region is the prevalence of the primary sector and the availability of agricultural land, which seems however to be of low potential. Economic diversification is not evident and the primary sector cannot support demographic growth.

Cluster 5: Declining regions

This cluster consists of 179 mountainous municipal departments which are found mostly in the interior. The average altitude is the highest among clusters (452 m.).

Population density is low (21 inh./km^2), while population experienced the greatest decrease among clusters (-26%) in the period 1981-2001. Population ageing is extremely high (367%). Employment in the primary sector is very high (59%) and it has decreased dramatically in the period 1991-2001 (-48%). Employment in the secondary sector as well as in hotels and restaurants is low (8.2% and 8.1% respectively). The average percentage of agricultural land is the lowest among clusters (36%), while the average area per holding is rather low (6.7 stremmas). The average percentage of irrigated land is low (16%), while the average market-oriented agricultural land is close to the average (90%). Finally construction activity is the lowest among clusters (10m^3 per inhabitant).

In conclusion, the municipal departments in this cluster are characterized by demographic decline, limited agricultural land, decreasing agricultural sector and limited employment in the other two sectors. This cluster does not seem to have any advantages and the extremely high index of population ageing is the very characteristic of its declining prospects.

4. POLICIES FOR RURAL DEVELOPMENT

Spatial patterns of rural regions in Greece present increased complexity when compared to earlier time periods. It seems that the changes in Greek economy after joining the EEC in 1981, have affected in different ways rural regions, according to their agricultural potential, the possibilities of non-agricultural employment, mainly in the tourist sector and their geographical location relative to major urban centers and transportation networks.

Policies for rural development traditionally emphasized the role of agricultural activity and of the relevant infrastructure. This was also evident in the Community Support Frameworks of 1989-93 and 1994-99, where the Operational Program “Agriculture” was the main tool for rural development. The O.P. “Agriculture” included several measures for modernizing Greek agriculture at a national scale and handled agricultural subsidies, which account for a great share of agricultural income in Greece. Rural development goals were also served by the Regional Operational

Programs, one for each of the thirteen programming (NUTSII) regions of the country. The Regional Programs included several projects specializing into the needs of each region, and a great number of them concerned agriculture. These programs, though much smaller than the national ones were more focused towards an integrated local development, in an effort to support financially infrastructure for a variety of economic activities.

In the Third Community Support Framework, the O.P. "Agriculture" was replaced by the O.P. "Rural Development – Restructuring of the Countryside 2000-2006". The change of the name of the O.P., which was recently accompanied by the change of the name of the former "Ministry of Agriculture" into "Ministry of Rural Development and Food", reflects the change in the way rural development is now perceived in Greece. It became gradually evident that agriculture, although still important for certain regions it cannot lead alone to rural development and it should be incorporated into integrated development programs together with alternative economic activities, infrastructure development and environmental protection (Ministry of National Economy 1998). However, the selection of appropriate projects to implement the goals of rural development has proven to be difficult and the tendency to support activities found in earlier CSFs is evident in the CSF 2000-06.

The first general objective of the O.P. "Rural Development – Restructuring of the Countryside 2000-2006" is to "improve the competitiveness of Greek agriculture in view of the challenges of an increasingly competitive international environment". The second general objective is "the sustainable and integrated development of the countryside in order to increase its competitiveness and attractiveness and to restore social and economic function". The third general objective is to "conserve and improve the environment and the countryside's natural resources".

The program consists of seven priority axes. The total budget for the period 2000-2006 is 3557.1 million euro. The seventh priority axis concerns the "Integrated development programs for rural space", with a budget of 452.1 million euro (12.7% of the OP's budget). This axis is implemented in 40 selected areas of intervention, which are the most deprived in the country, several small islands and mountainous areas among them. The target population in these areas is 800000 people (7.3% of the

country's population) and they account for 34183.6 km^2 (25.9% of the area of the country). The seventh priority axis consists of 14 measures. Several of these measures concern agricultural production (e.g. reclamation projects, water resources management, provision of services to agricultural holdings, marketing of high quality agricultural products). Several measures however concern basic social services for rural population, technical infrastructure and preservation of cultural heritage in rural settlements, diversification of agricultural employment towards agricultural tourism and manufacturing (Ministry of Rural Development and Food 2005).

Crete is one of the 13 NUTSII regions which has been financed by several development programs since the '80s. In the Regional Operational Program of Crete special mention is being made to intraregional inequalities. The basic distinction is between the nothern coastal area on the one hand and the interior together with the southern coast and small islands on the other. The northern coastal area concentrates most of population and economic activity in Crete. Mountainous areas and small islands are sparsely populated in a dense network of settlements with very small population sizes. These areas are the target of several measures of the operational program for Crete in order to improve living conditions. In addition rural areas in Crete are supported by the O.P. Rural Development –Restructuring of the Countryside 2000-06" which, among other measures, finances projects in 19 municipal departments of Crete, some of them being mountainous rural communities through the "Integrated development programs for rural space".

A typology of rural areas could be a useful tool for a better implementation of rural development policies, given the different characteristics of rural areas. The analysis presented in this paper indicated that the most dynamic rural areas (clusters 1 and 2) do not depend on agriculture. Proximity to urban centers and tourist development seem to contribute more to rural development. However these areas suffer from pressures on the environment and agricultural land due to urbanization and intense tourist development. Consequently in these areas measures for protecting the environment are necessary, especially in the tourism-oriented regions for which environment is their main natural resource.

Agriculture is more important for rural development in regions with significant agricultural potential (cluster 3) but also in peripheral and declining regions (clusters 4 and 5). In all cases employment in the primary sector is not sufficient to support demographic growth. In regions with agricultural potential, modernization of agriculture and economic diversification are more appropriate. In peripheral and declining regions improvement of the living conditions and their accessibility are important.

Another aspect that became evident in this paper as well as in previous research on rural space in Greece is the role of urban centers in rural development. Proximity to the major urban centers along the northern coast of Crete was found to be strongly related to dynamic rural areas. However, the urban-rural relationship should be further explored, especially in terms of the role of small and medium-sized cities in rural development. This role has been emphasized in several European spatial development studies and it is considered to be important in Greece as well.

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