

Tourist development impacts on the spatial transformation of the Greek islands.

The case study of Kos insular area.

by *Byron Ioannou*¹

This paper is mainly based on the author's postgraduate thesis entitled "*The influence of the tourist development on the South Aegean islands' spatial structure. The paradigm of Kos' spatial unity*". The postgraduate research was presented in February 2002 in the framework of NTUA's postgraduate programme in Urban and Regional Planning. Prof. Minas Angelidis was the Tutor.

Introduction

The paper context is dealing with the influence of the tourist development on the spatial structures of the Greek insular space. Tourism is an activity directly related with space since it provides "place" for holidays, so it seems to effect definitely to the spatial forms of the developing areas.

For an appropriate approach, it is needed to build a theoretical framework by joining conceptions about the insular space and the function of the urban networks, in conduction with the vigorous tourist development Greece has met in the past thirty years.

The issues of spatial networking are frequently mentioned in the paper. *Connectivity*, a main characteristic of a spatial network (or system), is defining the strength of the spatial relations and dependencies. We find that connectivity loses within the insular areas. Fragmentation, as well as *non-continuity and geographical isolation*, determinately effect in the formation of spatial relations inside an island, which it may sometimes be taken as a closed system, but also in its relations with external systems.

But, which are the criteria usually used for investigating spatial networking? We found that each theoretical approach gives different gravity (Angelidis, 2000) i.e. to the spatial organization of labour, to the capitals' or investments' flux, to the distribution and mobility of population, to the social networks etc. And this is, because each analysis of a "place" cannot equally include the sum of internal or external relations this "place" develops. We believe that, in the case of the South Aegean islands, the *key sector* for the evolution of the demographic, social and economic spatial networking and the labour markets, is *tourism*, and that is why we choose to concentrate on it.

¹ *Byron Ioannou* studied Urban & Regional Planning and Architecture Engineering at the National Technical University of Athens (NTUA). Currently he is a Ph.D. researcher at the Laboratory of Urban Studies of NTUA.

Location of tourist activities in several places depends on: the natural benefits and potentials of each place, various international trends in tourist world-trade, but also on the knowledge and information all the involved coefficients get. Tourist development of an area involves local groups and interests drawing up the “community will”, as much as national or international interests (Tsartas et al 2001). Thus, the relation between place, economy and society is not one-way, even though, considering space as a network of urban nodes and flows, relations between physical, social and economic space very often appear reciprocal.

1. Hypothesis and methodological approach

We arise the hypothesis that *tourist development, in respect to the special characteristics of the insular space, forms networks of activities and functions changing spatial structures and classic nodal hierarchies of an insular urban network. Inversely, spatial organization of tourism is influenced and directed by the already consolidated spatial structures.*

To check out this hypothesis, we choose to investigate as a case study area (CSA) the islands of Kos and Nisyros as a part of the insular region of Notio Aigaio (South Aegean). Kos is a medium scaled Greek island of about 31.000 resident population and its “satellite” Nisyros a small under-developed island of 1.000 resident population (2001). For the examination of the case study area we have investigated quantitative data from the National Statistical Service of Greece, the Greek National Tourism Organization and the Hellenic Chamber of Hotels, referring to population data, labour data and tourist infrastructure data. We interpret them based on the conclusions of recent researches but also involving our opinion coming out by the observation of the place included non-directed discussions with its inhabitants, as well.

Elaborating the above hypothesis for the selected Case Study Area (CSA) we assume that:

- tourist development has different characteristics in each settlement related with the time of the development, settlement’s location, size and dynamic,
- tourist development created new dependencies, new connections and also transformed the role of each small town/ settlement,
- the local labour markets seem to be unified because of the increasing mobility of investments, labour force and persons,
- CSA has been functionally unified and the role of its urban center was reinforced.

If the above concept is describing a spatial transformation we ought to define the parameters, of this transformation, changed under the interaction of the tourist development. We choose to study, as main parameters the following:

- distribution and the specific characteristics of population and labour force,

- location of central activities and urban network's dependencies and hierarchies,
- special characteristics of each tourist area related with the functional relation of the tourist area with the urban network.

Considering the last parameter, we found that it is useful to define typologies based on the relation of tourist areas with their neighbour towns according to their special type of development. In conclusion, these typologies are becoming the arguments for further research and discussion.



Map 1. Location of CSA

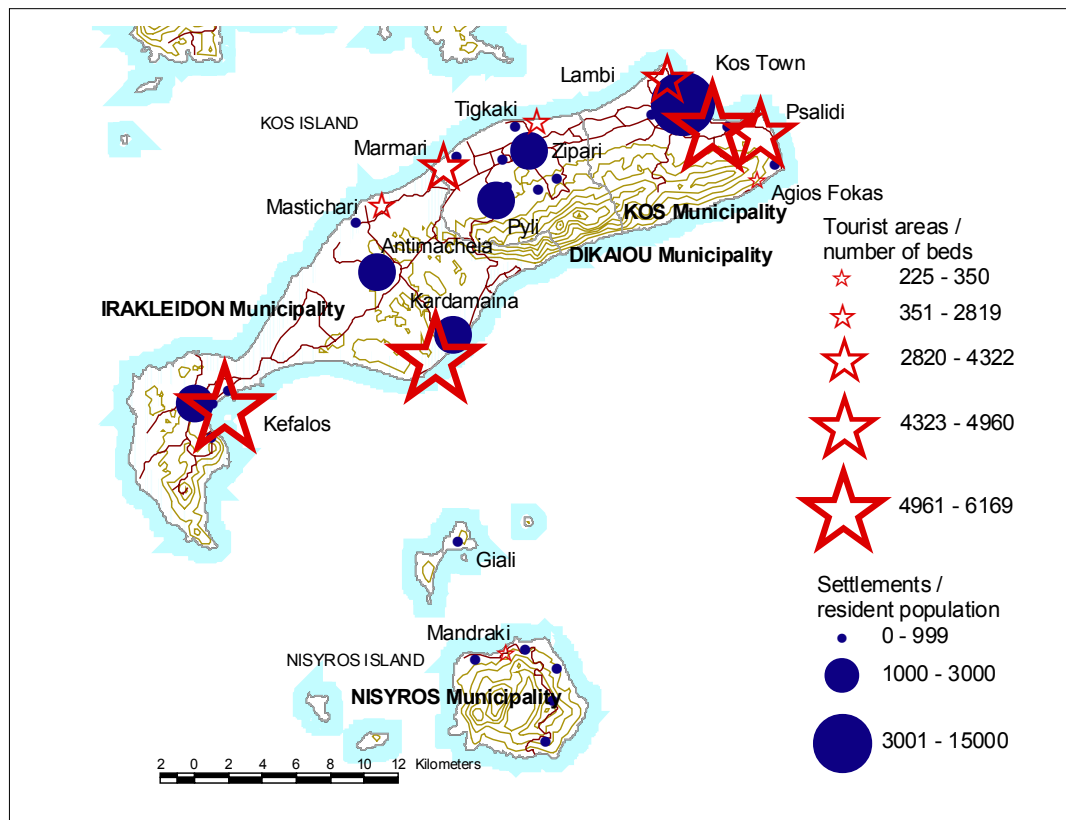
Source: Department of Urban and Regional Planning, NTUA

2. The procedure of the tourist development in CSA

Since 1970, it has performed a continuous increase in the number of visitors in the whole prefecture (NUTS3) of Dodecanesus, part of which CSA is. The tourists' type considered, and it still does, mass tourism visitors coming mainly from Northern Europe (GNTO, 1999).

It is very difficult to detect discernable development stages because of the different creation time and type of the tourist units in every small town/ settlement of CSA. Nevertheless, it is a fact that the first tourist activities were found in the center of CSA, Kos town. These activities were agglomerated in and around the town center and they were referred to small family hotels and relevant services' units, cooperating with international tour operators. Already in this early stage, the benefits of tourism, as the new activity compared with the traditional agricultural occupations, have been consolidated in the islanders' minds. In the Greek literature, this procedure is

described as the beginning of the social patterns' transformation (Manologlou et al 1996, Tsartas et al 2000). We believe that this also helped the “discovery” of new virgin areas beyond the island's center.



Map 2. Resident population by settlement (1991) and hotel beds by tourist area (1999) in the Case Study Area of Kos.

Sources: GNTO database, National Statistical Service of Greece 1991

After 1980, urban area of Kos town moves into a stage of “maturing”; the local production system is more connected with tourism, new hotels have enlarged their size successfully and the linear expansion of the town's tourist areas has already begun to satiate. At the same time, *tourism turns into a professional and constant business*.

This conclusion derives from the elaborated census data (GNSS, 1981, 1991) where for Kos town the number of “helping and not rewarded employees²” was not increased compared with 1981 census, despite the huge tourist expansion took place in the decade 1981-91. The increase of CSA's labour force at that time was mainly caused to legally and properly rewarded employees. In the same decade, the

² Women or under age family members usually in a family business

development of coastal areas near medium-sized³ settlements began by the establishment of small hotel units, funded by local interests.

After 1990, we got through a new phase where all the above-mentioned areas were satiated. The tourist investments were addressed to virgin coastal zones, sometimes next to small-sized settlements (below 500 inhabitants), where large tourist units were built. Some of these new enterprises belong to Greek, European or foreign firms or consortia residing in Rhodes, Athens, Crete, Northern European cities or Cyprus (see Table 7).

We quote that the small island of Nisyros does not follow these development procedures due to its isolation but also due to the lack of a crucial dynamic, capable to reinforce development of considerable tourist activities.

3. Population distribution

How are the above procedures related with the changes in the population agglomeration?

CSA was a province of the Dodecanesus prefecture and it was constituted of Kos municipality and nine (9) communities, which were reformed in three (3) new municipalities by a recent governmental plan. In 2001, CSA has 31.029 resident population: 17.347 inhabitants -about 56%- were sitting at Kos town, about 36% at five medium-sized settlements of 1000-3000 inhabitants each and the rest 7% was residing in small-sized settlements (population<1000, most of them below 500 inhabitants).

Kos town has appeared a constant and intense population increase, already from 1971. The rest of the island's area, on the contrary, i.e. Irakleidon and Dikaiou municipalities, performed an intense population increase in the period 1981-91 related with the procedure of tourist development as it was described. For the period 1991-2001 the population increase in these areas was stabilized, but as referring to the town of Kos it continues its intensive increase even during the '90s.

We had data, for the settlement's level, only for the period 1971-91. By examining them, we quote that:

- the five medium-sized settlements have already, since the 80's, decade run away from the past demographic benching and abandonment, *this was coincided with the diffusion of tourist activities all over the island,*
- small-sized mountain settlements are decreasing population, and even very small coastal settlements appear strong population expansion,

³ A *medium-sized settlement* is defined, for the demands of this study, to have 1.000-3.000 resident population; a *small-sized settlement* is below 1.000 resident population.

- Nisyros' settlements are remaining in a state of abandonment,

Examining distributions by sex, age and educational level we can say that, today (1991) there is a relatively *homogenous composition* in the whole CSA. Nevertheless there are more females, higher educated and young people agglomerations in Kos town and all over the tourist developed zones of the island.

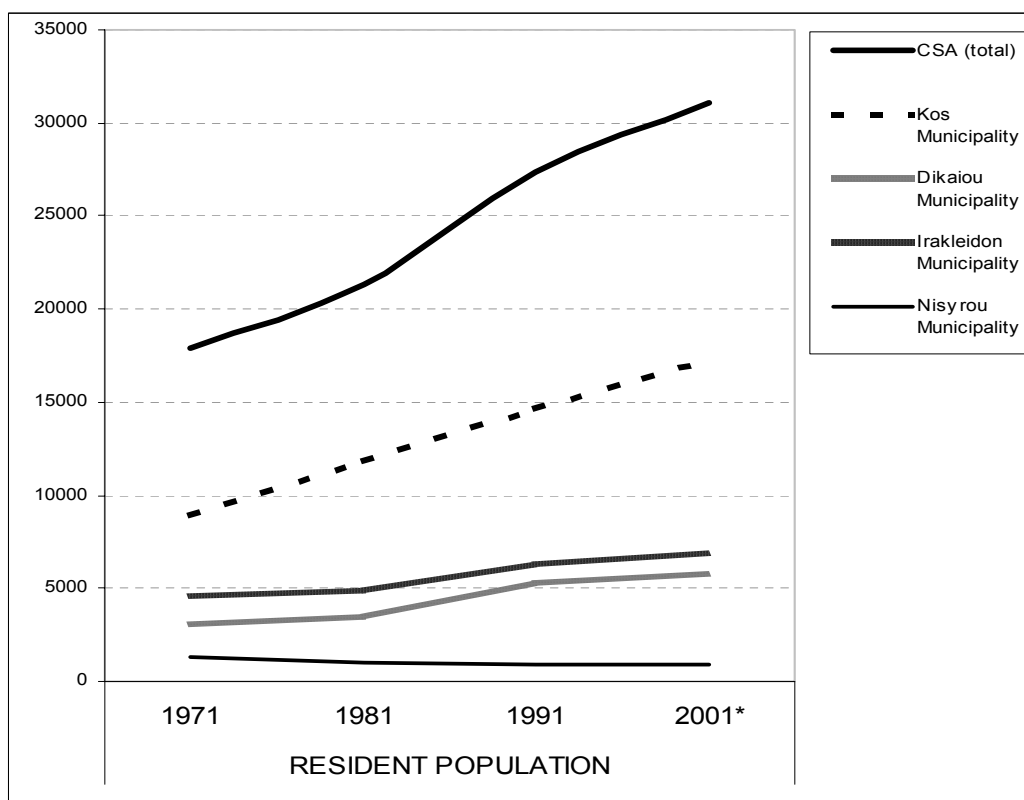


Chart 3. Evolution of the population per municipality

Sources: National Statistical Service of Greece / *temporary data

4. Labour force – Local labour market

A great percentage of active labour force, and employees of the service sector, was addressed to Kos and Irakleidon municipalities where most of the tourist activities were also located.

We elaborated NSSG data referring to the division of employees according to the NSSG's type of economic activity in 1981 and 1991, in order to check the changes in the composition of the labour force. From a larger list of NSSG census data clustered by economic activity, we selected the types of economic activity related directly or indirectly with the tourist activities i.e.:

- retail/ repairing/ hotels/ restaurants (code Z-H)

- transportations/storage/ communications (code Θ)
- intermediate financial organizations (code Ι)
- other services (code Π)

We noticed that the differences in the employees' percentages for each type of economic activity, between Kos town and the rest of the settlements, had reduced within the 80's. This reinforces the hypothesis that the local labour markets are homogenized and unified.

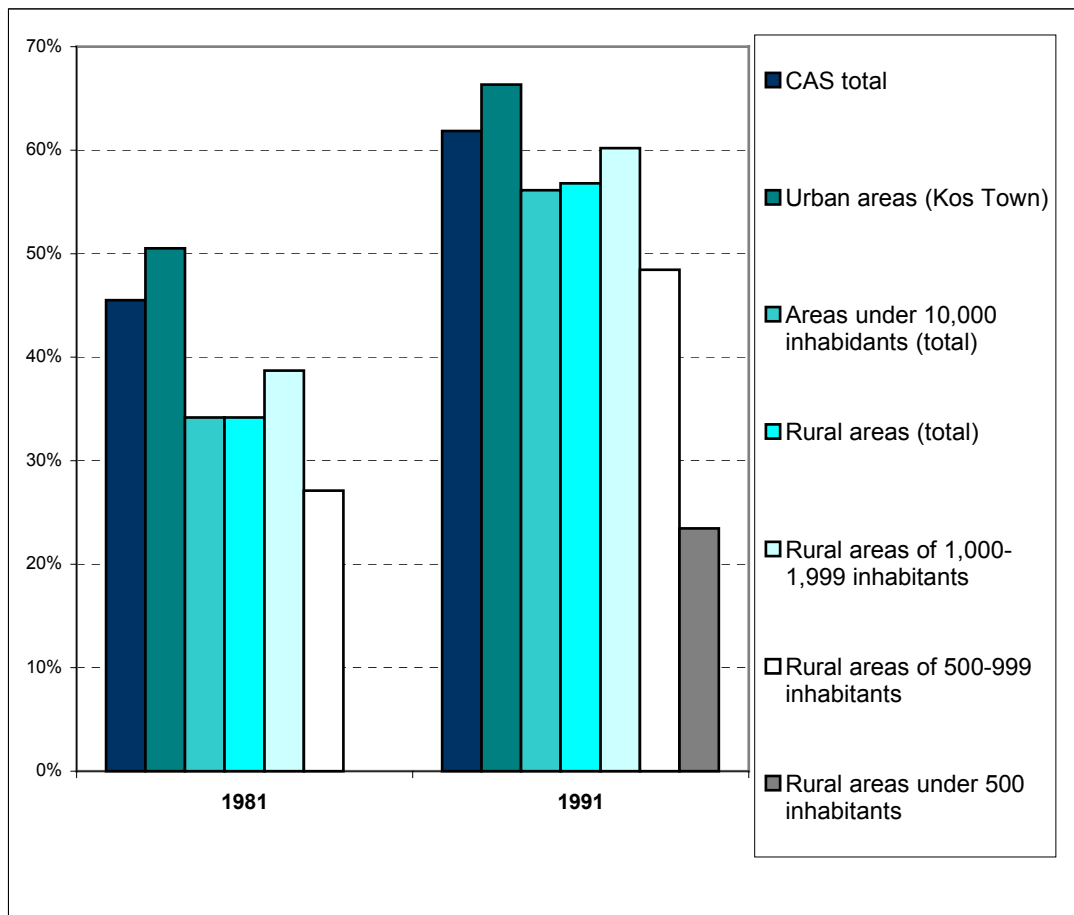


Chart 4. CAS Percentages of labour force employed in tourism related economic activities per each CSA's sub-area type

Sources: National Statistical Service of Greece, censuses: 1981 & 1991

There is also a considerable increase in the number of employees in trade and hotels (code Z-H) for the whole of CSA, which is mainly addressed to the non-urban and "de-agricultural" areas of CSA where 36% -instead of 14% in 1981- of the labour force was employed in these services (Areas below 10.000 inhabitants). The respective percentage for the urban area of Kos town was 30% in 1981 increased in 34% in 1991.

Small sized settlements appear to have no labour force occupied in trade/ hotels even though such activities are located next to them. This is probably an indicator of *labour mobility* assuming that labour force is moving daily, covering the demands of these enterprises.

Nisyros also appears a high percentage of expertise employees in different types of services. This could be understandable by taking in mind the small size of the island and the increased basic needs in several kinds of experts (doctors, teachers etc) caused by the isolation. So, this labour force is not destined for any development procedure.

5. Land uses⁴, transportations and the location of central activities

By observing the land uses' structure in CSA, we can realize the intensive effects of tourist development on the physical forms. We mention that, Kos urban area was concentrating most of the irrigated land, most of the housing areas, and recently, most of the tourist areas. Even that tourist development is relatively stabilized in Kos town and diffused in the rest of the island, it seems that the new, non tourist land uses keep on concentrating in Kos urban area.

Hence, we can conclude that Kos town is directly influenced by the location of each tourist activity anywhere in the island. We believe that this fact is caused by the *incapability of the insular settlements for developing a sufficient networking*, or dependencies, with *other urban centers rested in neighbour islands*, as this could be easily performed in a terrestrial area.

The mobility convenience in the island of Kos, compared with other Greek islands, has been a main factor of the further functional union of the island. There is an adequate road network having a maximum distance of 40 minutes, where private vehicles carry most of the movements.

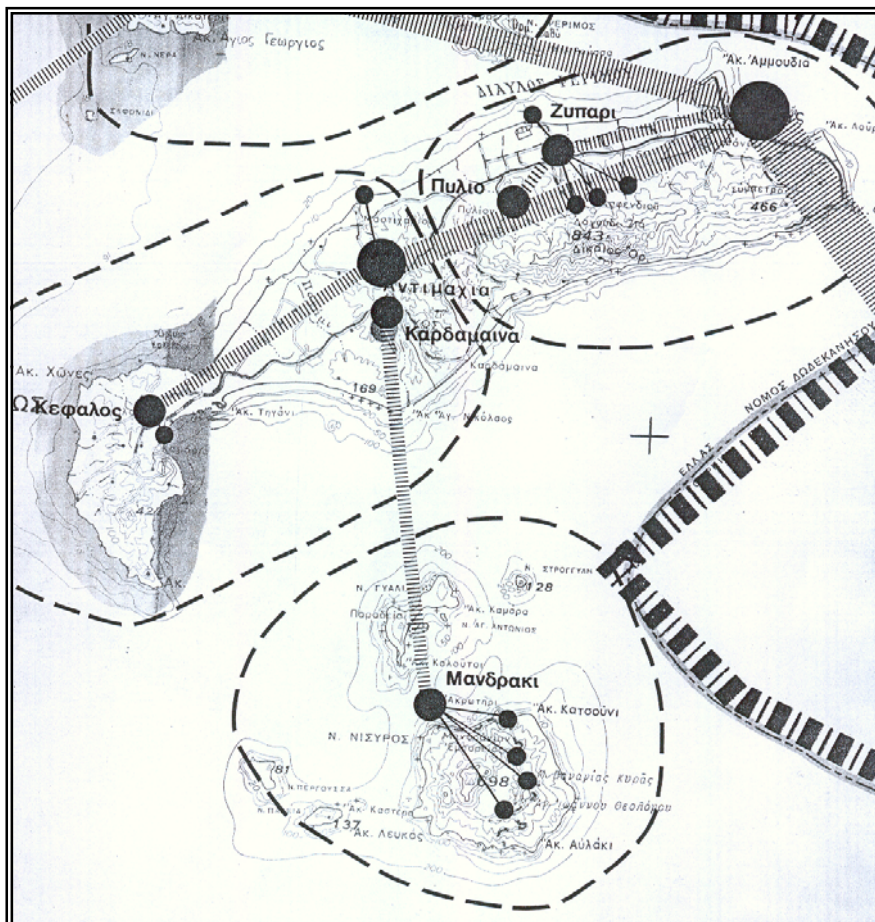
Kos town, as we mentioned, is the only urban center in CSA concentrating all the services supporting tourist activity i.e. financial services, travel agencies, trade, other offices etc. Basic health and educational infrastructure exists in all settlements above 1.000 resident population and also in Nisyros. Administrative services are located in Kos town.

Kos urban area is today the only considerable center of the retail activity in the whole CSA. Part of the daily needs retail has already moved from the local markets of each

⁴ In Ioannou 2002, for land uses' investigation we used: data from Corine programme of the Greek Ministry of Environment, Physical Planning and Public Works, data from the Greek Telephone Catalogues and also data from our personal observation.

settlement to the larger supermarkets build by the main road outside the town of Kos, serving today a large part of the daily needs of each settlement inhabitants.

A great number of small shops are also located in the tourist-developed areas all over the island. We assume that these agglomerations are *reinforcing the centrality and the importance of the respective settlements* -especially if we compare them with the same size non-tourist developed settlements-, despite the fact that these shops serve mainly tourists.



Map 6. 1984 proposal for settlements networking in CAS

Sources: The Greek Ministry of Environment Physical Planning and Public Works

6. The structure of the insular settlements network

The first attempt for a schematic representation of the spatial structure of CSA has been carried out in 1984 by the MEPPPW (See Map 6). This image came out from an *evaluation of the existing and the desirable situation*, describing three discrete sub-unities, two for Kos island and one for Nisyros and a nodal hierarchy of three sub-unity centers -one for each sub-unity-, where one was a major center (Kos town) and two were minor centers as well. This model was fitting with, what we call, *the*

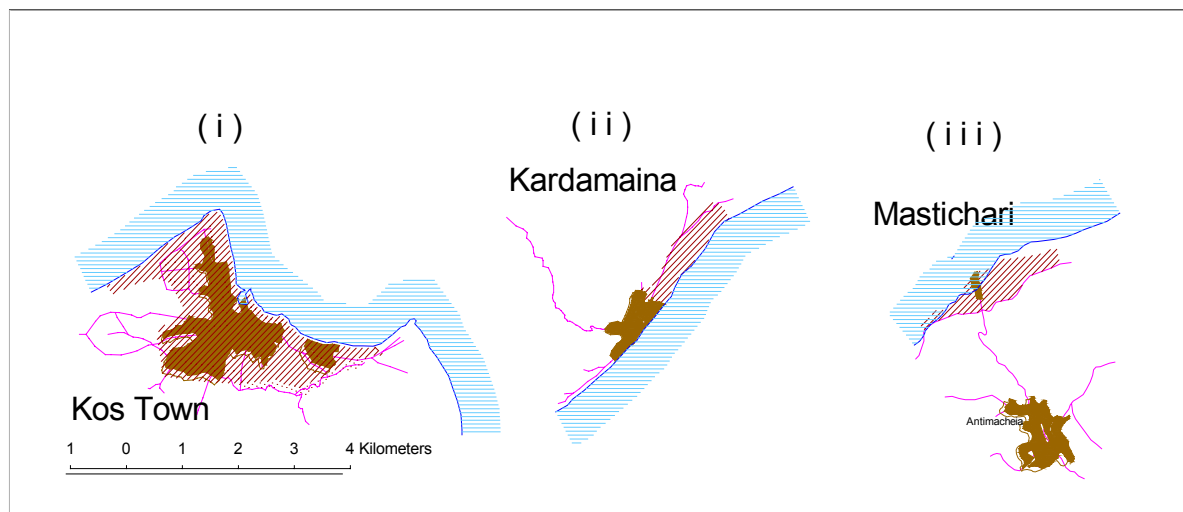
spatial structure of an agricultural area where goods were gathered in the main villages and consequently promoted for export to the town of Kos.

Today, we believe that CSA image was reshaped. Kos town monocentricity has been consolidated and, at the same time, intermediate nodal hierarchies are weakened, as the whole island of Kos functions as a single spatial unity, considering the distribution and function of the service sector, labour market and daily life in general.

The reasons related with the consolidation of monocentricity refer to: the disarticulation of the primary sector, the disconnection of labour and place of residence, the increasing mobility and the concentration of services and other facilities relevant to tourism in the town of Kos.

Medium-sized settlements, of about 1.000-3.000 resident population are directly depended to the town of Kos being at the same time in a state of equilibrium between them, regarding the importance of each one of them. For example, Antimacheia is the administrative center of Southern Kos (Irakleidon municipality) but it lacks in tourist development and relevant services because of its inland location. Thus it does not manage to gain an outstanding role, in respect to the same-sized coastal settlements, where considerable tourist activities are located.

Additionally, we claim that today, sub-unities or geographical zones of daily services cannot be easily detected within Kos island, because different shapes of successive spatial unities may exist, in proportion with the criteria someone each time arises i.e. health, administrative services, tourist activities, retail etc.



Map 7. Location and expansion of several tourist areas in relation with housing areas, one by each type (i), (ii) and (iii)

Sources: Hellenic Army Geographical Service, personal observation

7. Tourist areas and their relation with the islands' settlements

Agglomerations of tourist activities create areas with a special character differing from simple housing settlements.

We elaborated data from GTO's database in order to define the average hotel size and the average category per sub area. We noticed that, the areas developed in the early stages (Kos, Kardamaina, Lambi) have respectively smaller units of lower categories in relation with the rest tourist areas.

By clustering the analyzed tourist areas of CSA we detect three basic types: (i) tourist area next to the urban center, (ii) tourist area next to a medium-sized settlement, (iii) tourist area next to a small-sized settlement.

CSA tourist area name	Type of tourist area	Counted hotel units of non-local interest	Class(es)	Total number of beds	City of firm's or consortium headquarters
Kardamaina	(ii)	2	A	845	Dortmund (D) Lemesos (CY)
Kefalos	(ii)	1	A	710	Voiotia (GR)
Lambi	(I)	2	A C	438	Athens (GR)
Marmari	(iii)	1	A	523	Athens (GR)
Mastichari	(iii)	1	A	631	Athens (GR)
Psalidi	(iii)	3	A	2032	Rhodes(GR) Rhodes(GR) Athens (GR)

Table 7. Distribution of large, non local interest hotel units in CSA

Sources: Hellenic Chamber of Hotels, personal observation

- (i) Tourist activities, of Kos town tourist areas, are spread over the urban areas and linearly over the coastal zones from both sides of the town. Hotel units are mostly small-sized and low categorized. Tourist enterprises seem to employ labour force resident in Kos town. Furthermore the town center provides a number of services to the tourists and to the tourist enterprises. Nevertheless, a great number of seasonal employees are coming each summer in Kos town from greater cities (MEPPPW, 1999). Additionally, a lot of tourist services for the tourist enterprises, mainly commercial services, seem to be provided from the city of Rhodes or Athens.
- (ii) Tourist areas next to medium-sized settlements are usually extensions of the existing build-up areas. They were created at a second stage and they are partly embodied in the local economy and the functions of the

neighbouring medium-sized settlement. Tourist enterprises seem to partly employ labour force residing in their neighbouring areas. At the same time, part of the basic services is provided to the tourists (recreation, feasting etc) from local enterprises. Tourist enterprises are attending for services and additional labour force to Kos town, Rhodes and Athens.

- (iii) Tourist areas next to small-sized settlements are hardly embodied neither functionally related with these settlements. Even though they also employ residents of larger settlements or Kos town, in fact, and because of the special characteristics of their hotel units (luxury hotels of large scale) they employ more individuals coming from points outside CSA. As regards, services for the tourist enterprises and tourists, we can repeat what we said about the other two types; quoting that this area type appears a higher level of dependency from external centers. We may also claim that these tourist areas are less connected with CSA, compared with the other two types. Psalidi area next to Kos town should be included in this functional state even though its physical location does not match with the above description.

8. Conclusions

We overviewed that the fragmentation of the insular space in conduction with tourism's special characteristics, transformed the classical shapes of spatial structure but it did not transform the nodal hierarchies as much as they were intensively consolidated. We can claim that *the role of Kos urban center, within CAS, will remain significant* even if tourist areas of other parts of the island continue to expand more. Spatial organization of tourism addressed by the existing spatial structure and nodal networking, because, as it was described, there has been operated a closely hierarchical diffusion of tourist development from the more important nodes to the less.

Insularity and spatial isolation was crucial to the reinforcing of CSA's *monocentricity* while, in opposition with what will be happened in a terrestrial area, here, is difficult enough to develop daily, frequent, small scale relations between small insular tourist areas or settlements and larger insular centers excluding Kos town.

References

Angelidis M., 2000, *Regional Planning and Sustainable Development*, Athens: Symmetria, (in Greek).

Ioannides D., Debbage K., 1998, *The Economic Geography of the Tourist Industry*, London: Routledge.

Ioannou B., 2002, *The influence of the tourist development on the South Aegean islands' spatial structure. The paradigm of Kos spatial unity*, Postgraduate Thesis, Athens: NTUA. (in Greek).

Manologlou E., Tsartas P., Markou A., Papiakou B., 1998, *Tourism as an agent of social change*, Athens: Exantas – EKKE, (in Greek)

Ministry of Environment Physical Planning and Public Works, 1999, *Notio Aigaio Regional Plan*, Athens: MEPPPW (in Greek).

Papadaki – Tzedaki St., 1999, *Endogenous tourist development. Articulated or disarticulated tourist development*, Athens: Agricultural Bank of Greece, (in Greek).

Tsartas P. (ed.), Avgerinou S., Zacharatos G., Iakovidou O., Kokkosis Ch., Kousi M., Briasouli E., Spilanis G., 2000, *Tourist development. Multi-scientific approaches*, Athens: Exantas (in Greek).

Abbreviations

CSA = Case Study Area

GNTO = Greek National Tourism Organization

HAGS = Hellenic Army Geographical Service

HCH = Hellenic Chamber of Hotels

MEPPPW = Ministry of Environment Physical Planning and Public Works

NSSG = National Statistical Service of Greece

NTUA = National Technical University of Athens