

Green Urban Space Utilization for Mild ICT-Based Touristic Activities: The Case of Pafsilipo Park in Greece

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Abstract: This paper discusses the issue of mild touristic activities in green urban landscapes. More specifically, it uses the case of Pafsilipo Park in the city of Karditsa, Greece, where a green urban landscape has been utilized for local life improvement and illustrates existing touristic activities in this area. For the purposes of strengthening landscape's role, various touristic activities are proposed accompanied by Information and Communications Technologies (ICT). Moreover, this paper queries scientific issues with regard to the capitalization of green urban spaces for small scale touristic and ecological activities, which support local life and local economic growth. This study addresses the above modern requirements for urban development with respect to existing natural and human resources. It attempts to answer the following question: can green open spaces in cities be capitalized for touristic activities that support sustainable growth? In this order, green spaces in cities are recognized as areas for smart growth, where mild touristic activities can be undertaken without ecologic damages and can result in simultaneous economic activities that can lead to local development.

Key words: *ecological development, green open spaces, information technology, tourism.*

1. Introduction

Urban sustainable development and Smart Growth (Kelbaugh, 2010) have become popular issues and various approaches can be found in literature that follow these types of urban planning: viable cities that emphasize on citizen-friendly and easy-to-move urban areas (Zisis, 2008; Vourekas, 2008); sustainable cities that combine local economic growth with ecological aspects, such as resource capitalization and renewable energy (Tsagarakis, 2010; Goldfarb, 1992); eco-cities which envision a balance between society, human and nature (Witting, 2008; Coplák, 2003); and green cities which capitalize information and communications technologies (ICT) for sustainable growth (Anthopoulos et al., 2012; Brennan et al., 2008).

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Urban sustainability (Anthopoulos, 2014) has attracted attention quite early. Empirical evidence from UK and Netherlands illustrated significant relationships between energy consumption in transportation and the physical characteristics of the urban arrangements (i.e., city size, population density etc.). Further, a nexus of environmental, socio-cultural and economic factors influence the development of sustainable cities. At a greater extent, (Kennedy & Hoornweg, 2012) endorsed international initiatives towards urban sustainability and encouraged the application of a comprehensive “urban metabolism” framework for assessing urban environmental impact. To that end, they stress the need for data collection regarding material and energy flows in metropolitan areas in order to allow continuous environmental monitoring and promote the appropriate ecological policy interventions.

Smart cities on the other hand utilize technology in order to improve urban everyday life. ICT in urban spaces for instance, simplify inhabitants’ transactions and automate information flow across the city, while they enhance urban sustainability with smart waste, emission, energy and resource management (Anthopoulos, 2014). Although there is not a commonly agreed definition for a smart city, a smart city concerns smart solutions that enhance urban life. a classification and analysis of the alternative smart city approaches (Anthopoulos & Fitsilis, 2014) illustrates that various smart city forms exist, but ecological friendly forms (named eco-city/green city) appear to be the preferable approaches. These approaches deal with ICT utilization for six urban dimensions: a) people; b) economy; c) living; d) mobility; e) environment; and f) governance. Urban sustainability deals with all these dimensions and accordingly concern:

- a) The citizen’s engagement via ICT and people smartness increase –in terms of training and sustainable thinking development- concern a common purpose.
- b) Business ecological thinking; recycling; smart business buildings etc.
- c) Smart accommodation for energy consumption management, renewable energy appliances by habitants, smart grids etc.
- d) Intelligent transportation for traffic and vehicles’ emission control etc.
- e) Waste and emission measurement and control; water management; air quality measurement and green control, etc.
- f) Government prioritization of information collection via sensors and other sources, with regard to urban planning and municipal resource utilization.

Touristic activities in cities concern a major axe of precedence for smart city competition (Anthopoulos & Fitsilis, 2014), since cities traditionally compete to attract habitants, visitors and investments. To this end, local touristic product in urban spaces is promoted with the ICT (i.e., city websites and city guides), while visitors are encouraged to develop individual touristic experiences in the urban space with the support of location based Apps (i.e., touristic paths in the city, monuments, parks etc.).

This paper recognizes these characteristics of urban sustainable development, with smart city and ICT support, where touristic activities in urban spaces concern a priority. More specifically, it attempts to answer the following question: can green open spaces in cities be utilized for touristic activities that support sustainable growth? Green open spaces in cities are sources for smart growth and mild touristic activities can be applied without damaging urban sustainability efforts. These mild efforts can result to simultaneous economic activities, which can support local prosperity.

In order to answer the above question, this paper uses the case of Pafsilipo Park, which is located in the city of Karditsa, central Greece. Its capacity for mild touristic activities is illustrated, together with information and communication technologies (ICT) solutions that accompany these activities and can result in opportunities for sustainable local growth.

The remaining of this paper is structured as follows : the following section 2 describes the area of Karditsa, where the case study is located. Section 3 presents the case of Pafsilipo Park and section 4 contains a discussion regarding the opportunities for touristic activities accompanied by ICT solutions. Finally, section 5 contains some conclusions and future thoughts.

2. The city of Karditsa, Central Greece

Karditsa state is the smaller among the four states of Thessaly region, central Greece. It is underpopulated (Skagiannis, 2008), while its landscape is characterized by a contradiction of mountains and rural areas and of respective economic activities (Gousios et al., 2008). Its south-western part contains alternative forest ecosystems on the mountains of Pindos and Agrafa, with bushes, pines, green and red firs. Alternative economic activities have been developed in this area by its homogenous population, which vary from highland tourism to livestock (Eskioglou, 2008). On the other hand, northeastern area contains an extensive rural area, which is crossed by Pinios - one of the biggest Greek rivers - with its tributaries. Karditsa city is the capital of this state, located at a distance of 10 Km from Pindos Mountains and 310 Km from Athens, the capital of Greece (Greek Tourism Organization, 2013).

Karditsa city is today a dynamic economic, administrative and cultural center, where commercial activities regarding, mainly, agricultural products are carried out (Gousios et al., 2008). State's finance entirely depends on agriculture and livestock, which offers a comparative high local gross domestic product [45% of the average GDP per capita according to the Hellenic Statistical Authority (EL.STAT.), 2013]. Corn, cotton, sesame and livestock are the major local products, while industry and artisanship are almost nonexistent in this state (Stroggilis, 1991; Athanassopoulos, 1991). Karditsa city's economic pattern differs from the models that are followed by the other region's

capitals (Polyzos et al., 2008), but its natural capacity offers unique opportunities to its habitants, with economic, social, cultural and touristic content.

Moreover, Karditsa is a typical medium-sized Greek city, with a steady growth rate (Skagiannis, 2008), a population of 61,935 in 2011) and an average population growth of 63.99% during the last decade (Table 1) (Hellenic Statistical Authority - EL.STAT., 2011). The population growth that has been established during the last twenty years is based on the administrative reorganization that has been applied in Greek local Governments, named “Kapodistrias” (2000) and “Kallikratis” (2010).

Table 1. Karditsa city population growth

YEAR	POPULATION	POPULATION GROWTH	POPULATION GROWTH (%)
1981	27.532	-	-
1991	30.067	+2.535	+9.21
2001	37.768	+7.701	+25.61
2011	61.935	+24.167	+63.99

Source : Hellenic Statistical Authority (EL.STAT.), 2011.

Building factors and urban planning follow a concentric schema, which distinguishes the city in the following zones: zone A, which concerns downtown with a building factor of 2.4; zone B follows with a 2.2 building factor; zone C with a value of 1.4; and zone D that has been defined in 1980 with a building factor of 0.8 (Figure 1) (Giannakakou, 2003).

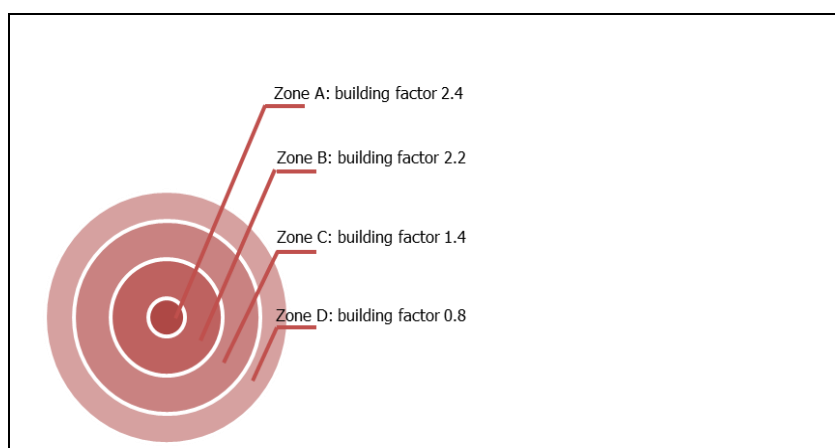


Figure 1: Urban planning zones in Karditsa city (Source : Giannakakou, 2003).

Today, experts suggest building factors' decreases as a means for local life improvement (Polyzos et al., 2008), which will secure a sustainable space organization and a social cohesion (Gousios et al., 2008).

Karditsa city contains several green parks, while the open green space per citizen ratio amounts 6m². This value cannot cover the environmental requirements of the city, since the internationally suggested value according to the World Health Organization is 10m². Most of the Greek cities have equal or lower ratios. Athens for instance amounts 2.8m²; Thessaloniki 2.73 m²; Larissa 7.32 m²; Heraklio 1.82 m²; Kalamata 8.00 m²; and Patrai 0.77 m². These values referred to open spaces in urban areas and trees, stadiums and rural areas (Delis et al., 2011).

On the other hand, this ratio is higher in European and other cities: 29m² in Brussels; 15m² in Sofia (Bulgaria); 27m² in Amsterdam; 9m² in London; 8.5m² in Paris; 5m² in Madrid; 18m² in Warsaw; 23m² in Berlin; 50m² in New York etc. It's worth mentioning that 80,000 trees are grounded on the streets of Vienna, while in Bratislava (Slovakia) the 60% and in Copenhagen the 23 %, respectively, of the city concerns green open spaces (Table 2) (Delis et al., 2011).

Table 2. Green open space per citizen ratio

City	Green open space per citizen ratio (m ²)
Washington	50.0
Brussels	29.0
Vienna	20.0
Hague	27.7
Amsterdam	27.0
Berlin	13.0
Rome	9.0
Paris	8.0
Thessaloniki	2.7
Athens	2.0
Karditsa	6.0

Source : Delis et al., 2011.

3. The Case of Pafsilipo Park

Pafsilipo Park is as old as the city of Karditsa. It is located in the center of the city and its role as "an area of pleasure" was envisioned by Mayor Stergios Lappas in 1892 (Paganos, 2002). Mayor St. Lappas gave this name to describe the park as the place that "stops the pain and removes sadness" (Paganos, 2002). Today, Pafsilipo Park is recognized by the local community as both a comparative and competitive advantage for Karditsa city (Crompton, 1992) as well as a symbol in contrast to other Greek cities.

The park has lasted for more than a century and today is considered as an area of reference, which is used for recent urban planning and interconnected to other open spaces (i.e., the Plastiras square).

The park was crossed by a small river, accompanied by various furrow channels. The entire land composed a unique farm and covered an area of 165 Km². It was used for a weekly animal market, annual fairs and ceremonies. In 1882, a piece of 50 Km² was given to the Municipality of Karditsa, which took the entire area in 1900 (Paganos, 2002). The engineer George Foskolos designed the architecture of the park in 1990 and placed it in its current position. Although the city of Karditsa emerged without an organized plan, Pafsilipo maintained its size and position, while it offers today a free space to the habitants (Giannakakou, 2003).

Pafsilipo offers unique opportunities for multiple activities, which exceed the touristic ones. Visitors can find a place for rest, relax and productivity (Dreyer, 2004; Kaiser, 2004). In this context, Pafsilipo combines alternative values, which vary from aesthetics, usability, a place of reference for urban planning and an open meeting place (Paganos, 2002). A variety of trees, bushes, flowers and a zoo can be found in Pafsilipo, which offer a natural beauty that is not seasonal but lasts during the entire year.



Figure 2. Representative view of Pafsilipo Park

Photos from the website: http://noexcus.blogspot.gr/2011/04/blog-post_13.html

4. Discussions

Modern theories and perceptions regarding ecotourism and ecology -in general- align to the existence of this park and support its maintenance. However, relative legislation must be settled regarding green urban space protection, while construction projects must be developed, which will upgrade green urban and rural spaces (Polyzos et al., 2008). Moreover, an info kiosk at the entrance of Pafsilipo Park would be useful to its visitors, since it would provide them with information regarding natural issues and the required attention. Green spaces' condition reflects social expectations and defines the appropriate environmental education that must be given in schools. Youth attitude

against natural environment is directly associated with empirical experiences, which are gained during primary and secondary education.

Investigations that have been carried out in Pafsilipo (Nastis, 2006) illustrate that most visitors prefer walking and trekking activities; they do not hold extensive environmental culture; they are not familiar with green issues neither they appreciate natural beauty. However, researchers persist that ecological tourism can be established only when social interest regarding environmental aspects and training can be confirmed, which can be extended to urban and rural green spaces (Nastis, 2006).

We propose the use of Pafsilipo for educational tourism. Students can perform environmental live labs as a means to enhance their environmental culture. Moreover, we encourage walking and trekking for the second and the third age of Karditsa city, which will highlight park's beauty and will protect green from abuse. Papastavrou *et al*, (1985b) show that park's streams must be scientifically documented and declared as monuments for protection, while their water flow must be controlled being suitable for ecotourism. Furthermore, every mild touristic activity -such as city tourism- must be undertaken in the park, since the green open space offers the appropriate conditions for physical health and spiritual revitalization.

These activities are expected to turn Pafsilipo to an attractive touristic destination (Papastavrou *et al*, 1985b; Karameris, 1985). In this context, the added value of the park will concern visitors satisfaction regarding relaxation, which will be measured with indexes such as : loyal visitor's frequency; space's rational organization; park distance from the city; traffic avoidance during driving to the park; availability of equipment for physical exercise; visitor's attitude against offering relaxation services at the park; environmental protection (Witt *et al*, 1992). However, it is beyond the purposes of this paper to measure and evaluate visitor's satisfaction and future research will be undertaken in this order.

Moreover than, we expect that the calculation of qualitative data about this park is necessary in order to develop the appropriate development strategy, which will identify the necessary building infrastructure (i.e., for picnic) and its position with respect to local environment and visitors' accessibility; the appropriate safety measures for tree and water protection against disasters and pollution (Migiros, 2008). Rational organization will follow European Directives for health and safety (i.e., EU Directive 91/127 which has been incorporated in Greek framework (KYA 5673/400/1997)), will define garbage collectors and parking areas, while it will secure the park from natural disasters and fires (Papastavrou *et al*, 1979; Karameris, 1985; Gratziou, 2008).

However, turning the park to a mild tourism and eco-tourism destination is not a simple neither an automatic procedure. It demands the existence of appropriate equipment, together with trained staff, which will schedule, monitor and support the offered activities. These requirements become more important, since visitors' number

increases although the park has not been organized appropriately yet. An incremental touristic attitude is observed in Karditsa, which obliges local Government to take the appropriate measures for environmental protection and pollution avoidance, as others have already done in Greece (Karagiannis, 2009). In this context open space use is expected to increase and green areas have to be protected before their damage becomes irreversible (Papastavrou et al., 1985a, 1985b).

Proposed ecological interventions at the park concern tree planting, tree clustering, grove formulation etc., which strengthen visitor's mental, health and aesthetic experience, while they enhance sense of security; decrease noise; eliminate extreme temperatures; filter dust; attract bird populations; control air flow; and handle water drain.

Water tanks combined with urban green change local micro climate and control extreme highest and lowest temperatures. Modern life style and pollution strengthen the requirement for groves' existence, especially in urban zones, which can be capitalized for citizen health and pleasure (Romanas, 1985; Papastavrou et al., 1985b; Papastavrou, 1988; Papastavrou et al., 1992). This requirement can be also documented from recent urban planning that is being applied in brand new cities, which are being developed internationally (i.e., New Songdo City, South Korea; King Abdullah Economic City, Saudi Arabia; Waterfront City, Dubai; Masdar City, Abu Dhabi etc.) (Anthopoulos et al., 2012; Weburbanist, 2009). These cities prioritize urban green areas, accompanied by infrastructure and walking paths, while they are located close to commercial centers, downtown or universities in order to enhance citizen accessibility.

Furthermore, hydrologic and energy efficient trees at the park must be protected, since they will support eco-touristic activities, which will bring income to the local economy of Karditsa. Garbage control at the broader park area is necessary, while visitors must have access to water and toilets. Additionally, existing wetlands must be secured and brand new must be constructed, since they will increase flora and fauna diversity. Such diversity will add social, financial, cultural and touristic local value, which transform natural environment to a recognizable national capital (De Kadt, 1990; Karagiannis, 2007).

Moreover, the park must become an attractive destination. Literature defines push and pull factors for a touristic destination, which translate the human event "trip" to personal desires (Uysal et al., 1993; Goossens, 2000; Klenosky, 2002; Kokkali et al., 2008). Push factors concern knowledge driven processes, desires, socio-psychological motives, fame or a dream accomplishment, which are expected to be established by a trip. On the other hand, destination's tangible and intangible cues (i.e., cost, safety, local history, customs and habits, natural landscapes, building architecture, openness, familiarity with locals, food, hotels' quality etc.) concern pull factors. Such approach is defined by Iso-Ahola (1980) and Wohler (1997), which consider that a destination's

decision is influenced by externalizing (push factors) or subconscious (pull factors) reasons/desires. In this context, the park must offer goods and services, which will satisfy the continuously increasing social needs and will play a significant role in attracting (pull factors) and encouraging (push factors) the Karditsa's habitants and visitors. However, it is beyond the purposes of this paper to measure and evaluate visitor's attitudes and future research will be undertaken in this order.

ICT can offer tools and methods that can enhance all the comparative advantages of the park and support the proposals that this article offers. More specifically, the following ICT solutions can be recognized to be applicable on Pafsilipo case :

1. *Location based services for visitors.* For instance, a visitor can use his smartphone and collect historical information regarding his particular position.

2. *ICT sensors* (i.e., antennas) that can measure environmental indexes (i.e., air and water quality) and support decision makers in taking measures for park's protection. This technology is followed by Green cities for monitoring environmental conditions in the city or for urban planning processes (Anthopoulos et al., 2012).

3. *Ubiquitous computing* (i.e., the installation of a Wi-Fi network at the park) that will offer an alternative communications channel to visitors. Such a service can add value to the park, since it could be free-of-charge and attract locals to visit the park and combine physical experience with Internet services (browsing, chatting etc.).

4. *Tourist guides* (i.e., in a web form or as a mobile application) that will provide visitors with information about potential activities (i.e., walking paths, picnic places etc.) or about events that take place at the park.

5. *Quick Response (QR)* codes can be quickly and easily interpreted by a proper mobile application to instant information about sightseeing, an object or a place. These codes can be placed on signs and installed at the park and will support visitors becoming familiar with local flora and fauna.

6. *Usual web page* and social media presentation can be capitalized for integrated marketing communication (IMC) regarding the park (Mangold et al., 2009). This online content will demonstrate park's comparative advantages to online visitors and invite groups of habitants and tourists to various campaigns. Moreover, it could support ecological training at schools, via providing useful data about park's flora and fauna.

7. *Security services* that can be enabled by a combination of safety equipment (i.e., cameras, antennas etc.) or even with bracelets given to kids and elderly visitors could enhance park's safety. Kidnapping avoidance and silver alerts are only some of these services, which are enabled by technology.

8. *E-Parking services*, which will be accessible via a webpage or via mobile communications, can make visitors' approach to the park easier when they know about the number of the available parking positions.

All the above ICT services align to the purposes of the park and to this paper's proposals about mild eco-touristic capitalization of green open spaces. More specifically:

- a) ICT sensors can support decision makers about a landscape selection for eco-tourism and about measures for landscape monitoring and protection;
- b) Location based services and QR codes can enhance visitor's familiarity with the natural environment;
- c) Web and social media presence can strengthen existing push and pull factors regarding visiting the park;
- e) Security, ubiquitous and e-parking services add value to the park, since they can become additional reasons for someone to visit the park.

The above proposals answer the research question that this paper placed and justify that green open spaces in urban areas, can be capitalized for mild touristic activities, which vary from simple visits for pleasure and relaxing, to athletic activities and school environmental training. Such capitalization can protect the maintenance of these open spaces, enhances modern theories for urban planning that align to smart growth, while it can support local economies. A significant dimension that documented in this article concerns the contribution of the ICT for the touristic e-services and multiple combinations are today available and extend usual marketing internet campaigns. However, proper planning, construction projects and measures for environmental protection have to be applied on green open spaces in order to secure both visitors and the parks from accidents and damages.

5. Conclusions and Future Thoughts

Urban sustainability has attracted the scientific attention, while smart city enhances sustainability with the application of intelligent solutions and the ICT on several urban dimensions. The urbanism era that the international community experiences, shows that more than 80% of the global population lives in cities, while cities – independently of their size- compete to attract habitants and visitors (Anthopoulos & Fitsilis, 2014). This paper recognizes this phenomenon and considers green open space utilization for mild touristic purposes in cities.

In order to ground this thesis, it analyzes the case study of Pafsilipo Park in Karditsa to demonstrate how this landscape has been historically used to enhance local life in a small city. It recognizes the pros and cons (for and against) of such a park, with regard to the competitive advantages of the broader area of Karditsa, since it can become an area of reference for urban planning and for visitors, while it can support local economic growth. These findings can be utilized by decision makers, who aim to undertake touristic plans in cities and attract habitants and visitors. Moreover, urban

planners can refer to these outcomes in their attempts to redefine the directions to which a city will be extended or when they will propose transportation paths.

Moreover, this article provides the reader with proposals about the capabilities of such landscape to support visitors' health and pleasure; to encourage student environmental training; to familiarize visitors with local flora and fauna; and to accompany natural beauty with ICT services. Smart city applications (websites, city guides and location-based apps) can utilize green open spaces and propose visitors to perform individual local experiences, which are based on these spaces.

However, this paper's limitation concerns the findings from a single but indicative case in Greece. Urban characteristics in this country influence the outcomes of this study, since green open spaces are something usual in central and northern Europe, but various Mediterranean and Middle East countries experience similar urban conditions. However, the characteristics of this indicative case –in terms of dense constructions, lack in open space etc.- can be faced in megacities, which are being developed internationally and attract global population. To this end, this study represents a highly recommended reference for all cities, while it has to be extended with future research on other cases too. Finally, future research will investigate visitors' attitudes and satisfaction from this case and from other similar cases too.

References

1. Anthopoulos, L., 2014. Evaluating Green Smart City's Sustainability with an Integrated System Dynamics Model. *Proceedings of the CEDEM ASIA 2014*, Hong Kong, Dec. 4-5, 2014.
2. Anthopoulos, L. and Fitsilis, P., 2014. Smart Cities and their Roles in City Competition: a Classification. *International Journal of Electronic Government Research (IJEGR)*. Vol. 10 (1), pp. 67-81.
3. Anthopoulos, L., and Vakali, A., 2012. Urban Planning and Smart Cities: Interrelations and Reciprocities. In the Alvarez, F. et al., (Eds.), *Future Internet Assembly 2012: From Promises to Reality*, 4th FIA book - LNCS 7281, Springer.
4. Athanasopoulos, K.G., 1991. Karditsa State Growth with regard to regional development of Thessaly. *Proceedings of the 1st Conference of Karditsa Research Sciences*, October 12-13, 1991, p. 197-202, Athens, Greece.
5. Brennan, C., and O'Connor, D., 2008. Green City Guidelines. Advice for the protection and enhancement of biodiversity in medium to high-density urban developments. UCD Urban Institute Ireland. Retrieved, March 2013 from http://www.uep.ie/pdfs/guidelines_intro.pdf
6. Chon, K.S., 1989. Understanding recreational traveller's motivation, attitude and satisfaction. *The Tourist Review*. Vol. 44 (1), p.3-7.

7. Coplák, J., 2003. The Conceptual Framework of the EU Project Ecocity. *Alfa Spectra*. Vol. 7, (2), p. 3-17.
8. Crompton, J.L., 1992. Structure of Vacation Destination Choice Sets. *Annals of Tourism Research*. Vol.19, p.420-434.
9. Delis, D. and Polykarpidis, A., 2011. *Urban green in Karditsa: Development, Problems and Proposals for its upgrade* (in Greek). Graduate dissertation, Department of Forestry and Natural Environment Management, T.E.I. of Larissa.
10. De Kadt, E., 1990. Making the alternative sustainable: Lessons from development for tourism. *IDS Discussion Paper 272*, University of Sussex, U.K.
11. Dreyer, A., 2004. Kundenorientierung in Touristischen Destination. In Hinterhuber, H.H, Pechlaner, H., Kaiwer, M.O. und Matzler, K., (Hrsg.), *Kundenmanagement als Erfolgsfaktor*, Verlag E.Schmidt, Berlin, p.29-49.
12. Eskioglou, P. X., 2008. Forest ecosystem and natural environment protection. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, p. 203-214, Karditsa, Greece.
13. Giannakakou, I., 2003. *Urban – Rural Green, Proposals and Perspectives* (in Greek). Graduate dissertation, Department of Forestry and Natural Environment Management, T.E.I. of Larissa.
14. Goldfarb, E., 1992. *The Sustainable City*. Retrieved, January 2013 from <http://cnx.org/content/m44935/latest/#footnote1>.
15. Goossens, C., 2000. Tourism information and pleasure motivation. *Annals of Tourism Research*. Vol. 27, p.301-321.
16. Gousios, D. N. and Mardakis, P.I., 2008. Space reconstruction and urban planning directions for the Karditsa local Government. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, p. 101-122, Karditsa, Greece.
17. Gratziou, M., 2008. Alternative proposals for liquid waste management of Karditsa State. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, p. 243-263, Karditsa, Greece.
18. Greek Statistics, 2011. *Urban Population Growth* (in Greek). Retrieved, March 2013 from http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/General/NWS_19_CENSUS_310712_GR.pdf.
19. CENSUS_310712_GR.pdf.
20. Greek Tourism Organization, 2013. *Destination: Karditsa*. [online] Retrieved, March 2013 from http://www.visitgreece.gr/en/main_cities/karditsa.
21. Iso-Ahola, S.E., 1980. *The Social Psychology of Leisure and Recreation*, Dubuque.
22. Kaiser, M.O., 2004. Kundenzufriedenheit als touristischer Erfolgsfaktor. In Hinterhuber, H.H, Pechlaner H., Kaiwer, M.O. und Matzler, K., (Hrsg.), *Kundenmanagement als Erfolgsfaktor*, Verlag E.Schmidt, Berlin, p. 51-88.

23. Karagiannis, S., 2011. Tourismus in Unter Schutz stehenden Gegenden und Oecotourismus zum Schutz der Caretta - caretta und den Oecosystemen am Beispiel Kretas, *Regional Science Journal Inquir.* Vol I (1), p.22-32.
24. Karagiannis, S., 009. An Empirical Analysis Using Principal Competents for Identifying Crucial Factors for the Ecotourism Development of Lake Kourna in Crete. *The Open Information Science Journal.* Vol. 2 (1), p. 32-39, 2009.
25. Karagiannis, S., 2007. Tourism and Environment today. A first review of the ecological resulting from the tourist development and a first evaluation – The case of Crete, *Review of Economic Sciences.* Vol. 12, p. 49-66, 2007.
26. Karameris, A.K., 1985. Operations and Pleasure Value of Rural Forests in Thessaloniki. *Proceedings of the "Nature and Quality of Life in Thessaloniki" Hellenic Conference*, Municipality of Thessaloniki, Greece.
27. Kelbaugh, D. (2010. Smart Growth in a Changing World. *Journal of Urban Design.* Vol. 15 (2), p. 289-291, Routledge.
28. Kennedy, C., & Hoornweg, D. (2012). Mainstreaming urban metabolism. *Journal of Industrial Ecology.* Vol. 16 (6), p. 780-782.
29. Klenosky, D.B., 2002. The "Pull" of tourism destinations: A means and investigation. *Journal of Travel Research.* Vol. 40, p. 385-395.
30. Kokkali, P. and Koutsouris, A., 2008. Farm-tourism development at Plastira lake. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, 2008, p. 351-368, Karditsa, Greece.
31. Lam, T. and Hsu, Chc., 2006. Predicting behavioral intention of choosing a travel destination. *Tourism Management*, vol.27 (4), pp.589-599.
32. Mangold, W.G. and Faulds, D.J., 2009. Social Media: the new Hybrid Element of the Promotion Mix. *Business Horizons*, vol. 52, pp. 357-365, 2009, Elsevier.
33. Migiros, G.P., 2008. Water management as a natural source. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, 2008, pp. 123-134, Karditsa, Greece.
34. Nastis, A., 2006. Urban Green Planning for Sustainable Development. *Proceedings of 2nd Hellenic Conference of Environmental Council*, July 1-4, 2006, Thessaloniki, Greece.
35. Paganos, H.K., 2002. *Pafsilipo a centure of existence* (in Greek). Municipality of Karditsa publishing, Karditsa, Greece, 2002.
36. Papastavrou, A.K. and Goupos, X.B., 1992. *Forestry Applications* (in Greek). Aristotle University publishing, Thessaloniki, Greece.
37. Papastavrou, A.K., 1988. *Forestry Social Role*, (21) (in Greek). Aristotle University publishing, Thessaloniki, Greece.
38. Papastavrou, A.K. and Makris, K.I., 1985a. *Forestry Policy*, First Issue (in Greek). Aristotle University of Thessaloniki publishing, Thessaloniki, Greece.

39. Papastavrou, A.K. and Makris, K.I., 1985b. *Forestry Policy in Greece*, Second Issue (in Greek). Aristotle University of Thessaloniki press, 1985, Thessaloniki, Greece.
40. Papastavrou, A.K., Anayos, N.E. and Makris, K.I., 1979. *Forestry Policy Practices*, First Issue (in Greek). Aristotle University publishing, Thessaloniki, Greece,
41. Polyzos, S. and Petrakos, G., 2008. Karditsa State GrowthL Comparative evaluation and policy proposals. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, p. 63-85, Karditsa, Greece.
42. Romanas, L.X., 1985. Green contribution to Quality of Life in a city. *Proceedings of the "Nature and Quality of Life in Thessaloniki" Hellenic Conference*, Municipality of Thessaloniki, Greece.
43. Skagiannis, P., 2008. Rising Physiognomy of Karditsa State, after the implementation of large scale network infrastructure. *Proceedings of the 1st Development Conference of Karditsa State*, February 8-10, p. 87-100, Karditsa, Greece.
44. Strogilis, A., 1991. Growth particularities of Karditsa state. In *Proceedings of the 1st Conference of Karditsa Research Sciences*, October 12-13, p. 193-196, Athens, Greece.
45. Tsagarakis, M., 2010. *Sustainable City Award 2010: City Viability Evaluation: Cities and Policies*. [Online] Retrieved, March 2013 from <http://www.citybranding.gr/2010/04/sustainable-city-award-2010.html>.
46. Uysal, M. and Hagan, L., 1993. Motivations of pleasure travel and tourism. In Khan, M., Olsen, N., Var, T. (Eds.), *Encyclopedia of hospitality and tourism*, Van Nostrand Reinhold, New York, p. 798-810.
47. Vourekas, K., 2008. *From a Viable City to a Viable State: the Case of Mesogeia*. Dissertation under Urban Planning Course, National Technical University of Athens. Retrieved, January 2013 from <http://courses.arch.ntua.gr/fsr/131067/Vourekas.pdf>.
48. Weburbanist (2009) *Starting at the End: 12 New Cities Built From Scratch* [online]. Retrieved, March 2013 from <http://weburbanist.com/2009/10/13/12-cities-from-scratch/>.
49. Witt, C.A. and Wright, P.C., 1992. Tourist Motivation: Life after Maslow. In: Johnson, P. and Thomas, B., (Eds.), *Choice and Demand in Tourism*, London, p. 33-55
50. Wittig, R. (2008). Principles for Guiding Eco-city Development. *Ecology. Planning and Management of Urban Forests*, p. 24-29, Springer.
51. Woehler, K., 1997. *Marktorientiertes Tourismus-management-Tourismusorte: Leitbild. Nachfrage-und Konkurrenzanalyse*, Verlag Springer, Berlin, Heidelberg, New York.
52. Zisis, G., 2008. *Viable City. Green City Series*. [Online] Retrieved, March 2013 from <http://www.solon.org.gr/index.php/2008-07-16-12-47-53/82-2008-07-15-14-55-16/246-2008-07-27-08-56-22.html>.

