

Spatial environmental planning in Athens and Thessaloniki

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Abstract Urban green space is an element of vital importance to the city, enhancing quality of life, maintaining sustainable development and fostering the livability of an area. Most importantly, spatial environmental planning ensures further environmental benefits for residents, as it reconciles environmental concerns with social and economic aspirations. The current paper aims to evaluate the enhancement of green spaces in statutory planning processes in Greece through a study of the Master Plans of Athens and Thessaloniki, giving emphasis to the recently reformed metropolitan planning. However, even if environmental planning in Greece was inspired and innovative from an ecological point of view, provisions for urban green spaces and green infrastructure only partially managed to be implemented due to the peculiarities of the historical evolution of Greek cities. This fact becomes even harder to tackle at this time, because of the current fiscal crisis that in many cases triggers an endless discussion on whether the remaining open spaces should be converted into built-up areas to generate public revenue.

Keywords: green spaces, environmental planning, Athens, Thessaloniki

1. Introduction: the importance of green spaces in city planning and management

Urban green space is an element of prime importance to a city, ensuring enhanced quality of life and health to the inhabitants (Richardson *et al.*, 2011 · van Kamp *et al.* 2003 etc). Green surfaces found either within the urban agglomeration or in its surrounding area, may contribute in many different ways to the quality of the urban environment as well as the well-being of the residents. They serve as air-cleaning filters, they improve the microclimate, they foster biological diversity, they mitigate city noises and other nuisances, they reduce the risk of floods, they serve as leisure and recreation venues for social interaction, they contribute to the upgrade of the urban landscape and they also function as gathering areas in case of natural disasters and emergencies (Benedict and McMahon, 2002· Gill *et al.*, 2007).

Urban green space and open space are often used interchangeably, giving rise to confusion. In fact, 'green space' and 'grey space' constitute two distinct subcategories

of open space in the city, with the key difference among them lying in the type of coverage. According to Swanwick *et al.* (2003), grey space is land that consists of mainly impermeable 'hard' surfaces, such as concrete or tarmac. Instead, green space consists of predominantly permeable 'soft' surfaces, such as soil, grass, shrubs, trees and water.

For the most part, urban green spaces can be categorized using several criteria:

- *the size (surface) of green space area along with the range of the city area they serve:* local (district) green spaces and city parks usually of small or medium size that are easily accessed by residents on an every-day basis, as well as supra-local green spaces of inter-municipal or metropolitan scope,
- *The quality and the degree of intervention or naturalness:* artificial gardens or parks; street trees; green spaces created upon re-use of brownfields (restored quarries, abandoned industrial areas and the like); semi-natural areas like urban forest and non-planned natural areas, such as in the case of natural formations (rivers, hills, woodland); sites of ecological interest, protected areas,
- *The type and intensity of use by the residents:* playgrounds, recreation parks, theme parks, cemeteries, churchyards,
- *The proprietary status and function:* public and private green spaces, areas designated (or claimed by local authorities) as green spaces, spaces of collective use.

Additionally, urban green spaces may be divided into two elementary types according to their location:

- a) green spaces within the city and
- b) green spaces found in continuity or in the vicinity of the city that usually include forest areas or other types of vegetation.

Whereas green spaces inside the city are physically constrained due to the limitations of the urban form, green spaces in surrounding areas, because of their size and location, address a significant quota of the city's population and therefore, they are often spaces of supra-local importance. They serve as "green walls" in the surroundings of a city and are as important as those within the city, not only in the case of small or medium-sized

cities but mostly in the case of large urban centers and particularly the metropolises, where usually the need for green spaces is much bigger (Allen, 2003 ·Beriatos, 2002).

In short, green spaces, inside the city and in its surrounding area, existing and prospective, play a significant role in the environmental planning and management of the city through their design and conservation (Campell, 1996).

In this context, the current paper aims to evaluate the enhancement of green spaces in statutory planning processes in Greece through a study of the Master Plans of Athens and Thessaloniki, giving emphasis to the recently reformed metropolitan planning.

2. Urban green and environmental planning in Greek cities

Whereas the majority of cities in northern and northwestern Europe have been characterized by an increased per capita green space allocation, cities in the south and east of Europe lag behind to a large degree concerning the per capita green space coverage. Greek cities, characterized by a very compact urban form, have the lowest green space availability per inhabitant, ranging between 2.00 and 10.00 square meters per capita (Fuller and Gaston, 2009). Despite the fact that green spaces coverage declines as human population density increases, there is a set of factors that determines the differences between cities with regard to the allocation of green spaces. The differences between cities are explained by historical city planning (e.g. cities with extended medieval cores, planned or organically developed areas); the productive model of the city (e.g. industrial or tourist-led city); institutional and social parameters that are related to land ownership; unforeseen events, such as earthquakes or other natural or manmade disasters, which allowed major urban planning interventions to be made; as well as environmental conditions (climate type, land terrain, water existence).

In Greece, the development of green spaces began rather late in the 19th century, right after the proclamation of Athens as the capital of Greece. In the beginning, only few cities having an urban plan had the privilege to acquire parks and gardens, whose value and role was totally aesthetic. Beyond urban centers though, green parks and areas could also be found in tourism resorts, such as the Greek spa-towns, which constituted the most attractive destinations found in the country during the 19th and most of the 20th centuries (Papageorgiou, 2009).

In the 1920s, the Asia Minor Catastrophe had a catalyzing role in the evolution and planning of green spaces. The massive flows of refugees towards Greece were mainly allocated to the urban centers of Athens and Thessaloniki, resulting in unprecedented urbanization. Due to the urgent need for housing, extended open spaces hastily turned into urban fabric, limiting significantly the potential areas for developing urban green spaces in the future. As a result, the interwar period was characterized by a very low pace in the development of green parks both in Athens and Thessaloniki.

In the postwar period, the continuous increase of the

population of the two major poles due to the waves of internal migration resulted in overexploitation of the urban and peri-urban land, giving a compact - but less and less green - city. As regards the majority of the Greek towns, the needs in urban green spaces were usually neglected and suppressed. However, there was a group of small cities that due to their morphology, geo-environmental features and location (near lakes or rivers), had a more “green” identity.

In Greece, the perception of the role and value of urban green actually began to change in the 1960s. Indeed, in the planning efforts of the time (such as the Master Plans of both Athens and Thessaloniki that, however, were never officially adopted), urban green was perceived as an element of both environmental balance and urban design.

In the early 1980s, this perception was further strengthened and stressed through the national legislation. The Law 1337/1983, and the Presidential Decree 23.02.1987 set urban green spaces as a compulsory type of land use in the spatial and environmental planning of all Greek cities. Beyond urban green, another important planning tool was introduced in order to protect peri-urban green and rural areas from uncontrolled urbanization: the so-called “Zone for Urban Control”.

In practice, the first integrated attempt to achieve a desired distribution of green areas and open spaces in the urban area was made by the Ministry for the Environment in 1983, as part of the ‘Urban Reconstruction Operation’. Since then, several amendments in the legislation have led to the determination of the existing national standards (valid since 2004) according to which the optimal proportion of green spaces per inhabitant is 8m². Despite the fact that this ratio is lower than many other European standards, it is still considered to be a luxury for many Greek cities. In the cases of Athens and Thessaloniki, high priority was given to the urban environment and green spaces through the enactment of the first officially adopted Master Plans in 1985. As for the protection of their suburban green, it was mainly achieved through the implementation of ‘Zones for Urban Control’ and the designation of protected areas (such as the ‘Zones of Outstanding Natural Beauty’, ‘National Parks’ etc.).

3. Environmental planning in the metropolitan areas of Athens and Thessaloniki

3.1. Key facts and data

According to estimations based on the urban planning standards and the size of the metropolitan area, green spaces in the Athens Basin should amount to 35km² (NTUA, 2011). However, in the densely built metropolitan area of Athens, the reality is considerably different. Green spaces in the Municipality of Athens hardly cover 0.4 km², which correspond to 2.8-3% of the municipality’s surface area. This means that each citizen in the Athens Municipality is entitled to only 2 –2.5 m² of green spaces. At the same time, even if all open spaces in the city of Athens (i.e. abandoned and underused spaces) were converted to green, this proportion would only manage to reach 3.84 m² per inhabitant (Bellavilas *et al*, 2012).

It is beyond any doubt that the proportion of green spaces per inhabitant in the metropolitan area of Athens is particularly low, compared to other European cities. Moreover, it is below the goal that the Athens Master Plan sets (5 m²/inhabitant) and far lower than the national standards for urban planning (8m²/inhabitant). At the same time, green spaces are unequally distributed in the metropolitan area of Athens since the proportion of green spaces is significantly low in the historic center and the western part of the Metropolis, contrary to the suburban areas in the northern and southern parts (Bellavilas and Vatavali, 2009).

However, these facts come as no surprise. Since the enactment of the first Master Plan of Athens in 1985, very few of the proposed green spaces were eventually realized. Besides, the Project "Attica S.O.S." proved to be excessively ambitious in terms of creating new and vast green spaces. And a singular opportunity was missed when Athens became the host city for the Olympic Games of 2004. Excessive needs in sports facilities and arenas resulted in the permanent loss of large-sized open spaces, many of which were planned as future green spaces. This loss is estimated to correspond to as much as 1.23 m² of green spaces per inhabitant.

Additionally, Athens' suburban green spaces, instead of compensating for this loss of green spaces inside the city area, are constantly under threat of fire. Indicatively, according to WWF studies (WWF Hellas 2007 and 2009), between 1987 and 2007, 18,418 km² of suburban forests were converted to other types of coverage (e.g. built-up areas), while the fire of 2009 in northern Attica destroyed another 20,521 km² of land that was mainly covered with forests.

In the metropolitan area of Thessaloniki green spaces reach 5.697 km² in the urban agglomeration, and 1.534 km² in the suburban zone. This means that – if suburban green is taken into account – green spaces in the metropolitan area of Thessaloniki are very close to the national standards. Indeed, the deficit in green spaces is estimated to be 13,600m² in the total surface of the metropolitan area, which corresponds to only 16m² per 1,000 inhabitants. However, despite these impressive facts, the inevitable truth is that green spaces in the urban agglomeration of Thessaloniki are unequally dispersed, fluctuating from 0.8m² per inhabitant (in the western districts) to 30.62m² per inhabitant in the eastern. Regarding the allocation of green spaces in the city and its surroundings, it is found that the proportion is particularly low in the urban agglomeration (5.08m² per inhabitant) and extremely high (31.22m² per inhabitant) in the peri-urban zone, due to the presence of forests and other natural or semi-natural spaces found there (Master Plan Agency of Thessaloniki, 2006).

3.2. The role of the Master Plan Agencies

Master Plan Agencies of Athens and Thessaloniki were established in 1985 (by Laws 1515/1985 and 1561/1985 respectively) along with the enactment of the first Master Plans for both metropolitan areas. In fact, the enactment of

these Master Plans is considered to be a milestone in the consolidation of the natural environment and urban green spaces as an important factor of quality of life and biodiversity in the two metropolises of Greece.

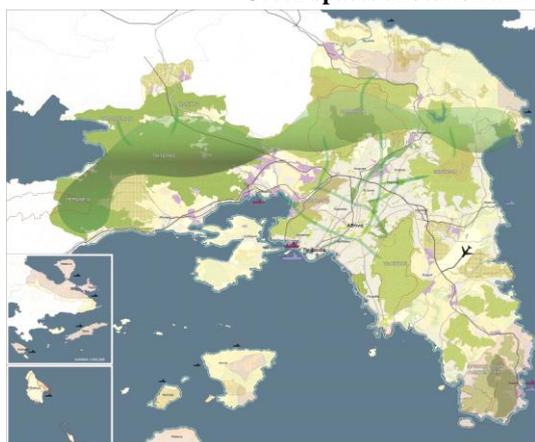
Taking fully into consideration the peculiarities of the period in which they were enacted and the special features of the two metropolises, these first Master Plans focused on: the smog and air pollution in the case of Athens, and marine pollution of the Thermaikos Gulf in the case of Thessaloniki. Beyond this differentiation, overall philosophy in both Master Plans remained common regarding the natural environment, giving priority to: the ecological reconstruction of urban areas, the reduction of air and soil pollution, the protection of the peri-urban agricultural land and the protection of the natural ecosystems (forests, mountains, wetlands etc).

The first Master Plan of Athens envisaged a substantial upgrade of the quantity of green spaces, equivalent to 5m² per inhabitant, even though this is far lower than the national standards for urban planning (8m²/inhabitant). In order to fulfill this objective, a decade later (in 1994), an ambitious project was launched by the Hellenic Ministry for the Environment, under the code name 'Attica S.O.S.'. Even though not all designated spaces managed to be realised, it was due to this project that Athens achieved to develop its last generation of urban green spaces, the majority of which correspond to few existing green parks of metropolitan and supra-local importance. The hosting of the Olympic Games created excessive needs in sports facilities and arenas resulting in the permanent loss of future green spaces, that corresponds to 1.23 m² of green spaces per inhabitant (Bellavilas and Vatavali, 2009).

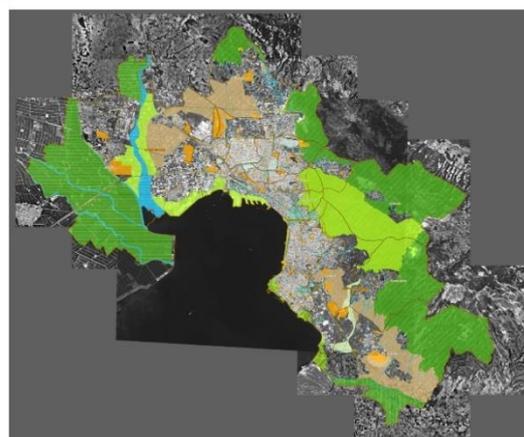
In 1985, the enactment of the Master Plan for the metropolitan area of Thessaloniki set the goals of the environmental planning until the end of the 20th century. However, the need for redesigning urban green spaces as part of the natural heritage of Thessaloniki then became a high priority. Especially significant was the designation of Thessaloniki as Cultural Capital of Europe in 1997, which led to a series of urban design projects in order to enhance and upgrade both the natural and the built environment of the city, some of which have been implemented and others not. Nevertheless, emphasis was given to the formulation of 'city's shots' trying to improve the city's image.

In the 2000s, the time for the first revision of the first Master Plans had come. In view of this revision (and the hosting of the Olympic Games in 2004), both Agencies proceeded to the assignment of two plans entitled "Strategic and Operational Plan for the Upgrade of Green Spaces", one for Athens and a second for Thessaloniki. Although these studies were never completed, they provided valuable input and they influenced, in many ways, both the policy of the Agencies and the revision of the Athens and Thessaloniki Master Plans, especially in terms of protection and upgrade of the natural environment in the urban agglomerations of both metropolises.

Green spaces allocation and networking in Athens and Thessaloniki



The Athens Basin (Attica Region)



Thessaloniki's metropolitan area

Source: Master Plan Agencies of Athens and Thessaloniki

In 2014, despite the fact that both revised Master Plans were introduced to the Hellenic Parliament for their enactment, only the Athens Master Plan was approved (by L.4277/2014), constituting the Spatial Plan for the whole Region of Attica as well. On the contrary, approval of Thessaloniki's Master Plan is still pending, as it is expected to take place along with (and as part of) the Spatial Plan for the Region of Central Macedonia. However - even if not yet approved - it is worth noting that both Master Plans have common guidelines for the urban environment and the green spaces, focusing on the following goals:

- upgrade of urban green spaces, both in qualitative and quantitative terms
- development of a continuous network of urban green spaces, including Protected Areas and natural ecosystems located in the suburban and peri-urban areas
- inclusion, in this green network, of open spaces and areas of cultural and historical importance (archaeological sites, monuments etc)
- protection and wise management of the urban landscape (including natural landscapes)
- wise management and planning for the protection of water resources and water surfaces.

To conclude, since their establishment, the Athens and Thessaloniki Master Plan Agencies have proved very consistent in a firm policy in favor of the urban environment of the two metropolitan areas. However, due to the current economic crisis, in recent years little has been done. Lately, most of the actions undertaken for the environment by both Agencies have mainly regarded amendments in the restrictions and zoning of existing green spaces and not the creation of new ones (so as to increase the proportion of green spaces per inhabitant). Nevertheless, efforts must be continuous, especially in this new era, in which both metropolitan areas have been left without their competent Agencies. Since 2014 the role of the Master Plan Agencies has been undermined, as they were absorbed in the Ministry for the Environment as a single Directorate responsible for the physical planning of both metropolises.

4. Discussion: experience from Greece

Greece is a country with a relatively short tradition in urban green spaces and even shorter in evaluating urban green as an element of ecological value and a factor of quality of citizen's life. However, once environmental planning became an essential pillar of urban planning in the 1980s, green spaces were adequately acknowledged and integrated both in national legislation and in urban plans.

In the case of Athens and Thessaloniki, although many of the existing green areas date back even two centuries ago, the protection and networking of green spaces was conceptualized for the first time in the 1960s concentrating mainly in the peri-urban areas. The role of green spaces inside the city had been undermined, whereas different externalities had put them under constant pressure. However, it was not before the enactment of the Master Plans and the establishment of the competent Master Plan Agencies (in 1985), that firm and consistent actions were taken. Since then, green planning projects and interventions have moved in parallel in both metropolitan areas, as the upgrade of the urban environment and of the urban and suburban green was a high priority for both Agencies.

However, even if environmental planning in both metropolitan areas was innovative from an ecological point of view, little has been done in practice. In fact, planning provisions for urban green spaces and green infrastructure failed to be implemented, given that very few of the large-scale projects were finally realized in Athens and Thessaloniki, whereas at the local level the authorities failed to convert open or underused areas to green spaces due to lack of means or the reaction of proprietors of land. Instead, most of the Agencies' efforts focused on amendments regarding the zoning or the restrictions of existing green spaces and infrastructure and not on the creation of new ones. At the same time, not only are green spaces constrained by a deficient implementation of spatial and environmental planning, but they were also earlier threatened by natural disasters and nowadays by the reformations that the fiscal crisis

provokes in spatial planning through the imminent privatization of public land.

To conclude, it is of utmost importance that Greek cities and metropolitan areas meet the national standards for green spaces. They have a lot to do mainly at an administrative level in order to implement their vision for green infrastructure and green networks. Especially in Athens and Thessaloniki, emphasis and special efforts should be made to avoid conversion of valuable and extended open spaces into built-up areas, an option (and a threat) which is always under discussion, since in exchange it can offer the state valuable revenue that is needed more than ever, due to the current economic crisis.

References

- Allen A. (2003). Environmental planning and management of the peri-urban interface: perspectives on an emerging field. *Environmental Planning and Management*, **15**(1), 135 – 148.
- Bellavilas N. and Vatavali F. (2009), *Green and Open Urban Spaces*, Athens: WWFHellas (in Greek).
- Benedict M. And McMahon E. (2002). Green Infrastructure: Smart conservation for the 21st century. *Renewable Resources Journal*, 20(3), 12-17.
- Beriatos E. (2002). Suburban forests – the green walls of Greek cities: protection and enhancement issues. *Proceedings of the 6th Pan-Hellenic Geographical Congress*, Aristotle University of Thessaloniki, Vol.II, 420-427, (in Greek)
- Campell S. (1996). Green Cities, Growing Cities, Just Cities? Urban planning and the contradictions of sustainable development, *APA Journal*, Summer 1996, 296 – 312.
- Fuller R. and Gaston K. (2009). The scaling of green space coverage in European cities. *Biology Letters*, **5**(3), 352–355.
- Gill S.E., Handley J.F., Ennos A.R. and Paulet S. (2007). Adapting cities for climate change: the role of the Green Infrastructure. *Built Environment*, **33**(1).
- Master Plan Agency of Thessaloniki (2007), *Study for the construction of the canal of Thessaloniki and the formation of its buffer zone*, Master Plan Agency of Thessaloniki. (in Greek).
- Master Plan Agency of Thessaloniki (2006), *Strategic and Operational Plan for the Upgrade of Green Spaces in Thessaloniki*, Master Plan Agency of Thessaloniki. (in Greek)
- NTUA (2011), “Planning principles for the Metropolitan Green Park of Elliniko airport in Athens”, in *Geographies*, No 18, pp. 97 – 103. (in Greek)
- Papageorgiou M. (2009), *Spatial organization, planning and development of spa tourism in Greece*, Doctoral Thesis, Volos: DPRD – University of Thessaly, (in Greek).
- Richardson E., Mitchell R., Hartig T., DeVries S., Astell-Burt T. and Frumkin H. (2011). Green cities and health: a question of scale? *Journal of Epidemiology and Community Health*, 1-6.
- Swanwick C., Dunnett N and Woolley H. (2003). Nature, role and value of green spaces in towns and cities: an overview. *Built Environment* **29**(2), 94-106.
- Van Kamp I., Leidelmeijer K., Marsman G. and De Hollander A. (2003). Urban environmental quality and human well-being towards a conceptual framework and demarcation of concepts: a literature study. *Landscape and Urban Planning*, **65**, 5-18.
- WWF Hellas (2009), *Fire in North Attica - August 2009: changes in the coverage of the prefecture and environmental assessment*, Athens: WWF Hellas. (in Greek)

WWF Hellas (2007), *Ecological assessment of the catastrophic fire in June 2007 in Mount Parnitha (Athens)*, Athens: WWF Hellas. (in Greek)