Urban competitiveness and sprawl as conflicting planning priorities: the Olympic legacy of Athens

1. Introduction

This paper investigates the relationship between two major discussions in spatial planning and policy that focus on European metropolitan areas. The 'urban competitiveness' discussion has dominated the agendas of planning researchers and urban policy makers the last two decades reflecting the growing importance of cities in economic development. It inquires into the ability of metropolitan areas to attract investment, addressing also the uneven socioeconomic implications of the reorientation of policy. The second discussion revolves around the concept of 'urban sprawl'. Sprawl is one of the classic themes of planning theory with most research conducted in the USA. It is primarily associated with cities experiencing modest overall population growth and significant population redistribution into the urban fringe (Batty et al, 2003). From a planning perspective sprawl is broadly perceived as unplanned urban expansion driven by market forces. Lately there has been an increasing interest in mapping and exploring this particular pattern of urban growth in Europe through EU funded research projects such as SCATTER (2005) and URBS PANDENS (Couch et al, 2007).

It is striking that while both discussions refer to ongoing transformations occurring simultaneously in metropolitan areas there is little overlap between them. The urban competitiveness discussion tends to neglect the aspects of land use change associated with competitivenessrelated land development strategies. The focus of the literature on sprawl is either focused solely on the exercise of mapping land use change, or rests heavily on its negative effects, paying relatively less attention to the causes of growth in suburban and ex-urban areas. In this paper we argue that there is need for more sophisticated analysis of the relationship between sprawl and competitiveness through in depth case study research.

Athens is presented as an example of this. Sprawl in the case of Athens is a structural characteristic of the way the city developed. It is noted in the post-war period of rapid urbanization, occurring simultaneously with growth in the urban core. It was sustained as a trend in subsequent phases of urban development due to particularities of the socio-political environment, and the distinct land-use planning traits. Athens is currently phasing a new wave of sprawl, with already noticeable socio-economic and environmental consequences. This, in turn, is related to the changed spatial planning priorities that promote the competitiveness of the local economy.

The first part of the paper reviews the discussion on urban competitiveness and sprawl. The second part looks at Athens. Analysis starts with a brief presentation of the difficulty with which the planning apparatus in the city influenced the trajectories of urbanization processes. It then moves into recent planning interventions aiming at promoting competitiveness, linked with the 2004 Olympics. The mismatch between economic development priorities and sustainable spatial form in Athens is examined in the Messoghia plain, the area of metropolitan Athens in which significant transport infrastructure investment took place under the auspices of the Olympics. Quantifying and mapping land-cover changes using satellite imagery and GIS substantiates the discordance between planning goals and growth trends, underscoring the role of competitiveness in triggering urban sprawl.

2. Competitiveness and sprawl

2.1 Planning goals reorientation

Socio-economic restructuring processes and the emerging distributions of economic activities at an international scale suggest that the growth prospects of cities depend increasingly on their comparative advantages to attract investment and generate local development opportunities (Camagni, 2002). The term of 'urban competitiveness' attempts to capture the shifting role(s) of the local level in economic development. It indicates a change in the structural orientation of local public policies, from the political articulation of the nationally determined priorities of domestic full employment and collective consumption (Goodwin and Painter 1996), to the 'construction of territorial specificities' aiming at enhancing the growth potential of the locality (Preteceille, 1997). The shift towards the 'competitive' city, is noticeable in the following three, methodologically distinct, regulatory responses attempting to modify the competitive attributes of cities.

- First, supply-side actions, focusing on altering local administrative and economic characteristics that shape urban competitiveness. The spatial re-organisation of the urban administration and the creation of metropolitan governance structures is, in this context, aiming at improving co-ordination amongst actors and boost the local development potential.
- Second, demand-oriented actions, striving to respond to the attributes which firms are seeking from a particular location in order to operate. The construction of physical infrastructure designed to make the area more locationally attractive for investment is a key example of such a response (Malecki, 2007).
- Third, image development and image enhancement strategies, aiming to differentiate a place from other investment location choices by highlighting its core benefits, style and culture. (Bennett and Savani, 2003). The promotion of rejuvenated urban images involves mobilisation of diverse policy tools and resources including, among others: the preservation of architectural heritage sites; flagship property developments aiming at altering city-centre landscapes; and the hosting of major cultural, entrepreneurial and sport events. Place marketing considerations, in that respect, are now viewed as a fundamental factor, guiding the development of places.

The consequences of such a development strategy re-orientation has attracted the interest of scholars the last two decades. Urban competitiveness, it is suggested, is embedded in a framework of zero-sum inter-urban competition for resources, jobs and investment in which as many cities lose as gain in the process, furthering the potential of uneven geographical development (Zukin, 2006). Inter-urban competition is regarded as a capacity-building and growth enhancing policy-orientation only for the successful urban regions (Cheshire and Gordon, 1995). Even in the case of 'winner' cities, the literature questions the effectiveness of competitiveness-oriented policy interventions in tackling social inequalities. The replacement of universal support structures with the targeting of particular - geographically specific and economically promising - places for intervention is a process that fosters exclusionary mechanisms (Swyngedouw et al, 2002). In light of the absence of higher-scale level regulatory and redistribution policies, place-focused development approaches re-organise the socio-economic fabric of the city along fragmented lines, accentuating polarisation (Brenner and Theodore, 2002).

Urban competitiveness strategies have been adequately analyzed in terms of their social, political and economic implications at both the inter- and intra-city levels. Building on this work, this paper explores their impact on patterns of land-use change. Competitiveness-related policies, it is argued, generate a spatial restructuring dynamic with distinct implications on the urban form and functions. In the case of cities with underdeveloped land-use planning structures, this impact results in uncontrolled urban sprawl. The literature on competitiveness has not adequately explored this dimension - and outcome - of shifting planning orientations. There is a reason for this. Sprawl is a particularly elusive concept.

2.2 Erratic sprawl

Similar to urban competitiveness, the concept of 'sprawl' is another umbrella term surrounded by a controversy regarding its features, causes and effects. The exercise of defining sprawl in terms of its corresponding density traits, spatial forms, socio-economic and environmental impacts presents inherent difficulties. Focusing on the density factor, for instance, sprawl is positioned against the ideal-typical urban models of Burgess and Alonso, in which

the density of urban activity follows a declining slope away from the city centre. In cases of sprawl, it is argued, the density gradient of urban activity is always becoming less steep. In this argument, however, sprawl comes across as a matter of degree, not easily quantified. Moreover, what is understood as low-density development differs from place to place, rendering the designation of the process a relative and place-specific exercise (Chin, 2002).

Similarly, the urban forms that are considered to correspond to a sprawl-type of growth present a high degree of variation. Key examples include, among others:

- 'suburban' growth, or contiguous expansion of existing development away from a central core;
- 'strip' development, referring to growth along major transport routes;
- 'scattered', or, discontinuous development positioned against a multi-centered city; and,
- 'leapfrog' development, a form of growth that is discontinuous and positioned against a mono-centric city (Galster et al. 2001).

As too many patterns of land development are gathered under one term, sprawl is defined on an ad hoc basis, following the characteristics of the case-study examined. In this light, an alternative approach at distinguishing sprawl is to view the process indirectly, looking at its impact. Recent research projects that explored the consequences of sprawl in European cities identified the following land-use conversion, transport, and (low) density related processes of change:

a) *environmental*, with reference to the consequences of increased rural land consumption, loss of forested and environmentally fragile land, ecosystem fragmentation, greater consumption of resources per capita, and heightened car transport usage;

b) *economic*, referring to land value speculative dynamics, augmented costs for public infrastructure investment and maintenance, and to the problematic viability of public service provision;

c) *social*, with reference to increased commuting and weakened sense of community, income-related spatial segregation of residential development, and increased risk of social exclusion and underinvestment in the inner cities (Johnson 2001; EEA, 2006).

Such impacts describe at best what sprawl does, instead of what it is (Galster et al. 2001). Attempting to recognize sprawl through its effects, in other words, creates a tautology: one that assumes the negative consequences of sprawl, and defines, in turn, all undesirable impacts of urban growth as sprawl (Chin, 2002). Sprawl, therefore, is a term applicable to many unwanted conditions associated with unplanned urban expansion and unsustainable growth. The quest for sustainable urban development refers to 'smart growth' strategies, consisting of land-use controls sensitive to the issues of housing diversity, traffic congestion and environmental degradation (Burchell at al. 1998). However, the capacity of land-use planning to influence urban expansion through smart-growth policies, presupposes that policy objectives reflect primarily growth-control considerations. The increased weight of competitiveness-related priorities in the planning agenda unsettles this prioritization. In the case of cities with underdeveloped land-use planning structures, the re-prioritization of planning goals towards the development target, is risking unordered expansion.

The following section of the paper explores this argument in Athens Metropolitan Area.

3. Planning an uncontrolled city

3.1 Athens and urban sprawl

Researchers have argued that Athens, along with other Mediterranean cities, is 'not adequately understood through traditional spatial analysis' (Leontidou *et al.*, 2007:72) and 'does not seem to comply with either the model of the global city or with that of the simply deindustrialized city' (Maloutas, 2003:172). The basis for such argumentation lies in the distinct development path that the city experienced throughout the 20th century, described as 'urbanization without industrialization' (Leontidou, 1990). Athens did go through a relatively short phase of belated industrial development during the post-war period. Industrial employment, however, was never the backbone of the city's occupational profile. Influx of refu-

gee population in the interwar period and post war rural exodus were much more powerful drivers of urban growth. In this context the process of urban development itself, rather than industrialization fuelled the city's rapid post war economic growth and determined its socioeconomic formation. Regulatory planning did not play an active role in this process. Rather urban development was shaped by individual self housing strategies on the basis of small scale land ownership and capital investment. Two parallel mechanisms of housing development emerged applying to different parts of the city. Densification of the urban core with the increase of building coefficients within the limits of statutory plans and scattered urban expansion in the urban fringe through illegal building practices (Mantouvalou *et al.*, 1995). The consequent incorporation of these illegal areas (*afthereta*) into the official city plan enabled the provision of urban infrastructure and densification. In this context it can be argued that sprawl has been a structural characteristic of the way the city developed and the role of planning was reduced to a posteriori regulation of already formed urban realities.

The history of the city's growth trajectories can be discerned in the following phases, each of which is characterized by distinct sprawling dynamics (Leontidou *et al.*, 2007):

- The first major push to urban sprawl processes coincides with the arrival of large refugee numbers from Minor Asia (1922), storming areas surrounding the existing urban nuclei, soon to be transformed into working-class suburbs. Uncontrolled urban development had started with illegal building activity taking place outside statutory urban plan borders.
- In the post war period (1950s-1970s) the city densified experiencing rapid population and economic growth, driven by internal rural migrants in search for diffuse employment opportunities. Most of them settled in the Western part of the conurbation, in areas with proximity to industrial plants. The city's actual borders extended significantly during that time. The whole process reversed the urban *life cycle* model (Van der Berg *et al.*, 1982) with popular suburbanization preceding urbanization.
- Athens begun to resemble more the Western urban life-cycle model in the 1980s, when the pace of internal migration slowed down, accompanied by the gradual loss of industrial to service employment jobs. Growth over this period (1980s-1990s) was driven by population escaping from a polluted and increasingly congested city. This wave of intra-urban population movement structured the creation of dense middle-class suburbs in the northern parts of Athens. Moreover, housing clusters and economic activity zones emerged in a leapfrogging fashion along seashore towns and around green villages to the Northeast of the conurbation.

These urbanization processes left clearly their traces in the form and structure of the city's built environment, which is characterized by inefficient distribution of densities, lack of open public spaces and amenities, low quality of urban infrastructure, environmental degradation and private car transportation dependence. The *Athens Regulatory Master Plan* adopted in 1985 constituted a significant governmental initiative to deal with the structural problems of the conurbation in a comprehensive way with an emphasis on environmental protection and control of peri-urban growth dynamics. A single central government agency, the *Organization for Planning and Environmental Protection of Athens* (OPEPA), was created to oversee its implementation. However its role in influencing the city's future is constrained by its limited formal competences and inherent structural deficiencies of the planning system. In particular:

- OPEPA with its advisory status as subsidiary to the Ministry of the Environment has neither sufficient formal powers nor the corporate capability to respond to the acute needs of metropolitan management and coordination of the Athens conurbation. In present a great number of administrative bodies at various levels (1st and 2nd tier of local government and several central government agencies) directly interfere with land management decisions.
- Moreover several institutional ill-capacities are preventing OPEPA's regulations and directives from being successfully implemented 'on the ground'. Examples of regulatory and pragmatic obstacles to planning efficiency include the status of legal building outside statutory plans and the absence of basic land-management tools, like the national cadastre.

These factors present major structural impediments for sustainable urban development in the metropolitan area. In the last decade, the capacity of regulatory planning to guide growth is further challenged by the re-prioritisation of development goals towards the promotion of economic competitiveness. The 2004 Olympic Games played a major role in this.

3.2 Athens and urban competitiveness

With a concentration of around one third of the total population of the country (3.761.810 in 2001), and a contribution of over one third of its total income (OECD, 2003:39), Athens Metropolitan Area dominates the Greek urban system. Athens was for many decades, however, credited with one of the lowest indicators of competitiveness in Europe due to a variety of factors relevant to its geographical peripherality, outdated infrastructure and its long lasting environmental problems. Olympics, therefore, were perceived as an opportunity to project a new 'winner' image for the capital and - in the words of the organizers - 'prove to the world that the city has also a future besides a glorious past' (METREX, 2001: 36). In this light, staging the Games was perceived as a national rather than a local effort. The government re-oriented regional policy towards this goal and allocated significant funds for the realization of projects aimed directly at raising urban competitiveness. Two key project categories reflect this prioritisation:

- First, those aiming at reducing peripherality and improving the functional aspects of the metropolitan area, focusing on transport and telecommunication infrastructure provision. Key examples include the new Athens Underground, the international airport, the Athens ring road, the suburban railway and the tramway connecting the city-centre with the western waterfront.
- Second, those aiming at improving the attractiveness of the urban area and the capacity
 of the city to act as an international venue for year-round tourism. Examples include the
 Unification of Archaeological Sites in the city's historical centre, the Regeneration of the
 western Waterfront area, and the post-olympic conversion of sporting facilities to convention, business and entertainment venues.

Part of this wide redevelopment program was financed through the national budget. Most of funding, however, derived from the Community Support Framework, especially the 3^{rd} CSF (2000-2006). In some cases the Greek state experimented for the first time with public-private partnership schemes. This shift towards new state-led entrepreneurial strategies unsettled dominant ideas regarding the future development of the city. In the area of spatial planning, in particular, the *competitiveness* target influences the (still ongoing) process of updating the Athens Regulatory Master Plan, especially with regard to its capacity in promoting the so called 'international role' of the city. The latter envisages a stronger international presence for Athens, with local firms extending their operations to Eastern Mediterranean and Middle Eastern markets. It also comments on the need to strengthen unexploited local assets, and to develop new initiatives in the economically promising fields of tourism, education, health, and sports (Economou *et al.*, 2001). This attitude marks a clear break from past urban development practices, in which investment in major projects was opposed in an attempt to halt the over-concentration of activities and population in the congested metropolitan area.

Olympic Games, therefore, acted as a catalyst for the redirection of spatial policy towards the promotion of urban competitiveness (Pagonis, 2006). The extent to which the above policy shift will trigger growth, as well as the way in which expected benefits will be distributed within the city in the long run, has generated a distinct controversy (see OECD, 2003; Stathakis and Hadjimichalis, 2004). The focus of this examination turns towards exploring the impact of these policies on spatial restructuring, with respect to sustainable urban development and sprawl. Two key aspects of the above changes guide analysis to this direction. First, the emergence of new spatial links that alter development dynamics. Long awaited transport projects, such as the underground, the suburban rail and the Athens ring road,

transformed the geography of the metropolis, establishing new connections between previously ill-linked areas. This, in turn, led to the expansion of the functional urban limits, initiating processes of growth in the metropolitan periphery. Second, changes in real estate dynamics, associated with the high level of infrastructure investment and the novel role of the private sector in relevant undertakings. The emergence of major developers' consortiums, focusing on investment opportunities in large retail, office, entertainment, and housing estate projects, affects land prices and intensifies development pressures (Delladetsima, 2006). Urban growth is manifest in various locations around Athens. The most striking transformations, however, are taking place in the eastern part of the metropolis, the area called the Messoghia plain.

3.3 The study area: The Messoghia plain

Messoghia is part of the Athens Metropolitan Area, regulated by the city's Master Plan. There are two reasons for narrowing down the study of urban growth in the Messoghia plain. First, this is the part of Athens where the majority of large scale transport infrastructure projects took place. Second, with a size comparable to the Athens conurbation (see figure 1) and a relatively low level of development, Messoghia is regarded as a key territorial asset for the metropolitan area (OECD, 2003).



Figure 1: The Messoghia Plain

As seen in Figure 1, the plain extends easternwards of the Athens conurbation in an area of approximately 481km². Hymettus Mountain to the west has acted as a physical barrier separating the plain from the conurbation, providing also a reason as to why the area escaped the waves of intensive urbanization that transformed Athens throughout the 20th century. Messoghia, in fact, retained its agricultural character until the early 1980's when marked popula-

tion increases were set off. The area, however, still lacks a major spatial pole of economic development. The settlement pattern is defined by various small towns scattered across it, and several sea-side resorts to the east that grew as popular summer-house areas to Athenians. Administratively, Messoghia is subdivided into 13 municipalities and communes.

The beginning of change for Messoghia starts during the 1980s when the decision to relocate the city's international airport in the area was taken. Subsequent appropriation of agricultural land for airport construction was followed by further infrastructure investment, materialised due to Olympic Games funding. The construction of new road infrastructure and rail links - connecting the airport with the city - transformed the area's accessibility patterns. The picture was completed with the construction of two major Olympic venues (the Equestrian centre and the Shooting Centre, both near the town of Markopoulo) built again on appropriated agricultural land. These developments have had a profound effect on the evolution of Messoghia into a *hybrid* landscape. They functioned as attraction poles for tertiary sector activities, while a new wave of settlement expansion was set off. Nowadays the plain is one of the most rapidly growing areas of the metropolitan periphery.

Recognizing the socio-economic consequences deriving from such infrastructure investment activity, OPEPA commissioned in the early 1990's a comprehensive spatial planning study of Messoghia (OPEPA, 1997). This resulted in the issuing of land-use and urban development control regulations for the area, activated, however, as late as 2003, a year before Olympic Games commenced. The next part of the paper aims to explore the consequences of the belated planning response to infrastructure investment in Messoghia. Investigation starts with an attempt to assess the extent to which the Messoghia study area has been urbanised. Locating and quantifying landscape character change, in turn, provides a framework for approaching the role of regulatory land-use planning in guiding growth processes in the area.

4. Land-cover change in Messoghia

4.1 Mapping urban growth

Satellite imagery and aerial photographs are often used to map land-cover for several time periods and quantify land-cover changes. For the quantitative analysis of these images, various techniques are used such as image differentiating, image ratio, correlation, principal component analysis or vegetation indices. These techniques are referred to as preclassification techniques (Yuan et al. 2005). However, simple detection of change rarely is sufficient and qualitative analysis of change "from-to" is often needed. Therefore many change detection studies have widely focused on post-classification comparison (for example, Symeonakis *et al.*, 2006; Gatsis *et al.*, 2006; Koukoulas *et al* 2007). The main advantage of post-classification analysis is that it overcomes the problems occurring upon comparing images acquired at different times of the year by different sensors. However, it presents significant difficulties concerning the accuracy of each classification individually but also the assessment of land-cover types of historical data.

A more specific research field is that of urban growth monitoring, especially of big metropolitan centers. Monitoring urban growth using remote sensing is materialized by comparing classified images of different dates and detecting changes of pixels from one class (nonurban) to another (urban). In our research, two Landsat TM 5 satellite images (June 1987 and May 2003, 7 bands, nominal pixel size: 30m) were employed for identifying land-cover changes in the study area. Geometric correction of the images was performed with an RMS error smaller than one pixel. The two scenes were referenced to a common projection (Greek Geodetic Reference System 1987) and were classified using the maximum likelihood classification rule with randomly selected samples within each land-cover class identified using existing land-cover maps. Initially seven (7) land-cover classes were chosen, using the Corine classification system for interoperability with other classification productsi. As our study is orientated towards urban growth monitoring, change detection focuses on the transformation of non-urban land-uses to urban land-uses. Thus, we have proceeded to post-classification

merging of all non-urban land-use types in one class in order to differentiate them from urban land-uses.

Change detection using only two satellite images does not always produce reliable results as confusion among similar classes often occurs. Spectral signatures of cultivated areas and bare land are similar to urban areas (with varied density) and this compromises the accuracy of land-cover mapping and moreover that of change detection. In order to alleviate this problem a wide range of approaches have been used by other researchers (such as multitemporal, multisensor and/or advanced classification techniques). We have limited our study area to exclude nearby mountainous surfaces that could cause confusion and with the help of basic rules regarding possible or not changes, we were able to limit our errors in the urban cover maps and the final map of changes. Accuracy assessment was applied using error matrices as described in Koukoulas and Blackburn (2001) and Khorram (1999). In the final map of changes, three types of change can be observed:

- unchanged urban use areas
- unchanged non-urban use areas
- areas with change from non-urban to urban use

In order to assess changes quantitatively and in combination with census data per municipality, we have overlaid the municipalities' limits vector to the thematic map of changes. Statistical data of land-use change were calculated for each municipality polygon separately by cross tabulating the thematic map with the vector.

4.2 How is growth materializing?

Our results are summarised in figure 2 and table 1. The accuracies of the initial land-cover maps were 93% and 94% respectively. The estimated accuracy of the final change map was 86%.

Type of land-use change	Area (km ²)	Percentage (%)
Non urban uses to urban uses	38.4	12
Unchanged urban uses	22.8	7
Unchanged non-urban uses	261.1	81
Total	322.3	100

 Table 1. Land-cover change in Messoghia plain (1987-2003)

From table 1, we can see that 12% of the study area has changed from non-urban to urban land-use, corresponding to an area of 38.4 km². In total the urban uses in the study area amount to 19% in 2003, indicating a significant increase in urban land-uses which appear to follow the same pattern with the existing nuclei: dense fabric in the hinterland settlements and scattered in those of the coastal zone. Of special interest though, is the pattern of change observed outside the settlements' limits. As it can be seen from figure 2, three types of urban growth can be distinguished:

- Linear development can be clearly observed along the main road axes (for example, along the Attica and Varis-Koropiou Roads). Apart from the road works completed during the period of study, change is attributed to the concentration of urban land-uses along their length. Of interest is also the expansion of urban uses that follows the secondary road network (not shown in figure 2, as the network is quite dense and obscures land-use changes).
- Scattered growth is mostly observed at seashore town extensions. Despite the difficulty of differentiating urban from non-urban uses in sparsely built areas, a trend of settlement growth can be assessed, which to some extent follows the secondary and tertiary road network.
- *Emergence of new nuclei of urban uses* or expansion of existing ones, characterised by high density, is the third type of growth observed. Typical cases of this type include the

quarries concentrated in the area of Koropi and Markopoulo, the new international airport and Olympic installations (figure 2). They consist of large and continuous areas and the change resulting to the character of the landscape is significant, contrasting in scale and form with the surrounding elements.

Thus, we can observe a change of the landscape character in Messoghia departing from its rural character towards to an ever growing urban/suburban area. Moreover, the comparison of the percentage of land-cover change to that of population change in the same period in the four largest municipalities reveals that the two aspects are not directly correlated. Change is mostly attributed to the emergence of urban uses other than housing, such as secondary and tertiary sector activities, infrastructure and quarries, or second homes/summer houses. This finding strengthens the case of capital investment induced growth.



Figure 2: Land-use change in Messoghia (1987-2003)

5. Competitiveness and sprawl as conflicting planning priorities

Messoghia has been recognized in official planning documents as a key territorial asset of Athens Metropolitan Area. The goals of the *Athens Master Plan*, in particular, suggest the reinforcement of primary sector activities, stressing the necessity of measures in support of rural land-uses. However, the construction in Messoghia of major transport infrastructure and sport venues in the framework of Olympic spatial interventions altered envisaged local

prospects. The examination of spatial data on land-use change by means of satellite imagery and GIS confirmed the emergence of dynamic processes of urban growth, attributed to tertiary and secondary sector activities, attracted by enhanced accessibility and new functions located in the area. The process set in motion, therefore, diverts significantly from the stated planning targets for the area. What we actually see in Figure 2 is the significant loss of agricultural land and the rapid urbanization of the countryside driven by market forces. Growth in the Messoghia plain therefore, constitutes unplanned urban expansion and, hence, sprawl.

Exploring the reasons behind the inadequacy of land-use planning in metropolitan Athens to control growth, we noted the underdeveloped traits of land management tools. We also commented upon regulatory and municipal fragmentation, associated in the literature with the limited capacity of planning to control sprawl. More, importantly, however, we noted the non-prioritization of planning agenda implementation. Following the approval of the Athens Master Plan (1985), which identified Messoghia as an area in need of urban development control, the process of defining land-uses for Messoghia started in 1994, with the respective regulations coming into force in 2003. During those twenty years, the area's prospects were entirely transformed, a fact that rendered relevant regulations obsolete before their very implementation. The extent to which the area was not prepared to accept urban uses is underscored by the absence of drainage and sewage infrastructure in expanding settlements (Leontidou et al, 2007). Land-use planning regulations for Messoghia have to practically adapt to new developments, even though their very purpose was to influence them. In light of the absence of growth management policies during investment phase, growth tendencies materialized in undesired urban forms. Figure 2 portrays key examples of this blind planning alley:

- The unordered expansion of the seaside town of *Loutsa*. The town has already engulfed part of *Vravrona*, a designated zone of archaeological interest according to new regulations.
- Growth noted around the *quarries* located near the town of *Markopoulo*. The running of the quarries and their expansion is explicitly prohibited by new regulations.
- Growth in urban uses noted along main transport axes connecting settlements (Varis-Koropiou and Paiania-Markopoulo roads). Linear development observed is in contradistinction with the goal to concentrate productive activities in specially designated areas.
- Growth in urban uses noted around Olympic sports venues, with key examples the *Shooting Centre* and the *Equestrian Centre*. While these urban uses have been secured by the new regulations, their construction on prime agricultural land contradicts the stated goals of the Athens Master Plan.

In contrast to the de-prioritization of the mainstream planning agenda geared towards environmental protection, the goals of promoting urban competitiveness have been actively assisted by the Structural Funds and effectively implemented by a number of ad hoc specialpurpose agencies. Their focus however was on short term efficiency and on the timely delivery of projects (Pagonis, 2006). In the absence of strategic land use planning considerations and appropriate land management tools, the spatial restructuring dynamic of Olympic interventions ended up pushing more sprawl in the newly annexed areas of the metropolitan periphery.

Uncoordinated growth takes the form of place-specific land-use changes. Approaching the impact of such changes is an exercise that cannot be distinguished from the causes of urban dispersal. In this context, it is the motivating factors and mode of urban expansion that should be looked at.

The promotion of competitiveness-related spatial policies is an internationally-oriented and place-focused activity. In the case of Athens it brought into the spotlight a geographically specific and economically promising part of the metropolitan area. Spatial interventions in

Messoghia aimed to both address overdue infrastructure deficiencies of Athens metropolitan area, and to trigger economic development. Yet they were devised and implemented on an ad hoc basis, responding to the needs of short-term economic performance targets such as the staging of the Olympics. The displacement of land-use planning priorities by competitiveness-related spatial interventions arrested the emergence of smart-growth policies for Messoghia. The resulting urban sprawl underscores the critical role of regulatory land-use planning structures in accommodating the pressures deriving from the pursuit of urban competitiveness. In the absence of policies geared towards social and environmental goals, the very success of competitiveness-related actions mortgages future growth prospects.

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Endnotes

¹ Urban uses (Discontinuous urban fabric, Industrial or commercial units, Airports, Mineral extraction sites, Construction sites), Various cultivations (Fruit trees and berry plantations, Complex cultivation patterns, Land principally occupied by agriculture with significant areas of natural vegetation), Olive groves, Vineyards, Low vegetation (Natural grasslands, Sclerophyllous vegetation, Transitional woodland-scrub), Forest (Coniferous forests) and Water bodies.

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