

PROBLEMS OF REGIONAL DEVELOPMENT

STRATEGIC THINKING IN ECODEVELOPMENT: THE EMERGENCE OF A NEW TYPE OF ECO-NEIGHBORHOOD THROUGH BROWNFIELDS REGENERATION

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Abstract

*The creation of the first eco-neighborhoods coincides with the emergence of concerns about the antagonistic relations between society and nature and the development of ecological and environmental movements in 1960s. Currently, eco-neighborhoods are a fully recognized "institution" that is called upon to implement the concept of sustainable community. Despite their diversity, there are common axes of organization such as (a) the empowerment and revival of the local community with the key elements of open governance, widespread participation and sound social and political networking (b) the implementation of sustainable practices in the management of natural and cultural resources, accessibility and the built environment. The paper aims to discuss **the strategic thinking in ecodevelopment** focusing on eco-neighborhoods in the Euro-Mediterranean area. Lessons learned from this region are the integration of the protection and enhancement of natural and cultural heritage given that natural and cultural resources are central for place identity. In this context, and after briefly discussing the development of eco-neighborhoods in Greece, examples of strategic urban interventions are being examined such as the potential regeneration of the port-industrial area of Drapetsona which, in our view, is striving for a vision of environmental protection and economic development based on both the reconnection of natural and cultural heritage and on the mobilisation of public-private cooperation in urban planning and governance.*

Key words : Strategic thinking, Ecodevelopment, Econeighborhoods, brownfields, regeneration, Southern Europe, Greece

1. Introduction: about eco-neighborhoods

Even though there are various approaches regarding the concept of eco-neighborhood, an eco-neighborhood is commonly defined on the basis of high-density, walkable residential or mixed use district which has a low ecological footprint, a local identity and a strong sense of community (Barton, 2000). It is worth noting that gradually there has been a shift from environmental issues through health and social inclusion to the more abstract concepts of freedom and community. (Barton, 2000, Kyvelou and Papadopoulos, 2011, Joss, 2011, Medved, 2017). Furthermore, Bayulken & Huisingh (2015) in their extended and systematic review of Northern European ecotowns suggested that political commitment, timing, financial aspects, physical qualities, stakeholder involvement and environmental planning were key elements in achieving the ecotowns' goals.

Concerning the typology of eco-neighborhoods there are three phases, according to the existing literature (Souami, 2009). The onset of the first eco-neighborhoods coincides with the development of ecological and environmental movements in 1960-1970 and the emergence of

concerns about the antagonistic relations between society and the natural environment. The initial eco-neighborhood type -well known as “eco-village”- was most often a small pool of buildings located in rural areas or in the periphery of cities organized with the principle of community, and even co-housing. The initiators of such projects were usually professional and experts, politically active, enrolled in so-called alternative movements. This type of eco-neighborhood is often met during the 1980s in Austria, Netherlands and Germany (Souami, 2009, Kyvelou et al., 2012)

The second type includes the «prototype» of eco-neighborhood of the '90s. These projects are developed as exemplary neighborhoods that take advantage of exceptional urban events (such as World's Fair in Hanover, B01 exhibition in Malmo), show ambitious environmental goals and promote a learning procedure for both stakeholders (developers, technicians, local politicians) and citizens. They are implemented by public-private partnerships and using funds that come from local, national and international sources (Kyvelou et al., 2012).

The third type of eco-neighborhood appears from the mid-90s and is based on environmental quality objectives. These projects are being planned in a long-term period and implemented in a conventional manner since they adopt ordinary tools of development and construction and common production methods (Kyvelou et al., 2012).

On the other hand, it is worth noting the three phases of eco-city development distinguished by Joss (Joss, 2011): During the first phase, extending from 1980s to early 1990s, the so-called grassroots/visions phase, the ‘eco-city’ remained mainly a normatively prescriptive concept, ‘a collection of ideas about urban planning, transportation, health, housing, economic development, natural habitats, public participation and social justice...’ with relatively few practical examples. The second phase extended from 1992 to early 2000s is the local and national experimentation period during which eco-city concepts were increasingly translated into practice. The third phase that is the post-2000s period is, according to Joss, the global expansion/policy mainstreaming period. This third phase began to manifest itself in the early to mid 2000s through the concurrent globalisation and mainstreaming of the eco-city phenomenon. A proliferation of eco-city initiatives is observed during this last period all over the world and several high profile policy initiatives at national and international levels have begun to promote eco-city innovation (e.g the Clinton Climate Initiative, the EC Eco-City Project, the World Economic Forum's SlimCity initiative etc.)

Our own hypothesis is that we are currently running a new era of eco-urbanism as this was influenced by the economic crisis and the fact that ecosystems thinking and resilience thinking are gaining ground in spatial and urban planning.

2. Comparing eco-neighborhoods in Northern Europe and Euro-Mediterranean area

2.1 The Northern European VS the South European Eco-neighborhood model

The experience from the development of eco-neighborhoods projects shows that there are common features that characterize the Northern Europe eco-neighborhood model. The North-European model is mainly described by its technical and environmental components and its performance in terms of energy, saving water or recycling materials. This model is managed by communities leading a strong environmental policy, with regard to the implementation of Agenda 21. Therefore, its environmental approach and performance seems to be not only a strong mechanism to move from principles and visions to the effective implementation of sustainable development, but also a powerful tool of communication and reverse of the social and economic depreciation. Furthermore, the communities have the land ownership that allows them to develop long-term and integrated community and neighborhood policies. Besides, the demonstration and the exemplarity of eco-neighborhoods project is another common element

used by communities to showcase their expertise in sustainable development and report on the project internationally and within their communities. Finally, the high diversity and level of involvement of public and private actors during both the operational phase and the lifetime of these neighborhoods is a common feature that is related to the success of these projects (Kyvelou and Papadopoulos, 2011, Kyvelou and Papadopoulos, 2010).

Table 1 shows the comparison of 16 examples of eco-neighborhoods in Southern Europe that have been either completed or are in the design phase. For the identification of the types of eco-neighborhoods Bioregional One planet living framework has been used as methodological tool (Kyvelou et al., 2012). The table shows that environmental performance issues (such as zero carbon, zero waste, sustainable use of water) are common in the most projects. However, it is clear that sustainable transport is a key field of Mediterranean interest together with health and happiness issues. Besides, there is a focus on aspects that were neglected in the Northern European model, such as land and wildlife as well as culture and heritage (such as San Rocco in Italy and MonteQuinto/Dos Hermanas in Spain) highlighting the importance that natural and cultural heritage have for the euro-Mediterranean area. Nevertheless, the focus on cultural experience as a tool to promote ecodevelopment is also met in other continents. Rizhao (City of sunshine, in China) and Songdo in South Korea with thematic parks/districts are some examples referenced by Joss (Joss, 2011).

Table 1. Comparing eco-neighborhoods in the Euro-Mediterranean area

ONE PLANET LIVING PRINCIPLES	Zero Carbon					Zero Waste		Sustainable Transport			Sustainable Materials Local-Sust. Food		Sustainable Water		Land and Wildlife		Culture and Heritage		Equity and Local Economy		Health and Happiness						
	Solar - panels, wind control orientation	Renewable energy	biomass	Photovoltaic systems	Thermal stations	Waste management	Pedestrian routes	Bicycle network	Green belts	Urban bus lines	Covered parking	Sustainable materials	Local and sustainable foods	Rainwater storing	Water reutilisation	Water nets	Water devices	Land and wildlife	Connection with historical canities	New cultural centres	Social services	Generation mix	Integrating urban environment	Sports facilities	Public buildings	Kindergartens	Urban parks
Portugal																											
Mata de Sesimbra, Lisbon		•		•		•	•	•	•	•	•	•	•					•	•		•				•		•
Spain																											
Entrenucleus, Seville				•									•														•
Valdespartera, Zaragoza	•	•							•			•	•				•	•		•			•	•			
Logroño Montecorvo, Rioja	•		•												•												
France																											
Andromède quarter, Blagnac			•			•	•	•		•			•	•							•	•			•		•
Ville de Pézenas,Saint Christol			•	•		•	•	•	•			•	•						•		•	•					•
Italy																											
St.Rocco, Faenza				•	•			•	•				•	•					•		•						
Malizia ,SienaCognento				•				•				•		•				•			•					•	
BIOPEP, Modena					•	•	•	•				•					•				•				•		•
Sanpolino quarter, Brescia		•			•		•	•	•	•			•			•		•						•	•	•	•
Parco Ottavi , Reggio Emilia				•	•	•	•	•	•				•	•	•						•			•	•	•	•
Public Buildingsr, Pietrasana				•					•					•	•	•					•			•	•	•	•
Villa Fastiggi, Pesaro		•						•	•	•		•						•			•			•			•
Quartier de la Bolognina								•	•	•									•	•							
Greece																											
Elefsis						•		•				•						•		•							
Iasmos	•	•	•		•		•					•						•									
Aghia Varvara	•	•	•		•							•															•

Source : Kyvelou et al., 2012

The socioeconomic and urban contexts are different in each case showing that there is no common profile to serve as a basis for the creation of an eco-neighborhood. The main findings from the Euro-Mediterranean area show that they seem to prefix social, economic and governance issues and less attention is paid to environmental performance at least from the point

of view of their initial definition and specification. They are not merely expressions of integration of sustainable development in city planning or products integrating new technologies and alternative energy resources (Kyvelou et al., 2012). Instead, the high degree of diversity that characterizes the Mediterranean cities is often associated with local aspects of strategic spatial planning in which territorial management has a predominant role. There are constraints in their implementation and a relative delay.

2.2 Planning eco-neighborhoods in Greece: constraints and perspectives

To date, the only integrated residential projects that are based on the integration of sustainability principles and environmental performance and are part of a central action plan have been developed by the Greek Workers' Housing Organization. The Workers' Housing Organization was the main public body responsible for housing workers and lower social classes until 2012 (Georgiadou, 2010). Under his jurisdiction, the innovative eco-district -named "Solar Village"- was built in the 1990s in Pefki, a suburb in Northern Attica. Nowadays, there are many problems concerning the environmental performance of the "Solar Village" due to lack of maintenance of passive and energy systems and low degree of cooperation between the tenants and the stakeholders. Besides, the Elefsis Project regarding the construction of 88 housing units in the city of Elefsina in West Attica was carried out in order to upgrade in environmental and social terms this part of the city. Last, Iasmos Project concerning a pilot social housing project in Northern Greece (Rodopi) has been designed by Workers' Housing Organization having as a central pillar the consultation between the various stakeholders. However, it was not implemented, proving that eco-neighborhood ideas are still immature in Greece (Kyvelou et al., 2012).

There are many barriers with regard to the planning and implementation of eco-neighborhood projects in the country. Since, currently, affordable housing policies have weakened due to the austerity measures, eco-neighborhood projects need to be unassociated with social estate policy and relate to real estate prospects through the activation of private initiative in cooperation with local and regional authorities and non-governmental organisations. Besides, the lack of guaranteed financing, especially in the era of economic recession is a hurdle needed to be jumped, along with bureaucracy that is related to planning issues. Finally, concerning territorial management, there is difficulty in setting up engagement strategies that would bring together different stakeholders (such as municipal authorities, land owners, property developers, Greek utilities) assigning them at the same time distinct roles (Georgiadou, 2010).

3. Converting the brownfield of the port-industrial zone of Keratsini- Drapetsona into an eco-neighborhood

3.1 Area Profile

The former port-industrial zone of Keratsini-Drapetsona is a wide coastal area in the Municipality of Keratsini-Drapetsona that is located between the passenger and commercial port of Piraeus (Figure 1). This area, which in the past was a major industrial area for the Piraeus region, is currently inactive industrially and therefore, in economic and social terms. Unemployment has escalated and significant environmental degradation problems have been arisen. Nowadays it is a brownfield near the sea that obstructs the access of the citizens in the waterfront (Strategic Plan of the Municipality Keratsini-Drapetsona, 2015).

The emergence of this port-industrial zone was interconnected with the incoming wave of industrial workers (Armenian and immigrants from the Dodecanese islands) that settled in Keratsini as well as the inflow of refugees that arrived in the country after the Asia Minor

catastrophe and settled mostly in Drapetsona. In particular, Drapetsona was converted into a 'spontaneous' (self-made) refugee settlement with low-quality dwelling structures (usually wooden shacks, even tents). Large industrial and harbor establishments had been gradually settled in the coastal zone and formulated a boundary -a 'concrete' industrial block of 3km length between the residential areas and the sea. Since 1930 it has gradually been converted into a working class neighborhood with an intense political and ideological orientation. After the World War II new homeless people have been moved towards Drapetsona and settled expanding the slum area.

In short, urban development in Drapetsona and Keratsini started at the beginning of the 20th century and is closely related to the port of Piraeus and the industrial development of the greater area (Georgiadou, 2010, Strategic Plan of the Municipality Keratsini-Drapetsona, 2015).

Figure 1. The former port-industrial zone of Keratsini- Drapetsona.



However, in the mid 1970s most of the factories close down or moved to other areas, aligning with the de-industrialization trends that dominate in Europe. Since the early 1990s the emblematic Fertilizers Factory, which had 9.000 employees in the 1960s, gradually reduced its labor force and turns off definitely in 2000. In 2003 the largest part of the complex had been demolished, along with most industrial buildings. Since then, the area has been abandoned (Figures 2a and 2b) (Mourgou et al.2017).

Being the last remaining free area in the waterfront, this former port-industrial zone is a brownfield that struggles for livability. It is a site of vital importance for the western Piraeus as well as the Municipality of Keratsini-Drapetsona. Even though the discussion for this area's regeneration has set off since 1979 without any results, currently, it is programmed as a strategic intervention area for the qualitative upgrading of both western Piraeus and the municipality of Keratsini-Drapetsona capitalizing its location next to the sea, its wide waterfront as well as its significant historical and cultural background (Strategic Plan of the Municipality Keratsini-Drapetsona, 2015).

Figures 2a and 2b. The area that was occupied by the old Fertilizers Factory: before and after the demolition of its largest part.



Taking into consideration the concept of eco-neighborhood, the paper examines the ways in which the port-industrial zone of Drapetsona-Keratsini could be converted into an eco-neighborhood making the most of the reconnection of cultural and natural heritage and mobilizing public-private cooperation.

3.2 Key elements of cultural heritage, both tangible and intangible

The port-industrial zone of Keratsini-Drapetsona has a strong historical background. Urban development had been identified with the inflow of refugees fleeing into the country in the aftermath of the Asia Minor Catastrophe, and later on, with the incoming wave of industrial workers.

In the beginning of the 20th century different social strata such as refugees, working class people, internal migrants mainly from the islands as well as groups of marginal people coexisted in Drapetsona area resulting in the formulation of a specific local identity. An essential feature of this identity was the birth of the forbidden popular song -well known as 'rebetiko'- in 1920s. Rebetiko songs were reflected the various problems of the area along with the social and political scene of the era (living in popular neighborhoods, working class strata, environmental degradation, political assertions) (Mourgou et al., 2017). Later on, Drapetsona had become the epicenter of civil war. Its population was enthusiastic supporters of the left. The prison Vourla, located in the waterfront area, was well known for the breakout of communists but it was demolished. Apart from rebetiko and other popular songs, many references of Keratsini and Drapetsona had been in various novels that were catching the spirit of the city.

The industrial memory is strong since the former industrial buildings act as landmarks. The part of the Complex of Fertilizers and Chemical Products in Drapetsona that has not been demolished

has been characterized as modern monument by the Ministry of Culture (Gaz 1417/B/2002). Its most outstanding feature is the tall chimney that dominates in the brownfield.

In the surrounding area there are other historical places and monuments, such as St. George Hill, Balatzian Baths (Keratsini) and Hetionia Tower (Drapetsona). Furthermore, the Mount Aigaleo that is the physical boundary of the urban development is characterized since 1969 as a place of special protection, whereas the sea area in the bay Abelakia and Salamina consists an archaeological site.

For many years, people claimed the right for this zone to be part of the city. Within this context, the Municipality of Keratsini-Drapetsona organizes successfully the cultural event “Festival in the Sea – Fertilizer” for first time in 2017.

Nowadays, almost a century later, the remnants of this industrial zone remind the history of the place, showing the way to the future with respect to the past. In short, this brownfield is a place of historical memory that in combination with its wide waterfront has a hyper local importance. Despite the environmental degradation caused by the air and sea pollution, the cultural background and the potential of natural environment especially at the land-sea interface, give the area added value and sets off the issue of its urban regeneration.

3.3 Stakeholders and ownership issues

The port-industrial zone under study has a total surface of 66 hectares. However, it is divided in nine sections which include both private and under public control estates that belong to seven different land owners (Table 2). The surface of private estates is 408 ha corresponds almost to the 66% of the total surface. These estates belong to oil and cement companies (Mobil, BP, Aget Heracles) and mostly to Protypos Ktimatiki-Touristiki S.A. (affiliated to the National Bank of Greece), which has under its ownership the largest part of the zone (241ha). The estates that are under public control expand to 211ha that account for around 34% of the total zone. The Piraeus Port Authority, the Municipality of Drapetsona-Keratsini and the Hellenic State are the public bodies that are responsible for the management of these estates (Mourgou et al., 2017).

Table 2. Ratio of private and under public control estates

<i>Estates under public control</i>	210,75	34,08%
Municipality of Keratsini-Drapetsona	68,35	11,05%
Piraeus Port Authority	89,65	14,50%
Hellenic State	52,75	8,53%
<i>Private Estates</i>	407,59	65,92%
Protypos Ktimatiki S.A. (National Bank)	241,75	39,10%
Mobil	33,7	5,45%
Aget Heracles	94,05	15,21%
BP	38,09	6,16%
Total area	618,34	100%

Source : Bellavilas, 2015

Recently, a significant part of the enacted Terrestrial Piraeus Port Zone has been provided by the Government for use and exploitation to the Municipality of Keratsini-Drapetsona (Gaz 1603/B/9.5.2018) for fifty years. The grant concerns an area of a total surface 56.975 square

meters, satisfying a long and constant demand of the local communities for free access to the coastal zone. At the same time, the Municipality has an upgraded role concerning the exploitation of the zone and the definition of its strategic vision.

Nevertheless, this complicated ownership status reflects the diversity of the aspects that the various stakeholders have for the desired activities and the land uses with reference to the exploitation of the zone. Therefore, apart from the cooperation that is difficult to be achieved between the stakeholders, conflicts with regard to land uses hamper the zone's regeneration.

3.4 The Strategic spatial planning framework

The former port-industrial zone of Keratsini-Drapetsona is enacted by the reformed Strategic Spatial Plan of Attica (L. 4277/2014) as an area of Urban Regeneration and Special Intervention of Metropolitan character. The main objectives are to ensure a high-quality environment with regard to technical and social infrastructure, basic functions (such as recreation and urban green) and access to the waterfront, which will address the needs of both the local society and the western Piraeus. More specifically, the urban regeneration-development of the area is based on the following directions:

- a) The formulation of a hyper-local pole for the upgrading of western Piraeus, where the permitted land uses and activities concern culture, education, health, sport, green spaces and recreation.
- b) Ensure significant open spaces for recreation and other collective activities that will contribute to the restoration of the adjacent hinterland and the coastal area mainly through the formulation of an expanded green park. The maximum building factor is set at 0,15 of the total area.
- c) The protection and promotion of the industrial archeology monuments through their re-use with compatible activities related to the history, culture and traditions of the greater area.

The above-mentioned directions have been formulated in 2015 after the reformation of Strategic Spatial Plan of Attica in order to exclude some of the previous enacted land uses such as industry, manufacturing and activities related to port function, which were considered that downgrade the environment and undermine the urban sustainability of the area. Additionally, residential areas have been excluded, despite the fact that residential development was a target of Prototypos Ktimatiki S.A. which is the largest owner.

Finally, it is worth noting that the strategic guidelines have not yet been applied, since currently the area is "outside of the city plan". This means that it lacks of the planning tools that could activate the regeneration of the area.

4. Discussing the regeneration of the port-industrial zone and its transformation to an urban eco-neighborhood

Brownfields such as the Drapetsona port-industrial zone could be regenerated making use of the concept of eco-neighborhood. This does encompass not only the sustainability principles, both in terms of environmental upgrading and social and economic revitalization, but is also based on the high involvement and participation of various actors from public and private sectors (such as developers, policy-makers, landlords, architects, associations, technical services). The latter is a crucial element for overcoming problems related to financing and investment, bureaucracy and inefficient management, that are all common in Greece.

Besides, in Greece the development of urban eco-neighborhoods and, in general, any integrated urban regeneration requires a series of institutional interventions in order to overcome the fragmentation of land property and the peculiarities of the regulatory planning system. However, the recent reformation of the spatial planning system (law 4447/2016) gives the opportunity to use the tool of “Special Spatial Plan” (EXS, art.8 of law 4447/2016) in order to implement a new model of eco-neighborhood. According to the law, this Special Spatial Plan may be initiated by the private sector as well. This allows to re-plan this zone from the beginning under the condition that the identity of the greater area is not adversely affected and with respect to the natural and cultural heritage.

The achievement of the consensus of all stakeholders is an issue of high importance so that the project may be implemented. The development of a strategic vision which will satisfy both stakeholders and the local society and at the same time will formulate a strong local identity, is crucial. Within this context, the possibility of residential development is greatly recommended, almost imposed. Residential use is totally compatible with the programmed activities of culture and recreation and at the same time allows real estate development. This may ensure financing from private funds and minimize the risk of investment for the private sector. Besides, political support is necessary for the approval of the plan. Finally, the implementation of the project requires the enactment of a development agency, which will be consisted of all stakeholders, both private and public, including local authorities. The establishment of such an agency may successfully activate the development process.

Summing up, we conclude that the development of eco-neighborhoods in Greece may be structured around the following key strategic axes:

- ✓ Integrate the concept of place-based development founded on the need of place making and urban regeneration;
- ✓ Reclaim the local identity of the area with reference to the natural (land-sea interface) and cultural heritage in the shaping of place-making identity;
- ✓ Reconnect and promote natural and cultural heritage to create strong cultural branding;
- ✓ Identify commercialization opportunities for the private sector – create a real estate prospect, including affordable housing, thus avoiding “green gentrification” effects;
- ✓ Ensure public-private-people cooperation and establish public-private-people partnerships;
- ✓ Stimulate local economy dynamics.

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