THE ANALYSIS OF SPECIALIZED PROFILE GREEN SPACES FROM INSIDE IASI

ANALIZA SITUAȚIEI SPAȚIILOR VERZI CU PROFIL SPECIALIZAT DIN MUNICIPIUL IAŞI

SANDU TATIANA [1], ALINA TROFIN[1]
CARMEN LAMBAN[2], R.BERNARDIS[1]
[1]University of Agricultural Sciences and Veterinary Medicine Iaşi
[2]Research and Development Station for Fruit Tree Growing Iasi

Abstract. *The actual surface of Iasi is 3770 ha, from which the cultivated green spaces (with unlimited, limited or specialized profile access) occupy approximately 827 ha (22%). The specialized profile green spaces occupy 294,1 ha, from which 103,8 ha belong to the Botanical Garden, 2,3 ha are occupied by the Zoological Garden, 13,6 ha for sport parks, 113,8 ha for cemeteries, 39,4 ha are plantations for sustaining the slopes, 12 ha are occupied by tree nurseries and 9,2 ha are protection plantations for the water sources. This paper proposes to analyze, from the structural and functional point of view, these surfaces of specialized profile green spaces, observing and emphasizing their positive and negative aspects. The favorable combination of green spaces with constructed perimeters, with the main transportation lines, industrial platforms but also with residential areas, yet having a high potential of expanding the green spaces represents an appreciated solution for recovering Iasi's previous charm.*

Rezumat. *Suprafața actuală a municipiului Iasi este de 3770 ha, din care, spațiile verzi plantate (cu acces nelimitat, cu acces limitat şi cu profil specializat) ocupă cca. 827 ha (22%). Spațiile verzi cu profil specializat dețin 294,1 ha, din care 103,8 ha aparțin Grădinii Botanice, 2,3 ha ocupate de Grădina Zoologică, 13,6 ha pentru parcuri sportive, 113, 8 ha sunt ocupate de cimitire, 39,4 ha sunt plantații de consolidare a versanților, 12 ha sunt ocupate de pepiniere iar 9,2 ha sunt plantații de protecție a surselor de apă. Lucrarea îşi propune să analizeze din punct de vedere funcțional şi structural aceste suprafețe de spații verzi cu profil specializat, urmărind evidențierea aspectelor pozitive şi negative ale acestora. Îmbinarea fericită a spațiilor verzi cu perimetrele construite, cu principalele fluxuri de transport, platforme industriale dar şi zone rezidențiale, având potențialul încă ridicat de extindere a spațiilor verzi, reprezintă o soluție apreciată pentru regăsirea farmecului de odinioară al municipiului Iasi.*

Key words: green spaces, gardens, parks, specialized profile.

Into the specialized profile green spaces' category enter: botanical gardens, dendrology parks, rose gardens, zoological gardens and parks, exhibit area parks, cemeteries green spaces, plantations for slope support, nurseries and protection plantations for the water sources.

In this paper we want to present as detailed as possible the situation of this category of specialized profile green spaces, analyzed from a structural and functional point of view in order to emphasize their positive and negative aspects.

MATERIAL AND METHOD

The analysis of the territory around Iasi was conducted between May 2006-October 2007, by visual monitoring the actual status of the specialized profile green spaces areas from Iasi and the surroundings; more complex observations were made in cooperation with the specialists from Tree Research and Development Center Iasi, as part of a larger project.

The acquired and processed data were used for structuring the results regarding the vegetal carpet's composition, its health status and its placement into the Iasi's close perimeter in order to draw some conclusions in what concerns the areas with specialized profile green spaces and their actual status, pieces of nature altered enough by the human activity in the studied area.

RESULTS AND DISCUSSIONS

In the administrative territory of Iasi, the function of specialized profile green space is assured by the following green spaces:

1. Botanical Garden Iasi. Is a multiple function institution (didactic, scientific, cultural-recreational, hygienically-sanitary and for preserving the spontaneous plant species genetic stock) with a surface of 103.80 ha, representing an important green area in the northwestern side of Iasi, with an obvious role of support and protection against erosion on a soil otherwise liable to slip, also with a role of protecting the mineral water sources (in present intensively exploited) and climate protection against strong winds and excessive temperature.

This objective is always present on the list of the visitors coming to Iasi, having a benefic influence, of ecological education for everybody, becoming a reference place for this town. Also, the agreement function of this green space increased lately.

In essence, Botanical Garden Iasi represents an artificial ecosystem but with naturalization trends, in which the biotope (soil conditions, microclimate) is systematically improving and the biocenosis (vegetal and animal communities) are constantly enriching. (Leocov, M., Lupu, I.A., 1988).

The Botanical Garden's mixed vegetal carpet is herbaceous in proportion of 35% and ligneous in proportion of 65%, the ligneous species having an average height of approximately 15 m. In its ensemble, this botanical garden's vegetation induces to the visitor a sedative – relaxing influence against the every day stress, but also has some exciting – soliciting influences.

The multitude of landscapes, interchangeable, has a strong comforting action on the visitor through variations of shapes and volumes, through colors and scents.

Botanical Garden Iasi represents a semi natural ecosystem but also an important green space in the northwestern side of Iasi, highly cherished by the locals and not only.

2. Sport parks. The sport parks from inside Iasi occupy a cumulated surface of 13.6 ha, that is approximately 1.7 % from the sum of town's green spaces. The biggest part of this surface (12.3 ha) is herbaceous, asphalted or covered with cinder and the rest of it (1.3 ha) is planted as perimeter green curtains. These curtains' composition contains: 0.3 ha – resin trees, 0.7 ha – deciduous trees and 0.3 ha deciduous shrubs. The trees / shrubs ratio is 0.77 / 0.23 and the deciduous / resin trees ratio is 0.7 / 0.3. The most representative sport parks from inside Iasi are: „Emil Alexandrescu" City Stadium, „Constructorul" Stadium, „Tineretului" Stadium, „Penicilina" Stadium and „Tepro" Stadium. From all these, the most important is „Emil Alexandrescu" City Stadium, with a surface of 5.67 ha, from which the perimeter shrub green curtain occupies 1.08 ha, made of deciduous trees in proportion of 90%. The most valuable existing specie in this perimeter is the black American nut tree (*Juglans nigra*) which is perfectly accommodated here and realized considerable growths. The estimated necessary capacity for a city like Iasi is of approximately 30 ha of sport parks, noticing thus an existing deficit of almost 16 ha, which, unfortunately, underlines extremely well the increased lack of interest of the modern society for sports and related activities.

3. Zoological Garden. Placed at approximately 2.5 km south from the town border, into the frame of a separate body and with a surface of almost 2.3ha, the zoological garden does not accomplish the function it was created for. Thus we will mention the green space inside, with a surface of 1.70 ha, occupied by ligneous plants in the following proportions: 1.20 ha - deciduous trees and 0.50 ha - deciduous shrubs.

4. Cemeteries green spaces. The conducted studies show that in Iasi there was once an old Israeli cemetery in Ciurchi zone (Cihodaru, C., Platon Gh. şi col., 1980), and also a Turkish cemetery in Sărărie zone (mentioned in old documents from 1735). The cemeteries functioning today are: Eternitate (27 ha) Sf. Petru and Pavel - Eternitate extension (22 ha), Păcurari and Sf. Treime (26 ha), Sf. Vasile (8 ha), Buna Vestire (10 ha), Evreiesc (14 ha), Bucium (2.5 ha), Socola – Neuropsychiatry Hospital (0.5 ha), Copou - Sf. Atanasie and Chiril (1.5 ha). The sum of cemeteries surfaces from Iasi is of 113.8 ha.

The cemeteries' ligneous vegetation represents 11.40 ha from which: 2.30ha – resin trees, 4.10 ha - deciduous trees, 3.20 ha resin shrubs and 2.70 ha deciduous shrubs. The trees/shrubs ratio is 0.56 / 0.44, and the deciduous / resin species ratio is 0.60 / 0.40. The actual cemetery surface administered by Iasi council (app. 114 ha) covers the necessary for a town of Iasi's size, extensions being unnecessary.

5. Plantations for land support. It is well-known the fact that Iasi is placed in a region with lands liable to slip, because of the clay-marl under layer from the Sarmatia age and of the aquifer layers extremely uneven spread. (Barbu,

N., Ungureanu Al. şi col., 1987). These studies concluded that inside Iasi's actual perimeter there were many land slipping episodes through time, though the actual situation is relatively good, the active slipping lands being restrained as surface, in favor of the stabilized or going to be stabilized ones. As an effect of ligneous plantations for supporting the slopes we can admit that the old slipping episodes stopped on the western side of „La Cosari" Hill and on Manta Roşie Valley. Another effect of plantations for supporting the slopes is the action for stabilizing the land slipping areas from Cetățuia, Galata and Ciric.

Also, through the conducted stabilizing measurement complex, including trees and shrubs plantations, we consider solved the problem of land slipping from Râpa Galbenă and Groapa lui Vodă (on the left bank of Cârlig creek). Inside Iasi city, the plantations for supporting the lands liable to slip or to form torrents are spread on 39.4 ha, including 4 ha resin trees (*Pinus sylvestris* and *Pinus nigra*), 27.4 ha deciduous trees (mainly *Robinia pseudacacia*) and 8 ha deciduous shrubs. The trees / shrubs ratio is 0.8 / 0.2 and the deciduous / resin species ratio is 0.9 / 0.2.

We need to mention the following aspects: in time, the role of ligneous plantations proved benefic in supporting the unstable lands; the land surface with supporting role is not sufficient in Iasi city, therefore there must be studied the five zones affected by slipping during 1969 - 1974 in order to establish a program of prevention measures for the close future.

6. Tree nurseries. The nurseries in Iasi show a deficit, the only town nursery is the one from „Moara de Vânt" with a surface of approximately 12 ha which includes, in the cultivated space: 1.2 ha with resin trees, 6 ha with deciduous trees (including seedlings selection facilities) 1.2 ha resin shrubs and 3.6 ha deciduous shrubs. The trees / shrubs ratio is 0.6 / 0.4 and the deciduous / resin species ratio is 0.8 / 0.2.

This nursery can't cover, quantitative and qualitative, the local demands for tree cultivar material; there are also 5 private nurseries, but most of them are in fact importers, not producers. The City Public Service Iasi searched possibilities for establishing another town nursery, the most probable location being outside town's perimeter, nearby the former Heavy Hardware Combine.

According to standards, the nursery necessary for a town like Iasi is of 30 ha, that leaving a deficit of almost 18 ha.

7. Water sources protection plantations. This category includes the planted spaces surrounding the water reservoirs Păcurari, Aurora, R.A.J.A.C. Company, I.C.H.V., Şorogari etc., the occupied surface being of 9.20 ha. The biggest part of this surface is the green space from the R.A.J.A.C. Company, of almost 1 ha, which was once a part of „ Ghica Vodă Promenade „ from Copou. In present, there are 43 taxons, from which 21% are resin species and 79% are deciduous species, and the percentages of trees and shrubs are: 58% trees - 42% shrubs.

In ensemble, the green spaces for water sources protection occupy a surface of 8.2 ha with ligneous plants and 1 ha with herbaceous species. It is necessary to

maintain and may be extend this surface once the existing reservoir are expanding or new ones appear.

For„ Chirița Lake" water source protection is necessary to assure a perimeter plantation of minimum 500 m wide, what means a planted surface of almost 240 ha.

The conducted analysis on these categories of green spaces from inside Iasi emphasizes the fact that for all green space categories the total necessary capacity is of 1684 ha, noticing a deficit of 857 ha, bigger than the existing green space surface which covers 827 ha.

It is imperatively necessary to establish other green spaces inside the Iasi city borders, therefore the local City Council approved „The National Program for improving the environment quality by implementing green spaces inside the urban area", initiated in 2007. Thus, the local municipalities in Iasi proposed creating four new green spaces, three of the proposed zones being situated in Dacia zone and one in Țigarete zone. A financial contract is desirable to be accessed: "*Environmental fund for the national program of improving the environment quality by establishing new green spaces*".

CONCLUSIONS

1. The paper realized an analysis of the specialized profile green spaces from inside Iasi, represented by: Botanical Garden, former Zoological Garden, cemeteries green spaces, plantations for land support, tree nurseries and green spaces for water sources protection.

2. Botanical Garden Iasi is „the happiest" example of specialized profile green space, representing an important green area in the northwestern side of Iasi, with an obvious role of support and protection against erosion on a soil otherwise liable to slip, with an obvious role of support and protection against erosion on a soil otherwise liable to slip, also with a role of protecting the mineral water sources (in present intensively exploited) and climate protection against strong winds and excessive temperature.

3. The estimated necessary capacity for a city like Iasi is of approximately 30 ha of sport parks, noticing thus an existing deficit of almost 16 ha, which, unfortunately, underlines extremely well the increased lack of interest of the modern society for sports and related activities.

4. The actual cemetery surface administered by Iasi council (app. 114 ha) covers the necessary for a town of Iasi's size, extensions being unnecessary.

5. The conducted studies underlined the fact that there is a deficit of plantations for slope support of approximately 21 ha, the existing land surfaces with a support role inside Iasi being not sufficient, therefore there must be studied the five zones affected by slipping during 1969 - 1974 in order to establish a program of prevention measures for the close future.

6. According to standards, the nursery necessary for a town like Iasi is of 30 ha, that leaving a deficit of almost 18 ha.

7. In what regards water sources protection, it is the same deficiency; in this case the deficit is of almost 11 ha.

8. The conducted analysis on these categories of green spaces from inside Iasi emphasizes the fact that for all green space categories the total necessary capacity is of 1684 ha, noticing a deficit of 857 ha, bigger than the existing green space surface which covers 827 ha.

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