CONSIDERATIONS ON STATUS OF GREEN SPACES IN NORTHERN PART OF IAŞI CITY

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Abstract

The green spaces within cities are very important due to their multiple functions concerning the environemental quality and the perception of life quality.
The aims of study are to highlight the evolution of the area occupied by green spaces located in the northern city; the classified categories; the disparities in their spatial distribution and their landscaping.
To achieve this study, we used maps from different periods (topographical plans, 1964 edition, and 2008 satellite images) and some database. To proccess and mapping the recoderd data, ArcGIS software were used. The results highlight the decreasing of green spaces areas and the disparities between the northern and western part of the city are releated to the surface, landscaping and type of green spaces.
The curent situation of the green spaces in the studied area put into evidence the well maintained and planning status and variable functionality of those.

Key words: green spaces, evolution, functionality, built area, planning.

Iasi is attested by more than 600 years with a variable territorial development in time and space, the urbanization process has led to changing in land use so the built spaces has been expanded over green areas, considerably reducing their areas. The importance of green spaces is due to their multiple functions and benefits of both landscape and human health, the green spaces being often interposed between artificial and natural landscape that human activities take place in a pleasant and healthy environment. Currently, legislation provides for a minimum area of green space per inhabitant in urban areas, particularly due to high population concentration in a fairly narrow space. According to the law, green spaces is defined like "green zone belongs to the cities, defined as a network or a mosaic of semi-natural ecosystems, which is specifically determined by vegetation (wood, tree, shrubs, and herbaceous flowery)" (Law 24 / 2007).

Northern part of Iasi is the area where the study was done and have been chosen because it is an area where green spaces have varied functionality and are well arranged, knowing that in Iasi city the green areas are concentrated mainly in north and south of the city, the other areas being disadvantaged from this point of view, a population migration from these areas to other greater green spaces being registered (Barbu, N., Ungureanu, A., 1987).

MATERIAL AND METHOD

For the study have been used: cartographic materials like 1:5000 topographic plans 1964 edition and orthophotoplan 2008 edition. Using these, the evolution of area occupied by green spaces have been determined as well as the identification and classification of present green spaces have been established, according to law. Also, were used some databases concerning to green space planning administered by local authorities, inventory of parks and dendrological monuments. To validate the information have been made some tests in the field. Data recorded was processed and mapped using ArcGIS software (Yang, M., 2003).

RESULTS AND DISCUSSIONS

The study area covers 1279 ha, representing 16% of the Iasi total built, having different uses. The public green spaces represent 19% from total area (242 ha) being divided into several categories, in accordance with legislation (*fig. 1*).

According to the Law no. 24/2007 regarding the regulation and management of green spaces in built-up settlements, republished in 2009, the study area have identified the following categories (*fig.2*):

a) public green spaces with unlimited access: parks, gardens, squares, strips planted;

b) public green spaces with specialized use:

- botanical and zoological gardens, outdoor museums, galery parks, outdoor recreational and circus trained animals areas;
- public facilities: nurseries, kindergartens, schools, hospitals or social protection institutions, religious buildings, cemeteries;
- buildings and parks for sports performance;

c) protection corridor from technical infrastructure - the Pacurari protective band has the role to protect the neighborhood of railway traffic noise in the area.

d) recreational forest - Ţicău Forest.

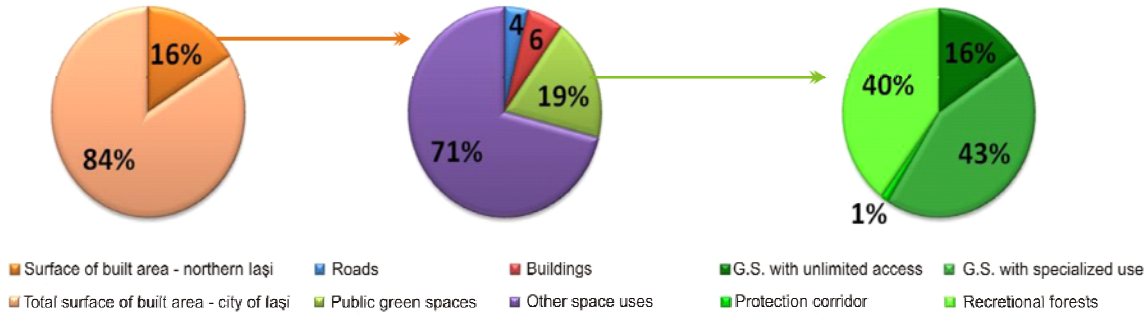

Figure 1 **Utilisation of surface of built area and types of green spaces**

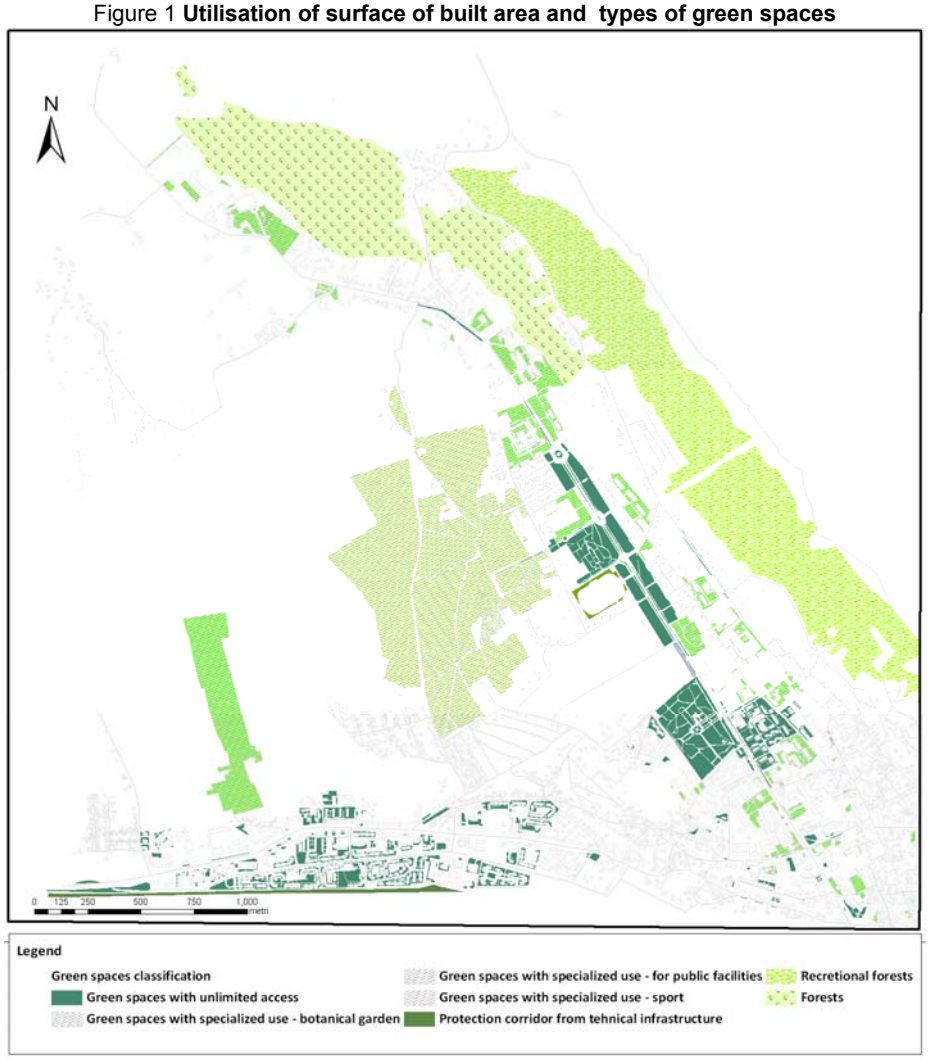

Figure 2 **Green spaces classification – according to the law 24 / 2007**

In these, a special place is occupied by dendrological parks, constituting "plantations carried around some properties representing heritage values by the rarity of the native or exotic trees and shrubs species that they contain. Many of these have been made by landscape architects, and have a real artistic value. " They have a special status and cover a large area (111.1 ha)

including 11 parks, in which the most important area of 72.25 ha belongs to the Botanical Garden, 5.4 hectares to Exposition Park, 10.11 ha to Copou Park, 2 ha to Agricultural University, 0.6 ha to "Titu Maiorescu"park, 2 ha to Târguşor campus, 7.61 ha to „Vasile Lupu" college teaching, 1.47 ha to the Observatory, 1 ha APAVITAL Company, 0.5 ha to TVR Iasi, 8.24 ha along Alley "Grigore Ghica Voda".

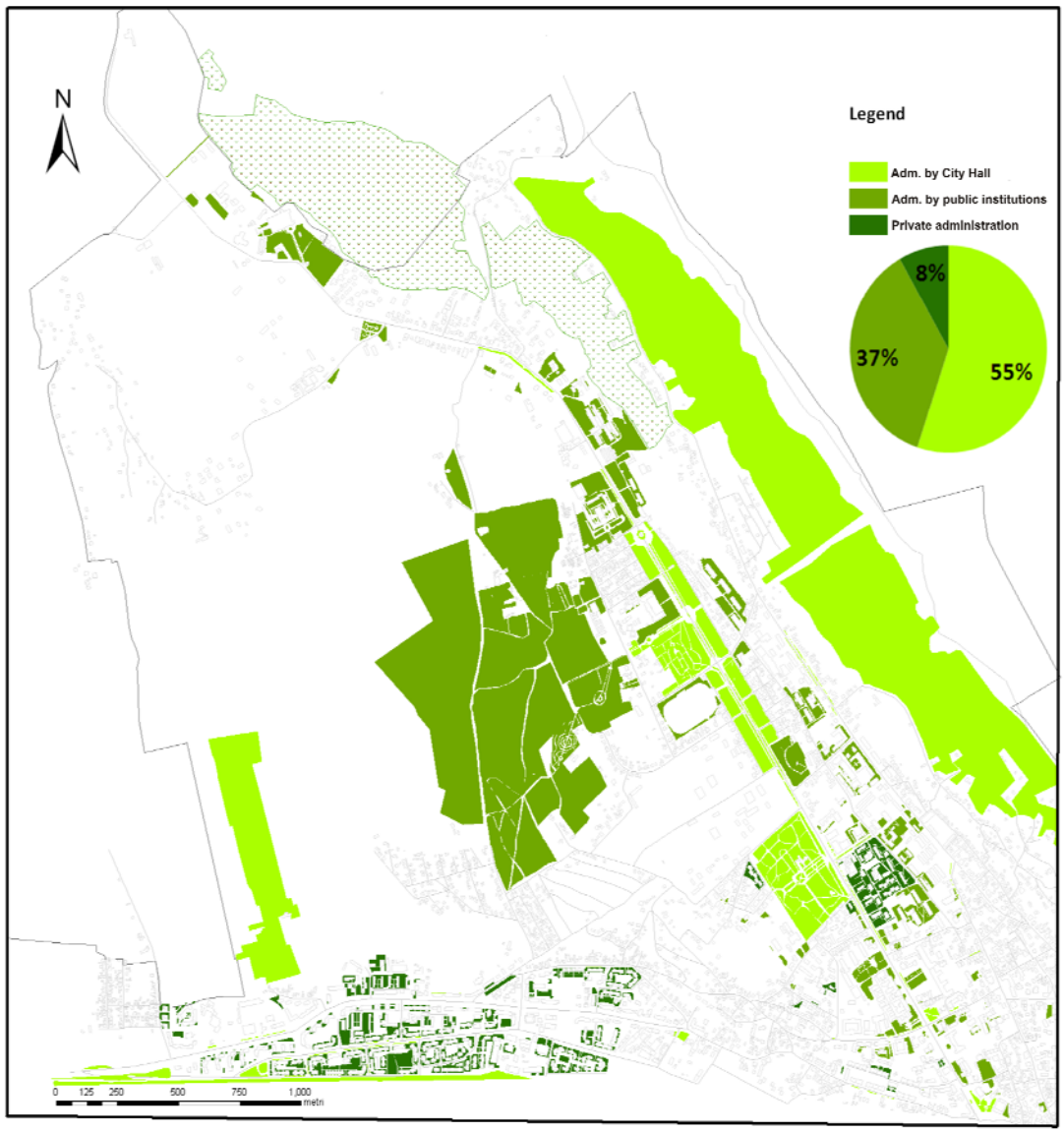

Figure 3 **Green spaces classification by administration**

In their inside the most valuable trees monuments are located, necessitating special rules and restrictions (Nicoară, M., Bohmer, E., 2010).

Depending on those responsible for the administration and maintenance, green spaces are divided into three categories:

- administrated by local authority (55%) including dendrological parks - 70%, squares - 1%, street alignments - 14%, parks - 7%, other (cemeteries, protection corridor, etc.) - 8%;
- administrated by public institutions around which they are or serve (37%), including Botanical Gardens and other important dendrological parks (Old Botanical Garden, Exposition Park, Copou Garden, etc.) and - private administration (8%), including green areas around the condominium type buildings (*fig. 3*).

Figure 4 **Evolution of green areas between 1964 - 2008**

According to the Emergency Ordinance no. 114/2007 of environmental protection, the local authorities are obliged to assure from the built area minimum 20 m^2/inhabitant of green space until December 31, 2010 and minimum 26 m^2 /inhabitant, until December 31, 2013. Currently, Iasi city respects this limit, the total area of green areas being of 660 ha, each inhabitant having 20.6 sqm of green space. From this point of view residents from northern part of Iasi, which represents about 11% of total city population benefits of 75.7 sqm per inhabitant, exceeding the city average. It can say that the green spaces, especially those from Copou area presents a significant attraction for all citizens, especially for those from less green space areas, predominantly residential blocks of flats, conforming the landscape importance in the city. (Stoleriu, O. 2008).

Evolution of green areas between 1964 - 2008 present different trends: the decreasing about 10% of forest zone (26.8 ha), through extending residential area, thereby endangering the functions of created ecosystem, while the area occupied by public green spaces increased with 10% (27.3 ha) through the Botanical Garden expansion, as well as due to condominium buildings, built after 1964, even each of them have small green spaces (*fig.4*).

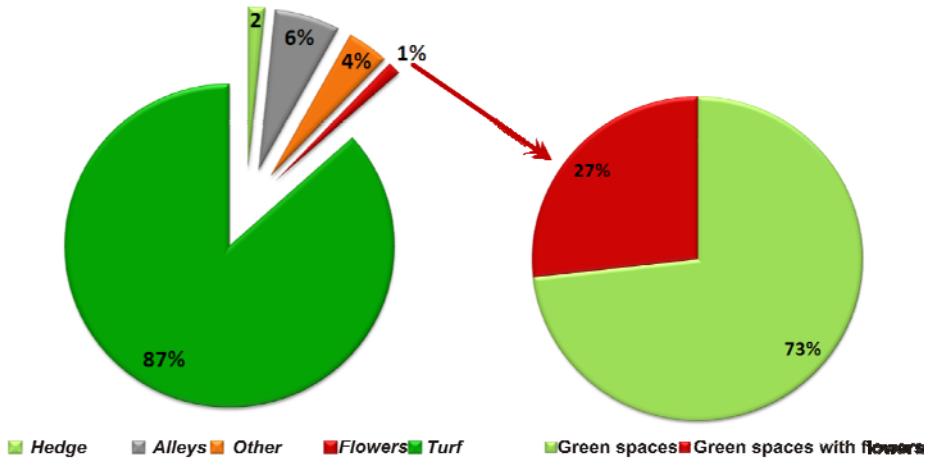

Figure 5 **Maintenance of green spaces administrated by local authorities**

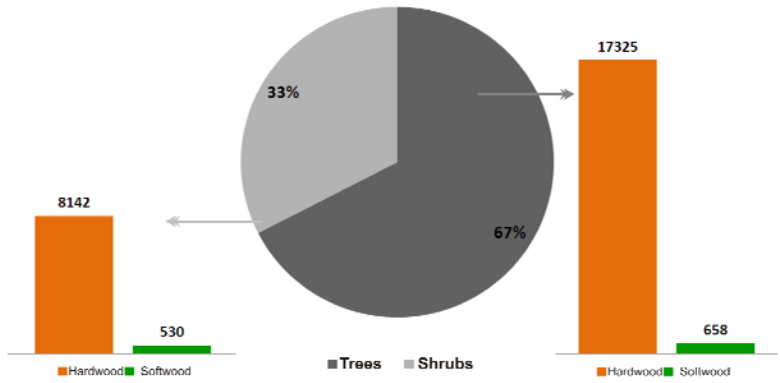

Figure 6 **Classification of arboreal vegetation of green spaces administrated by local authorities**

However, many green spaces especially the public's are invaded by children's playgrounds and small terraces. A well-known example is the Exposition Park where has been arranged the playground Children's World, and some commercial units. 37 ha of green spaces administrated by local authorities are well maintained and arranged. It is noticed the presence of turf at a rate of 87%, 6% of alleys, 4% for different uses (turrets, fountains, etc.), 2% of hedges, used for the delineation of areas with reduced functionality and 1% of flowers, planted only on 27% from all green spaces, the largest area with flowers being concentrated in the central part of main parks (*fig. 5*).

In the field of study has been noticed, also arboreal vegetation, predominantly hardwood species, specific for the forest steppe vegetation followed by softwood species (*fig. 6*).

CONCLUSIONS

The analysis performed in the present study highlighted the following.

Green spaces from the northern part of the Iasi city are divided in different categories providing a high variety.

The most important green spaces including dendrological parks has been located in Copou area, concentrating major vegetation elements, with a particular importance in shaping the personality of the city landscape.

The best maintained and equipped green spaces are administrated by local authorities due to their endowments like: turrets, fountains, benches, waste bins, paved and asphalted alleys, annually cleaning trees etc.

The dynamics of green spaces between 1964-2008 put into the evidence the decreasing of forests by 26.8 ha and increasing of green spaces due to the location and expansion of Botanical Garden on the present site.

Now, the EU standards require until 31 december, 2010 20 sqm/capita green areas, the study area has 75.6 sqm/capita, greater then the city average of 20.6 sqm./capita.

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