



## STATUS, PROBLEMS AND TREMDS TO ADDRESS GREEN SPACE IN SKOPJE, MACEDONIA

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### Abstract

The landscape is an essential component of the natural and cultural heritage and sustainable development, especially for balance and harmony between social needs, economic activity and the environment.

Skopje city is the capital the Republic of Macedonia and it is of a great importance for economic and social development of the country. As the largest city in Macedonia is designated as an interesting subject for research opportunities for sustainable development of green areas.

It takes a man to be a specialist to see role of green spaces in cities. The presence of green areas is of great importance to the quality of life in every township.

The main aim of the report is to assess the condition of the green area of Skopje in recent years, to instantiate problems and tendencies to solve the green areas.

### Keywords | Key phrases

Landscape, park, green space, sustainable development, composition

„Green urban system and other settlement is a set of functional - and planned volume - spatially associated parking - urban units (public and serving green areas) within the village and surrounding territories meeting the quantitative parameters and qualitative indicators. Green system with specific natural and anthropogenic conditions provides biologically active part of the living environment of man and his society, the link between individual elements and structural zones of urban organism to its environment and provides ecological and aesthetic environment for various human functions”.

The modern state of green areas is influenced by the lifestyle of today's civilization, the rapid development of industry and the destruction of green space. That is why the existence of green areas is a significant factor and limits the high quality of life in urban environments.

Macedonia is located in the central part of the Balkan Peninsula. According to the territorial organization of the country, Skopje (figure 1) is the capital of the Republic of Macedonia municipal center of the country and it is concentrated political, economic, cultural and educational activities.

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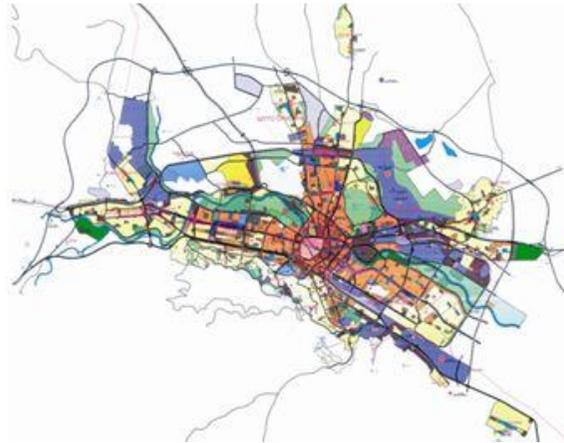


Fig 1. Map of the City of Skopje

The city is situated on the both sides of river Vardar which divides the city into two almost equal parts.

This area is of great importance for Macedonia because of a number of factors:

- Favorable geographical position
- Presence of natural and anthropogenic resources for tourism
- Existence of rich cultural and historical heritage of different eras
- Existence of good infrastructure construction
- Established and built a settlement

The diversity of the relief on the ground has great influence on the development of the capital Skopje. Today, there live almost 500 000 inhabitants, a quote of the population of the state. Over the years a distinctive rapid demographic growth.

By studying the statistics of population, area of Skopje and green areas of the city of Skopje made various grades. General statements in favor of forecasts for future development of green areas:

The city of Skopje is 7088 ha, greenery covering 649.89 ha (green areas for public use, green areas for limited use and green spaces for special use).

- Green space for public use occupies 378.53 ha.
- Green areas for limited use occupy 144.96 ha.
- Green spaces for special use occupy 126.40 ha. These include the zoo nursery, botanical garden cemetery.

With a population of 467.257 inhabitants of Skopje and a total of 649.89 ha of green areas are falling 13.9 m<sup>2</sup> / h.

The territory of Skopje is divided into 10 administrative acts. Today Skopje is characterized by uneven distribution of the elements of green systems.

The data show that most occupy much of the green areas in the municipalities Karposh - 24%, Centre - 12% Kisela voda - 15%, Chair - 11% and Gazi Baba - 12% which is due mainly to the territory of these municipalities distributed mostly in central urban area and the existence of parks. Small green areas take part in Suto Orizary - 1%, Gorce Petrov - 3%, Airport - 7%, Butel - 4%, Saray - 2%, here the reasons are lack of parks, gardens and squares.

With proper shaping of the green system and solve a few basic groups tasks: biological-ecological, recreational and aesthetic.

In the broadest sense echo-biological task of green system was comprised in: improving the microclimate conditions in the urban part, providing good ventilation and air



exchange the western direction; stimulate penetration of mountain air from the south (mountain water) in urban tissue.

Analyzing the current state of the Skopje green system can determine that it does not fully meet the above mentioned tasks. The main reason can be found in low-elective and physical construction of the system, the lack of specific and purposeful arrangement in and around production fields, river courses, and the imperfect structure in terms of autonomous volumes of each element of the green system.

Recreational tasks of the green system in the first place consisting of ever green areas are considered as a medium for entertainment, but fully functioning recreational needs several conditions. The assessment of the current situation shows that the possibilities of green system to address recreational tasks in terms of Skopje are not used fully. This lack stating the following:

- Do not use all opportunities along the Vardar River to organize daily and weekly rest;
- Zaiचेv Hill and Gazi Baba is treated as important centers for recreation;
- Not provided functional and territorial relationship between urban and around town green areas for recreation.

The green systems are resolved and aesthetic objectives. They have significance for the city and should be required in spread the natural framework of the city (fences Mountain Vodno, Skopje Montenegro etc.) The emphasis river Vardar Skopje only natural for granted, in shaping the identification of sectors in the urban landscape through the selection of specific plant species composition and spatial composition, to create comfort and representation in public centers, through various forms of regulation and park furniture.

To avoid a total urbanization of Skopje should address serious attention today and in the future in relation to the development of green areas including:

- Exposure of green lands and landscape and to enhance the role of tourism
- Exploring the role of cultural landscapes appreciated and implement regulations to protect
- Reconstruction of green spaces in order to stop the negative development environment as a whole
- Lying of care and attention to the park memorials appreciated art
- Preserve and protect existing green spaces;
- A ban on the construction of green buildings in areas inconsistent with the main purpose of the park;
- Planting vegetation on all the free spaces in the city;
- Increasing the green areas along rivers;
- Construction of linear green space on the boulevard and streets;
- Performing enrichment activities dendrology composition;
- Construction of new parks and gardens;
- Providing buffer zones around production areas.

To improve the environmental conditions is required:

- Implementation of landscape planting and reclaimed the disturbed areas with appropriate tree and shrub species;
- Enrichment plant species of all elements of the green system in accordance with the environmental requirements to them:

- air quality;
- high summer temperatures and dry air;
- soil moisture and air;
- proper selection of plant species in accordance with the specifications of production processes



- recovery of streets with appropriate species.

The second group of tasks, which also depends on the development of the green system is linked to the demand for funds to improve the performance of planting areas for living, working, recreation.

**Functional system of living.** Habitat in need of fresh air. Therefore, the residential areas should ensure the deepest penetration of the local wind associated with the surrounding mountains. This can be done by wide boulevards, directed radially from the mountains to the city center. Improvement of indicators landscaping in residential zones may be achieved by: increasing the green areas, a forestation of free and low built-up areas, landscaping exempt from production activities in areas residential areas, increase of street and yard landscaping, especially in the set new extensions.

**Functional work system .** Improvement of indicators of improvement in the areas of labor could be achieved through: separation of work areas from residential zones by green protective zones, including plantings in and around industrial sites as part of the urban green system, proper selection of plant species-specific production processes.

**Functional relaxation system.** Improving landscaping in recreational areas associated with meeting the following general conditions: the formation of specialized recreation areas in areas with the highest recreation assessment, but in terms of environmental protection, spatial targeting and positioning of objects the individual subsystems of recreation and consideration of compatibility between them and elements of the green system performing spatial and compositional relationship between urban and recreational areas around settlements - ie around settlements forests are a potential resource for recreation, which should be linked with the green system the city of Skopje. (Vodno, Zaychev Hill Sports recreative center "Saraj", etc..)

The improvement of the structure of the green structure can be accomplished in several ways:

- Establishment of the green system as a means of connecting the urban area with around settlements.
- Improving the structure of the elements of the green system (promoting quality parameters) via: reconstruction of existing facilities, the green system, paying attention to aging trees and shrubs; renewal of vegetation in the streets with suitable gas-tight species, planting of roadside easements and strips off water flows with appropriate tree and shrub vegetation, development of spatial and landscape projects for the sites of the green system

Useful for improving the structure of the green system is the formulation of urban development model of the system (within the compact city) (Figure 2) developed and proposed by us, which includes the following statements:

- Accepts river Vardar as an important element of the green system of Skopje, which provides a green corridor to the east - west;
- Consider the existing City Park as an element enriching the green system of Skopje;
- Available to anticipate and build protective vegetation belts with a width of 15-25 m along the road transport communications;
- Available to plan buffer strips of forest plantations near water channels (10 m);
- Accepts the newly parks Gazi Baba and Zaychev Hill as supporting elements for the development and completion of the system of green links between them and the mountain water;
- Available formation of public green spaces - gardens and parks in housing estates - at least 20% of the total area of the housing complex.



Urban development model of the green system of Skopje can be implemented in priority development of the green system by building new parks and recreation areas, mainly in the compact city.

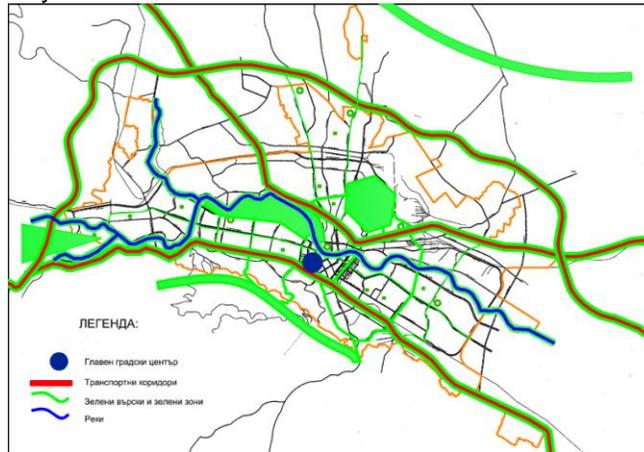


Fig. 2. Urban development model of the green system (within the compact city)

### Conclusions

Green system in the city is characterized by an imbalance in territorial extension.

Collateralization city of Skopje with green areas does not meet the needs of people with green spaces.

Green system in the City is characterized by uneven emplacement its elements in the territory. The problems associated with green areas are:

- Unregulated construction in green areas;
- Change of use of the river greenbelt;
- 1. Unsatisfactory maintenance of significant green complexes: Gazi Baba, Zajcev Hill, parts of coastal regulation of the Vardar River and other rivers;
- Lack of functional spatial relationships of suburban water park, recreation Center - Canyon Matka, Sports Center recreation - Saray with City.
- The territory of Skopje there is only one park.

To create conditions for sustainable development of the green system elements, so their defense is necessary normative perspective (special) file system for green.

Sitting and landscaping areas to live, work, and leisure are essential for architectural, artistic and aesthetic and cleared and improved performance indicators for landscaping areas to live, work, relax, relate to: providing enough green areas within the zones of residence, work, recreation, construction of green belts to separate work areas from residential zones, providing enough space for relaxation, providing a connection with urban vegetation around settlements (Vodno, Zaychev hill, Saray, Gazi Baba), construction of new parks and gardens.

### Recommendations

1. The future development of green areas and connecting them in a green system should be carried out some important events, such as effective use along the Vardar River and adjacent areas, and prevarshtaneto them a key element of the green system, creating conditions for a variety of functional use of the river, construction of facilities for the needs of different sports and recreation along the river, as well as facilities to improve water quality.

2. To improve the environmental conditions is necessary to



- conduct landscape a forestation and reclamation of disturbed areas with appropriate tree and shrub species;
  - enriching the species composition of all elements of the green system in accordance with their environmental requirements;
3. To improve the environmental conditions necessary: pursuing landscape a forestation and reclamation of disturbed areas with appropriate tree and shrub species, enrichment of the species composition of all elements of the green system in accordance with their environmental requirements: air quality, high summer temperatures and drying air, soil moisture and air, and weather conditions of the urban environment (track width of sidewalks, the height of buildings, the orientation of the street, etc..), specific production processes in industrial zones, renewal of vegetation streets gazustoychivi appropriate species.
  4. Research and planning of the green system in different territorial units (municipalities) will help control even distribution of green areas in the urban area and achieving the satisfaction m2/inhabitant.
  5. Creating the conditions for sustainable development of elements of the green system in order to protect them in the future, requiring authority (special) paper green system (laws or regulations of the green system of capital and major cities).

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Landscape transformations of the post-communist countries:  
an international interdisciplinary student conference SVK 3B/13/F5

PRAGUE October 2013



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