

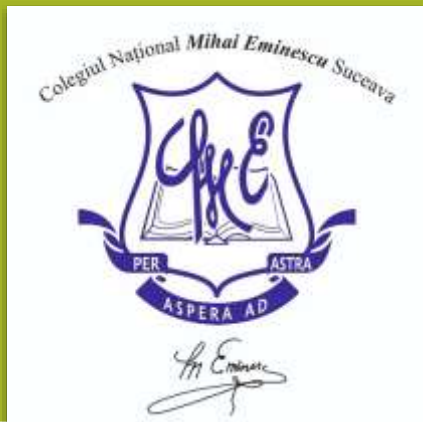


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Learn biodiversity through Environmental Action For the community

MODULE:
« PARKS, FORESTS AND CITIES' GARDENS »

« Project Reference : 2022-1-RO01-KA220-SCH-000086884 »



THEORETICAL PART

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CHAPTER I.

GENERAL PRESENTATION OF THE TOPIC AND THEORETICAL ASPECTS




1.1. Introduction




This chapter aims to highlight a number of concepts, typologies and roles of urban forests and parks and their meanings from different perspectives.




The dominant form of urban settlement for the coming decades and rapid urbanisation will bring with it great challenges in terms of balancing the modern world, meeting people's needs and caring for the environment.

The contribution of forests and urban parks, in relation to the 2030 Agenda and its goals, brings to the forefront the Sustainable Development Goal on Sustainable Cities and Communities (SDG 11) the roles of forests and urban parks can be linked to the achievement of the other SDGs as well, due to their complex relevance in achieving sustainable development.

The role of the urban forests

Sustainable Development Goal	The role of urban forests
 1 NO POVERTY	Urban forests create employment, provide a resource for entrepreneurs, reduce the cost of urban infrastructure, provide ecosystem services for all citizens, improve the living environment and increase property values, ultimately boosting local green economies.
 2 ZERO HUNGER	Urban forests are direct sources of food (e.g. fruits, seeds, leaves, mushrooms, berries, bark extracts, saps and roots, herbs, wild meat and edible insects). Indirectly, they support healthy eating by providing affordable woodfuel, high-quality water and improved soil for sustainable agricultural production.
 3 GOOD HEALTH AND WELL-BEING	Forests and other green spaces in and around cities provide ideal settings for many outdoor recreation and relaxation activities, thereby contributing to the prevention and treatment of non-communicable diseases and the maintenance of mental health. Urban forests filter and efficiently remove pollutants and particulates, which also helps reduce the incidence of non-communicable diseases.

 6 CLEAN WATER AND SANITATION	Urban forests are efficient regulators of urban hydrological cycles. They filter drinking water by reducing biological and chemical pollutants, reduce the risk of floods and erosion, and reduce water losses by minimizing mesoclimatic extremes through evapotranspiration processes
 7 AFFORDABLE AND CLEAN ENERGY	The sustainable management of urban forests can produce renewable energy for use by urban communities. This is a vital function for billions of urban and peri-urban dwellers worldwide, particularly in lower-income countries, where woodfuel is often the most affordable and sometimes only available source of energy
 8 DECENT WORK AND ECONOMIC GROWTH	Investments in urban forests and other green infrastructure add significantly to green economic growth by providing an attractive environment for tourism and business, improving home values and rental rates, creating job opportunities, providing materials for housing, and generating savings in the costs associated with energy and the maintenance of human health

 11 SUSTAINABLE CITIES AND COMMUNITIES	Well-designed and managed urban forests make significant contributions to the environmental sustainability, economic viability and livability of cities. They help mitigate climate change and natural disasters, reduce energy costs, poverty and malnutrition, and provide ecosystem services and public benefits
 13 CLIMATE ACTION	Trees and forests in and around cities contribute to climate-change mitigation directly by sequestering carbon and reducing greenhouse gas emissions and indirectly by saving energy, reducing the urban heat island effect, and mitigating flooding
 15 LIFE ON LAND	Urban forests help create and enhance habitats, constitute a pool of biodiversity, significantly improve soil quality, and contribute to land restoration

Pictures source: <https://www.un.org/sustainabledevelopment/news/communications-material/>

Text: FAO. 2016. *Guidelines on urban and peri-urban forestry*, by F. Salbitano, S. Borelli, M. Conigliaro and Y. Chen. FAO Forestry Paper No. 178. Rome, Food and Agriculture Organization of the United Nations, pag. 7

<https://www.fao.org/documents/card/en/c/e068e0d9-0c97-41c7-a856-05556a1bd10b>

1.2. Defining the terminology (urban forest, urban park)

1.2.1. Urban forest

According to FAO (Food and Agriculture Organization of the United Nations) **urban forests** are "systems comprising forests, trees and groups of trees, located in urban and peri-urban areas", acting as the "backbone" of the "urban green infrastructure".

(<https://www.fao.org/documents/card/en/c/e068e0d9-0c97-41c7-a856-05556a1bd10b>) (Guidelines on urban and peri-urban forestry, FAO Forestry Paper-Nr.178 (F. Salbitano, S. Borelli, M. Conigliaro and Y. Chen, 2016, Roma), FAO (Food and Agriculture Organization of the United Nations))

Urban forests located in or on the outskirts of towns and cities include, in principle, tree species, herbaceous plants, faunal elements specific to forest-type ecosystems, but unlike **urban parks**, they often do not have special facilities for the population (paths, well-established boundaries, facilities, etc.)

(https://en.wikipedia.org/wiki/Urban_forest)

1.2.2. Urban Park

Parks are natural, semi-natural or man-made areas with multiple purposes (recreation, protection of the natural environment and habitats, conservation of biodiversity, etc.) comprising vegetation, buildings, special-purpose land under different forms of ownership, and structurally, active recreation areas and passive recreation areas.

The structural variety of **urban parks**, which includes different components (forests, green spaces, street trees and shrubs, gardens, lakeside amenities, sports areas, etc.), is determined by the local particularities imposed by the natural and socio-economic framework.

Urban parks serve cities and include areas of natural, historical or cultural significance, and their facilities are necessary to meet the needs of the urban community. (<http://www.ijstr.org/final-print/nov2015/A-Brief-Review-On-Urban-Park-History-Classification-And-Function.pdf> (Mohammad Mehdi Sadeghian, Zhirayr Vardanyan, INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 4, ISSUE 11, NOVEMBER 2015))



Components of the urban forest

(Source: City of Vancouver and Vancouver Park Board, 2018. Urban Forest Strategy, 2018 Update. 60 pp. <https://parkboardmeetings.vancouver.ca/files/STRATEGY-UrbanForestStrategy-20180430.pdf>)

1.3. Urban Forests and Parks Typology

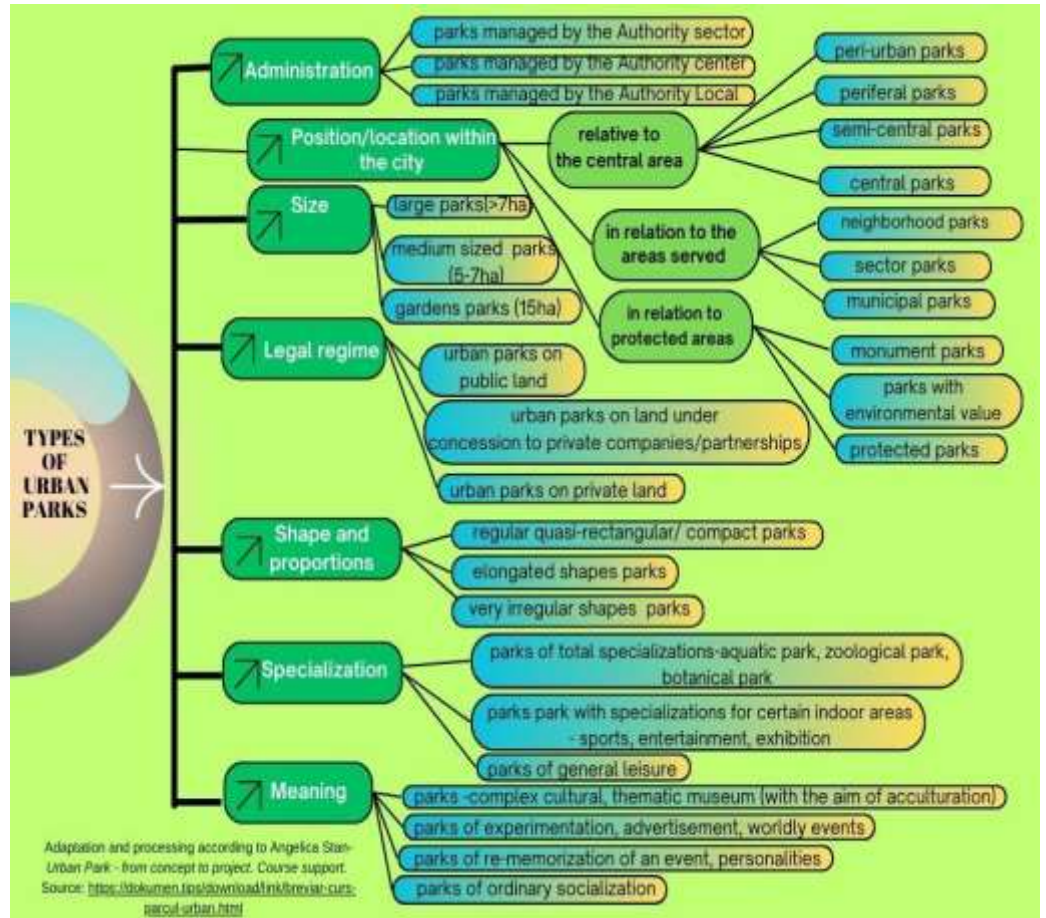
Types of urban forests

The urban forests categories:

- Peri-urban forests and woodlands ;
- City parks and urban forests;
- Pocket parks and gardens with trees;
- Trees on streets or in public squares;
- Other green spaces with trees.

(Source: *Guidelines on urban and peri-urban forestry*, FAO Forestry Paper-Nr.178
F. Salbitano, S. Borelli, M. Conigliaro and Y. Chen, 2016)

Types of urban parks

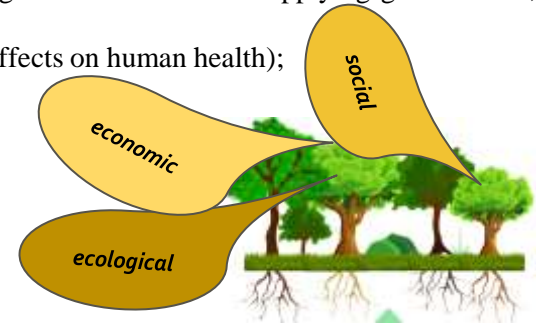


1.4. The Role and Benefits of the urban forests and parks

Numerous studies, articles and scholarly papers mention the multiple benefits of green spaces in general and urban forests and parks in particular as central structural elements of urban space, supported by scientific evidence and a wealth of research.

The functions of urban forests and urban parks can also be brought to the foreground by direct reference to the natural forest:

- **anti-erosion** (they reduce the risk for soil erosion, landslides, due to too much rain landslides and other slope processes);
- **climatic** (role of natural filters purifying the air, reducing high temperatures in cities, producing oxygen, reducing noise pollution);
- **hydrological** (they contribute to increasing atmospheric humidity and have a role in reducing surface runoff and supplying groundwater, streams and plants);
- **biological and biodiversity** (living environment, they conserve biodiversity and have positive effects on human health);
- **social** (they promote social integration and reduce stress);
- **educational** (they constitute educational environments in themselves as outdoor laboratories);
- **scientific** (they provide important subjects for scientific analysis);
- **economic** (they provide resources and increase the value of land);
- **aesthetic and landscape** (they increase the aesthetic value of space).



The roles and benefits of urban forests can be grouped into three major areas:

- **social** (they promote socialisation, they create a positive perception of the urban environment, they contribute to improving the health of the population, they facilitate movement, reduce violence and crime and have an aesthetic and landscaping role);
- **ecological** (they offset locally and directly certain CO2 emissions, produce oxygen and store carbon, reduce the risk of natural hazards-floods, landslides and storms, increase air quality and reduce city temperature, contribute to biodiversity conservation, reduce pollutants and noise pollution);
- **economic** (contribute to increase the value of nearby land, facilitate economic growth by providing new jobs, offer specific goods and products, contribute to increase income, offer shopping opportunities in a pleasant environment).

CHAPTER II. THE INTERNATIONAL AND NATIONAL CONTEXT VERSUS THE LOCAL REALITY CONTEXT

2.1. Parks in Europe

European parks contribute to the conservation of nature, the promotion of sustainable development and the well-being of society and the planet. Europe's parks fulfil various functions and play important roles in conserving natural ecosystems, providing recreational opportunities and promoting environmental education. Here are some key functions of parks in Europe: *biodiversity conservation, leisure time and tourism, cultural and historical importance, mitigating climate change, protection of water resources, community engagement and well-being, education and research.*

2.2. Representative parks in Europe



Plitviče Lakes System (photo source: <https://np-plitvicka-jezera.hr/en/>)



Lake District National Park, England (photo source: www.lakedistrict.gov.uk)



Cinque Terre National Park, Italy (photo source: <https://www.parcnazionale5terre.it/>)



The Saxon Switzerland National Park (photo source: <https://www.passports.top>)



Vatnajökull National Park (photo source: <https://www.iceroom.fr>)



The Cévennes National Park (photo source: <https://www.cevennes-parcnational.fr/fr/>)

2.3. Representative forests and parks in Romania

Romania is a country that enjoys a special biodiversity, both in urban and natural environments. Gardens, parks and urban forests not only beautify cities, but also purify their air and ensure the preservation of the diversity of flora and fauna. The cities compete in the arrangement and maintenance of the most beautiful green spaces, both for the purpose of relaxation, greening, preservation of biodiversity, and scientific research. In the more than 300 urban settlements in our country, where more than half of the population lives, there has been an increase in the area of urban green spaces of approximately 30% in recent years.

Within the module we analyzed several representative spaces from the main cities in the regions of Romania: Maramures, Banat, Oltenia, Muntenia, Dobrogea, Moldova and Transylvania.



"Simion Bărnuțiu" Central Park (photo source: <https://cluj.com>)



Bistrița Municipal Park (photo source: <https://timonline.ro>)



Herăstrău Park (photo source: <https://agora.md>)



Timișoara Green Forest (photo source: <https://green-report.ro>)



Archaeological Park-Constanța (photo source: <https://www.litoralulromanesc.ro>)



Copou Park (photo source: <https://dynamic-media-cdn.tripadvisor.com>)

Local level-city parks and forests

Urban Parks and forests

Urban parks in Suceava

”Ștefan Cel Mare”
University Park– Suceava

”Trei Bărboși” Park

”Mărășești” Square Park



”Simion Florea Marian”
Park



”Mihai Eminescu”
National College Park -
Suceava

”Vladimir Florea” Square
Park

”Ioan Nemeș” Central Park



Urban forests in Suceava

”Șipote” Dendrological
Forest - Park



Zamca Forest



PRACTICAL PART

CHAPTER III. PRACTICAL ASPECTS AND SOLUTIONS



1.1. Urban forests and parks worldwide. Practical aspects and solutions.

1.2. Urban forests and parks in Europe. Practical aspects and solutions.

1.3. Urban forests and parks at a national level. Practical aspects and solutions.

1.4. Practical aspects and solutions at a local level-city parks and forests

1.5 The use of WE- LAB in the project

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source map: <https://www.mapsinternational.com/satellite-map-of-the-world.html>

Urban forests and parks worldwide. Practical aspects



Erasmus+



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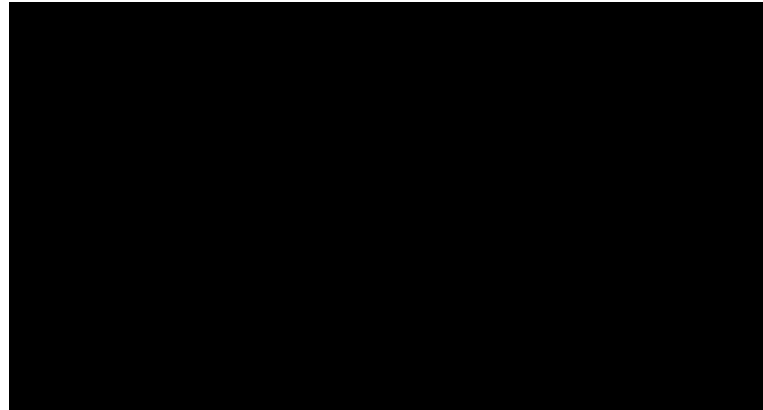
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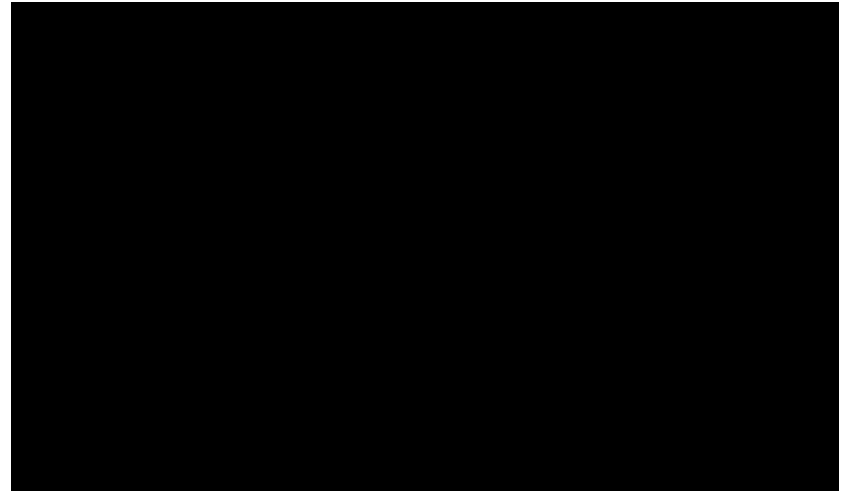
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Urban forests and parks in Europe. Practical aspects

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Urban forests and parks at a national level. Practical aspects

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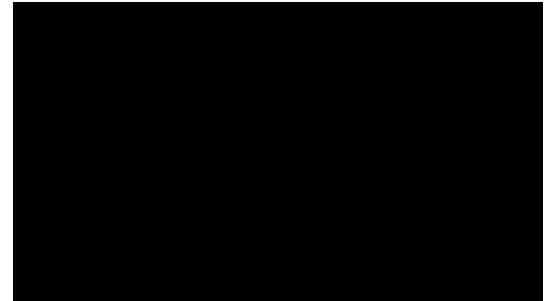


source map: https://romaniadigitala.ro/de/sv_jos_dr.html

PRESENTATION OF THE SCHOOL PARK



EXAMPLES OF OUTDOOR ACTIVITIES



Practical aspects and solutions at a local level-city parks and forests

Photometry

The use of WE- LAB in the project

Yellow roses



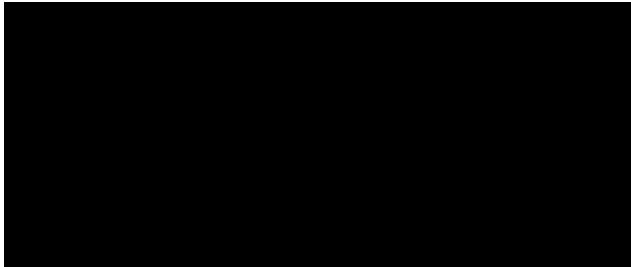
Brier



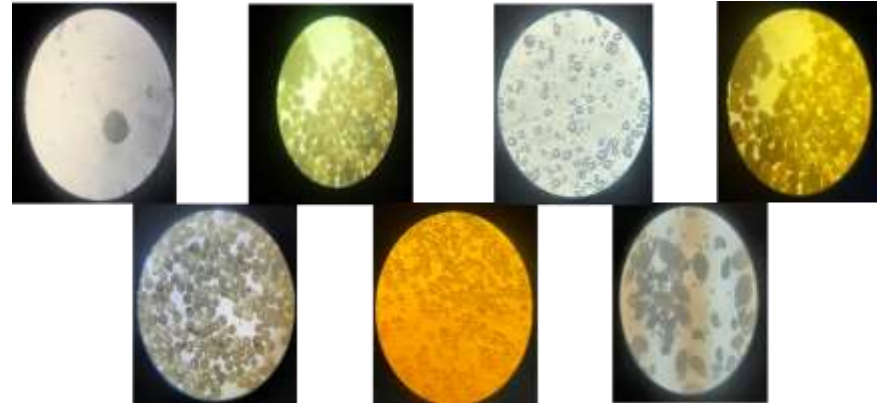
Danewort



Hawthorn



Microscopy



Conclusions

Forests and urban parks play extremely important roles for the urban habitat and its neighbourhoods, through the landscape pattern of the city, their impact on the urban microclimate, population and economy, and by ensuring biodiversity and the well-being of the population.

The significant value of urban forests and parks in terms of preserving biodiversity, through the opportunities provided by their multiple functions, must also be linked to ensuring the quality of life in urban environments, which, through its multidimensional values, is directly proportional to the well-being of the population.

In urban environments, biodiversity is most often limited, so the need for green space of any kind, in the context of current climate change and achieving urban sustainability, is crucial to ensuring the future well-being of the population, maintaining ecological balance and preserving biodiversity.