

“Eco Features” Recognized as Sustainable Urban Strategies Applicable in the Neglected Area in the City of Skopje

Radmila Tomovska PhD¹, Iva Petrunova PhD², Hekuran Musli³

¹Faculty of Architecture and Civil Engineering at University Mother Teresa – Skopje, N.RM

²NGO GRADOT UBAV Skopje, NRM

³Dessau Institute of Architecture at Anhalt University – Dessau, Germany

Abstract: *This research analyses certain sustainable urban strategies that are in correlation with the improvement of the living conditions of the local flora and fauna, improvement of the air quality, air temperatures in summer period and improvement of the physical wellbeing and social cohesion of it's habitants. More precisely, this research discusses the possible ways of application of the analyzed ecological and bioclimatic urban strategies for achieving sustainable solutions regarding urban planning and design of a green active public space on a selected neglected location in Novo Lisice – Aerodrom Municipality in Skopje. The proposal for new active green public space is designed to be context - sensitive and ecologically treated space. It is intended this project to be a new meeting point for sport and recreation for the local residents, that in the same time will offer green and safe home for all the local flora and fauna species. This study was conducted in the following steps. At first, the environmental and bioclimatic discourse was analyzed in order to give explanation which of the mentioned principles can be applied on the analyzed case. Then, different analytical methods and information from various scientific areas were used, which helped in detecting the real problems present on the analyzed location. The following step was to define the target group of future visitors and residents on the newly defined conceptual design. In order to define the adequate sustainable strategies that will have ecological, health and socio - environmental qualities, the so called “eco features” were established. “Eco feature” in this research represents a sustainable quality of a particular strategy or urban measure that can improve the coexistence of all the local inhabitants on this location and neighborhood: people, animals, insects and plants. In the same time the selected strategies will improve the air quality, lower the summer temperatures, revitalize the chosen location, improve the physical wellbeing and social cohesion, create people centered urban design and redefine the city values.*

Keywords: Sustainable urban strategies, Local flora and fauna, Physical wellbeing, Social cohesion, Environmental urban planning

1. Introduction

The levels of contamination and deterioration of the quality of life in the cities makes it necessary to think of nature as a transitional element to mitigate these effects and build more resilient and sustainable cities. Recognize, protect and conserve ecosystems and urban biodiversity as means to increase the capacities of the city of Skopje to face the impacts of climate change are the goals of this research. It is vital and urgent that cities implement “green measures and actions”. These strategies and measures help in conducting further analysis that help in defining precise design solutions for the selected urban fragment. The “eco features” defined in this research and applied in the designed pilot project show different dimensions and positive impacts on the

biodiversity and urban ecosystems, on the nature as urban infrastructure and green spaces as areas of vitality for those who inhabit the city of Skopje, or more precisely the Aerodrom Municipality.

This research represents a cooperation between: the researchers, the City of Skopje (ГРАД СКОПЈЕ - Одделение за соработка и поддршка на здруженија на граѓани и фондации) and NGO Gradot Ubav (Figure 1). Transforming the neglected chosen location into ecological, inclusive, socially vibrant and active green public space is one of the goals of this research that strives towards the so called GREEN SPACIALITY in Skopje.



Figure 1: Conceptual project LYNX represents a cooperation between: the researchers, the City of Skopje and NGO Gradot Ubav, Source: authors

Sustainable urban trends and urban forests are gaining momentum in the world as a current urban practice and direction for the development of modern active and sustainable cities [1], [2]; especially in the pandemic and post - pandemic period. The pandemic is another aspect that is tightly related to public spaces and their redefinition. Beside the victims, it caused a massive impact on people's everyday life and on the overall society. Our concept of urban livability is transforming, because the normal routines of traveling, working, and socializing are completely reshaped. Lockdown regulations that required distancing, resulted in the need for transformation of the overall urban realm. That is why the importance of outdoor and green public spaces, as a crucial space for socialization has never been so evident. New patterns of designing the public spaces in the post Covid period represent an innovative strategy.

Balancing physical development through increasing local cultural, ecological and environmental capacity is another way that leads towards sustainable urban development. Research methods of returning the subject of investment in well - designed public spaces, in terms of community, well - being, environment, and resources, have shown that we need to focus on innovating new comprehensive solutions to help people have unusual outdoor experiences. This research shows that sustainable bioclimatic urban revitalization should be understood as a multidisciplinary approach: analyzing all possible aspects relevant to a particular location in order to offer a quality innovative solution that will be used as an active public space for healthy living of the present and future inhabitants of the city (people, animals, insects and plants) [3]. So, long term effects on society and environment will be enabled by offering the citizens new sustainable way of living.

Focusing on creating an urban forest in the city of Skopje that will offer green and safe home for all the local flora and fauna species represents imperative of the conducted

research. An urban forest encompasses the trees and shrubs in an urban area [1], including trees in yards, along streets, in protected areas, and in watersheds [4]. This includes individual trees, street trees, green spaces with trees, and even the associated vegetation [2] and the soil beneath the trees [5]. In this research the focus is on creating larger area in form of an urban forest in order to have better implications on the environment and its inhabitants. In many regions, urban forests are the most extensive, functional, and visible form of green infrastructure in cities. Green infrastructure is the natural and semi - natural infrastructure within a city that provides ecosystem services like storm water management or air pollution abatement [4].

Reviewing the scientific literature on low - carbon cities, green cities, healthy cities, urban forests [1], [2], [3], [4], [5], [6], [7] as well as conducting this research, helped the researchers to come to the conclusion that the selected location should be designed as: green, multifunctional, compact, walkable, healthy, barrier - free and socially vibrant space that will deliver a high quality life to the people, animals, insects that gravitate in this area. This conclusion led in defining the concept of this project: transformation of the analyzed location into a green active public space in a form of representative landmark of the city called LYNX [8], as synonym for one the endemic species of Macedonia¹ (Figure 2).

¹ Considered to be a national symbol, and placed on the back of the 5 denar coin, the Macedonian wildcat, the Balkan lynx, is one of the rarest animals in the world. Around 100 specimens are believed to be scattered around the Balkans, most of which inhabit the National Park Mavrovo. Facing a real threat of extinction, there finally might be hope for preserving and reintroducing this magnificent animal [5].



Figure 2: Considered to be a national symbol, the Macedonian wildcat, the Balkan lynx, is one of the rarest animals in the world., Source: <https://www.discoveringmacedonia.com/2015/the-macedonian-wild-cat/>

2. Purpose of Study

The sustainable urban discourse has been analyzed and discussed by many theoreticians and many institutions mainly because of its importance on global level. According to Jan Gehl, [4] external activities are influenced by many conditions. The physical environment is one of the factors that influence activities in many different ways. There are three types of outdoor activities that take place in public spaces, and each of these activities requires a specific physical space:

- 1) **Essential activities** - Necessary activities take place in all conditions: going to school or work, shopping, waiting for public transport, etc. These activities take place throughout the year, regardless of the exterior, and the citizens have no choice regarding them.
- 2) **Optional activities** - Optional activities happen because the citizens have a desire for them and they happen only in the exterior that provides them and has good conditions for them. This category includes walks in the fresh air, sitting in the sun, walking around enjoying, and so on. These activities occur when the time and place are pleasant and the exterior of the city or neighborhood is encouraging them to do so and are particularly dependent on the physical conditions of the environment. When the outdoor space is of poor quality, only the necessary activities take place, the citizens rush to go home. If the outdoor space is well designed, people stay on the street and in the city, sit outside, socialize and cover a wide range of different activities. The good environment expands the activities in the city.
- 3) **Social activities** - Social activities are all activities that involve people in public spaces. These include: children's games, meetings, conversations, various activities, and most often - passive contact, simply watching and listening to other people. These activities can be considered as a result of the two previous categories (necessary and optional activities). Social activities occur spontaneously as a result of people moving and being in the same space. This means that social activities indirectly depend on whether and how good the space is designed for the necessary and

optional activities to take place. The nature of social activities depends on the context in which they occur [4].

The social cohesion will have even greater benefits if the social activities are being performed in the nature. The healing and relaxing effect of the forest will enable the citizens another dimension in performing optional and social activities. Urban forests play an important role in ecology of human habitats in many ways. Aside from the beautification of the urban environment, they offer many benefits like improving the climate conditions, while providing shelter to wildlife and recreational area for its citizens.

The elaborated project is led by the idea of strengthening the link between ecology, environmental practice, research, architectural and urban design. The problems that this project address and tries to solve are the following ones:

- 1) Accessibility and spatial inequality. Geographical distribution, potentialities. How to expand green areas in city? The lack of green forests in some of the neighborhoods in Skopje.
- 2) Urban biodiversity. Characterization and characteristics. Ecosystems in the city of Skopje. Deterioration of urban biodiversity, its impacts. Management for the conservation and protection of urban biodiversity.
- 3) Nature Based Solutions. Mechanism and building of green infrastructure as well as interaction with the built (existing) infrastructure to face socio - environmental challenges.

The climate in Skopje (dry hot summers and wet cold winters), demands the open public spaces to be designed in bioclimatic manner in order to protect the visitors from high exposure on sun, rain and snow so that the visitors can have a pleasant stay [9]. Another big problem for the people that live in this city fragment is the absence of open public spaces for resting, sport recreation and enjoying the nature. The problem with the social cohesion in this area is also evident. The conducted questionnaire showed that the residents do not have open public space where to enjoy the nature and gather. The children do not have enough open space for playing. The old people do not have open parks for walking and gathering. The young people living in the surrounding houses wrote in the questionnaire that they are lacking of an open space where they can practice sports, perform music, gather and enjoy the nature....

The analysis has showed that the local fauna species are leaving this area because of lack of trees, shrubs and grass. Also the residents that own domestic animals wrote in the questionnaire that they do not have decent park to walk their dogs.

The analyzed location is in the Aerodrom Municipality. In the moment is serves for the local residents to throw their garbage and it has no particular function. This space has nor aesthetic or ecological significance. From all the sides it is surrounded with small houses. The location has great potential to be used as open public space, but in the moment hasn't got particular function and doesn't look appealing. That is why it is avoided from the local citizen.



Figure 3: The selected location in the neighborhood Novo Lisice in the Aerodrom Municipality, Skopje, NRM, Source: authors

The purpose of this study that further was developed as an architectural project proposal was: designing a green active public space inside a residential area that will serve as ecological habitat for all the flora and fauna species, will improve the biodiversity of the selected urban fragment and will represent an urban forest that welcomes the residents for sport activities and recreation. The multifunctional character of the location will enable revitalization of the

location by redesigning the existing devastated and unused location by adding a number of new urban contents. Revitalization of locations in the city that have lost their mining through time by adding new urban contents that enlighten the context of ecology, biodiversity and social cohesion represents very important sustainable urban principle [1], [4].



Figure 4: Architectural project proposal for the selected location, Source: authors

3. Research Methods

This research is focused on defining strategies and measures related with urban revitalization of dehumanized, devastated and abundant public spaces in creating SUSTAINABLE and NATURAL HABITATS in the city of Skopje. In that manner the percentage of urban forest in the city will grow. The process of mapping this kind of places in the city of Skopje can be called *urban acupuncture*, which is one of the methods conducted in this research. After conducting the process of mapping and choosing a place that fulfills all the criteria, the further steps of the research were conducted.

The interdisciplinary approach represents a pilot action for the future sustainable development of green active public spaces that will have an impact on society and future urban policies. In order to have successful results, during the research and design process there was a cooperation with the civil sector in a form of questionnaires which were seeking of opinions, advices and needs from the local citizens for the selected location.

Environmental planning is a decision - making process that addresses environmental parameters when creating human designed environments. It is an interdisciplinary field that includes urban planning, landscape architecture, engineering, related arts, natural sciences (biology, geography, meteorology, physics...) and social sciences [9]. Different analytical methods and various scientific findings

were used in order to come up with precise answers regarding the real problems at the analyzed location.

The on - site research included: identifying, developing and accessing alternative approaches in the field of ecological and environmental analysis and diagnostics of the selected location (soil, underground waters, air, vegetation, biodiversity, build structures, condition and usability of the built structures, ect.). Another method used in this research was making observation of the chosen location during prolonged period of 6 mounts which was very helpful for the conducted bioclimatic analysis. All these methods helped in discovering the capacity as well as the potential usage of the selected location.

Another important research method that helped in enlightening the present situation was conducting urban and architectural analysis of the built environment inside the chosen city fragment. Conducting historical and social analysis that lighten the context in which this public space is situated, followed. Conducting bioclimatic analysis helped in defining the solar radiation during all year around, measuring the air temperature on location during day and night in summer period, defining the air circulation (rose of dominant winds) on the location and presence / absence of greenery. The analysis of the biodiversity: the existing local flora and fauna on the location as well as the quality of the ecosystem followed. The analysis of the pedestrian walking routines, as well as analysis of the necessary and possible

programs and functions and their impact on the citizens was crucial in designing the new project proposal. Analysis of the functions and frequency of the people helped in discovering the percent of functional usage of this public space, which was only 2%.

By conducting and combining various methods, the researchers developed critical thinking toward developing design proposal for this specific location as well as for future urban interventions.

4. Findings and Results

The results of this research are the so called “eco features” that represent sustainable urban strategies applicable on the

neglected area in Skopje. They were further incorporated in form of a conceptual sustainable urban intervention. The conceptual project was presented at the Mayor’s office among the representatives of the City of Skopje and received very positive remarks.

Analysis of the functions and frequency of the people was very important step of the conducted methodological procedure. This analysis helped in discovering the percent of functional usage of this public space, which was only 2%. Conducting comparative analysis between (1) *the actual usage* of this space and (2) *the possible usage*: the possibilities that the newly designed urban forest project offers was one of the biggest results of the conducted research (Tab.1).

Table 1: Comparative analysis of the possible usage and the actual usage of the space

Location function:	Greenery	Pedestrian paths, safety and artificial lighting	Soil	Events	Public WC	Socialization corners (benches, playground)	Space for sports	Connectivity - walking zone for people with disabilities
Present situation: Abundant unused place	Only low greenery - uncultivated	No	Poor quality of soil	No	No	No	No	No
New project proposal: Urban forest	Maximum greenery: high and low local floral species	Yes	Good quality of soil	Yes	Yes	Yes	Yes	Yes

The interviews as well as conducted architectural, urban, social, bioclimatic and environmental analysis helped in determining the best character of the new proposal for this open public space: GREEN MULTIFUNCTIONAL public space that will gather all the people and animals gravitating in this area. The green active public space in form of an urban forest will provide citizens with many ecosystem services, or benefits that humans and animals will derive from nature. The benefits and contributions are the following ones:

- **Contribution to the physical and mental health of residents** by buffering stress and creating inviting places for various physical activities;
- **Mitigating the heat island effect** by reducing temperatures through enlarging and enriching the high and low greenery through shading and evapotranspiration [10], [11];
- **Reducing burdens on traditional water infrastructure and reducing run - off** by absorbing and natural filtering of storm water [12];
- **Improving air quality** by removing harmful pollutants, like particulate matter, ozone, and smog, by enriching the high and low greenery [13], [14].
- **Reducing noise** as a result of urban forest absorption characteristics [15],
- **Improving scenic quality and aesthetic appeal of the location by planting various local floral species** like: flowers, shrubs, trees (pine, chestnut, oak, jasmine, fruit trees, local flowers, ect);
- **Producing food for the local fauna** (animals and insects) from the local flora that is planted on the location;
- **Enhancing community cohesion and supporting local livelihoods** by fostering social interaction, building

environmental consciousness, and establishing a shared sense of place [16], [17];

- **Enhancing soil productivity** by improving the conditions of the soil, it’s purification from harmful pollutants in form of a waste that was present on the site [18];
- **Increasing property values** by creating well designed public space inside the neighborhood which will increase the price of the properties in this area;
- **Increasing residents’ connection to nature** during resident engagement activities such as tree plantings, which may promote pro - environmental behavior [19]
- **Intercepting rainfall and surface runoff to reduce erosion and sedimentation** in urban areas.

The defined adequate sustainable strategies that will have ecological, health and socio - environmental qualities, the so called “eco features” were the starting point of the design phase. “Eco feature” in this research represents a sustainable quality of a particular strategy or urban measure that can improve the coexistence of all the local inhabitants on this location and neighborhood: people, animals, insects and plants. In the same time the selected strategies will improve the air quality, lower the summer temperatures, revitalize the chosen location, improve the physical wellbeing and social cohesion, create people centered urban design and redefine the city values. “Eco features” in this research are the following ones:

- 1) **Detoxification of the soil** – ground layers on the location. The goal of this measure is to provide healthy base for growing the local flora;
- 2) **Planting local flora (high and low greenery)** that is well adjusted to the local climate and the environment. The goal of this measure is to attract the local insects once again in the city and to purify the air that is very

polluted in this area especially in the winter period. The high greenery in form of a urban forest will also provide lower temperatures and better humidity in the summer period. The high greenery and the bushes will attract the local fauna to inhabit this location again (birds, cats, dogs, rabbits, insects, mice, squirrels, hedgehogs, ect);

- 3) **Designing GREEN ACTIVE PUBLIC SPACE** with possibility of performing sport activities inside the urban forest. With the implementation of this design solution, the immediate surroundings of this location will get a new green and recreational corner, which would help in improving the health of the local citizens. This urban forest will offer many benefits, such as: (1) practicing sports in healthy environment surrounded with high greenery, (2) offering walking routes for the people of all ages; (3) socialization corners, (4) sand pools – children playgrounds ect. Among the multisport field for playing basketball and football, athletics running tracks are being incorporated as well. Practicing sports in healthy green environments instead of practicing sports in polluted city sport fields represents imperative it today's modern way of living in the city.
- 4) **Designing a safe and attractive place for spending more time in the nature** – adding the urban equipment and furniture, café bar and public toilets will convince the residents of all ages to spend more time in nature and socialize. All the functions that were lacking and

were given as propositions from the residents were incorporated in the project proposal.

4.1 The design idea of the project - proposal on the chosen location

The functions of the designed green active public space were clearly defined after a questionnaire was given to the citizens of this urban fragment to state what is lacking in this area. The interview showed that 72% of the citizens of this neighborhood said that they need sport field for practicing various sport activities such as basketball, football, athletics; 81% said that this public space is very unsafe and needs more lights, paths and public bathrooms. The young people (32%) said that they prefer an open space for gathering at the night that involves music and a café bar. Nearly half of the interviewed residents (45%) said that they need an open space where they can sit, relax, walk their pets in nature. These results defined the new program content of the chosen public space: urban forest, café bar, public bathrooms, sport field and rubber athletic trails for running, children's playground, benches and pedestrian paths for walking and resting during the day and night, and quality artificial lightning of the location. All these functions (walking, gathering, relaxing, playing, practicing various sports, riding bicycles, organizing sport events) could be performed on this place in different periods of the day, or in different days of the week.



Figure 5: New project proposal (Source: authors)



Figure 6- 9: New project proposal (Source: authors)





Figure 10- 11: New project proposal (Source: authors)

5. Conclusions and Recommendations

Planning, decision - making, and implementation related to urban forests should be participatory and inclusive approach in the urban regulations of every city. Although it can be challenging, it is necessary to understand which community needs and priorities should be incorporated in the sustainable urban planning of the cities. To reduce the potential for increasing disparities in health, safety, and disappearing of the local flora and fauna species from the city we must see the potential that urban forests are offering.

City planning should respect the eco system of certain location and wider context. It should be people and animal centered, rather than design centered. A city is a constantly evolving organism, and city planning must take a broader perspective than the design of individual buildings.

Revitalization of locations in the city that have lost their mining through time by adding new urban contents and ecological bio systems that enlighten the context of ecology and social cohesion - making them socially vibrant places represents an imperative in the conducted research. The goal of this research was to show that the city should offer adequate and quality solutions that will serve well for present and future generations of the planet Earth enabling them to live in healthy, sustainable and socially vibrant environments.

Benefits of incorporating projects of this kind that support the sustainable urban planning in the city of Skopje as well as in other cities facing similar problems should be:

Improving the air quality;

- Reducing the heat islands in the city;
- Enriching the greenery in the city;
- Improving walkability;
- People and animal centered city planning, rather than design centered urban solutions;

- Redefining city values: a sustainable city depends on the attitude and behavior of each urban individual and user. The sense of citizenship and individual responsibility towards sustainable values should be encouraged rather than plain consumerism;
- Incorporating more and different out - door activities (such as walking, bicycling, exercising, gathering, playing, performing...);
- Improving social cohesion;
- Improving people's mental and physical health;
- Supporting a harmonious and prosperous society.

Implementing multi - functionality within communities creates spaces that have multiple purposes. Due to their access to diverse uses in one place, these spaces can contribute to a community's vitality. These multi - functional spaces often are appealing not only to the citizens that live nearby, but to diverse community members, including activists, artists, academics and social entrepreneurs, allowing them to act as incubators for new ideas, shared experience and experimentation.

This research focuses primarily on urban forest - related planning and design interventions at the city and local level. However, these interventions can be manifested in various forms and on various locations. We need to create awareness among the young architects, urbanists and city users to think about resource reduction and motivate them to change their behavior and consumption patterns. Reuse of "brownfield" locations instead of new ones is very important sustainable principle for improving the qualities of a city.

References

- [1] Escobedo, F. J., Kroeger, T., & Wagner, J. E. (2011). *Urban forests and pollution mitigation: analyzing ecosystem services and disservices*, in: Environmental

- Pollution (Barking, Essex: 1987), 159 (8–9), 2078–2087.
- [2] Konijnendijk, C. C., Ricard, R. M., Kenney, A., & Randrup, T. B. (2006). *Defining urban forestry – A comparative perspective of North America and Europe*, in: *Urban Forestry & Urban Greening*, 4 (3–4), 93–103.
- [3] Konijnendijk van den Bosch, C. C., Ferrini, F., Fini, A., Ferrini, F., & Fini, A. (2017). *Introduction*, in: *Routledge Handbook of Urban Forestry*.
- [4] Laforteza, R., Pauleit, S., Hansen, R., Sanesi, G., & Davies, C. (2017). *Strategic Green Infrastructure Planning and Urban Forestry*, in Francesco Ferrini, Cecil C. Konijnendijk van den Bosch, & Alessio Fini (Eds.). *Routledge Handbook of Urban Forestry*. (pp.179 - 193). London, UK and New York, NY.
- [5] Miller, R. W., Hauer, R. J., & Werner, L. P. (2015). *Urban forestry: planning and managing urban greenspaces*, Waveland Press, Illinois.
- [6] Bogdanovic, B. (2008). *Zelena kutija: knjiga snova*, Novi Sad: Mediterran.
- [7] Gehl, J., (2010) *Cities for the people*, Island press, Copenhagen, pp.34 - 44.
- [8] Discovering Macedonia, (2015) *The Balkan Lynx in Macedonia*, Electronic source: The Balkan Lynx in Macedonia - Discovering Macedonia
- [9] Tomovska, R., Petrunova, I., Musli, H. (2022) Revitalization of Public Spaces: Sustainable and Bioclimatic
- [10] Strategies that Improve the Qualities of Skopje's Urban Matrix, in: *International Journal of Science and Research (IJSR)*, ISSN: 2319 - 7064, pp.712 - 717, SJIF (2022): 7.942. <https://www.ijsr.net/archive/v11i8/SR22808164233.pdf>
- [11] Lai, D., Liu, W., Gan, T., Liu, K., & Chen, Q. (2019). A review of mitigating strategies to improve the thermal environment and thermal comfort in urban outdoor spaces. *Science of the Total Environment*, 661, 337–353.
- [12] Nowak, D. J., Stevens, J. C., Sisinni, S. M., & Luley, C. J. (2002). Effects of urban tree management and species selection on atmospheric carbon dioxide. *Journal of Arboriculture*, 28 (3).
- [13] Kuehler, E., Hathaway, J., & Tirpak, A. (2017). Quantifying the benefits of urban forest systems as a component of the green infrastructure stormwater treatment network: Quantifying the Benefits of Urban Forest Systems as Green Infrastructure. *Ecohydrology*, 10 (3), e1813.
- [14] Nowak, D. J., & Dwyer, J. F. (2007). Understanding the Benefits and Costs of Urban Forest Ecosystems. In J. E. Kuser (Ed.), *Urban and Community Forestry in the Northeast* (pp.25–46). Springer Netherlands.
- [15] Sicard, P., Agathokleous, E., Araminiene, V., Carrari, E., Hoshika, Y., De Marco, A., & Paoletti, E. (2018). Should we see urban trees as effective solutions to reduce increasing ozone levels in cities? *Environmental Pollution*, 243, 163–176.
- [16] Wang, Y., Bakker, F., De Groot, R., & Wörtche, H. (2014). Effect of ecosystem services provided by urban green infrastructure on indoor environment: A literature review. *Building and Environment*, 77, 88–100.
- [17] Sanesi, G., Gallis, C., & Kasperidus, H. D. (2011). Urban Forests and Their Ecosystem Services in Relation to Human Health. In K. Nilsson, M. Sangster, C. Gallis, T. Hartig, S. de Vries, K. Seeland, & J. Schipperijn (Eds.), *Forests, Trees and Human Health* (pp.23–40). Springer Netherlands.
- [18] Tomovska, R., Fejza, A. (2019). Sustainable urban strategies applicable in the dense urban matrix of the city of Skopje, *South East European Journal of Sustainable Development*, UNT, Skopje, Vol.1 (2/2019), pp.26 - 36.
- [19] Konijnendijk, C. C., & Gauthier, M. (2006) Urban Forestry for Multifunctional Urban Land Use, in *Cities Farming for the Future: Agriculture for Green and Productive Cities*, pp.414 - 416.
- [20] Whitburn, J., Linklater, W. L., & Milfont, T. L. (2019). Exposure to Urban Nature and Tree Planting Are Related to Pro - Environmental Behavior via Connection to Nature, the Use of Nature for Psychological Restoration, and Environmental Attitudes. *Environment and Behavior*, 51 (7), 787–810.