USING FRUIT GROWING SPECIES IN PERIURBAN LANDSCAPE DESIGN

FOLOSIREA SPECIILOR POMICOLE IN DESIGNUL PEISAGER PERIURBAN

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Abstract. *Present study sets out a new way of developing the green spaces, centered on the citizen, wishing to become a way for cities to cope with climate change, food and nutritional security, biodiversity management and prosperity. Our purpose was to find and implement a tool for the sustainable recovery of degraded lands, by using landscaping that includes periurban spaces dedicated to the development of agro-horticultural sector. The study was conducted between 2016-2019 and represents a multidisciplinary approach, which took into consideration as many aspects as environment, economic, social, horticultural and biological. Horticultural part of this study is characterized by a great biodiversity and is dominated by fruit growing species. As for the degraded area in which urban orchards are located, they could be the hope of having safe spaces, of improving the landscape, as well as another form of social inclusion. The most important benefits from a social point of view are the maintenance of public spaces at a low cost, the social inclusion, the economy of saving food and the short chain, while under the environmental asp*ect, the protection of biodiversity and the safety of health become important.
Key words: periurban spaces, fruit growing species, landscape

Rezumat. *Studiul actual prezintă o nouă modalitate de dezvoltare şi valorificare a spaţiilor verzi, centrată pe cetăţean, dorind să devină o modalitate prin care oraşele să facă faţă schimbărilor climatice, securităţii alimentare şi nutriţionale, gestionării biodiversităţii şi prosperităţii umane. Scopul nostru a fost să găsim şi să implementăm un instrument pentru recuperarea durabilă a terenurilor degradate, prin utilizarea amenajării teritoriului periurban care include spaţii dedicate dezvoltarii sectoarelor agro-horticole. Studiul a fost realizat în perioada 2016-2019 şi reprezintă o abordare multidisciplinară, care a luat în considerare aspecte precum mediul, economic, social, horticol şi biologic. Partea horticolă a acestui studiu este caracterizată de o mare biodiversitate şi este dominată de specii pomicole. În ceea ce priveşte zona degradată în care sunt situate livezile urbane, acestea ar putea fi speranţa de a avea spaţii sigure, de a îmbunătăţi peisajul, precum şi o altă formă de incluziune socială. Cele mai importante beneficii din punct de vedere social sunt întreţinerea spaţiilor publice la un cost redus, incluziunea socială, economisirea alimentelor, în timp ce sub* aspectul mediului, protecţia biodiversităţii şi siguranţa sănătăţii devine vitală.
Cuvinte cheie: spaţiu periurban, specii pomicole, peisager

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INTRODUCTION

Population growth and increasing consumption are placing huge demands on agriculture and natural resources. In the present, approximately 15 % of world population is chronically malnourished while our agricultural systems are degrading land, water, biodiversity and climate on a growing scale. To stand up to the world's future food security and sustainability needs, food agriculture production must grow substantially but in the same time to protect the environment (Irvine *et al*., 2013).

This is why we have to find solutions for a cultivated planet and UF could be one.

In the last decade urban farming is expanding into European cities and has recently colonized the roofs of buildings, being part of the large category of roof agriculture, especially due to constraints related to the availability of urban land (Kothencz *et al*., 2017).

This paper proposes a series of projects/arrangements, analysing solutions to this dilemma, showing that tremendous progress could be made by halting agricultural expansion, closing 'yield gaps' on underperforming lands, increasing cropping efficiency, shifting diets and reducing waste. Together, these strategies could double food production while greatly reducing the environmental impacts of agriculture (Montanaro *et al*, 2017).

MATERIAL AND METHOD

For a better understanding the ideology of including fruit growing species in periurban landscape design (Specht *et al*., 2016), we reviewed their integration in a proposal to arrange a urban orchards in the city of Iasi. In the process of identifying the areas with high potential for such territorial systematizations, we discovered different sites of a special kind of picturesque in which the built elements were harmoniously combined with the vegetal ones.

For this study, we identified the 10 most populated neighborhoods in Iasi, which comprise 56% of the total population of the city and in which green spaces account for only 20% of total green spaces. Among these neighborhoods are the Mircea cel Batran, Nicolina and CUG neighborhoods, where the lack of green spaces was intensified by uncontrolled asphalting in the perimeter of the few areas with vegetation and also did not allow the reintroduction or creation of new green spaces.

Taking into account these considerations, we propose the implementation of the concept of an urban orchard in an unused space of 6400 sqm, located between three important neighborhoods, more precisely to the right of Sofia Nădejde street in front of Arcadia Hospital (fig. 1).

The principles used in the proposal for the arrangement of the Urban Orchard not only want to offer solid arguments regarding the efficient change of the landscape on which it is based, but also describe the means by which the fusion between artistic values and the qualities of the created environments is created (Timpanaro *et al*, 2015). Thus, within the urban orchard development project, it was decided to suppress the presence of cars in the landscaped space in order to obtain a strictly pedestrian landscape.

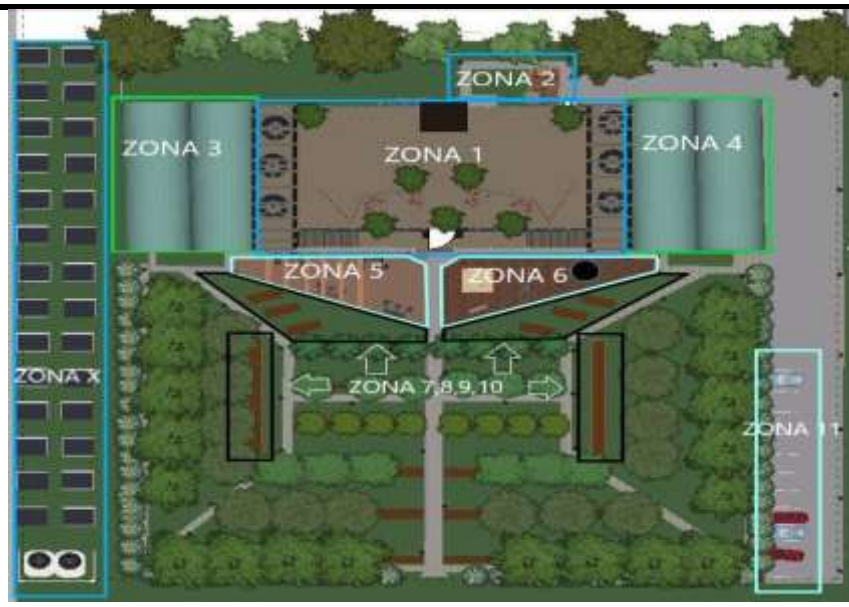

Fig. 1 The zoning of the orchard project, area at the interference of three important neighborhoods, Iasi city

The orchard is an element that ensures flavor, freshness and color to each garden. It offers a decorative spring look through flower and color, attracting pollinators and offering delicious and fragrant fruits. In addition, fruit growing can be a relaxing activity practiced with pleasure, which pleases you on all levels.

RESULTS AND DISCUSSIONS

Periurban orchards are a sustainable solution to many of the urban challenges, providing access to fresh fruit, improving the urban environment and creating habitats necessary to protect local wildlife (Zasad, 2011). The most important aspect of the project is the opportunity to facilitate connections between the inhabitants of the area, but also for them to benefit from a balanced diet rich in fresh fruits and vegetables. Connecting residents so they can create and view urban orchards as a great way to spend time in the city (most do not have their own garden). There is also a strong educational element: children, in particular, love to learn how to grow and harvest their own food, and early education creates healthy eating habits. We tried to create an orchard as varied as possible in terms of assortment, especially using qualitative varieties, low vigor dwarf type, with medium to high production, with a wide ripening season , from early May to late November.

Location of the trees in the orchard, this was done according to their size from large to small from outside to inside.

Perimeteral high-species species were used, the specimens being positioned so as to create a natural curtain of protection against proximity, but also to offer privacy to visitors.

The vigor of the planted species was taken into account, ensuring the appropriate planting distances, but also the space necessary for maintenance, the need for water, this being ensured by a well-developed irrigation system.

CONCLUSIONS

1. The concept of peri urban orchards is meant to create a space, not only with an aesthetic role, but also with an important sanogenic, economic and social role. This desire can be achieved by introducing an oasis of relaxation, as close as possible to nature for site visitors.

2. The advantage of using this type of arrangement of fruit species, initially induces visitors the feeling of modernism, but in reality, the landscape created is a rustic, natural and local, being easy to maintain.

3. The site has been designed so that each space has a well-defined role, both as an orchard, but also as a space for relaxation, trying to please all types of visitors.

4. The planting of trees and shrubs species will take into account the optimal conditions for these works to ensure the highest possible planting success.

5. Creating a research team with specialists from different fields, agriculture, landscape, biology and others will lead to diverse projects, perspectives, expertise, approaches and solutions, essential for biodiversity in food, agriculture, quality of life and for conserving food plants that will also include their use in our natural landscapes.

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