

ANALYSIS OF CONDITION OF FOREST OF THE TOWN OF SMEDEREVO IN ACCORDANCE WITH SUSTAINABLE RURAL DEVELOPMENT¹

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Abstract

Forests are an important factor in improving the environment and forest management in Serbia is regulated at both the state and local level. In this paper, forest complexes on the territory of the city of Smederevo as the administrative center of the Danube region will be considered. This paper has the goal to analyze the state of the forest fund of the city of Smederevo and the possibilities of its improvement in the context of sustainable rural development. The city of Smederevo, as a strong industrial center of the Danube region, is strategically determined to improve the existing forest fund. The paper will present the current state of forests and, accordingly, what measures are planned to increase the area under forests with certain woody species.

Key words: *forests, sustainable rural development, Smederevo, forestry.*

Introduction

Forests as ecosystems are important for life on our planet in many ways. Of the total land area, 30% is under forest. (Food and Agriculture Organization, 2006) Forest ecosystems are made up of many different plant and animal species and in that sense contribute to the maintenance of biodiversity. In terms of primary production on Earth, forests produce 80% of biomass. (Pan Yude, et al., 2013) It has been established that forests are extremely important in the production of oxygen in the intensive metabolic process of photosynthesis, during which they bind carbon dioxide and form primary carbohydrates.

In urban areas, forest plantations, such as wild chestnuts, can significantly reduce the level of air pollution due to industrial and traffic activities.

Various harmful gases, dust, radioactive particles of the forest can be absorbed to a great extent and in that way purify the air of polluted urban environments. Depending on the type of forest and density, they are a significant factor in reducing noise.

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Coniferous forests are efficient in the production of essential substances that disinfect the air, especially juniper trees. (<http://ekovrba.com/sume-i-znacaj-suma.html>)

Forest-covered areas in watercourses are protected from torrents that wash away and carry away soil around rivers. In that way, forests prevent soil erosion, and they are a good filter for water purification and obtaining drinking water.

Climate change is to some extent compensated by the presence of forest complexes. Forest exploitation, often uncontrolled, threatens the survival of forest communities, thus jeopardizing the survival of the planet.

Forests play a very important role in the global carbon cycle. Forests are a source of carbon, they are important in terms of binding and retention carbon. Forests and land to which they are attached by the root system have a large capacity to accumulate and release carbon. (Mijajlović, 2015)

Sustainable development as a concept implies the use of existing available, natural resources in order to meet the needs of present generations, while implying that they do not jeopardize the ability of future generations to use these resources. Forests have been given their special place in the context of sustainable development as renewable resources that can be maintained and improved with protection and care. Legislation and legal norms for the protection and planned exploitation of forests have been established at the world level.

The Law on Forests (Law on Forests, “Official Gazette of the RS”, No. 30/2010, 93/2012, 89/2015 and 95/2018) which applies in Serbia is adapted to international regulations at the state and local level and in accordance with that is taking measures to protect and improve forest ecosystems. Based on the annual plans, the public companies “Srbijasume” and “Vojvodinashume” perform artificial afforestation and planned deforestation within the existing forests and outside the forests. (<https://upravazasume.gov.rs/wp-content/uploads/2015/12/Strategija-razvoja-sumarstva.pdf>)

The forest fund, which occupies about 30% of the territory of the Republic of Serbia, is composed of deciduous forests mainly (90.7%), conifers have significantly less (6.0%), while the smallest percentage is mixed forests (3.3%). Beech forests with 27.6% are dominant, followed by oak forests 24.6%, other hardwoods 6.0%, poplar 1.9%, other softwoods 0.6% and mixed hardwood forests 30%. State-owned forests in Serbia have unfavorable age structures, unsatisfactory growth and health condition, and there is a large share of stands

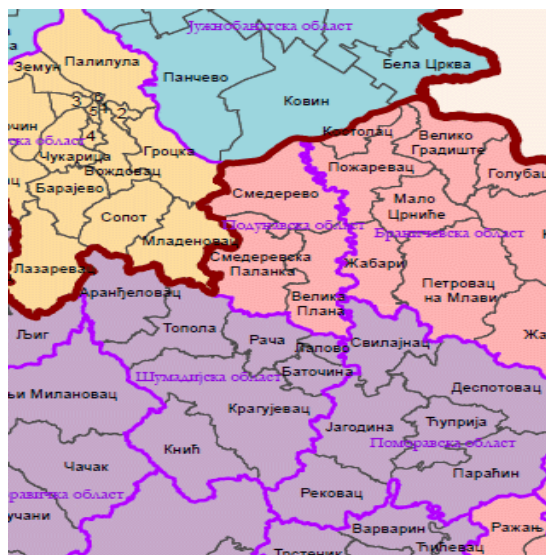
with broken structures and weedy areas due to unplanned, uncontrolled and often illegal logging and exploitation. (http://www.fornetserbia.com/doc/shared/Strategija_razvoja_sumarstva.pdf)

Climate change has had an impact on forest communities in Serbia. Due to climate change, the boundaries of certain types of forests have shifted in relation to latitude and altitude. There have been changes in the composition of some forest communities, changes in the relationship of individual forest communities to light. It is considered that all these changes have a cumulative effect and thus endanger the biodiversity of forest communities. In addition, the management of forest resources on the principles of sustainable development is also difficult to achieve. (Medarević et al., 2007)

Forest fund of the city of Smederevo

The city of Smederevo is the center of the Danube district. It is located on the banks of the Danube River in the northeastern part of Serbia. (Fig. 1). Smederevo is composed of 11 local communities. Geographical position and climate determine that two thirds of the land of this city are suitable for agricultural activities. The continental climate in Smederevo has been modified by the influence of the flows of the large rivers Danube and Velika Morava, but also small ones, which can lead to colder winters. The largest number of agricultural farms on the territory of Smederevo is engaged in the cultivation of field and vegetable crops. Areas under forest are mostly privately owned. The state forests are under the management of the Forest Company - Požarevac, within Srbijasume. Due to the larger share of private ownership over forests, the data in the available literature on areas under forests also differ. (<https://www.agromedia.rs/opstine/smederevo-grad/>)

Figure. 1. Map of the Danube area with the town of Smederevo as the center



Source site: internet reference No.5.

According to the available data from the 2012 census of agriculture, which are shown in Table 1, of the total forest land at the level of the Danube region, 31.25% is located in the city of Smederevo. At the level of the Danube District, since it is a very fertile land of the first and second class, agricultural and vegetable production has been developed and forests have been suppressed and reduced to very small areas.

Table 1. Comparative overview of total available land and forest land at the level of the Republic of Serbia, the Danube District and the City of Sederevo.

Area	Available land (ha)	Forest land (ha)
Republic of Serbia	5346596.52	1023035,53
Danube District	94747.66	4458.22
Town Smederevo	38494,87	1393,42

Source: Census of Agriculture Data, 2012. http://popispoljoprivrede.stat.rs/?page_id=6221

Based on the data from Table 1, it can be noticed that 3.6% of the total territory of the city of Smederevo is under forest areas. Due to the fact that large areas of fertile land are being actively cultivated, it is difficult to implement the plans related to afforestation at the level of this city.

Based on the Review of the Basics of Forest Management of the Public Company “Srbijašume” from 2013, the total area under forests for the city of Smederevo was 1598.32 ha, of which private forests occupied 1402 ha and the remaining 196.32 ha were state-owned under the Forest Administration Požarevac. Based on this document, the Danube District had a forest area of 106,456.78 ha, of which 64,372 ha was private property, while the remaining 42,084.78 ha was in state ownership under the management of the competent forest companies. (<https://www.srbijasume.rs/pdf/30osnove.pdf>)

According to statistical data from 2019, the forest fund is 1519 ha, which is 3.62% of the total territory of the town of Smederevo (38494.87 ha). (Municipalities and regions in the Republic of Serbia, 2019).

Strategic documents and plans at the level of the Town of Smederevo envisage the protection of existing and the establishment of new forest plantations. Actions of afforestation, renewal and rejuvenation of the forest fund are being implemented slowly for now. In terms of the composition of the existing forest fund, there are mostly poplars and willows, and ash, maple and oak forests are less represented. Oak, malt and cera forests are of the climatogenic type and it is therefore necessary to restore these forests and afforest larger areas with seedlings of these woody species. Afforestation measures must be intensified in order to ennoble and improve the environmental conditions of this industrialized city.

Conclusion

The city of Smederevo as the administrative center of the Danube region is industrially developed. Fertile land areas on the territory of this city are used for agricultural activities of growing monocultures of field and vegetable crops. The forest fund of the city of Smederevo is scarce, but in relation to the entire forest fund of the Danube region, it makes up one third. It must be pointed out that at the level of local government there are strategic plans and a commitment to change this situation. Planned measures to expand the area under forests are being taken slowly and it is necessary to develop awareness of the importance of the concept of sustainable development, which would speed up the process of afforestation and improvement of the forest fund of the city of Smederevo.

Literature

1. Census of Agriculture Data, 2012: *Republic of Serbia*
2. Forest resources of Europe, Cis, North America, Australia, Japan and New Zealand (TBFRA), (2006), UNECEFAO, Rome.

3. Law on Forests, "Official Gazette of the RS", No.30/2010, 93/2012, 89/2015 and 95/2018
4. Municipalities and regions in the Republic of Serbia, 2019.
5. Medarević, M., Banković, S., Šljukić, B., Slivicić, A. (2007): *Sustainable forest management - forest biodiversity and climate change*. In Forests and Climate Change. Proceedings. University of Belgrade - Faculty of Forestry, Belgrade. 125-152.
6. Nada Mijajlović, (2015) : *Analysis of the situation and the importance of forestry in the context of sustainable development* in Serbia, 6th Edition of the International Symposium, Agrarian Economy and Rural Development, Realities and perspectives for Romania, organizer: Research Institute for Agricultural Economy and Rural Development, Editura ASE, November 2015, Bucharest, ISSN 2285-6803, ISSN-L 2285-6803, pp. 337-341, Web site: <http://www.iceadr.ro/>
7. Pan, Yude; Birdsey, Richard A.; Phillips, Oliver L.; Jackson, Robert B. (2013): „*The Structure, Distribution, and Biomass of the World's Forests*” (PDF). *Annu. Rev. Ecol. Evol. Syst.* **44**: 593—62. doi:10.1146/annurev-ecolsys-110512-135914.)

Internet sources:

8. <http://ekovrba.com/sume-i-znacaj-suma.html> (18.09.2020.)
9. <https://upravazasume.gov.rs/wpcontent/uploads/2015/12/Strategija-razvoja-sumarstva.pdf> (19.09.2020.)
10. http://www.fornetserbia.com/doc/shared/Strategija_razvoja_sumarstva.pdf (19.09.2020.)
11. <https://www.agromedia.rs/opstine/smederevo-grad/> (20.09.2020)
12. https://www.google.com/search?q=Opstina+velika+plana&rlz=1C-1CHBF_enRS832RS833&sxsrf=ALeKk01NAXfneazGYP_ePV-5zs-5gHVkpVg:1606095504501&source=lnms&tbm=isch&sa=X-&ved=2ahUKEwj4JSAXJftAhUI3qQKHfKPB5kQ_AUoAnoEC-B8QBA&biw=1366&bih=600#imgrc=AhBNh8SyMHO6VM (20.09.2020.)
13. http://popispoljoprivrede.stat.rs/?page_id=6221 (23.09.2020.)
14. <https://www.srbijasume.rs/pdf/30osnove.pdf> (24.09.2020.)