

ANALYSIS OF REVENUE STRUCTURE IN FINANCING NATIONAL PARKS IN SERBIA

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Abstract

Financing of protected areas in Serbia is one of the important issues in the system of nature protection. Protected areas covers ~5,89 % of territory of Serbia while national parks involve ~30,57% of this land. Their importance is very significant since they include nature ecosystems, landscape and cultural features and this area is intended for protection of existing natural resources as well as for protection of landscapes, geological and biological features. Their usages are also oriented toward scientific, educational, cultural and tourism needs. This paper analyses different revenue structures in managing this type of natural resource as well as approaches in the financing in the region and abroad. The objective of the article is the structure of revenues in the financing five national parks in Serbia. Territorial framework of the research is the Republic of Serbia with the autonomous provinces. In order to determine the structure of revenues in the financing, statistical techniques based on analysis of time series is used. Non-reactive method is used for collection of data's. Results are showing that most revenues are coming from sales and services and least from government revenue allocation. The best average exponential trend has national park "Fruška gora" while national park "erdap" has negative exponential trend. Based on this, in all national parks, on revenue structure mostly influence revenues from sales of goods and fees.

Key words: nature protection, national park, revenue structure, financing, trends

Introduction

Serbia as a future member of the European Union (EU) has already begun the process of harmonization of its legislation and adoption of certain norms and rules in the management of protected areas (PA). System of protected areas in Serbia is a complex structure of different actors, rules, responsibilities and institutions involved in the management of PA. Law on nature protection (2009) is one of the essential documents of nature protection in Serbia. This law defines the different forms of management, types and methods of funding the PA. This law also defines institutions involved in the management of the national park. Protected areas are defined as areas that have a specific geological, biological, ecosystem and/or landscape diversity and therefore, based on act on the protection, are proclaimed as protected areas of common interest. On the other hand, the International Union for Conservation of Nature (IUCN) defines a protected area as a geographical space, recognized, marked and managed through the implementation of legislative and other effective measures¹⁹, in order to achieve long-term protection with associated "ecosystem services" and cultural values (Emerton et al., 2006). The national park (NP) represent "... an area with number of different natural ecosystems of national significance, the prominent feature of the natural landscape and cultural heritage in which man lives in line with the nature, intended for the preservation of existing natural values and resources"(2009). Management of NP in Serbia is given to public enterprises (PE) registered for this activity. Thus, in Serbia, there are five public enterprises responsible for the management of this good (Table 1)

¹⁹ This means that PA must be recognized through specific laws, international conventions and agreements and manage effectively in accordance with Olegislation and traditional usage.

Table 1. National parks in the Republic of Serbia

National park	Area (ha)	Manager– Public enterprise national park (PENP)	Region of Serbia	Year of establishment	Year of establishment of current status	IUCN category
Fruška Gora	25393	PENP "Fruška gora"	AP Vojvodina	1960	1993	V
erdap	63608,45	PENP "erdap"	Central Serbia	1974	1993	IV
Tara	19175	PENP "Tara"	Central Serbia	1981	1993	II
Kopaonik	11809,91	PENP "Kopaonik"	Central Serbia	1981	1993	V
Šar Planina	39000	PENP "Šar planina"	AP Kosovo i Metohija	1986	1993	II
Total area	158986,4					

Source: Sekulic, 2011 and original

Financing of NP is directly defined by the Law on nature protection and the Law on forests, and indirectly through a number of by-laws and regulations. In the system of financing NP three types of funding are defined (2009): a) budget of the Republic of Serbia-budget grants, b) revenue generated by the organization that manages the NP and c) donations. Direct funding through budget grants may be from the budget of Republic of Serbia, autonomous province (AP) and the funds of local governments. Revenues generated by the organization that manage NP may be fees for uses of PAs, income generated through performing activities and management of NP and funds obtained from implementation of programs, plans and projects in the field of environmental protection. The last category includes donations, gifts and grants, from domestic and international source.

In order to analyze the revenue structure in the financing of the national parks, public enterprise, as a form of business, needs to be defined. Enterprise represents the main organizational form in the process of reproduction, which function is related to the satisfaction of social needs for specific products and/or services (Rankovic, 2008) and represents legal entity which carries on business for profit. Owners of enterprises may be legal, individuals, state or local government. Public enterprise perform duties of special and general interest (Zivkovic, 2006), and in its management is state involved, through its representatives. Public enterprises are established by the state, autonomous provinces and local self-governments. They are formed to perform tasks that are in the area of infrastructure, public services, important government economic systems and the exploitation of natural resources that are of public interest. Revenue structure of NP, which is the subject of this research (Table 2), in this paper, is shown through different revenue categories which are involved in the financing of NP. Revenues involved in the financing of NP are showed in Table 2 (Zivkovic, 2006 Rankovic, 2008).

Table 2. Type of revenues in the management of national parks

Type of revenue	Distribution of revenue type
Operating revenue (operating income represents income that companies obtain from its operations, i.e. their core business)	Revenues from sales of goods and services
	Revenues from donations
	Fee revenues
	Other operating revenues
Revenue from capital	Interests, share of profit in other corporations, positive difference between selling price and nominal value of shares sold, renting of fixed assets etc. (Rankovic, 2008)
Extraordinary revenue	Result of extraordinary and unforeseen circumstances. These revenues are coming from charges of previous bad debts, obligations subscribed, positively resolved law suit, etc. (Rankovic, 2008)

Source: Živkovic, 2006, Rankovic, 2008

The research topic of this study is revenue structure in the financing of NP in Serbia. The main objective is to determine the revenue structure and its trend, and determine cause-effect relationship between observed values. The purpose of the research is that by comparing the revenue structure in five national parks, define necessary facts that will enable finding the most appropriate option for financing these categories of PA in Serbia.

Based on this two hypothesis are set:

- there is growing impact of revenues from goods and services on overall revenues, based on total revenues per hectare of protected area;
- average growth rate of fees and budget grants is on the level of growth rate of all operating revenues.

Material and method

The research is conducted within the NP's in order to determine the structure of revenues and revenues structure trends of the national parks. As a research method in this paper, method of trend analysis (Šešić, 1984) is used. In order to determine structure of revenues in the financing of the national parks statistical techniques based on the analysis of time series are used (Ke a et al., 2012, Stojkovic, 2001). As a basic-parameters following parameters are used:

-) absolute level of occurrence;
-) mean absolute level of occurrence;
-) average annual exponential growth rate (*I_s*).

As a special scientific method, for the collection of financial indicators in the Republic of Serbia, non-reactive method is used (Neuman, 2006). This method involves research that does not involve the collection of data directly from the subject of research and is contrary to the research methods such as interviews, surveys and experiments. The basic techniques of non-reactive research methods include content analysis, use of existing statistics, documents and their secondary analysis.

Results and discussion

The results are showing that financing of NP is primary affected by sales of goods and services as well as income from fees (Table 3). National park erdap (NP) from all observed NP only has negative *I_s* (-0.4%). This value is mostly affected by strong negative *I_s* from sales (-35.1%) and fee revenues (-6.3 %). On negative *I_s* from revenue in NP mostly influence results from last year (2011), which compared to the highest income in this category represent a reduction of almost 80%.

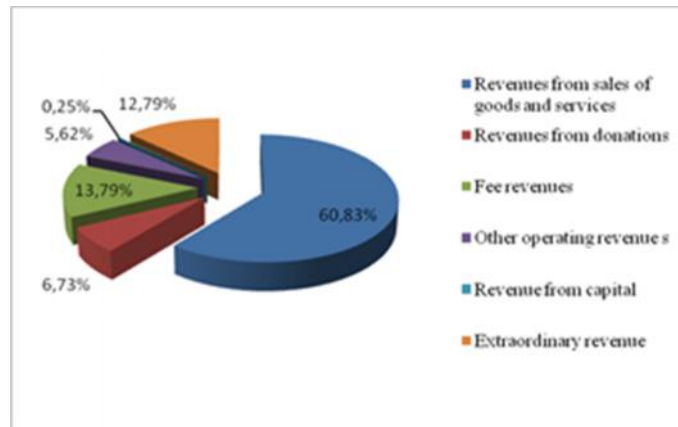
Other NP recorded positive *I*s and among them stands out NP Šar planina (NPŠP), which in 2009 and 2010 recorded significantly higher sales, but far lower incomes ($10\text{-}228 \text{ RSD}\cdot\text{ha}^{-1}$) compared to the other NP. Differences between revenue sales are primarily present between NP and other national parks. The reasons for this are primarily affected by large share of non-productive protective forest (bushes and shrubs) in the territory NP, which are not affordable to use. However, from the other side, NP Tara (NPT) and the National Park Kopaonik (NPK), recorded lower revenues from NP Fruška Gora (NPF), although the condition of forests is far more favorable in this two NP. NPT and NPK have large share of high-quality forest (dedicated unit 10) with a favorable assortment structure and high share of technical wood. On the other hand, NPF is mostly covered with soft hardwoods, which has far lower assortment structure (from two other mentioned NP), but are much easier to sell as technical wood (technical logs) because of so-called positional rent. In Montenegro revenues from selling forest assortments are negligible. The reason for this lays in strict protection of valuable forests which doesn't leave space for forest management activities. Influence on this has also structure of the forest complex that is much different from the theoretical normal (Curović et al., 2013).

Table 3. Annual exponential revenues growth rate of national parks in Serbia in period from 2008-2011.

National park	Overall business revenues (%)	Revenues from sales and goods (%)	Revenues from budget grants (%)	Revenues from fees (%)	Other business revenues (%)	Extraordinary revenues (%)	Financial revenues (%)	Overall revenues (%)
erdap	-2,3	-35,1	9,5	-6,3	24,5	30,1	79,2	-0,4
Fruška gora	11,4	8,1	-21,8	20,5	175,4	5,4	-19,1	10,7
Kopaonik	5,0	8,0	-2,9	8,0	/*	-26,5	9,4	1,9
Tara	4,0	4,9	14,0	11,9	27,9	2,7	-19,1	3,9
Šar planina	21,2	82,4	13,6	/*	/*	58,7	/*	14,2
Prose na Is	7,1	6,3	1,4	11,0	18,5	2,6	18,1	5,8

* due to the lack of data in some years of observation in this category of *I*s isn't possible to calculate

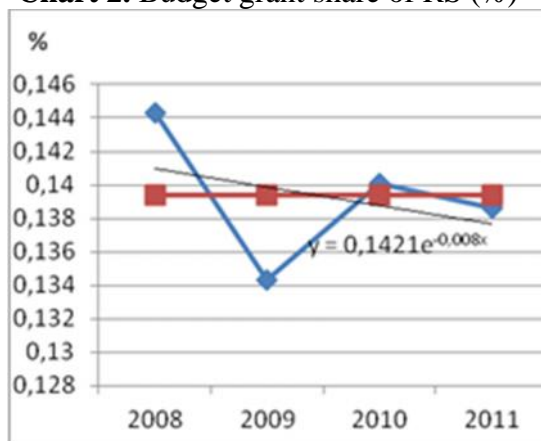
Chart 1. Income share in all national parks in Serbia in period between 2008-2011.



Source: original

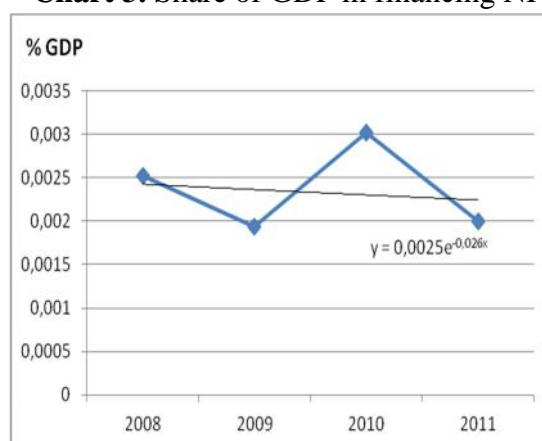
Revenue from grants, compared to other income categories (Figure 1), recorded the lowest *Is* (1.43%). The reason for this lies in the negative *Is* in two NPs. The NPFPG negative *Is* is very present (-21.8%) while NPK has somewhat mild character (-2.9%). Although revenues from grants have small *Is*, their impact on total revenues of NP is notable, considering the average share of income of 6.7%. Allocation of budget grants in NP, from budget of Republic of Serbia, has negative *Is* (-0.8%) and in average only 0.14% of the state budget. In Croatia NP funding is provided through the responsible Ministry of Culture and it amounts to 31% of all revenues. Comparing to other protected areas in Croatia (nature park, nature reserve and PA at the level of local municipalities) funding by the relevant ministry is about 90% of all revenues (Spurgeon, 2009).

Chart 2. Budget grant share of RS (%)



Source: original

Chart 3. Share of GDP in financing NP



Source: original

Allocations of budget grants in the Republic of Serbia in the 2008th year, in relation to gross domestic product (GDP), is 0.0025%, while spending in the Republic of Croatia in the same period for NP is 0.0052% (2008 and Spurgeon, 2009). Here is also present negative *Is* (-2.6%). For all protected areas in Croatia during 2004 state allocated 0.028% of GDP (Mansourian et al., 2008) while for Serbia, such data isn't available especially for longer period.

On the other hand, revenues from fees accounted approximately 13.8% of total revenues, and their *Is* has positive trend (11.0%). The results are showing that NP only has a negative *Is* since this revenue category earned twice less in period between 2009-2010. Revenues achieved in this category for NPSP are insignificant in comparison with the other NP. The reason for this surely lies

in the political situation that is present in the territory of Kosovo and Metohija, which prevents the collection of revenues from this category. The highest *Is* is present in NPPFG (20.5%), which in absolute terms, is double (for NP) and quadruple (for NPT). The reasons for this are probably similar to the trend of revenues of goods and services. Road fees for the management of NP represent very efficient mechanism for financing PA. In Serbia, these fee goes directly to NP that manage the area, while in Croatia this fee is collected by the relevant ministries (Porej et al., 2009). In Spain, for example, the share of income (5-10%) of the highway that passes through the PA, are given to specific programs to protect species and habitats (Spurgeon, 2009). Fees collected, by providing touristic activity, in the world are a major source of income for PA. Thus, in studies that have been done in the 90's it was found that nearly half of all PAs charge entering in the PA (Giongo et al., 1994) and during the last decade this trend increased (Spurgeon, 2009). Although NPs in Serbia are one of the main destinations for sightseeing of PAs there is no record of this type of income. In Slovenia, the entry into the PA, is charged and makes 26% of all revenues, in Montenegro 7.5%, Greece 35%, Croatia 63% (Mansourian et al., 2008).

Other operating revenues, in all NP, follows *Is* of 18.5%, which in our case is the highest but it is influenced by *Is* that could not be calculated in the case of NPK and NPŠP. The average annual exponential growth rate of 175.4% in NPPFG is primarily influenced by the revenue from the 2008th which have been significantly reduced due to the effect of lowering the value of goods of about 21 million RSD. Extraordinary revenues, after income from grants, have the lowest average *Is* (2.7%). For this category of revenue, highest difference is reported in terms of total income (3-40%). So NP has the highest *Is* in this category and the largest growing share in total income (from 16% to 42%) while NPK recorded negative *Is* (-26.5%) and decreasing share in total income (from 16% to 6%). NPŠP has *Is* of 58.7% as a result of the large share of these revenues in 2009-2010. The average annual exponential growth rate for NPT is the lowest (2.72%) and the lowest recorded deviations (about 5% of the income), followed with *Is* of NPPFG (5.4%). High revenues of NP in this category are primarily the result of revenue valuation adjustments and suspension of the long-term reservation, which occurs as a result of unpaid claims and release of reserved funds for a particular purpose.

The last categories of revenues are from capital, which *Is* for NPs is at extremely high level (18.10%). This trend is right behind *Is* of other operating revenues and records high *Is* for NP (79.2%), negative *Is* for NPPFG (-19.1) and NPT (-19.1). On this trend mostly influence interest income, which for NP grows while for NPPFG and NPT decline. Although this revenue category has significant *Is*, they are negligible as a share of this value is less than 1% of total revenue. The exception here only makes NPŠP, which in 2011 records high revenues (16% of total revenue) arising due to repayment for pension and disability insurance.

Conclusion

Based on the obtained results, it can be said that most revenues is earned through sale of goods and services (60.8%), followed by fee income (13.8%), other income (12.8%) and income from grants (6.7%). Looking at the structure of *Is* NPPFG has the best results. The average annual exponential growth rate of fees and revenues, from the sale of goods and services, have a positive impact on the total revenue of *Is* (10.7%), but this is influenced by other operating revenues, caused by the effect of lowering the value of the goods. NP recorded negative *Is* as a result of negative sales and fees (although this two NP have only negative operating revenue *Is*). NPT and NPK have similar overall *Is* that are results of positive *Is* of sales and fees, but because of the small share of overall revenues (although this two NP have negative *Is* in other categories), they do not reflect the whole picture. Looking at the *Is* of NPŠP, it could come to the conclusion that they have best position, but this can't be said with certainty because of very low revenues per hectare in various categories and the absence revenues from fees.

According to this, on the revenue structure, greatly affect revenues from sales of goods and services as well as revenues from fees. Other operating revenues together with financial revenues have the highest *Is* but their influence is much smaller due to the small share in total revenues. Interestingly, the high percentage of total revenue have extraordinary revenues, which are right behind the revenues from fees and can be considered as an essential component in the financing of NPs.

Based on all the above, research suggests that in the future fee revenue have the greatest potential for development and its diversification can improve businesses of NP, especially in regards to the changes in the region. Also, the analysis shows that the revenues share of grants and *Is* of grants is very small, and that in the region this revenue type is essential component in the financing PA. Therefore, one of the objectives of the policy development of protected areas, should go toward improving the mechanisms for the collection of fees stemming from tourism and recreation, which are currently neglected, and creation of a special state mechanism for funding work in national parks.

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