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# FINANCING OF NATIONAL PARKS IN SERBIA - CASE STUDY OF PE "NP TARA"

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**Apstract:** Financial statements are written records that convey the financial activities of a company. The main purpose of this study is to determine, forecast and evaluate the best of economic conditions and company's performance in the future. For-profit primary financial statements include the balance sheet, income statement, statement of cash flow, and statement of changes in equity. The **subject** of the research are the categories of income and expenditure, which move in financing PE "NP Tara". The main **goal** of this research is to determine the income structure and expenditures in the financing and the trends of their movement in the territory of PE "NP Tara" and establish cause-and-effect relationships among observed quantities. The **purpose** of the research is comparing the different structures of income and expenses that participate in the financing, during the period of 2008-2021.

**Keywords**: financial statements, financing, income, expenditure, PE "Tara National Park", business.

## 1. INTRODUCTION

There has been a significant expansion in protected areas (PAs) during the last 40 years. However, this increase in area was not followed by sufficient financing support to maximize the management (Emerton *et al.* 2006).

The purpose of this study is to analyze the financial statement and give information for financial managers to make through decisions about their business in PE "Tara National Park".

There are various number of methods used by accountants and financial analysts to analyze financial state of a company. The analysis of the financial statements is a method of comparing, judging or valuate situation of particular parts of balance sheet, on the basis of which important decisions are made (Hasanaj P., Kuqi B. 2019).

Financial statements provide interested parties with a company's overall financial condition and profitability (https://corporatefinanceinstitute.com/resources/accounting/three-financial-statements/). The analysis of financial statements, respectively the analysis of the financial reports are used by managers, shareholders, investors and all other interested parties regarding the company's state (Hasanaj P., Kuqi B. 2019). The balance sheet provides an overview of assets, liabilities, and shareholders' equity as a snapshot in time. The income statement primarily focuses on a

company's revenues and expenses during a particular period (Graham et al., 1937). Once expenses are subtracted from revenues, the statement produces a company's profit figure called net income (Osadchy *et al.*, 2018). The cash flow statement (CFS) tracks how a company uses its cash to pay its debt obligations and fund its operating expenses and investments (Peterson and Fabozzi, 1999).

The Tara National Park is in the westernmost part of Serbia and represents a mountainous area with exceptionally important geomorphological, hydrographic and ecological natural values. The total area of the National Park in Serbia is 19,200 ha with a protective zone of 37,584 ha a (https://whc.unesco.org/en/tentativelists/1698/).

The subject of the research are the categories of income and expenditure, which move in financing Tara national park. The main goal of this research is to determine the income structure and expenditures in the financing and the trends of their movement in the territory of NP Tara and establish cause-and-effect relationships between observed quantities. The purpose of the research is comparing the different structures of income and expenses that participate in the financing, during the period of 2008-2021.

## 2. MATERIAL AND METHODS

The formulation of the trend was made on the basis of the data of income categories and subcategories and expenditures for the observed period. It was used to calculate the research results regression function. The criteria for choosing the regression function were: parameter value and correlation coefficient and their statistical significance. Statistical data processing in the appropriate statistical package will provide the elements of the trend model and their graphic display, which will help to see more clearly the trends of observed variables in a given period (Kovačić, 1995).

In economic literature, it is usual to separate the balance sheet from the income statement, where the balance sheet is defined as an instrument for showing the financial condition of the company understood in the sense of quantitative and qualitative changes in the disposal of funds. On the other hand, the income statement is defined as an instrument that aims to express the degree of business success in a given period of time (Ebeke *et al.*, 2021).

The research was carried out in order to determine the structure of expenditures and trends expenditure structures of PE "NP Tara". As a general scientific method in this research the modeling method was used, and the research method was trend analysis (Šešić, 1984). In order to determine the structure of expenditures in the financing of PE "NP Tara" were used statistical techniques based on time series analysis (Kečа *et al.*, 2012, Kečа *et al*., 2015, Stojković, 2001). The following parameters were used as basic indicators:

a) mean absolute level of occurrence;

b) average annual growth rate (Is).

As a special scientific method, for collecting financial indicators in the territory Republic of Serbia, a non-reactive method was used (Neuman, 2006). Non-reactive research is such research where the research subject is not aware of this fact. This method includes research that does not involve direct data collection from the subject research and the opposite is the case with research methods, such as interviews, surveys and experiments. The basic techniques of non-reactive research methods include: content analysis or document observation and use of existing statistics, documents and their secondary analysis.

## 3. RESULTS AND DISCUSSION

Tara National Park management plan for the period 2018-2027. is realized from the resources of the management of the PE "NP Tara", dedicated funds from the Budget of the Re-

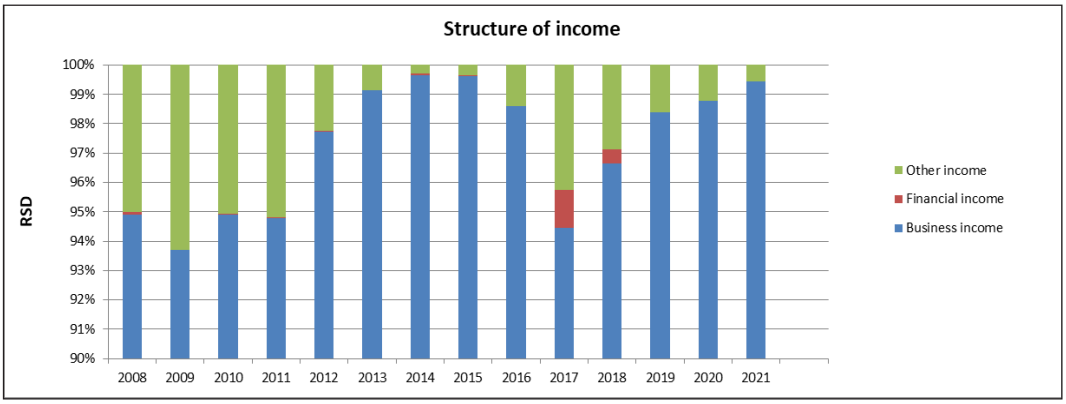


**Figure 1.** Structure of income

public of Serbia, donation funds, funds of the Municipality of Bajina Bašta and funds of other users. Sources of necessary funds, PE "NP Tara", realizes from income from the performance of the Company's activities, income from fees for use of the protected area, dedicated funds of the Budget Fund for Forests and the Budget of the Republic of Serbia, based on subsidies and donations.

If the structure of income is observed, it was determined that the largest share has business income (income from sales; income from activation of performances and goods; increase in the value of stocks of performances and other business income) (Figure 1). The average annual growth rate for business income had a positive value, while in the case of financial and other income it was negative. In the specific case, business revenues grew, on average, by 2.43% annually, while financial revenues had an average annual decrease of 28.52% and other incomes decreased by 13.68%.

In the structure of business income, the largest share belongs to income from sales and others business income. Revenues from activating performance and goods have a very small share of business income. In the categories of business income, such as income from sales and other business income, periods of growth and stagnation are observed during

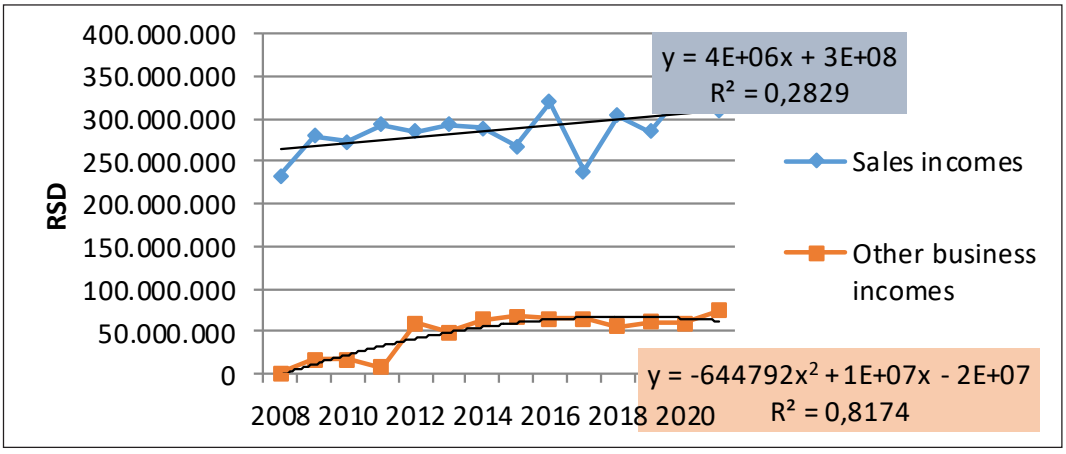


**Figure 2.** Business income trend

**Table 1.** Regression and correlation analysis for sales revenue

| SUMMARY OUTPUT | |
|---|---|
| *Regression Statistics* | |
| Multiple R | 0,53184618 |
| R Square | 0,282860359 |
| Adjusted R Square | 0,223098723 |
| Standard Error | 24508876,66 |
| Observations | 14 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 1 | 2,84313E+15 | 2,84313E+15 | 4,733142779 | 0,050290332 |
| Residual | 12 | 7,20822E+15 | 6,00685E+14 | | |
| Total | 13 | 1,00513E+16 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* | *Lower 95,0%* | *Upper 95,0%* |
|---|---|---|---|---|---|---|---|---|
| Intercept | -6835023426 | 3273413333 | -2,088041665 | 0,058779091 | -13967178385 | 297131532,6 | -13967178385 | 297131532,6 |
| X Variable 1 | 3535147,253 | 1624922,7 | 2,175578723 | 0,050290332 | -5255,169499 | 7075549,675 | -5255,169499 | 7075549,675 |

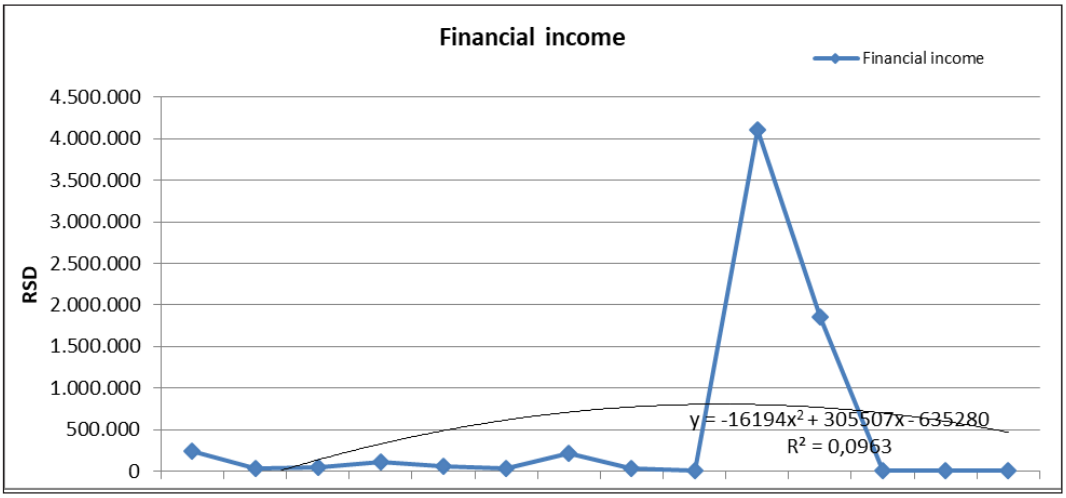


**Figure 3.** Financial income

the period 2008-2021. The function that best fitted the original data, in the first in one case it is a linear trend, and in the other a polynomial of the second degree (Figure 2).

There is a strong correlation with sales revenue (0.531). Assuming that the value α=0.05, and that the Significance is F=0.050, as well as the P-value=0.587, it can be said that there is a borderline statistical significance of the correlation coefficient and parameters, but that the results should be accepted with a reservation due to insignificant parameters (Table 1).

In the category of other income, a very strong correlation was established (0.904), as well as significance of correlation coefficients and parameters Revenues from the activation of performance and goods are characterized, in general, by a digressive trend during the entire time interval. Original data best was fitted with a polynomial of the second degree.

Total business revenues had a tendency to grow until 2015, after which periods of growth and decline alternated. The quadratic function was the best fit to the original data, which is why the trend is described by a polynomial of the second degree. On the basis of regression and correlation analysis for business income, the existence of a strong correlation relationship (0.784) was determined, as well as the statistical significance of the correlation coefficient and parameters.

Financial income in the period 2008-2021 was characterized by a balanced movement until 2017, when there was an extreme growth, after which the dynamics of these revenues returned to their original pace (Figure 3). For the purposes of the analysis, a second degree polynomial model was used. In the case of financial income, a weak correlation was recorded (0.310). Also, the correlation coefficient and parameters are not statistically significant, which is why the results should be taken with a grain of salt.

In the case of other incomes, there is also a cyclical movement, with changes in the increase and decrease in the volume of these revenues. A particularly pronounced decline was achieved in period 2011-2014. and 2017-2021. In this case, for analysis purposes, it was used linear trend model.

In the structure of expenses, business expenses have the largest share (Purchase value of goods sold; material costs; Salary expenses, salary compensation and other personal expenses; Depreciation and provisioning expenses; other business expenses). Other and financial expenses participate to a lesser extent in the total structure of expenses (Figure 4).

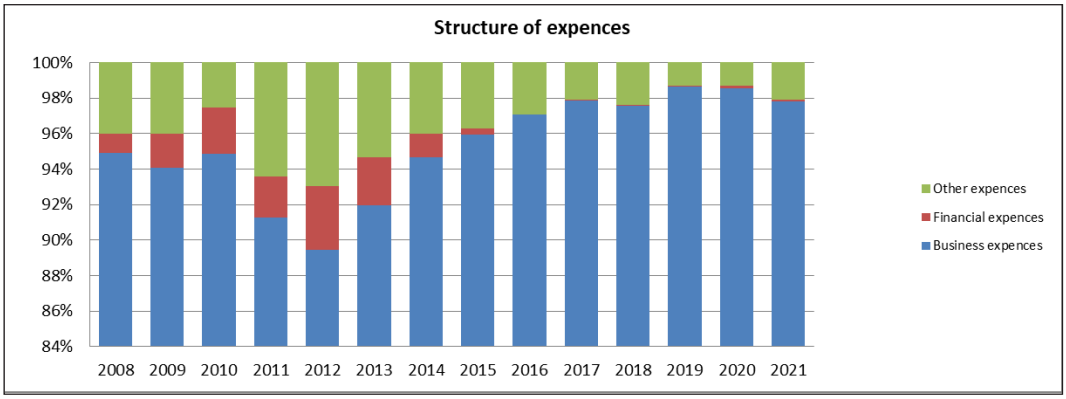


**Figure 4.** Structure of expences

The average annual growth rate in the case of business expenses had a positive value, while it was negative in the case of financial and other expenses. In the specific case, business expenses grew, on average, by 1.99% annually, while financial expenses had an average annual decrease of 13.60% and other expenses decreased by 3.25%.

The analyzed categories of business expenses are characterized by changing trends during the observed period of 2008-2021 (Figure 5). In all cases, a linear trend model was used during the analysis.

In the category of salary expenses, salary compensation and other personal expenses, a very strong correlation was established (0.898), as well as the significance of correlation coefficients and parameters. In the category of expenses related to depreciation and provisioning costs, a strong correlation was established (0.564), as well as the significance of correlation coefficients and parameters.

In the structure of business expenses, the largest share is the cost of salaries, compensation and other personal expenses. In relation to that, other categories of expenditure, such as: procurement value of goods sold; Cost of materials; depreciation and provisioning costs and other business expenses have a smaller share.

The expenditure, in the context of the purchase value of the goods sold, is characterized

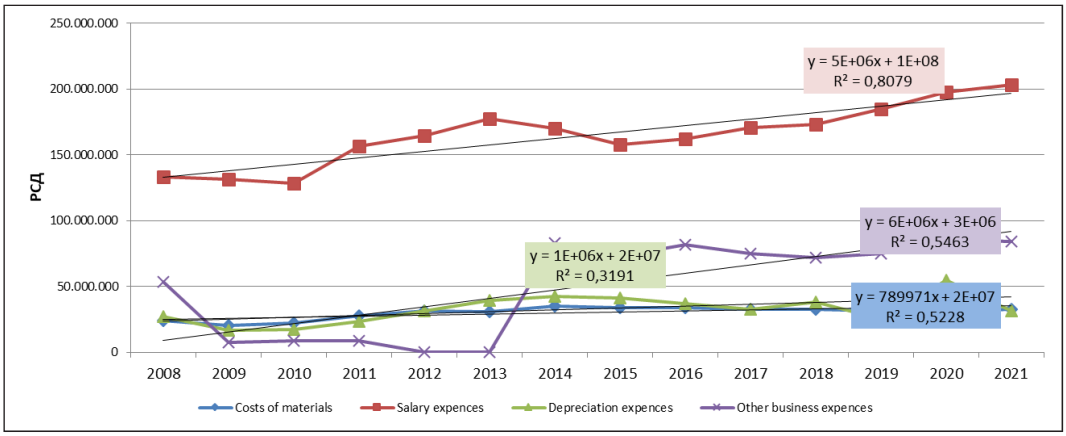


**Figure 5.** Business expenses

by a significant decrease in 2010 and 2012. After that, there is continuous growth until 2019, as well as the fall of 2020. The original data were best fitted by a quadratic trend. In the case of expenditure based on the purchase value of goods sold, there is a strong presence correlation relationship (0.711). The critical values for the correlation coefficient and parameters are less than 0.05, which indicates their statistical significance.

Sustainability is one of the important components of protected areas management and also financing of protected areas, which is defined as "... the ability to provide sufficient, stable and long-term funding sources' to cover the total costs" (E m e r t o n *et al*., 2006). The sustainability of protected areas financing is the basis for nature protection, and is defined as: "...the ability to secure sufficient, stable and long-term financial resources...", which is possible to give in the appropriate time and form, in order to "... cover the full costs of the protected areas (PA), i ensured efficient and effective management of the PA, in accordance with the objectives of protection and others goals" (Worboys *et al*., 2010).

## 4. CONCLUSIONS

Based on the financial analysis of PE "NP Tara", we came to the following conclusions:

If the income structure is observed, it was determined that the largest share is from business income (income from sales; income from activation of performance and goods; increase in value performance stock and other business income). The others are represented to a lesser extent, as well as financial income.

The average annual growth rate for business income had a positive value, while in the case of financial and other income it was negative. In the specific case, business revenues grew, on average, by 2.43% annually, while financial revenues had an average annual decrease of 28.52% and other incomes decreased by 13.68%.

In the structure of business income, the largest share belongs to income from sales and others business income.

There is a strong correlation with sales revenue (0.531).

Financial income in the period 2008-2021 characterized by a balanced movement until 2017, when there was an extreme growth, after which the dynamics of these of income returns to its original pace. A model was used for analysis polynomial of the second degree.

In the structure of expenses, business expenses have the largest share (Purchase value sold goods; Cost of materials; Salary expenses, salary compensation and other personal expenses expenditures; Costs of amortization and reservation; Other operating costs).

The average annual growth rate in the case of business expenses had a positive value, while financial and other expenses were negative. In the specific case, business expenses, on average, grew by 1.99% annually, while financial expenses had an average annual decrease of 13.60% and other expenses decreased by 3.25%.

In the category of salary expenses, salary compensation and other personal expenses, a very strong correlation was established (0.898), as well as the significance of correlation coefficients and parameters. In the category of expenses related to depreciation and provisioning costs, a strong correlation was established (0.564), as well as the significance of correlation coefficients and parameters.

Methods of financing of NPs are very diverse and range from direct to indirect allocations by the state, through financing by the management itself (i.e., introduction of various fees for the use of NP), to financing by donations and help. Financing, in the form of payments for ecosystem services, is not present, but there is a large potential for future development in this field. It is therefore necessary to define the ways of financing NPs, because current financing largely depends on itself managers, and those funds proved to be in-

sufficient for efficient management of this asset. One of the models could be the adoption of a specific fee for this purpose, which is the case in some countries already implemented, or the introduction of a more efficient system of current financial management means. Given that the financing of NPs by the state is done through different means institution, one of the models could be the establishment of an umbrella institution, which would finance all works in the NP, and was financed by the existing competent ministries and other state institutions.

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