
Financial Aspects of National Parks in Poland

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Abstract:

Purpose: National parks in Poland and other countries are an important form of protection of natural areas. Their wide-ranging activities aimed not only at the protection of biodiversity but also at the realization of social, educational, scientific, recreational functions require appropriate financing. The purpose of this article is to identify the sources of income, the direction of expenditures and to present the financial results of selected national parks in Poland.

Design/Methodology/Approach: A methodological principle in empirical scientific research is the principle of triangulation. It indicates the need to use at least three complementary research methods. The method of literature analysis, analysis of empirical secondary materials and the method of statistical analysis were used to write the article. The complementary research methods adopted allow to achieve more objective results from the research conducted.

Findings: the research showed that the leading source of funding for national parks in Poland is subsidies from the state budget. The parks also receive financial revenues from their own activities and from support from the public finance sector. A small amount of funding is received by some national parks from the European Union. Among the costs incurred for their activities, the costs of salaries of employees are dominant.

Practical Implications: The theoretical analysis of the problem studied and the research results presented in the article has practical value. It can be used in the development of

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financial strategies and business plans of national parks, and in reducing the negative financial result in a given year.

Originality/Value: *The article should contribute to a broader consideration of the financial problems of national parks in conservation theory and practice. The issues of revenues, costs, and financial performance of these parks as a social good should complement the content of the subject of nature economics and public finance.*

Keywords: *Nature protection, national parks, revenue, costs, financial result, Poland.*

JEL classification: *R11, Q23, Q56, Q57.*

Paper Type: *Research study*

1. Introduction

The European Union (EU) pays close attention to a variety of often complex environmental problems involving climate change and biodiversity loss or resource depletion and pollution. European environmental policy, to address these problems, has as its basis the principles of precaution, prevention, removal of pollution at the source and the “polluter pays” principle. The Commission has put environmental issues at the forefront of EU policy (EU 2024).

It is not only the Community that notices these problems, but also Europeans themselves. According to a 2017 Eurobarometer survey, the vast majority of Europeans (94%) believe that environmental protection is important, and 87% are personally involved in tasks for its benefit. The EU is widely (83%) seen as the best guarantee of proper application of EU environmental laws (Nature 2018).

Nature conservation is an unquestionable necessity these days. Efficiently functioning, species-diverse ecosystems determine to a large extent how healthy and how expensive food is and how clean the water is in lakes, rivers and taps. Effective nature conservation is nowadays an indispensable component of sustainable (balanced) development of societies (Nature 2024).

A key component of environmental policy, which aims to preserve biodiversity and natural ecosystems, are protected areas in the European Union (EU). The most important of these are:

- Natura 2000: Birds and Habitats Directive
- UNESCO Biosphere Reserves
- National Parks and Landscape Parks
- RAMSAR areas

- Marine Protected Areas
- Activities and Projects Supporting the Conservation of Protected Areas i.e., LIFE Program, and Green Infrastructure.

Among the goals of the European Biodiversity Strategy 2030, it is written that “bringing nature back into our lives” will follow. Europeans should focus on covering legal protection by 2030. 30% of the land area (including inland waters) and 30% of the seas in the EU, of which 1/3, or at least 10% of the land and 10% of the seas, are to be under strict protection (Protect areas 2022).

The EU's national parks are key protected areas designed to protect nature, biodiversity, while offering recreational and educational opportunities for visitors. Each of these parks has unique natural features that attract tourists from all over the world.

The purpose of this study is to show the financial aspects of national parks in Poland. To achieve the purpose of the study, financial data from the activities of all national parks for the years 2012-2023 were used. As an example for detailed analysis, data for four selected national parks, i.e. Białowiecki National Park, Bory Tuchoskie National Park, Karkonowski national park and Wielkopolski national park for the years 2015-2023 were used.

2. Literature Review

2.1 The Background of National Parks Origins

The origins of nature conservation date back to ancient times. Forest areas were first protected in India nearly 2,000 years ago, and since then, at various times in history and with varying degrees of success, efforts have been made around the world to protect areas of special conservation value (Wright and Mattson, 1996). The origins of conservation, however, were not formalized, institutionalized, and were not understood as it is captured today. That is, in the past, the natural qualities of a site or area were not taken into account (Radziejowski, 2011).

Nowadays, protected areas are one of the elements of the global system of nature conservation. They create the necessary conditions for the preservation of biodiversity, and form the basis of virtually all national and international nature conservation strategies. They aim to maintain functioning natural ecosystems, protect species and maintain ecological processes threatened by intensive management of the natural landscape (Özyavuz, 2012).

The International Union for Conservation of Nature (IUCN) defines a protected area as follows, “is a terrestrial and/or marine area specifically dedicated to the conservation of biological diversity and natural and associated cultural resources, managed through legal or other means” (IUCN, 1994, p. 7).

One of the examples of these areas defined by the IUCN is a national park, which is treated as a natural area of land or sea that is managed primarily for ecosystem protection and recreation.

Defined in this way, a national park has several basic functions. It is intended to ensure the protection of the ecological integrity of one or more systems for present and future generations; - it is intended to eliminate exploitation or unfriendly, hostile activities that threaten the objectives of the protected area; it is intended to provide conditions for the fulfillment of human psychological, educational, recreational, tourist and scientific needs, which are to be environmentally and culturally compatible (Dudley and Stolton 2008, p. 9).

The term “national park” was created in the United States of America in 1872 to preserve the natural values of the Yellowstone area. Over time, the idea of giving this status to the area's national natural and cultural heritage was transferred to a diverse and wide range of political, social and ecological values (Gissibl, Höhler, and Kupper 2012). Other values may also be present in these areas: cultural, aesthetic, spiritual.

The broad approach to defining a national park indicates the scope of its inclusion. It is commonly believed that parks, and nature reserves serve the “common good”. They are created and managed by “impartial” state institutions, and their primary purpose is to protect and maintain biodiversity (Mekonnen, 2016).

According to the IUCN, there are currently more than 4,000 national parks worldwide (Travel, 2022). They are parts of dedicated protected areas to maintain functioning ecosystems. Regardless of how exactly individual countries define a national park, the prevailing common idea of these areas is that they are meant to protect “wildlife” for the well-being of the public and serve as a symbol of national pride (Mwangi, Zhang, and Wang, 2022).

2.2 The Framework of National Parks Finance

It should be noted that all national parks share a common rationale for their operation and an overarching goal. This is the effective protection of biodiversity, cultural, historical and socio-economic values. Their activities in this regard are linked to adequate funding. In general, several basic sources of funding for national parks can be identified:

- domestic government budgets - in most countries they are financed from the government budget;
- international assistance - in economically underdeveloped countries, national parks receive financial support from international organizations and other foreign donors;

- multilateral funds - the source of funding is global financial institutions, such as the World Bank, and International Development Association;
- bilateral donors - protected areas, including national parks, are financed by a country's government organizations;
- private and community funds - sources of funding are non-profit organizations, charities, various types of foundations and individuals (Emerton, Bishop, and Thomas 2006);
- own income - in the financing of national parks their own income contributes.

It follows from the above that various institutions participate in the financing of these protected areas. In the United States, for example, the National Park Service is primarily funded by the US Congress. Additional sources are its own revenues derived from park entrance fees, park use, and support from private donors, including non-profit organizations (National parks, 2024).

In Denmark, national parks are independent organizations receiving government funding. A park board is established that includes representatives from municipalities, states, NGOs and the local national park council (Visitor Management in Nordic National Parks, 2019). In contrast, in the United Kingdom, the parks are largely funded by the central government (e.g., in Wales by the Welsh government).

In practice, park authorities are also working to find other innovative ways to increase their revenue from the public (e.g., through visitor centers and parking lots, partnerships with entrepreneurs, obtaining grants for specific projects (Cairn, 2018).

In Germany, full funding for a national park is provided by the state in each case. Funding covers protection of natural processes, management costs, supervision of the area, maintenance of recreational infrastructure, education for sustainable development, monitoring, communication, research, general administration, cooperation of parks with the local environment. Support for park activities from third parties (private, institutional) is also possible (Evaluation of German National Parks. 2012).

3. Materials and Methods

The subject of the study was to examine the principles of financing national parks in Poland. The aim of the study was to identify the financial aspects of national parks in Poland. In order to achieve such a defined objective, financial data from the activities of all national parks for the years 2012-2023 were used. Data for national parks (purposive selection), i.e., Białowiecki national park, Bory Tuchoskie national park, Karkonoski national park and Wielkopolski national park for the years 2015-2023, were analyzed in detail.

The research assumed the identification of key sources of income and costs of national parks, as well as the analysis and evaluation of the financial result of selected national parks.

The following research methods were used to write the article: empirical analysis of secondary materials, literature analysis method, and statistical analysis method. The authors were guided by the basic directive of empirical research, which dictates that several research methods or techniques should be used simultaneously in social and economic research that complement each other.

This principle makes it possible to reduce the negative values of the research methods used and compensate them with positive features, including achieving more objective results from the research conducted. The results obtained were presented in descriptive, tabular and graphical form.

4. Study Area

4.1 The System of National Parks in Poland

The origins of nature conservation in Poland date back to ancient times, when the first rulers, wanting to protect valuable game animals above all, issued laws threatening severe repression to those daring to hunt in royal or princely forests. However, this was to protect their own interests (Radziejowski, 2011).

In Poland, in the existing legal system, nature protection is regulated by the relevant provisions of laws, the most important of which is the Law on Nature Protection of April 16, 2004, together with its implementing acts (Act, 2021). It introduces the following forms of protected naturally valuable areas: national parks, nature reserves, landscape parks, areas of protected landscape, Natura 2000 areas, nature monuments, documentary sites, ecological land uses, natural and landscape complexes, and species protection of plants, animals and fungi.

The purpose of nature protection is: 1. maintenance of ecological processes and stability of ecosystems; 2. preservation of biological diversity; 3. preservation of geological and paleontological heritage; 4. ensuring the continuity of the existence of species of plants, animals and fungi, together with their habitat by maintaining or restoring them to a proper state of protection; 5. Protecting landscape values, greenery in cities and villages, and tree plantings; 6. Maintaining or restoring to a proper state of protection natural habitats, as well as other resources, creations and components of nature; 7. Shaping proper human attitudes towards nature through education, information and promotion in the field of nature protection (Act, 2021).

National parks are also one of the forms of nature protection in Poland. These are areas distinguished by special natural, scientific, social, cultural and educational values, with an area of not less than 1,000 hectares, where all nature and landscape

values are protected (Act, 2021). The main purpose of establishing a national park is to secure and protect the richness of natural heritage and biodiversity. It is the responsibility of the state to ensure the security of these protected areas.

Therefore, this institution should take care of an adequate amount of financial resources to guarantee their operation (Czarnecki and Gołębiowska 2013). National parks are organizational units that have their own structure, and the main body is the park director, elected by the minister responsible for the environment (Zbaraszewski, 2016).

The first national parks in Poland were already established before World War II, as two such areas were created in 1932: Białowieża and Pieniny (PNP, 2020). Currently, there are 23 national parks in Poland (Figure 1), with a total area of 315,100 hectares, which is only 1% of the country's area. The largest of its kind is Biebrzański National Park, with an area of about 600 square kilometers, and the smallest is Ojcowski National Park, which has just less than 22 square kilometers (Environment, 2020).

Figure 1. National parks in Poland



Source: <https://stat.gov.pl/porta1/edukacyjny/polskie-parki-narodowe-wystawa/>.

National parks are the highest national form of nature protection. The last new national park was created in Poland 23 years ago - the Warta Mouth National Park, established in 2001. In subsequent years, only four parks were enlarged: Slowinski, Karkonoski, Poleski and in 2022 Swietokrzyski.

As already highlighted, national parks cover only 1% of Poland's area, and in this respect we are almost at the very end in Europe. This compares with 9.5% in France, 7% in Norway, 6.5% in Slovakia, 5.4% in Italy, 5.2% in Hungary, 3.3% in the Netherlands, 2.9% each in Germany and Finland, 2.3% in Lithuania, 2.2% in Austria, and 1.7% in the Czech Republic (Olejniczak, 2023). Most national parks in Poland occupy small areas, much smaller than their counterparts in many other countries (Table 1). The average size of such a park in Europe is 52,000 hectares, almost four times the Polish average.

Table 1. National parks in Poland

National park	Year of establishment	Area [ha]	Landscape zones
Słowiński NP.	1967	21,611	seashores
Woliński NP.	1960	8,199	
NP Bory Tucholskie	1996	4,613	lake districts
Drawieński NP	1990	11,342	
NP. Ujście Warty	2001	8,099	
Wielkopolski NP	1957	7,597	
Wigierski NP.	1989	15,090	
Białowiecki NP	1932	10,517	lowlands
Biebrzański NP	1993	59,223	
Kampinowski NP	1959	38,544	
Narwiański NP	1996	7,350	
Poleski NP.	1990	9,760	
Ojcowski NP.	1956	2,163	uplands
Roztoczański NP	1974	8,483	
Świętokrzyski NP	1950	7,626	mountains
Babiogórski NP	1954	3,393	
Bieszczadzki NP	1973	29,202	
Gorczański NP	1981	7,030	
NP Gór Stołowych	1993	6,353	
Karkonoski NP	1959	5,951	
Magurki NP.	1995	19,438	
Pieniński NP.	1932	2,372	
Tatrzański NP	1947	21,182	
TOTAL		315,138	

Source: Own study.

It is worth noting that by 2030 Poland should cover 10% of the country's area with protection. The question arises, what are the main reasons why no national park has been established in Poland for more than 20 years? One reason for the failure to

establish new national parks is the reluctance of local governments and local communities. They fear that they will lose more from it than they will gain. This is because there are significant restrictions in a national park, such as building new houses, tourist facilities, or carrying out other investments that leave taxes in the municipalities and provide jobs. The priority in such municipalities is nature conservation, and anything that conflicts with it is prohibited in them.

There is a provision in the current Law on Nature Protection that allows local governments to block initiatives to create and expand national parks in Poland. The compensation envisaged for this, offsetting losses from economic constraints caused by the location of municipalities within national parks in the form of tax credits, is too insignificant.

Compensation to farmers for lost income from their farms located within the boundaries of the national park is lacking. There is no system of environmental subsidies to compensate municipalities for lost revenue from protected areas. Such financial support should be provided from the state budget.

One of the reasons inhibiting the creation of new national parks or the expansion of existing ones is the attitude of many foresters. Foresters in national parks earn much less than foresters in the National Forests. Once a forest complex is incorporated into a national park, the foresters employed there face a significant pay cut.

In conclusion, the creation of new and the expansion of existing national parks is hampered by current legislation and community attitudes, which do not encourage local governments and residents to give their consent to the creation of a new or expansion of an existing national park.

4.2 The Framework of National Parks Finance in Poland

National parks in Poland have undergone significant formal changes in recent years, which have affected their legal and financial operations. Until the end of 2010, they functioned as budgetary units of the state treasury with established auxiliary farms that collected the unit's own income, which is the basis for good management (Babczuk and Kachniarz, 2015).

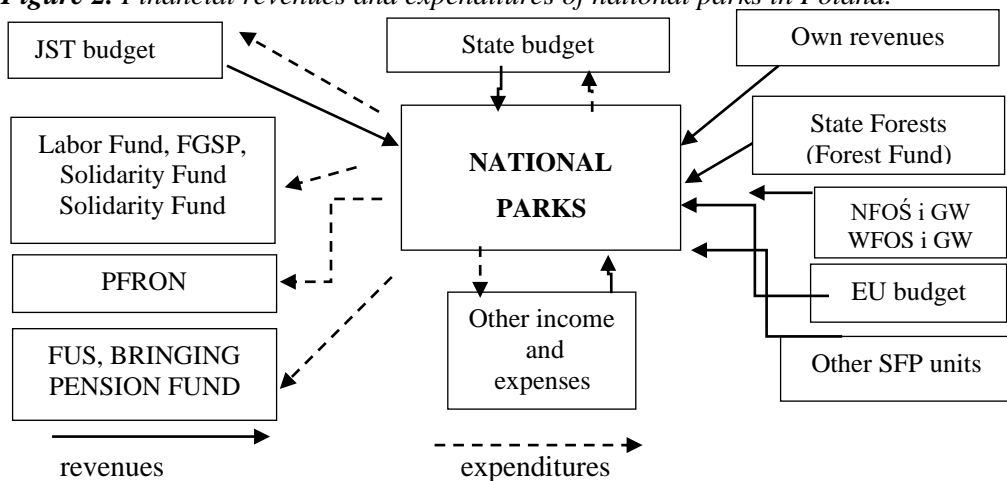
Since 2012, national parks have functioned as state legal entities, obliged to conduct independent financial management based on an annual financial plan. They play the role of a steward of subordinate space, a full-fledged investor, employer and actor of the local socio-economic scene (Kulczyk-Dynowska, 2018).

These changes have created opportunities for national parks to undertake activities of an economic nature, provided, however, that these activities do not contradict the provisions of the law (Pawlusinski, 2019).

According to Art. 8g. Paragraphs 1, 2 and 3 of the Law on Nature Protection (Journal of Laws 2021, item 1098), the entity “conducts independent financial management by covering expenses for financing the tasks specified in the Law, including the tasks of the National Park Service and the costs of operations, from its funds and revenues received.”

The basis for the financial management of a national park is an annual financial plan, in which the following are distinguished: revenues from operations, subsidies from the state budget or budgets of local government units (JST), costs (including: salaries and contributions accrued thereon, interest payments resulting from incurred liabilities, purchases of goods and services), funds for property expenditures, funds allocated to other entities, the balance of receivables and liabilities at the beginning and end of the year, as well as the balance of cash at the beginning and end of the year (Babczuk and Kachniarz, 2015). Sources of income and expenses of national parks in Poland are shown in Figure 2.

Figure 2. Financial revenues and expenditures of national parks in Poland.



Notes: JST - Units of Local Government; NFOŚ and GW - National Fund for Environmental Protection and Water Management; WFOŚ and GW - Provincial Fund for Environmental Protection and Water Management; SFP - Public Finance Sector; EU - European Union; FUS - Social Insurance Fund; FGŚP - Guaranteed Employee Benefits Fund; PFRON - State Fund for Rehabilitation of Disabled Persons.

Source: Own study.

National parks are public goods, and for this reason they are financed from the state budget, the EU budget and the budget of local government units. They receive earmarked subsidies from the state budget for statutory activities, for additional activities, such as the payment of compensation for damage caused by animals, for the implementation of their own projects subsidized by EU funds (e.g., nature conservation projects).

The activities of national parks can also be subsidized by local government units (e.g., financial support allocated for the implementation of tasks related to the protection of natural and cultural values of the region (Cieślukowski, 2023). Revenues of national parks from their own sources include entrance fees, revenues from the sale of products (e.g., timber, fish), from leases, rentals, among others.

Sources of revenue for national parks also include funds from the Forestry Fund, which is subordinate to the State Forestry Administration, e.g., for the parks' redemption for the benefit of the State Treasury of real estate located within their boundaries, for scientific research, the creation of infrastructure needed for forest management, and for nature protection in forests.

National parks' revenues from the National Fund for Environmental Protection and Water Management (NFOŚ and GW) and the Provincial Fund for Environmental Protection and Water Management (WFOŚ and GW) are used to implement parks' nature and landscape protection projects.

National parks' revenues from other entities of the Public Finance Sector (SFP) include universities, executive agencies, whose finances in the form of cooperative grants can support environmental projects and statutory tasks carried out by parks (Zbarszewski, 2016a; 2016b; Cieślukowski, 2023). Other sources of funding for the activities of national parks also include interest, donations received from private entities, and the equivalent of depreciation on acquired fixed assets (Cieślukowski, 2023).

The possibilities for sources of financial revenue for the budget of national parks are very broad. These revenues can most generally be put into three groups:

- internal revenues: They arise from the park's primary activities, which, among other things, include revenues from the sale of products obtained in the implementation of tasks arising from the protection plan or from protective tasks. They also include income from educational activities, sales of educational and scientific materials, income from entrance tickets to the park, from making the park available to third parties for various purposes, income from renting premises, leasing, renting or using real estate, income from farming within the park, from fees for providing information, from the sale of property, income from projects organized for the benefit of nature protection;
- external revenues: Grants from the state budget, NFOŚ and GW, WFOŚ and GW, Forest Fund, from the European Union, from local governments (in connection with the transfer of relevant tasks to parks), from other financial support programs (foreign and domestic);
- other revenues: These include voluntary contributions, inheritances, bequests, donations and other benefits in kind, as well as proceeds from

restitution ordered against offenders convicted of environmental offenses (Pater, 2020).

Regardless of the sources of revenue, national parks also have expenses that are transferred to the state and local government budgets. They also include mandatory contributions resulting from employees working in the parks (Figure 1). To the state budget they remit value-added tax, corporate income tax, and pay various public fees depending on their activities (e.g., stamp duties, court fees). To the budget of local government units (county district administration) go registration fees on transportation vehicles that are assets of parks.

On the other hand, municipalities earn income from local taxes and fees (Cieślukowski, 2023, p. 131). National parks employ workers and are therefore employers. For this reason, they become payers of mandatory contributions to state special purpose funds on salaries paid to employees.

They pay contributions to the Social Security Fund (FUS), the Labor Fund (FP), the Solidarity Fund (FS), the Bridging Pension Fund (FEP), the Guaranteed Employee Benefits Fund (FGSP), and the State Rehabilitation Fund for Persons with Disabilities (PFRON). Other expenditures involving national parks may include, among other things, fees on civil law activities (e.g., fees for cutting down trees and shrubs).

5. Results and Discussion

Scientific research on the financial aspects of national parks is usually carried out in two streams, which consider the economic value of national parks and their impact on the state of the local economy (Mika, Pawlusiński, and Zwalińska 2015). The topic of financing national parks is being addressed more and more in the scientific literature. These studies clearly indicate that national parks generate significant income from tourism and create jobs for many people working directly and indirectly in tourism (Mwangi, Zhang, and Wang 2022).

As mentioned earlier, since 2012, national parks in Poland base their financial management on an annual financial plan. In this plan, they determine the amount of revenue as well as operating costs.

Analyzing the financial statements of the national parks, it was found that both revenues and operating costs of the national parks have a sustained upward trend. Total revenues between 2012 and 2023 totaled more than PLN 3.5 billion (Table 2).

In 2012, the revenue was more than PLN 187 million and in 2023 it was already nearly PLN 435 million. The average annual growth rate of the revenue level in the analyzed period was 8.0%.

Analyzing the year-on-year increases in revenue, it was found that their highest increases occurred in 2013 (18.8%) and in 2022 (20.2%). In contrast, in 2019, the total revenue of national parks was lower than 2018. (-2.3%). As for the operating costs of the national parks, between 2012 and 2023 they spent an amount of more than PLN 3.3 billion in connection with their activities, which is less than the value of revenues in the analyzed period.

Table 2. Implementation of financial plans by national parks in 2012-2023

Year	Total revenue in thousand PLN	YoY Change	Total costs in thousand PLN	YoY Change	Gross result in thousand PLN
2012	187,170	-	191,046	-	-3,876
2013	222,379	18.8%	229,130	19.9%	-6,751
2014	238,458	7.2%	232,486	1.5%	5,972
2015	255,384	7.1%	243,147	4.6%	12,237
2016	273,225	7.0%	239,957	-1.3%	33,268
2017	281,549	3.0%	261,149	8.8%	20,400
2018	293,410	4.2%	279,968	7.2%	13,442
2019	286,617	-2.3%	283,079	1.1%	3,538
2020	301,417	5.2%	300,782	6.3%	635
2021	334,704	11.0%	308,277	2.5%	26,427
2022	402,272	20.2%	366,447	18.9%	35,825
2023	434,561	8.0%	418,161	14.1%	16,400

Source: Own study based on the Report on the Implementation of the State Budget for 2012-2023.

In 2012, the operating costs of all national parks amounted to PLN 191 million, when in 2023 their value exceeded PLN 418 million. On average, the annual growth rate of expenses for the operation of national parks was 6.7%. The highest year-on-year increase in costs was recorded in 2013. (19.9%), 2022 (18.9%) and 2023 (14.1%). The increase in operating costs in the last two years was due to the high level of inflation in Poland and the increase in salaries for national park employees.

Taking into account the amount of revenue and operating costs of the national parks, the gross result can be determined. Analyzing this indicator, it was found that only in the first two years (2012 and 2013) the gross result was negative. In subsequent years, it was positive, which indicates that the authorities of the national parks manage the available financial resources well.

Unfortunately, it cannot be stated unequivocally that all of Poland's 23 national parks generate a positive gross result. The calculations show that in the first year after the change in the rules of operation of national parks, including the rules of their financing, as many as 17 of the 23 generated a negative gross result. From year to year, the number of parks with a negative gross result decreased, for example, in 2016-2018 there were 6, and in 2022 only three parks were in the negative. The high level of inflation resulted in 10 parks with a negative gross result in 2023.

The following section of the paper presents the results of the study on four selected national parks. The selection of these parks was purposive and covers the years 2015-2023.

Bialowiecki national park is one of the oldest national parks in Poland (Table 1), and Bory Tucholskie national park is one of the youngest parks.

Analyzing the reports on the implementation of the financial plans of the analyzed national parks, it was found that revenues increased by more than 63% during the analyzed period. Total revenues in 2015-2023 amounted to nearly PLN 425 million.

Considering the value of revenue, the highest revenue is generated by Kampinoski national park (Table 3). It is a park that charges entrance fees to the park. Therefore, in the structure of revenues, more than half (51.8%) of the revenues are from its activities. The share of funds from the state budget in the form of an earmarked grant does not exceed one-fifth.

Table 3. Revenue of selected national parks in 2015-2023

Listing	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bialowiecki national park									
Total revenue in thousand PLN	10,827	12,301	11,346	11,324	11,262	11,398	11,033	15,967	19,856
YoY Change	-	16.6%	-7.8%	-0.2%	-0.6%	1.2%	-3.2%	44.7%	24.4%
Revenue from operations	28.8%	30.7%	30.6%	29.7%	31.1%	18.6%	29.4%	21.9%	17.7%
Special purpose grant from the state budget	52.6%	43.3%	47.7%	47.6%	47.9%	49.6%	52.6%	62.0%	52.5%
Funds from other units of the public finance sector	5.7%	9.1%	2.6%	2.0%	3.5%	9.2%	5.5%	5.0%	9.8%
Other income	10.9%	16.9%	19.1%	20.7%	17.5%	22.6%	12.5%	11.1%	20.0%
Bory Tucholskie national park									
Total revenue in thousand PLN	3,804	4,020	4,514	4,350	4,249	4,586	4,186	6,669	7,145
YoY Change	-	5.7%	12.3%	-3.6%	-2.3%	7.9%	-8.7%	59.3%	7.1%
Revenue	11.9%	11.5%	11.4%	10.6%	11.7%	11.9%	12.9%	10.1%	10.9%

from operations									
Special purpose grant from the state budget	60.5%	62.8%	58.6%	60.8%	62.2%	62.7%	68.7%	67.6%	65.8%
Funds from other units of the public finance sector	5.8%	2.3%	1.5%	1.7%	2.9%	1.8%	3.3%	1.3%	2.0%
Other income	21.8%	23.4%	28.5%	26.9%	23.2%	23.6%	15.1%	21.0%	21.3%
Karkonoski national park									
Total revenue in thousand PLN	14,818	17,424	13,256	14,869	17,696	16,100	20,334	20,145	25,787
YoY Change	-	17.6%	-23.9%	12.2%	19.0%	-9.0%	26.3%	-0.9%	28.0%
Revenue from operations	38.8%	34.3%	44.9%	44.1%	53.4%	56.6%	55.3%	56.6%	51.8%
Special purpose grant from the state budget	51.3%	20.4%	26.9%	24.4%	20.4%	23.0%	18.0%	26.3%	23.1%
Funds from other units of the public finance sector	6.1%	3.0%	1.0%	1.7%	2.8%	2.0%	1.5%	1.4%	0.6%
Other income	3.8%	42.3%	27.2%	29.8%	23.4%	18.4%	25.2%	15.7%	24.5%
Wielkopolski national park									
Total revenue in thousand PLN	8,887	9,370	11,654	9,728	8,684	8,273	8,521	11,351	11,043
YoY Change	-	5.4%	24.4%	-16.5%	-10.7%	-4.7%	3.0%	33.2%	-2.7%
Revenue from operations	47.6%	44.5%	55.3%	39.2%	45.5%	43.8%	42.3%	42.4%	40.7%
Special purpose grant from the state budget	36.8%	36.0%	28.9%	34.7%	38.8%	42.6%	41.3%	37.6%	40.5
Funds	7.4%	3.8%	0.0%	5.4%	2.5%	1.6%	2.1%	1.4%	1.9%

from other units of the public finance sector									
Other income	8.2%	15.7%	15.8%	20.7%	13.2%	12.0%	14.3%	18.6%	16.9%

Source: Own study.

In terms of revenue, Bialowieza national park ranked second, with revenues increasing year after year. During the analyzed period, these revenues increased by more than 83% and amounted to more than PLN 19.8 million in 2023. In the structure of revenues, the highest share is the targeted subsidy from the state budget, the share of which in the last three years exceeded more than 52% of total revenues. A high share is also accounted for by other revenues (20.0%) and their share doubled compared to 2015. Bialowieza national park also charges admission fees to the Natural Forest Museum and the Bison Show Reserve.

Analyzing the financial data for Wielkopolski national park, it is obvious that its main source of revenue was the income from its operations and an earmarked subsidy from the state budget. Its revenue structure also includes a high share of other revenues. Wielkopolski national park does not charge entrance fees. The total amount of revenue in 2015-2023 was more than 85.5 million PLN a, which gave an average revenue of more than 9 million per year.

In 2018-2020 and in 2023, the park's revenue was lower compared to the previous year. The last park analyzed was the Bory Tucholskie national park, which was the youngest national park in Poland until 2001. It is also a relatively small park in terms of area occupied (4,613 hectares) which affects the amount of revenue generated. Total total revenues in 2015-2023 amounted to more than 43.5 million PLN. Revenues in this park grew steadily, the highest growth occurred in 2022 and amounted to 59.3% compared to the previous year.

Over the entire period under review, the park's revenue increased by 87.8%, the highest growth among the surveyed parks. The main source of revenue was an earmarked subsidy from the state budget, the share of which accounted for more than 60% in each year analyzed. It is worth noting that, relative to the other parks, other revenues ranked quite high in the revenue structure, the share of which was stable during the analyzed period.

When considering the financial situation of the analyzed national parks, it is necessary to analyze the costs incurred for the operation of the parks. Table 4 presents a summary of the costs incurred in 2015-2023 and the structure of these costs. Gross results, which is the difference between revenues and costs, were also calculated. A positive result means that in the studied park there was a surplus of

revenues over costs, while a negative result indicates that the park recorded a loss in a given financial year.

Table 4. Operating costs and gross profit of selected national parks in 2015-2023

Wyszczególnienie	2015	2016	2017	2018	2019	2020	2021	2022	2023
Białowiecki national park									
Total costs in thousand PLN	11,360	10,795	11,005	11,457	11,354	12,172	11,812	16,074	20,536
YoY Change	-	-5.0%	1.9%	4.1%	-0.9%	7.2%	-3.0%	36.1%	27.8%
Koszty funkcjonowania	80.0%	83.3%	93.2%	88.7%	94.0%	87.4%	94.4%	89.7%	80.7%
w tym wynagrodzenia	50.9%	53.3%	51.2%	50.5%	49.9%	52.5%	50.0%	57.4%	57.7%
Koszty realizacji zadań	20.0%	16.7%	6.8%	11.3%	6.0%	12.6%	5.6%	10.3%	19.3%
Gross result in thousand PLN	-533	1,506	341	-133	-92	-774	-779	-107	-680
National park Bory Tucholskie									
Total costs in thousand PLN	3,537	3,840	4,301	4,293	4,314	4,556	4,157	6,623	7,266
YoY Change	-	8.6%	12.0%	-0.2%	0.5%	5.6%	-8.8%	59.3%	9.7%
Operating costs	89.8%	86.4%	78.5%	82.2%	85.7%	83.7	92.7%	93.9%	92.6%
including salaries	46.8%	51.6%	54.0%	51.5%	49.3%	53.0%	51.8%	48.3%	48.7%
Costs of task implementation	10.2%	13.6%	21.5%	17.8%	14.3%	16.3%	7.3%	6.1%	7.4%
Gross result in thousand PLN	267	180	213	57	-65	30	29	46	-121
Karkonoski national park									
Total costs in thousand PLN	12,342	12,064	12,967	14,020	16,010	15,475	15,906	19,575	28,665
YoY Change	-	-2.2%	7.5%	8.1%	14.2%	-3.3%	2.8%	23.1%	46.4%
Operating costs	96.7%	96.1%	96.4%	96.0%	94.5%	94.0%	92.8%	94.4%	95.7%
Including salaries	27.2%	30.2%	31.7%	30.3%	27.9%	31.9%	31.5%	32.5%	30.4%
Costs of task implementation	3.3%	3.9%	3.6%	4.0%	5.5%	6.0%	7.2%	5.6%	4.3%
Gross result in thousand PLN	2,476	5,360	289	849	1,686	625	4,428	570	-2,878
Wielkopolski national park									
Total costs in thousand PLN	8,371	8,859	8,830	8,838	9,047	9,295	9,203	11,955	12,437
YoY Change	-	5.8%	-0.3%	0.1%	2.4%	2.7%	-1.0%	29.9%	4.0%
Operating costs	90.4%	84.9%	87.7%	83.8%	88.8%	91.9%	88.4%	88.2%	90.1%
Including salaries	32.2%	36.5%	38.7%	40.9%	41.0%	41.9%	45.2%	39.5%	40.6%
Costs of task implementation	9.6%	15.1%	12.3%	16.2%	11.2%	8.1%	11.6%	11.8%	9.9%
Gross result in thousand PLN	516	511	2,824	890	-363	-1,022	-682	-604	-1,394

Source: Own study.

Analyzing the data on the expenditures incurred for the activities of the studied national parks, it should be noted that the highest were in Karkonoski national park and Białowiecki national park. Relatively lower was in the other two parks. In the

cost structure, the highest share was accounted for by park operating costs, including the cost of employee salaries. National parks are, on the one hand, nature that is subject to protection and, on the other hand, a multitude of employees who work in these parks to protect this nature.

The total costs of the four parks studied between 2015 and 2023 amounted to more than PLN 393 million. The highest increase in costs during the analyzed period was recorded in Karkonoski national park (132.3%) and in Bory Tucholskie national park (105.4%).

On the other hand, in Bialowieza national park the increase was not so impressive and amounted to only 80.8%, and in Wielkopolski national park only 48.6%. Such a high increase in the cost of operating the national parks is the aftermath of the increase in employee salaries in 2022 and 2023.

At this point, it should be noted that the level of salaries of national park employees in Poland is regulated by the Ordinance of the Minister of Climate and Environment (Journal of Laws 2024, item 231), which determines the conditions of remuneration for employees' work, including the amounts of basic salary and other components of remuneration.

The cost of salaries, of course, depends on the amount of employment in a given park. The largest number of employees in 2019 was in Bialowieza National Park - 101 people, and slightly fewer in Karkonoski National Park - 76 people. The smallest number of employees in 2019 was recorded in Bory Tucholskie national park (35) and Wielkopolski national park (47).

Considering the data on task costs, that is, costs including all costs related to the implementation by national parks of projects and tasks financed with external funds, their share varied, and they accounted for from 4.3% to 19.3% (in 2023).

The financial result of national parks depends on the revenues received and the costs incurred for their operations. On an annual basis in the studied period 2015-2023, each of the national parks recorded a negative gross result in at least one year. All of the analyzed parks had a negative gross result in 2023 (Table 4).

In terms of gross result, Karkonoski national park fared best, recording a negative gross result (-2.9 million PLN) in the last year of the study alone. Bory Tucholskie national park, on the other hand, its financial situation does not look impressive as in the case of Karkonoski national park. However, it generates a positive gross result in the analyzed period, only in 2019 (-65 thousand PLN) and 2023 (-121 thousand PLN) it received a negative financial result.

The situation is different for Bialowieski national park, which generated a positive gross result only in 2016 and 2017, and in the other years this result was negative. In

contrast, Wielkopolski national park generated a positive gross result in 2015-2018, but as of 2019 its financial result is negative.

Undoubtedly, the negative gross financial results obtained by the surveyed national parks during the period under study means that they are insufficiently financed. The analyses carried out showed that the financing of the studied parks is mostly based on a targeted subsidy from the state budget, and the factor that generates the highest operating costs is the salary costs of employees working in these parks.

Therefore, in order to ensure proper and stable financing, the subsidy from the state budget should cover at least the basic costs, especially salary costs including surcharges.

6. Conclusions

This article presents the financial aspects of national parks activities in Poland. In particular, the sources of revenue, operating costs and financial results of their activities in 2015 - 2023 were highlighted. The following results were obtained:

- among the sources of revenue of national parks in Poland, targeted subsidies from the state budget and revenue from their own activities prevail. On an average, the annual rate of increase in the level of revenue from all sources in national parks in the years studied was 8%;

- operating costs in the majority of national parks represented a smaller value compared to the revenues received. The average annual rate of increase in the costs of national parks' operations from 2015 to 2023 was 6.7%. In the structure of costs, the highest share was accounted for by costs related to employee employment.
- the gross financial result of national parks depends on the amount of revenue they receive and the costs they incur for their operations. It cannot be stated unequivocally that all 23 national parks in Poland generate an added gross financial result. There were parks with a negative financial result.

Thus, to ensure stable financing of national parks activities in Poland, these parks should:

- receive larger subsidies from the state budget /they are state entities/, local government, State Forests, social organizations and the European Union;
- increase revenues from their own activities, including educational tourism, research and development, and marketing.

The issue of financing national parks in Poland should be more widely taken into account in the theory of nature economics, public finance, and environmental management.

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