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ANALYSIS OF THE DEVELOPMENT OF TOURISM AND RECREATION INFRASTRUCTURE IN THE FOREST DISTRICTS OF THE REGIONAL DIRECTORATE OF STATE FORESTS IN BIAŁYSTOK

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ABSTRACT: Forest areas are not only limited to the sale of timber (the economic side), but have many other advantages, such as: influence on climate, humidity, soil protection, health, harvesting of undergrowth, development of tourism and recreation (Gołos & Janeczko, 2001). The aim of the study is to analyse and evaluate the development of tourism and recreation infrastructure in forest districts belonging to the RDSF in Białystok in terms of its accessibility, construction and modernisation. Tourists are reluctant to visit places where such infrastructure does not exist or is neglected (Bański, 2014). This also serves as the main motivation for undertaking this kind of a study. The research used the method of observation, a diagnostic survey with a research questionnaire and a face-to-face interview. Forestry literature and financial and economic reports for the years 2020-2021 were also used. When analysing tourist and recreational infrastructure, it is worth mentioning the source of funds for its construction and modernization since, without financial support, its development would be impossible.

KEYWORDS: forest inspectorates, tourist and recreation infrastructure, sylvano-tourism, forest fund

Introduction

The State Forests National Forest Holding (SFN FH) is a state organisational unit without legal personality, which is not an enterprise and operates in Poland (Act, 1991). The State Forests (State Forests) conduct forest management and care for the condition of the managed areas, i.e. for the preservation of natural and landscape values. The economic foundation of the State Forests is the principle of self-financing. PGL LP allocates the funds reserved for its own needs, without paying the owner (state) any form of dividend. Such solutions are relatively common in Western Europe.

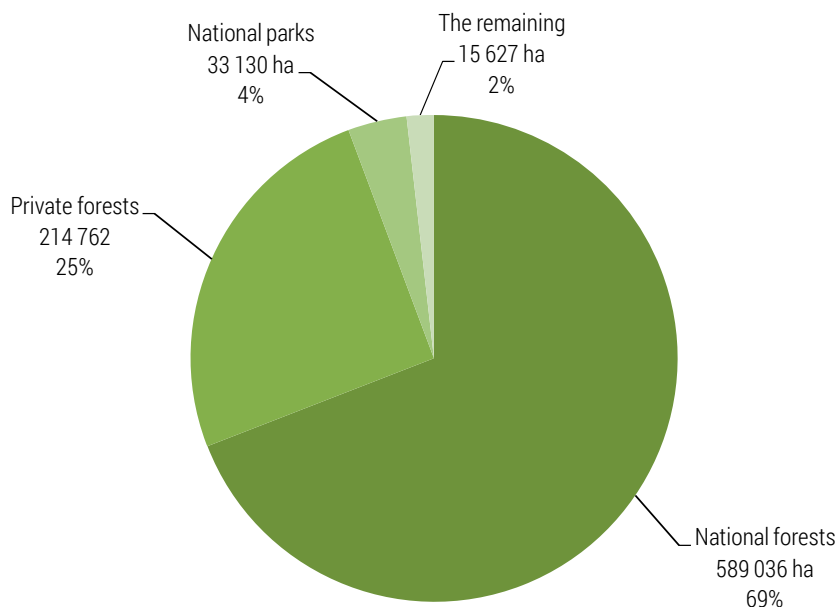


Figure 1. The range of RDSF in Białystok

Source: authors' work based on RDSF (2022).

In Poland, activities related to forestry, i.e. the core activity of the State Forests, are exempt from income tax and are only subject to forest tax. Polish forest-related authorities include the General Directorate of State Forests (GDSF) and 17 Regional Directorates of State Forests (RDSF) – (Figure 2) with 429 forest districts and 17 thousand tourist facilities registered (GUS, 2022). 31 forest districts belong to the Regional Directorate of State Forests in Białystok (Table 2). The State Forests units have the capacity to act in law (e.g. the forest inspector represents the State Treasury and issues administrative decisions and is personally responsible for compliance with the law).

RDSF's tasks include, above all, supervision over subordinate units and coordination of activities in their area. The surface structure of RDSF activity in Białystok is shown in Figure 1.

Additionally, SFN FH is equipped with a unique instrument to compensate for financial shortages in individual forest districts. Such an instrument is the forest fund. It is mainly supplied by funds from forest districts, the so-called basic write-off which is determined annually, as a percentage of revenues from sold wood. Financial districts in good financial condition transfer their surpluses, which are then used by other units. Various projects are also financed from the forest fund, including national ones, such as education, scientific research, creation of tourist infrastructure and the preparation of forest management plans. Thanks to this model, the State Forests do not burden the state budget, and the funds from the sale of wood are allocated to various tasks to be performed by the forest inspectorate.

The forest fund is administered by the General Director of the State Forests. A typical example of this instrument is supporting forest districts where forest stands have been affected by a natural disaster. However, one can also encounter an opinion that the forest fund has a demotivating effect, as there are no criteria for assessing the profitability of individual forest districts.

Research has shown that RDSF use the following sources of financing for the construction and modernization of tourist infrastructure. The most common are:

- own funds,
- forest fund,
- National Fund for Environmental Protection and Water Management,
- Marshal Office,
- Infrastructure and Environment Operational Program,
- sponsors.

The development of sylvano-tourism (tourism in forest areas) in forest districts is closely related to the development of tourism and recreation infrastructure and depends mainly on the attractiveness of the area, the commitment of foresters of a given unit and the possibility of obtaining funds without which infrastructure development is impossible. The survey showed that there are forest districts which are not interested in the development of tourism and recreation, nor in the construction or modernization of infrastructure, even though tourist values and attractions exist in their area. Representatives of selected forest districts claim that they prefer peace and quiet, and are not interested in tourist traffic, but there are also those that create favourable conditions for sylvan tourism and, at the same time, take into account the requirements of the so-called "tourist absorptive capacity," i.e. the capacity of the natural environment to accommodate a number of tourists that will provide optimal conditions for recreation, while not upsetting

One may ask whether it is necessary to develop sylvan-tourism in forest districts and build tourist-recreational infrastructure? Progressive socio-demographic changes and an increase in the importance of one's health and psychophysical condition contribute to the growth of interest in active forms of leisure in forest areas. However, tourism and recreation, in addition to many other functions, also perform tasks of health-promoting importance. In everyday life, physical activity is very important, and, therefore, it is reasonable to provide optimal conditions for the implementation of various forms of physical activity (Grzywacz, 2011). According to numerous authors (Graf, 2011; Karczewski, 2010; Nałęcka, 1983; Grzywacz, 2008), too little physical activity can be a cause of stress and diseases of civilization. Regular physical activity, on the other hand, is a path to a better and healthier life for modern society (Jalinik, 2021). Therefore, it is advisable to continuously invest in the development of tourist and recreational infrastructure, which should result in the improvement in the health and physical condition of society. Forest areas, as already mentioned, have many functions, among them: economic, health, social, educational and tourism and recreation.

Therefore, the purpose of the study is to analyse and evaluate the activities of forest districts belonging to the Regional Directorate of State Forests in Białystok in terms of construction and modernization of tourist and recreational infrastructure. Tourist-recreational infrastructure is aimed at enabling visitors in a given area to satisfy their needs for active as well as passive recreation. So far, no attempt has been made to analyse tourist and recreational infrastructure in the forest districts of the RDSF in Białystok and thus, there is a need for public interest in the subject. In conclusion, it should be said that visitors are attracted mainly by tourist and recreational infrastructure. Where it does not exist, sylvano-tourism hardly develops, and forest areas are not used for health purposes.

The purpose, scope and research methods

The aim of the study is to analyse and evaluate the activities of forest districts belonging to the Regional Directorate of State Forests in Białystok in terms of the development of tourist and recreational infrastructure in the years 2020-2021. Each forest district operates in different natural and landscape conditions and the creativity of individual units is varied in different forest areas.

Therefore, the purpose of the study is to find out the scope of development of tourism and recreation infrastructure in the analysed units (forest districts). The study was prepared on the basis of surveys, direct interviews (diagnostic survey), observations and financial and economic reports for 2020-2021, which were made available by the Regional Directorate of State

Forests in Bialystok. Inductive and deductive were also used (Poskrobko et al., 2020).

62 questionnaires containing 36 closed-ended and open-ended questions were sent to 31 forest districts and the Regional Directorate of State Forests in Bialystok. Fifty-six questionnaires were returned to the authors of the study with responses, which were analysed in detail and from which relevant conclusions were drawn regarding the development of tourist and recreational infrastructure. Although the sample was not very large, the level of responses was satisfactory. In order to deepen the knowledge of the analysed topic, specialised literature was used; mainly financial and economic reports for 2020-2021. The research was conducted in the months of June, July, August 2022. It should be noted that 83.5% of the respondents answered in a comprehensive manner. The remaining percentage (16.5%) were general answers. The observation method was also helpful in assessing the course of work and the state of infrastructure in the surveyed forest districts.

Elements of tourism and recreation infrastructure in the study area

In order for the human body to function efficiently, movement in an unpolluted environment is essential. Such areas are undoubtedly state-owned forests, as well as private forests. Willingness to use the resources of forest areas depends primarily on the existing tourist and recreational infrastructure which, in turn, depends on a number of factors including: transport accessibility of the area, natural and scenic qualities, tourist attractions, ongoing nature conservation activities and forest management (Jalinik, 2021).

With the progress of urbanisation and technologization, as well as with the increase in the quality of life, it is indispensable to develop and modernise tourist and recreational infrastructure in forest areas (Strahl, 2006). Forest districts belonging to the Regional Directorate of State Forests in Bialystok are a special area in terms of having natural, scenic and cultural values and attractions.

Infrastructure in general is an economic category and includes basic facilities and institutions that are the material and organisational base for tourism development (Dyczkowski, 1998; Jovanović & Ilić, 2016). It includes four basic elements:

- accommodation base,
- food (catering) base,
- accompanying base,
- transportation base (Panasiuk, 2007; Rogalewski, 1974).

An important element is the accompanying base, which includes facilities and institutions of a service, entertainment, cultural and tourist-recreational nature. Tourist-recreational infrastructure includes many types of tourist facilities and equipment designed to enable visitors to an area to fulfil their needs for both passive and active tourism.

The accompanying base was classified into four basic groups (Panasiuk, 2007):

- facilities that enable tourists to enjoy the attractions of a given area, which include sports and recreational facilities and equipment (swimming pools, aquaparks, cable cars, rope parks, ski lifts and trails, hiking trails, marinas, stadiums, golf courses, bowling alleys, tennis courts, observation towers and others),
- facilities that enable tourism, which include travel agencies, tourist service offices and tourist information centres,
- cultural and entertainment facilities: movie theatres, exhibition halls, gymnasiums, theatres, libraries, sports and entertainment arenas,
- service facilities that allow tourists to meet their daily needs through a base of amenities established to serve the area's residents, which include: technical development of the area, retail network, service network, postal and telecommunications facilities, health care facilities, public safety institutions, mountain and water rescue institutions.

A peculiarity of forested areas is that they are different in terms of tourist infrastructure compared to non-forested areas. Its signage is also different. Elements of tourist infrastructure in the forest districts of the Regional Directorate of State Forests are shown in the table below.

The survey shows that the largest number of registered facilities are point and area, recreational and educational facilities. For example, out of 31 forest districts in the RDSF, there are only three hunting lodges, one campground, 13 guest rooms, two campgrounds, four children's playgrounds and eight forest parking lots. From the data presented, the conclusion is that, if there is a small number of accommodations, visitors cannot be expected.

Tourism and recreation infrastructure, also known as tourism development (Rogalewski, 1974), is one of the most important factors in the development of sylvano-tourism.

The literature often emphasises that the so-called material base of tourism plays a special role in tourism development. Tourism and recreation infrastructure allows the commercial use of natural, as well as anthropogenic tourist destinations. Consequently, a larger and more attractive infrastructure improves the tourist offer and increases the attractiveness of the region. One of the most important accompanying facilities are sports and recreational facilities and equipment (Pawlikowska-Piechotka, 2009). They can be erected and organised with tourists in mind (hiking, biking, Nordic walking,

educational paths, observation towers, open-air museums and others), as well as built primarily to meet the needs of the local population (Denstadli & Jacobsen, 2011).

Table 1. Elements of tourism and recreation infrastructure in the forest districts of the Białystok RDSF (in 2020-2021)

Unit name	Object types	Number of objects*
Cubature accommodation base	Training and recreation centre	7
	Recreation centre / facility	60
	Hunting quarters	3
	Guest room	13
	Forest shelter	1
Non-cubature accommodation base	Camping site	104
	A camping site	2
	Camping	1
	Scout camp	21
Area recreational, recreational and educational facilities	A place to rest	77
	Forest parking	8
	Place of parking for vehicles	212
	Place / playground for children	4
	Green class	5
	Another object of a surface character	285
Point objects recreational, leisure and educational facilities	Viewpoint	28
	Point for launching and mooring for water equipment	8
	Another point feature	2035
Cubature recreational and leisure facilities and educational	Forest education centre	7
	Chamber of forest education	15
	Other cubature building	9
Linear educational objects	Educational / didactic path	78
Total		2905

* all objects are the property of forest districts and are located in the used area (none are leased)

Source: authors' own study based on RDSF (2022).

Forest areas are characterised by the fact that they should be used according to their function and protected from non-forest use. It should be borne in mind that the forest is intended to serve the public and should be used as much as possible for recreational and tourist purposes (Janeczko, 2013). There should be easily accessible elements of tourist-recreational infrastructure in forest areas to the extent that one can enjoy the scenery, explore accessible parts of the reserves, view natural monuments, watch birds, take photographs and camp but, at the same time, not to destroy undergrowth (Roovers et al., 2004). Elements of tourist and recreational infrastructure should be built in such a way that as many camping sites, places for outdoor

games, accommodation and food facilities are created, so that leisure time can be effectively managed. There are too few such elements in the RDSF in Białystok. Auxiliary maps, folders, brochures and information boards should be prepared for visitors, which would encourage them to visit the most attractive places. Of the surveyed forest districts (31), not all of them are trying to develop a tourist and recreational base. A significant proportion of them lack an accompanying base for the development of sylvano-tourism, and are mainly engaged in economic activities (timber sales), while forest districts such as Augustów, Białowieża, Ełk, Goldap, Giżycko, Olecko, Pisz, Rajgród, Hajnówka, Łomża, Suwałki, or Supraśl should promote and develop their tourist potential due to location and attractiveness.

From the point of view of the motive criterion, infrastructure can still be divided into strictly recreational and sports-oriented for the practice of psycho-physical activities, mainly for health purposes. Proper infrastructural development is one of the factors determining visitors' choice of a suitable tourist destination (Roman, 2018). Infrastructural development is also formed by the already mentioned trails, paths and accommodation and catering facilities, without which the stay will be unattractive. In forest areas, special care should be taken to develop tourist and recreational infrastructure. This will result in greater interest in the area and an influx of tourists.

The forest fund as a source of support for the development of tourism and recreation infrastructure

The basic organisational form of finance that enables money management in forest districts is the forest fund. It enables the accumulation and distribution of funds by a specific entity (Dyduch, 2012). The forest fund was established pursuant to Art. 56 (1) of the Forest Act and is a form of management of the funds collected therein for the purposes specified in the Act. It is a deliberate action to compensate for financial shortages arising in the implementation of forest management tasks by forest districts. It is also an indispensable means for building and upgrading tourism and recreation infrastructure in forest districts. This mainly applies to those units that have favourable natural and landscape conditions for forest management and are taking measures to improve infrastructure. The forest fund has been repeatedly considered in the literature on the subject from the angle of economic, production and non-production. The fund was created to ensure the financial stability of forest districts, as part of the financial system of the State Forests, which is primarily a mechanism for redistributing funds from income to deficit forest districts (Adamowicz et al., 2014).

There are also such opinions that the selected organisational units of the State Forests are not sure about their future financial situation and are not familiar with the economic parameters according to which the forest fund's resources are allocated (Jalinik & Bakier, 2021). Certain deficiencies in the functioning of the forest fund also stems from the fact that it is a substitute for budget financing (compulsory payments, non-refundable payments, non-equivalent contributions to taxpayers) – (Sochacka-Krysiak, 1997). The forest fund is administered by the General Director of the State Forests with its seat in Warsaw.

The goal of forest management is the production of material goods and the provision of public services in the form of an increasing number of non-productive functions of forests, which determine the specific needs (preferences) of the society (Dawidziuk & Klocek, 2005). The income of the forest fund is:

- basic write-offs charged to the forest district's costs (for example, in 2020 it amounted to PLN 1,053,391.7 thousand),
- penalties and fees related to the exclusion of forest land from production,
- receivables resulting from compensation for damages resulting from the impact of industrial gases and dust,
- premature cutting of stands and occurring fires,
- income resulting from participation in or obtained from the sale of shares in shares in companies,
- budget subsidies, excluding earmarked subsidies for tasks commissioned by the government administration,
- mining and geological works,
- other income obtained for the forest fund.

The resources of the forest fund may be allocated to (Piekutin & Gruchała, 2006):

- joint ventures of organisational units of the State Forests, in particular in the field of forest management,
- research,
- maintenance of general purpose infrastructure facilities,
- creating tourist and recreation infrastructure,
- maintenance and conservation of tourist and recreation infrastructure,
- preparation of forest management plans,
- work related to the assessment and forecasting of the condition of forests and forest resources:
- nature protection in forests carried out with the use of forest management methods,
- acquisition by the State Treasury of land referred to in Art. 37 *pre-emption right to land* and forests or land intended for afforestation, referred

to in Art. 37 *acquisition of land and forests by the head of the State Forests unit*,

- organisation of trainings in the field of estimating hunting damage, referred to in Article 46 of training in the field of estimating hunting damage of the Act of 13 October 1995 – Hunting Law (Act, 1995).
- other forest management tasks,
- afforestation of land not owned by the State Treasury,
- construction of trees on land not owned by the State Treasury,
- other works related to the removal of the effects of natural disasters and management of non-state forests,
- purchase by national parks for the State Treasury of real estate located within the park.

The forest fund plays a special role especially when, in addition to the economic tasks, non-productive goals are pursued in forest areas, such as the development and modernization of tourist and recreational or educational infrastructure. It is worth mentioning that the resources of the forest fund not used in a given calendar year constitute the income of this fund in the following year. According to the RDSF in Białystok, most of the funds from the forest fund were directed in 2020-2021 to various types of projects in national and landscape parks, including infrastructure.

Results of the research

The development of tourism and recreation infrastructure in forest areas is not possible without financial resources and investments of this kind are closely related to the creation of a material base for the provision of tourism services. The surveys were conducted in the months of June – August 2022. They covered the years 2020-2021. The results were based on surveys, the diagnostic survey method, financial and economic reports for 2020-2021, specialised literature and the observation method (Jevons, 2007). 62 research questionnaires containing 36 closed-ended and open-ended questions were addressed to the Regional Directorate of State Forests in Białystok, and a face-to-face interview was conducted on the development of tourism and recreation infrastructure in their units. The questions included in the surveys mainly concerned the following areas (Table 2).

Table 2. Questions in the surveys focused on:

No.	The content of the most important issues (research questions)
1.	Possibility and desirability of infrastructure development in forest districts
2.	Construction and modernization of tourist and recreational infrastructure in the area of forest districts
3.	The type of proposed tourist and recreational infrastructure
4.	The attitude of the residents of the Białowieża Primeval Forest's buffer zone to tourists staying in the area
5.	Sources of funding for the construction and modernization of tourist and recreational infrastructure
6.	The importance of tourist and recreational infrastructure in terms of health
7.	Persons responsible for the development of infrastructure in the forest district area
8.	The influence of external institutions (outside the forest district) on infrastructure development
9.	Health and safety conditions in the Białowieża Forest area

The number of forest districts as study units is shown in Table 3.

Table 3. Forest districts belonging to the Regional Directorate of State Forests in Białystok

Augustów	Głęboki Bród	Plaska
Białowieża	Gołdap	Pomorze
Bielsk	Hajnówka	Rajgród
Borki	Knyszyn	Rudka
Browsk	Krynki	Supraśl
Czarna Białostocka	Łomża	Suwałki
Czerwony Bór	Maskulińskie	Szczerba
Dojlidy	Nowogród	Waliby
Drygały	Nurzec	Żednia
Ełk	Olecko	
Giżycko	Pisz	

Source: author's own work based on RDSF (2022).

The research showed that infrastructure development mainly depends on the creativity of forest districts and the financial resources they have. The survey found that some forest districts are content with mediocrity and do not specifically seek to develop tourism and recreation infrastructure. There were also opinions (diagnostic survey) expressed by some employees that tourism and recreation infrastructure, as well as tourists themselves, are not welcome in their area. They communicated interest in maintaining peace and

quiet and working without problems. This position is in contrast to the fact that silvano-tourism is an important sphere of physical activity, as well as social activity. With its development, the tourist and recreational infrastructure of forest districts becomes inseparable. It should be added that local governments are also quite often involved in its construction and modernization. According to survey data, forest districts in 2020-2021 raised funds for its construction and modernization from the following sources:

- own funds,
- forest fund,
- National Fund for Environmental Protection and Water Management,
- Marshal Office,
- Operational Program Infrastructure and Environment,
- sponsors.

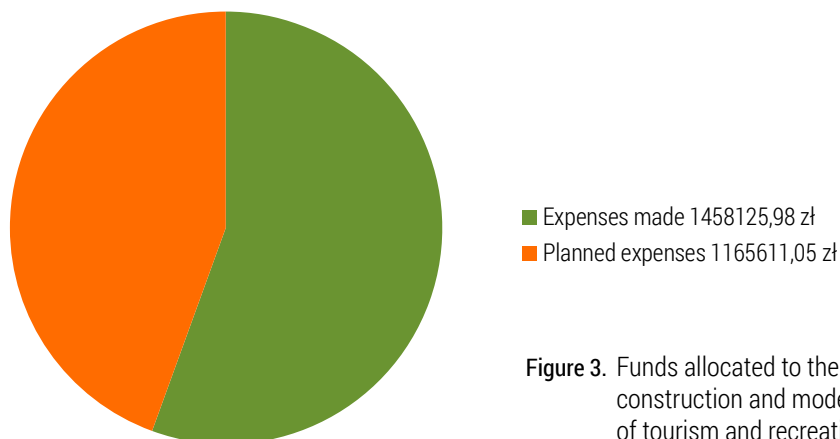


Figure 3. Funds allocated to the construction and modernization of tourism and recreation infrastructure in 2020

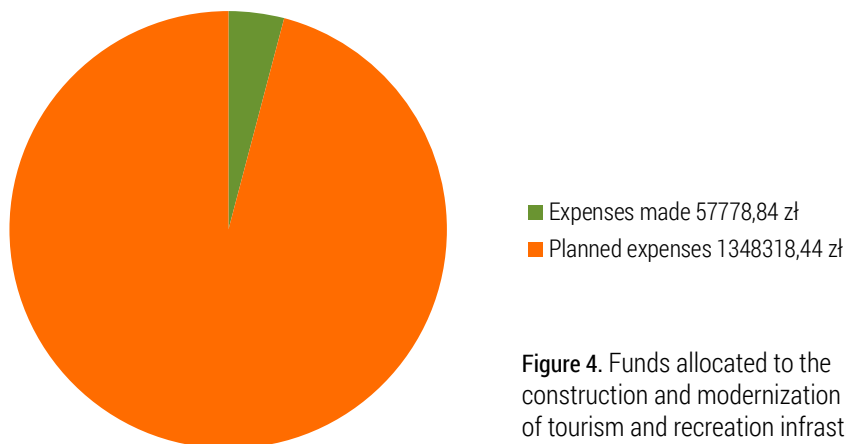


Figure 4. Funds allocated to the construction and modernization of tourism and recreation infrastructure in 2021

In 2020, the Regional Directorate of State Forests in Białystok spent PLN 1,165,611.05 on the construction and maintenance of tourism and recreation infrastructure, with planned expenditures of PLN 1,458,125.98, while in 2021 PLN 57,778.64 was spent, with planned expenditures of PLN 1,458,125.98. PLN 1,348,318.44 (Figure 3, 4).

In turn, the following amounts were spent on the accompanying infrastructure: in 2020 PLN 30,016.59 with the planned expenditure of PLN 28,368.05, and in 2021 only PLN 2,203.39 was spent against the planned PLN 26,733.94 (Figure 5).

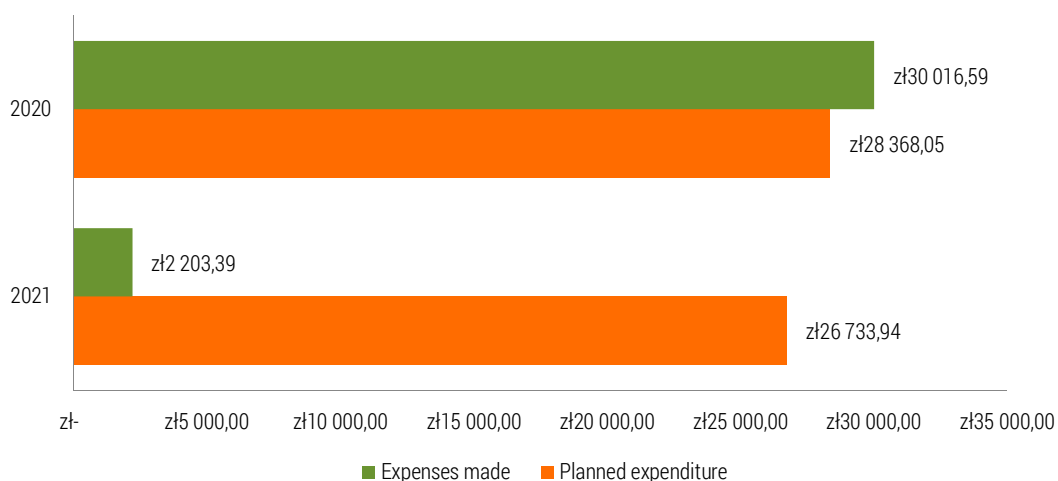


Figure 5. Expenditures on the associated infrastructure

The greatest demand for the development of tourist and recreational infrastructure exists in forest districts where sanatoriums, spas, tourist values and attractions exist and larger cities are located. Such forest districts include: Białowieża, Augustów, Gołdap, Ełk, Giżycko, Olecko, Supraśl, Hajnówka, Pisz, Rajgród, Łomża, Suwałki. When asked about their responsibility for infrastructure development, 92.5% answered that it was the responsibility of the forest districts, mainly the district manager and the director of the Regional Directorate of State Forests in Białystok. The survey showed that significant financial assistance for the development of tourist and recreational infrastructure in the forest districts of the Regional Directorate of State Forests in Białystok was obtained from the forest fund and its own funds, which was allocated to (RDSF, 2022):

- ventures in national and landscape parks (spent the most funds in the period under review) – construction, modernization, maintenance,

- construction of car parks and parking spaces,
- restoration, cleaning and maintenance of educational paths,
- modernization of shelters for rest,
- restoration and marking of tourist routes,
- modernization of narrow-gauge railways,
- upkeep and maintenance of observation towers,
- renovation and modernization of access roads and forest roads,
- upkeep and maintenance of devices for monitoring tourist traffic,
- cleaning tourist information points,
- modernization of common rooms in tourist information facilities.

Conclusions

Forest areas offer an unpolluted environment, favourable microclimate, peace and quiet and, at the same time, provide a place to relax and improve physical and mental fitness. In order for forest areas to meet such expectations, a tourist and recreational infrastructure is necessary. This assignment should be taken care of by the forest districts of the Regional Directorate of State Forests in Białystok. The public expects healthy recreation in an unpolluted environment and, therefore, it is advisable to allocate substantial funds to the construction and modernization of tourist and recreational infrastructure, and forest districts should mobilise their potential to actively participate in its construction and modernization. This involves planned expenditures in 2020-2021, which were not used (Figures 3 and 4). The situation was similar with associated infrastructure, where only PLN 2,203.39 was spent in 2021 against the planned PLN 26,733.94 (Figure 5). The study confirmed that the greatest demand for the development of tourism and recreation infrastructure exists in forest districts with sanatoriums, spas, rich scenic qualities and large cities. Such forest districts include: Augustów, Białowieża, Ełk, Giżycko, Pisz, Gołdap, Hajnówka, Łomża, Olecko, Rajgród, Suwałki, Supraśl. The area has the greatest interest in sylvano-tourism, the respondents said. When asked who should be responsible for the development of infrastructure in their area, the respondents said that the head of the forestry division together with the director of the Regional Directorate of State Forests in Białystok.

In the years 2020-2021, the most funds were spent on the construction of parking lots, renewal and marking of tourist routes, renovation, cleaning and maintenance of educational paths, as well as renovation and modernization of access roads and forest roads to attractive places. These were mainly allocated from own resources of forest districts, the forest fund and the EU funds. Most often they are point and surface recreational and educational facilities.

However, it should be stated that RDSF spent the most resources from the forestry fund on various types of projects in national and landscape parks (construction, modernisation, maintenance).

Numerous studies confirm that, for a dynamic development of sylvano-tourism, tourism and recreation infrastructure is necessary (Dąbrowski et al., 2021). The more developed it is, the more visitors it “attracts”. It should be emphasised that, in the areas belonging to the forest districts of RDSF in Białystok, there is a lack of a significant number of tourism and recreation infrastructure elements, such as: rope parks, hunting lodges, guest rooms, campsites, playgrounds for children, forest shelters and car parks, forest sports fields. These are elements of tourism infrastructure which are present in a small number, but are very important in the development of sylvano-tourism. Efforts should be made to ensure that the potential of naturally valuable areas, such as forest areas, is fully utilised by visitors which, at the same time, will improve the budgets of forest districts and municipalities and, as a result, improve the much-needed physical and mental health of the public.

The contribution of the authors

M. Jalinik – 50%; P. Selwesiuk – 50%

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