



ACCESS2MOUNTAIN

**Sustainable Mobility and Tourism in Sensitive Areas of the
Alps and the Carpathians:
GOOD PRACTICES WITHIN THE EXISTING CONNECTIONS AND NARROW
GAUGE RAIL LINKS IN THE PODKARPACIE VOIVODESHIP AND THE
PRESOV REGION IN SLOVAKIA**

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1 INTRODUCTION - THE IDEA OF SUSTAINABLE TRANSPORT IN PROTECTED AREAS

The concept of sustainable development in protected areas plays an increasingly important role in the world today. Sustainable development (eco development) is understood as satisfying the needs of today's inhabitants of the Earth, while ensuring, at the same time, the feasibility of the needs of future generations¹. This idea is applicable at all levels of economic activity, including tourism and transport.

The concept of sustainable tourism is defined as any form of tourist activity and management supporting environmental, social and economic integrity of the various areas. Since the mid-70s in many countries, one can observe certain changes in the strategies of economic development - the concept of development based on economic growth is giving way to the concept of sustainable development². One of the indicators of sustainable development in tourism is so-called local mobility, including the introduction of additional means of transport for tourists, which at the same time are useful for the inhabitants of the region. In the areas of high natural value there are introduced appropriate management plans, including also the popularization of sustainable forms of transport. The primary damage done by tourism to the natural environment is the pollution emissions on the route to travel destinations and the result of moving around.

61% of tourist arrivals in Europe, takes place by of road transport, while only 15% by rail, which is regarded as an environmentally friendly mean of transport. The effect of this is the pollution, causing irreversible changes in the microclimate of the region. One of the instruments of eco-policy in European Union countries at the regional level is therefore to improve public transport by excluding motor transport and creating green, sustainable transport infrastructure³. Among the land transport, this is the rail transport which has the least bad influence on nature and society. The actions dealing with the promotion of environmentally friendly modes of transport have been given a lot of attention in the programme documents of the European Union. The European Commission's White Paper entitled "A strategy for revitalising the Community's railways" emphasizes the need to implement sustainable rail transport⁴.

Sub-Carpathian region of Poland and the Presov Region in Slovakia are particularly valuable and vulnerable natural areas. On their area there is an extensively developed network of nature conservation forms, including the transboundary UNESCO „Eastern Carpathian“ International Biosphere Reserve. In 1997, the World Wide Fund for Nature Foundation developed a program of WWF's "Global 200", to restore the most valuable ecologically parts of the world⁵. In the list – as a part of an international initiative to restore the world's invaluable natural riches - were also the Carpathians as the common heritage of Central Europe and Eastern Europe countries. In this field the issues of sustainable

¹ Zaręba D., 2010, Ekoturystyka, PWN, Warszawa

² Turystyka zrównoważona, 2010, red. A. Kowalczyk, PWN, Warszawa

³ Bjorn Luell, 2007, Dzika przyroda a komunikacja [w:] Oddziaływanie infrastruktury transportowej na przestrzeń przyrodniczą, red. B. Jackowiak, wyd. GDDKiA, Warszawa

⁴ Gronowicz J., 2004, Ochrona środowiska w transporcie lądowym, ITE, Poznań-Radom

⁵ Zaręba D., 2010, Ekoturystyka, PWN, Warszawa

development seem to be a priority. One of such measures is to promote eco-transport infrastructure, including the narrow gauge railways.

In the Podkarpackie Voivodeship in Poland there are two narrow gauge railways route: Przeworsk Commuter Railway and Bieszczadzka Forest Railway. Both are tourist attractions in the region, whereas in the Presov Region in Slovakia there is the Tatra Electric Railway, which is especially important means of sustainable, multiodal transport of the region considered to be the most attractive for tourists in Slovakia.

2 BASIC INFORMATION ON THE REGIONS

2.1 The Podkarpackie Voivodeship

The Podkarpackie Voivodeship is the furthest situated south-east Polish region. Its area is 17 844 km²⁶. It borders with Lviv Oblast and Zakarpattia Oblast in Ukraine (over a distance of 239 km) and the Presov Region in Slovakia (over a distance of 134 km). On the area of Poland it is adjacent to the Polish provinces of Lublin, Lesser Poland and Świętokrzyskie. The voivodeship consists of 21 districts and 4 cities with district rights (Rzeszow, Przemyśl, Krosno, Tarnobrzeg). On its area there are located 158 municipalities and 46 cities.

The population of the Podkarpackie Voivodeship is 2 102 742⁷, while the average population density is 117.8 inhabitants/km². The largest city and the capital of the voivodeship is Rzeszów. Population growth of the region is among the highest in Poland and is of 0.8 ‰. Podkarpackie is the least urbanized voivodeship in Poland but has, at the same time, large areas of valuable natural resources, including those legally protected. Forest cover in the region is higher than the national average and is 40.2%⁸.

The Podkarpackie Voivodeship is located at the crossroads of historic trade routes and it is an important communication hub of south-eastern Poland. Of the great importance here are international, national and regional roads, rail network and the international Rzeszow –Jasionka Airport - one of the busiest airports in Poland. The total length of roads in the Podkarpackie Voivodeship is 18370.3 km⁹. Two international routes: E40 (Zgorzelec- Krakow- Rzeszów-Lviv) and E371 which connects the Podkarpackie Voivodeship with the Presov Region in Slovakia run through this area. Of international importance is also national road No. 19, which links Baltic states with Slovakia. Through the area of the Podkarpackie Voivodeship run a total of seven national roads and 39 provincial roads.

Numerous district and municipal roads have a complementary significance. Three land border crossings enables for cross-border movement with Ukraine: Krościenko-Smolnica (passenger and freight), Medyka-Szeginie (passenger and freight) and Korczowa-Krakowiec (passenger and freight). Under the Schengen Agreement of 21 December 2007 all existing Polish-Slovak border crossings were closed down (of which the largest was Barwinek-Vysny Komarnik).

The length of railways in the voivodeship is 1027 km¹⁰. The main hub of the rail transport is the trunk line No. 91, running from Krakow through Rzeszow and Przemyśl to the border with Ukraine in Medyka. It forms a part of the international railway line E30 (Germany-Ukraine). In addition, through the voivodeship run rail lines of a national and regional character. In the region there are 3 railway crossings

⁶ www.stat.gov.pl (data for 2010)

⁷ www.stat.gov.pl (data for 2010)

⁸ www.stat.gov.pl (data for 2010)

⁹ www.stat.gov.pl (data for 2010)

¹⁰ www.stat.gov.pl (data for 2010)

with Ukraine: Krościenko-Chyrowa (passenger), Przemysl-Mościska (passenger and freight) and Werchrata-Rawa Ruska (freight).

2.2 The Presov Region

The Presov Region is located in the north-eastern part of Slovakia near the Polish border and Ukraine. In the south it borders with the Košice Region, while in the west with the Zilina Region. Its area is 8 974.5 km². The population is 801.939 (nearly 15% of the population of Slovakia), while the population density of 89 persons/km²¹¹ (the second largest¹² and most populated region in Slovakia).

The region consists of 13 districts: Bardejov, Humenne, Kezmarok, Levoca, Ľubovňa, Medzilaborce, Poprad, Presov, Sabinov, Snina, Stropkov, Svidnik, Vranov nad Topľou. In the region area there are located in 23 cities and 666 municipalities¹³. The Presov Region is located within the following historic lands: Spis, Saris, Ung and Zemplin. The capital of the region is Presov.

The total length of roads in the Presov Region of is 3 160.633 km, of which 600 km are first-class roads¹⁴. The main communication hub of the Presov Region (east-west) is a designed highway D1 (E50) that runs over the national roads No. 18 and 68 from Bratislava through Trenčín, Poprad, Presov to Košice. Also the national road No. 73 (E371), joining Barwinek with Presov and Svidnik is very significant.

In addition, the region's road network includes, for example Presov national roads: No.74 (Ukraine-Strazske), No.77 (Spisska Bela-Svidnik), No.68 (Kosice-Piwniczna). Of the complementary importance are also local roads, including road No. 537 that runs at the foot of the Tatra chain, along which passes the Tatra Electric Railway. It combines with Liptovský Mikuláš with Strbské Pleso, Old Smokovec and Tatranská Lomnica, and has numerous links with the international road E50.

Among railways of the Presov Region the most important is Martin - Liptovský Mikuláš – Poprad line and the links from Poprad through Kežmarok to Old Ľubovňa and from Sabinov to Presov. The eastern part of the region is much less communicated - Bardejov is linked with Presov, while Medzilaborce and Vranov nad Topľou with Humenne. The railway line Medzilaborce - Humenne links at further parts Poland with Hungary (Sanok - Sátorajuhely). Svidnik and Stropkov do not have rail links.

¹¹ www.po-kraj.sk

¹² Príklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, 2012

¹³ www.statistics.sk

¹⁴ www.statistics.sk (data for 2010)

3 NATURAL AND ANTHROPOGENIC VALUES OF THE REGIONS

3.1 The Podkarpackie Voivodeship

In terms of geomorphological location the Podkarpackie Voivodeship is located within the following four regions¹⁵: North Podkarpacie part (including the eastern part of the Sandomierz Basin), western part of the External Western Carpathians (i.a.: Cieszkowice, Dynów, Strzyżów Foothills and the eastern part of the Central Beskids (the Lower Beskid), the western part of the Eastern Carpathians (including the Salt Range) and the western Bieszczady), a small part of the Roztocze.

In the region there is, therefore, a very large variety of forms of relief which determine its exceptionality in comparison with natural attractiveness of the country. The Sandomierz Basin is a vast lowering in the fork of the Vistula and San Rivers¹⁶. The Central Beskidian Piedmont is a group of hills of the height from 300 to 600 m above sea level cut by river valleys and streams. The Lower Beskid is the lowest, heavily forested Carpathian Mountains with one of the largest sites of rare species of birds of prey¹⁷, while the Bieszczady is the highest range of Podkarpacie (Tarnica 1346 m above sea level). The Salt Range is a complex area of the preserved ancient Carpathian Forest.

On the area of the Podkarpackie Voivodeship there are numerous natural resources (i.a.: petroleum, natural gas, peat, mineral waters)¹⁸. Because of the numerous mineral waters with rich chemical content, together with the combination of a unique and diverse microclimate of a lowland, foothill and mountains one decided to create on this area four health resorts: Rymanów Zdrój, Iwonicz Zdrój, Polańczyk Zdrój and Horyniec Zdrój. About a large natural attractiveness of the region decide also large forest areas, especially in the Cieszkowice and Przemyśl Foothills and in the Lower Beskid and in the Bieszczady Mountains (including so-called Carpathian beech), which in many places is protected. The peculiar phenomenon are also Bieszczady pastures - alpine and subalpine communities of grasslands over the upper tree line¹⁹.

Due to the wildlife, the system of various forms of protection in the Podkarpackie Voivodeship is very rich. As follows from tab.1 in the region there are two national parks (Bieszczady and Magura) and 10 landscape parks. The landscape parks in the Podkarpackie Voivodeship constitute over 15% of its area²⁰. There are also 94 nature reserves (4 faunal, 12 landscape, 40 forest, 6 peat , 26 floral, 6 inanimate

¹⁵ Kondracki J., 2002, *Geografia regionalna Polski*, PWN

¹⁶ Kłós S., 2005, Podkarpackie. Przewodnik po województwie, wyd. BOSZ, Olszanica

¹⁷ Kłós S., 2005, Podkarpackie. Przewodnik po województwie, wyd. BOSZ, Olszanica

¹⁸ Tourism Development Strategy for the Podkarpackie Voivodeship for the years 2007-2013, 2006, PART-PROT, Warszawa

¹⁹ Kłós S., 2005, Podkarpackie. Przewodnik po województwie, wyd. BOSZ, Olszanica

²⁰ Zawilińska B., 2008, Problemy zrównoważonego rozwoju turystyki w parkach krajobrazowych (na przykładzie parków krajobrazowych w Karpatach), [w:] Zrównoważony rozwój turystyki, red. S. Wodejko, SGH Warszawa

nature) and 1375 monuments of nature. The most valuable in terms of nature include i.a. the reserves: Chwaniów (montane Carpathian beech), Hulskie and Krywe (Otryt mountain range), Sine Wiry (valleys of the Wetlinka and Solinka Rivers), Turnica (beech-fir forest) and Zwieżło (Bieszczady landslide lakes).

Tab. 1 Forms of nature conservation in the Podkarpackie Voivodeship

No.	Legally protected area	Protected object
National parks		
1.	Magura National Park	Transition area between the Eastern and Western Carpathians, Carpathian beech
2.	Bieszczady National Park	Outer Western Carpathian Flysch Belt, pastures
Landscape parks		
1.	San Valley Landscape Park	Otryt Mountain Range, Valley of the Upper San, montane Carpathian beech
2.	Cisna-Wetlina Landscape Park	Part of the Western Bieszczady
3.	The Salt Range Landscape Park	Northern parts of Sanocko-Turczańskie Mountains, ranges of the Salt Mountains and Chwaniów, a part of beech-fir forest
4.	Jaślicka Landscape Park	Eastern part of the Lower Beskids, upper basin of the Jasiołka and the Wisłok springs
5.	Czarnorzeki-Strzyżów Landscape Park	A part of Strzyżów and Dynów Foothills, sandstone inselbergs
6.	Pogórze Przemyskie Landscape Park	Part of beech-fir forest, dry valleys, raised bogs, open pit Carpathian flysch
7.	South Roztocze Landscape Park (together with the Lubelskie Voivodeship)	Part of the Eastern Roztocze
8.	Puszcza Solska Landscape Park (together with the Lubelskie Voivodeship)	Forest complexes Solska Wilderness (diverse forest communities), a groundbreaking river valleys
9.	Janów Forests Landscape Park (together with the Lubelskie Voivodeship)	Forest complex of Janów Forests
10.	Pasma Brzanki Landscape Park (together with the Lesser Poland Voivodeship)	Part of Ciężkowice Foothills

Source: Kłos S., 2005, *Podkarpackie. Przewodnik po województwie*, Olszanica; Lijewski T., Mikułowski B., Wyrzykowski J., 2008, *Geografia Turystyczna Polski*, PWE, Warszawa; www.epodkarpacie.pl

On the area of the Podkarpackie Voivodeship very well developed is a network of Natura 2000 nature conservation - within it there are as many as 62 areas²¹ (i.a: the Lower Beskid Mountains, the Bieszczady Mountains, the Salt Range, Valley of the Lower San). Natural attractiveness of the region in terms of sustainable tourism development raises the existence on the area of the voivodeship of the UNESCO International Biosphere Reserve. Located across borders (the first of this kind in Europe), in the area of three countries (Poland, Ukraine, Slovakia) it protects: Bieszczady National Park (Poland), Cisna-Wetliński Landscape Park (Poland), San Valley Landscape Park (Poland), Poloniny National Park (Slovakia), Użański National Park (Ukraine) and Nadsański Regional Nature Park (Ukraine). The largest part of the reserve is located on the Polish side (1087.24 km²).

Rivers of the region (San, Wisłoka and Wisłok) are among the cleanest in the country, and the Carpathian sections are characterized by a significant drop in large abundance of water. Of the many reservoirs of major importance for the region there are: the Solina Lake (the largest capacity in Poland) and the Myczkowskie Lake.

²¹ www.natura2000.gdos.gov.pl

Large natural attractiveness of the region determines the direction of tourism development. The most important advantages are: the Bieszczady Mountains, the Lower Beskid, Strzyżowsko-Dynowski Foothills and the Salt Range. Important for tourism development is the occurrence of mineral waters (resorts). Secondary wilderness of the nature which took place in southern-east Poland in the period after World War II created in the region a unique complex of very diverse in form, untouched nature, was not destroyed by anthropopressure. Very significant for the region development is therefore a reasonable use of these values consistent with the principles of sustainable development.

Historically, the region in question belongs to the Małopolska. For centuries this area was under the influence of penetration of many cultures, nationalities and religions - Polish settlers, Jewish (including Hasidic) and Ruthenian (Ukrainian). In the fifteenth and sixteenth centuries in the Lower Beskid and Bieszczady settled Lemkos, but also nomadic pastoral people who arrived from the Balkans. Bieszczady were also inhabited by Russians Highlanders - Boykos. Most of the settlers of Russian origin (Ukrainian) were affected by the mass expulsions of the Operation Vistula in 1947. The cultural landscape of the region consists of temples of various denominations (Roman Catholic churches, Orthodox churches, synagogues), and numerous historical evidence of its multicultural roots.

The list of the major anthropogenic values of Podkarpackie shows tab. 2. Many cities in the voivodeship have historic urban arrangements (including Przemyśl, Sanok, Jarosław and Przeworsk). The characteristic is a large concentration of ancient castles, once belonged to the famous aristocratic families of the former Commonwealth (i.a. in Sanok, Kraszczyn, Przemyśl, Łańcut Baranów Sandomierski). In addition, the region is famous for its large concentration of former Greek Catholic church (especially in the Lower Beskid and the Bieszczady Foothills). Two wooden churches have been inscribed into the UNESCO World Heritage List (Blizne and Haczów).

A peculiarity of the region are numerous preserved synagogues and Jewish cemeteries (Lesko, Leżajsk), military facilities (i.a. of the Przemyśl Fortress, bunkers of Molotov Line), a historic health resort buildings (especially Iwonicz Zdrój) and centers of pilgrimage (Kalwaria Pałacowska). The area of Dukla and Dukla Pass (so-called Death Valley to the west of Dukla) has many relics from the days of Dukla-Presov Operation (1944).

Tab. 2 The most important anthropogenic values of the Podkarpackie Voivodeship

No.	Place	Selected anthropogenic values
1.	Rzeszów	The urban layout of the Old Town, city hall, houses, numerous churches and monasteries, castle, palace of the Lubomirski, synagogues, Underground Tourist Route, Museum of Cartoons
2.	Przemyśl	The urban layout of the Old Town, houses, Casimir Castle, the Roman Catholic Metropolitan Cathedral, the Byzantine-Ukrainian Cathedral, numerous churches and monasteries, churches, clock tower, Fortress forts, bunkers of Molotov Line, Pipe and Bell Museum
3.	Krosno	The urban layout of the Old Town, houses, palaces, churches and monastery complexes, Motor Museum, Museum of Craft
4.	Sanok	The urban layout of the Old Town, city hall, houses, royal castle (Historical Museum), churches and monasteries, monument-bench of the Good Soldier Svejek, The Museum of Folk Architecture
5.	Lesko	The urban layout of the Old Town, town hall, The Kmita Castle, a synagogue, Jewish cemetery

6.	Zagórz	Ruins of the Carmelite monastery
7.	Leżajsk	Monastery of the Bernardine, a Jewish cemetery (tzaddikim ohels), Museum of Leżajsk
8.	Krasiczyn	The Krasicki palace and park
9.	Kalwaria Pałacowska	The monastery of the Franciscans with the Calvary chapels
10.	Jarosław	The urban layout of the Old Town, Orsetti (Museum), City Hall, houses, numerous churches and Orthodox churches, the underground tourist route
11.	Łańcut	The Lubomirski Castle (museum), carriage house, distillery museum
12.	Przeworsk	The urban layout of the Old Town, the town hall, the fragments of walls, a palace and park (Museum), narrow-gauge railway station, open-air museum "Pastewnik"
13.	Dukla	The urban layout of the Old Town, the town hall, churches and monasteries, palace and park, the cemetery from the times of Dukla-Presov operation (1944)
14.	Rymanów Zdrój	The historic health resort buildings
15.	Iwonicz Zdrój	The historic health resort buildings (in a Swiss style)
16.	Komańcza	The orthodox Church of the Assumption of the Care of Our Lady, the Sisters of Nazareth Convent
17.	Blizne	The wooden church of the Assumption of All Saints (UNESCO)
18.	Haczów	The wooden church of the Assumption of Virgin Mary (UNESCO)
19.	Cerkwie Beskidu Niskiego i Pogórza Bieszczadzkiego	Some examples: Ulucz, Równia, Smolnik nad Sanem, Tyrawa Solna, Olchowa, Rzepedź, Komańcza, Turzańsk
20.	Pruchnik	The spatial arrangement of the old town of Galicia with a wooden, small-town architecture
21.	Bobrka	Museum of Oil Industry
22.	Baranów Sandomierski	Castle (Museum)
23.	Krasiczyn	Castle (Museum)
24.	Miejsca pamięci z czasów operacji dukielsko-preszowskiej	Dukla, Nowosielce, Iwla, Chyrowa, Głojsce
25.	Strzyżów	The underground railway shelter under the Żarnowska Mountain of World War II
26.	Stępin-Cieszyn	Tunnel shelter of World War II
27.	Odrzykoń	Kamieniec Castle
28.	Przeclaw	Castle
29.	Rozwadów	The Castle of the Lubomirski
30.	Rzemień	Castle
31.	Węgierka	Castle

Source: Klos S., 2005, *Podkarpackie. Przewodnik po województwie*, Olszanica; Lijewski T., Mikułowski B., Wyrzykowski J., 2008, *Geografia Turystyczna Polski*, PWE, Warszawa

In the region there are located in 47 major museums²², among which the most unique exhibitions are: the Museum of Bells and Pipes in Przemyśl, the Historical Museum at the castle in Sanok (valuable collection of icons, Z. Beksiński Gallery), The Orsetti Museum in Jarosław, Museum of Oil Industry in Bóbrka and the largest ethnographic park in Poland - Museum of Folk Architecture in Sanok.

3.2 The Presov Region

The Presov Region's natural environment is very varied and is thus the most valuable in the country. On its site runs the boundary between the Eastern and Western Carpathians. Among many areas located in the Presov Region the most important destinations are²³: The High Tatras, The West Tatras and The Bielskie Tatras, the Pieniny, Spišská Magura, Levočské Mountains, Czerchowskie Mountains, Low Beskid Mountains Slaný, Bernese Ondawska, Bukowski Mountains (the Western Carpathians and Podkarpacie) and the Bieszczady Mountains and Wihorlackie (the Eastern Carpathians). Carpathian

²² www.podkarpacie.pl, strony internetowe gmin i miejscowości

²³ Państwa świata. Encyklopedia PWN, 2009, red. B. Kaczorowski, PWN, Warszawa

ranges constitute in the Presov Region some areas of different geological structure and varying surface shape.

In the Presov Region there are located five out of nine national parks in Slovakia, including the two oldest ones – Tatra National Park (from 1993 the UNESCO Biosphere Reserve, together with Poland) and Pieniny National Park. A valuable natural area is also Poloniny National Park, part of the UNESCO International Biosphere Reserve (with Poland and Ukraine)²⁴. Moreover, in the Presov Region there are located next two national parks: Low Tatras National Park and Slovak Paradise National Park (Poprad district).

Eastern Carpathian Mountains are heavily forested areas - in their area it is located Wihorlacki Protected Landscape Area. In 2007, the Carpathian forests of the Wihorlackie Mountains was inscribed into the list of UNESCO World Heritage. In the Presov Region there is the highest peak in Slovakia and the whole of the Carpathians - Gerlach (2655 m). Tatra chain, which is the highest range of the Carpathians, in 77.7% located in Slovakia. Across the Presov Region there are located: High Tatras (Alpine sculpture), Western Tatras, and arranged transversely to the main ridge of the Tatras - Bielskie Tatras. Tatras area because of the terrain is the most touristic region of the Presov Region. Tatra Electric Railway links make the region even more attractive and the villages situated at the foot of the Carpathians are perfectly connected. At the foot of the Tatra chain there are located many resorts, which are the base for both hiking trails as well as skiing routes (i.a: Strbske Pleso, Stary Smokovec Tatranska Lomnica, Ždiar and Podbaňské). Winter tourism is also developing on the western outskirts of the Poprad district (Lower Tatras).

In the Presov Region runs the watershed between the Baltic Sea catchment area and the Black Sea area. The main rivers of the region are: Topľa, Ondava, Laborec, Torysa, Poprad and Dunajec. In the landscape of the High Tatras mountain very characteristic are mountain lakes (e.g. Strbske Pleso). Moreover, in the eastern region, on the Ondava river, there is located a high dam reservoir Velka Domasa, used either for energy purposes or recreation.

An important natural value of the Presov Region are mineral waters, including thermal ones. The combination of their rich mineral content together with the unique microclimate contributed to the foundation of many famous in Europe resorts: Bardejovskie Kupele, Nova Lubovna, Vyžne Ružbahy, Strbske Pleso, Old and New Smokovec and Vyžne Hagy.

The Presov Region has a very distant and rich history. It was an area of settlement of various ethnic groups and religious organizations. Currently 16% of the region are Greek Catholics, 4% Orthodox, Protestant and 5%. In medieval times the Presov Region was a part of the Hungarian state which the natural northern boundary were the Carpathians. In many towns there were established royal castles (e.g. the Spis Castle), many of them of strategic importance. Already in medieval times emerged historical and ethnographic areas of the Region: Spisz, Saris, Zemplin. By the important trade routes there were established many cities (i.a.: Bardejov, Kežmarok, Levoca, Presov).

²⁴ Zaręba D., 2010, Ekoturystyka, PWN, Warszawa

The rich history of the region are its numerous monuments (Table 3). Valuable old town systems were preserved in Presov, Bardejov, Kezmarok, Lbowla and Levoca. The evidence of their violent, medieval development are richly decorated town houses, numerous churches and fragments of walls (Bardejov - the best preserved in Slovakia). A great anthropogenic merit are the castles, including the most famous in Lubowla and Spišské Podhradie (UNESCO). There are also open air museums of folk architecture (eg: Ždiar, Bardejov, Humenne) and examples of folk *in situ* architecture (including churches in Svidnik area). Many resorts are also famous for its nineteenth-century buildings (eg: Vyžne Ružbahy, Old Smokovec Bardejov Kupele) and museums, among which the best known is the Andy Warhol Museum of Modern Art in Medzilaborce. On the UNESCO World Heritage list there were inscribed in the Presov Region 7 objects, of which the most famous are: Spišské Podhradie, Old Town in Bardejov, church in Kežmarok and wooden churches in the Slovak Carpathians.

Tab. 3 The most important anthropogenic values of the Presov Region

Lp.	Miejscowość	Wybrane walory antropogeniczne
1.	Preszów	The urban layout of the Old Town, churches and monasteries, Calvary, the Rakoczy palace, Neptune Fountain
2.	Barejów	The urban layout of the Old Town (UNESCO), the town hall, town houses, Gothic church, fragments of walls, Jewish museum of folk architecture
3.	Humenne	Open-air museum of folk architecture, The Drugeth castle, a Gothic church, synagogue, memorial of the Good Soldier Schweik
4.	Kieżmark	The urban layout of the Old Town, town hall, parts of the city walls, the particular Church (UNESCO), numerous churches, a castle
5.	Lewoca	The urban layout of the Old Town, the town hall, church parish church of St. Jacob, numerous churches and monasteries, Regional House, House Turzonów, workshop of Master Paul of Levoča cage of shame (pillory) (UNESCO), the Spiskie Museum
6.	Lubowla (Stara Lubowla)	The urban layout of the Old Town, apartment buildings, the Gothic church, castle, museum of folk architecture
7.	Medzilaborce	Andy Warhol Museum of Modern Art, Andy Warhol's memorial, churches
8.	Poprad	The urban layout of the Old Town, houses, churches
9.	Spiska Sobota (dzielnica Popradu)	The urban layout of the Old Town (spindle shape), townhouses, houses of craftsmen, town hall, numerous churches, the Podtatranské Museum
10.	Sabinov	Gothic church of StJohn, the numerous churches of various denominations, fragments of city walls
11.	Snina	Classical palace with a statue of Hercules, Miro International Art Gallery
12.	Stropkov	Castle, numerous churches and monasteries
13.	Svidnik	Rusyn cultural center, Museum of Material and Spiritual Culture of Ukrainians and Russians, the Battle of Dukla Museum , D. Millyho Gallery (a collection of icons)
14.	Cerkwie okolic Svidnika	Selected examples: Bodružal, Hunkovce, Dobroslav, Korejovce, Krajné Čierno, Ladomírová, Miroľa, Nižný Komárnik, Potoky, Príkra i Semetkovce
15.	Spiska Biela (Spiska Bela)	Układ urbanistyczny Starego Miasta, ratusz, kamienice, kościoły i klasztory
16.	Spiskie Podhradie	Spis Castle (one of the largest castles in Central Europe, UNESCO), Town of Spišské Podhradie - medieval urban layout, Spišská Chapter - fortified village church
17.	Czerwony Klasztor	The historic monastery of the Carthusian and Camaldolese
18.	Stražki	The castle, the park in English style
19.	Health resorts and tourist places at the foothill of the High Tatras	Strbske Pleso, Vyžne Hagy, Old Smokovec, New Smokovec Tatranska Lomnica
20.	Podoliniec	The urban layout of the Old Town, terraced houses, town hall, churches and monasteries
21.	Vyžne Ružbachy	The historic health resort buildings, travertine crater (lake)
22.	Bardejovské Kúpele	The historic health resort buildings
23.	Bodružal	Greek Catholic wooden church of St. Nicholas, UNESCO
24.	Hervartov	Wooden Catholic Church of St. Francis of Assisi, Unesco
24.	Ladomirova	Greek Catholic wooden church of St. Michael the Archangel, UNESCO
25.	Nova Lubovna	The historic health resort buildings
26.	Osturna	Open-air museum of folk architecture
27.	Ždzar	Open-air museum of folk architecture

Source: Nacher A., Styczyński M., Cisowski B., 2004, *Spisz. Od Pienin po Raj. Przewodnik Turystyczny*, wyd. Bezdroża, Kraków; Nacher A., Styczyński M., Cisowski B., Klimek P., 2004, *Słowacja. Karpackie serce Europy. Przewodnik turystyczny*, wyd. Bezdroża, Kraków

4 TOURIST INFRASTRUCTURE OF THE REGIONS

4.1 The Podkarpackie Voivodeship

Because of the great number of the touristic values, the Sub-Carpathian region is frequently visited by tourists. According to the Institute of Tourism, in 2009, the Podkarpackie Voivodeship was visited by nearly 0.9 million domestic tourists (6th place in Poland among the voivodeships²⁵). In total, during January-December 2010, there were occupied 2 107 672 vacancies, of which 154 396 foreign tourists²⁶. Most accommodation was provided in the resort facilities and hotels (Figure 1). Nearly 200 thousand places were occupied in training and recreation centers and holiday resorts.

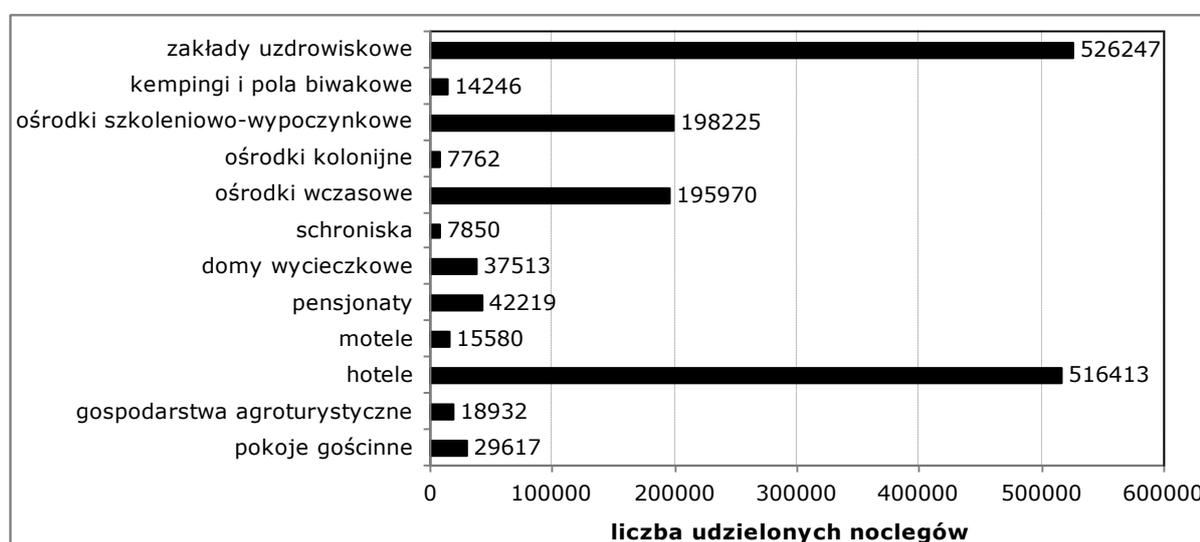


Fig. 1 Number of accommodation according to sites in the Podkarpackie Province in the period I-XII 2010

Source: www.stat.gov.pl

In the region there are favorable conditions for tourism development in mountain and lowland walking, biking, skiing and spa. Mountain hiking is focused in the Bieszczady and the Lower Beskid, in turn, biking and horseback riding can be practised on various terrains of the Dynów and Przemyśl Foothills. Subjected to legal protection natural resources are of the great importance for the development of active tourism and specialized tourism, ecotourism and nature tourism (including geotourism²⁷, and ornithological tourism). Water tourism (sailing), in turn, takes place in the waters of Solina and Myczkowski Lake. Winter tourism (alpine and cross country skiing) is focused in the Bieszczady

²⁵ www.intur.com.pl

²⁶ www.intur.com.pl

²⁷ www.intur.com.pl

Mountains, of which the most developed infrastructure is in Ustrzyki Dolne (winter capital of Bieszczady)²⁸.

Tourist development of the region is very varied. Lower Beskid is the least visited Carpathian region in Poland. The area is still poorly developed²⁹ and as a result of post-war Lemko population resettlement, has a low population density³⁰. Visits to Podkarpacie are often associated with healing-Iwonicz and Rymanów Zdrój have the largest number of places (resorts). In the Bieszczady very important is an area of Solina Lake, where in Polanczyk and Solina are many of the tourist attractions (leisure centers, marinas, swimming pools, campsites, et al.). Also the Bieszczady mountain range (near Sanok, Lesko and Ustrzyki Dolne) has more and more developed tourist facilities, especially vigorously developing rural tourism. Dynowski and Przemysl Foothills, because of the substantial planting, do not have well-developed tourist facilities. The area is mainly for leisure holiday. The common tourist destinations in the Podkarpackie Voivodeship are historic places of the region (i.a. Krasiczyn, Lancut, Jaroslaw, Przemysl, Przeworsk, or Blizne and Haczów).

The network of hiking trails in the region is extensively developed. Through the highest parts of the Lower Beskid and Bieszczady runs the Main Beskidy Trail (Magura Wątkowska - Wołosate)³¹. In addition to numerous bike trails and hiking (especially in the Lower Beskid, the Bieszczady Mountains and the Przemysl Foothills) there are also waterways (i.a.: Wisłok, Ropa, "Blue San") and horse tracks (especially in the Bieszczady Mountains and the Bieszczady Foothills). Highly attractive are also theme trails. The most valuable and relevant for the region are: Galician Oil Route (Poland-Ukraine) connecting the places related to the oil extraction in the Podkarpacie, Trail of Icons in the Valley of the San and Ośława, Wooden Architecture Route of the Podkarpackie Voivodeship (9 marked trails) and the Good Soldier Schweik trail (pedestrian and bicycle). In recent years, due to developing sustainable tourism in the region, including eco-tourism, the voivodeship has begun to create the so-called eco-museums³². Currently there are five eco-museums in the region, four in the Bieszczady Mountains and one in the Sanok-Turczyn Mountains (The "Hołe" eco-museum presents the tradition of oil extraction in Podkarpacie).

Of the great importance for the development of sustainable tourism in protected areas are Greenways – multi-role, non-motorized trails leading along the natural wildlife corridors, historic trade routes and along the rivers and the narrow gauge railway line³³. Through the Podkarpacie region runs the trail of "Green Bike - Greenway Eastern Carpathians", joining Poland, Slovakia and Ukraine. The uniqueness of the trail highlights the fact that it runs through the UNESCO "Eastern Carpathians" Biosphere Reserve. One of the advantages of the route is the possibility of journey by Bieszczadzka Narrow Gauge Forest Railway, which runs through the land route of Cisna and Wetlina Landscape Park.

²⁸ Kłos S., 2005, Podkarpackie. Przewodnik po województwie, wyd. BOSZ, Olszanica

²⁹ Lijewski T, Mikułowski B., Wyrzykowski J., 2008, Geografia turystyczna Polski, PWE, Warszawa

³⁰ Akcja Wisła

³¹ Kłos S., 2005, Podkarpackie. Przewodnik po województwie, wyd. BOSZ, Olszanica

³² The so-called Scattered Museums which consist of a network of distributed objects forming a living collection of natural and cultural history. The main idea of eco-museums is a visitor-object interaction in order to achieve a better educational effect.

³³ www.greenways.pl

4.2 The Presov Region

The Presov Region due to the high natural and anthropogenic attractiveness, is one of the many popular tourist regions of Slovakia. Definitely the most popular places are nearby Tatra areas where focuses a substantial part of the Slovak tourism infrastructure (i.a.: Poprad, Old Smokovec, Strbske Pleso, Tatranska Lomnica, Podbaňské, Ždiar). These places are mainly facilities for the development of mountain hiking, skiing and health resort activity. Typical for them facilities include: downhill skiing and cross country skiing, ski lifts, different categories of accommodation facilities (including hotels, Spa & Wellness facilities, mountain shelters) and an extensive range of catering³⁴.

Strbske Pleso is a resort of international renown. In addition to the nine slopes, the resort offers a wide range of cross-country skiing (16 km of trails), and many more attractions (including the snowpark)³⁵. Old Smokovec, besides numerous resort facilities has many ski lifts and ski slopes and funicular railway to Hrebienok (siding Tatra Electric Railways). From Hrebienka one can also use the sleigh run, and the newest attraction is the snow slide for snowtubing. In Tatranska Lomnica operates cable car on Lomnica (2634 m) and the cable car to Skalnatego Pleso (1750 m). There are numerous ski lifts, ski jumps and ski slopes (including the slope of Lomnicki's Pond to Tatranska Lomnica). In the villages there is also located ski infrastructure: Mountain Rescue, ski schools, ski rentals, ski-service. In Poprad, due to the presence of thermal springs (around 50°C) there are located swimming pools with Spa & Wellness centers, sports center, cryocentre and a wide range of catering and entertainment facilities³⁶.

The ski infrastructure also focuses in the Levočské Mountains (Krúžok), the Lower Tatras, as well as around Sabinov and Bardejov (ski resorts: Lysa-Drienica, Regetovka, Nižná Polianka - Makovica, Stebnická Huta³⁷) and Kežmarok and Levoča (Vyžne Ružbahy, Litmanova).

The network of hiking trails (especially mountain hiking in the Poprad district) is very well developed in the region. An important element of tourism infrastructure in the region is a cross-border heritage trail "Green Bicycle (Zeleny Bicykel) - Greenway Eastern Carpathians", joining Poland, Slovakia and Ukraine. Its appeal contends the fact that it runs through the International Biosphere Reserve - UNESCO, which is an excellent example of sustainable tourism infrastructure³⁸.

Tab. 4 Accommodation in the Presov Region in 2010 and its use

category	accommodation	vacancies	accommodation provided	no. of people who used the accommodation
hotels	103	12 597	1 236 601	406 061
pensions and privates	131	4 453	158 725	64 653
camping sites	8	3 785	22 608	9 133
other	343	11 009	606 883	131 786
total	585	31 844	2 024 817	611 633

Source: www.statitics.sk

³⁴ Słowacja. Przewodnik narciarski., 2002, red. Darmochwał T., Wydawnictwo Turystyczne „Agencja TD”

³⁵ www.vt.sk

³⁶ www.aquacityresort.com

³⁷ www.slovakia.travel

³⁸ Zaręba D., 2010, Ekoturystyka, PWN, Warszawa

In 2010, the number of overnight stays in the region amounted to 2 024 817 (Tab. 4)³⁹. In this respect, it is just ahead of the Zilina Region (2 135 892). The number of beds in the region was at the same year 31 844, most of which were in hotels (12 597). In the whole Presov Region the most overnight stays occurred in the Poprad district (1 230 502), second in line, with a much smaller number is the Bardejov district (236 841). This results from the biggest tourist attractiveness of the two districts and, consequently, the best-developed tourist infrastructure in them.

³⁹ www.statistics.sk

5 EXISTING NARROW-GAUGE RAILWAY CONNECTIONS IN THE ANALYZED REGIONS – EXAMPLES OF GOOD PRACTICES

5.1 Przeworsk Local Railway

Przeworsk Local Railway⁴⁰ is a narrow-gauge railway connecting two towns in the Podkarpackie Voivodeship: Przeworsk and Dynów⁴¹. It runs through Pogórze Dynowskie (Dynów Foothill), along the valley of the Mlecza river. It was built in the years 1900-1904 for the needs of servicing the sugar factory in Przeworsk. The idea of its construction was born in the times of the Austro-Hungarian monarchy. The efforts to construct the railway were started at the end of 19th century by the then freeholders (counts Roman Scypior from Łopuszka Wielka and count Skrzyński from Bachórz), after the construction of “Przeworsk” sugar factory by prince Andrzej Lubomirski. Aside from transport of beetroots to the sugar factory, crops, timber, gravel and stone from the Brzozów region were also transported. The complete commission of 46.25 km-long route (including a steam engine depot in Dynów) took place on September 8th 1904. Przeworsk rail line had a gauge of 760 mm, typical for the Austro-Hungarian monarchy (changed only in the 1950s to 750 mm)⁴². In 1910 the railway had 4 locomotives and 7 passenger cars, as well as 55 freight ones. In the following years the rolling stock was gradually increased. In the first years of railway exploitation a cargo of total 32.3 thousand tonnes was transported. Before the outbreak of the First World War 110 000 passengers also used this railway.

The first owner of the rail was Małopolskie Towarzystwo S.A. in Lviv. After the First World War PKP (Polish State Railways) took over the rail, however, the line slowly deteriorated. In 1925 the rail went into private hands. In 1945 it became once again a property of the Treasury (at first DOKP Cracow, then DOKP Lublin). In 1985 the track with steam traction and after some time also passenger traffic was cancelled.

In 1991 the rail was put in the monuments record (along with the tunnel railway shelter near Szklary). In 2003 Stowarzyszenie Kolejowych Przewozów Lokalnych in Kalisz (Local Railway Transport Association) opened tourist passenger traffic in the summer season and in 2004 a freight one (rudimentarily functioning until now). The Association is still the rail operator. It controls its exploitation and conducting transport (contract of lending for use)⁴³.

The owner of the rail from Przeworsk to Jawornik Polski (without the Przeworsk station itself) and the whole rail rolling stock is District County in Przeworsk. The owner of the route from Jawornik Polski to Dynów and the station in Przeworsk is the Estate Management Company in Cracow.

Local Railway Transport Association in Kalisz was founded in 2001. Its goal is to create conditions to protect, maintain and develop narrow-gauge and standard-gauge railways in Poland. Nowadays (2012)

⁴⁰ original names: Wąskotorowa Kolej Lokalna Przeworsk-Dynów, Przeworsk-Dynów narrow-gauge rail, „Dynówka”

⁴¹ www.pogorzanin.pl

⁴² Kurowska-Ciechańska J., Ciechański A., 2011, *Koleje w Polsce. Parowozy, wąskotorówki, dworce, muzea*, Carta Blanca, Warszawa

⁴³ Data made available by Local Railway Transport Association in Kalisz

beside Przeworsk Local Railway, the Association is the operator of the following narrow-gauge railways: Kaliska Kolej Dojazdowa (Kalisz Local Railway), Pleszewska and Śremska Kolej Lokalna (Pleszew and Śrem Local Railways)⁴⁴ Moreover, SKPL services also industrial sidings.

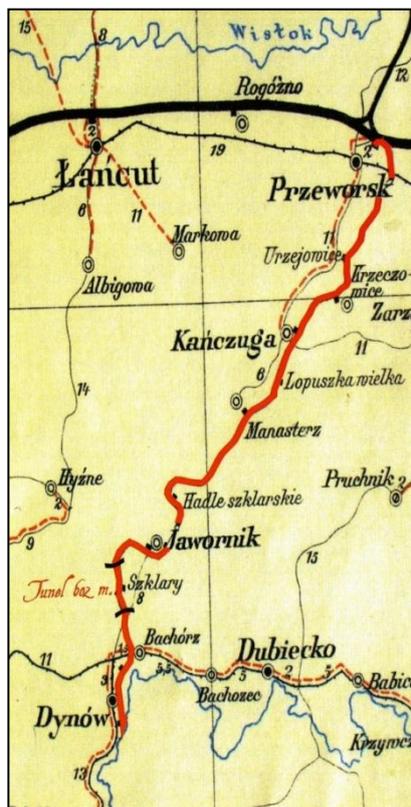


Fig. 2 Route of the Przeworsk Local Railway

Source: PKD commercial brochure

Przeworsk Local Railway is used mainly for seasonal tourist transport. The rail route is depicted in the Fig. 2. Total length of route amounts to 46.25 km – it starts in the Przeworsk Wąskotorowy station (where it is connected with the standard-gauge rail), then it runs through the towns of Kańczuga, Jawornik Polski, Hyżne and Dynów communes. The final stop for the rail is Dynów. There are 4 railway stations and 8 passenger stops along the route. Maximum number of passengers in the train set is 280, including 160 seats in passenger cars and 120 in the so-called retro cars (with a roof, without windows).

Route of the Przeworsk Local Railway runs through the picturesque area of Dynów Foothill, located between valleys of Wisłok and San⁴⁵. Beside numerous hills, there are various rock formations. Farming landscape is dominant, there are however large stretches of woods (including valuable beeches and firs). Along the rail route flows Mleczka river, right tributary of the Wisłok river. The closing section of the rail (Dynów area) runs through the picturesque valley of the San river. “Pogórzanin” is famous for the

⁴⁴ Data made available by Local Railway Transport Association in Kalisz

⁴⁵ Kondracki J., 2002, Geografia regionalna Polski, PWN

only tunnel in Poland in Szklary (602 m) located on the route of the narrow-gauge rail. This tunnel is at the same time the longest construction of this type in Europe.

Tab. 5 Timetable of the so-called scheduled tourist trains of PKD

No.	Station	km	to Dynów		to Przeworsk	
			departure	arrival	departure	arrival
1.	Przeworsk Wąsk.	0	9:00	-	-	17:10
2.	Urzejowice	9	9:23	9:22	16:45	16:44
3.	Krzeczowice	11	9:30	9:29	16:38	16:37
4.	Kańczuga	15	9:40	9:38	16:28	16:26
5.	Łopuszka Mała	18	9:47	9:46	16:20	16:19
6.	Łopuszka Wielka	19	9:52	9:51	16:15	16:14
7.	Manasterz	21	10:01	10:00	16:07	16:06
8.	Zagórze	24	10:11	10:10	15:57	15:56
9.	Hadle Szklarskie	29	10:22	10:21	15:44	15:43
10.	Jawornik Polski	33	10:42	10:40	15:26	15:24
11.	Szklary k/tunelu	36	11:07	10:57	-	-
12.	Szklary	38	11:15	11:14	15:06	15:05
13.	Bachórz	42	11:31	11:28	14:49	14:44
14.	Dynów	46	-	11:45	14:30	-

Source: www.pogorzanin.pl

Scheduled tourist trains run on Saturdays and Sundays – from the last Saturday in May till the end of August, while in September on Sundays only. Tourist train timetable on the Przeworsk-Dynów-Przeworsk route in the period from May to the end of September is presented in table 5. Departure time from the Przeworsk Wąskotorowy station is permanent (9.00)⁴⁶. Planned train arrival at the Dynów station – 11.45. Return trip from Dynów to Przeworsk starts at 14.30 (arrival to Przeworsk at 17.10).

Additional train on the Dynów-Bachórz-Dynów route (free of charge) departs from Dynów at 13.00, from Bachórz at 13.50, while planned arrival of the train at the Dynów station is at 14.00. Special request train for a group of minimum 40 passengers on the Dynów-Jawornik Polski-Dynów route departs from Dynów at 12.00 and comes back at 14.00.

Ticket price depends on the route length (table 6.). Discount tickets are only for schoolchildren up to 18 years, free fare – for children up to 2 years. There is also a possibility of bike transport (price of a discount ticket). In the case of special request train fare on the Przeworsk-Dynów-Przeworsk route, the lease price depends from the number of cars in the train set. The cheapest is travel in the 1-car train set, which costs 1 404 PLN for schoolchildren and 1 620 PLN for adults. The most expensive is travel in a 6-car train set (280 passengers) – fare for schoolchildren is then 2 484 PLN, while for adults it amounts to 2 700 PLN.

Tab. 6 Ticket fares for scheduled tourist train PKD

No.	Distance	Regular ticket	Discount ticket
1.	0-10 km	7 PLN	5 PLN
2.	11-20 km	8 PLN	6 PLN
3.	21-30 km	10 PLN	7 PLN
4.	31-40 km	12 PLN	8 PLN
5.	41-46 km	13 PLN	9 PLN
6.	92 km	24 PLN	16 PLN

Source: www.pogorzanin.pl

⁴⁶ Data for year 2011

Yearly rail maintenance costs amount to circa 140 000 PLN⁴⁷. These are the so-called direct costs – employee remuneration, payments for commission agreements (total of ca. 70 000 PLN), cost of purchase of fuel, oil, grease, spare parts for repair and maintenance of the rolling stock and tracks (total of ca. 55 000 PLN), costs of buildings maintenance along with electric energy bills (total of circa 11 000 PLN) and additional costs i.e.: purchase of office supplies, phone bills, purchase of working clothes, cleaning products, beverages for employees and promotion expenses.

During the last few years there have been many investments into the Przeworsk Local Railway “Pogórzanin” route. In the years 2009-2010 the station building in Przeworsk, where mini-museum (locomotive Lxd2, passenger and freight cars) and ticket booth are, were reconstructed⁴⁸. The timetable boards, diesel trolleys (financial support of the Karczma “Pod Semaforem”/”Pod Semaforem” Inn), switch lanterns and crane were also reconstructed. Acquiring external subsidies is impossible because of the above-mentioned complex ownership structure of the Przeworsk Local Railway. Due to the same reason it is impossible to acquire data concerning the return on investment – Przeworsk Local Railway is now not separated from the whole railway system managed by the Association.



Photo 1. Przeworsk Local Railway en route
Source: www.pogorzanin.pl

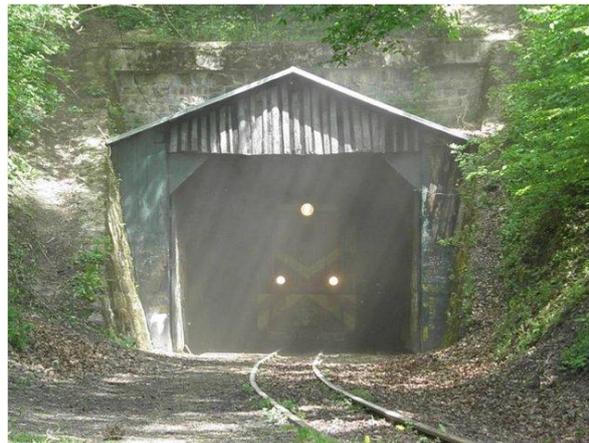


Photo 2. Tunnel in Szklary on the route of Przeworsk Local Railway
Source: www.pogorzanin.pl

⁴⁷ Data made available by Local Railway Transport Association in Kalisz

⁴⁸ www.pogorzanin.pl



Photo 3. Przeworsk Local Railway
Source: www.pogorzanin.pl



Photo 4. Przeworsk Local Railway – rolling stock
Source: www.pogorzanin.pl

The primary financing source of the rail are scheduled tourist trains (circa 48 000 PLN) and transport with special trains (circa 29 000 PLN)⁴⁹. We also need to take into account income from freight trains (it amounts to circa 3 000 PLN⁵⁰), income from the apartment rental (16 000 PLN), lease of estate and rooms (28 000 PLN) and advertisements (4 000 PLN). A vital source of financial resources is also support of the Town Council and Commune Council in Dynów (6 000 PLN from each of the councils).

Members of the Stowarzyszenie Miłośników Przeworskiej Kolei Dojazdowej (Association of the Przeworsk Access Rail Fans) do community work of advertising and marketing for the PKD. Within the scope of these activities a website (www.pogorzanin.pl) with the most important pieces of information for tourists was created, as well as advertising banners were designed and printed and were put up i.a. in the centre of Rzeszów, near the national road No. 4 in Głuchów and Przeworsk, as well as in the castle in Krasiczyn near Przemyśl. Advertising brochures were distributed in Cracow, Warsaw, Lublin, as well as in the Ukraine (offices, travel agencies, schools, companies). Due to the lack of financial resources these investments are of basic character. Nowadays there is no coherent marketing strategy for the PKD and the whole Podkarpacie (the so-called correlated marketing), whereas information concerning train rides can be more and more often found on the websites of towns, communes or districts of the Podkarpacie (i.a.: www.epodkarpacie.com, www.powiat.rzeszow.pl, www.gmina.dynow.pl).

Przeworsk Local Railway is not a means of alternative transport for the region inhabitants – it has first of all a tourist character (also for the Podkarpacie inhabitants). Additional attractions of the Przeworsk Local Railway are: Galicyjska Linia Drezynowa (Galicia Trolley Line), a possibility to rent self-propelled trolleys, visiting the tunnel and something for children – trampoline. Special rides take place on request, during which the customer chooses a place for a two-hour stop (in any place along the route) and visits the rail station in Przeworsk and rail rolling stock in Dynów. There is also a possibility to organise a campfire or trips to the reservoir in Łopuszka Mała.

⁴⁹ Data made available by Local Railway Transport Association in Kalisz

⁵⁰ Occasional coal transport to private company selling fuel and constructing materials in Kańczuga

The newest attraction of the PKD is the possibility of riding in the four-person motor trolley on the Bachórz-Dynów-Bachórz or Bachórz-Szklary tunnel-Bachórz routes. An attraction for fans of good cuisine during the ride is a visit in the “Pod Semaforem” Inn in Bachórz, where the guests can try the traditional Polish dishes. In the scheduled and special train sets there is also a dining car with tables and 24 seats and A *caboose* type car for transporting ca. 12 bikes. There is a lack of cars adapted for the transport of disabled people, however according to the Association’s employees, with help of the staff they can also enjoy the train rides.

An average of about 12 000 tourists⁵¹ use the Przeworsk Local Railway during the tourist season (May-September). As the research of tourist traffic conducted in the years 1993-2011 (Fig. 3.) shows, the number of trains servicing the scheduled tourist rides in the season was slightly fluctuating during the years (except for the year 2002)⁵². In the analyzed period a total of 715 scheduled trains and 464 special trains conducted their runs. The largest number of scheduled train sets in service was in 1994 (60), the lowest number was in 2002 (7). On average, there are 34-38 scheduled tourist trains running during the year. Basically they are family runs, out of which 55-60% passengers are adults, while 40-45% are children and teenagers⁵³.

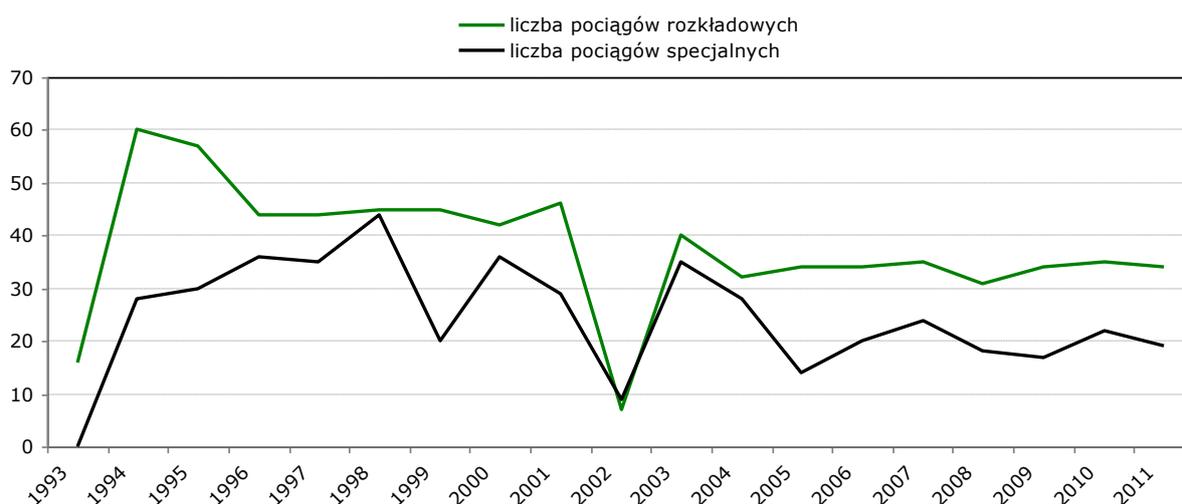


Fig. 3 Number of scheduled and special trains of PKD in the years 1993-2011

Source: www.pogorzanin.pl

More significant fluctuations are visible in the case of special trains sets running for organized groups in the course of years. On average, during the year there are 20-30 special trains running. When analyzing data from the years 1993-2011 the largest number of trains was running in 1998 (44). In 1993 not a single special train was used, lower number of trains was also running in 2002 (9) and in 2005 (14). In the last year (2011) 34 scheduled and 19 special train sets of “Pogórzanin” started their runs. In this group of passengers 65-70% are teenagers, while 30-35% are adults. Companies, offices and other organized groups gladly use the special rides. During each season 1-2 special trains are used by the tourists from abroad. Foreign visitors also ride the scheduled tourist trains almost every time/year.

⁵¹ Data made available by Local Railway Transport Association in Kalisz

⁵² www.pogorzanin.pl

⁵³ Data made available by Local Railway Transport Association

In the years 1993-2011 in the scheduled trains travelled 165 491 passengers, whereas in the special ones 104 708 passengers travelled (Fig. 4.). Similarly as in the case of number of running trains, the worst in scope of travelling passengers were the years: 1993 (the first year of tourist transport) and 2002. The highest number of passengers in both types of trains travelled in 1998 (17 923 passengers in scheduled trains and 9 220 in special trains). In respect of the first years of functioning tourist transport, one can observe a general downward trend.

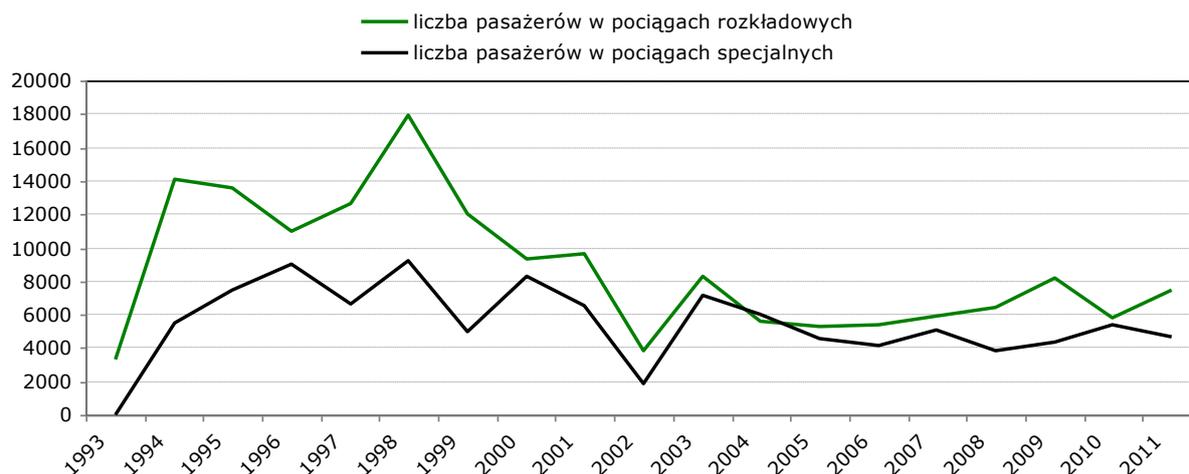


Fig. 4 Number of passengers in scheduled and special trains of PKD in the years 1993-2011

Source: www.pogorzanin.pl

The PKD serves only for tourist transport purposes – it does not constitute an element of multimodal transport. Przeworsk, where the departing station of narrow-gauge “Pogórzanin” train is located, is however favourably located with respect to communication, near the international road E40 (national road No. 4) and voivodeship road No. 835 from Lublin to Grabownica Starzeńska, along which the whole train route runs. Moreover, Przeworsk is located near the train line No. 91 Cracow-Medyka) and No. 68 (Lublin-Stalowa Wola-Przeworsk). Due to good communication availability of Przeworsk, narrow-gauge train “Pogórzanin” line is conveniently connected with other regions of Poland.

In the scope of railway connections Przeworsk has the best connections with Przemyśl (through Jarosław) and Rzeszów (through Łańcut) (more than a dozen connections a day)⁵⁴. Moreover, from Przeworsk trains run to Szczecin (through Cracow, Katowice, Poznań), Skarżysko-Kamienna (through Leżajsk, Nisko, Stalowa Wola and Starachowice), Jelenia Góra (through Rzeszów, Kraków, Katowice, Opole and Wrocław), Gdynia Główna (through Łańcut, Rzeszów, Kraków, Warszawa), Łódź Kaliska (through Łańcut, Rzeszów, Kraków, Krzeszowice, Trzebinia), Wrocław (through Łańcut, Kraków, Katowice, Gliwice, Opole), Świnoujście (through Rzeszów, Kraków, Katowice, Wrocław and Poznań) and to Horyniec Zdrój health resort (through Pełkinie, Jarosław, Surochów). According to the Association’s employees, good availability of Przeworsk train is owed first of all to close proximity of standard-gauge railway station and correlation of connections with the PKP timetable.

⁵⁴ www.rozklad-pkp.pl/

When it comes to road transport the access to the train is easy mainly due to the international road E40, connecting Przeworsk with Cracow, Tarnów and Rzeszów and the border crossing in Korczowa (Ukraine). Train stop is located ca. 1 km from the bus station. The distance from the nearest large urban centres is not large, the smallest distance is to Rzeszów (38 km) and Przemyśl (47 km – by connection of international road No. 4 with the national road No. 77). Voivodeship road No. 835 provides comfortable communication with the Lubelskie voivodeship (Biłgoraj, Lublin) and with the final train stop in Dynów. Distance in kilometres from Przeworsk to the chosen cities in Poland is presented in the table 7.

Tab. 7 Distance from Przeworsk to chosen cities in Poland (in km) and estimated time of travel

No.	City	Distance in km	Estimated time of travel
1.	Rzeszów	38 km	36 min.
2.	Przemyśl	47 km	43 min.
3.	Stalowa Wola	76 km	1 hr 15 min.
4.	Lublin	147 km	2 hrs 49 min.
5.	Tarnów	118 km	1 hr 58 min.
6.	Kraków	200 km	3 hrs 12 min.
7.	Warszawa	304 km	5 hrs
8.	Łódź	343 km	5 hrs 28 min.

Source: www.mapy.google.pl

The potential of the PKD is not fully used. According to the PKD employees, beside weekend runs there should be also connections functioning on weekdays (minimum of 1-2 trains). Low level of rail exploitation is connected first of all with meagre employment and limited financial resources, as well as complex ownership structure. However, due to picturesque landscape, through which the rail's route is running, it is considered to be one of the greatest tourist attractions of the Podkarpacie and it has significant influence into the region's tourism development. Potentially the rail could also be an attractive element of the region's multimodal transport, especially due to the existing connection with the standard-gauge rail in Przeworsk. As an ecological means of transport it would then have an influence on preservation of valuable natural values of the Pogórze Dynowskie and San Valley.

5.2 Bieszczady Forest Railway

Bieszczady Forest Railway is one of the last existing narrow-gauge rails that were once used to transport timber in the Eastern Carpathians. It is also the only rail in Poland and one of very few in Europe that runs in the mountainous area. It was constructed in the years 1895-1898, when the first section of the rail on the Nowy Łupków – Majdan (near Cisna) route with the length of 24.2 km⁵⁵ was opened. The project was implemented by Self-governing Stock Society (Local Railway Nowy Łupków - Cisna). Along with the construction of the first section a station building in Majdan was erected, as well as a warehouse, a loading ramp, a steam engine depot and residential buildings for employees. There were also new train stops constructed along the route (Balnica, Żebracze, Wola Michowa). In 1911 the control was taken over by the C.K. Austro-Hungarian National Railway with its head office in Lviv and management in Nowy Łupków.

⁵⁵ www.kolejka.bieszczady.pl

The aim of constructing a rail was first of all transport of timber to European countries, however the passenger runs were also taking place. Numerous timber mills were erected on the rail's route. In the years 1900-1904 a line to Kalnica and Beskid (18 km) were built. Before the outbreak of the First World War the rail would run up to Strzebowiska near Wetlina and it had branches to numerous timber mills. Investment was financed by owners of the surrounding woods – Stenberg and Dydyński company. During the First World War numerous objects were destroyed (bridges, buildings). However, it served mainly for the army's needs (military field railway), used subsequently by the Russians and the Austrians.

In 1920 the rail was taken over by Regional Directorate Board in Lviv. The rail was rebuilt, which resulted in significant economic animation of the region. After depleting the timber stock in 1931 the rail was closed and dismantled. During the Second World War the Germans resumed its exploitation and after reconstruction they once again adapted it to their military needs. During that time the rail was subordinate to General Directorate of Eastern Railways in Cracow. In 1942 the track gauge was reduced from 760 to 750 mm. The warfare caused significant damages to the rail. Also after the Second World War the rail was subject to devastation, this time as a result of the Ukrainian Insurgent Army's activities (until 1948).

After the war the administration of the National Forest commissioned the reconstruction of the rail – in the years 1953-58 the rail was managed by Forest Transport Company in Przemyśl and from 1958 by the Forest Transport Centre in Sanok. As a result of building a large wood industrial complex in Rzepedź the route Rzepedź-Mików was reopened and a project of the Rzepedź-Moczarne route was planned. Today's form of the rail is a result of its reconstruction in the years 1954-64. (1961 – the end of construction of the Rzepedź-Smolnik route with Mików and Mików Górny branches; 1964 – the end of construction of the Majdan-Moczarne route). It was the largest post-war investment in the wood railways – the total length of tracks was 104 km. The following buildings were constructed: a steam engine depot in Rzepedź, workshops in Nowy Łupków and station buildings in Rzepedź, Smolnik, Nowy Łupków and Wetlina. New residential buildings were constructed for the rail employees. In the years 1956-80 the rail transported 2.4 million m² of timber and circa 315 tonnes of materials. More than 10 thousand passengers a year travelled with the rail. As time passed by, as a result of the extension of the road infrastructure in Bieszczady and after the collapse of the Forest Industry Works in Rzepedź this type of transport lost its significance. In 1994 Bieszczady Forest Railway was shut down.

On 16 July 1996 a Bieszczady Forest Railway Foundation was established, which has been a rail user since then. The foundation has its seat in Cisna, its activity aim is to keep the historic, narrow-gauge rail in Bieszczady running and to improve natural environment in the UNESCO International Biospheric Reserve „Eastern Carpathians” and tourist activation of the region. The property of the Treasury (State Forests – Cisna forest inspectorate and Komańcza forest inspectorate) has been taken by the Foundation into free lease for an indefinite period of time⁵⁶. Among the fixed assets belonging to the Foundation are i.a. station buildings in Majdan, tracks, fifteen bridges, fifty-five culverts, locomotives, cars, trolleys, workshop and office equipment, etc. Transport resumed on the route of the Bieszczady Forest Railway is only of tourist character, thus it does not make an alternative means of transport for the region's inhabitants.

⁵⁶ Data made available by the Bieszczady Forest Railway Foundation



Photo 5. Bieszczady Forest Railway - en route
Source: www.kolejka.bieszczady.pl



Photo 6. Bieszczady Forest Railway en route
Source: www.kolejka.bieszczady.pl



Photo 7. Bieszczady Forest Railway – a museum room in Majdan
Source: www.kolejka.bieszczady.pl



Photo 8. Bieszczady Forest Railway – station in Majdan
Source: www.kolejka.bieszczady.pl

The Foundation has introduced a series of stocktaking activities (i.a. rail station in Majdan, reconstruction of electric supply, reconstruction of the car park, construction of a shelter for keeping the rolling stock). The expenditure for track reconstruction in the last years was as follows⁵⁷: 2007: 131.6 thousand PLN, 2008: 184.1 thousand PLN, 2009: 180.7 thousand PLN. In the years 2006-09 a reconstruction of the tracks on the Wola Michowa-Smolnik route was conducted. The Foundation was also increasing the railway's rolling stock – i.a. 10 so-called summer cars were purchased. In the summer of 2011 another 3 cars were added, including 1 for the transport of disabled people. New locomotives and steam engines were purchased.

The source of the BKL finances is sales of tickets for rail rides and external subsidies acquired by the Foundation. As it is stated in the data made available by the Foundation the number of sold tickets in the last year of railway activity (May-October 2011) amounted to 135 999 pieces. Most of them were regular tickets (full fare) rather than discount ones. During the last three years (2009-2011) the highest sale took place in months that are *strictly speaking* summer ones (July-August); in July 2011 as much as 44 126 tickets were sold, whereas in August 49 490.

⁵⁷ www.kolejka.bieszczady.pl

The balance sheet of the Foundation has been negative since 2009 and in 2011 it amounted to - 231645,30 PLN⁵⁸. This is a result of implementing a large project named „**Renovation, modernization and expansion of the station objects, tracks and rolling stock of the Bieszczady Forest Railway in Majdan**” since 2010. This project is co-financed by the European Union from the European Regional Development Fund and from the national budget within the scope of the RPOWP for the years 2007-2013 and its total value is 1 686 892.32 PLN. The amount co-financed from the EFRR is 662 930.18 PLN. The amount co-financed from designated subsidy from the national budget is 116 987.69 PLN. Within the scope of the project many new activities have been implemented – i.a.: construction of outdoor toilets at the Majdan station, exchange of the locomotive engine, reconstruction of the KP-4 steam engine, redecoration of the steam engine depot and station buildings (tourist information, left-luggage office, storerooms etc.), as well as acquiring a refund of investments that took place in 2007 (i.a. reconstruction of tracks from Wola Michowa to Smolnik).

In order to implement the project the foundation uses its own resources and credits. In 2011 except for a subsidy from the European Union, it also acquired a subsidy of 50 000 PLN from Voivodeship Environment Protection Fund (construction of outdoor toilets) and from voivodeship’s heritage conservator.

The basic source of financing the ongoing activity of the BKL is income resulting from the tourist traffic services (sales of tickets, souvenirs etc.). It is worth noting that this income in the years 2008-2011 increased by about 30% (Table 8). It is definitely a positive proof for the BKL’s offer development. Some costs of the BKL activity are also covered from subsidies acquired from different sources, which were previously mentioned. Since 2010 the amount of acquired subsidies has increased thanks to acquiring a modernisation project within scope of Regional Operational Programme by the Foundation.

Tab. 8 Income and operating expenses of the BKL Foundation

Line	Details	Data for year			
		2008	2009	2010	2011
A	Net income from sales	813,754.56	958,011.82	920,928.66	1,059,653.35
B	Operating expenses	689,975.19	856,150.89	1,151,417.44	1,590,244.07
	including:				
II	materials and energy consumption	88,820.96	104,790.61	163,721.54	182,464.59
III	external services	161,387.38	189,552.72	255,302.46	672,469.95
V	remuneration	316,941.33	419,185.58	540,460.17	535,977.33
VI	social insurance and other benefits	50,949.79	61,513.87	79,936.13	79,754.92
C	Profit/loss from sales	123,779.37	101,860.93	-230,488.78	-530,590.72
D	Other operational income	25,002.59	45,142.07	204,833.51	325,195.45
	including:				
II	subsidies	25,000.00	44,815.00	201,237.14	325,195.45
F	Profit/loss from operational activities	148,779.10	146,342.65	-25,807.16	-205,397.72
I	Profit/loss from economic activity	138,901.22	137,953.84	-37,940.94	-231,645.30

Source: Data made available by the FBKL

⁵⁸ Data made available by the Bieszczady Forest Railway Foundation

As the analysis of available financial reports shows, during four years included in the analysis (2008-2011) the cost of current activity of the Foundation significantly increased. The largest increase took place in purchase of external services, which to a great extent is due to the implementation of the Foundation's modernisation project of the Bieszczady Forest Railway and the resulting necessity of investing the Foundation's own financial resources in implementation of the investment. This cost was growing much faster than income from sales, thus contributing to generating a loss from the operational activity during the last two years of the BKL Foundation. However, this situation needs to be interpreted as a sign of strategic approach to the BKL management, since this cost will cause a development of its offer.

A supplement to the above analysis can also be pieces of information provided in the collective juxtaposition presenting financial activity of the Foundation in the years 1997-2010. According to them the cost of rolling stock exploitation and upkeep of tracks amounted in that period to the total of 4 858 000 PLN, which constitutes ca. 70% of the costs related with exploitation of the BKL.

Some information concerning the Foundation's financial condition can be also found in the analysis of financial balance sheets of the BKL Foundation prepared for the years 2008-2011 (Table 9). According to them the value of the Foundation's assets was systematically growing, achieving the value of 1 429 216.45 PLN in 2011. Each year it comprised mostly of material fixed assets of structure presented in the table below (Table 9). As it can be seen these are mainly fixed assets related with the BKL activity, however, it is worth noting that from 2009 the value of buildings and premises at the BKL's disposal has significantly increased. The value of means of transport has also increased – however, to a much smaller extent. Each year the other part of material assets were comprised of fixed assets under construction. Increase in their value in the last year is due to the implementation of the above-mentioned modernisation project by the BKL Foundation.

Tab. 9 Analysis of financial balance sheets of the BKL Foundation

	2008	2009	2010	2011
Assets total, including:	970,658.87	1,018,104.47	1,258,306.42	1,429,216.45
Material fixed assets	790,438.35	865,401.08	1,059,634.12	1,284,746.95
Fixed assets, including:	408,542.18	750,730.11	874,821.17	935,071.84
- buildings, premises and objects	210,131.14	501,349.04	633,441.96	594,574.44
- technical equipment and machines	1,486.15	22,234.97	21,781.26	32,280.33
- transport means	196,924.89	227,056.10	219,597.95	285,557.63
fixed assets under construction	381,896.17	114,670.97	184,812.95	349,675.11

Source: Data made available by the FBKL

The route of the Bieszczady Forest Railway runs through the area of 2 districts: Lesko (Cisna commune) and Sanok (Komańcza commune). It runs through the Ciśniańsko-Wetliński Landscape Park, which makes the natural protection zone for the nearby Bieszczady National Park. This park is included in the UNESCO "Eastern Carpathian" International Biosphere Reserve. There are 7 nature reserves nearby, the most precious ones are: "Sine Wiry" (landscape park) and "Zwierzło" (geological park).

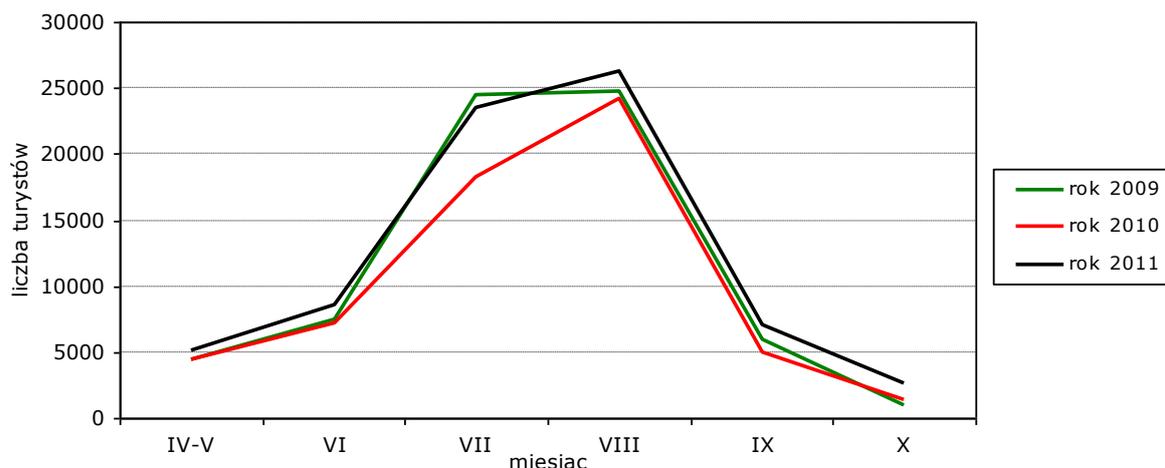


Fig. 5 Tourist traffic on the BKL route in months from April to October in the years 2009-2011

Source: Data made available by the FBKL

Tourist traffic in each month in the years 2009-2011 is shown in figure 5. The number of tourists travelling by rail in the recent years has been gradually increasing – in 2011 there were 73 048 of them⁵⁹. The highest occupancy takes place in *strictly speaking* summer months (July, August) – up to 26 257 tourists in August 2011. The smallest number of rides takes place in October (in 2009 – 989 tourists). According to the data made available by the Bieszczady Forest Railway Foundation in 2011 the highest number of tourists used the scheduled trains on the Majdan-Balnica-Majdan route. There were definitely fewer special rides (by trolley, photostops – open air photo shoots on customer’s request). The most special rides on request took place from September to October, which is caused by the profile of customers (organized groups – companies, offices etc.)⁶⁰. Tourists from abroad use all routes of the railway, however the Foundation unfortunately does not keep statistics allowing to define their number.

Bieszczady Forest Railway has scheduled connections on 2 routes (2012): Majdan-Przysłup-Majdan and Majdan-Balnica-Majdan (Fig. 6). On the route to Przysłup there are 7 cars for ca. 30 tourists (total capacity amount to ca. 210 tourists), whereas on the route to Balnica there are 8 cars (capacity of ca. 240 tourists). The railway is available from the end of April to the end of October, on weekdays only in July and August. In other months only on Saturdays, Sundays and holidays.

⁵⁹ Data made available by the Bieszczady Forest Railway Foundation

⁶⁰ Lack of data concerning foreign tourists using the railway



Fig. 6 Route of the Bieszczady Forest Railway

Source: advertising brochure of the FBKL

The railway schedule on the Majdan-Przystup-Majdan route (12km) is presented in tables 10 and 11, which shows that there are two railway connections – first one at 10.00 (return to Majdan at 12.40), and second one at 13.30. (return to Majdan at 16.10). On the Majdan-Balnica-Majdan route (9 km) there are also two trains running: one of them departs from Majdan at 10.30 and returns to Majdan at 12.15, while the second one departs at 13.00 and is back in Majdan at 14.45. (tables 12 and 13). There is also a possibility of renting a train outside the scheduled timetable and riding on a trolley.

Tab. 10 Timetable for the so-called scheduled tourist trains of the BKL on the Majdan-Przystup- Majdan route

No.	Station	km	time	
			connection 1	connection 2
1.	Majdan	0	10.00 (departure)	13.30 (departure)
2.	Cisna	2	10.15	13.45
3.	Dołżyca	5	10.30	14.00
4.	Przystup	12	11.10 (arrival)	14.40 (arrival)

Source: Data made available by the FBKL

Tab. 11 Timetable for the so-called scheduled tourist trains of the BKL on the Majdan-Przystup-Majdan route

No.	Station	km	time	
			connection 1	connection 2
1.	Przystup	0	11.30 (departure)	15.00 (departure)
2.	Dołżyca	7	12.10	15.40
3.	Cisna	10	12.25	15.55
4.	Majdan	12	12.40 (arrival)	16.10 (arrival)

Source: Data made available by the FBKL

Tab. 12 Timetable for the so-called scheduled tourist trains of the BKL on the Majdan-Balnica-Majdan route

No.	Station	km	time	
			connection 1	connection 2
1.	Majdan	0	10.30	13.00
2.	Balnica	9	11.15	13.45

Source: Data made available by the FBKL

Tab. 13 Timetable for the so-called scheduled tourist trains of the BKL on the Majdan-Balnica-Majdan route

No.	Station	km	time	
No.	Station	km	time	
			connection 1	connection 2
1.	Balnica	0	11.30	14.00
2.	Majdan	9	12.15	14.45

Source: Data made available by the FBKL

At the station in Majdan there is the only a station building, in the rest of towns on the route there are passenger stops. In the building in Majdan, as a result of the conducted reconstruction are located: a tourist information point, a ticket booth, railway offices, museum rooms (including an audiovisual one), a traffic duty room, outdoor toilets and car parks. There is also a historic steam engine depot.

Tab. 14 Price list for riding the tourist scheduled train of the BKL

No.	Route	Standard ticket	Reduced ticket
1.	Majdan-Przysław	14PLN	11PLN
2.	Majdan-Przysław-Majdan	21PLN	15PLN
3.	Majdan-Balnica	12PLN	10PLN
4.	Majdan-Balnica-Majdan	17PLN	13PLN

Source: Data made available by the FBKL

Tab. 15 Price list for riding the request train of the BKL

Number of cars	Maximum number of passengers	Departure from the Majdan station to destination station/price	
		Przysław	Balnica
2	50	900 PLN	710 PLN
3	75	1090 PLN	900 PLN
4	100	1300 PLN	1060 PLN
5	125	1540 PLN	1120 PLN
6	150	1960 PLN	1470 PLN
7	175	2170 PLN	1620 PLN
8	200	-	1800 PLN

Source: Data made available by the FBKL

The price list of rides in the Bieszczady Forest Railway is diversified and depends on the type and length of the chosen route (table 14). Free tickets are for children up to 3 years old, while reduced tickets are for children aged 3-16 and for people over 70 years old. The fee for ride on request the fee depends on the number of cars in the train set and the maximum number of passengers which is related to it (table 15). The cheapest is in that case a ride in a 2-car train set (with a maximum number of 50 passengers) – on the Majdan-Przysław route and back, the cost of this ride is 900 PLN, while on the Majdan-Balnica route and back it costs 710 PLN. The most expensive ride is in the 8-car train set (maximum of 200 passengers), which costs 1800 PLN on the Majdan-Balnica-Majdan route. Additional fee for bike is 5 PLN.

If you request a ride in the LAS steam engine, the cost on the Majdan-Balnica-Majdan route is 1630 PLN, whereas on the Majdan-Dożyca-Majdan route 1420 PLN (2 cars, maximum of 50 people). Cost of a request ride in a 10-person trolley is presented in the table 16. It depends from the number of people and destination (Cisna, Dożyca, Przysław, Balnica, Smolnik). In the case of maximum number of people the cheapest is travel to Cisna, the most expensive is to the most far away Smolnik.

Tab. 16 Cost of request ride in 10-person trolley

Destination	Number of people/price (PLN)									
	1	2	3	4	5	6	7	8	9	10
Cisna	60.00	30.00	20.00	15.00	12.00	10.00	8.50	7.50	7.00	6.00
Dolżyca	110.00	55.00	37.00	27.50	22.00	18.00	16.00	14.00	12.00	11.00
Przysłop	210.00	105.00	70.00	52.50	42.00	35.00	30.00	26.50	23.00	21.00
Balnica	170.00	85.00	57.00	42.50	34.00	28.50	24.00	21.00	19.00	15.00
Smolnik	400.00	200.00	135.00	100.00	80.00	67.00	57.00	50.00	45.00	40.00

Source: Data made available by the FBKL

There are no recurring accompanying events on the railway route. The only one is the beginning of the summer season, in 2012 it is supposed to have a form of a larger fest. Moreover, upon customer's request, there is a possibility to organize a so-called horse attack on the train on the route to Przysłop (the organizer – a private company). Campfires can be started only in designated places – shelters, due to the railway location in the protection zone of the Bieszczady National Park. The FBKL is planning to build a shelter at the station in Majdan, where there is already a shepherd's hut, where regional food (bread, cheese, honey) made by local inhabitants is sold. There is also a possibility to eat meals in the restaurant car. In the train set there is also a car, where souvenirs are sold.

The railway is not an element of the region's multimodal transport. Connection of the railway with other means of transport is difficult first of all due to a weakly developed communication network. The main communication hub, along which the railway's route runs is the voivodeship road No. 897 connecting Tylawa with Wołosate. Its section between Cisna and Ustrzyki Górne is called the great Bieszczady ringroad. In Cisna this road connects with the road No 893 (to Lesko), and in Komańcza with the road No. 892 (to Zagórz and Sanok).

The nearest rail line is the line No. 108 connecting Stróże in the Małopolskie voivodeship with the border crossing in Krościenko (i.a. through Jasło, Krosno, Sanok, Zagórz, Ustrzyki Dolne). There are few connections from the nearest railway station (Zagórz), only a couple of them during the day to Sanok, Jasło, Łupków (through Komańcza) and to Rzeszów. However, there are many connections from the bus station in Sanok with many towns in Poland (Veolia Transport sp. z o.o.)⁶¹. You can get to Sanok i.a. from: Częstochowa, Gdańsk, Katowice, Cracow, Łódź, Lublin, Opole, Przemyśl, Rzeszów, Toruń and Warsaw. Sanok is also connected with many other small towns located in Bieszczady, including some near the railway's route: Wetlina, Komańcza, Łupków, Cisna and Wetlina – there are also connections with the narrow-gauge railway station in Cisna and Majdan before noon, allowing to start on the route of the Bieszczady Forest Railway.

Conducted promotional activities for the Bieszczady Forest Railway include mainly publishing a number of publications (leaflets, posters, folders) and functioning of the website (www.kolejka.bieszczady.pl). In these materials are basic pieces of information concerning the railway, including price lists, timetables, attractions on the route. Leaflets and folders are sent by post to travel agencies, tourist information points and to tourism fairs. Due to huge interest in the railway and its attractiveness, information about it appears also on the websites of the Podkarpacie (i.a.: www.twojebieszczady.pl, www.bieszczady.net.pl, www.bieszczady.pro, www.epodkarpacie.com).

⁶¹ www.e-podroznik.pl

Communes and districts are applying themselves to include data about the railway in their advertising materials. Additionally, for the 15th anniversary of the Bieszczady Forest Railway Foundation, there was a book published with a description of its complete history. Each ticket entitling to a travel with the railway is accompanied by a so-called souvenir ticket, with a short description of attractions. The railway's route is also marked on all tourist maps published in the Podkarpacie region. Within the scope of the project implemented in the last years co-financed by the European Union's funds new promotional publications were prepared. The Foundation is also planning to replace the existing signposts on the approach routes and to put up information signs with a description of stops and nearby attractions. Promotional activities are then of correlated character, however the Foundation's employees admit that the railway is such a famous and popular attraction of the region, that tourists themselves look up the needed information on their own, so greater expenses for promotion are not necessary.

5.3 Tatra Electric Railway

The Presov Region, especially the Poprad district, is classified as one of the most important tourist regions in Slovakia. Service of the tourist traffic at the feet of the Tatra Mountains is possible thanks to a railway transport system – Tatra Electric Railway. It provides protection for valuable natural environment and simultaneously ability to transport a large number of tourists: two railway rides at an interval of 30 minutes, the railway can transport 400 passengers, if we convert that into bus transport it means 5-6 rides at the same time⁶².

There are two main narrow-gauge railways in the region, providing connections at the feet of High Tatra mountains (Tatra Electric Railway, *slov.* Tatranské električné železnice, TEŽ, *električka*). First of them (No. 183) is on the Poprad – Starý Smokovec – Szczyrbskie Pleso route (29.110 km), second of them (No. 184) is on the Starý Smokovec – Tatrzańska Łomnica route (5.983 km). These lines have a track gauge of 1000 mm. The operator of the Railway is a railway company in Slovakia (ZSSK), which has been providing passenger transport in the country since 2005.

Rack railway from Szczyrba to Szczyrbskie Pleso (OŽ, No. 182, 4.678 km) also belongs to the narrow-gauge railway system at the feet of the Tatra Mountains. Tatra Electric Railway, running along the so-called Freedom Road (local road No. 537), connects holiday and health resorts of the Wysokie Tatry settlement, founded in 1947. It includes i.a.: Szczyrbskie Pleso, Vyzňe Hagi, Podbańskie, Starý Smokovec, Tatrzańska Łomnica.

The first line (Poprad - Starý Smokovec) was opened in the years 1906-1908⁶³. After another 3 years the Starý Smokovec – Tatrzańska Łomnica line was opened, and after another year the one to Szczyrbskie Pleso. The aim of creating the railway was to transport passengers (including tourists) and transport various goods, including bricks and cement. Before the First World War the opening of other

⁶² Příklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, Agentura na podporu Regionalneho Rozvoja Kosice, 2012

⁶³ www.pl.wikipedia.org

sections was planned (Szczyrbskie Pleso – Liptowski Hradek, Tatrzńska Łomnica – Tatrzńska Kotlina), however these plans were finally not implemented.

In 1948 the railway underwent nationalization and for the next 40 years it belonged to the Czechoslovak State Railways. Since 1992 supervision over the railway has been exercised by the Slovakian Republic Railway (Železnice Slovenskej Republiky (ŽSR)). The railway is powered by current of 1500 V. Nowadays there are 15 low-floor train sets with a capacity of 200 people running on the route.

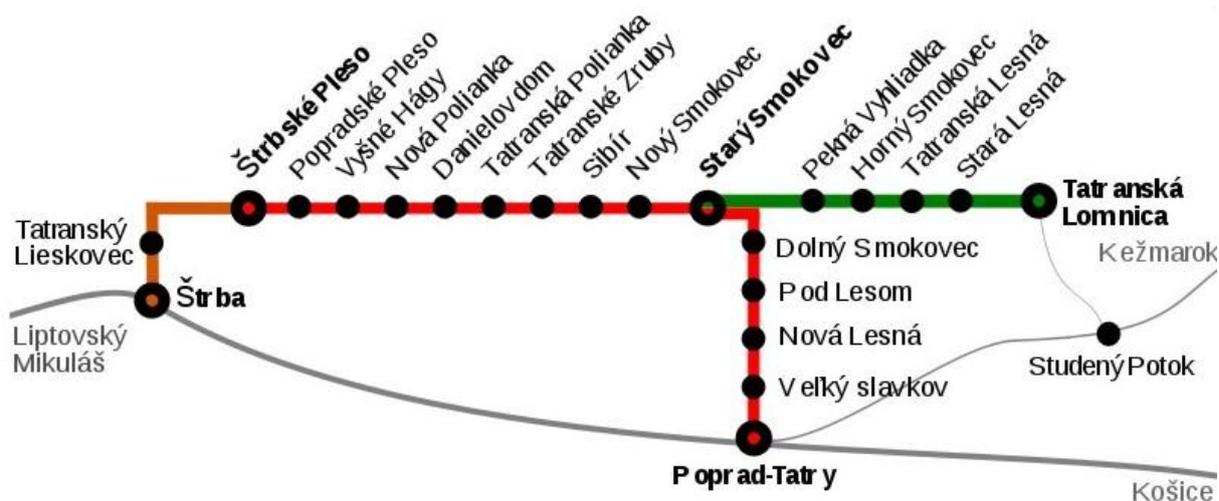


Fig. 7 Route of the Tatra Electric Railway

Source: www.pl.wikipedia.org/wiki/Tatrz%C5%84skie_Koleje_Elektryczne

The route of the railways runs in a very attractive tourist region of High Tatras, that are typical for Alpine landscape. It is an important multimodal transport system of the region – it enables inhabitants and tourists to travel to the hub staging areas for Tatra trails. Railway stations are located near the mouths of mountain valleys (including i.a.: Mięszowiecka, Wielicka, Velka Studena valleys), which are important from the tourist exploration point of view. Tourist rails leading to lodges (i.a. Śląski Dom, Chata Teryho) connect with the railway route. Railway route also leads to the feet of the highest Tatra peaks: Łomnica, Sławkowski Szczyt or Gerlach. Additional value is provision of connections within transborder UNESCO Biosphere Reserve (Tatra National Park in Poland and in Slovakia). Due to this fact it seems important that environmental means of transport, not posing a threat to natural environment, operate in the region.

The railway route is presented in Fig. 7 and in the table 17. Poprad-Starý Smokowiec-Szczyrbskie Pleso route (No. 183) is the longest and has 29.110 km⁶⁴. There is a total of 15 stops on the route, out of which 7 are train stations (including two nodes), while the remaining 8 are passenger stops with a modest infrastructure in form of single platforms and shelters. Route No. 184 Starý Smokowiec – Tatrzńska – Łomnica has 6 stops (2 stations, 4 passenger stops – table 18), whereas route No. 182 from Szczyrba to Szczyrbskie Pleso has 3 stops (2 stations and 1 passenger stop – table 19).

⁶⁴ www.143mm.net.pl

Tab. 17 Stops on the Poprad-Tatry - Szczyrbskie Pleso

No.	Town on the route	type of stop	km
1.	Poprad-Tatry	station	0
2.	Velky Slavkov	station	5.091
3.	Nova Lesna	passenger stop	8.320
4.	Pod Lesom	station	10.042
5.	Dolny Smokowiec	passenger stop	10.872
6.	Stary Smokowiec	station (node)	13.088
7.	Novy Smokowiec	passenger stop	13.651
8.	Sibir	passenger stop	14.141
9.	Tatrzanska Zruby	passenger stop	15.235
10.	Tatrzanska Polianka	station	16.786
11.	Danielov Dom	passenger stop	18.377
12.	Nova Polanka	passenger stop	19.766
13.	Vyzne Hagy	station	22.294
14.	Popradzkie Pleso	passenger stop	27.420
15.	Szczyrbskie Pleso	station (node)	29.110

Source: www.143mm.net.pl

Tab. 18 Stops on the Stary Smokowiec-Tatrzanska Łomnica route

No.	Town on the route	type of stop	km
1.	Stary Smokowiec	station (node)	0
2.	Pekna Vyhliadka	passenger stop	0.998
3.	Horny Smokowiec	passenger stop	1.636
4.	Tatrzanska Leśna	passenger stop	3.253
5.	Stara Leśna	passenger stop	4.400
6.	Tatrzanska Łomnica	station (node)	5.983

Source: www.143mm.net.pl

Tab. 19 Stops on the Szczyrba-Szczyrbskie Pleso route

No.	Town on the route	type of stop	km
1.	Szczyrba	station related	0
2.	Tatrzanski Lieskovec	passenger stop	1.353
3.	Szczyrbskie Pleso	station	4.678

Source: www.143mm.net.pl

There are modern, European standards compatible, low-floor cars 425.9 brought into service in 2000, running on these routes. The operator focuses mainly on the passenger traffic services, there is also a possibility of bike transport. Ticket price depends on the distance travelled and on the fees set individually by carriers (tables 20 and 21). Fee schedules of the Tatra Electric Railway are different than in the whole railway system in Slovakia.

Tab. 20 Price list on the Poprad-Tatry – Szczyrbskie Pleso route

number of zone	distance (km)	standard (SKK/€)	reduced (SKK/€)
1	0-5	10.00/0.33	5.00/0.17
2	6-14	20.00/0.66	10.00/0.33
3	15-21	30.00/1.00	15.00/0.50
4	22-29	40.00/1.33	20.00/0.66

Source: www.zssk.sk

Tab. 21 Price list on the Szczyrba – Szczyrbskie Pleso route

number of zone	section	standard (SKK/€)	reduced (SKK/€)
1	Szczyrba-Tatrzański Lieskovec	10.00/0.33	5.00/0.17
2	Tatrzański Lieskovec-Szczyrbskie Pleso	30.00/1.00	15.00/0.50
3	Szczyrba-Szczyrbskie Pleso	30.00/1.00	15.00/0.50

Source: www.zssk.sk



Photo 9. Tatra Electric Railway – cars 425.9
Source: www.primatoup



Photo 10. Tatra Electric Railway – rolling stock
Source: www.pl.wikipedia.org



Photo 11. Tatra Electric Railway –Stary Smokowiec station
Source: www.wysokie-tatry.pl



Photo 12. Tatra Electric Railway – inside of a car
Source: www.traffy1.wz.cz

The infrastructure (tracks, stations) of the Tatra Electric Railway is managed by the entity responsible for managing the national railway network in Slovakia (Železnice Slovenskej Republiky, ŽSR)⁶⁵. The manager is conducting revitalization works on the railway routes, in 2012 the following ones are planned: revitalization of stations in Szczyrbskie Pleso and Tatrzańska Łomnica and construction of bike and car parks (e.g. in Poprad). Due to large investment expenditures into the rolling stock repairs in the

⁶⁵ Príklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, Agentura na podporu Regionálneho Rozvoja Kosice, 2012

previous years, the most important investment made by the operator was rolling stock replacement in 2000 (425.9 low-floor cars). One significant investment was also introduction of self-service ticket purchase system and development of electronic forms of their sale. In order to improve services, the operator introduced a direct possibility of ticket purchase during travel (self-service system).

Travel time between Poprad-Tatry – Szczyrbskie Pleso stations is about 1.13 hr. Travelling on the same distance by car takes 30 minutes less. Travelling on two remaining routes takes approximately ca. 14 minutes and it is similar to travel time in a car. All trains, excluding rack railway, are adapted to transport disabled people in wheelchairs. Travel of the disabled people on the rack railway's route is possible due to help of the railway's employees.

The railway provides transport all week long (Mon-Sun). On the Poprad-Tatry – Szczyrbskie Pleso route on weekdays (Mon-Fri) there are 20 pairs of train sets, whereas on Saturdays and Sundays 19 pairs. On the Stary Smokowiec-Tatrzańska Łomnica route on weekdays there are 19 pairs, on weekends 18 pairs. On the rack railway route there are 16 pairs of trains every day. The Tatra Electric Railway trains are considered to be very punctual and reliable. According to the operator, punctuality of train arrivals at Szczyrbskie Pleso station is 99.81%, whereas at Stary Smokowiec station 99.9%⁶⁶.

Trains on the No. 183 route (Poprad - Szczyrbskie Pleso) are running from 5:06 to 23:31 (departures from Poprad-Tatry station)⁶⁷. The runs take place more or less every hour. Increased traffic takes place in the early morning (2 trains between 6:00 and 7:00) and in the afternoon (from 13:31 to 15:31 every half an hour). On the return journey there are more passengers also between 6:00 and 7:00 in the morning and between 17:15 and 18:15 (3 train sets). It suggests larger usage of trains by region inhabitants, as well as tourist going on or coming back from mountain excursions.

On the No. 184 route Stary Smokowiec – Tatrzańska Łomnica trains run every hour between 4:46 and 22:04. Between 7:00 and 8:00 there are 2 train sets departing from Tatrzańska Łomnica. Line No. 182 Szczyrba – Szczyrbskie Pleso runs between 4:44 – 20:44, more or less every hour, with an increased number of runs between 14:00-17:00. Due to a large number of connections and affordable ticket prices at the feet of the Slovakian Tatra there is no large-scale, developed bus transport, including private carriers (the so-called buses, typical for the Polish Tatra area).

Passenger traffic on all three described routes is correlated with the long-distance trains (including Inter City, Euro City), which is why it constitutes an integral part of multimodal transport. For example, at Poprad-Tatry station 13 out of 40, at Szczyrba station 11 out of 32 trains have the possibility of a transfer in a 15-minute period of time. From the railway operator's point of view it is significant to increase the correlation of trains with the bus transport.

In the years 2005-2010 the highest number of passenger rides took place on the Poprad – Szczyrbskie Pleso route, in 2010 it was almost 419 000. On that route from 2005 to 2010 passenger rides showed a rising trend. On the remaining two routes the number of passengers was slightly fluctuating, in 2010 more passengers travelled on the Stary Smokowiec - Tatrzańska Łomnica route. As it is shown in the

⁶⁶ Příklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, Agentura na podporu Regionalneho Rozvoja Kosice, 2012

⁶⁷ www.slovakrail.sk

table 21 the number of passenger rides of the TEŽ and OŽ lines in the period of mentioned years was slightly decreasing, which was caused by smaller tourist traffic in the High Tatras area because of both global economic crisis, as well as unfavourable weather conditions in the years 2009-2010. Definitely less rides took place on the rack railway (OŽ) route, which is connected with its much smaller range – shorter route and lesser importance in regional transport. According to the preliminary data from 2011 traffic on the railway routes returned to the level from before 2009.

Tab. 22 Number of passenger rides on particular routes in years 2005-2010

Route	2005	2006	2007	2008	2009	2010
TEŽ	1 499 924	1 499 813	1 456 123	1 459 687	1 279 524	1 261 606
OŽ	385 764	335 863	313 147	289 935	272 842	282 995
TOTAL	1 885 688	1 835 676	1 769 270	1 749 622	1 552 366	1 544 601

Source: *Príklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, Agentura na podporu Regionalneho Rozvoja Kosice, 2012*

Target groups of the operator are mainly tourists, as well as inhabitants (commuters), including students. In 2010 the passenger group comprising of students constituted ca. 3.4% of all transported passengers (circa 44 000 students). In 2011 on all railway routes 47 616 students and 436 914 passengers commuting to work were transported. Similarly as in the case of tourists, during the last few years there has been a slight decrease of this type of transport, which was probably caused by bad economic situation in the last years. The aim of operator's marketing policy is to keep in the next years the number of people commuting to work on a similar level.

The most important goal of marketing activities of the carrier is however a development of the tourist traffic – tourists constitute the largest group among all railway customers (2011 – more than 1 million) (table 22)⁶⁸. In spite of the mentioned number of people travelling by train in the years 2009-2010, in 2011 there was another increase and match with the level from before 2009. This data underlines tourist value of the High Tatras region (both in the case of summer tourism and winter tourism). The number of tourists is strongly connected with the weather conditions in the tourist season.

Tab. 23 Passenger transport divided according to target groups in 2011

target group	2011
commuting inhabitants	436 914
students	47 616
tourists	1 023 473

Source: *Príklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, Agentura na podporu Regionalneho Rozvoja Kosice, 2012*

A significant element of the operator's marketing policy is cooperation with local self-government, tourist companies in the region, as well as local and regional tourist organizations. The aim of this policy is to improve quality of passenger services, focused mainly on the service of tourist traffic in the High Tatras area. Cooperation with all partners can be seen both in the case of transport system, as well as creating packages of additional services, which are very attractive for tourists (i.a. related with

⁶⁸ Data concerning division into domestic and foreign tourist traffic not obtained.

lower prices of the package elements, such as board, lodging, transport). The operator is going to continue existing cooperation and to search for new partners. The most important strategic partners are in that case: the town of Wysokie Tatry, the association „Wysokie Tatry“, the association of hotels and restaurants in Slovakia and Regional Tourist Organization „Wysokie Tatry“.

Among the basic marketing activities of the operator one can definitely mention:

- cooperation with partners in the region in scope of creating a package of products and services (combined tickets for sport and cultural events),

- increase in distribution and at the same time availability of ticket sale (i.a. stands, hotels), popularization of electronic form of ticket sale (decrease in own expenses),

- in the scope of price policy: development of sales of the so-called network tickets (unlimited number of rides on chosen lines, combining rides), introduction of the so-called monthly subscription (unlimited number of rides on chosen lines during 1 month). Both tariff instruments are addressed to all target customer groups,

- development of promotional activities (website, information on social networking portals), publishing of a newsletter with information about connections, organising international conferences, publishing a brochure “Wysokie Tatry“, initiation of marketing mechanism „Tatra Room and Rail“, installation of tables with timetables and maps in High Tatras, creating a virtual map of ticket sale points.

Due to problems with obtaining data (operator’s trade secret) no data concerning railway exploitation cost, return on investment and sources of financing was obtained.

6 SUMMARY AND CONCLUSIONS

The Podkarpackie Voivodeship in Poland and the Presov Region in Slovakia are important tourist regions, mainly because of their rich natural value. The most precious legally protected area located in both countries is the UNESCO International Biosphere Reserve „Eastern Carpathians”. Implementation of activities within the scope of balanced development, including balanced transport, is here of fundamental significance. One of such activities is popularization of environmentally friendly means of public transport, namely narrow-gauge railways.

In the Podkarpacie region there are 2 lines of narrow-gauge railways – Przeworsk Local Railway (PKD) and Bieszczady Forest Railway (BKL). Both of them have been operated until now only for the tourist traffic and do not pose a multimodal means of transport in the protected areas. Bieszczady Forest Railway is definitely to a larger extent used in scope of tourism, and is one of the main tourist attractions of the region. Even though its route is shorter and flow capacity a little less smaller than in the case of PKD, it runs in the area of greater tourist attractiveness (protection zone of the Bieszczadzki National Park). It has more additional attractions and better infrastructure. Railway operator (the BKL Foundation) acquires EU subsidies for its development – new investments into rolling stock and station infrastructure are financed i.a. from EU resources.

It is different in the case of Przeworsk Local Railway, which has complex ownership structure, which makes these type of activities impossible. Even though the railway has larger flow capacity, it is much less used for tourist needs, so the income (from tourist traffic and periodically opened transport of goods) is also lower. The operator – Kalisz Association of Local Transport also acquires funds from the Town Council and Commune Council in Dynów. The weak link of the PKD activity is that all marketing activities are of basic character and result mainly from citizens’ initiative. Good communication availability of PKD is worth noting, such as connection of the railway with the standard-gauge railway, which potentially gives a possibility of operating it as an alternative means of multimodal transport.

It is different in the case of the Tatra Electric Railway in the Presov Region in Slovakia. The railway route runs in one of the most naturally attractive regions of the country – at the feet of the High Tatras. The railway is an important means of communication between towns, which are very popular among tourists (centres of hiking and skiing mountain tourism). Thanks to the railway both tourists and region inhabitants have access to important hub points (Poprad, Szczyrbskie Pleso, Stary Smokowiec, Tatrzanska Łomnica and others). This line makes an important centre of environmental transport in the north-eastern Slovakia.

The ownership structure of the Tatra Electric Railway is also different – while Polish railways were taken over by private operators (Foundation, Association), Slovakian railway remains in the hands of state entity responsible for managing the railway network in the whole country. Timetables can be found on the publicly available railway websites. Comfortable, low-floor, adapted to serve disabled people cars give both tourists visiting the region, as well as inhabitants of this part of the Presov Region, a possibility to travel in them (commuting to work and schools). Weak points of the Electric Railway are: significant dependency of the number of passengers on weather conditions in the High Tatras area and problem

with conducting repairs of tracks and stations, which are managed by a different entity, namely Republic of Slovakia Railways (Železnice Slovenskej Republiky, ŽSR). In spite of some problems, Tatra Electric Railway as a form of balanced transport gives significant local mobility in the region.

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Project Partners

Lead partner

U-AT - Environment Agency Austria, AT

ERDF partner

bmvit - Federal Ministry of Transport, Innovation and Technology, AT

ERDF partner

Gesäuse - National Park Gesäuse, AT

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Mostviertel - Mostviertel-Tourism Ltd., AT

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ERDF partner

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CJIT Maramures - County Center for Tourism Information, RO

ERDF partner

ARR-KE - Agency for the Support of Regional Development Kosice, SK

20% ERDF partner

RARR-PL - Rzeszow Regional Development Agency, PL

10% partner

TIMOK -Timok Club, RS

10% partner

CFUA - Carpathian Foundation Ukraine, UA

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