



# ACCESS2MOUNTAIN

## Sustainable Mobility and Tourism in Sensitive Areas of the Alps and the Carpathians:

**“Sustainable transport: Integration possibilities of existing narrow-gauge railways lines, traditional railway lines and alternative transport routes in the Polish-Slovak border region with particular consideration of Podkarpackie Voivodeship in Poland and the Presov region in Slovakia”**

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## **1. INTRODUCTION – AN IDEA OF SUSTAINABLE TRANSPORT IN PROTECTED AREAS IN THE ASPECT OF THE FIELD OF STUDIES**

Since a half of 1970s changes in economic development strategies of many world countries<sup>1</sup> have been observed. Conceptions based on economic growth give way to conceptions of sustainable development. Above all, more and more numerous strong threats of natural environment cause that phenomenon.

Sustainable development (ecodevelopment) means socioeconomic development compliant with natural conditions, not damaging ecological balance and facilitating survival of future generations. In practice, it means such resources and environment values management which does not expose future generations to their loss. That idea is applied in various areas of economy, including tourism (sustainable tourism) and transport (sustainable transport).

Sustainable tourism relates to every form of tourist activity and management which supports ecological, social and economic integrity of areas. One of the indicators of sustainable development in tourism is a so-called local mobility – an introduction of additional sorts of transport and lines for tourists as well as the **region's inhabitants by** which these regions are becoming more accessible, competitive and as a consequence, attractive for tourists. A primary damage caused in natural environment (particularly in protected areas) is emission of pollution in tourist localities (**changes of the region's microclimate**)<sup>2</sup>.

Transport threatens environment and worsens its quality<sup>3</sup>. On the other hand, however, needs related to transport infrastructure development are huge and they play a fundamental role in every region in its tourist exploration and life of local communities. Therefore, improvement of roads quality condition is essential thanks to which threats for natural environment decrease. Road infrastructure development for alternative forms of transport is also a vital aspect (cycle lanes, local roads for pedestrian traffic, routes for cross-country skiing tourism and others). Such actions are developed within microprojects of The Transboundary Cooperation Programme The Polish Republic – The Slovak Republic 2007-2013<sup>4</sup>. Their primary objective is promoting local initiatives and

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<sup>1</sup> **Turystyka zrównoważona**, 2010, red. A. Kowalczyk, PWN, Warsaw

<sup>2</sup> Bjorn Iuell, 2007, *Dzika przyroda a komunikacja* [w:] **Oddziaływanie infrastruktury transportowej na przestrzeń przyrodniczą**, ed. B. Jackowiak, GDDKiA, Warsaw

<sup>3</sup> **Truskolaski T., Środowiskowe bariery rozwoju transportu w województwie podlaskim** [w:] *Gospodarowanie na obszarach chronionych*, 2001, red. A. Bołtomiuk, Wydawnictwo Uniwersytetu w Białymstoku, Białystok

<sup>4</sup> [www.plsk.eu](http://www.plsk.eu)

establishing transboundary contacts. Many projects realised assume development or renovation of local transport network in the Polish-Slovak borderland.

Polish-Slovak borderland area being the subject of this study is particularly attractive as far as natural environment is concerned. Within its area a system of nature protection forms is widely developed, including as many as 3 transboundary UNESCO Biosphere Reserves (Babia Gora Range, the Tatra mountains, the Bieszczady mountains) out of which as many as two are located within the area of Podkarpackie Voivodeship in Poland and the Presov region in Slovakia. In this area activities related to sustainable development and in particular, sustainable transport seem to be of priority importance.

The study is an analysis of actual borderland road infrastructure condition and its use and an attempt to determine potential possibilities of connecting present infrastructure in context of sustainable transport.

## **2. POLISH-SLOVAK BORDERLAND – LOCATION AND ATTRACTIVENESS FOR TOURISTS**

The study refers in a wide context to Polish-Slovak borderland which covers border fragments of 3 voivodeships in Poland: Podkarpackie Voivodeship, Małopolskie Voivodeship and Silesian Voivodeship and 2 countries in Slovakia: the Presov region and the Žilinsky region (Figure 1). A general analysis of tourist values, tourist infrastructure, tourist traffic, transport accessibility of areas environmentally valuable and transport infrastructure has been made within this area. An evaluation of mentioned elements in the areas of extraordinary environmental values, among others, in the Beskidy mountains, the Tatra mountains, the Pieniny mountains, the Poprad Valley, the Lower Beskids and the Bieszczady mountains has been made with particular insight.

A coordination analysis of transportation lines and potential possibilities of existing infrastructure connection has been made within the area narrowed to 2 regions: Podkarpackie Voivodeship in Poland and the Presov region in Slovakia. Podkarpackie Voivodeship covering the area of 17 844 km<sup>2</sup><sup>5</sup>, borders with the Presov region in Slovakia on the section of 134 km. It consists of 21 districts and 4 cities with district rights (Rzeszów, Przemyśl, Krosno, Tarnobrzeg).

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<sup>5</sup> [www.stat.gov.pl](http://www.stat.gov.pl)





Figure 1. Polish-Slovak borderland area

Source: an own study on the basis of: Pogranicze polsko-słowackie. Dostępność transportowa a turystyka, IGIPZ PAN, GuSav, Warsaw – Bratislava 2012

Podkarpackie Voivodeship's population amounts to 2 127 300 and its population density is 119 persons/km<sup>2</sup><sup>6</sup>. The Podkarpacie region is the least urbanised voivodeship in Poland, it possesses numerous areas which are environmentally valuable and are subject to legal protection. Its forestation amounts to 40,2% and it is higher than a country's average.

The Presov region is the second largest and most densely populated region of Slovakia. It is located in north-eastern Slovakia by the border of Poland and Ukraine. In the south it borders with Koszyce country and in the west with Žylinski country. The area of the Presov region amounts to 8 974 km<sup>2</sup><sup>7</sup>, population is 801 939 inhabitants and density amounts to 89 persons/km<sup>2</sup>. The Presov region comprises 13 districts and 23 towns are located within its area.

## 2.1. Natural values and nature protection system

The area studied is highly attractive for tourists with respect to natural values. Above all, it is influenced by very diverse land relief (high mountains alpine type, medium-height mountains, low mountains and foothills), clearly formed climatic and plant layers (from a layer of foothills to a layer of crags and presence of mountain meadows called mountain pastures in Eastern Beskids), high forestation (in particular, in eastern part of the area studied), gorges (of the Dunajec and the Poprad valleys, in particular), presence of rock forms abundance in the karst areas, including caves (in

<sup>6</sup> www.stat.gov.pl (data as for 2011)

<sup>7</sup> www.po-kraj.sk

particular, in Slovakia) and multiple springs of mineral waters (including thermal waters)<sup>8</sup>. An essential factor is also a relatively small extent of natural environment conversion by man and its large abundance of fauna and flora.

All area discussed is located within the range of Carpathians (Eastern and Western) as well as the Northern Podkarpacie region<sup>9</sup>. Within its borders the highest peak of all Carpathian range – Gerlach (The Slovak High Tatras, 2655 m a.s.l.) is located. The most attractive are, above all: the Tatra mountains, Babia Gora Range, the Pieniny mountains, the Bieszczady mountains, Little Fatra and Great Fatra as well as the Low Tatras.

In Polish part of the area the most significant physiocgeographical lands are Silesian-Moravian Foothills, the Beskids (the Silesian Beskids, the Żywiec and Orava Beskids, the Little Beskids, the Maków Beskids, the Island Beskids, **the Sącz Beskids and the Low Beskids**), Babia Gora Range, the Tatra mountains, the Gorce mountains and the Bieszczady mountains<sup>10</sup>. Moreover, **Ciężkowice Foothills, Dynów Foothills, Przemyśl Foothills and Sanok and Turka mountains** are of considerable importance for tourists.

In Slovakia out of many Carpathian physiocgeographical lands Little Fatra and Great Fatra, the Sub-Tatra Valley, the Low Tatras, Slovak Paradise, the Orava Beskids, the Maple Mountains, the Tatra mountains (the High Tatras, Western Tatras and Bielanske Tatras), the Pieniny mountains, Spisz Magura, the Lewoca mountains, the Cergov mountains, the Low Beskids, the Slanec Hills, the Bukovec Mountains, the Bieszczady mountains and the Vihorlacky Mountains<sup>11</sup> are of greatest significance for tourists.

Within the whole area of Polish-Slovak borderland diverse types of land relief occur. The High Tatras are distinguished by a unique alpine glacial landscape belonging to the highest category with respect to attractiveness both in Poland and in Slovakia. Karst gorge of the Pieniny mountains (the highest range of the Pieniny Klippen Belt), Slovak Paradise, Little Fatra and Great Fatra or the Low Tatras is also interesting. In this case caves constitute a large attraction for tourists, among others, Faulty Cave (Jaskinia Mylna) and Frosty Cave (**Jaskinia Mroźna**) (Western Tatras), Bielanska Cave (Bielanske

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<sup>8</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>9</sup> Kondracki J., 2002, Geografia regionalna Polski, PWN

<sup>10</sup> Kondracki J., 2002, Geografia regionalna Polski, PWN

<sup>11</sup> **Dobre praktyki w zakresie istniejących połączeń i linii kolei wąskotorowych w województwie podkarpackim i regionie preszowskim na Słowacji**, RARR – ASM, Kutno – Rzeszów, 2012



Tatras), Dobsinska Ice Cave (Slovak Paradise, a UNESCO site) and Demanovska Ice Cave (a chain part of Demanovske Caves, the Low Tatras). There are also numerous ravines (among others, Homole ravine in the Pieniny mountains) and gorges of mountain rivers on which rafting routes have been blazed (Dunajec, Poprad, Orawa, Wag).

Polish-Slovak borderland is located in the zone of temperate climate, within the Polish area (northern exposure of slopes) the climate is cooler, influenced by polar maritime air masses. In the Slovak area warmer continental weather is characteristic (southern exposure of slopes). Another feature of particular mountain ranges is, moreover, climatic superposition. Long winters with a snow layer last for a few months (in the Tatra mountains from the end of November to the end of March –alpine-like climate<sup>12</sup>), which create favourable conditions for development of skiing tourism.

The area discussed is distinguished by high forestation. In eastern part (the Low Beskids, the Bieszczady mountains, the Ciężkowice Foothills and the Przemyśl Foothills) beech forests predominate (fertile Carpathian beech forest - *Dentario glandulosae-Fagetum*) and in western part – spruces, with an admixture of fir, pine and oak. High peat bogs occur in low-lying water partings and in the valleys. A special place is taken by the Orava-Nowy Targ Valley where a relic mountain pine marshy type occurs<sup>13</sup>.

Typical species of the Carpathian animals are, among others: stag, doe, wild boar, bear, wolf and lynx. Among species of birds which occur in large numbers here the following should be mentioned, among others, Spotted Nutcracker (*Nucifraga caryocatactes*), black grouse, wood grouse or three-toed woodpecker (*Picoides tridactylus*). Among birds of prey which nest in the area studied golden eagle (*Aquila chrysaetos*), **lesser spotted eagle and buzzard should be classified. The symbol of the Tatras' fauna is** chamois and groundhog<sup>14</sup>.

The Carpathians constitute a European water parting between watersheds of the Baltic Sea and the Black Sea. Among others, the Vistula River, the **Soła River, the Skawa River, the Raba River, the Dunajec River, the Wisłoka River and the San River** have their sources in the Polish area whereas the Wag River, The Kysuca River, the Orava River, the Torysa River, the Odnava River and the Laborec River – in the Slovak area. There are numerous artificial water reservoirs on rivers with power, flood as well as recreational functions (among others, lakes: **Solińskie, Czorsztyńskie, Rożnowskie, Żywieckie, Liptowska Mara, Orava, Velka Domasa and Nova Bystrica**. Natural lakes (called ponds)

<sup>12</sup> Nyka J., 1969, Tatry Polskie. Przewodnik, wyd. Sport i Turystyka, Warsaw

<sup>13</sup> Kondracki J., 2002, Geografia regionalna Polski, PWN

<sup>14</sup> Nyka J., 1969, Tatry Polskie. Przewodnik, wyd. Sport i Turystyka, Warsaw

occur only in the landscape of the High Tatras (among others: Szczyrbskie Pleso, Czarny Staw, Morskie Oko). Within the area of the Slovak Tatras there are over 100 ponds of post-glacial origin. Eastern part of the region (Podkarpacie) is characterised by a large number of rivers with a considerable dip and purity (among others: the San River, the **Wisłoka** River, the **Wisłok** River).

The region is famous for spa tourism as many springs of mineral waters (including thermal waters) occur in the Carpathian zone. The most important health resorts in the Polish area are: **Piwniczna, Krynica Zdrój, Żegiestów Zdrój, Muszyna Zdrój (the Sącz Beskids – the largest concentration), Wysowa Zdrój, Rymanów Zdrój, Iwonicz Zdrój (the Low Beskids), Szczawnica (the Pieniny mountains), Rabka (the Gorce mountains), Polańczyk Zdrój (the Bieszczady mountains)**. In the Slovak area the following health resorts are located: **Turczańskie Cieplice, Besenova, Rajeckie Cieplice, Vyžne Ružbahy, Bardejovské Kupele, Nova Lubovna, Szczyrbskie Pleso, Vyžne Hagy** and Nowy and Stary Smokowiec. The prevailing types of mineral waters are bicarbonate szczawy as well as brines and sulphide waters. Complexes of thermal swimming pools (aqua parks) have been created on the basis of warm waters, including among others, in: Liptowski Mikulasz (Tatralandia), Poprad (Aquacity), Oravice (Meander Thermalpark), Dolný Kubín (AquaRelax), and in **Bukowina Tatrzańska, Poronin and Zakopane** in the Polish area.

Valuable natural environment of the borderland area has led to creation of many nature protection forms. In general, within all borderland area there are as many as 13 national parks, including 6 national parks in Poland: Babia Góra National Park, Tatra National Park, Gorce National Park, Pieniny National Park, Magura National Park and Bieszczady National Park (Figure 2). In the Slovak area there are seven national parks: The Tatra National Park, The Pieniny National Park, The **Poľoniny** (in a direct neighbourhood of a country border) and: Little Fatra, Great Fatra, the Low Tatras and Slovak Paradise (at a larger distance from the border). It should be stressed that three parks are located cross-border – The Tatra National Park, The Pieniny National Park, The Bieszczady National Park (The **Poľoniny**).

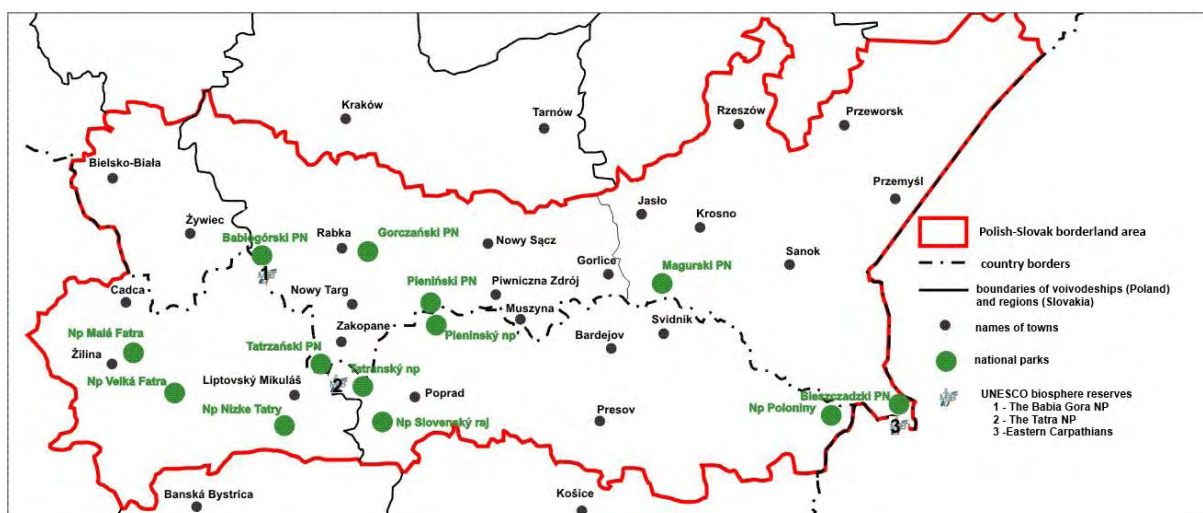


Figure 2. Primary protected areas in Polish-Slovak borderland  
Source: an own study on the basis of different sources

The Babia Gora National Park protects a massif of Babia Gora, the highest range of the Beskids and the second range in Poland after the Tatra mountains<sup>15</sup>. The Park possesses elements of alpine landscape (sharp-edged walls, rampions and landslides).

The Tatra National Park protects the highest Carpathian ranges in Poland (Rysy 2499 m a.s.l.) and Tatranský národný park located in Slovakia – the highest peak of all the Carpathians – Gerlach (2655 m a.s.l.). A characteristic feature of the Tatra environment is the presence of plant superposition. The Tatras landform is of alpine relief character (among others, U-shaped valleys, geographic cirques, hanging valleys, couloirs and screes).

Gorce National Park located at a distance from the border covers the highest Gorce ranges (except the highest peak – Turbacz). Forests **dominate in the park's** landscape (including beech and fir forests) and clearings are a large rarity. Gentle mountain ridges crossed by valleys of streams are characteristic.

Within the Polish area Pieniny National Park protects: **Pieniny Czorszyńskie**, a massif of Three Crowns (Trzy Korony) and Pieninki (all ranges constitute so-called the Proper Pieniny). **The park's landscape comprises, among others, diversified geological** structures, a mosaic of forests, clearings and fields as well as the Dunajec gorge which constitutes the largest attraction of the Park (both in Poland and in Slovakia). Pieninśky

<sup>15</sup> Polskie parki narodowe. Przewodnik ilustrowany, 2000, red. J. Zaborowska, Pascal, Bielsko-Biala

národný park located on the other side of the border is the smallest national park in Slovakia<sup>16</sup>.

Magura National Park protects a massif of Magura **Wątkowska** and ranges of hills adjacent to it from **the south in the source area of the Wisłoka River**. It is the lowest part of the Carpathian range – ridges are flat, with arched peaks.

Bieszczady National Park located furthest to the south-east of Poland protects a fragment of the Eastern Beskids. Ridges are sharp and they have steep slopes. On forestless mountain pastures outcrops and rubbles are visible. Forestation of the area is high– it amounts to as much as 80%. **Within the park's area there are many** rare and protected alpine and east-Carpathian plants. In Slovakia the **Połoniny** National Park is located; it protects mountain pastures of the Western Bieszczady Slovak part.

Moreover, in the area studied there are many landscape parks – in Poland, among **others, Żywiec Landscape Park, Poprad Landscape Park, Jaśliska Landscape Park, Cisna and Wetlina Landscape Park, The San River Valley Landscape Park or Słonne Mountains Landscape Park**. In the borderland area in Slovakia there are four landscape parks: Beskidy-Kysuce Landscape Park, Upper Orava Landscape Park, The Eastern Carpathians Landscape Park and Wyhorlat Landscape Park.

Many borderland areas are also protected in a form of nature reserves, landscape protected areas (Poland – East Beskids Protected Landscape **Area, Przemyśl and Dynów Protected Landscape Area**), protected areas (Slovakia), natural monuments (Poland and Slovakia) and Nature 2000 areas (Poland and Slovakia). Within the area of Podkarpackie Voivodeship itself there are 62 Nature 2000 areas<sup>17</sup> (among others: The Low Beskids, the Bieszczady Mountains, the **Słonne Mountains**, The Upper San Valley).

High value of natural environment is highlighted by the fact of three UNESCO biosphere reserves formation in the borderland studied: Eastern Carpathians (Poland, Slovakia, Ukraine), the Tatra Mountains (Poland and Slovakia) and Babia Gora (Poland). Worth stressing is the fact that the Eastern Carpathians is the first transboundary biosphere reserve in Europe and it comprises: Bieszczady National Park (Poland), Cisna and Wetlina Landscape Park (Poland), the San Valley Landscape Park (Poland), The **Połoniny** National Park (Slovakia) and the **Użański** National Park as well as San Regional Landscape Park (Ukraine). The largest part of the reserve (1087,24 km<sup>2</sup>) is located within the Polish area.

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<sup>16</sup> [www.slovakia.travel](http://www.slovakia.travel)

<sup>17</sup> [www.natura2000.gdos.gov.pl](http://www.natura2000.gdos.gov.pl)

As it results from the analysis above, eastern part of Polish-Slovak borderland: Podkarpackie Voivodeship and the Presov region are presented as particularly attractive as far as natural environment is concerned. In Podkarpackie Voivodeship widely forested Carpathian ranges are distinguished – the largest forestation occurs in Przemyśl and Ciężkowice Foothills, the Low Beskids and the Bieszczady Mountains, where also alpine and sub-alpine swards – mountains pastures are a curiosity. Therefore, nature protection system is strongly developed here– in the whole area of Podkarpackie Voivodeship there are 2 national parks (the Magura National Park and the Bieszczady National Park), 10 landscape parks (15% of the voivodeship's area), 94 nature reserves (among others, Chwaniów, Hulskie, Krywe, Silne Wiry, Turnica) and 1375 natural monuments<sup>18</sup>. What is more, in the area of this region a UNESCO biosphere reserve – the Eastern Carpathians is located. The purest rivers in Poland are located here (The San River, the Wisłoka River, the Wisłok River) and an artificial water reservoir of the largest capacity in Poland – Solina Lake. Selected natural values of the Podkarpacie region are presented in Table 1.

In the Presov region the Carpathian ranges constitute a few zones featured by different geological structure and diverse landform<sup>19</sup>. 5 out of 9 national parks in Slovakia are located here, including 2 very valuable parks – The Tatra National Park (UNESCO transboundary biosphere reserve) and the Pieniny National Park. In 2007 Carpathian virgin forests of the Wihorlat Mountains and the Bukovec Mountains entered a list of UNESCO world heritage. In the area of the Presov region itself the highest mount of all the Carpathians – Gerlach is located. The Tatra region is the most attractive and most highly exploited region of the Presov region and all Slovakia with respect to tourism as a result of diversified alpine landform. A vital value of the Presov region is mineral waters which have formed a basis for creation of many health resorts here (among others: Bardejovskie Kupele, Nova Lubovna, Vyžne Ružbahy, Šczyrbskie Pleso, Stary and Nowy Smokowiec, Vyžne Hagy).

Pos.	Legally protected nature area	Protection subject
<b>National parks</b>		
1.	The Magura National Park	An intermediate area between the Eastern Carpathians and Western Carpathians, Carpathian beech forest
2.	The Bieszczady National Park	Flysch formation of the External Carpathians, mountain pastures
<b>Landscape parks</b>		
1.	San Valley LP	Otryt Range, the Upper San Valley, Carpathian beech forest growing at different altitudes
2.	Cisna and Wetlina LP	A part of the Western Bieszczady Mountains

<sup>18</sup> Dobre praktyki w zakresie istniejących połączeń i linii kolejek wąskotorowych w województwie podkarpackim i regionie preszowskim na Słowacji, RARR – ASM, Kutno – Rzeszów, 2012

<sup>19</sup> Państwa świata. Encyklopedia PWN, 2009, red. B. Kaczorowski, PWN, Warsaw

3.	Słonne Mountains LP	Northern parts of the Sanok and Turka Mountains, ranges of the <b>Słonne</b> Mountains and Chwaniów Mountains, a part of beech and fir virgin forest
4.	Jaslińska LP	Eastern part of the Low Beskids, upper basin of the <b>Jasiołka River and the Wisłok River</b> sources
5.	Czarnorzeki and Strzyżów LP	<b>A part of Strzyżów and Dynów</b> Foothills, sandstone outliers
6.	Przemysł Foothills LP	A part of a beech and fir virgin forest, dry valleys, raised peatbogs, outcrops of the Carpathian Flysch
7.	South Roztocze LP (with Lubelskie Voivodeship)	A part of Eastern Roztocze
8.	Solska Virgin Forest LP (with Lubelskie Voivodeship)	Forest complexes of Solska Virgin Forest (diverse forest clusters), gorge river valleys
9.	Janowskie Forests LP (with Lubelskie Voivodeship)	Janowskie Forests Complex
10.	Brzanka Ranges LP (with Małopolskie Voivodeship)	<b>A part of Ciężkowice Foothills</b>

Table 1. Selected natural values of Podkarpackie Voivodeship

Source: an own study on the basis of: **Kłos S., 2005, Podkarpackie. Przewodnik po województwie**, Olszanica; **Lijewski T., Mikułowski B., Wyrzykowski J., 2008, Geografia Turystyczna Polski**, PWE, Warsaw; [www.epodkarpacie.pl](http://www.epodkarpacie.pl)

## 2.2. Anthropogenic values

For centuries the Polish-Slovak borderland area studied has been characterised by diffusion of cultures, nationalities and religions. Not only Polish settlement was founded here but also Jewish settlement (including Hasidic settlement) and Russian settlement (Ukrainian settlement)<sup>20</sup>. In 15th and 16th centuries in eastern part of the area – in the Low Beskids and the Bieszczady Foothills the Lemko people settled – Carpathian pastoralist people. Moreover, the Bieszczady mountains were inhabited by Ukrainian highlanders – the Bojko people. The majority of those settlers were affected by repatriation **within the scope of “the Vistula”** Action (1947). Occurrence of temples and houses of prayer for people of different faiths (Catholic churches, Orthodox churches, synagogues) is a feature of the studied area cultural landscape.

The largest development of settlement in the area studied took place at the turn of 14th and 15th centuries. Since 1567, all area of the present Slovakia and southern Poland (since 1772) till the end of World War I remained in hands of the Habsburg Dynasty, which had an influence on formation of socioeconomic systems, settlement and culture of the borderland area discussed<sup>21</sup>. Then, after World War II Poland and Czechoslovakia were influenced by the Soviet Union and socialist politics. After the collapse of the USSR and the decline of the Eastern Bloc in both countries (and at the same time in the borderland areas studied), free market economy started to develop. In 2004 both countries entered the structures of the European Union (and in 2007 the

<sup>20</sup> **Kłos S., 2005, Podkarpackie. Przewodnik po województwie**, wyd. BOSZ, Olszanica

<sup>21</sup> **Pogranicze polsko-słowackie. Dostępność transportowa a turystyka.**, IGiPZ PAN, GuSav, Warsaw – Bratislava 2012



Schengen zone). Furthermore, since January 1st, 2009 Slovakia belongs to the euro zone.

Many cultural similarities can be found in the borderland's landscape (settlement, town planning, architecture, folk culture). In addition, the area's development has been strongly determined by natural environment – very diverse landform has caused considerable isolation of settlements (the Carpathians' orographic barrier).

In Polish part of the borderland the most valuable anthropogenic qualities are: city urban layouts (among others: **Przemyśl, Jarosław, Rzeszów, Sanok, Nowy Sącz, Cieszyn, Bielsko-Biała**), aristocratic and royal castles (among others: **Krasiczyn, Sanok, Przemyśl, Sucha Beskidzka, Nowy Wiśnicz, Nidzica, Czorsztyn, Pszczyna**), a group of former Greco-Catholic Orthodox churches in the Sącz Beskids and the Low Beskids (among others: **Muszyna, Tylicz, Powroźnik, Kotań, Kwiaton, Bartne, Turzańsk, Komańcza**), wooden churches of the Małopolska and the Podkarpacie regions (including churches which entered a list of UNESCO world heritage: **Binarowa, Blizne, Dębno Podhalańskie, Haczów, Lipnica Murowana, Sękowa**), synagogues and Jewish cemeteries (among others: **Lesko, Nowy Sącz**), military objects (among others: **Przemyśl** fortress, cemeteries from the period of Dukla and Presov operation in the Low Beskids), historic development of health resorts (among others: **Szczawnica, Krynica Zdrój, Iwonicz Zdrój, Rymanów Zdrój**) and pilgrim centres (among others: **Kalwaria Zebrzydowska, Kalwaria Pałacowska, Wadowice, Ludźmierz**)<sup>22</sup>.

The most interesting museum collections are displayed, among others, in: Sanok (The Historic Museum), Wadowice (The Museum - Family House of John Paul II), Bóbka (The **Museum of Oil and Gas Industry**), **Przemyśl** (The Museum of Pipes and Bells) or **Łańcut** (The Museum - Castle of the Lubomirski family) and Zakopane (the Tatra Museum). A considerable touristic value of the area studied is folk culture resources whose large amount and diversity at the same time, relate to an abundant ethnographic diversity of the Carpathian region (several groups of highlanders). They occur, among others, in Sanok (the largest ethnographic museum in Poland), **Nowy Sącz** (the **Sącz Ethnographic Park**), **Szymbark** (The Ethnographic Museum of **Pogorzańska Village**), **Jurgów** (Spisz Farmhouse), **Zubrzyca Górna** (Orava Ethnographic Park), **Zydranowa** (the Lemko Culture Ethnographic Museum). Historic folk buildings can be also seen in many villages of the Podkarpacie region (among others **Chochółów, Lanckorona**). An additional attraction is folk craft chambers, the most important ones are located in Koniaków

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<sup>22</sup> T. Lijewski, B. Mikułowski, 2008, J. Wyrzykowski, *Geografia turystyki Polski*, PWE, Warsaw

(Koniaków Lace Museum) and Istebna (The Museum - John Kawulok's Cottage). In the Podhale region we can also encounter "live" folk culture (painting on glass, sculpture, metaloplastics, **weaver's craft**, artistic smithery). Anthropogenic values which entered a list of UNESCO world heritage, located in Polish part of the borderland are: a Nazi extermination camp in Auschwitz, a manieristic architectural and landscape complex and a pilgrim park in Kalwaria Zebrzydowska and **wooden churches of southern Małopolska** mentioned above. Ecomuseums (the so-called Scattered Museums) established during the last years constitute an interesting attraction. There are 5 ecomuseums in the Podkarpacie region. A list of selected anthropogenic values of Podkarpackie Voivodeship is presented in Table 2.

Slovak borderland possesses a very distant and rich history and, similar to the Polish Podkarpacie region, was the settlement area of different ethnic and religious groups<sup>23</sup>. Already in medieval times clear historical and ethnographical lands emerged in its area: **Górne Powąże, Kysuce, Orava, Liptów, Spisz, Szarysz and Zemplin**. The evidence of rich history is numerous cities developed by important trade routes (among others: **Žilina, Liptowski Mikulasz, Bardejov, Kieżmark, Lewocza, Presov**) and their valuable architectural relics. In many places royal palaces were erected (among others the Spisz Castle, Lubowla, the Orava Castle), castles<sup>24</sup> (among others Besonova, **Liptowski Mikulasz, Vyžny Kubin**), defending walls, churches (including many gothic churches, among others in Liptowski Mikulasz), rich bourgeois tenement houses. Valuable relics of folk housing have been collected in ethnographic museums (among others: **Ždiar, Bardejov, Humenne, Zuberec**) and many of them can still be admired at a place of their creation (*in situ*), among others in Podbiel in Orava and Vlolinec which entered a list of UNESCO world heritage (development of traditional liptowska village).

Pos.	Place	Selected anthropogenic values
1.	Rzeszów	Old Town's urban layout, the town hall, tenement houses, numerous churches and monasteries, the castle, the Lubomirskis' palace, synagogues, The Underground Tourist Route, The Good-night Stories Museum
2.	Przemyśl	Old Town's urban layout, tenement houses, <b>Casimir the Great's castle</b> , Roman Catholic metropolitan cathedral, Byzantine and Ukrainian metropolitan cathedral, numerous churches and monasteries, Orthodox churches, <b>the Clock Tower, Przemyśl Fortress forts, Mołotow Line bunkers</b> , The Museum of Pipes and Bells
3.	Krosno	Old Town's urban layout, tenement houses, palaces, churches and monastic clusters, the Museum of Motorization, the Museum of Craft
4.	Sanok	Old Town's urban layout, the town hall, tenement houses, a royal castle (The Historic Museum), churches and monasteries, a monument –a bank of

<sup>23</sup> Nacher A., Styczyński M., Cisowski B., Klimek P., 2004, Słowacja. Karpackie serce Europy, wyd. **Bezdroża**, Cracow

<sup>24</sup> Duda M., Michniewska M., 2005, Orawa i Liptów. Po słonecznej stronie Tatr, wyd. **Bezdroża**, Cracow

		the Good Soldier Svejk, the Museum of Folk housing
5.	Lesko	Old Town's <b>urban</b> layout, the town hall, the castle of the Kmits, a synagogue, Jewish cemetery
6.	Zagórz	the Carmelite Fathers monastery ruins
7.	Leżajsk	The Bernardine Fathers Monastery, Jewish cemetery (tzaddiks ohels), The <b>Leżajsk Land Museum</b>
8.	Krasieczyn	The Krasickis' palace and park complex
9.	Kalwaria Pałacowska	Franciscan Fathers Monastic Cluster with Kalwaria chapels
10.	Jarosław	Old Town's urban layout, the Orsettis' tenement house (the Museum), the town hall, tenements houses, numerous churches and Orthodox churches, The Underground Tourist Route named after prof. F. Zalewski
11.	Łańcut	the Lubomirskis' Castle (the Museum), the Coachhouse, The Distillery Museum
12.	Przeworsk	Old Town's <b>urban</b> layout, the town hall, parts of defending walls, a palace and park complex (the Museum), a narrow-gauge railway station, "Pastewnik" ethnographic museum
13.	Dukla	Old Town's <b>urban</b> layout, the town hall, churches and monasteries, a palace and park complex, a cemetery from the period of Dukla and Presov operation (1944)
14.	Rymanów Zdrój	Historic health resort development
15.	Iwonicz Zdrój	Historic health resort development (in Swiss style)
16.	Komańcza	An <b>Orthodox Church dedicated to Mother of God's Care</b> , Sisters of the Holy Family of Nazareth convent
17.	Blizne	A wooden church dedicated to all Saints (UNESCO)
18.	Haczów	A wooden church dedicated to AVM (UNESCO)
19.	Orthodox Churches of the Low Beskids and the Bieszczady Foothills	Selected examples: Ulucz, Równia, Smolnik by the San River, Tyrawa Solna, Olchowa, Rzepedź, Komańcza, Turzańsk
20.	Pruchnik	Spatial layout of former Galician town with wooden town development
21.	Bóbrka	The Oil Industry Ethnographic Museum
22.	Baranów Sandomierski	The Castle (the Museum)
23.	Krasieczyn	The Castle (the Museum)
24.	Places of commemoration from the period of Dukla and Presov operation	<b>Dukla, Nowosielce, Iwla, Chyrowa, Głojsce</b>
25.	Strzyżów	The Underground <b>Railway Bunker</b> under Żarnowska Mountain from the period of World War II
26.	Stępina-Cieszyna	The Bunker tunnel from the period of World War II
27.	Odrzykoń	The Kamieniec Castle
28.	Przeclaw	The Castle
29.	Rozwadów	The Lubomirskis' Castle
30.	Rzemień	The Castle
31.	Węgierka	The Castle

Table 2. Selected anthropogenic values of Podkarpackie Voivodeship

Source: an own study on the basis of: **Kłos S., 2005, Podkarpackie**. Przewodnik po województwie, Olszanica; **Lijewski T., Mikułowski B., Wyrzykowski J., 2008, Geografia Turystyczna Polski, PWE, Warsaw**

Moreover, in Presov region landscape historic development of health resorts is characteristic (among others: **Vyžné Ružbachy, Stary Smokowiec, Bardejovské Kupele**) and valuable historic exhibits have been collected in numerous museums (among others: **Svidník, Ružomberk, Liptowski Mikuláš, Medzilaborce**). Important centres of the Marian cult in this part of the bordeland are among others: Lewocza, Lutina, Gaboltov or Litmanova. The relics importance of the Slovakia region discussed is shown by the existence of many places which entered a list of UNESCO world heritage: the Spisz Castle (Koszyce region), the Spisz Chapter and the Spisz Podgrodzie, Bardejov, **Bodružal, Lewocz, Vlkolinc, Žehr** (St. Spirit's church, Koszyce region), articular churches groups

(Kieżmark, Św. Krzyż, Istebne, Lestiny) and groups of wooden churches in Slovak Carpathians. The Presov region is particularly abundant in this respect – a list of the most vital anthropogenic values of the Presov region is shown in Table 3.

Within all the area of Polish-Slovak borderland studied over 200 folk, cultural and sports events of different importance take place (from local to international events)<sup>25</sup>. The most significant events are, among others: The International Folk Festival of Mountainous Lands in Zakopane, The Winter World Cup in Ski Jumping in Zakopane, The European Festival named after J. Kiepura in Krynica Zdrój, The Beskid Culture Week (the Silesian Beskids and the Żywiec Beskids), a **Pipe Holiday in Przemyśl**, The International Festival of Lace-Making in Presov or Dukla Race in Svidník.

### 2.3. Tourist infrastructure

In the chapter below the most significant elements of tourist management have been subject to analysis – accommodation offer, ski infrastructure and tourist routes. Having discussed general tendencies occurring in Polish-Slovak borderland, selected border mountainous regions have been carefully analysed.

Accommodation offer which constitutes the most vital element of all the discussed area tourist management possesses a diverse standard and placement. The largest concentration of accommodation offer occurs in the border mountainous region, in particular, in the Tatra area<sup>26</sup>. In Polish area private rooms (including agritourist rooms) are of greatest importance. Hotels are concentrated in larger tourist centres and the **region's cities, health resorts and tourist resorts** (among others: **Zakopane, Ustroń, Wisła, Krynica Zdrój, Rzeszów**). The largest number of accommodation buildings among the Podkarpacie region health resorts is located in Iwonicz and Rymanów Zdrój.

Pos.	Place	Selected anthropogenic values
1.	Presov	Old Town's <b>urban</b> layout, churches and monasteries, calvary, Rakoczy palace, <b>Neptun's Fountain</b>
2.	Bardejov	Old Town's <b>urban</b> layout (UNESCO), the town hall, tenement houses, St. Giles' gothic church, parts of defending walls, Jewish buildings cluster, the folk housing ethnographic museum
3.	Humenne	The folk housing ethnographic museum, Drugeths' castle, a gothic church, a synagogue, a monument of the Good Soldier Svejk
4.	Kieżmark	Old Town's <b>urban</b> layout, the town hall, parts of city walls, an articular church (UNESCO), numerous churches, a castle
5.	Lewocza	Old Town's <b>urban layout</b> , the town hall, St. Jacob's <b>parish church</b> , numerous churches and monasteries, the Saltworks House, the Turzons House, a workshop of the Foreman Paul from Lewocza, a cage of disgrace (pillory) (UNESCO), the Spisz Museum

<sup>25</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>26</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012

6.	Lubowla (Stara Lubowla)	Old Town's urban layout, tenement houses, a gothic church, a castle, the folk housing ethnographic museum
7.	Medzilaborce	The Modern Art Museum named after Andy Warhol, <b>Andy Warhol's monument</b> , Orthodox churches
8.	Poprad	Old Town's urban layout, tenement houses, churches
9.	Spiska Sobota (Poprad's district)	Old Town's urban layout (spindle-shaped), tenement houses, craftsmen houses, the town hall, numerous churches, the Museum at the foot of the Tatra mountains
10.	Sabinov	<b>St. John's gothic church</b> , numerous churches of different faiths, a post-Piarist college, parts of city walls
11.	Snina	Classical palace with a statue of Herkules, Miro International Art Gallery
12.	Stropkov	The Castle, numerous churches and monasteries
13.	Svidnik	Rusin culture centre, the Ukrainians and Russians Material and Spiritual Culture Museum, the Museum of Dukla Battle, D. Millyho Gallery (a collection of icons)
14.	Orthodox Churches near Svidnik	Selected examples: <b>Bodružal, Hunkovce, Dobroslav, Korejovce, Krajné Čierno, Ladomírová, Miroľa, Nižný Komárnik, Potoky, Prikra and Šemetkovce</b>
15.	<b>Spiska Biela (Spiska Bela)</b>	Old Town's urban layout, the town hall, tenement houses, churches and monasteries
16.	The Spisz Podgrodzie	<b>The Spisz Castle</b> (one of the largest castle complexes of Middle Europe, UNESCO), <b>the Spisz Podgrodzie city complex</b> – medieval urban layout, <b>the Spisz Chapter</b> – a fortified church town
17.	Czerwony Klasztor	Historic monastic complex of Kartuzes and Camaldolites
18.	<b>Strażki</b>	A castle, a park in English style
19.	Tourist resorts and health resorts at the foot of the High Tatras	<b>Szczyrbskie Pleso, Vyžne Hagy, Stary Smokowiec, Nowy Smokowiec, Tatrzńska Łomnica...</b>
20.	Podoliniec	Old Town's urban layout, tenement houses, the town hall, churches and monasteries
21.	<b>Vyžne Ružbachy</b>	Historic health resort development, a travertine crater (a lakelet)
22.	Bardejovské Kupele	Historic health resort development
23.	<b>Bodružal</b>	Greek Catholic St. Nicolas wooden orthodox church, UNESCO
23.	Hervartov	St. Francis from Asyz wooden catholic church, UNESCO
24.	Ladomirova	Greek Catholic <b>St. Michael the Archangel's</b> wooden orthodox church, UNESCO
25.	Nova Lubovna	Historic health resort development
26.	Osturna	The folk housing ethnographic museum
27.	<b>Ždiar</b>	The folk housing ethnographic museum

Table 3. Selected anthropogenic values of the Presov region in Slovakia

Source: an own study on the basis of: **Nacher A., Styczyński M., Cisowski B., 2004, Spisz.** Od Pienin po Raj. Przewodnik Turystyczny, wyd. **Bezdroża**, Cracow; **Nacher A., Styczyński M., Cisowski B., Klimek P., 2004, Słowacja.** Karpackie serce Europy. Przewodnik turystyczny, wyd. **Bezdroża**, Cracow

In Polish part of the Bieszczady mountains the tourist base is concentrated mainly in the vicinity of **Soliński reservoir (Polańczyk Zdrój, Solina)**. In the Bieszczady Foothills agritourism is developing gradually. The Dynów and the **Ciężkowice Foothills** do not possess a well-developed tourist infrastructure and they serve mainly for holiday leisure.

In Slovakia the highest-class hotels are concentrated in Presov, **Žylin, Poprad**, Liptowski Mikulasz, Martin, Bardejov and Humenne, in the area of the High Tatras and in the vicinity of the Demianowska Valley. They are also densely located in health resorts (**Vyžne Ružbahy**, Besenova, Rajeckie Cieplice and others). In Slovak part of the borderland there are 1 384 accommodation buildings<sup>27</sup> out of which 16% in lodging houses, 15% at one-star and two-star hotels, 13% in tourist hostels, 9% at four-star and

<sup>27</sup> The Slovak Republic Statistical Office Data, 2011

five-star hotels, 6% in private houses. The use of accommodation offer is larger in the **Žilinsky** region than in the Presov region. Higher-class hotels are visited most willingly. The highest number of accommodation buildings is located in 2 districts: Liptowski Mikulasz and Poprad (1/3 of all accommodation offers in Slovak borderland area). Least visited districts by tourists are: Bytca, Nove Mesto, Namestovo, Stropkov and Svidnik.

There is a considerable concentration of hostels in the area studied, including mountain huts (the largest concentration in Poland and in Slovakia) and that facilitates excellent tourist exploration of particular mountain ranges.

In case of ski infrastructure, there are visible differences in particular mountain regions of the borderland area discussed. While in Polish part of the area small ski stations and short ski runs dominate (to 2 km long), Slovak centres are larger, less crowded and they possess more diverse ski runs.

Among alpine terrains three areas located in Slovakia are distinctive: **Tatrzńska Łomnica** (the highest located run terrain in Slovakia, 2196 m a.s.l.), Szczyrbskie Pleso and Rohacze ski centre – the Spalona Valley in the Western Tatras (the Zuberska Valley). An equally essential ski run centre is Chopok in the Low Tatras. Jasna-Donovaly centre located at its foot offers, among others, illuminated ski trails, marked trails for cross-country skiing, a sports equipment rental, an ice rink and skiing schools. The centre also offers an opportunity of doing extreme sports, including among others: skifox, snowbike or snoscoot<sup>28</sup>.

Tourist route network is highly developed in the area studied. Here mountain hiking routes, which in some regions (the Beskids, the Tatra mountains, the Bieszczady mountains) are abundant, take a special place. Moreover, during the last years a rapid development of cycling tourism and horse tourism trails took place (the Bieszczady mountains). In addition, there are opportunities of doing white-water canoeing and rafting on the Dunajec River and the Poprad River. Furthermore, 2 international Greenways are running across the area studied: "Amber Greenways" (Poland, Slovakia, Hungary) and "Green Bicycle – Greenway Eastern Carpathians" (Poland, Slovakia, Ukraine)<sup>29</sup>. Those Greenways are used by non-motorised tourists and they follow the idea of sustainable development. The most significant thematic routes of the area studied are: the Wooden Architecture Route (all 3 voivodeships), The Icon Route at the Valley of the **San River and the Oslawa River**, The Galician Oil Route (Poland-Ukraine) or the Route of the Good Soldier Svejk (**the Przemyśl Foothills**, the Sanok and Turka mountains, the

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<sup>28</sup> [www.jasna.sk](http://www.jasna.sk)

<sup>29</sup> [www.greenways.pl](http://www.greenways.pl)



Bieszczady mountains). A vital horse trail from the point of the analysis is the Trans-Beskid Horse Trail, which is running across all the Carpathians from Brenna in the Silesian Beskids to Wołosate in the Bieszczady mountains. The Carpathian Cycle Route with its connecting routes is a cycle route which links the Carpathian ranges in the Polish area.

An essential transboundary initiative is a tourist product called "Three-Point Contact" near the point in which borders of three countries are linked: Poland, the Czech Republic and Slovakia. Thanks to the EU funds gained for this purpose (in particular, TCOP Microprojects Fund 2007-2013 the Czech Republic – the Polish Republic), a new tourist infrastructure has been created, including among others, a footpath, a cycle lane, cycle infrastructure, shelters, a bridge as well as information materials: folders and a common project map. Within the transboundary cooperation programme The Polish Republic – the Slovak Republic 2007-2013 numerous projects or microprojects are realised, transboundary tourist routes are determined, including among others: the Transboundary Cycle Route "the Beskid Museums", "the Carpathian Wine Routes", "the Carpathian Temples Route", "the Gothic Route" and "the Intercultural Tourist Route of Polish-Slovak Borderland".

In the area of the Silesian Beskids, the Żywiec Beskids and Kysucki Beskids large ski centres are located in **Ośčadnica (Snow Park /Sun Paradise Velka Racza), Čierne, Skalite-Serafinov (the last two connected to Zwardoń)**. Ski Resort Skalite-Serafinov is famous for the so-called Kysucka Trail – a cross-country skiing routes system<sup>30</sup>. What is more, in **Ośčadnica** there is the longest coast in Middle Europe as well as: a ropes park, a climbing wall and a mountain bike rental<sup>31</sup>. The largest ski run tourism centres and mountain hiking tourism centres located in the Polish area are: **Szczyrk, Zwardoń** and **Korbielów**. Ski infrastructure (T-bar lifts mainly) is also located in small towns and villages: **Sól, Ujsoły, Rycerka Dolna** or **Rycerka Górna**. Moreover, important summer and winter tourist centres are here **Wisła, Istebna, Zwardoń** or **Korbielów**. Considerable competition for the Polish area is **Velka Racza Snow Park**, located under a massif of **Wielka Racza** in the Kysucki Beskids.

All the region of the Beskids possesses an abundant tourist mountain routes system. The Main Beskid Route named after K. Sosnowski is running across the Silesian Beskids and the Żywiec Beskids (the red one). Cycle route network is also developed.

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<sup>30</sup> [www.skalite.sk](http://www.skalite.sk)

<sup>31</sup> [www.oscadnica.info](http://www.oscadnica.info)

An essential tourist area in the Beskids is Babia Góra Range protected by Babia Góra National Park. The most significant tourist centres of the region (Orava) are: Zawoja (the best starting point to BGNP), Markowe Szczawiny and Zubrzyca Górna<sup>32</sup>. Zawoja itself offers approximately 1 600 accommodation places, mainly in lodging houses and private houses. **Within the park's area there are about 50 km of tourist routes and many didactic paths.**

The most popular among tourists in the Slovak part of the borderland are towns at the foot of the Tatra mountains (Wysokie Tatry), where considerable part of tourist infrastructure is concentrated<sup>33</sup>. Poprad, Stary Smokowiec, Szczyrbskie Pleso, **Tatrzańska Łomnica, Podbańskie** and Zdiar constitute a vital base for mountain tourism, climbing tourism, ski tourism and spa tourism. Ski run trails and cross-country ski trails, ski lifts, accommodation buildings of different category and diverse gastronomic premises are located here<sup>34</sup>. Szczyrbskie Pleso is a centre of an international reputation offering 9 ski run trails and 16 km of trails for cross-country skiing. In Stary Smokowiec apart from numerous ski lifts and run trails, there is a cable railway on Hrebienok (The Tatra Electric Railway siding), there are a sledge trail and a snow slide for snowtubing. In **Łomnica** a **cable railway on Łomnica (2634 m a.s.l.)** and a cabin railway on Skalnaté Pleso operate. There are numerous ski lifts, ski jumps and run trails (including a ski run from **Łomnicki Pond to Tatrzeńska Łomnica**). What is more, ski infrastructure is also located in mountain towns: mountain rescue service, ski schools, equipment rentals, ski-service. In Poprad, in relation to the presence of thermal resources, there are swimming pools with Spa&Wellness centre, a sports centre, a cryocentre and a wide gastronomic and entertainment offer<sup>35</sup>.

The largest ski centres in the Polish area of the Tatra range are: **Zakopane, Białka Tatrzeńska and Bukowina Tatrzeńska**. A vital region of run skiing in Polish Tatras is also the Goryczkowa Valley, Hala Kondratowa and **Hala Gąsienicowa**. A ski centre of the largest capacity in Slovakia is **Tatrzeńska Łomnica** and then: Bachledova Dolina – Jezersko, Zdiar – Strednica and Stary Smokowiec – Hrebienok<sup>36</sup>. In Slovakia in the region of the High Tatras there are approximately 20 000 accommodation places in

<sup>32</sup> Polskie parki narodowe. Przewodnik ilustrowany, 2000, red. J. Zaborowska, Pascal, Bielsko-Biała

<sup>33</sup> [www.slovakia.travel](http://www.slovakia.travel)

<sup>34</sup> **Słowacja**. Przewodnik narciarski., 2002, red. Darmochwał T., Wydawnictwo Turystyczne „AgencjaTD”

<sup>35</sup> [www.aquacityresort.com](http://www.aquacityresort.com)

<sup>36</sup> [www.slovakia.travel](http://www.slovakia.travel); Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGIPZ PAN, GuSav, Warsaw – Bratislava 2012

nearly 1000 buildings, most of which are located in towns: Wysokie Tatry, Szczyrba, Liptowski Mikulasz and Poprad. In 2011 in Wysokie Tatry itself there were 271 accommodation buildings, comprising 15 635 beds<sup>37</sup>. In Liptowski Mikulasz there were 53 buildings (2 174 beds), in Poprad - 27 buildings (1 607 beds) and in **Žilina** - 34 buildings (2 623 beds).

In relation to the occurrence of numerous mineral springs (including thermal springs) in the region studied, a system of aqua parks is being dynamically developed. In Polish area the largest complexes are located in **Bukowina Tatrzańska, Zakopane, Szaflary and Białka Tatrzańska**. In general, in Polish borderland area studied there are 17 facilities of this type whereas in Slovak area there as many as 62 of them. The largest facilities are Tatralandia in Liptowski Mikulasz, Aquacity in Poprad (they are both visited by the highest number of tourists), Thermal Park in Besenova and Meander Park in Oravice. Within their area a wide range of attractions are offered including, among others: jacuzzi, geysers, sparkling streams, etc.<sup>38</sup>

In the area of the Tatra National Park 275 km of routes with a different category of difficulty have been prepared. In Slovak part of the Tatra mountains – approximately 600 km.

The most important tourist area of the Pieniny mountains covers: Szczawnica (a ski centre and health resort), **Krościenko** by the Dunajec River, Jaworki, Sromowce **Niżne, Czorsztyn, Niedzica** (in Poland) as well as **Czerwony Klasztor and Leśnica** in Slovakia. In **Szczawnica and Krościenko by the Dunajec River** there are approximately 6 500 accommodation places<sup>39</sup>. In Slovak part of the area tourism is concentrated in: Spiska **Stara Wieś, Haligovce, Leśnica and Czerwony Klasztor**. The greatest tourist attraction in the region is rafting on the Dunajec River, which takes place both in the Polish area (**Sromowce Wyżne-Kąty – Szczawnica Niżna/Krościenko**<sup>40</sup>), and Slovak part of the area (unfavourable competition and no transboundary cooperation). In Polish part of the Pieniny mountains (PNP) 35 km of tourist trails have been prepared in total. There are also 2 sections of routes available for cyclists – the so-called Pieniny Road (Szczawnica – Czerwony Klasztor) and the so-called Road to Karst (**Krościenko** by the Dunajec River – Kras). Both sections coincide with hiking trails. An interesting transboundary initiative is a footbridge over the Dunajec River which enables crossing to

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<sup>37</sup> [www.statistics.sk](http://www.statistics.sk)

<sup>38</sup> [www.meanderthermal.com](http://www.meanderthermal.com)

<sup>39</sup> Polskie parki narodowe. Przewodnik ilustrowany, 2000, red. J. Zaborowska, Pascal, Bielsko-Biała

<sup>40</sup> [www.pieninypl](http://www.pieninypl)

the Slovak side to Czerwony Klasztor. The majority of marked tourist routes are accessible to ski tourism.

The Poprad Valley is a vital spa region – here in the Polish part of the area large health resorts are concentrated: **Krynica Zdrój, Muszyna, Żegiestów**, bordering with Stara Lubowna district in Slovakia. **Despite large natural values the region's potential in the Slovak area is poorly used** – tourist infrastructure, including transport infrastructure is not developed enough. In the Polish area, in Muszyna-**Złockie**, there is a horse-riding centre which offers, among others, horse rallies to the region of Jaworzyna Krynicka<sup>41</sup>. Here there are also a few marked trails for practising equestrian tourism.

In Muszyna commune there are a few ski lifts and about 4 km of run trails. However, the best conditions for ski run tourism can be found in Krynica Zdrój commune (Jaworzyna Krynicka range) and Piwniczna Zdrój (a "Wierchomla" ski station). In Szczawnik Zdrój there is a "Two Valleys Muszyna-**Wierchomla**" **ski station**, opened in the season of 2008/2009, which is to become an element of the larger ski system.

According to the Central Statistical Office (CSO), 42 buildings of collective accommodation offering 3 800 accommodation places functioned in Muszyna commune in 2010. At the official commune website there is information on 99 buildings out of which the most numerous group concerns private houses (including agritourism farms). In the district of Stara Lubowna in the Slovak part of the area there were 50 accommodation buildings offering 2858 beds in 2009. The largest concentration of accommodation offer can be found in the town of Stara Lubowna and **Vyžne Ružbahy** health resort.

An essential tourist attraction of the region is the Poprad River on which raftings are organised (Leluchów – **Nowy Sącz**). The Poprad River also provides opportunities for doing rafting and white-water canoeing. In the area of **the Sącz Beskids there are a few cycle trails**: the Carpathian Cycle Trail, "Around Kotylniczy Wierch", the Transboundary Cycle Trail and the Muszyna Tourist Loop.

The Low Beskids are the least visited range of the Polish Carpathians. As a consequence of the Lemko and Ukrainian people displacement in the post-war period (Action "**Vistula**", 1947), this area is known for wild, inaccessible nature as well as poor tourist infrastructure. A dominant form of tourism is mountain hiking as well as cycle tourism (the lowest of the Polish Beskids) and equestrian tourism. Within the area of the Magura National Park there is a well-developed network of hiking trails (9) and cycle

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<sup>41</sup> [www.wbeskid.pl](http://www.wbeskid.pl)

trails (5)<sup>42</sup>. Moreover, **across the park's area a horse trail is running from Nieznajowa to Olchowiec (a section of the Trans-Beskid Horse Trail Brenna – Wołosate)**. Because of the so-called abandoned valleys present here, there is a possibility of using local roads and paths for practising different forms of tourist activity. Within the area of Krosno district "the Beskid Museums" Transboundary Cycle Trail has been prepared (a loop linking 21 museum facilities, 321 km). Project partners in Slovakia are districts: Svidnik, Stropkov and Humenne<sup>43</sup>.

In 2010 according to CSO official data, in the Low Beskids there were only 12 buildings of collective accommodation offering 540 accommodation places (communes: **Jaśliska, Dukla, Komańcza**)<sup>44</sup>. An actual number of buildings is, however, difficult to **estimate; the region's official website informs that there are** 50 agritourism farms here. In Slovakia the region covers the area of 3 districts: Svidnik, Stropkov and Medzilaborce. Accommodation buildings are concentrated in large cities and according to the Slovak Republic Statistical Office data, there were only 32 of them in 2009 (1493 beds).

The Bieszczady mountains located peripherally are an area of uncontaminated natural environment protected by the Bieszczady National Park in Poland and by the **Połoniny** National Park in Slovakia. Both parks, with parks in the Ukrainian area constitute the UNESCO International Biosphere Reserve "Eastern Carpathians". A vital element of sustainable tourist infrastructure is the Bieszczady Forest Rail, one of the most popular narrow-gauge railways in Poland.

The Bieszczady mountains are not, as a result of severe climate conditions (thick layers of snow with an icy cover on the surface in the area of mountain pastures) an important region of ski run tourism, on the other hand, infrastructure for cross-country skiing is being developed, however, forest roads are excellent for practising this sport (e.g. in the San Valley, in the vicinity of Lutowska, Zatwarnica, Czarna and Tarnawa **Niżna**)<sup>45</sup>. Ustrzyki Dolne is called a "Winter capital of the Podkarpacie region" and offers both cross-country trails and ski run trails. The only chairlift in the Bieszczady mountains - "Laworta" is located here. This station possesses a primary run trail which is 1250 m long, artificial snowing system, lighting, equipment rentals and 2 T-bar lifts<sup>46</sup>. Another ski

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<sup>42</sup> [www.magurskipn.pl](http://www.magurskipn.pl)

<sup>43</sup> [www.beskidniski.org.pl](http://www.beskidniski.org.pl)

<sup>44</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>45</sup> Polskie parki narodowe. Przewodnik ilustrowany, 2000, red. J. Zaborowska, Pascal, Bielsko-Biała

<sup>46</sup> [www.ustrzyki-dolne.pl](http://www.ustrzyki-dolne.pl)

station located in Ustrzyki Dolne is **Gromadzyń** station. Moreover, in a nearby **Arlamów** (the **Przemyśl Foothills**) three ski runs function.

According to CSO data, in Cisna commune there are 31 buildings of collective accommodation offering 1655 accommodation places (2010). However, the commune's website informs that there is a higher number of these buildings, the majority of which are private houses and agritourism. Here accommodation offer is mainly concentrated in Cisna, Wetlina and Smerek. In Snina district in Slovakia there were 11 buildings offering 1377 beds in 2009. **It is visible that the region's accommodation offer is still quite poorly developed.**

In the Bieszczady National Park tourists can use over 130 km of hiking trails<sup>47</sup>. There is a similar number of natural paths. There are approximately 50km of cycle trails, within the area of BNP there are also 5 parking lots for bicycles. Equestrian tourism is developed, too (among others: Hucul horses breeding in **Wołosate** and a Stud Farm of Equestrian Tourism in **Tarnawa Niżna**). The Bieszczady National Park is discerned in comparison with other borderland regions by perfectly developed horse trail network – in total, 142 km of equestrian trails have been prepared in the BNP area. What is more, in the Slovak area there are 2 marked cycle trails: "The Green Bicycle" and "The Icon Route".

As compared to the entire Polish-Slovak borderland studied, Podkarpackie Voivodeship and the Presov region are distinguished by a very diverse extent of tourist infrastructure development. In this respect the Tatra mountains (both in Poland and Slovakia) is the best developed region. In Slovakia a considerable part of the entire Presov region tourist infrastructure is concentrated in a small town Wysokie Tatry – known for its accommodation offer and ski run infrastructure. Here large ski centres are located, such as **Tatrzańska Łomnica**, **Szczyrbskie Pleso** or Spalona Valley. The Tatra region also possesses the longest system of marked mountain hiking trails as compared to other regions described in this analysis.

Moreover, the Presov region is distinguished by a considerable concentration of health resorts, including those created on the basis of thermal waters (among others, Poprad, Besenova). Their eastern frontiers: the Low Beskids and the Bieszczady mountains are least developed in both regions. However, in the latest years the Bieszczady mountains are becoming a vital region of equestrian and cycle tourism (a developed trail network). In the vicinity Greenways and many thematic trails are running.

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<sup>47</sup> [www.bieszczady.pik-net.pl](http://www.bieszczady.pik-net.pl)



### 3. TOURIST TRAFFIC IN THE POLISH-SLOVAK BORDERLAND AREA

Distribution of tourist traffic in the Polish-Slovak borderland area studied is very diverse. The largest concentration of tourist movement takes place in the Tatra region (on both sides of the border)<sup>48</sup>. Other most frequently visited areas are: the Pieniny mountains, the Low Tatras, Little and Great Fatra as well as the Silesian Beskids and the Żywiec Beskids. In Poland districts visited by the highest number of tourists include: **cieszyński, tatrzański, nowosądecki and leski**. In Slovakia these are the following districts: **Turczańskie Cieplice, Liptowski Mikulasz and Poprad**<sup>49</sup>.

In Poland over 2 million tourist arrivals take place annually (Polish tourists constitute approximately 85%). In Slovakia there are fewer arrivals – approximately 1,3 million, out of which the Slovaks constitute nearly 66%. The **Žilinský** region is the second (658 thousand tourists) and the Presov region is the third (611 thousand tourists) Slovak region with respect to the number of tourists (Bratislava region is a region which is visited by the highest number of tourists). In **Žyliński** region tourist traffic is clearly higher in winter season and that results from many ski stations of large capacity functioning here (among others: Jasna, Wielka Racza)<sup>50</sup>. Ski centres in the Presov region are mainly concentrated around the High Tatras. In the Presov region mountain hiking tourism is developed in summer season and as a consequence, it records more arrivals **than Žyliński** region<sup>51</sup>. In the Tatra mountains area large participation of foreign tourists is clear – Germans, the Czechs, Poles in Slovakia and the British, Germans and Ukrainians in Poland.

Each of the borderland areas studied possesses its specificity which provides a development opportunity of tourism diverse forms. In each of the mountain ranges hiking is developed and that is facilitated by perfectly developed tourist trail network. It is similar with ski tourism which is, however, a primary domain of the Tatra region (in particular, Wysokie Tatry), the Poprad Valley (Krynica Zdrój) or the Beskid region (in particular, the vicinity of Wielka Racza). Moreover, in the latest years equestrian tourism **is developing in the Bieszczady mountains, spa tourism in the Sącz Beskids and water tourism in the Pieniny mountains (the Dunajec River) and the Poprad Valley.**

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<sup>48</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGIPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>49</sup> **Możliwości poprawy dostępności i rozwoju turystyki na pograniczu polsko-słowackim.** Warunki rozwoju, rekomendacje i dobre praktyki, IGIPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>50</sup> **Możliwości poprawy dostępności i rozwoju turystyki na pograniczu polsko-słowackim.** Warunki rozwoju, rekomendacje i dobre praktyki, IGIPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>51</sup> The Slovak Republic Statistical Office

Furthermore, in the borderland studied there are excellent opportunities for sightseeing, cultural tourism, including folklore tourism (a large ethnic diversity).

More and more often tourist centres provide new seasonal attractions – ropes parks, climbing walls, bicycle and scooter rentals are created. The so-called teambuilding during which the following activities occur, among others, geocaching, paintball, balloon flights, paragliders, archery, is becoming popular. There are also more and more new attractions for children. An example of such attractions can be **Tatrzańska Dzikolandia** in Wysokie Tatry offering among others: Groundhog Land (ecominiipark) or numerous attractive educational paths<sup>52</sup>.

In 2010, 51 000 tourists visited the **Silesian Beskids and the Żywiec Beskids and Čadca** district was visited by nearly 23 200 tourists who spent almost 60 000 nights there (a half of nights was spent at **Oščadnica** ski centre).

According to TNP estimates, the number of tourists visiting the Polish Tatras every year amounts to 2,5 million (one of the most frequently visited regions in Poland)<sup>53</sup>. The most exploited regions of the Polish Tatras are: the vicinity of Morskie Oko, the Valley of the Five Polish Ponds, **Kasprowy Wierch, Giewont, Świnica and Rysy**. Tourists who visit the Polish Tatras not only come from Poland but also, among others, from Germany or Great Britain. In 2010 1, 6 million nights were spent in the Slovak area.

In 2010, 143 000 tourists used accommodation in the Polish Pieniny mountains. However, according to the PNP data, the park is visited by nearly 700 000 tourists annually<sup>54</sup>. The Pieniny National Park in Slovakia was visited by over 670 000 tourists in 2008.

In 2010, 62 000 tourists used accommodation in the area of the Poprad Valley (Muszyna commune). In 2009 over 30 000 tourists<sup>55</sup> visited Stara Lubowna district located on the other side of the border.

The least visited region of the borderland is the Low Beskids in which there were approximately 5 700 tourists in 2010. In Slovak part of the area visits of about 10 000 tourists were recorded in three districts in 2009.

According to the CSO official data, in 2010 over 35 500 tourists used accommodation in the Polish Bieszczady mountains and on the Slovak side 10 700 nights were spent in Sinina district in 2009<sup>56</sup>.

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<sup>52</sup> [www.vt.sk](http://www.vt.sk)

<sup>53</sup> According to some unofficial data, the Tatra National Park is visited by even 3,5 – 4 million tourists annually ([www.gazeta.pl](http://www.gazeta.pl))

<sup>54</sup> [www.pieniny.pn.pl](http://www.pieniny.pn.pl)

<sup>55</sup> The Slovak Republic Statistical Office

<sup>56</sup> The Slovak Republic Statistical Office

According to the Tourism Institute data, 0,9 million country tourists visited all Podkarpackie Voivodeship in 2009<sup>57</sup>. The same year, the number of Poles using collective accommodation buildings amounted to 591 900. In 2010, 2 107 672 nights were spent. The highest number of nights were spent in resort centres (526 247) and hotels (516 413)<sup>58</sup> (Figure 3).

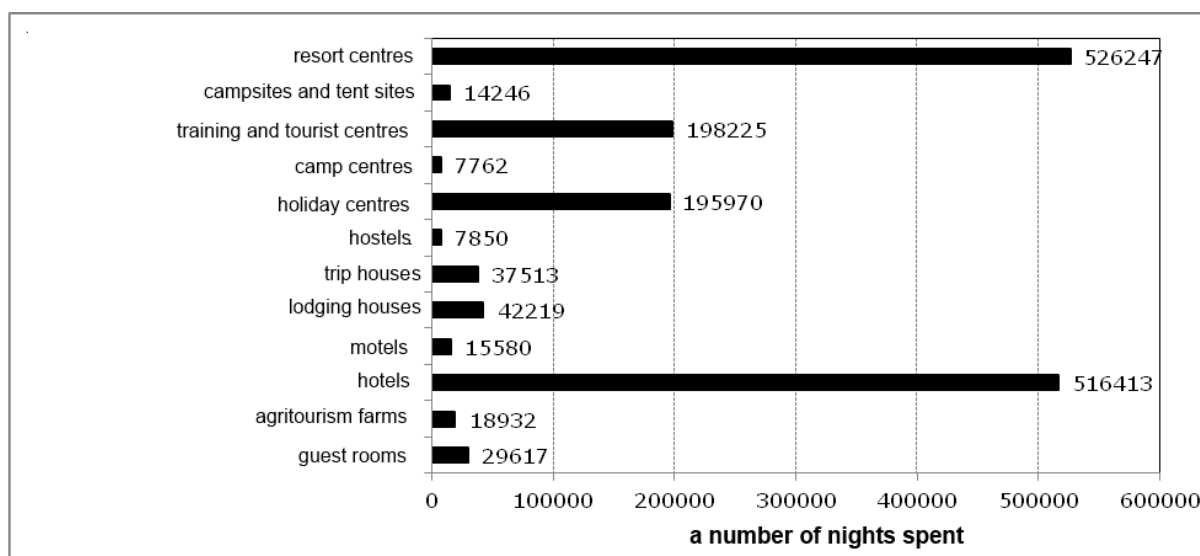


Figure 3. Use of different accommodation sites in Podkarpackie Voivodeship in 2009  
Source: an own study on the basis of: [www.intur.com.pl](http://www.intur.com.pl)

In 2010, in the Presov region located on the other side of the border 2 024 817 nights were spent, most of which in hotels (1 236 601). The number of the **region's accommodation places** amounted to 31 844 this year, including 12 597 places in hotels (Table 4). The highest number of nights was spent in Poprad and Bardejov districts<sup>59</sup>.

Category	accommodation sites	accommodation places	nights spent	accommodation users
<b>Hotels</b>	103	12597	1 236 601	406061
<b>lodging houses and private houses</b>	131	4453	158 725	64653
<b>Campsites</b>	8	3785	22 608	9133
<b>Others</b>	343	11009	606 883	131786
<b>Total</b>	<b>585</b>	<b>31844</b>	<b>2 024 817</b>	<b>611633</b>

Table 4. Accommodation sites and their use in the Presov region in 2010  
Source: an own study on the basis of: [www.statistics.sk](http://www.statistics.sk)

<sup>57</sup> [www.intur.com.pl](http://www.intur.com.pl)

<sup>58</sup> [www.stat.gov.pl](http://www.stat.gov.pl)

<sup>59</sup> [www.statistics.sk](http://www.statistics.sk)

#### 4. TRANSPORT INFRASTRUCTURE AND ACCESSIBILITY OF THE BORDERLAND PROTECTED AREAS

Many roads of international, national as well as local importance are running across the Polish-Slovak area studied. Transport accessibility of areas located in western part of the region, including the Beskids (Figure 4) is considerably higher. A transport corridor is running this way from the North to the South (Upper Silesia – north-western Slovakia). In this case, an asset is location in the vicinity of the Upper-Silesian Conurbation<sup>60</sup>.

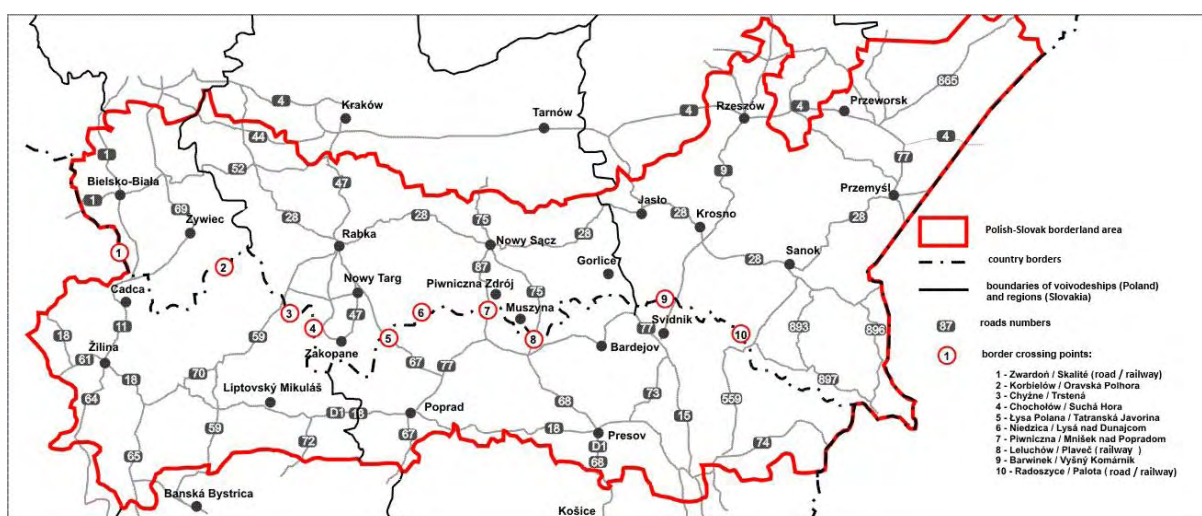


Figure 4. Main roads, railway lines and border crossing points in the Polish-Slovak borderland  
Source: an own study on the basis of: [www.statistics.sk](http://www.statistics.sk)

The lowest road density is characteristic for bieszczadzki and leski districts, a part of the borderland located furthest to the east. In 2007 as result of Poland and Slovakia's accession to the Schengen zone, a border control ceased to be in force. Till 2007 there were 16 road border crossing points and 3 railway crossings in the area studied (Figure 4). The highest road traffic was recorded at the following border crossing points: Chyżne – Trestena, Barwinek – Vyžny Komarnik, Chocholów – Sucha Hora and Łysa Polana Tatrzańska Jaworzyna<sup>61</sup>. High traffic also occurred at such border crossing points as Leluchów – Čirč, Niedzica – Łysa by the Dunajec River, Korbielów – Oravska Polhora and Piwniczna – Mniszek by the Poprad River.

<sup>60</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012

<sup>61</sup> The Border Guard Headquarters data

The borderland railway crossings are: **Zwardoń** – Skalite, Muszyna – Plavec (suspended lines) and **Łupków** – Medzilaborce (suspended lines). Out of the above mentioned, the highest traffic was noted at **Zwardoń** – Skalite crossing in 2007.

The following country roads in Poland are of an international importance: No. 69 (from Bielsko-**Biała** to the border with Slovakia in **Zwardoń**), No. 7 (a section of E77 **European road from Żuków near Gdańsk to the border in Chyžne**, across Slovakia to Budapest), No. 49 (from Nowy Targ to the border with Slovakia in Jurgów), No. 87 (from **Nowy Sącz** to the border with Slovakia in Piwniczna) and No. 9 (from Radom to the border with Slovakia in Barwinek). Moreover, roads of considerable importance for the region studied, increasing transport accessibility in the Polish part of the area are: a country road No. 4 (E40, A4 Motorway, Tarnów – Korczowa, to the border crossing point with Ukraine) and No. 28 (the so-called Carpathian route, Zator – Medyka, to the border crossing point with Ukraine). In addition, other important transit routes are the following country roads: No. 52 (**Bielsko-Biała** – **Głogoczków**), No. 75 (Kraków – Muszynka) and No. 84 (**Sanok-Krościenko**, to the border crossing point with Ukraine). Numerous voivodeship and local roads in the region complete the line network.

Till January 1st, 2011 in the Slovak area there were 149 km of motorways (D1 and D3), 4,3 km of motorway connector passages and 22,3 km of dual carriageways (R3 and R4)<sup>62</sup>. Total length of road network in the **Žilinski** region and the Presov region is 5 202,6 km. The designed D1 motorway (E50), running along country roads No. I/18 and I/68 from Bratislava through Trenčyn, Poprad, Presov to Koszyce (a **Žylina** – Koszyce section is to be finished in 2017) is of the greatest importance for the borderland. Total length of I-class roads amounts to 1133,37 km. The most significant road in the Slovak part of the borderland is a road I/18 (parallel to D1 route) from Slovak-Czech border through **Žylina**, Liptowski Mikulasz, Poprad, Presov to Michalovce (direction east-west). What is more, roads No.: I/73 (Barwinek – Svidnik and further in the direction of Koszyce), I/77 (Spiska Bela - Svidnik), I/68 (Presov – Piwniczna through Sabinov and Presov), I/78 (Oravski Podzamok – Namestovo – Glinne Pass), I/67 (Telgart – Poprad – **Jaworzyna Tatrzńska** – **Łysa Polana**), I/59 (**Chyžne** – Dolny Kubin – **Ružomberk** – **Bańska Bystrzyca**) and I/11 (Cieszyn – **Čadca** – **Žilina**) are of essential importance. Moreover, from the regional point of view the following roads are important: I/15, I/74 (eastern part of the borderland) and I/64, I/72 (western part of the borderland).

<sup>62</sup> Pogranicze polsko-słowackie. Dostępność transportowa a turystyka., IGiPZ PAN, GuSav, Warsaw – Bratislava 2012



The largest road junctions in the Polish part of the borderland are: **Bielsko-Biała, Rabka, Nowy Sącz, Gorlice, Jasło, Krosno, Sanok, Przemyśl** and **Rzeszów**. On the Slovak side these are: **Presov, Poprad, Ružomberk, Dolný Kubín, Martin** and **Žilina**. For transboundary traffic in the borderland traffic junctions of the highest importance are: **Svidník, Stara Lubovna, Spiska Bela** and **Čadca**. Transport accessibility of mountain protected areas is higher in western part. Landscape parks in this region because of Silesian cities closeness, are accessible with respect to road as well as railway infrastructure.

Similarly as in case of road network, railway line network in the Polish part of the borderland is more developed in its western part. Low density of railway network in the area of the borderland is related to landform (a mountain area). Two most significant railway routes of the region running latitudinally are lines<sup>63</sup>: an arterial route No. 91 (Kraków – Medyka, a section of E30 international route) and a railway road created by a few lines: **108 (Krościenko – Stóże), 96 (Tarnów – Leluchów, to the border with Slovakia, further in the direction of Plaveč), 98 (Chabówka – Sucha Beskidzka), 97 (Skawina – Żywiec) and 139 (Katowice – Skalité, to the border with Slovakia, further in the direction of Žilina)**. Furthermore, with respect to transport accessibility of the borderland protected areas the following railway lines are of essential importance: No. 107 (Zagórz – Łupków, to the border with Slovakia and further in the direction of Medzilaborce), No. 106 (Rzeszów – **Jasło**), No. 105 (Muszyna Zdrój – Krynica Zdrój), No. 99 (Chabówka – Zakopane), No. 117 Kalwaria Zebrzydowska Lanckorona – **Bielsko Biała**), No. 190 (**Bielsko-Biała** – Cieszyn), No. 191 (Goleszów – **Wisła**), No. 117 (Kalwaria Zebrzydowska – **Bielsko-Biała**) and No. 101 (Munina – Hrebenne).

In the Slovak part of the borderland a **Bratislava – Žilina – Koszyce** railway line is of greatest importance (the most significant railway line of all Slovakia, No. 180) through: **Martin, Ružomberk, Liptowski Mikuláš, Poprad, Kieżmark** (to the border with Poland in Leluchów and to Koszyce). Essential lines in eastern part of the region are: No. 191 Michalany - Medzilaborce – **Humenne (Łupków)** and in western part **Trestena – Dolný Kubín – Martin/Ružomberk** and **No. 129 Žilina – Čadca** (to the border crossing point in Skalité). Another vital railway line of the borderland is a line No. 188 (Presov – Plavec – Muszyna, a border crossing point in Leluchów). The following three railway lines are crossing the Polish-Slovak border: No. 129, No. 188 and No. 191 (the last two lines have been suspended as a result of unprofitability).

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<sup>63</sup> [www.pkp.pl](http://www.pkp.pl)



The most significant railway junctions in the Polish part of the borderland are: **Bielsko Biala, Kalwaria Zebrzydowska Lanckorona, Sucha Beskidzka, Chabówka, Zakopane, Nowy Sącz, Stróże, Jasło** and **Zagórz**. On the Slovak side the junctions are: **Žilina, Martin, Poprad** and **Presov**.

Transport junction of the Żywiec Valley is City **Żywiec** from which buses are going to the majority of mountain towns and villages located in **Żywiec Landscape Park** and **Silesian Beskids Landscape Park** (the largest number of lines is going to **Rajcza**). **Istebna** is well-communicated with **Wisła** and then with **Cieszyn** and **Katowice**. Country roads No. 52 and 69 as well as voivodeship roads No. 941, 942, 943, 945, 946 and 951 are running in the vicinity. A local road No. 487 linked in Slovakia with a country road No. I/11 (**Čadca, Žilina**) and **I/69 (Żywiec, Bielsko-Biala)** provide a connection of the region to the Slovak area. Another road linking both countries in the region of the **Żywiec Beskids** and the **Orava Beskids** is a Polish voivodeship road No. 945 (to the border in **Korbielów**) and then a local road No. I/78 in Slovakia (**Námestovo**). The most vital railway lines in this part of the borderland are roads No. 127 and 129.

In Slovakia in the Beskid region narrow-gauge railway lines are: **Historická Lesná Uvraťová Železnica** in **Nowa Bystrzyca – Vychylovce** and the **Orava Forest Rail**. However, they are only used for tourist purposes.

The easiest way to get to the **Babia Góra National Park** is going along a voivodeship road No. **957 (Maków Podhalański-Jabłonka)**, in the vicinity also country roads No.: 7 (from the east) and 28 (from the north-east) are running. The nearest transboundary road in the vicinity is a road No. 945 to **Glinne Pass** to **Námestov** (a road No. 78). A railway line running in the vicinity is a line No. 97 (**Skawina – Żywiec**).

The **Tatra National Park** is well-communicated thanks to a large municipal centre located at its foot – **Zakopane** to which a country road No. 47 (the so-called **Zakopianka**) and a voivodeship road No. 958 are running. In western part of the region **E77** country road enables connection with **Dolny Kubin, Martin, Žilina** and **Rožemberk**. A voivodeship road No. 958 (Poland) with a local road No. 520 (Slovakia) through **Chocholów** enables a similar connection. From the east border crossing is possible by a country road No. 49 (**Jurgów**), connected to a road No. 67 in Slovakia (**Zdziar, Bielanske Tatra mountains**). What is more, this region is also linked with Poland by a road No. 960 from **Bukowina Tatrzńska**. On Slovak side transport accessibility of the region is considerably better than on Polish side (**D1** motorway running latitudinally, a road **I/18** and a railway line **Bratislava – Žylina – Koszyce**). From the viewpoint of tourist traffic a so-called small

Tatra loop (a road No. 537) and its connections with a road I/18 are essential. A railway line No. **180 (Žylina – Koszyce)** and lines of the Tatra Electric Railway No. 182, 183 and 184 are running across the region.

A voivodeship road No. 969 facilitates access to the Pieniny National Park (**Krościenko** by the Dunajec River). From western and southern side only local roads facilitate access to the park. Its accessibility is also limited from the east both on Polish and Slovak side. The most vital roads on Slovak side are roads No. 542 and 543. A border crossing point **Leśnica – Szczawnica** (PNP) and a footbridge on the Dunajec River **Czerwony Klasztor – Sromowce Niżne** are used for local tourist traffic. No railway line leads to the vicinity of the park.

In the Poprad Valley country roads No. 87 and 75 as well as voivodeship roads No. 971 and 997 facilitate access to protected areas (Poprad Landscape Park). Important transport junctions are: **Nowy Sącz** and Krynica Zdrój. A country road No. 87 running through Piwniczna Zdrój ( a border crossing point – Mniszek by the Poprad River) to a road No. 68 in Slovakia (Stara Lubowna) facilitates connection with Slovakia. A road of high landscape values is a voivodeship road No. 971 running along the Poprad River flowing along the border across Muszyna and **Żegiestów Zdrój**. On Slovak side near Muszyna a road No. 77 (to Bardejov and Svidník) is running which facilitates access to the Slovak mountain range that is **Lubowniańskie Wierchy**. Western part of the Slovak part of the region is unfavourably located in transport network layout.

In the vicinity of the Magura National Park two voivodeship roads: No. 981 and 993 are running. The most significant transport junction in the region is Gorlice as well as **Żmigród and Iwonicz Zdrój**. Local roads are running through Bartne, Krempna and Osiek Jasielski. From eastern side (Dukla) it is easiest to get by a country road No. 9 (E371). This road links the region with Slovakia (Svidník) through Dukla Pass and Barwinek (a road No. I/73). In the vicinity also a **railway line from Zagórz to Łupków and Medzilaborce** is running, being at present in a poor technical condition. A border crossing Barwinek – **Vyžny Komarnik** is one of the busiest points in the borderland. On Slovak side II-class roads: No. II/559 (Humenne – Medzilaborce – a border at the Beskid Pass) and II/575 (Stropkov-Medzilaborce – a border crossing in Palota/Radoszyce) are of great importance. In the vicinity there is also a railway line No. 191 (Michalany - Medzilaborce – **Łupków**). However, transboundary lines were suspended in 2011 because of unprofitability.

The further to the east of the area studied the smaller transport accessibility and the fewer roads linking both borderland countries. The Bieszczady National Park and at

the same time, The **International Nature Reserve "Eastern Carpathians"** can be accessed by a country road No. 84 from the north and a voivodeship road No. 896 from the east. From the north and west it can be accessed by voivodeship roads No. 894, 893 and 897. The Bieszczady Forest Rail is a railway line used exclusively for tourist purposes. A road transport axis on Slovak side is a road No. **II/558 Stakčín – Ulič**. There are no I-III-class roads leading to the border with Poland (Bukovskie Wierchy orographic barrier). A regional railway line No. 196 (Humenne – **Stakčín**) is leading to the **Poľoniny** region.

Total roads length in the area of Podkarpackie Voivodeship amounts to 18 370,3 km<sup>64</sup>. Two vital international roads are running here: E40 (Zgorzelec-Lwów) and E37 linking the Podkarpacie region with the Presov region through the Dukla Pass. In general, 7 country roads and 39 voivodeship roads are running across Podkarpackie Voivodeship<sup>65</sup>. Numerous roads locally vital (district as well as communal roads) are of supplementary importance. In the area of Podkarpackie Voivodeship railway lines length amounts to 1 027km<sup>66</sup>. The main railway transport axis is a main line No. 91 (Kraków – Medyka, the section of E30 international route). In addition, a dozen or so railway lines of local character are running across the voivodeship area. In the Dynów Foothills at some distance from the border a narrow-gauge railway line is running from Przeworsk to Dynów – the Przeworsk Commuter Rail which provides tourist transport<sup>67</sup>.

In the Presov region roads length amounts to 3 160,633 km (over 600 km are the so-called first-class roads). The main road axis (east-west) is the designed D1 motorway (E50), running by country roads No. 18 and 68 from Bratislava through Trenczyn, Poprad, Presov to Koszyce. A country road No. 73 (E371) linking Barwinek with Presov and Svidnik is also of international importance. Country roads No. 74 (Ukraine-**Stražske**), No. 77 (Spiska Bela-Svidnik) and No. 68 (Koszyce-Piwniczna) also constitute a road network of the Presov region. Local roads, including a road No. 537 running at the foot of the Tatra mountains along which the Tatra Electric Rail route is running, are of supplementary importance. It links Liptowski Mikulasz with Szczyrbskie Pleso, Stary **Smokowiec** and **Tatrzańska Łomnica** and possesses numerous connections to E50 international road.

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<sup>64</sup> [www.stat.gov.pl](http://www.stat.gov.pl) (data as for 2010)

<sup>65</sup> **Dobre praktyki w zakresie istniejących połączeń i linii kolejek wąskotorowych w województwie podkarpackim i regionie preszowskim na Słowacji, RARR – ASM, Kutno – Rzeszów, 2012**

<sup>66</sup> [www.stat.gov.pl](http://www.stat.gov.pl) (data as for 2010)

<sup>67</sup> [www.pogorzanin.pl](http://www.pogorzanin.pl)

Among railway lines in the Presov region line Martin – Liptowski Mikulasz – Poprad and lines from Poprad **through Kieżmark to Stara** Lubowla and from Sabinovo to Presov are of highest importance. Eastern part of the region is in this case much poorly communicated – Bardejov possesses a line linking it with Presov, Medzilaborce and Vranov by the Toplou with Humenne. Svidnik and Stropkov do not possess railway lines.

## **5. REALISED PROJECTS ON SUSTAINABLE TRANSPORT IN THE POLISH-SLOVAK BORDERLAND**

One of characteristic integration phenomena in Europe is cooperation of local governments – authorities and self-governing communities. Transboundary cooperation is one of its forms on a local level, which is written in sustainable development principles.

A fundamental objective of the European Territorial Cooperation (ETC) is integration of the European Union countries by development of common regional initiatives, including among others, natural environment and cultural heritage protection, development and common infrastructure usage and transport accessibility improvement<sup>68</sup>.

A form of transboundary cooperation is euroregions. In the Polish-Slovak borderland these are: "The Carpathians" Euroregion (Poland, Slovakia, Hungary, Ukraine, Romania), "The Tatras" (Poland, Slovakia) and "the Beskids" (Poland, the Czech Republic, Slovakia). The first one, created in 1993, was "The Carpathians" Euroregion whose fundamental objective was integration of particular countries peripheral areas. "The Tatras" Euroregion activity objective is, above all, cooperation related to natural environment protection, on the other hand, the Beskids Euroregion operates aiming at local communities cooperation in the Polish-Slovak borderland.

The Community Initiative Programme INTERREG IIIA Poland – the Slovak Republic 2004-2006 aimed at, above all, realisation of projects directed at public welfare. Among actions realised from the programme were also those related to transport infrastructure and environment protection development. Continuation of transboundary cooperation programmes INTERREG III 2004-2006 is European Territorial Cooperation (ETC)<sup>69</sup>.

Within the EU cohesion politics for the period of 2007-2013 Objective III has been determined – European Territorial Cooperation covering transboundary cooperation programmes. In the Polish-Slovak borderland Transboundary Cooperation Programme the Polish Republic – The Slovak Republic 2007-2013 (TCP) is realised. One of its

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<sup>68</sup> [www.ewt.gov.pl](http://www.ewt.gov.pl)

<sup>69</sup> [www.euroregion-tatry.eu](http://www.euroregion-tatry.eu)

objectives is transboundary infrastructure development (priority I). Priority axis III is support of local initiatives through microprojects realisation (Microprojects Fund TCP PL SK 2007-2013)<sup>70</sup>.

Within microprojects, among others, initiatives related to development, modernisation of tourist infrastructure (paths, tourist routes, local roads, etc.) are supported as well as realisation of small infrastructural investments.

Participation of Polish and Slovak beneficiaries in TCP microprojects is co-financed from the European Regional Development Fund (ERDF) at the amount of up to 85% of eligible costs incurred (on the basis of costs incurred reimbursement)<sup>71</sup>. Among supported initiatives there were, among others, protection and maintenance of cultural heritage, natural values promotion and realisation of infrastructural investments related to initiatives of tourist and sports character as well as related to environment protection.

During the first recruitment within TCP (to a half of 2009) in the Carpathian Euroregion, 43 microprojects were granted in the Polish area the majority of which concerned natural and cultural heritage. In "the Tatras" Euroregion 56 microprojects were realised and in "The Beskids" Euroregion - 49 microprojects. On Slovak side, within TCP in the Presov region 48 microprojects were realised and in the **Žilinskí** region - 36 mikroprojects. Primary microprojects beneficiaries are local governments, cultural institutions, tourist organisations as well as non-governmental organisations.

Selected microprojects on transport infrastructure development, including alternative transport realised in the period of 2007-2013 are presented in Table 5. The projects concern, above all, reconstruction, development and building new roads and paths enabling mobility for **tourists and the region's inhabitants within both borderland countries**<sup>72</sup>. They constitute a considerable part of all TCP microprojects realised in the borderland, however, their subject area is also sewage infrastructure improvement of borderland communes, cooperation platforms formation between towns and villages, the **region's cultural and natural heritage protection and** ecological modern technology implementation or new tourist products development (including many cultural and sports events).

Many microprojects assume transport accessibility improvement and make it easier to get to towns and villages on both sides of the border (among others, a border crossing Niedzica/Lysa by the Dunajec River in the Pieniny mountains or **Ożenna in the Low Beskids**). A good example of the borderland road infrastructure condition

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<sup>70</sup> [www.euroregio-beskidy.pl](http://www.euroregio-beskidy.pl)

<sup>71</sup> [www.karpacki.pl](http://www.karpacki.pl)

<sup>72</sup> [www.plsk.eu](http://www.plsk.eu)

improvement is a **microproject realised in Rajcza, Ujszoły and Novot communes** (the **Żyliński** region), where roads modernisation takes place in order to improve connections of both areas and as a result, it bears fruit in their better accessibility and the increase of their popularity among tourists. The project covers modernisation of a uniform road stretch (a key regional transport artery): a district road Rajcza – Ujszoły – a country border. On Slovak side a road running through Novot, by which it shall be possible to get faster to the border in Oravska Polhora, is subject to redevelopment.

An example of other actions is a microproject entitled "The Bystrzycka Valley Microregion" realised in Rajcza and Milówka communes on Polish side as well as in the **Bystrzycka Valley in Żyliński** region in Slovakia. The project is oriented on redevelopment of road infrastructure and paths for tourist traffic (among others, cycle trails, cross-country skiing trails) with consideration of alternative forms of transport. Partly, the road is running along a former narrow-gauge route of the Kusycka Forest Rail.

Of great importance in transboundary tourist traffic is a project realised in the Pieniny mountains (Czorsztyn commune/Czerwony Klasztor commune), where pavements have been built linking historic tourist resorts on both sides of the border (earlier, within PHARE programme a footpath for transboundary traffic has been built on the Dunajec River).

Pos.	Project partners	Project name
<b>Bielsko-Bialski Region</b>		
1.	Istebna Commune/ <b>Čierne</b> Commune/ Skaliste Commune ( <b>Żyliński</b> country)	"Creation of a new transportation line between Polish and Slovak communes"
2.	Rajcza commune/ <b>Ujszoły</b> commune/ Novot commune ( <b>Żyliński</b> country)	" <b>The Żywiec district roads modernisation in Rajcza, Ujszoły and Novot communes</b> with an aim to improve connections of areas on Polish and Slovak side of the border"
3.	Rajcza Commune/ <b>Oščadnica</b> commune ( <b>Żyliński</b> commune)	"Rajcza – <b>Oščadnica</b> Road Infrastructure Modernisation"
4.	Istebna Commune/ <b>Čierne</b> ( <b>Żyliński</b> country)	"Polish-Slovak borderland transport accessibility improvement with an aim to increase attractiveness of Polish-Slovak borderland"
<b>Nowy Sącz Region</b>		
1.	The Institute of Geography and Spatial Management of Polish Academy of Sciences / the Institute of Geography of Slovak Academy of Sciences	"Determination of tourist potential increase opportunities as a result of transport accessibility improvement and knowledge as well as good practices transfer from scientific sector to administration sector" (2 publications)
2.	Szczawnica town and commune/ Lesnica commune (the Presov region)	"Tourist infrastructure quality improvement in the area of the Pieniny National Park"
3.	Gorlicki district/ Jasielski district/ Bardejov district (the Presov region)	"Road infrastructure development between gorlicki, jasielski and bardejowski districts"
4.	Roads Administration of Presov Region	"Improvement of safety and transport accessibility and spatial integration of the Polish and Slovak borderland area by improvement of road infrastructure leading to an international border crossing Niedzica-Lysa by the Dunajec River on both sides of the border"
5.	<b>Żyliński</b> Region, Bobrov Commune (the <b>Żyliński</b> region)/ <b>Małopolskie</b> Voivodeship	"Orava Road" – <b>modernisation of Jabłonka – Lipnica Wielka – Bobrov – Zubrohlava road stretch</b>
<b>Krosno and Przemyśl Region</b>		



1.	Zarszyn commune/ Niżna Sitnica commune (the Presov region)	"Transboundary infrastructure development through local roads modernisation in Zarszyn and Niżna Sitnica communes"
2.	Krosno district, Roads Administration of Presov Region / Jasło district	"Road infrastructure development between krośnieński, jasielski and bardejowski districts"
<b>The Žilinski region</b>		
1.	The Bystrzycka Valley Microregion (Žyliński region)/ Rajcza commune/ Milówka commune	"The Bystrzycka Valley Microregion – the increase of traffic infrastructure quality with particular consideration of alternative transport types"
<b>The Presov region</b>		
1.	Osturňa Commune (the Presov region)/ Łapsze Niżne commune	"Accessibility, safety, infrastructure improvement on Polish –Slovak borderland"
2.	Czerwony Klasztor Commune/ Czorsztyn commune/District Roads Administration/Štátne lesy TANAP-u (Forests Administration of the Tatra National Park)	"Transboundary footpath building in Czerwony Klasztor and Sromowce Niżne linking places of Polish-Slovak borderland"
3.	Bukowina Tatrzańska Commune/ Spiska Bela town (the Presov region)	"Tatry Bialskie – together and better"
4.	Łapsze Niżne Commune/ Spiska Stara Wieś town	"Common Spisz tourist area"
5.	Roads Administration of Presov Region/District Roads Administration in Nowy Targ/ Spišská Stará Ves town/ Osturňa commune	"Modernisation of Osturňa – a country border – Niedzica road infrastructure"
6.	Roads Administration of Presov Region /Sanok district	"Road infrastructure development between Medilaborce, Humenne, Snina, Sanok districts"

Table 5. Selected TCP microprojects realised between 2007-2013 in the Polish-Slovak borderland area (concerning transport infrastructure)

Source: an own study on the basis of: [www.plsk.eu](http://www.plsk.eu)

Spiska Bela town in Slovakia and **Bukowina Tatrzańska** commune realise a project within which a cycle lane connected to the designed cycle route around all the Tatra mountains is formed.

Except road infrastructure development, many projects also aim at creating new information points for tourists and inhabitants (e.g. info-kiosks), cultural centres, issuing common promotional materials, ecological or regional education, cultural events organisation, etc.

The projects discussed, thanks to a build-up or modernisation of transport infrastructure, facilitate contacts development between inhabitants of both borderland **sides and creation of common tourist offer strengthening the region's economic potential** (new tourist products). According to the principles of sustainable development, improvement of transport **services quality increases the region's competitiveness**, develops tourist traffic and as a consequence, leads to life level improvement of local communities.

## 6. THE ANALYSIS OF EXISTING BORDERLAND TRANSPORTATION LINES

The analysis describes all uppermost regions of Polish–Slovak borderland with respect to current timetable railway and bus lines. It shows transport possibilities to the most vital protected areas. Here description of three narrow-gauge railways which enable to get to the most environmentally valuable places of the area studied with simultaneous respect of sustainable development principles takes a special place. Particular attention has been drawn to transboundary lines giving a potential opportunity of free travel between both countries discussed.

### 6.1. Railway lines

On Polish side of the borderland the following transport companies: PKP Inter City S.A., Przewozy Regionalne Sp. z o.o. and Polskie Koleje Linowe S.A. (mountain funicular railways) provide railway services. **Spółka PKP Polskie Linie Kolejowe S.A.** is an administrator of infrastructure and stations. A country is responsible for railway transport in Slovakia (**Železnice Slovenskej Republiky**) (**ŽSR**) company.

3 railway lines are running across the border in the borderland area discussed: No. **129 (Čadca – Skalite Serafinov – Zwardoń)**, No. 188 (Koszyce – Plavec – Muszyna) and No. 191 (Michalany – Medzilaborce – **Łupków**). Trains traffic at a border crossing in Muszyna and Medzilaborce – **Łupków** lines have been suspended because of unprofitability.

Definitely, the Beskid region is best communicated with respect to transboundary railway lines. A vital transport junction of the Beskid region is **Čadca** on Slovak side to which **railway lines from Žilina and from the Czech Republic (Jablunkov)** are running. 4 trains a day run along a line No. 129 **from Zwardoń to Čadca town**<sup>73</sup>. Those rides except one take place in the afternoons, there are no night rides. There are only 3 return trains to **Zwardoń**. There are more rides from border Skalite Serafinov station (additional 4 rides) or from Skalite village (additional 4 rides).

This line is connected on Slovak side to a railway line No. **127 (Žilina – Čadca – Mosty u Jablunkova, Slovak-Czech border)**. 14 trains a day run along a line **Čadca – Žilina**<sup>74</sup>. **Stopping trains run in the morning from Žilina, Čadca and Skalite-Serafinov to Oščadnica station, located on the railway route.**

There are 17 connections a **day from Zwardoń to Katowice and 5 to Žilina**. 6 trains a **day run from Katowice to Wisła, including two trains in the morning**. Also 6 trains a day

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<sup>73</sup> [www.rozklad-pkp.pl](http://www.rozklad-pkp.pl)

<sup>74</sup> [www.slovakrail.sk](http://www.slovakrail.sk)

run from **Częstochowa** but only one train arrives at morning hours. There are 6 return trains a day from **Wisła** to Katowice. The Beskid region on Polish side is also quite well communicated with respect to railway on a line **Żywiec – Milówka – Rajcza – Rycerka – Zwardoń** (13 rides a day, including 3 at early morning hours).

In general, The Tatra mountains are an easily accessible region, but this accessibility is much better on Slovak side. On Polish side of the borderland Zakopane possesses the highest number of railway lines with other cities<sup>75</sup>. There is a possibility of morning transport (the most convenient for tourists) to Zakopane by trains from Warsaw (Radom, Kielce), Szczecin (**Poznań, Kraków**) and from Gdynia (**Bydgoszcz, Łódź**)<sup>76</sup>. There is also a possibility of direct transport at morning hours from Cracow. Trains from Zakopane leave, among others, to Cracow, Warsaw, Gdynia and **Częstochowa**. In the evening it is possible to get from Zakopane to Gdynia, Warsaw and Szczecin.

On Slovak side railway transport is very well-developed, primarily due to a railway line No. 180 running at the foot of the Tatra mountains providing connections between eastern and western part of the Presov region and linked in Poprad with the Tatra Electric Railway. The analysis of transport lines condition shows that the region possesses many possibilities of sustainable transport. Frequent, convenient and ecological lines provide an opportunity of free travel between the most significant tourist centres in the region.

At morning hours it is possible to get to Poprad, among others, from Bratislava (14 connections during 24 hours) and Koszyce (30 connections during 24 hours) (a railway line No. 180). In the evenings there are lines to all places mentioned above. From early morning hours stopping trains run with a high frequency to the Stary Smokowiec **station from such stations as Poprad, Tatrzańska Łomnica and Szczyrbskie Pleso** (The Tatra Electric Railway – railway lines No. 183 and 184). Returns of trains at afternoon and evening hours take place more or less every hour.

In the Poprad Valley 8 trains a day run to Krynica Zdrój, including 4 trains from Cracow through **Tarnów and Nowy Sącz at morning hours**<sup>77</sup>. In the evenings transport is possible by two trains to Tarnów (through **Nowy Sącz**). There are no transboundary railway lines in the region.

There is a very convenient system of railway lines, in particular, a line No. 194 to Bardejov (Presov – Bardejov). There are 10 connections during 24 hours from Presov to

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<sup>75</sup> At the moment of writing this analysis railway lines have been suspended due to tracks repairs. Substitute bus transport has been running to places located closest

<sup>76</sup> [www.rozklad-pkp.pl](http://www.rozklad-pkp.pl)

<sup>77</sup> [www.przewozyregionalne.pl](http://www.przewozyregionalne.pl)

Bardejov, the majority of which at morning and evening hours. It is similar in case of return connections from Bardejov in the direction of Presov.

On a railway line No. 191 (Michalany – Medzilaborce - **Łupków**) trains run only to Medzilaborce (they do not reach a **station on Polish side of the border in Łupków**). From Humenne there are 11 railway connections to Medzilaborce, including 4 at morning hours.

## **6.2. Narrow-gauge railways**

In all Polish-Slovak borderland area studied 5 narrow-gauge railway lines have been inventoried, including two in Podkarpackie Voivodeship (the Przeworsk Commuter Rail, The Bieszczady Forest Rail), one in the Presov region (the Tatra Electric Railway) and two in **Žyľiński country** (**Historická Lesná Uvraťová Železnica in Nowa Bystrzyca** – the Vychylovce and Orava Forest Railway). A close description of infrastructure and connections of all listed railway lines is presented below.

### **6.2.1. The Przeworsk Commuter Rail (PCR)**

The Rail links Przeworsk and Dynów – towns located in the Dynów Foothills, between the **Wisłok and the San Valleys** in Podkarpackie Voivodeship. The line was created between 1900-1904 for the needs of a sugar plant in Przeworsk<sup>78</sup>. It was used to transport sugar beets to a sugar plant as well as: produce, wood, gravel and stone. A track gauge initially possessed by the Przeworsk Commuter Rail was 760 mm (characteristic for Austro-Hungarian monarchy). In 1950s a track gauge was replaced by 750 mm<sup>79</sup>. Before an outbreak of World War I passenger rail service was provided along this route. When the line was taken over by PKP after World War I, it started to collapse gradually. In 1925 it was transferred to private hands and since 1945, it was state-owned. Passenger traffic was finally suspended in 1985. Six years later the rail entered a list of relics.

In 2003 Local Railway Service Association in Kalisz launched tourist services in summer season. Since 2004 freight traffic has been activated. By virtue of a bailment agreement the Association is the railway operator up to now. A complicated proprietary situation (both District Starosty in Przeworsk, and Property Administration Office in

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<sup>78</sup> Dobre praktyki w zakresie istniejących połączeń i linii kolejek wąskotorowych w województwie podkarpackim i regionie preszowskim na Słowacji, RARR – ASM, Kutno – Rzeszów, 2012

<sup>79</sup> Kurowska-Ciechańska J., Ciechański A., 2011, Koleje w Polsce. Parowozy, wąskotorówki, dworce, muzea, Carta Blanca, Warsaw

Cracow) impedes actions aiming at a railway line development as a tourist attraction, including EU funds acquisition.

At present, the Przeworsk Commuter Rail provides mainly seasonal tourist services. The route length amounts to 46,25 km. It runs from the Przeworsk Wąskotorowy station (connection to a normal-gauge railway), through Kańczuga, Jawornik Polski, Hyżne and Dynów communes (a target rail station) (Figure 5).

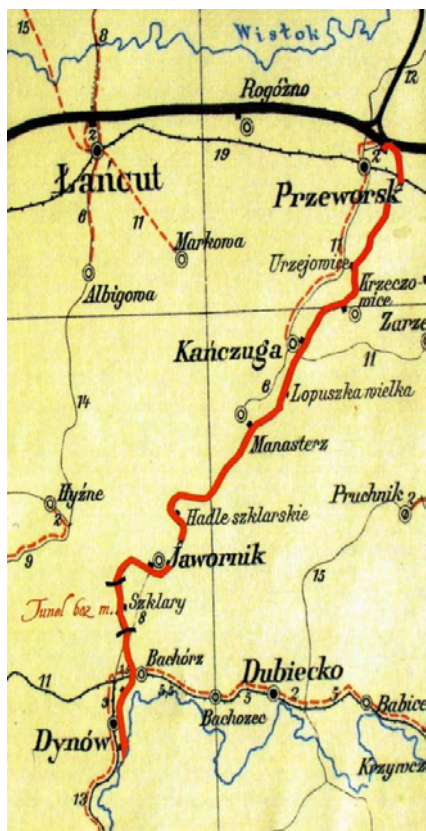


Figure 5. The Przeworsk Commuter Rail route  
Source: PCR promotional folder

There are 4 railway stations and 8 passenger stops on the route. The number of places in a train amounts to 280, including 160 in passenger carriages and 120 in "retro" carriages (with a roof, without windows). The rail is famous for the only in Poland on a route of narrow-gauge railways tunnel in Szklary 602 m long (entered to the register of monuments).

The train is running in summer season usually from the last Saturday of May to the end of August (Saturdays, Sundays)<sup>80</sup>. In September the train is running exclusively on Sundays. Table 6 presents the train's timetable. The train always leaves at 9.00 a.m.

<sup>80</sup> In 2013 the rail season starts on June 1st and ends on August 31st (Saturdays, Sundays). In September the rail train leaves only on Sundays

from the **Przeworsk Wąskotorowy** station<sup>81</sup>. A planned arrival of the train at the Dynów station is at 11.45 a.m., a return train from Dynów is at 2.30 p.m. (finally at the Przeworsk Wąskotorowy station at 5.10 p.m.).

Pos.	Station	km	to Dynów		to Przeworsk	
			Departure	arrival	departure	Arrival
1.	Przeworsk Wąsk.	0	9:00 a.m.	-	-	5:10 p.m.
2.	Urzejowice	9	9:23 a.m.	9:22 a.m.	4:45 p.m.	4:44 p.m.
3.	Krzeczowice	11	9:30 a.m.	9:29 a.m.	4:38 p.m.	4:37 p.m.
4.	Kańczuga	15	9:40 a.m.	9:38 a.m.	4:28 p.m.	4:26 p.m.
5.	Łopuszka Mała	18	9:47 a.m.	9:46 a.m.	4:20 p.m.	4:19 p.m.
6.	Łopuszka Wielka	19	9:52 a.m.	9:51 a.m.	4:15 p.m.	4:14 p.m.
7.	Manasterz	21	10:01 a.m.	10:00 a.m.	4:07 p.m.	4:06 p.m.
8.	Zagórze	24	10:11 a.m.	10:10 a.m.	3:57 p.m.	3:56 p.m.
9.	Hadle Szklarskie	29	10:22 a.m.	10:21 a.m.	3:44 p.m.	3:43 p.m.
10.	Jawornik Polski	33	10:42 a.m.	10:40 a.m.	3:26 p.m.	3:24 p.m.
11.	Szklary near the tunnel	36	11:07 a.m.	10:57 a.m.	-	-
12.	Szklary	38	11:15 a.m.	11:14 a.m.	3:06 p.m.	3:05 p.m.
13.	Bachórz	42	11:31 a.m.	11:28 a.m.	2:49 p.m.	2:44 p.m.
14.	Dynów	46	-	11:45 a.m.	2:30 p.m.	-

Table 6. The train timetable on the PCR route

Source: an own study on the basis of: [www.pogorzanin.pl](http://www.pogorzanin.pl)

Moreover, on the Dynów – Bachórz – Dynów route an additional free train is running. It leaves Dynów at 1.00 p.m., from Bachórz at 1.50 p.m. A planned arrival at the Dynów station at 2.00 p.m.

On the Dynów – Jawornik Polski – Dynów route an additional train operates (minimum a 40-person group, departure from Dynów at 12.00 a.m., return at 2.00 p.m.).

Additional attractions of the Przeworsk Commuter Railway are, among others, Galician Trolley Line, an opportunity to rent automotive trolleys and tunnel sightseeing in **Szklary**. On customer's request special rail services are launched (workplaces, offices and other organised groups). Rides by a 4-person trolley on the Bachórz – Dynów - Bachórz or Bachórz – Szklary tunnel – Bachórz routes are the latest PCR attraction.

**Ticket prices are dependent on the route's length** – the cheapest normal ticket costs 8 PLN (up to 10km), the most expensive – 26 PLN (92 km). Ticket fares are a primary source of financing the rail (an additional source is subsidies of the City Office and the Commune Office in Dynów. The train is adjusted to bicycles transportation (a carriage type *brankard*, adjusted to transportation of approx. 12 bicycles). PCR does not possess carriages adjusted to transportation of the handicapped, however, those persons **can use the service with an assistance of the rail's employees**. Between 2009-2010 a station building in Przeworsk was renovated in which there are a mini-museum and

<sup>81</sup> Kalisz Local Railway Service Association data as for 2011



a ticket office<sup>82</sup>. What is more, new boards were placed, a combustion trolley and points lamps were renovated.

The Przeworsk Commuter Rail is not an alternative sort of transport for the **region's inhabitants, it is primarily of tourist character**. Also freight services operate on a small scale (coal transportation to a private enterprise dealing with sale of fuel and **building materials in Kańczuga**).

Approx. 12 000 tourists<sup>83</sup> on average use the rail service in a tourist season (May-September). In 2012 during a tourist season "Pogórzezanin" transported 8 317 passengers, 46 rides took place (31 timetable trains and 15 special trains). Between 1993-2011, 715 timetable trains and 464 special trains left stations. On average during a year 34-48 timetable tourist trains and 20-30 special trains leave. Most often these are family services.

As a result of a convenient Przeworsk location (an initial rail station) towards the Podkarpacie region transport network (a country road No. 4, a voivodeship road No. 835, a railway line No. 91 and No. 68), the Przeworsk Commuter Rail could be an element of **the region's multimodal** transport in future. As an ecological sort of transport it could influence natural values retention of the Dynów Foothills and the San Valley.

**Przeworsk is best communicated with respect to railway lines with Przemyśl (through Jarosław) and Rzeszów (through Łańcut) (a dozen or so connections during 24 hours)<sup>84</sup>**. What is more, to Przeworsk trains run from Szczecin (through Cracow, Katowice, Poznań), from Skarżysko Kamienna (through Leżajsk, Nisko, Stalowa Wola and Starachowice), from Jelenia Góra (through Rzeszów, Cracow, Katowice, Opole and Wrocław), from Gdynia Główna (through Łańcut, Rzeszów, Cracow, Warsaw), from Łódź Kaliska (through Łańcut, Rzeszów, Cracow, Krzeszowice, Trzebinia), from Wrocław (through Łańcut, Cracow, Katowice, Gliwice, Opole), from Świnoujście (through Rzeszów, Cracow, Katowice, Wrocław and Poznań) and to Horyniec Zdrój health resort (through Pełkinie, Jarosław, Surochów). Above all, closeness of a normal-gauge railway station and the railway services adjustment to PKP timetable provide good accessibility of the Przeworsk rail.

In case of road transport, above all, E40 international road linking Przeworsk to Cracow, Tarnów and Rzeszów as well as a border crossing point in Korczowa (Ukraine) facilitates access to the rail. The rail station is located at a distance of 1km from a bus station. Distances from large municipal centres are not considerable, including the closest

<sup>82</sup> [www.pogorzanin.pl](http://www.pogorzanin.pl)

<sup>83</sup> Kalisz Local Railway Service Association data as for 2011

<sup>84</sup> [www.pkp.pl](http://www.pkp.pl)

distance with Rzeszów (38 km) and Przemyśl (47 km – through connection of an international road No. 4 to a country road No. 77). A voivodeship road No. 835 provides convenient connection with Lubelskie Voivodeship (Biłgoraj, Lublin) and a target rail station in Dynów.

#### **6.2.2. The Bieszczady Forest Rail (BFR)**

The Rail was created between 1895-1898. The first fragment of the rail was launched on the **Nowy Łupków – Majdan** route (24,2 km). Local Share Association was an initiator of this section creation. In 1911 administration was taken over by I.-R. Austro-Hungarian National Rails with management in Lwów. A primary rail function was wood transportation in the vicinity of Eastern Carpathians (numerous sawmills by the rail route), passenger rail services were also provided. Between 1900-1904 a line to Kalnica and Beskid was built (18 km). Before World War I the rail ran as far as to Strzebowiska near Wetlina and possessed branch lines to numerous sawmills. During World War I the rail functioned mainly for the needs of the army. In 1931 the rail was closed. It was launched again by Germans during World War II (considerable destruction). During the post-war period the rail was also subject to devastation (UIA). In 1950s in relation to **building a wood plant in Rzepedź** a line **Rzepedź – Mików** was launched. The present shape of the rail comes from the period of 1954-64 when it was considerably developed (numerous branch lines, total length of 104 km). Among others, a locomotive shed in **Rzepedź, workshops in Nowy Łupków** and a few station and residential buildings for the rail employees were erected. During the post-war period also 10 000 passengers were **transported annually**. **After the collapse of wood industry plants in Rzepedź**, the rail lost its importance. Eventually, in 1994 the Bieszczady Forest Rail was excluded from use.

In 1996 the Bieszczady Forest Rail Foundation (with a seat at Cisna) being the rail user until now was created<sup>85</sup>. **The Foundation's activity objective is the area tourist activation through the historic rail traffic retention which leads to natural environment condition improvement in the UNESCO International Biosphere Reserve "Eastern Carpathians".** The rail uniqueness is stressed by the fact that it is currently the only rail in Poland (and one of few in Europe) whose route is running in the mountain area. Rides on the BFR are only of tourist character – unfortunately, it is not an alternative sort of **transport for the region's inhabitants**.

During the last years the foundation conducted a range of inventory activities, including a station building renovation in Majdan. **Gradually it also enlarged the rail's**

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<sup>85</sup> Free use for an indefinite period of time. The Rail is a property of Cisna Forest Inspectorate and Komańcza Forest Inspectorate.

rolling stock – it bought new carriages (including 1 for transportation of the handicapped), locomotives and puffers. The foundation gains external subsidies, however, a primary source of financing the rail is tickets sale. In 2010 the foundation realised a large project partly co-financed from the European Union (ERDF). Within the project, among others, new public toilets at the railway station in Majdan were built, renovation of the track, locomotive shed and station buildings was made (information point, luggage office, warehouses).

The BFR route is leading through Lesko and Sanok districts, including Cisna and Wetlina Landscape Park (a natural protection of the Bieszczadzki National Park). In its vicinity there are many nature reserves (among others "Sine Wiry" and "Zwierzło"). The BFR route is presented in detail in Figure 6.

The number of tourists using the BFR services was increasing throughout the latest years<sup>86</sup>. In 2011, 73 048 rides took place. The highest number of tourists uses the rail in summer months (July, August).

The rail is running in season from May to the end of October on 2 routes<sup>87</sup>: Majdan-**Przysław**-Majdan and Majdan-Balnica-Majdan. On work days the train is running only in July and August. In other months the train is running only on Saturdays, Sundays and **holidays**. **The train to Przysław** is designed for transport of 210 tourists maximum (7 carriages for approximately 30 tourists each) and the train to Balnica can transport approximately 240 tourists (8 carriages).

According to the BFR timetable, there are 2 rail rides on the Majdan-**Przysław**-Majdan (12 km) route: the first train leaves at 10.00 a.m. (return to Majdan at 12.40 p.m.) and the second at 1.30 p.m. (return to Majdan at 4.10 p.m.).

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<sup>86</sup> The Bieszczady Forest Rail Foundation Data

<sup>87</sup> [www.kolejka.bieszczady.pl](http://www.kolejka.bieszczady.pl)



Figure 6. The Bieszczady Forest Rail Route  
Source: BFRF promotional folder

Two trains also run on the Majdan-Balnica-Majdan (9 km) route: the first one leaves at 10.30 a.m. (return to Majdan at 12.15 p.m.), the other at 1.00 p.m. (return to Majdan at 2.45 p.m.). Tables 7-10 present the BFR timetables. There is also a possibility of ordering a ride by a custom-made train as well as a ride by a 10-person trolley.

Pos.	Station	Km	Hour	
			ride 1	ride 2
1.	Majdan	0	10.00 a.m. (departure)	1.30 (departure)
2.	Cisna	2	10.15 a.m.	1.45 p.m.
3.	Dołżyca	5	10.30 a.m.	2.00 p.m.
4.	Przysłop	12	11.10 a.m. (arrival)	2.40 p.m. (arrival)

Table 7. The BFR timetable on the Majdan-Przysłop route  
Source: The Bieszczady Forest Rail Foundation Data

Pos.	Station	Km	Hour	
			ride 1	ride 2
1.	Przysłop	0	11.30 a.m. (departure)	3.00 p.m. (departure)
2.	Dołżyca	7	12.10 p.m.	3.40 p.m.
3.	Cisna	10	12.25 p.m.	3.55 p.m.
4.	Majdan	12	12.40 p.m. (arrival)	4.10 p.m. (arrival)

Table 8. The BFR timetable on the Przysłop-Majdan route  
Source: The Bieszczady Forest Rail Foundation Data

Pos.	Station	Km	Hour	
			ride 1	ride 2
1.	Majdan	0	10.30 a.m.	1.00 p.m.
2.	Balnica	9	11.15 a.m.	1.45 p.m.

Table 9. The BFR timetable on the Majdan-Balnica route  
Source: The Bieszczady Forest Rail Foundation Data

Pos.	Station	Km	Hour	
			ride 1	ride 2
1.	Balnica	0	11.30 a.m.	2.00 p.m.
2.	Majdan	9	12.15 p.m.	2.45 p.m.

Table 10. The BFR timetable on the Balnica-Majdan route  
Source: The Bieszczady Forest Rail Foundation Data

During winter holidays rail services on the Majdan – **Dołżyca** – Majdan route are launched on Fridays and Saturdays at 12.00 a.m.

The only station building is located in Majdan. Here there are: a tourist information stand, a ticket office, offices, an audiovisual hall, museum rooms, a traffic room, public toilets and parking lots. In Majdan there is also a renovated locomotive shed. There is also an opportunity of purchasing gastronomic regional products at the station (honeys, bakery products, cheeses). Moreover, there is a restaurant carriage in a train and a carriage in which a sale of regional souvenirs is organised.

Ticket prices for the BFR ride **are diverse and they depend on the route's length**. The cheapest normal ticket – 12 PLN on the Majdan – Balnica route, the most expensive on the Majdan – **Przysłop** – Majdan route – 21 PLN.

**The rail is not an element of the region's multimodal transport.** Poor transportation network (a protected area) prevents adequate connection of the rail to other sorts of transport. A voivodeship road along which the BFR route is running is a road No. 897 **connecting Tylawa to Wołosate** (called the Great Bieszczady Ring Road on the route between Cisna and Ustrzyki Górne). The road from Cisna is connected to a road No. 893 to Lesko and **in Komańcza** to a road No. 892 from Zagórz and Sanok. A railway line running in the vicinity is a line No. **108 (Stróże – Krościenko, through: Jasło, Krosno, Sanok, Zagórz, Ustrzyki Dolne)**. The nearest railway station is Zagórz from which there are a few lines **a day to Sanok, Jasło, Łupków through Komańcza** and to Rzeszów. However, Sanok provides convenient bus lines with many cities in Poland (**Częstochowa, Gdańsk, Katowice, Cracow, Łódź, Lublin, Opole, Przemyśl, Rzeszów, Toruń, Warsaw**)<sup>88</sup> and many small towns and villages in the area of the Bieszczady mountains (Wetlina, **Komańcza, Łupków, Cisna, Wetlina**). From Sanok there are morning connections to the station in Majdan which enable connection to the BFR and synchronizing them with its timetable.

<sup>88</sup> [www.e-podrozik.pl](http://www.e-podrozik.pl)



The Bieszczady Forest Rail strongly modernised in the latest years could be potentially an ecological transport **alternative for the region's inhabitants** with respect to the fact that transport infrastructure is not well-developed in the Bieszczady region.

### **6.2.3. The Tatra Electric Railway**

Unlike the Podkarpacie region railway lines described, this rail constitutes an essential transport system of the Presov region, which enables tourists to get to the most significant tourist attractions of the High Tatras (to vital starting points to the Tatra routes of the **Mięguszowiecka Valley**, the Wielicka Valley and the Velka Studena Valley). Tourist routes starting by the rail route lead, among others, to the vital Tatra mountain huts – **Śląski Dom, Chata Teryho**. The rail enables getting to the UNESCO transboundary Biosphere Reserve mountain protected areas. It is also a **vital element of the region's** ecological multimodal transport – two rail rides in an interval of 30 minutes can transport 400 passengers, which means 5-6 rides at the same time by bus transport<sup>89</sup>.

The rail route is running along the so-called Freedom Road (a local road No. 537) and connects tourist and health resorts of Wysokie Tatry settlement erected in 1947 (among others, **Szczyrbskie Pleso, Vyžne Hagi, Podbańskie, Stary Smokowiec, Tatrzańska Łomnica**). In addition, Poprad's location by a primary railway route of Slovakia Bratislava – **Žilina** – Koszyce is of great significance.

At the foot of the High Tatras there are 2 primary railway lines: No. 183 (Poprad – Stary Smokowiec – Szczyrbskie Pleso; 29,110 km) and No. 184 (Stary Smokowiec – **Tatrzańska – Łomnica; 5,983 km**). Lines possess a track gauge of 1000 mm. A rack railway line from Szczyrba to Szczyrbskie Pleso (No. 182; 4,678 km) is also an element of the Tatra Electric Rail system.

A railway line Poprad – Stary Smokowiec started to operate between 1906-1908, then after the next 3 years a rail on the Stary Smokowiec-**Tatrzańska Łomnica** route was launched and still a year later to Szczyrbskie Pleso. The rail transported both passengers and various goods (including cement and bricks). Since 1992 the rail is administered by the Slovak Republic Railways (**Železnice Slovenskej Republiky (ŽSR)**). On all the route 15 modern trains run meeting European standards, with low-floor carriages of 200 persons capacity (carriages 425.9), with a possibility of bicycles transportation. All trains (with the exception of a rack rail) are adjusted to transportation of the handicapped moving in wheelchairs. Figure 7 presents the rail route.

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<sup>89</sup> **Príklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, 2012**





Trains on the route No. 183 run more or less every hour from 5.12 a.m. to 10.37 p.m. (departures from the Poprad-Tatry station)<sup>91</sup>. Increased traffic takes place at early morning hours (in addition, one connection before 7.00 a.m. and at 10.12 a.m.) and afternoon hours (an additional connection at 2.12 p.m.). Return trains run from the Szczyrbskie Pleso station from 5.21 a.m. to 10.21 p.m. and they run frequently between

<sup>91</sup> [www.slovakrail.sk](http://www.slovakrail.sk)

6.00 a.m. and 7.00 a.m. (an additional connection at 6.51 a.m.) and between 3.00 p.m. and 4.00 p.m. (an additional connection at 3.51 p.m.). At those hours the largest traffic of both the inhabitants (transport to school, work) as well as tourists going on mountain trips and those who return takes place<sup>92</sup>.

On a route No. 184 trains run more or less every hour between 4.40 a.m. and 10.10 p.m. Between 7.00 a.m. and 8.00 a.m. there are 2 **return trains from Tatrzńska Łomnica**.

On the route No. 182 trains run between 5.05 a.m. and 8.24 p.m. (more or less every hour). Increasing the number of rides takes place at 7.00 a.m. - 8.00 a.m. Return trains from Szczyrbskie Pleso run till 10.52 p.m.

Traffic on the Tatra Electric Railway route is correlated with long-distance **trains'** traffic thanks to which the rail is an excellent, ecological element **of the region's** multimodal transport system.

In 2010 the number of passenger services on the Poprad – Szczyrbskie Pleso route amounted to 419 000. In general, in the period of 2005 – 2010 the number of passengers inconsiderably decreased, primarily as a result of economic crisis as well as unfavourable weather between 2009-2010<sup>93</sup>. However, in 2011 traffic on the rail routes returned to the level before 2009. The highest number of travellers are tourists (1 023 473).

The rail operator conducts a developed marketing cooperation with a local government and enterprises as well as tourist organisations (among others, Wysokie Tatry town, Wysokie Tatry association, Hotel and Restaurant Association in Slovakia and "Wysokie Tatry" Regional Tourist Organisation. Among the most vital actions the following should be mentioned, among others: an introduction of combined tickets for sports and cultural events, the increase of tickets sale distribution (kiosks, hotels), sale development of the so-called network tickets, an introduction of a so-called monthly subscription, common promotional actions conduction (among others: a newsletter, a website, brochures, boards with timetables, a virtual map of ticket sale points).

#### ***6.2.4. Historická Lesná Uvraťová Železnica in Nowa Bystrzyca – the Vychylovce and the Orava Forest Rail***

The railway lines are linking Kysuce to Orava – two historic and ethnographic regions of Slovakia. They are an essential tourist product, being a technical monument

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<sup>92</sup> In 2011, 436 914 commuters were transported on all railway routes

<sup>93</sup> Příklady dobrej praxe úzkorozchodných železníc prevádzkovaných v Košickom a Prešovskom kraji, Projekt access2mountain je spolufinancovaný z Programu nadnárodnej spolupráce Juhovýchodná Európa, 2012

(**Historická Lesná Uvraťová Železnica** – the rail system with a loopback)<sup>94</sup>. The rail created in 1915<sup>95</sup>, connected forest rails of both regions in northern Slovakia in 1926: **Oščadnica** – Vychylovka (Kysuce) and Lokca – **Oravska Leśna (Orava)** (in total, over 110 km of the route 217 m of elevation difference). The line usage for industrial purposes (mainly wood transportation) was finished in 1971. The other, 8-kilometre track stretch (Vychylovka – **Tanečník**) with a unique loopback entered a list of the national cultural heritage in 1972.

**Historická Lesná Uvraťová Železnica** is currently an integral part of the Kysucka Village Museum in Nowa Bystrzyca Vychylovce. Rail services take place on approximately 3-kilometre route from the Museum to Chmura, during a tourist season –from May to October. The rail departure hours from the Skansen (Ethnographic Museum) station: 9.15 a.m., 10.30 a.m., 11.30 a.m., 1.00 p.m., 2.00 p.m., 3.00 p.m., 4.00 p.m. (Monday-Friday)<sup>96</sup>. On Saturdays and Sundays the train also leaves at 5.00 p.m. Moreover, there is also a possibility of ordering additional rail rides.

Within the Transboundary Cooperation Programme (TCP) The Polish Republic – The Slovak Republic 2007-2013 "the Bystrzycka Valley Microregion" microproject is realised (together with Rajcza and Milówka communes on Polish side)<sup>97</sup>. Its objective is the increase in traffic infrastructure quality with particular attention to alternative sorts of transport (bicycles, rollerblades, cross-country skis). Within the project new roads and cycle lanes are created. Over 17 km of the route are created on a former unexploited Kysucka Rail route.

The Orava Forest Rail leaves **Tanečník** station and runs on the stretch of 6 km. At the station there are a small museum, a ticket office and a souvenir sale point as well as primary tourist infrastructure. In summer season trains run from the beginning of April to the end of October at: 11.00 a.m., 1.00 p.m., 2.15 p.m., 3.30 p.m., 4.45 p.m. (Saturdays, Sundays) and at: 9.30 a.m., 11.00 a.m., 2.15 p.m., 3.30 p.m. (Monday – Friday)<sup>98</sup>. A ride time with entering an observation tower– about an hour. An approximate route of the Orava Forest Railway is presented in Annex No. 1.

Presented examples of good practices on narrow-gauge railway lines highlight an essential importance of this type of sustainable transport. An excellent example seems to

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<sup>94</sup> **Możliwości poprawy dostępności i rozwoju turystyki na pograniczu polsko-słowackim.** Warunki rozwoju, rekomendacje i dobre praktyki, IGIPZ PAN, GUSav, Warsaw – Bratislava 2012

<sup>95</sup> [www.krajoznawcy.info.pl](http://www.krajoznawcy.info.pl)

<sup>96</sup> [www.kusyckemuzeum.sk](http://www.kusyckemuzeum.sk)

<sup>97</sup> [www.plsk.eu](http://www.plsk.eu)

<sup>98</sup> [www.oravskemuzeum.sk](http://www.oravskemuzeum.sk)

be the Tatra Electric Railway whose high ride frequency in connection with its ecological character provides considerable potential opportunities of local multimodal transport development.

### 6.3. Bus lines

Bus transport in the Polish borderland area is realised by several companies of **Przedsiębiorstwo** Komunikacji Samochodowej (PKS) and private carriers (mainly in tourist resorts and on access roads to them).

Since January 1st, 2004 in Slovakia bus transport has been taken over by local governments. A line system is very complex – there are many convenient lines between many places of the region.

A convenient bus line with Polish places of the borderland is from the Regional Bus Station in Cracow (among others: **Sanok, Ustrzyki Dolne, Nowy Sącz, Nowy Targ, Zakopane, Krynica Zdrój, Piwniczna Zdrój**)<sup>99</sup>. However, there are no transboundary lines from the station. SZWAGROPOL, Voyager, San-Bus and **PKS Oświęcim** provide transport services on the routes.

The most important borderland carrier (transboundary services) is STRAMA Zakopane company, providing transport services on the Zakopane – Poprad route: 2 rides a day: at 9.00 a.m. and at 3.00 p.m. from Zakopane, **through Łysa Polana, Tatrzńska Jaworzyna, Zdziar, Tatrzńska Łomnica and Stary Smokowiec** (return buses from Poprad to Zakopane at 11.50 a.m. and 4.50 p.m.)<sup>100</sup>. Moreover, the line also runs from Zakopane to Liptowski Mikulasz with a change in Poprad. Those buses enable connections with the Tatra Electric Railway on the Zakopane – Stary Smokowiec – Szczyrbskie Pleso line (back and forth) twice a day (at 9.15 a.m. and 3.15 p.m.).

In Zakopane a private transport network is highly developed (small buses), offering transport to the most popular tourist attractions in Podhale and to the most vital mountain valleys in the Tatra mountains which are starting points to tourist routes (in summer) or where ski trails are located (in winter). What is more, those services facilitate transport of the local community (short-distance transport services). The most popular routes are, among others, to **Kuźnice, Palenica Białczańska, Łysa Polana, Dolina Kościeliska and Chochołowska**. There is a very convenient bus line of Zakopane with the closest city centre – Cracow: from 4.50 a.m. to 11.30 p.m., more or less every half an

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<sup>99</sup> [www.rda.krakow.pl](http://www.rda.krakow.pl)

<sup>100</sup> [www.strama.eu](http://www.strama.eu)

hour and even more frequently (primary carriers: SZWAGROPOL, Max Bus, PKS, Polski Bus, Veolia Transport)<sup>101</sup>. Furthermore, there are many connections to large cities in Poland, including among others: Warsaw (8 connections), **Łódź** (8 connections a day), Katowice (14 **connections**), **Poznań** (3 **connections**) and **Białystok** (1 connection).

On Slovak side of the Tatras Poprad is a considerable transport junction from which connections to many places of Slovak borderland are offered: Spiska Nowa Wieś, Svit town, Szczyrba, Liptowski Mikulasz, Szczyrbskie Pleso, Stary Smokowiec, Bardejov, **Kieżmark** or Lewocza<sup>102</sup>. There are also connections from Poprad **through Tatrzńska Łomnica, Zdziar, Tatrzńska Jaworzyna to Łysa Polana**. Buses run from early morning hours (5.40 a.m.) to late evening hours (9.40 p.m.). These rides enable transboundary connections in the Tatra borderland part, including a connection with the Tatra Electric Railway. Moreover, 2 connections a **day to the vicinity of Dobszyńska Ice Cave** are launched (Poprad-**Rożnawa**, hours: 1.25 p.m., 6.56 p.m.). Connections from Poprad to Stary Smokowiec are not frequent and they leave mainly at noon and afternoon hours. There are more morning connections in the opposite direction.

Last year many bus **connections in the Żywiec Valley were** withdrawn as a result of unprofitability. There are 3 connections a **day from Bielsko Biała to Żywiec**, from Cracow – 10. There are 6 connections to Rycerka **from Żywiec** and to Zakopane - 2. PKS bus transport does not reach the border with Slovakia<sup>103</sup>.

On Slovak side **Čadča** is well-communicated with Kysuckie Nowe Mesto, Żylina, **Oščadnica, Skalite** (a border with Poland)<sup>104</sup>. Buses on the Skalite – **Čadča** line leave very frequently – at morning and evening hours 2-3 buses leave during an hour. There are also bus lines which enable to get to the Kysucka Forest Rail route in Vychylovce (from 4.40 a.m. to 10.35 p.m.).

A Slovak carrier EUROBUS a.s. Koszyce provides transport services on the Spiska Nowa Wieś – Lewocza – Spiski Czwartek – Vrbov – **Kieżmark** – Spiska Bela – Wysokie Tatry – Zdziar – Nowy Targ route<sup>105</sup>. Long-distance connections in the region are also provided by carriers: SINDBAD, INTERBUS, a Hungarian carrier Orange Ways Zrt. (the Budapest – Cracow route) and a travel agency **Wactur Nowy Sącz**.

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<sup>101</sup> [www.zdazakopane.pl](http://www.zdazakopane.pl)

<sup>102</sup> [www.sadpp.sk](http://www.sadpp.sk)

<sup>103</sup> [www.pks.zywiec.pl](http://www.pks.zywiec.pl)

<sup>104</sup> [www.sadza.sk](http://www.sadza.sk)

<sup>105</sup> [www.eurobus.sk](http://www.eurobus.sk)

In the Pieniny region you can go to Szczawnica from Nowy Sącz (11 connections a day, including 3 at morning hours)<sup>106</sup>. There are 10 connections a day from Szczawnica to Nowy Sącz (through Krościenko by the Dunajec River, Stary Sącz). At morning hours you can also get from Szczawnica to Zakopane. In the evening it is possible to get to Warsaw through Kielce. What is more, between the most vital tourist resorts on Polish side of the Pieniny mountains private car transport (small buses) operates which provides many convenient connections within the region, including connections to the nearest large cities, among others to Nowy Sącz<sup>107</sup>. There is no transboundary public transport in the region. Hikers and cycling tourists can use the road Leśnica – Szczawnica. Transport accessibility was also improved by the footbridge on the Dunajec River linking Czerwony Klasztor in Slovakia with Sromowce Niżne in Poland since 2006.

In the Poprad Valley on Slovak side there are many bus lines from Bardejov, among others, to: Koszyce through Presov (from early morning hours to early evening hours), Poprad (3 connections a day, including 1 at early morning hours), Liptowski Mikulasz, Stropkov through Svidnik, to Vranov by the Topľou, Humenne and Michalovce.

On Polish side transport accessibility is quite good – to Piwniczna Zdrój there are 16 connections to Nowy Sącz as well as to Krynica Zdrój. Moreover, SZWAGROPOL company launched 4 connections a day from Cracow to Piwniczna Zdrój as well as to Krynica Zdrój and Muszyna<sup>108</sup>.

Mainly PKS Oświęcim provides services of bus traffic in Krynica<sup>109</sup>. Timetables put at the carrier's website show that from Krynica Zdrój there are long-distance connections to Cracow (6 during 24 hours), Katowice (2), to Nowy Sącz (6 target connections), Warsaw and Wrocław (one morning connection to each city). From Muszyna Zdrój you can get to Cracow through Krynica and Nowy Sącz (2 connections at early morning hours). From Nowy Sącz there are many PKS bus connections with Krynica Zdrój (including as many as 4 morning connections) and with Piwniczna Zdrój (20 target connections, including as many as 7 morning connections). Buses to Szczawnica (11 target connections) and to Zakopane (2 connections a day) also run from the city. Krynica Zdrój is, moreover, well-communicated with the neighbouring towns located in the Poprad Valley - Żegiestów, Powroźnik, Andrzejówka, Muszyna, Tylicz, Muszynka and

<sup>106</sup> Services are provided by PKS Oświęcim

<sup>107</sup> [www.busportal.pl](http://www.busportal.pl)

<sup>108</sup> [www.szwagropol.pl](http://www.szwagropol.pl)

<sup>109</sup> [www.pksoswiecim.pl](http://www.pksoswiecim.pl)



Szczawnik (private carriers)<sup>110</sup>. An important transport barrier for transboundary traffic of the area is the Poprad River flowing along the border.

In the vicinity of the Low Beskids in Slovakia bus transport is very well-developed. From Medzilaborce you can get to the following towns, among others: Humenne, Palota (a border with Poland, 6 connections) and Stropkov (10 connections a day). From Stropkov there are 9 bus connections a day to Bardejov, 4 to Humenne, 8 to Koszyce, 11 to Medzilaborce, 19 to Presov<sup>111</sup>. The most numerous are connections with Svidnik – from early morning hours (5.30 a.m.) to late evening (10.45 p.m.). Vranov by the Topľou possesses 3 connections with Bardejov, 8 connections with Lewocza and many connections with Presov, Poprad, Humenne or Koszyce. There are no transboundary connections in the region, there are only connections from Medzilaborce to Palota located close to the border with Poland<sup>112</sup>. There are a few buses a day from Svidnik to **Vyžne Komarnik**, however, there are no connections through the Polish-Slovak border.

On Polish side **Voyager Usługi Transportowe Wojtarowicz**<sup>113</sup> offers transport from Gorlice, among others, to Wysowa Zdrój health resort (connections more or less every hour, most frequent at morning hours). Also Veolia Transport enables transport to some places of the Low Beskids, among others, from Sanok to **Jaślicka or Łupków (to Łupków only at afternoon hours)**.

In the Bieszczady region on Polish side bus services are provided, among others, by PKS Krosno<sup>114</sup>. The carrier offers a few connections a day from Krosno, Tarnów or Cracow to Sanok. Using services of the same carrier you can get from Sanok to areas located in the Bieszczady mountains, among others, to Ustrzyki Górne (3 morning connections) or Cisna (1 morning connection). The carrier who offers considerably more connections in the region is Veolia Transport whose buses run from Sanok to the following places located in the Bieszczady mountains, among others, to **Cisna, Komańcza, Lesko, Łupków, Polańczyk, Solina, Ustrzyki Dolne and Górne, Wetlina, Wołosate, Zatwarnica and Zagórz**<sup>115</sup>. Moreover, the region is communicated with the use of bus transport with many Polish cities, including among others, Warsaw, Wrocław, Przemyśl, Tarnów, Rzeszów and Cracow<sup>116</sup>.

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<sup>110</sup> [www.krynica.org.pl](http://www.krynica.org.pl)

<sup>111</sup> [www.sadhe.sk](http://www.sadhe.sk)

<sup>112</sup> [www.sadhe.sk](http://www.sadhe.sk)

<sup>113</sup> [www.busportal.pl](http://www.busportal.pl)

<sup>114</sup> [www.pks-krosno.pl](http://www.pks-krosno.pl)

<sup>115</sup> [www.e-podroznik.pl](http://www.e-podroznik.pl); [www.veolia-transport.pl](http://www.veolia-transport.pl)

<sup>116</sup> [www.veolia-transport.pl](http://www.veolia-transport.pl)

EUROBUS<sup>117</sup> - a carrier from Przemyśl provides a large number of connections in the Karpackie Foothills (the Dynów Foothills, the Przemyśl Foothills). Buses from Przemyśl to Dynów (through Bachórz – a narrow-gauge railway station of the Przeworsk Commuter Rail) run from 5.45 a.m. to 10.15 p.m. There are equally many return connections from Dynów to Przemyśl. The same carrier enables transport from Rzeszów to Przeworsk (back and forth).

## **7. THE COORDINATION POSSIBILITIES ANALYSIS OF EXISTING TIMETABLE TRANSPORTATION LINES IN PODKARPACKIE VOIVODESHIP AND IN THE PRESOV REGION**

The chapter describes coordination suggestions of existing transportation lines (including transboundary lines Poland – Slovakia) with the use of different transport forms, including sustainable transport. Correlations have been prepared on the basis of possibilities of current timetable connections existing in the region.

### **7.1. Zakopane – Szczyrbskie Pleso and Zakopane – Tatrzańska Łomnica lines**

The first transboundary line which enables both inhabitants of the Tatra region and tourists to get to places located at the foot of the Slovak Tatras is a Zakopane – Szczyrbskie Pleso and Zakopane – Tatrzańska Łomnica lines. The transport is possible thanks to STRAMA carrier, offering bus transport on the line of Poland – Slovakia. Tables 11 and 12 present both possibilities.

In case of the Zakopane – Szczyrbskie Pleso line, the carrier offers two connections with the Tatra Electric Railway (a so-called Elektriczka) in Slovakia: a morning connection at 10.15 a.m. and an afternoon connection at 3.15 p.m. Buses leave the bus station in Zakopane and arrive at Stary Smokowiec at 10.37 a.m. and 4.37 p.m. respectively. Connections are communicated with Elektriczka leave from the Stary Smokowiec station. Using a morning connection passengers have an opportunity to return at 4.21 p.m. from Szczyrbskie Pleso, travelling by the same sorts of transport (return to Zakopane at 6.33 p.m.).

The Zakopane – Tatrzańska Łomnica line leads through the following places: Poronin, Bukowina Tatrzańska, Łysa Polana (Polish side), Tatrzańska Jaworzyna, Zdziar and Tatrzańska Kotlina (Slovak side)<sup>118</sup>. There are two possibilities of transport to the Tatra Electric Railway in Tatrzańska Łomnica: at 9.00 a.m. and 3.00 p.m. from Zakopane. In the first case a train from Tatrzańska Łomnica to Szczyrbskie Pleso arrives

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<sup>117</sup> [www.eurobus.net.pl](http://www.eurobus.net.pl)

<sup>118</sup> The bus destination is Poprad

at 11.50 a.m. (the same as in case of the bus departure from Zakopane at 10.15 a.m.), in the second at 5.50 p.m. Return is possible thanks to a bus at 3.21 p.m. (arrival at Zakopane at 6.39 p.m.). What is more, there is also a morning connection at 10.21 a.m. from Szczyrbskie Pleso.

Pos.	Line	Hour	Hour
<b>Poland-Slovakia lines</b>			
1	Bus departure from the bus station in Zakopane	10.15 a.m.	3.15 p.m.
2	Bus arrival at Stry Smokowiec	10.37 a.m.	4.37 p.m.
3	Elektriczka departure from Stry Smokowiec	11.09 a.m.	5.09 p.m.
4	Elektriczka arrival at Szczyrbskie Pleso	11.50 a.m.	6.50 p.m.
<b>Slovakia-Poland lines</b>			
1	Elektriczka departure from Szczyrbskie Pleso	11.21 a.m.	4.21 p.m.
2	Elektriczka arrival at the bus station in Stry Smokowiec	12.00 a.m.	5.00 p.m.
3	Bus departure from the bus station in Stry Smokowiec	12.10 p.m.	5.10 p.m.
4	Bus arrival at the bus station in Zakopane	1.33 p.m.	6.33 p.m.

Table 11. Zakopane – Szczyrbskie Pleso line

Source: an own study on the basis of [www.strama.eu](http://www.strama.eu); [www.slovakrail.sk](http://www.slovakrail.sk)

Pos.	Line	Hour	Hour
<b>Poland-Slovakia lines</b>			
1	Bus departure from the bus station in Zakopane	9.00 a.m.	3.00 p.m.
2	Bus arrival at the bus station in <b>Tatrzańska Łomnica</b>	10.27 a.m.	4.27 p.m.
3	<b>Elektriczka departure from Tatrzńska Łomnica</b>	10.43 a.m.	4.43 p.m.
4	Elektriczka arrival at Stry Smokowiec	10.57 a.m.	4.57 p.m.
5	Elektriczka departure from Stry Smokowiec	11.09 a.m.	5.09 p.m.
6	Elektriczka arrival at Szczyrbskie Pleso	11.50 a.m.	5.50 p.m.
<b>Slovakia-Poland lines</b>			
1	Elektriczka departure from Szczyrbskie Pleso	10.21 a.m.	3.21 p.m.
2	Elektriczka arrival at Stry Smokowiec	11.00 a.m.	4.00 p.m.
3	Elektriczka departure from Stry Smokowiec	11.10 a.m.	4.10 p.m.
4	Elektriczka arrival at <b>Tatrzańska Łomnica</b>	11.24 a.m.	4.24 p.m.
5.	<b>Bus departure from the bus station in Tatrzńska Łomnica</b>	12.24 a.m.	5.24 p.m.
6	Bus arrival at the bus station in Zakopane	1.39 p.m.	6.39 p.m.

Table 12 Zakopane – **Tatrzańska Łomnica** line

Source: an own study on the basis of: [www.strama.eu](http://www.strama.eu); [www.slovakrail.sk](http://www.slovakrail.sk)

A drawback is a lack of earlier bus connections from Zakopane in the direction of towns located on the Tatra Electric Railway route in Slovakia. Such connections should enable to get to alpine routes of the Tatra National Park in Slovakia at early morning hours. Too early return of a **bus to Zakopane (both from Tatrzńska Łomnica and Stry Smokowiec)** does not provide an opportunity to return at late evening hours from mountain routes on Slovak side of the Tatra mountains. Taking into account a large

frequency of the Tatra Electric Railway departures<sup>119</sup>, launching a higher number of bus connections from Zakopane should enable free transboundary travelling both for the inhabitants of the borderland area and tourists.

## **7.2. Liptowski Mikulasz – Poprad – Szczyrbskie Pleso and Liptowski Mikulasz – Szczyrba – Szczyrbskie Pleso lines**

An interesting line on Slovak side which can facilitate transport for the inhabitants of the **Žilinskí** region to the Presov region in Slovakia is a line from Liptowski Mikulasz to Szczyrbskie Pleso. The correlation assumes using traditional railway (line No. 180, Bratislava – Koszyce) and the Tatra Electric Railway (line No. 183 Poprad – Szczyrbskie Pleso). Essential is the fact that there is a possibility of getting from Liptowski Mikulasz at morning hours and an early transport to the Tatra routes. As it is shown in the Table 13, **the train's departure from Liptowski Mikulasz is possible yet at 6.21 a.m.** (the train also stops earlier at a station in **Ružomberk**), which enables correlation with "Elektriczka" leaving the Poprad Tatry station at 7.37 a.m. (the train's **arrival** at Szczyrbskie Pleso at 8.50 a.m.). Among many return connections one of convenient connections is at 6.21 p.m. ("Elektriczka" departure from Szczyrbskie Pleso), providing a possibility of change to a train to Liptowski Mikulasz, which leaves the Poprad Tatry station at 7.33 p.m. This connection seems to be very convenient to tourists who would like to get to the vicinity of the **Mięguszowiecka Valley (Rysy)** and to many other hiking trails and cycling trails running along the Tatra valleys (e.g. the Wielicka Valley).

The same train Bratislava - Koszyce enables transportation from Liptowski Mikulasz (departure at 6.21 a.m.) directly to Szczyrba (arrival at 6.59 a.m.), where it is correlated with "Elektriczka" departure from the Szczyrba station (7.05 a.m.) to Szczyrbskie Pleso (arrival at 7.20 a.m. (Table 14). In this case there is also a convenient return connection – "Elektriczka" from Szczyrbskie Pleso leaving at 6.52 p.m. is correlated with a train of traditional railway on the Koszyce – Bratislava route: departure from the station in Szczyrba at 7.33 p.m. Such a connection provides an opportunity of convenient transport to the routes in the High Tatras in Slovakia (including Rysy).

Pos.	Connection	Hour
1	Train departure from Liptowski Mikulasz*	6.21 a.m.
2	Train arrival at the Poprad Tatry station	7.22 a.m.
3	Elektriczka departure from the Poprad Tatry station	7.37 a.m.
4	Elektriczka arrival at the Szczyrbskie Pleso station	8.50 a.m.

<sup>119</sup> [www.slovakrail.sk](http://www.slovakrail.sk)

Return connection		
1	Elektriczka departure from the Szczyrbskie Pleso station	6.21 p.m.
2	Elektriczka arrival at the Poprad Tatry station	7.26 p.m.
3	Train departure from the Poprad Tatry station	7.33 p.m.
4	Train arrival at Liptowski Mikulasz**	8.14 p.m.

Table 13. Liptowski Mikulasz – Poprad – Szczyrbskie Pleso line

\*Departure from the station in **Ružomberk** at 5.53 a.m.

\*\*Train arrival at the station in **Ružomberk** at 8.33 p.m.

Source: an own study on the basis of: [www.slovakrail.sk](http://www.slovakrail.sk)

Pos.	Connection	Hour
1	Train departure from Liptowski Mikulasz	6.21 a.m.
2	Train arrival at the station in Szczyrba	6.59 a.m.
3	Elektriczka departure from the Szczyrba station	7.05 a.m.
4	Elektriczka arrival at the station in Szczyrbskie Pleso	7.20 a.m.
Return connection		
1	Elektriczka departure from the Szczyrbskie Pleso station	6.52 p.m.
2	Elektriczka arrival at the Szczyrba station	7.10 p.m.
3	Train departure from the Szczyrba station	7.33 p.m.
4	Train arrival at Liptowski Mikulasz	8.14 p.m.

Table 14. Liptowski Mikulasz – Szczyrba– Szczyrbskie Pleso line

Source: an own study on the basis of: [www.slovakrail.sk](http://www.slovakrail.sk)

Thanks to all the above-mentioned connections, there is an opportunity of Polish-Slovak Tatra borderland tourist exploration. Numerous stations of Slovak railway are located at the foot of mountain valleys along which tourist routes are running (annex No. 2), are starting points of mountain trips within the area of the Tatra National Park in Slovakia. By the railway route **routes on Łomnica, Sławkowski Szczyt** or Gerlach start. The majority of the rail stations are located directly at the foot of mountain valleys. From **Tatrzńska Łomnica** tourist routes are leading through the Velka and Mala Studena Valley to the vicinity of Lodowy and Litworowy Szczyt. From Stary Smokowiec and the vicinity (the rail stations: **Tatrzńskie Zruby, Tatrzńska Polianka**) you can get to the Wielicka Valley. From the surroundings of Szczyrbskie Pleso the **Mięguszowiecka** Valley leads to Rysy.

Moreover, connections enable tourists and inhabitants to get to a very complex cycling trails network in the Sub-Tatra region<sup>120</sup>. They are running from the most significant tourist resorts (among others: **Tatrzńska Łomnica, Stary Smokowiec, Tatrzńskie Zruby** and **Tatrzńska Polanka**) and leading to main Tatra mountain huts on Slovak side. Routes are divided according to a category of difficulty (annex No. 3).

<sup>120</sup> [www.tatryportal.sk](http://www.tatryportal.sk)

### 7.3. Sanok – Cisna line (The Bieszczady Forest Rail)

Another connection analysed is a possibility of transport to the Bieszczady Forest Rail (BFR). Such correlation is possible only on Polish side – buses in Slovakia reach only border towns (Medzilaborce – Palota and Svidnik – **Vyžny Komarnik**). What is more, as a result of unprofitability **railway connections from Medzilabroce to Łupków have been withdrawn** which should facilitate mobility between places on both sides of the border for the Bieszczady region inhabitants as well as tourists. No transboundary connections hinder getting to the Bieszczady Forest Rail from Slovak side.

This connection facilitates transport by Veolia bus line – Transport from Sanok to Cisna<sup>121</sup>. The carrier offers two convenient morning connections from the bus station in Sanok – the one at 7.10 a.m. which enables departure by the Bieszczady Forest Rail from the Cisna station at 10.15 a.m. and the other at 10.40 a.m. (the BFR departure from the Cisna station at 1.30 p.m.). There is also a possibility of return by rail and then by Veolia Transport bus to Sanok with the use of two BFR return connections (at 11.30 a.m. and 3.00 p.m.). Table 15 presents correlations of connections.

Pos.	Connection	hour	Hour
1	Bus departure from Sanok	7.10 a.m.	10.40 a.m.
2	Bus arrival at Cisna	9.08 a.m.	12.05 p.m.
3	The BFR departure from the Cisna station	10.15 a.m.	1.30 p.m.
4	The BFR arrival at the <b>Przysław</b> station	11.10 a.m.	2.40 p.m.
<b>Return connection</b>			
1	The BFR departure from the <b>Przysław</b> station	11.30 a.m.	3.00 p.m.
2	The BFR arrival at the Cisna station	12.25 p.m.	3.55 p.m.
3	Bus departure from Cisna	1.25 p.m.	4.14 p.m.
4	Bus arrival at Sanok	3.24 p.m.	5.35 p.m.

Table 15. Sanok – Cisna line (The Bieszczady Forest Rail)

Source: an own study on the basis of: [www.veolia-transport.eu](http://www.veolia-transport.eu); [www.kolejka.bieszczady.pl](http://www.kolejka.bieszczady.pl)

As it has been mentioned in chapter 6.2.2., The Bieszczady Forest Rail is not an alternative sort of transport in the region, it is only used for transport of tourists. There is no possibility of linking rail departures with traditional railway (no railway network, the nearest station - Zagórz). In case of tourist transport, it is a considerable attraction in relation to location of its route in the area of high natural values, including legally protected areas (Cisna and Wetlina Landscape Park, being a natural protection of the Bieszczady National Park). In the vicinity of the rail there are many tourist routes, including cycling trails (annex No. 4). Close to the railway station in Cisna an international Route "Green Bicycle" Greenway Eastern Carpathians is running (Poland,

<sup>121</sup> [www.veolia-transport.pl](http://www.veolia-transport.pl)



Slovakia, Ukraine)<sup>122</sup>. In the vicinity of the rail route there is also a Transboundary Carpathian Cycling Trail<sup>123</sup> (Roztoki Górne – Cisna – Wisłok Wielki and further in the direction of **Leluchów in the Sącz Beskids**).

What is more, in the surroundings there are cycling trails: "Bieszczady Extreme", "The Icon Route", "The Route of the San River Fortifications" and "The Route of the Soldier Svejk ". The Transboundary Cycling Trail and "Green Bicycle" Eastern Bieszczady cross the Slovak border through a border crossing point for hiking and cycling traffic in Roztoki Górne.

In the area discussed a marked PTLA Bieszczady Horse Trail is running – its route is leading, among others, through Majdan and **Przysłop**, which enables linking different forms of tourism and sorts of transport in the region (horse tourism/transport by the Bieszczady Narrow-Gauge Rail)<sup>124</sup>.

#### **7.4. Rzeszów – Przeworsk and Przemyśl – Przeworsk lines (the Przeworsk Commuter Rail)**

As it has been mentioned in chapter 6.2.1., Przeworsk location by a country road No. 4 provides excellent opportunities of transport to the Przeworsk Commuter Rail. EUROBUS company provides a few connections at morning hours which enable tourists to use transport by rail on the **Przeworsk Wąskotorowy – Dynów** route. One of such connections is a connection from Rzeszów at 7.20 a.m., which arrives at Przeworsk at 8.18 a.m. and enables transport by the PCR leaving at 9.00 a.m. (Table 16). A drawback is a necessity of getting from a bus stop in Przeworsk (MOK, 10a **Jagiellońska** Street) to the **Przeworsk Wąskotorowy** station (approximately 15 minutes on foot). A return connection of the Przeworsk rail at 2.30 p.m. is correlated with a bus departure from Przeworsk to Rzeszów at 5.27 p.m. (in Rzeszów at 6.25 p.m.).

The other offer is linking traditional railway (Przewozy Regionalne) and the Przeworsk Commuter Rail (Table 17). The train departure from the **Rzeszów Główny** station at 7.22 a.m. enables getting to the station in Przeworsk at 8.04 a.m. and a ride by rail at 9.00 a.m. Return to the Rzeszów station is possible at 6.19 p.m. This connection is more convenient because of direct neighbourhood of narrow-gauge railway and normal-gauge railway stations in Przeworsk. Both traditional railway and the

<sup>122</sup> The route in detail on the territory of Poland: Roztoki Górne (a border with Slovakia) – Cisna – Solina – Myczkowce – Lesko – Olszanica – Brzegi Dolne – **Krościenko** (a border crossing point with Ukraine)

<sup>123</sup> The trail is a part of a complex system of the Carpathian Cycling Trail

<sup>124</sup> [www.gtj.pttk.pl](http://www.gtj.pttk.pl)

Przeworsk Commuter Rail possess carriages adjusted to bicycles transportation thanks to which the connection enables tourists to get on cycling trails of the Dynów Foothills. In the surroundings of Dynów there are a few marked hiking tourist routes, including a blue one and a green one in the vicinity of the Przeworsk rail route. Near Dynów and Bachórzec there is also a newly formed cycling trail along "The San Valley"<sup>125</sup>, created by the Dynów Foothills Tourist Communes Union. Through all the Dynów Foothills also 4 cycling trails are running.

Pos.	Connection	Hour
1	Bus departure from Rzeszów	7.20 a.m.
2	Bus arrival at Przeworsk	8.18 a.m.
3	The PCR departure from the <b>Przeworsk Wąskotorowy</b> station	9.00 a.m.
4	The PCR arrival at the station in Dynów	11.45 a.m.
<b>Return connection</b>		
1	The PCR departure from the Dynów station	2.30 p.m.
2	The PCR arrival at the <b>Przeworsk Wąskotorowy</b> station	5.10 p.m.
3	Bus departure from Przeworsk	5.27 p.m.
4	Bus arrival at Rzeszów	6.25 p.m.

Table 16. Rzeszów – Przeworsk line (bus transport)

Source: an own study on the basis of: [www.e-podroznik.pl](http://www.e-podroznik.pl); [www.pogorzanin.pl](http://www.pogorzanin.pl)

Pos.	Connection	Hour
1	<b>Train departure from Rzeszów Główny</b>	7.22 a.m.
2	Train arrival at Przeworsk	8.04 a.m.
3	The PCR departure from the <b>Przeworsk Wąskotorowy</b> station	9.00 a.m.
4	The PCR arrival at the station in Dynów	11.45 a.m.
<b>Return connection</b>		
1	The PCR departure from the Dynów station	2.30 p.m.
2	The PCR arrival at the station in <b>Przeworsk Wąskotorowy</b>	5.10 p.m.
3	Train departure from Przeworsk	5.35 p.m.
4	Train arrival at Rzeszów <b>Główny</b>	6.19 p.m.

Table 17. Rzeszów – Przeworsk line (railway transport)

Source: an own study on the basis of: [www.e-podroznik.pl](http://www.e-podroznik.pl); [www.pogorzanin.pl](http://www.pogorzanin.pl)

A connection on the **Przemyśl** - Przeworsk route is facilitated by numerous bus connections provided by EUROBUS company, however, there is also a possibility of getting from **Przemyśl to Przeworsk by traditional railway** (Przewozy Regionalne). As it results from Table 18 a train leaving **Przemyśl Główny** at 7.14 a.m. (through Radymno, **Jarosław and Pełkinie**) gets to the station in Przeworsk after approximately an hour from which the Przeworsk Commuter Rail leaves at 9.00 a.m. One of return trains to **Przemyśl** leaves the station in Przeworsk at 6.05 p.m.

<sup>125</sup> [www.pogorzedynowskie.pl](http://www.pogorzedynowskie.pl)

Pos.	Connection	Hour
1	Train departure from Przemyśl Główny	7.14 a.m.
2	Train arrival at Przeworsk	8.15 a.m.
3	The PCR departure from the Przeworsk Wąskotorowy station	9.00 a.m.
4	The PCR arrival at the Dynów station	11.45 a.m.
<b>Return connection</b>		
1	The PCR departure from the Dynów station	2.30 p.m.
2	The PCR arrival at the Przeworsk Wąskotorowy station	5.10 p.m.
3	Train departure from Przeworsk	6.05 p.m.
4	Train arrival at Przemyśl Główny	7.06 p.m.

Table 18. Przemyśl – Przeworsk line

Source: an own study on the basis of: [www.e-podroznik.pl](http://www.e-podroznik.pl); [www.pogorzanin.pl](http://www.pogorzanin.pl)

## **8. POTENTIAL POSSIBILITIES OF CONNECTING PRESENT INFRASTRUCTURE OF PODKARPACKIE VOIVODESHIP AND THE PRESOV REGION**

The chapter is an offer of correlating present borderland transport infrastructure (Podkarpackie Voivodeship, the Presov region). Potential possibilities presented use different forms of transport, including alternative transport (traditional railway, bus transport, narrow-gauge railway, hiking tourist routes, cycling trails and horse trails). A primary assumption was preparation of a possibility to connect the borderland region narrow-gauge railway lines<sup>126</sup>.

### **8.1. Proposals of the Przeworsk Commuter Rail transboundary connections with the Bieszczady Forest Rail**

The first proposal is connecting two narrow-gauge railway lines in Podkarpackie Voivodeship with the Presov region in Slovakia. A primary assumption is connecting the Przeworsk Forest Rail (PFR) with the Bieszczady Forest Rail (BFR) with alternative transport infrastructure (tourist routes) and a possibility of their correlation with Slovak borderland (Figure 8). Thanks to possibilities of bicycles transportation provided by both **rails, their connection with the region's active tourism routes** seems to be particularly essential. Transport to the Przeworsk Commuter Rail line from Polish side is very convenient because of a country road No. 4 running through Przeworsk (Zgorzelec – Medyka). An initial rail station (**Przeworsk Wąskotorowy**) is, therefore, connected to Cracow, Tarnów and Rzeszów in a convenient way thanks to which there is a direct possibility of getting to the station by buses running from Rzeszów. Moreover, a voivodeship road No. 835 is running to Przeworsk (Lublin – Grabownica Starzeńska) and in the vicinity there is a country road No. 77 (Lipnik – **Przemyśl**).

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<sup>126</sup> Timetables have not been taken into account, only potential possibilities of connecting present transport infrastructure

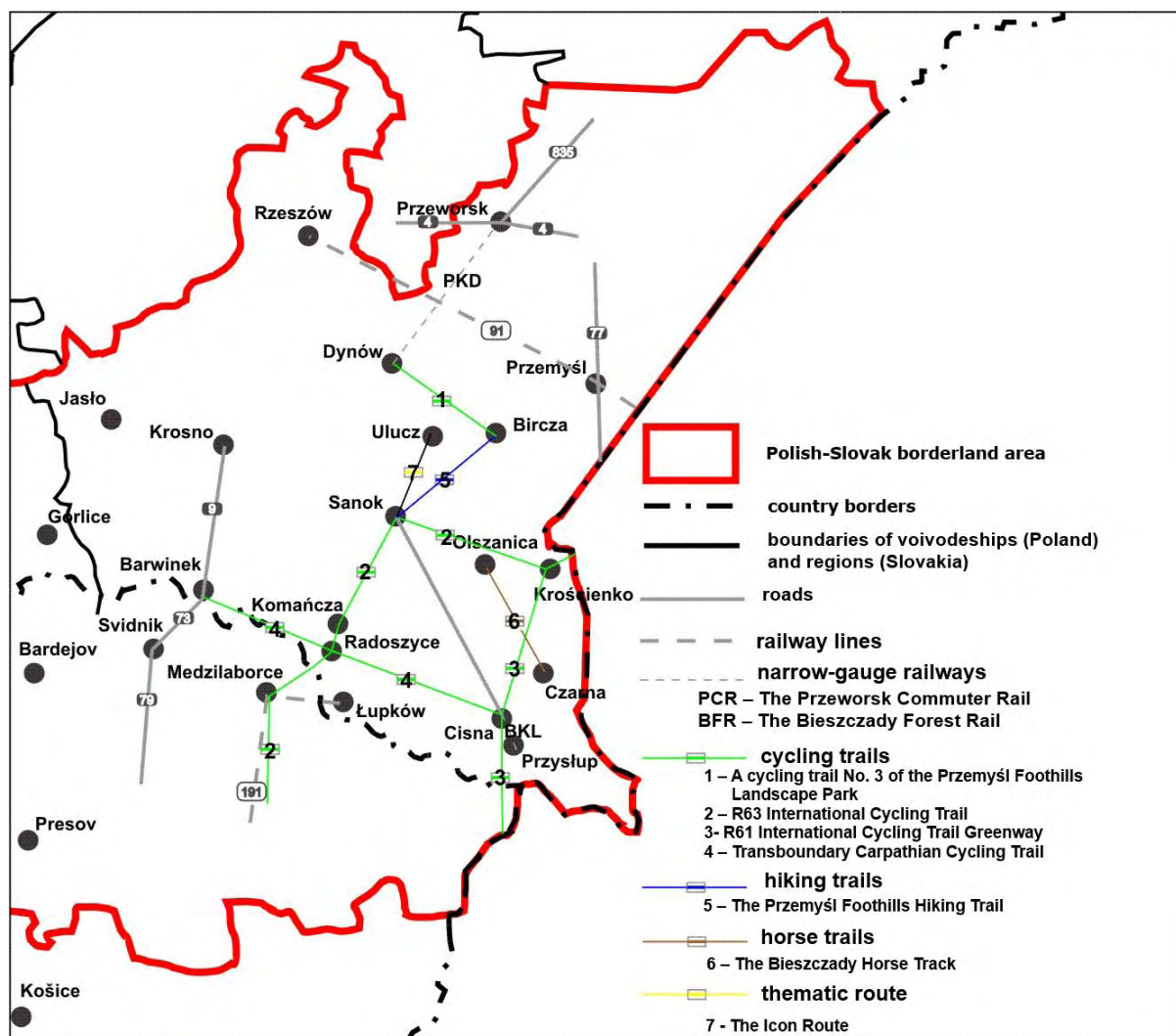


Figure 8. The proposal of connecting The Bieszczady Forest Rail with the Przeworsk Commuter Rail  
Source: an own study on the basis of different sources

A ride by a narrow-gauge Przeworsk Commuter Rail provides connection by ecological transport to Dynów and then with the use of alternative transport infrastructure (tourist routes) in the Przemyśl Foothills to Sanok. There is an opportunity of using a cycling trail No. 3 in Przemyśl Foothills Landscape Park from Dynów to Bircza (Dynów – Dąbrówka Starzeńska – Żohatyn – Jawornik Ruski – Lipa – Malawa – Bircza)<sup>127</sup>. This trail is classified as easy, its total length amounts to 41 km, a ride time is estimated for approximately 4 hours (annex No. 5 presents a plan of the Przemyśl Foothills tourist routes in detail).

<sup>127</sup> [www.przemysl24.pl](http://www.przemysl24.pl)

The Przemyśl Foothills red route is running from Bircza to Sanok<sup>128</sup>. The route is leading through forest areas, vantage points and small towns. In the vicinity there is also an opportunity of getting to the Icon Route running along the San River Valley (Ulucz – Mrzyglód – Tyrawa Solna – Sanok).<sup>129</sup> The route is marked blue and it provides an opportunity of learning the interiors of old Ukrainian orthodox churches located on the way and seeing an exhibition of icons presented at the Historic Museum in Sanok.

From Sanok there is a possibility of getting by bus transport (a country road No. 84, voivodeship roads No. 893 and 897) directly to Cisna in the Bieszczady mountains, through which the route of the Bieszczady Commuter Rail (BCR) is running. Another variant is a possibility of going by an international cycling trail R63 following "The Traces of the Good Soldier Svejk" from Sanok to Radoszyce. The trail is marked green, its total length on the Radoszyce – Krościenko route amounts to 180 km. On the route there are boards with information on the stay of this character in particular places. The route is running through picturesque river valleys of the Bieszczady Foothills: the Oślawa River and the Oślawica River. You can get from Radoszyce to Cisna (the BFR) using a red cycling trail (a section of the Transboundary Carpathian Cycling Trail) (Annex 4 presents tourist routes in the Bieszczady region).

After going by the Bieszczady Forest Rail (Cisna-Przysław-Cisna), there is a possibility of using a cycling trail R61 Green Bicycle Greenway "Eastern Carpathians"<sup>130</sup>. This international heritage route links natural and cultural attractions of the borderland. **The route's importance is stressed** by the fact that it is running through the UNESCO Biosphere Reserve "Eastern Carpathians" and therefore, through the Bieszczady National Park in Poland and "The Połoniny" National Park in Slovakia. **The route's idea is one of the actions on sustainable development** – travelling along this route you can learn initiatives related to ecotourism and support initiatives of local communities and **contribute to the protection of the region's rich heritage.**

At some distance from the Bieszczady Forest Rail route one of the most important tourist routes of the Podkarpacie region is running – the Bieszczady Horse Track. Its 150-kilometre route is running from Olszanica through Ustrzyki Dolne to Czarna. The route from the south-eastern side is connected to horse trails in the surroundings of Lutowiska (Wołosate – Wetlina and the Upper San River Valley)<sup>131</sup>, from north-western side it is linked with routes in the vicinity of Lesko, which allows horse trips through all the

<sup>128</sup> [www.przemysl24.pl](http://www.przemysl24.pl)

<sup>129</sup> [www.podkarpackietravel.pl](http://www.podkarpackietravel.pl)

<sup>130</sup> [www.greenways.pl](http://www.greenways.pl)

<sup>131</sup> [www.lutowiska.pl](http://www.lutowiska.pl)



Bieszczady range on Polish side<sup>132</sup>. Stanitsas in Tarnawa Niżna and Wołosate are used, among others, for the purposes of horse tourism.

Both in Cisna and in Radoszyce there is a possibility of getting to the Slovak side of the borderland. In the Mountain Pass over Roztoki near the main station of a narrow-gauge railway in Cisna Majdan there is a tourist passage for hikers, cyclists and persons moving in wheelchairs. R61 cycling trail is running through the mountain pass to Slovak side. However, no important road is running on Slovak side. The connection is of clearly local tourist character.

Another option of connecting the Bieszczady Commuter Rail with Slovak side is a **border crossing in Radoszyce close to the Łupkowska Mountain Pass. Here**, on Slovak side a railway line No. 191 Michalany – Medzilaborce – **Łupków** is running. However, a large obstacle in transboundary traffic is the fact that Slovak trains do not reach the **station in Łupków** – traffic through the border has been suspended as a result of unprofitability. To Palota located on the border itself you can only get by bus from Medzilaborce. Trains from Humenne and Michalany as well as buses, among others, from Giraltovce, Stropkov, Humenne are running to Medzilaborce. An implementation of transboundary rides should be a **great convenience in the region's** transboundary transport. Particularly essential from the viewpoint of sustainable transport seems to be lack of railway services on the Medzilaborce – Palota – **Łupków** line. R63 international cycling trail is running through a Palota – Radoszyce border crossing.

There is also a possibility of crossing the border in Barwinek (The Dukla Pass, a country road No. 9). However, there is no transboundary transport here. Numerous buses from Svidnik **go to Vyžny Komarnik the furthest and on Polish side** – only to Barwinek. You can get to Svidnik on Slovak side by many buses from Bardejov, Presov or Koszyce. An implementation of Poland-Slovakia connections should be a considerable convenience in the borderland mobility (not only in tourist traffic) and it should enable to get to the UNESCO International Biosphere Reserve "Eastern Carpathians". You can use the Transboundary Carpathian Cycling Trail to get from Barwinek to Cisna.

On Slovak side there is also a developed cycling trail network running from Svidnik.

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<sup>132</sup> [www.trail.pl](http://www.trail.pl)

## 8.2. Proposals of transboundary connections with the Tatra Electric Railway in Slovakia

The second potential transboundary connection assumes using a sustainable sort of transport which is the Tatra Electric Railway (the so-called Elektriczka) in the Tatra region in Slovakia (Figure 9).

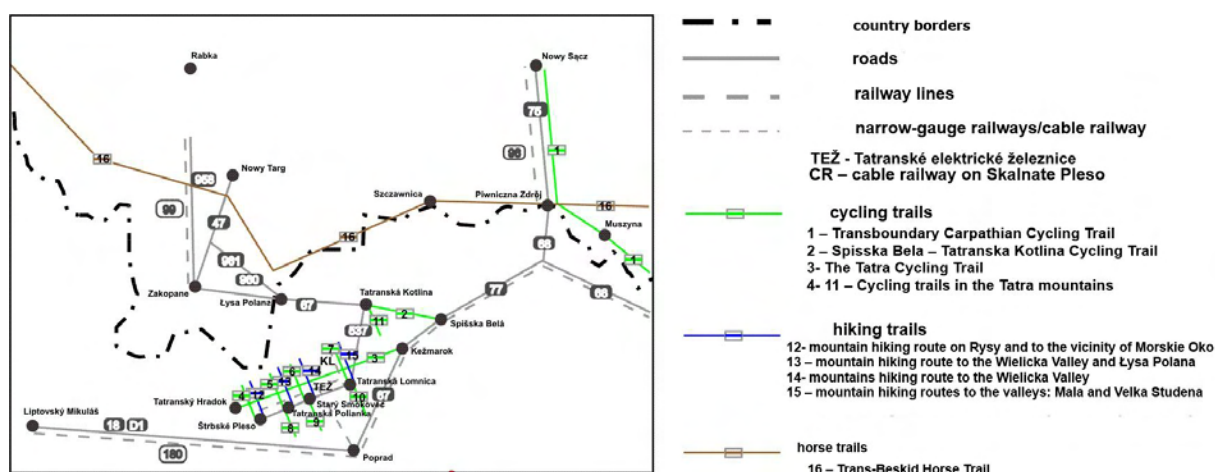


Figure 9. The suggestion of connections with the Tatra Electric Railway  
Source: an own study on the basis of different sources

On Polish side there is a possibility of fast transport by bus as well as by traditional rail to the largest city centre located at the foot of the Tatra mountains – Zakopane. It is easiest to get here from Cracow – bus connections are particularly numerous (The Regional Bus Station). From Zakopane STRAMA carrier provides services to the Slovak part of the borderland – **both to Szczyrbskie Pleso as well as to Tatrzańska Łomnica through Łysa Polana**. On Slovak side the Tatra Electric Railway provides excellent transport services to the Tatra valleys. As it has been mentioned in previous chapters, the railway is running on 3 lines: 183 (Poprad – Szczyrbskie Pleso), 184 (Stary Smokowiec – **Tatrzańska Łomnica**) and 182 (Szczyrba – Szczyrbskie Pleso). A great convenience is the fact that trains are running with a high frequency from early morning hours to late evening hours<sup>133</sup>. This sustainable form of transport provides connections within the High Tatra region both for the inhabitants (commuting to school and work) as well as tourists going to the most attractive regions of Slovak Tatras. The rail stations are located at the foot of the important Tatra valleys (annex No. 2). From the vicinity of **Tatrzańska Łomnica** there is a possibility of going by a cable railway on Skalnate Pleso (The Łomnica Peak) and to the valleys: the Mala Studena Valley and the Velka Studena Valley (there is also a passage from "Elektriczka" station in **Tatrzańska Leśna**). The same

<sup>133</sup> [www.slovakrail.sk](http://www.slovakrail.sk)

area is also accessible from Stary Smokowiec (there is also a passage on **Polski Grzebień** through the Wielicka Valley). From the **Tatrzańskie Zruby** and **Tatrzańska Polanka** stations convenient exploration of the Wielicka Valley is possible (**Śląski Dom**, **Świstowy Szczyt** and further through the White Water Valley to **Łysa Polana** to the Polish side). The most attractive area of the Tatra mountains is accessible from the station in **Szczyrbskie Pleso** from which many alpine routes are running, including those leading through the **Mięguszowiecka** Valley on Rysy and further to the Fish Stream Valley on Polish side (the vicinity of **Morskie Oko**).

Except mountain hiking routes there are also cycling trails, including a cycle lane **Spiska Bela – Tatrzńska Kotlina** at the disposal of tourists in the Tatra region in Slovakia. This lane is 9 km long and it has been created within the transboundary cooperation programme "Slovak-Polish Bielanske Tatras: together and better". The trail might be used both for riding a bicycle and rollerblading. In winter it is perfectly suitable for cross-country skiing. On the trail there is basic infrastructure in a form of stopping points (benches, tables) and tourist information (maps of the region and the cycle lane). Near **Tatrzańska Łomnica** (the railway station) there is also a start of the so-called **Tatra Cycling Trail** leading from **Liptowski Hradok** to **Kieżmark**. Moreover, many cycling trails of different category of difficulty leading in the direction of the most vital Slovak mountain huts (annex No. 3) are running from the most important tourist resorts of Slovak Sub-Tatras.

The Tatra Electric Railway in Slovakia enables convenient tourist exploration of the highest Carpathian range. A drawback is undoubtedly a lack of higher number of regular connections Poland-Slovakia in this region which should be correlated with "Elektriczka" departures<sup>134</sup>. The only mentioned carrier offering regular connections through the border in **Łysa Polana** is STRAMA transport company from Zakopane<sup>135</sup>.

An interesting solution is also crossing the border in **Piwniczna Zdrój** (a country road No. 87 in Poland/ a country road No. 68 in Slovakia) and getting to **Poprad** (through **Stara Lubowna**, **Kieżmark**).

On Polish side there are numerous bus connections from **Nowy Sącz** to **Piwniczna** (mainly provided by **PKS Oświęcim**) and railway connections (**Przewozy Regionalne**). The same road might be taken by bicycle – there is a marked Carpathian Cycling Trail here running from **Nowy Sącz** through **Piwniczna Zdrój**, **Żegiestów Zdrój** and **Muszyna** to

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<sup>134</sup> Small private buses departing from **Łysa Polana** provide transport services, however, they are not regular connections

<sup>135</sup> [www.starama.eu](http://www.starama.eu)

Leluchów). Moreover, in the area of the Sącz Beskids there is a possibility of connection with the Trans-Beskid Horse Trail (Brenna – Wołosate).

A large obstacle in transboundary traffic is a lack of international railway connections through Leluchów (connections suspended as a result of unprofitability). Connections through Plavec, Lipany to Koszyce (a line No. 188) and Plavec – Stara Lubowna – Kieżmark – Poprad enable free travel by rail in the Slovak borderland region, including transport to the Tatra Electric Railway.

STRAMA transport company also provides connections to Liptowski Mikulasz, where there is a possibility of using a "Liptów"<sup>136</sup> cycling trail. This cycling trail is leading around Liptowska Mara between the Western Tatra range and the Low Tatras in the vicinity of Liptowski Mikulasz and Liptowski Hradok (The Liptowska Valley). Stay might also be connected to sightseeing Demianowska Ice Cave, where there is an educational path. From Slovak side excellent transportation is provided by a well-developed bus transport (Poprad, Liptowski Mikulasz, Ružomberk) and railway transport (location by one of the main railway lines in Slovakia).

### **8.3. Potential marketing activities of the proposed transportation lines system and strategic partnership**

The discussed suggestions on connections of different sorts of transport in the region of Polish-Slovak borderland require preparation of a few preliminary, yet very essential marketing activities – the market segmentation, an analysis of necessary actions (including promotional actions), costs of initiatives planned as well as a strategy of potential Polish-Slovak partnership.

The market division into consumer groups which with respect to similarity of features demonstrate the same needs is extremely useful in relation to effectiveness of marketing actions taken<sup>137</sup>. The market segmentation procedure should be initiated from customer needs determination which shall allow for better offer adjustment and effective use of marketing instruments<sup>138</sup>.

Strategic, potential market segments shall be both the inhabitants of Polish-Slovak borderland area and (above all) tourists. The offer might be directed to families with children, amateurs of active tourism (in particular, mountain hiking, cycling tourism as well as horse tourism) and persons who visit the region occasionally for whom the

<sup>136</sup> [www.visitslovakia.com](http://www.visitslovakia.com)

<sup>137</sup> Altkorn J., 1997, Marketing w turystyce, PWN, Warsaw

<sup>138</sup> Korzeniowska – Zdon M., 2009, Jak kształtować regionalne produkty turystyczne? Teoria i praktyka, Wydawnictwo Uniwersytetu Jagiellońskiego

connections suggested make the journey convenient and they are an offer of using alternative sorts of transport (traditional railway, narrow-gauge railway, tourist routes). A particular target segment is tourists who practise mountain hiking in the Tatra region, where thanks to the presented offers of multimodal transport, there is an opportunity of getting to the highest Carpathian areas.

Also the handicapped might use the integrated connections system offered. On many sections the sorts of transport suggested possess facilities for persons who move in wheelchairs (all narrow-gauge railways discussed, the Tatra Electric Railway, traditional railway). Moreover, in the latest years border crossings accessible for such persons are built (e.g. a border crossing in Roztoki Górne near Cisna).

The multimodal connections offer can be used both by individual customers and group customers (including school trips, summer or winter camps, etc.). It might also be used for both longer stays and weekend stays.

The proposed integrated transport system might use present infrastructure to a considerable extent (e.g. on tourist routes or narrow-gauge railway routes), however, it should also cover the following actions:

- formation of cycle racks as well as stopping and rest places (in particular, in junction points),
- route marking – visual information system: preparation of information boards for passengers (a map of the region, possible suggested connections, junctions points, tourist values, etc.),
- formation of primary sanitary infrastructure in junction points,
- promotional packages formation, including the implementation of a so-called tariff policy facilitating transport connection (common fares for tickets in different sorts of transport, including combined tickets in case of going by both narrow-gauge railways on Polish side), sale development of the so-called network tickets or monthly subscription (unlimited number of rides by selected lines during a definite period of time),
- preparation of information and promotion system (among others: information materials on a possibility of the **region's integrated transport**, maps and folders, internet system),
- cooperation with partners in the region within the scope of products and services packages formation (e.g. combined tickets on a ride by sorts of transport and cultural events or accommodation),
- the increase of distribution and at the same time, tickets sale accessibility (e.g. kiosks, accommodation buildings or gastronomic premises),
- popularisation of tickets sale electronic forms.

Such actions shall guarantee safe and convenient travelling and transport to primary stops of collective transit and proper transport system operation. In order for marketing actions to bring the intended result, a marketing strategy should be formed (so-called mix marketing: product, price, place, distribution, promotion).

In all the process of forming promotion policy the so-called promotion instruments (sources) (the so-called promotion-mix) play a key role. They are: advertisement, sale promotion, public relations and personal sale. The most significant promotional actions of the integrated transport system offered are:

- advertisement on the Internet,
- advertisement publishings: folders with maps,
- additional programmes in tourist seasons (e.g. discounts for groups, network tickets, monthly subscriptions),
- additional attractions and events (cultural, sports events, etc., taking place during trips e.g. by narrow-gauge railways),
- free seasonal sightseeing (e.g. a historic rolling stock of narrow-gauge railways, museums located by the routes),
- offer presentation at tourist fairs.

Here information should have a form of data and offers integrated system in different channels of distribution. It should include both electronic and analogous parts.

A traditional (analogous) information system should include preparation of proper sign posts (leading a tourist along the route), information boards and leaflets (with schematic maps and junction points marked) presenting connection possibilities of different sorts of transport.

An electronic system (digital) assumes, above all, creation of a website which provides information on the sorts of transport integration possibilities on both sides of the borderland. The website should include detailed data on the route of particular transport lines and their junction points, timetables (buses, small private buses, traditional railway, narrow-gauge railway), exact description and difficulty category of tourist routes, prices of different sorts of transport present in the vicinity of tourist attractions and primary tourist facilities development.

All actions suggested on potential transport connections possibilities in the region require cooperation of different entities operating there which could form a common marketing policy of this initiative. They are tour operators and entities taking part in service provision for tourist traffic (owners of accommodation and gastronomic offer as



well as owners of transport companies, local travel agencies and all types of cultural institutions: museums, galleries, culture centres, etc.<sup>139</sup>

Moreover, organisations supporting tourism development in the region are very significant (associations, foundations, regional and local tourist organisations, etc.) and local government, which has a direct influence on the type of regional initiatives taken. The role of local governments is in this case, among others: supporting local initiatives, forming a system of incentives and facilities, developing and improving the marketing system and forming spatial harmony. What is more, it realises tasks within the scope of technical infrastructure (roads, paths, local transport, etc.), having an influence, among others, on approach roads quality to the region and on connections system. Furthermore, local organisations gathering tourist business entities serve an important function (owners of accommodation, gastronomic, transport offer, etc.) as well as associations, commune unions and regional development agencies. These entities create complex tourist products, conduct common marketing, deal with preparation of new and improvement of existing **region's offers**.

Actions coordination of all entities is necessary primarily in order to stimulate tourist traffic, organise tourist initiatives, new investments or cohesive regional information system.

Among entities which could play an essential role in creation and development of the suggested multimodal transport system on Polish-Slovak borderland, above all, local authorities and local governments should be mentioned, including The Local Government of Podkarpackie Voivodeship and Presov Region. In the second place district partnership can be of essential significance within the area of which connections function. Cooperation of the following districts seems to be vital: Sanok district and Lesko district (The BFR) and Przeworsk district (The PCR) with districts in Slovakia: Medzilaborce, Svidnik and **Poprad (TEŽ)**. Moreover, partnership of communes located within their area, particularly those which are located close by the border might be of great importance (in case of the Bieszczady region: Palota, Medzilaborce, Kalinov with communes on Polish side: Cisna and **Komańcza** and in case of the Tatra region: **Tatrzańska Łomnica, Poprad, Szczyrba** with communes: Zakopane and **Bukowina Tatrzńska**. Cooperation of Wysokie Tatry and Poprad towns with Zakopane is also essential.

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<sup>139</sup> Korzeniowska – Zdon M., 2009, Jak kształtować regionalne produkty turystyczne? Teoria i praktyka, Wydawnictwo Uniwersytetu Jagiellońskiego

From the viewpoint of transit connections prepared cooperation of transport companies operating within the area discussed seems to be important, including in particular: STRAMA Transport Company in Zakopane, The Tatra Electric Railways, Polskie **Koleje Państwowe (PKP)**, **Železnice Slovenkej Republiky** company, SAD bus company in Slovakia (in particular: SAD Poprad, SAD Humenne, SAD Svidník). In order to intensify and correlate connections, partnership of other transport companies operating on Polish side might be of considerable importance, including among others: **PKS Oświęcim**, **EUROBUS Przemyśl**, **VOYAGER (Władysław Wojtarowicz)** and Veolia Transport. What is more, cooperation of the Przeworsk Commuter Rail (PCR) with the Bieszczady Forest Rail (BFR), providing an opportunity of common tariff policy and promotional actions might be also of fundamental importance.

A high convenience in transboundary tourist traffic could be initiation of cooperation between regional and local tourist borderland organisations, including among others: the Podkarpacie Regional Tourist Organisation and the "Wysokie Tatry" Regional Tourist Organisation in Slovakia. An essential role in partnership might be also played by LTO "Beskid Niski" (Krosno), LTO "Wrota Karpat Wschodnich" (Bircza) and LTO "Bieszczady" (Sanok)<sup>140</sup>.

Among other entities attention should be also drawn to: the Podkarpacie Chamber of Commerce (Krosno), Grupa "Eko-Karpaty" (Ustjanowa Górna), the Bieszczady Foundation (Ustrzyki Dolne), The Carpathian Centre of Green Tourism (Ustrzyki Dolne/Snina), "Wysokie Tatry" Association, Hotel and Restaurant Association in Slovakia, Slovak Tourists Club (Snina) and selected travel agencies (in particular, ecotourist agencies), among others: "Bieszczader" Travel Agency (**Rzepedź**), "Green Bicycle" Ecotravel Agency (taking part in the "Greenways" programme or the "Pawuk" Bieszczady Travel Agency (Zagórz)).

What is more, essential from the viewpoint of using tourist routes seems to be actions coordination of national parks and landscape parks in the region (among others: **The Przemyśl Foothills LP**, "The San River Valley" LP, Cisna and Wetlina Landscape Park, the Bieszczady National Park and the **"Połoniny"** National Park in Slovakia as well as the Tatra National Park with Tatranský Narodny Park). Furthermore, cooperation within Euroregions existing in the Polish-Slovak area discussed is also essential. ("The Tatras", "The Carpathians", "The Beskids").

Considerable convenience in services provision for transboundary tourist traffic should also result from cooperation of agritourism farms, active tourism centres

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<sup>140</sup> [www.pot.gov.pl](http://www.pot.gov.pl)

(including horse tourism centres), regional taverns, etc. existing in the region. An example is, among others: "SNINA" Equestrian Centre in Slovakia, "The Horse Valley Equestrian Centre" Agritourism Farm (**Łukowe**) or "Gazdovski Dvor" restaurant (Zamplinske Hámre)<sup>141</sup>.

Conduction of actions directed at transport multimodality intensification in the described area of Polish-Slovak borderland is considered as possible for realisation, primarily as a result of the fact that it is not necessary to create new transport infrastructure. However, a drawback is undoubtedly lack of transboundary railway connections between the Podkarpackie region and the Presov region (a Medzilaborce – **Łupków** railway border crossing point). Restoration of connections could provide a possibility of easy mobility between regions for both the borderland's inhabitants and tourists who visit the region. As a result of the fact that railway is an ecological sort of transport, those actions could realise the idea of sustainable development, which is an asset on the territory so environmentally attractive, with considerable per cent of protected areas. The cost calculation estimation of the actions suggested is, however, dependent on the marketing strategy assumed, used tools and connections variants. A primary action which generates costs in the initial realisation stage of the connections system offered is promotional activity – directing the offer both to the region's inhabitants and tourists themselves. The most expensive part of the initiative is route marking – creation of visual information system.

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<sup>141</sup> [www.gocarpathia.pl](http://www.gocarpathia.pl)

## 9. SUMMARY AND CONCLUSIONS

The transport connections analysis of Polish-Slovak borderland provides many valuable observations. The most significant conclusions have been presented below:

- the borderland area studied is a one of the least urbanised areas in Poland and in Slovakia. It is distinguished by valuable natural environment transformed by man to a small extent (diverse mountain ranges, clear rivers, mineral waters occurrence),

- nature protection system is developed in the region, including 13 national parks, many landscape parks, Nature 2000 protection network, 3 transboundary UNESCO Biosphere Reserves,

- with respect to anthropogenic values the area is distinguished by large multiculturalism – there are many monuments of architecture and folk housing, including those which entered a list of the UNESCO World Heritage,

- **the region's tourist infrastructure is highly developed. There are many** tourist centres here (health resorts, ski centres, tourist resorts). The largest concentration of tourist facility centres is a feature of the Tatra region on both sides of the border. There is a developed network of tourist routes (mountain hiking routes, horse trails, cycling trails), including transboundary routes,

- the largest tourist traffic is a feature of the Tatra region (on both sides of the borderland). Diverse forms of tourism are developing, including mountain hiking, cycling tourism, equestrian tourism, spa tourism, cultural tourism. Many new tourist attractions are created in tourist resorts,

- western part of the borderland is considerably better communicated (road transport, railway transport) than eastern part,

- there is a shortage of transboundary railway connections in Podkarpackie Voivodeship and the Presov region (railway border crossing points Muszyna-Plavec and **Łupków**-Medzilaborce do not operate). This fact considerably impedes free travelling of both the inhabitants and tourists in the region. Bus transport reaches only border towns on a proper side of each country,

- perfectly developed railway and road infrastructure in the region of Liptowski Mikulasz and Poprad facilitates transport on Slovak side (the main railway line no. 180 in Slovakia and a country road No. 18),

- on Polish side of the border road transport is considerably better developed (bus lines) than railway transport,

- there are 4 narrow-gauge railway lines in the area studied (including 2 in Podkarpackie Voivodeship). Both the Przeworsk Commuter Rail and the Bieszczady Forest Rail **do not serve the region's inhabitants as an alternative sort of transport**, which is

their clear drawback, particularly that they are well communicated with the nearest city centres on Polish side (large possibilities of connections within multimodal transport),

- The Bieszczady Forest Rail is more frequently used by tourists and possess better infrastructure than the Przeworsk Commuter Rail whose route is leading through less attractive areas and its complicated ownership structure does not allow for external resources acquisition and hinders cohesive promotion. Both rails are adjusted to transport of the handicapped. Their drawback is, however, seasonal operation,

- The Tatra Electric Rail in Slovakia is both an excellent element of multimodal transport in the Tatra region and an essential sort of transport for tourists (also for the handicapped who move in wheelchairs). The rail is distinguished by a large frequency of rides and stations located at the foot of the Tatra mountain valleys enable to get to the most attractive, protected areas of Polish and Slovak Tatra regions. An additional advantage is the fact that "Elektriczka" rides are communicated with traditional railway trains departures in Slovakia,

- timetable transboundary connections in Podkarpackie Voivodeship and the Presov region are provided only by one carrier and they allow for getting to towns located at the foot of the Slovak Tatras. Too small number of connections, however, hinders free influx of tourists across the border,

- transboundary connections in the Tatra region suggested in the analysis use bus transport (Polish side) and its linking to the Tatra Electric Railway (Slovak side), thanks to which there is good access to mountain hiking routes in the Tatras and marked tourist routes (including cycling routes) in the Sub-Tatra region,

- the suggested connection of the Przeworsk Commuter Rail and the Bieszczady Forest Rail enables to get to valuable protected borderland areas with the use of alternative sorts of transport,

- multimodal transport integrated system described in this study is possible for realisation and it does not require many financial outlays because of already present infrastructure. The most significant initiative seems to be promotional actions aiming at popularisation of connections possibilities and common tariff policy of carriers which enables travelling in the borderland region. Potential partnership of entities and local authorities is also essential.

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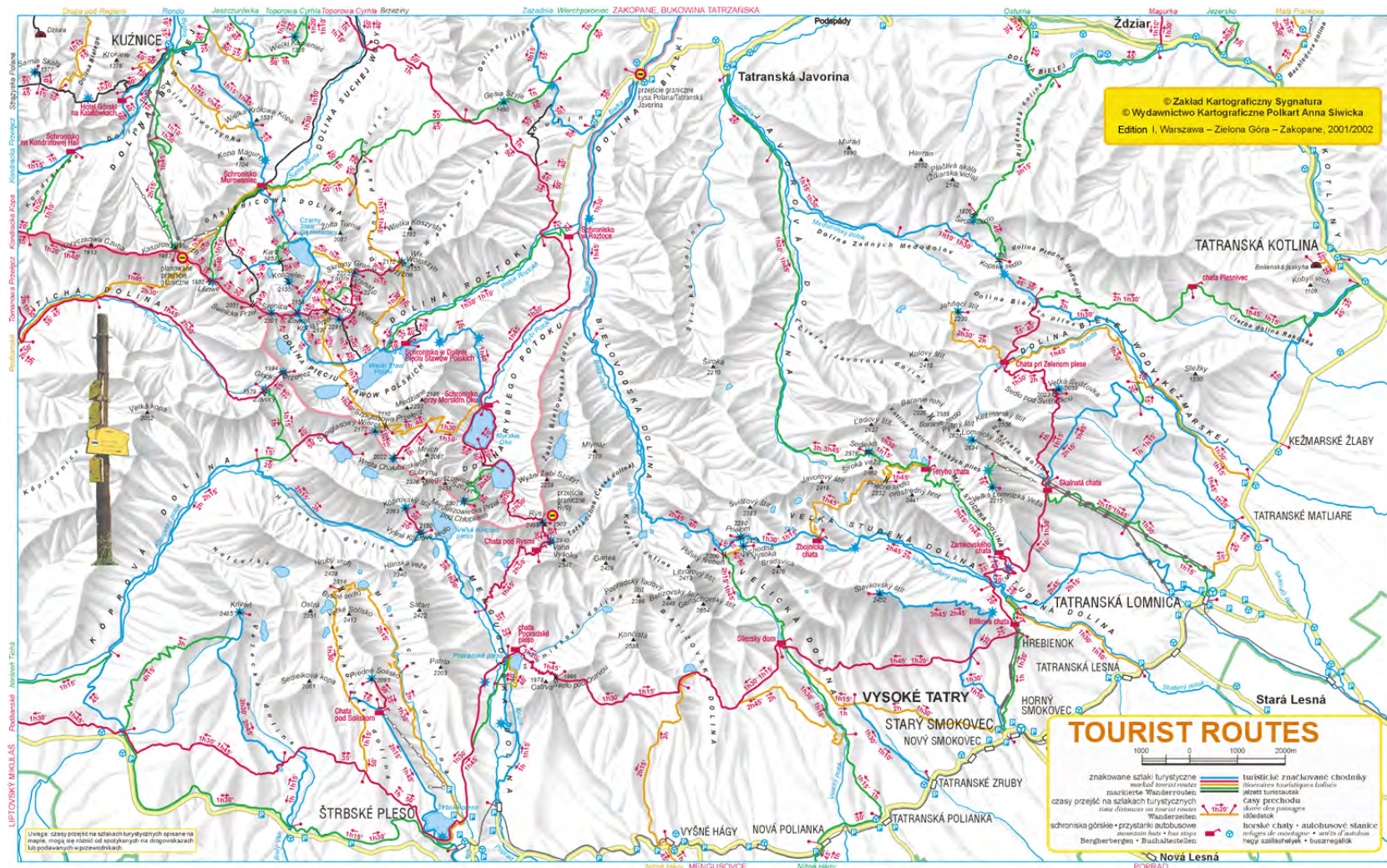
## 11. ANNEXES



Annex No. 1. The Orava Forest Rail Route  
Source: [www.oravskemuzeum.pl](http://www.oravskemuzeum.pl)

“Sustainable transport: integration possibilities of existing narrow-gauge railways lines, traditional railway lines and alternative transport routes in the Polish-Slovak border region with particular consideration of Podkarpackie Voivodeship in Poland and the Presov region in Slovakia”

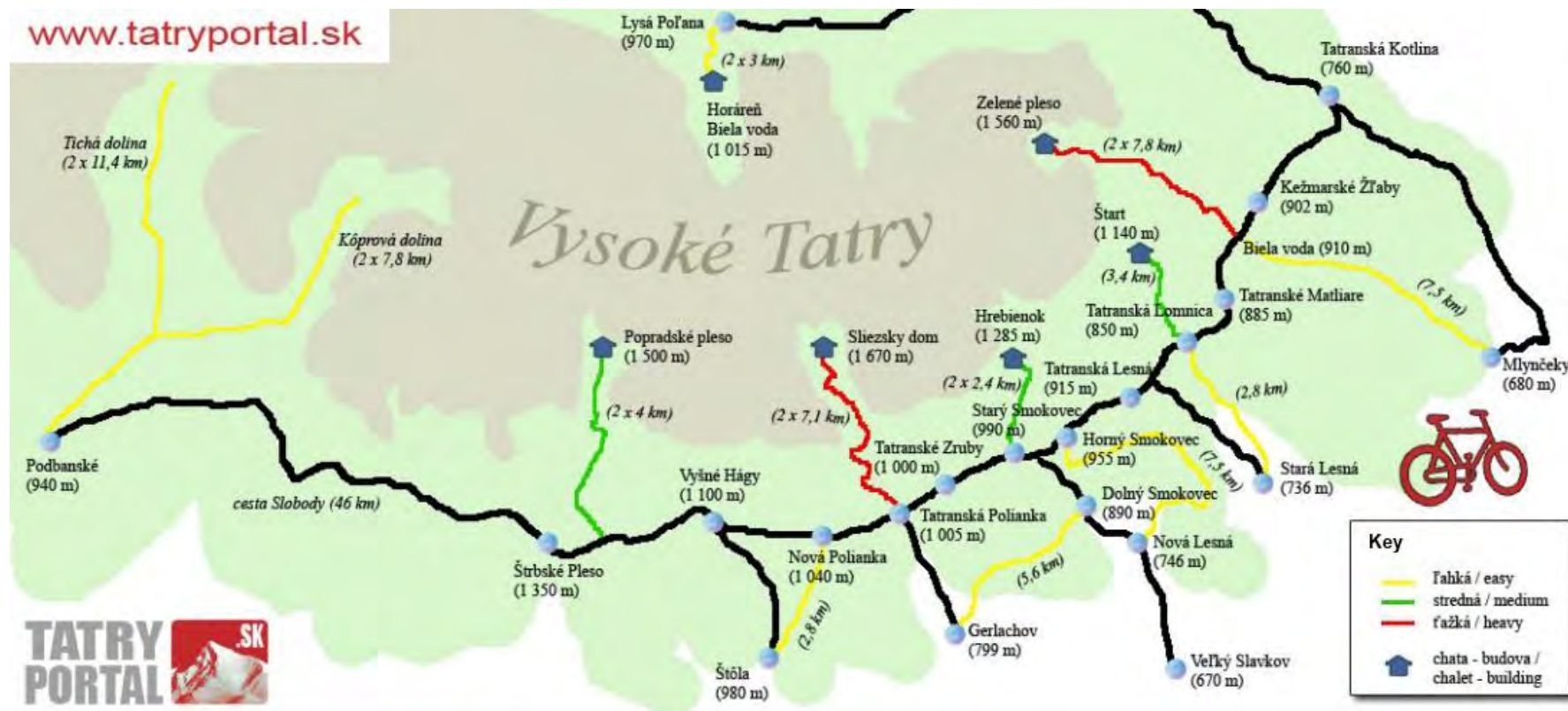




Annex No. 2. Mountain hiking routes in the Tatras, Source: [www.slowacja.hej.pl](http://www.slowacja.hej.pl)

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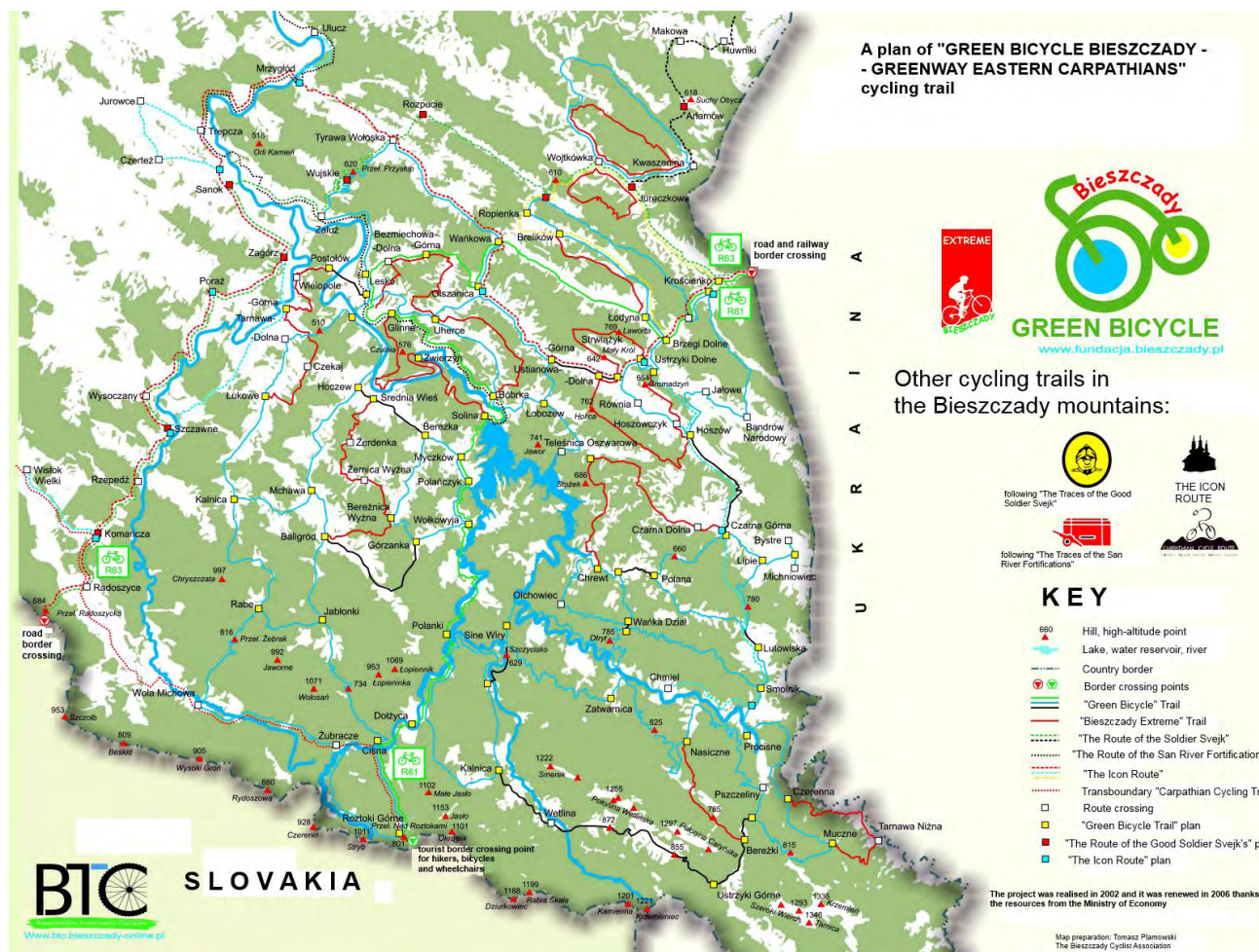




Annex No. 3. Cycling trails in the Tatra region in Slovakia

Source: [www.tatryportal.sk](http://www.tatryportal.sk)





Annex No. 4. Tourist routes in the Bieszczady region

Source: [www.bieszczady-online.pl](http://www.bieszczady-online.pl)

**"Sustainable transport: integration possibilities of existing narrow-gauge railways lines, traditional railway lines and alternative transport routes in the Polish-Slovak border region with particular consideration of Podkarpackie Voivodeship in Poland and the Presov region in Slovakia"**



Annex No. 5. A plan of tourist routes in the Przemyśl Foothills and the Dynów Foothills

Source: www.przemysl.pl