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INSTYTUT GEOGRAFII I PRZESTRZENNEGO ZAGOSPODAROWANIA
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POLISH-SLOVAK BORDERLAND

TRANSPORT ACCESSIBILITY AND TOURISM

PAN IGiPZ

Warszawa 2012

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POGRANICZE POLSKO-SŁOWACKIE

DOSTĘPNOŚĆ TRANSPORTOWA I TURYSTYKA

INSTITUTE OF GEOGRAPHY AND SPATIAL ORGANIZATION
Stanisław Leszczycki
POLISH ACADEMY OF SCIENCES

GEOGRAPHICAL STUDIES No 234

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CONTENTS

1. INTRODUCTION

This study is a result of nearly three-years' work carried out by a team from the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences and the Institute of Geography of the Slovak Academy of Sciences. The analytical and empirical research was carried out within the framework of the INFRAREGTUR project (*Infrastructural and organizational possibilities of spatial accessibility improvement as a factor for development of the Polish-Slovak tourist regions*), financed mainly by the European Regional Development Fund (ERDF) through the Republic of Poland – Slovak Republic 2007–2013 cross-border co-operation programme (85% of overall expenditure). Some of the financing was provided by the Polish Ministry of Science and Higher Education, by the Institute of Geography, and Spatial Organisation of the Polish Academy of Sciences and by state budget of the Slovak Republic. The project was implemented in the years 2009–2012 under the programme priority: Social and economic development through developing cross-border cooperation in tourism.

The idea behind the project has its origins in the more than twenty years of bilateral cooperation between the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences and the Institute of Geography of the Slovak Academy of Sciences. Both these partner institutions carry out research on accessibility, tourism and cross-border cooperation. The continuation of research on these issues with respect to a common territory, i.e. the Polish-Slovak border area, was a natural follow-up to this cooperation.

1.1. RESEARCH GOALS AND OBJECTIVES

The main goal of the project was to identify the opportunities for enhancing tourist potential through improving the accessibility of the borderland and the transfer of knowledge and good practice from the research sector to the administration sector. The main goal was delivered through the following objectives:

- Describe the current situation in terms of land management and tourist flows in the borderland and indicate the tourist centers;
- Analyse the accessibility of individual regions and tourist centers from the main locations creating demand;
- Specify the key transport solutions needed for the tourist centers and regions to grow.

The main objectives in the application process were as follows:

- Support authorities in local and regional policy making in the following areas: tourism (investments, ways of improving accessibility of tourist areas), economic development (promoting tourism, domestically and internationally), publicity (marketing the area) and financing (including ways of obtaining EU subsidies for local and regional policy making);
- Ensure the transfer of knowledge to the public administration and tourist organisations and adapt it to the particular situations in Poland and Slovakia;

It must be stressed that this book mainly presents the results of analytical and empirical research. It does not discuss the theoretical and conceptual studies.

1.2. DETAILED DESCRIPTION OF PROJECT DELIVERY

The activities delivered in the framework of the project were designed to identify the opportunities and threats associated with developing the tourism potential of the area by improving accessibility. It must be stressed that it was not the authors' objective to provide a definitive evaluation of the changes likely to result from increased accessibility[1]. The aim was to assess the magnitude of these changes, the sectors in which they will take place and their territorial distribution. Indicating the opportunities and threats related to transport development and its impact on tourism and regional growth may be a useful decision-making tool for the public administration. Consequently, it may improve the tourist attractiveness of certain areas and enhance their opportunities for exploiting existing and creation new tourist potential.

[1] It is hard to determine clearly whether, for example, enhanced tourism resulting from substantially improved accessibility is positive or negative. It may be a threat from the perspective of nature conservation, but may be beneficial to local government as it may generate increased income.

The implementation of the project was possible thanks to close co-operation between the two Institutes. The authors of the projects organised eight meetings to discuss key points, field work and meetings with local and regional representatives of the institutions operating within the border area (12 meetings altogether). A major achievement of the project was the organisation and delivery of training and consultations with local and regional authorities and other representatives of institutions active in the borderland area (two rounds of training, 6 seminars each).

The main tasks carried out in delivering this project and publishing this book included:

- analysis of documents, i.e. strategies, studies etc. carried out at several levels: the national, voivodship, and in special cases also at the poviat and gmina levels as well as by sectors (regional policy, socio-economic development, tourism, environmental protection); the results of this work are presented in sections: 2.4; 3.7; 4.4.;
- literature studies (mainly issues related to transport availability, tourism development, cross-border cooperation, geography of the Polish-Slovak border area etc.);
- field studies (in the course of working visits, visits to selected gminas, training and consultations etc.);
- consultations with representatives of local government as well as local and regional institutions;
- two surveys (analysis of the needs for improving accessibility and the role of tourism from the perspective of gminas, tourist organisations and tourists); the results of the surveys are presented in section 5;
- combined statistical and cartographic analyses aimed at proving or disproving the correctness of assumptions, hypotheses and opinions; for the most part the analyses are presented in section 6, but also in sections 2, 3, 4, 5 and in the final conclusions (section 7);
- analysis of the results and formulation of conclusions (presented at the end of each section and in section 7, which summarises the whole book).

Apart from this study, the results of the project are presented in the project's good practice manual entitled *The potential for improved accessibility and tourist development in the Polish-Slovak borderland.*

Conditions, recommendations and good practices, which is also available at the project website (http://www.infraregtur.eu).

The number of participants in the project was very high. Marek Więckowski was the coordinator of the overall project work and of the project itself. Daniel Michniak coordinated the Slovak part of the project. Apart from them, the following persons participated in the project and prepared this book (alphabetical order): Maria Bednarek-Szczepańska, Branislav Chrenka, Vladimír Ira, Tomasz Komornicki, Piotr Rosik, Marcin Stępniak, Vladimír Székely, Przemysław Śleszyński, Dariusz Świątek, Rafał Wiśniewski. Individual reports, studies and data bases were also prepared by: Ariel Ciechański, Sławomir Goliszek, Mikuláš Huba, Marta Jarzębowska, Elżbieta Rojan, Peter Skubinčan, Beata Zielińska.

1.3. TERRITORY COVERED BY THE RESEARCH

The research results presented in this study cover the Polish-Slovak border area corresponding to the area receiving support for cross-border cooperation in the Republic of Poland – Slovak Republic programme 2007–2013 (Fig. 1.1). In this study the "Polish-Slovak border area" is understood as the entire area eligible for support under the European Territorial Cooperation 2007–2012 (Fig. 1.1; Level 1 analysis). Whenever the term "border area" refers to a part of the entire territory covered by the research, the authors try to indicate this in very clear terms.

Figure 1.1. Area covered by the study (Level 1) – Polish-Slovak border area

Source: own elaboration.

Most of the key analyses and conclusions apply to the entire Polish-Slovak border area, yet for many aspects the authors considered it justified to narrow down the territory. In order to address such aspects as close cross-border cooperation, cross-border flows and to limit the territorial coverage of the surveys they designated Level 2 (Fig. 1.2), which covers the administrative units located along the state border (*gminas* in Poland, and *obce* in Slovakia) at a distance not exceeding 15 km.

Figure 1.2. Area of close cross-border cooperation between Poland and Slovakia set for the purposes of detailed research

Source: own elaboration.

In addition, the authors selected six specific areas chosen by their tourist potential (Level 3) to be analysed in terms of transport, tourism and accessibility (the corresponding results are presented in sections 3.6, 4.3 and 6.6). These include several gminas on the Polish side and several obce across the border. Starting from the west these are: Beskid Żywiecki, Beskid Śląski and Beskid Kusycki, the Tatra Mountains, the Pieniny Mountains, the Poprad Valley, Beskid Niski and the Bieszczady Mountains/Poloniny (Fig. 1.3).

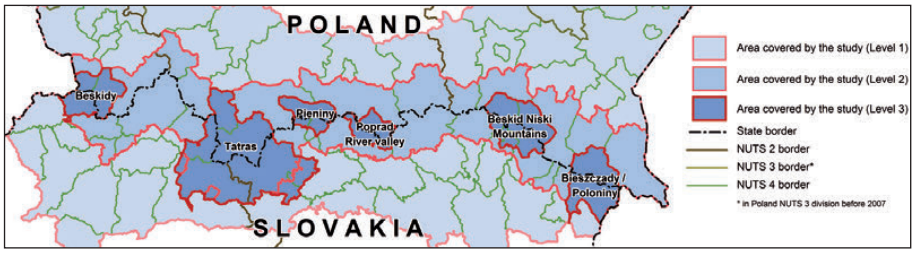

Figure 1.3. Areas covered by specific research (Level 3)

Source: own elaboration.

1.4. REASONS FOR INITIATING THE RESEARCH AND RESULTS OBTAINED

An essential requirement for the development, not only of tourism but also of most sectors of the economy, is the development of transport infrastructure and adequate accessibility of areas. Actions in this respect should be complementary to developments across a range of economic sectors. Apart from its relevance for tourism, transport infrastructure is a key factor contributing to economic success based on tourism. Unfortunately, existing research in the field of cross-border area accessibility is inadequate. Meanwhile, a number of studies, carried out by, among others, the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences, clearly indicate that nowadays networking and overall regional development must be based on detailed accessibility analyses leading to optimisation of the transport system (Komornicki et al 2010; Michniak 2010; 2011). In recent years, such studies have been successfully delivered by the Institute of Geography and Spatial Organisation, notably in the Mazowieckie Voivodship (Komornicki and Śleszyński 2009). Research covering the entire territory of Poland was conducted in the framework of the work on the Concept for the National Spatial Organisation Policy (Komornicki et al 2008). A natural continuation of these efforts is to use the methods developed and experience gained to date for cross-border areas (here the Polish-Slovak borderland).

The studies so far published in Central Europe on the accessibility of tourist areas are few and far between, fragmentary and cover small areas. One of the most interesting of these deals with the accessiblity of health resorts, but only on the Polish side of the border (Guzik, Kolos, 2003). Both the Polish and the Slovak borderland areas have great potential for developing tourism (in view of their natural qualities) and for stimulating regional development in general, while currently suffering from inadequate transport connections due to the orographic barrier. For this reason there is every justification for addressing these issues for the cross-border areas concerned. The accessibility analysis prepared in the course of the research across a range of spatial scales has allowed the authors to map transport bottlenecks, which may serve as the basis for investment- and organisation-related recommendations that should improve the situation in terms of functional connections

between the areas. Moreover a methodology has been created for evaluating accessibility and its impact on tourism, which can potentially be used by local government and other actors in the future (considering the dynamics of the on-going socio-economic and infrastructural changes).

What has turned out to be a challenge is the transfer of knowledge to the sphere of practice, which is crucial to economic development. Administrative, planning, decision-making and tourist bodies and organisations will obtain unique results from the analysis which will allow them to estimate the actual accessibility and its significance for tourism development and planning the infrastructure network, most particularly in the transport sector. Knowledge about actual accessibility will provide stakeholders with a basis for more effective management, reflecting actual processes and needs. Thus this knowledge is of critical importance for regional and spatial policy making at different levels. The conclusions of this study include specific recommendations for a range of policies: transport, tourism, regional and spatial policies as well as those related to developing transport projects for the Polish-Slovak border area. At the same time, this publication provides a critical review of existing land management plans.

Accessibility is an essential precondition for tourism development. A reverse dependence can also be observed here. On the one hand, upgrading transport infrastructure improves the attractiveness of tourist destinations and helps explore ("discover") new tourist destinations, and on the other, increasing tourism (including tourist flows) forces decision makers to enhance transport systems, which often become the main driving force of interregional and international relocations. Conversely, poor accessibility makes tourists escape to regions enjoying better accessibility, development and organisation, and offering better quality services. Thus, deprived of new investment, regions suffering from poor accessibility (i.e. most of the Polish-Slovak border area) and offering inadequate tourist facilities put limits on their activities (e.g. to the high season, which is economically unviable) and stagnate. This impairs the tourist functions within these areas.

Prosperous regions tend to undergo cumulative processes, which allow them to multiply their resources and expand operations. However, this may generate excessive concentration of tourism and use of land

for tourist purposes and lead to conflicts (e.g. over nature conservation issues).

Natural qualities alone, without sufficient tourist and transport infrastructure, will not ensure socio-economic growth. It merely creates a potential opportunity for such development. Therefore what is important is to assess the accessibility of the regions and tourist hubs in the Polish-Slovak border area both by country and in cross-border terms. The knowledge thus obtained seems crucial for any further development in the areas. As a rule, growing or improving accessibility enhances attractiveness, increasing tourism flows in many tourist regions. Poor or declining accessibility may lead to the marginalisation of towns and whole regions, hindering or completely blocking economic growth. This mainly concerns public transport, which hardly permits the tourist areas on both sides of the Polish-Slovak border to be explored. Meanwhile, public transport is crucial to ensuring sustainable development within naturally valuable areas.

The present-day situation in the border areas is a threat to their development. Currently, many locations, which are a source of tourist demand (e.g. large cities, such as Warsaw, Bratislava, Gdańsk, Poznań) have easier and better transport connections to many places elsewhere in Europe than to the Polish-Slovak border area. This may result in a massive escape of both foreign and domestic tourists to destinations located abroad. The stagnation or decline in tourist flows may lead to an economic recession of the vast borderland areas, which cannot prosper thanks to internal factors alone.

What merits separate attention is poor cross-border accessibility at the local level. This is reflected in the lack of coordination of tourist routes (frequently there are two parallel routes on both sides of the border) and lack of roads and bicycle paths near the border. Tourist facilities (hostels, restaurants etc.) on the border are also scarce. What is also far from perfect is the tourist information system, which is mainly oriented to domestic tourists.

Tourism development analyses and studies carried out over recent decades in Poland and Slovakia do not address the problems, while the results of evaluations merely touch on the poor accessibility and bad condition of the roads. There is neither any detailed research showing actual accessibility, including the time and cost of reaching major

tourist destinations, nor any comprehensive studies to explain the implications of the current insufficient accessibility for the growth of tourism.

The accessibility analysis conducted in the framework of this study has not only supplied information on the actual accessibility (in terms of travel time) of the different tourist hubs, but has also revealed the potential groups of clients and their sizes broken down by functional subgroups. The accessibility expressed in time and economic terms is specified for specific market segments (e.g. international and domestic tourism), considering such aspects as seasonality, length of stay and flow figures.

The authors have evaluated the implications of existing accessibility to determine both the key transport solutions required for successful development of the tourist hubs and regions in Poland and Slovakia, and to specify the threats for further growth of tourism and individual regions.

Another key element of the research was the cross-border aspect (spatial management and organisation). The authors compared the research results for counterpart regions of both countries and analysed existing polarisation and complementarity trends at the local and regional level. The effects of the work may provide a stimulus for developing local and regional cross-border transport – both public and private. The expected benefits of such cooperation for both sides (Polish and Slovak) include the possibility of exploring the current changes occurring at the local and regional level throughout the Polish-Slovak borderland.

It must be stressed that the on-going tourism development reflects the current excessive concentration of tourist facilities and thus also of the tourist flow itself. This is likely to affect the attractiveness of tourist destinations due to excessive pressure (pollution, transport inconvenience, overcrowding) and lead to negative changes in the natural environment. The suggestions presented take into account the need to minimise negative environmental impacts.

The authors of the project used detailed spatial databases created by the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences and the Institute of Geography of the Slovak Academy of Sciences. The research resulted in the establishing of

unique databases on the cross-border road system and tourist attractions (over 1800 items) etc.

Each section contains a detailed description of the methodology. The analysis of the initial situation is based on the most recent knowledge – for most part applying to 2010. As regards the analysis of the transport network (road, rail and air transport), the data used cover investments completed by the end of 2012 and planned projects (both short-term and with a longer-term horizon of 2030) (see sections 3 and 6).

2. CONDITIONS FOR DEVELOPMENT OF THE POLISH-SLOVAK BORDERLAND

The main objective of Chapter 2 is to introduce the conditions for development of the Polish-Slovak borderland. The Chapter specializes mainly in the similarities and differences between the Polish and Slovak sides in terms of several aspects: natural conditions (2.1.), legal regulations for environmental protection (2.2.), cultural-historical and socio-economic conditions (2.3.). Moreover, the Chapter describes planning of territorial and regional development at the national and regional levels (2.4.) and the Chapter describes the most important fields of Polish-Slovak cross-border cooperation (2.5.).

2.1. NATURAL CONDITIONS

The Polish-Slovak borderland is characterized by extraordinary natural wealth. The natural attractiveness of the area is influenced by many factors, from which the most important are:

- Area containing young folded chains with varied geological composition (Tatras, Pieniny, Beskydy),
- Varied relief (from high alpine-type mountains, through medium mountains to low mountains and foothills),
- Distinctively formed vegetation levels: oak, beech, spruce, dwarf pine, alpine meadows and subnivean level,
- Exceptional mountain meadows in the Eastern Beskydy called poloniny,
- A large proportion of forests (relatively little affected by human intervention) – especially in the eastern part,
- River gorges (including the Dunajec and Poprad),
- Purity of surface waters,
- Diversity of fauna and flora,
- A large number of endemic species of plants, animals and plant communities both in Poland and Slovakia,
- An area of relatively little human intervention and less intensive use of mountain localities difficult to access resulting from the

area morphology as well as from the existence of borders during several centuries,
- Relatively large distance from major cities, industrial areas and centres of economic growth (especially in the eastern part),
- Relatively long tradition of activities aimed at environmental protection and possibility to protect the territory along both sides of the border.

The whole Polish-Slovak borderland is located in the territory of the Carpathians, which, from the geomorphologic classification's point of view, is divided into two provinces – Western Carpathians and Eastern Carpathians. The borderland area mainly consists of young folded chains with varied geological composition and varied relief formed by a diverse mosaic of mountains, basins and valleys. Gerlach Peak in the Tatras (2655 m above sea level) is the highest peak of the borderland. From the geological perspective this part of the Carpathian arc consists of an older zone called the Inner Carpathians (which also includes the Tatras) and a younger zone called the Outer Carpathians – Beskydy and Carpathian foothills (Oszczypko 1995). The Pieniny Klippen Belt forms the boundary between these two zones (the Pieniny Klippen Belt is called *Pieniński Pas Skałkowy* in Poland). The units of the Outer Carpathians are formed by Paleocene flysch with alternating layers of claystones and sandstones (Korec et. al 1997), and sporadically of conglomerate admixtures. The units of the Inner Carpathians are created by granitic rocks, old crystalline slates and sediments of different ages; the above-mentioned sediments are mainly Mesozoic limestones, dolomites and sporadically (e.g. Slanské vrchy Hills, Vihorlat) also volcanic rocks. The adjacent basins are filled with Quaternary Period sediments.

The predominant relief in basins is of the hilly nature. The flysch units are mostly of upland character, and in the higher parts of highland character. The highest positions of the Tatras are characterized by an alpine relief formed by the activity of glaciers with peaks and glacial valleys. Noteworthy karstic relief is located in Slovenský raj, Pieniny, in the northern part of the Tatras and on the northern side of the Low Tatras.

The variety of relief influences the population density, transportation and development of tourism. A considerable slope angle aggravates the development of settlement and transport infrastructure. The natural conditions have an impact not only on the road location, for example,

road direction and flow, but also on the transportation intensity on the roads (Berezowski 1979). The Polish-Slovak border is considered a significant barrier for transportation because of its mountainous nature. The border has the least favourable natural conditions for transportation and transit of all border sections of both Poland and Slovakia (among others Podhorský 1995, Zygadlewicz 1997, Komornicki 1999, Więckowski 2004). Research has confirmed that the greatest barriers (mainly for the transportation) are the Tatras, Pieniny and Bukovské vrchy Hills (on the Polish side Bieszczady) and partially also the Kysucké Beskydy and Oravské Beskydy (on the Polish side Beskid Żywiecki). In some parts of the border the natural barriers are not really significant and in the many parts such as basins, valleys and mountain passes, the environment is convenient for road construction. These parts are the Beskid Niski (Low Beskydy) on the Polish side of the borderland, on the Slovak side of the borderland Nízke Beskydy (Low Beskydy) area and the Busov, Ondavská and Laborecká vrchovina Upland; Beskid Sądecki units in Poland and the Čergov, Ľubovnianska vrchovina Upland and also some parts of the Kysucké Beskydy in Slovakia. The smallest natural barriers on the Polish side are the Obniżenie Orawsko-Podhalańskie and Pogórze Spisko-Gubałowskie (Więckowski 1999, 2004) and on the Slovak side units of the Podhale-Magura Area – Oravská kotlina Basin, Skorušinské vrchy Hills, Podtatranská brázda Furrow and Spišská Magura.

The Polish-Slovak borderland is located in the mild climate zone. The highest locations have a cold climate, while lower locations and basins have a warm climate. The Polish part is characterized by colder climate resulting from the temporary influence of Arctic Sea air and predominant northern orientation of slopes. The Slovak part has a warmer climate caused by greater influence of continentality and predominance of the southern orientation of slopes.

The climate conditions make the every-day life of inhabitants more difficult and the conditions influence the population density in the higher located areas. The conditions negatively influence the transportation infrastructure – the conditions accelerate the deterioration of roads as well as worsening safety on the roads. Long winters with snow that can last longer than three months (in the Tatras even six months and in the shielded gutters during the whole year) create favourable conditions for winter sports. In some years the snow appears too late,

sometimes at the turn of the years, and strong warm mountainous winds cause melting of snow already in the middle of winter.

The Polish-Slovak borderland is an area with an exuberant channel network. The Carpathians represent the European watershed between the sea-drainage areas of the Baltic and the Black Sea. The Vistula River and Vistula River's tributaries flow on the Polish side (tributaries: Soła, Skawa, Raba, Dunajec, Wisłoka and San), and the Vistula River together with its tributaries flow into the Baltic Sea. There are various rivers of the Danube drainage basin that flow on the Slovak side of the borderland, including the Váh, Turiec, Kysuca, Orava, Torysa, Topľa, Ondava, Laborec and Cirocha. Their water flows into the Black Sea. The part of the Slovak area located east of the Tatras belongs to the drainage of the river Poprad which merges into the Dunajec and represents the only Slovak river flowing north to the Baltic Sea.

There are artificial reservoirs built on various rivers and in addition to their economic functions (e.g. energy and recreational functions) the reservoirs also mitigate the fluctuation of the flow of rivers and reduce the negative impacts of raised flow and potential floods. The largest artificial water reservoirs in Poland are: the Solina water reservoir on the San, Czorsztyn and Rożnow on the Dunajec, Żywiec on the Sola and in Slovakia: Orava on the river Orava, Nová Bystrica on the Bystrica, Krpeľany and Liptovská Mara on the Váh, Domaša on the Ondava and Starina on the Cirocha. Natural lakes are usually small and located mainly in the Tatras (mountain lakes).

The reserves and springs of mineral water are the essential prerequisite for spa development.

The Polish-Slovak border is mostly located along the river watershed, but it copies river and creek basins on 17 sections. The longest such sections are the Poprad (at two sections – 26.6 km and 4.4 km), Dunajec – 17 km, Bialka – 13.2 km and Jelešňa – 8.4 km (Więckowski 2004). The sum of all water flow sections on the border equals to 93.7 km, that represents 17.8 % of the total length of the Polish-Slovak border (Więckowski 2004). The strongest hydro-geographical barriers are the Dunajec and Poprad. There are no road bridges on the border sections of these two rivers.

The borderland is characterized by large proportion of forests that are relatively little affected by human intervention in many places

– especially in the vicinity of the state border and in the eastern part of the borderland.

Typical species of the Carpathian fauna include deer, roe-deer, wild boars and big beasts such as bears, wolves and lynxes. The eminent bird species in the forests include the Eurasian Three-toed Woodpecker, Spotted Nutcracker, Wood Grouse, Black Grouse and Hazel Grouse, Eurasian Eagle-owl, Eurasian Pygmy Owl. The birds of prey are represented by Golden Eagle, Lesser Spotted Eagle, Common Buzzard, Northern Goshawk, Common Kestrel, from singing birds – Wood Chaffinch, Eurasian Bullfinch, Eurasian Jay, various types of titmice, etc. The endemic species include Tatra Chamois, Alpine Marmot of the Tatras, Tatra Snow Vole and Alpine Shrew of the Tatras.

The environment is certainly one of the greatest assets enhancing the tourist attractiveness of the borderland. The most valuable natural areas are located in the direction from West to East on Babia Góra (Oravské Beskydy), in the Tatras, Pieniny, Bukovské vrchy Hills and Bieszczady, as well as in the Polish mountain range Gorce and in the Slovak mountain ranges Malá Fatra, Veľká Fatra, Low Tatras and Slovenský raj. These areas are full of protected landscape areas that are immensely valuable for the recreational and educational purposes and are among the main motivations for tourists to visit the borderland.

2.2. ENVIRONMENTAL PROTECTION AND LEGAL REGULATIONS

The environmental protection of the Polish-Slovak borderland is governed by the rules and legal enactments valid in the two countries and amended by some international regulations (e.g. biosphere reservations). The currently binding acts were adopted in 1990s and amended at the beginning of the 21st century.

In Poland the Act on Environmental Protection adopted on 16 April 2004 distinguishes the following main forms of the environmental protection: National Parks, Nature Reserves, Landscape Parks, Protected Landscape Areas, Areas NATURA 2000, Nature Monuments (Coll. 2004, No. 92 Paragraph 492 as amended by the Regulation Coll. 2009, No. 151 Paragraph 1220).

The primary legal document in the area of environmental and landscape protection valid in Slovakia since 1 January 2003 is represented by the National Council of the Slovak Republic's Act No. 543/2002 Coll. of 25 June 2002 on Nature and Landscape Protection as amended.

The first level of protection generally applies to the whole area of the Slovak Republic that is not under the territorial protection specified in the Act on Nature and Landscape Protection. These are the regions outside of the specially declared protected areas. The second, third, fourth and fifth levels of protection are generally applicable to protected areas. Protected areas (PA) can be represented by locations with habitats of European importance, habitats of national importance, habitats of species of European importance, habitats of species of national importance, and bird habitats including migrating birds for which protection there are protected areas, important landscape elements or areas of international importance being declared.

The protected areas of the Slovak Republic are divided into large-scale protected areas (LPA) and small-scale protected areas (SPA). The large-scale protected areas include National Parks (NP) and Landscape Parks (LP). Small-scale protected areas are represented by Protected Sites (PS), National Nature Reserves (NNR), Nature Reserves (NR), National Nature Monuments (NNM), Nature Monuments (NM) and Protected Landscape Elements (PLE). Detailed information on the status of environmental protection in Slovakia is provided by, for example, the book written by J. Klinda, Z. Lieskovská, et al. (2011).

2.2.1. NATIONAL PARKS

The definition of National Park was formed by the General Assembly of the International Union for Conservation of Nature (IUCN) in New Delhi in 1969. The National Park is defined as a relatively large area with one or several ecosystems little or not materially altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats are of special scientific, educational and recreational interest or which contain a natural landscape of great beauty. The National Park is an area where the highest competent authority of the country has taken steps to prevent or eliminate exploitation or occupation as soon as possible in the whole area and to effectively enforce the respect of ecological, geomorphological, or

aesthetic features while visitors are allowed to enter National Parks under special conditions, for educational, cultural, and recreational purposes (Radziejowski 1998).

In accordance with the Act on Environmental Protection of 16 April 2004 the National Park in Poland "is a protected area extraordinary for scientific, natural, social, cultural and educational values and with an area of more than 1000 ha, where the nature and particular landscape features are under protection" (Coll. 2001, No. 151, Entry 1220). Moreover, all the activities within the National Park must comply with the environmental protection and have priority over all other activities and the main objective of the National Park is to recognize and preserve the integrity of the natural systems of the respective area including the conditions designated for the functioning of the natural systems or reconstruction of damaged or lost elements of the local nature.

The Act on Nature and Landscape Protection defines the National Parks of Slovakia as larger areas usually of more than 1 000 ha, mostly with ecosystems not significantly altered by human intervention or of natural landscape structure forming the bio-centres of more than regional importance and the most important cultural heritage where the environmental protection has priority over all other activities. The third level of protection applies to NP's, unless otherwise stated.

There are 13 National Parks in the Polish-Slovak borderland, from which six are on the Polish side and seven on the Slovak side. The above-mentioned areas are located in the vicinity of the border and some of them even have their equivalents on the other side of the border. There are five National Parks in the Polish area directly adjacent to Slovakia: Babia Góra, Tatra, Pieniny, Magura and Bieszczady. At a greater distance from the border there is Gorce National Park. In Slovakia there are three NP's near the Polish border – Tatra National Park, Pieniny National Park and National Park Poloniny. In the greater distance from the Polish border there are four National Parks: Malá Fatra, Veľká Fatra, Low Tatras and Slovenský raj.

2.2.2. LANDSCAPE PARKS

Landscape Parks represent a relatively young form of nature and landscape protection in both countries. In Slovakia Landscape Parks began to emerge in 1973 and in Poland in 1975. The afore-mentioned

forms of protection have been introduced as a counterweight to the negative phenomena that occurred in the natural environment due to the enormous industrial development, urbanization and the growing need for the organization of recreation for people and also in order to increase the effectiveness of the protection of areas with particularly high natural and landscape value (Radziejowski 1998).

In Poland the Landscape Park is a protected area taking into account the Landscape Park's natural, historical and cultural values and the aim of the Landscape Park's creation is to preserve, promote and spread its value in terms of rational management. The Polish-Slovak borderland contains the following Polish Landscape Parks: Landscape Park of Silesian Beskids, Żywiec LP, Poprad LP, Jaśliska LP, Cisna-Wetlina LP. In addition, there are ten other Landscape Parks on the Polish side of the Polish-Slovak borderland.

In Slovakia, according to the Act on Nature and Landscape Protection, the Landscape Park (LP) is a larger area, generally with an area larger than 1000 ha, with scattered ecosystems important for preservation of biodiversity and ecological stability, with the characteristic landscape or specific forms of historical settlement. The LP's are governed by the second level of protection, unless otherwise stated. The Polish-Slovak borderland contains the following three Slovak Landscape Parks: LP Kysuce, Upper Orava LP, LP Eastern Carpathians, while LP Vihorlat and LP Strážovské Hills also reach the borderland.

2.2.3. NATURE RESERVES AND NATIONAL NATURE RESERVES

Nature Reserves represent one of the oldest forms of nature protection in the world. It is likely that Nature Reserves already existed in India in the 3rd century, B.C. (Radziejowski 1998). Attempts to create Nature Reserves in the Polish-Slovak borderland began in the late 19th century. Throughout the 20th century the number of reserves increased. In the late 1980's, the number of reserves in the Polish-Slovak borderland exceeded 200.

In Poland the Nature Reserve is defined by the Act from 2004 as an area of natural or slightly modified status of ecosystems, with some species of plants and animals or inanimate elements of significant value in terms of scientific, cultural and landscape perspective. In Slovakia, according to the Act on Nature and Landscape Protection,

the Nature Reserve (NR) and National Nature Reserve (NNR) are areas up to 1 000 ha in area, with the original or little altered status of habitats of European or national importance or habitats of species of European or national importance. The fourth or fifth level of protection is applicable to the areas of NR's and NNR's. If there is a requirement for the protection of a National Park, Protected Site, Nature Reserve or Nature Monument, a protection zone around the above-mentioned area can be declared. The protection zone usually has a protection level lower by one level than the one used for the respective protected areas.

In both Poland and Slovakia, the Nature Reserves keep the most valuable elements of the environment little influenced by human intervention. The areas of the greatest natural and more than regional importance can have a bigger value. Therefore activities of any character are not usually permitted in the areas; in many cases even entry is prohibited. This status is applicable to reserves with strict nature protection in Poland and to National Nature Reserves in Slovakia.

2.2.4. OTHER FORMS OF NATURE AND LANDSCAPE PROTECTION

The above-mentioned forms of nature and landscape protection: National Parks, Nature Reserves and Landscape Parks are of major importance for the preservation of the borderland's natural environment and are also the most effective in shaping Polish-Slovak cooperation in the area of environmental protection. Other forms of environmental protection are not described in detail in this work, but the forms require at least a short annotation. These forms include Protected Landscape Areas in Poland, Protected Sites and Natural Monuments in Slovakia, as well as Biosphere Reserves and the protection of species of flora and fauna.

Biosphere Reserves (BR) serve as an example of sustainable life, reasonable balance and the relationship of man with the natural environment. They play an important role not only for the local population, but knowledge of such areas is necessary for the whole society and is the main pillar of the vision of Biosphere Reserves in the 21st century. Within the UNESCO Programme Man and Biosphere (MaB) and within the region studied here, three protected areas have been declared as Biosphere Reserves without legal regulations and definition: Eastern

Carpathians (trilateral Biosphere Reserve extending into Poland, Slovakia and Ukraine), High Tatras (bilateral Biosphere Reserve in Poland and Slovakia) and Babia Góra (in Poland).

The objective of plant and animal species protection is to preserve wild species of plants and animals living in the wild, especially the species that can rarely be found in nature or are likely to become extinct. Most of the protected species are located in the Tatras. The protection of species is also ensured via other legal regulations related to the protection of natural elements and via ratified international agreements (CITES, Bonn, Bern, Ramsar).

We can conclude that both sides of the Polish-Slovak borderland are characterized by the highest concentration of small-scale protected areas within the Slovak Republic and Poland. This area is unique not only from the national, but also from the international perspective, as the borderland has one of the greatest concentrations of protected areas in Europe and even worldwide.

2.3. CULTURAL-HISTORICAL AND SOCIO-ECONOMIC CONDITIONS

The first human traces in the studied area come from the Ancient Era; however the larger development of the settlement had been recorded since 14th to 15th century. From the present perspective the most important fact is that the whole area of present-day Slovakia (from 1567) and southern Poland (1772) until the end of World War I was under the jurisdiction of the Habsburg Monarchy. It was a peripheral area, located on the eastern edge of Austria-Hungary having borders with Turkey for some period, and it was underdeveloped, poor, without a developed economy and scareely populated. The above-mentioned factors influenced the constitution of socio-economic conditions associated with the development of the population, economic and territorial organization. The most important phenomena and processes took place in the 19th century when the foundations of European nation states were established in today's sense. Poland as well as Slovakia was not politically independent at that time. After World War II, the two countries (Poland and Czechoslovakia) came under the influence of the Soviet Union. After the Soviet Union's collapse in the last decade Poland and Slovakia have been integrated into the EU structures. In

December 2007, Poland and Slovakia, along with other countries of the region, joined the Schengen Area.

Numerous political and geopolitical changes in the last centuries and decades often of catastrophic nature, did not support development and stabilization of the socio-economic structures, including the accumulation of capital (human and physical), formation of social and economic ties, improvement of housing conditions and quality of life. In distressed situations the consciousness of national patriotism was strengthened, but it had smaller impact on the awareness of regional differences. The social crises were reflected in numerous revolts and peasant revolutions.

Up to current times we can find more parallels between the cultural character of southern Poland and the whole of Slovakia than in Poland itself. The architect and art historian of Kraków T. Węcławowicz (1995) stated, that even the majority of the Carpathian cultural monuments is scarce and significantly provincial, the location of monuments in lovely river valleys surrounded by cupola-shaped hills and in the middle of mosaics of meadows and forests, create an unrepeatable, extraordinarily interesting *genius loci* and anthropological unity.

Influences of the 19th century and previous centuries can be now found mainly in architecture and urbanism, in the nature of the settlement, or partly in the way of land use. The similarity of the Slovak and Polish (and Czech and Lusatian) languages arises from the common origin of the nations that came into Eastern and Central Europe in the first centuries AD.

In addition to the similarity of the historical destiny, in all historical periods the development of human activities in the borderland was strongly determined by the mountainous nature of areas, which include the orographic barrier formed by the Carpathians. As a result, the Polish-Slovak border is one of the most stable in this part of Europe. The continuity of many sections has been recorded (with some breaks) since the Polish Kingdom was formed in the second half of the 14th century.

Although the Poles and Slovaks have a common language origin and partially also common Habsburg history (and after World War II common communist history), current cooperation between Poland and Slovakia is not notably developed. Differences are visible not only in

the mentality of people, but also in the organization of socio-economic systems. The eastern part of the investigated area is more densely populated with more significant social capital and its population is characterized by greater religiosity and stronger relationship to traditional conservative values. The position of the family and attachment to private property are much stronger in this part. This fact is reflected in stronger social ties, especially in traditional rural communities.

The Polish-Slovak borderland (the area supported within the Cross-border Cooperation Programme of 2007–2013) has an area of 38 000 km^2 (10.5% of the area of both countries) and population of 4.8 million inhabitants (10.9% of the population of both countries). The Polish part of the investigated area is larger – 58.6% of the area and population of 68.8% of border residents. It is interesting that while the Slovak part is equal to 45% of Slovakia and 28% of the population of the Slovak Republic, the Polish part represents only 7% of Poland and 9% of all Polish inhabitants. The average population density of the Polish part is 148 inhabitants/km^2 and in the Slovak part the average population density is 94 inhabitants per km^2 (Fig. 2.1). At first sight, there are clear patterns of population distribution, which are different on the two sides of the border. The Polish settlement is more continuous, "smoother" in the area, located in almost all the valleys; the Slovak part is characterized by greater concentration of settlements in basins and around larger urban centres.

The urban settlement system (network of cities) of the investigated area is significantly different on the two sides of the border. The Polish side is represented by Bielsko-Biała and Rzeszów with 178 000 and 175 000 people, respectively. On the Slovak side the largest cities are half the size of the Polish cities: Prešov (93 000) and Žilina (85 000). In both countries, there are four other cities with populations over 50 000 – Nowy Sącz, Przemyśl, Martin and Poprad. In 2009 in the borderland, there were in total 108 cities – 67 in Poland and 41 on the Slovak side with 43% of the borderland population, which represents much less inhabitants in comparison with the level of urbanization in both countries (approximately 56% in Slovakia and 60% in Poland).

Differences in territories on both sides of the border are related to the size and dispersion of rural settlements. On the Polish side the network of settlements is denser; the settlements form homes for many inhabitants and are usually composed of several thousand people. In 2002

within the whole borderland there were 901 rural settlements with more than a thousand inhabitants, while in Slovakia there were only 225 rural municipalities with more than a thousand inhabitants. It is evident in the Figure 2.1 that the northern border of the examined area in Poland goes through the centre of more densely populated territory stretching from the Czech border to the Ukrainian border.

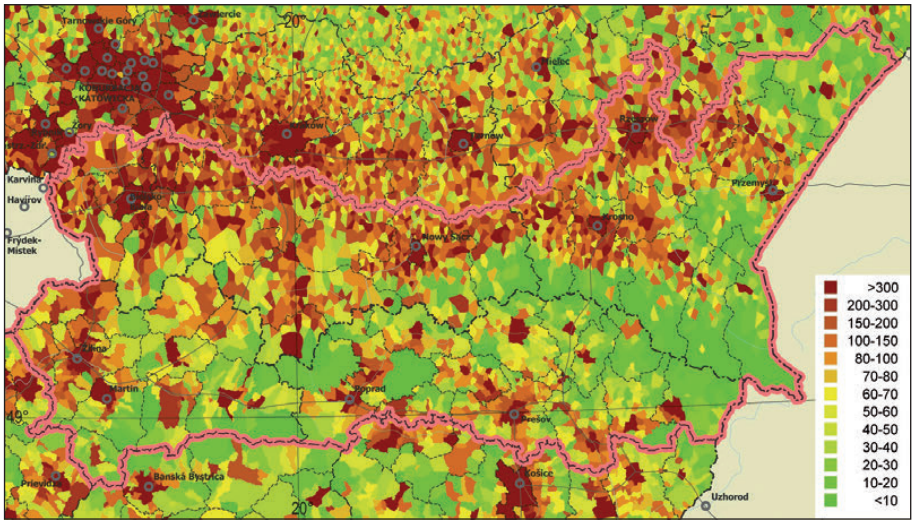

Figure 2.1. Population density (number of inhabitants per km^2) and cities within the Polish-Slovak borderland in 2009

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland (*Główny Urząd Statystyczny*); authors' elaboration.

On the Slovak side a significant urban settlement axis can be seen between the Tatras and Low Tatras, and partially leading through the valleys of Váh and Hornád. It includes most of the largest centres; from the West to the East these are: Žilina, Martin, Ružomberok, Liptovský Mikuláš, Poprad and Prešov. It is difficult to find an equivalent in Poland to the aforementioned structure in Slovakia. Up north from the investigated area between Kraków and Rzeszów it is possible to locate a distinct colonization-transport axis of parallel nature. Even though there is a transport corridor stretching along the Carpathian foothills in the direction of Bielsko-Biała – Wadowice – Rabka – Limanowa – Nowy Sącz – Gorlice – Jasło – Krosno (through Sanok to the border crossing in Krościenko), it is not so important from the functional-settlement point of view.

A characteristic feature of the settlement network is also a location between two big urban centres which have the second biggest populations in their countries. Kraków (755 000 inhabitants) and Košice (237 000) are located within few kilometres from the northern and southern borders of the Polish-Slovak borderland.

The development and traditions of settlement are indirectly reflected in the administrative system, which is a three-stage system in both countries, while the largest differences are in the smallest territorial administrative units, namely between the gmina (gmina – principal administrative unit in Poland – municipality, hereinafter "gmina", pl. "gminy") and municipalities. A Polish "gmina" is a grouping of several units (*miejscowość*) that correspond to Slovak municipalities in terms of size and area. In fact, there are wide disparities between different categories of basic administrative units (Tab. 2.1), which make comparison of various phenomena and processes difficult.

Table 2.1. Percentages of Polish gminy and Slovak municipalities within the Polish-Slovak borderland in terms of population and area according to size categories of municipalities for 2009

size category of gminy and municipalities (number of inhabitants)	number of units		population		area	
	Poland	Slovakia	Poland	Slovakia	Poland	Slovakia
	%					
Less than 200	–	19.9	–	1.5	–	12.2
201–500	–	29.0	–	6.6	–	18.7
501–1000	–	24.1	–	11.4	–	20.6
1 001–2 000	0.8	15.0	0.1	13.9	1.6	19.4
2 001–5 000	10.8	8.5	3.2	16.5	12.5	16.7
5 001–10 000	43.3	1.6	23.5	7.5	39.3	5.8
10 001–20 000	32.1	0.9	31.9	8.9	34.2	2.0
20 001 and more	12.9	1.1	41.3	33.6	12.4	4.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland; authors' elaboration.

The dynamics of the population in the Polish part of the territory has been significantly positive in recent years, but compared to previous decades, we can notice a slight weakening of this increase. In

2002–2009 the population increased by about 50 000 (1.5%). This happened due to high (compared with the average value in Poland) natural increase, which has its roots partly in the above-mentioned traditional values and strong family role in society. Podhale's population growth has always been particularly important as it reached the average annual values of more than 2% in many gminy in the last decade of the 20th century. Currently, some gminy and mainly cities of the eastern part of the Podkarpackie Voivodeship and also between Rzeszów and Sanok can be characterized more often by a decline of population and by deformation of demographic structure related mainly to ageing of the population and disproportions in the sex structure of the population. In spite of this, the majority of gminy on the Polish side in the western part of the investigated area have more than 25% of population at productive age and the proportion is among the highest in Poland as well as in the whole Polish-Slovak borderland.

In both Slovakia and Poland it is possible to see gradual decrease in the values of demographic indicators in the last two decades (Tab. 2.2). In the Slovak part of the defined border the population increased in the period 2002–2009 by about 18 300 people – 1.2%. The total population increase in both countries mainly reflects the development of natural increase. The mechanical movement of the population (in the context of the border it is possible to talk about moving to substantial distances) plays only a marginal role. The reasons are the incomparably higher real estate prices in the major centres of economic development of Slovakia, which affect the willingness and possibilities of residents to relocate outside the investigated borderland area.

It turns out that although the absolute values of population growth are higher on the Polish side of the Polish-Slovak borderland, the relative rate of population growth is about the same. In terms of overall assessment of demographic change it is significant that the proportion of population of the studied Slovak part in relation to the whole country was only slightly increased from 27.6% to 27.7%.

From an economic point of view, the studied area contains inequalities greater than in the case of the differences in demographic variables. This is due to the mentioned historical and geographical conditions, including peripheral location and the level of tourism development at present. In general, we can say that on both sides of the borderland the western part is more economically developed; some

areas near the Polish-Slovak border with developed tourism can also be part of the above-mentioned economic category. This is reflected in values of gross domestic product (GDP) and the population's income (Fig. 2.2 and 2.3). The existing differences also result from the general level of development of both countries.

Table 2.2. Changes in population within the Polish-Slovak borderland

area (NUTS3)	population (2002 in thous.)	population (2009 in thous.)	change in population (thous.)	growth rate (%)
Slovak Republic	5 379.2	5 424.9	45.8	0.85
Slovak part of the borderland	1 486.2	1 504.5	18.3	1.23
Out of which: Žilina Region	693.0	697.5	4.5	0.64
Prešov Region	793.2	807.0	13.8	1.74
Poland	38 218.5	38 167.3	–51.2	–0.13
Polish part of the borderland	3 268.3	3 318.3	50.0	1.53
Out of which: Śląskie Voivodeship*	747.0	761.0	14.0	1.87
Małopolskie Voivodeship*	1 262.6	1 293.6	31.0	2.46
Podkarpackie Voivodeship*	1 258.6	1 263.7	5.1	0.40

*in the part belonging to the Polish-Slovak borderland.

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland; authors' elaboration.

A problem, which is similarly reflected in both countries, is the growing socio-economic polarization. In 2007 the difference in the GDP per capita in the regions of the capital of both countries compared with peripheral regions (such as Prešov Region and Krośnieński Subregion) was 5:1 with a constant tendency to increase this difference. The process of polarization is characteristic of all the former so-called people's democracies that were undergoing transformation of the state system after 1989. Finding its root cause is difficult and often the subject of bitter dispute. It seems to stem mainly from the so-called transformation shocks, including the lack of mitigation of the concentration of capital (including foreign capital) in the areas attractive for investment. The economic polarization occurs simultaneously with social and demographic polarization, via the "transfer" of the most valuable human resources from peripheral areas to more developed, urbanized, and especially metropolitan areas.

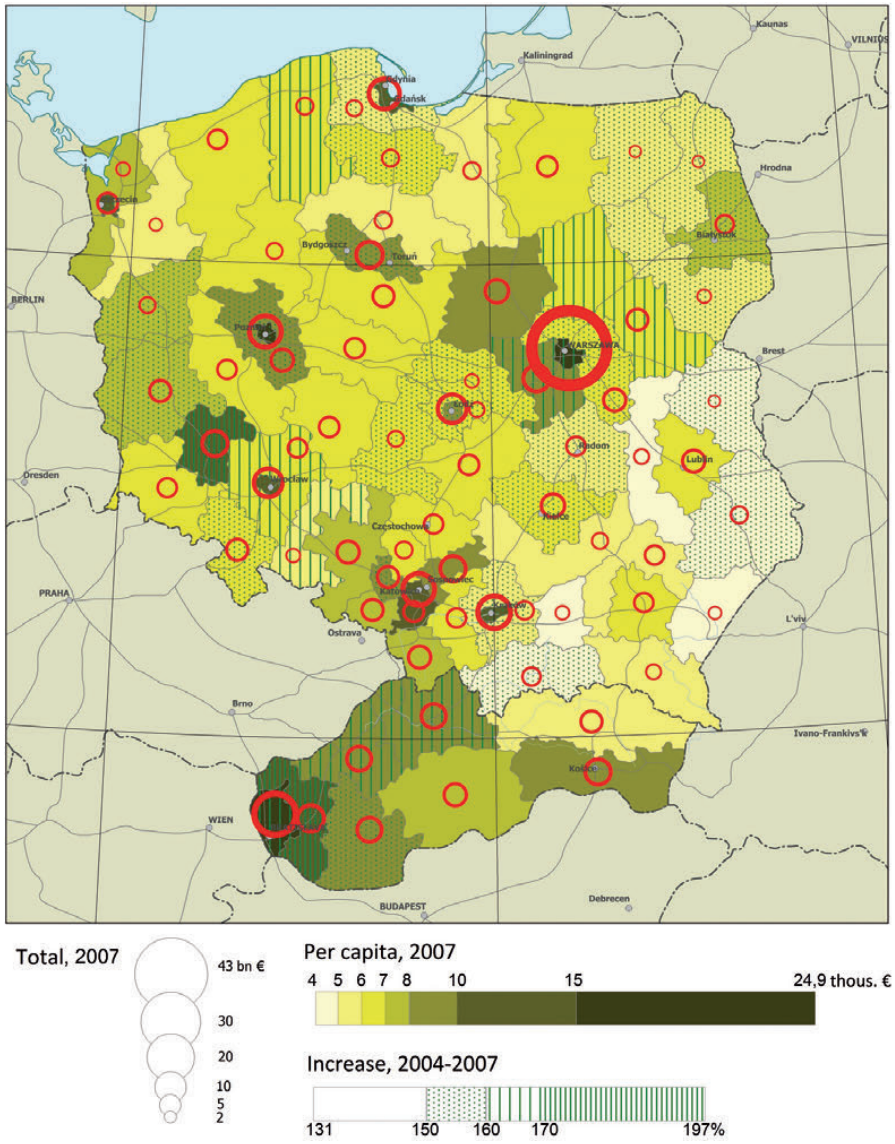

Figure 2.2. Gross domestic product in Poland and Slovakia in the period 2004–2007

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland; authors' elaboration.

Similar interpretative problems may be also encountered when analysing the level of unemployment and its interregional disparities, which are largely hidden in the agriculture oriented and small urbanized

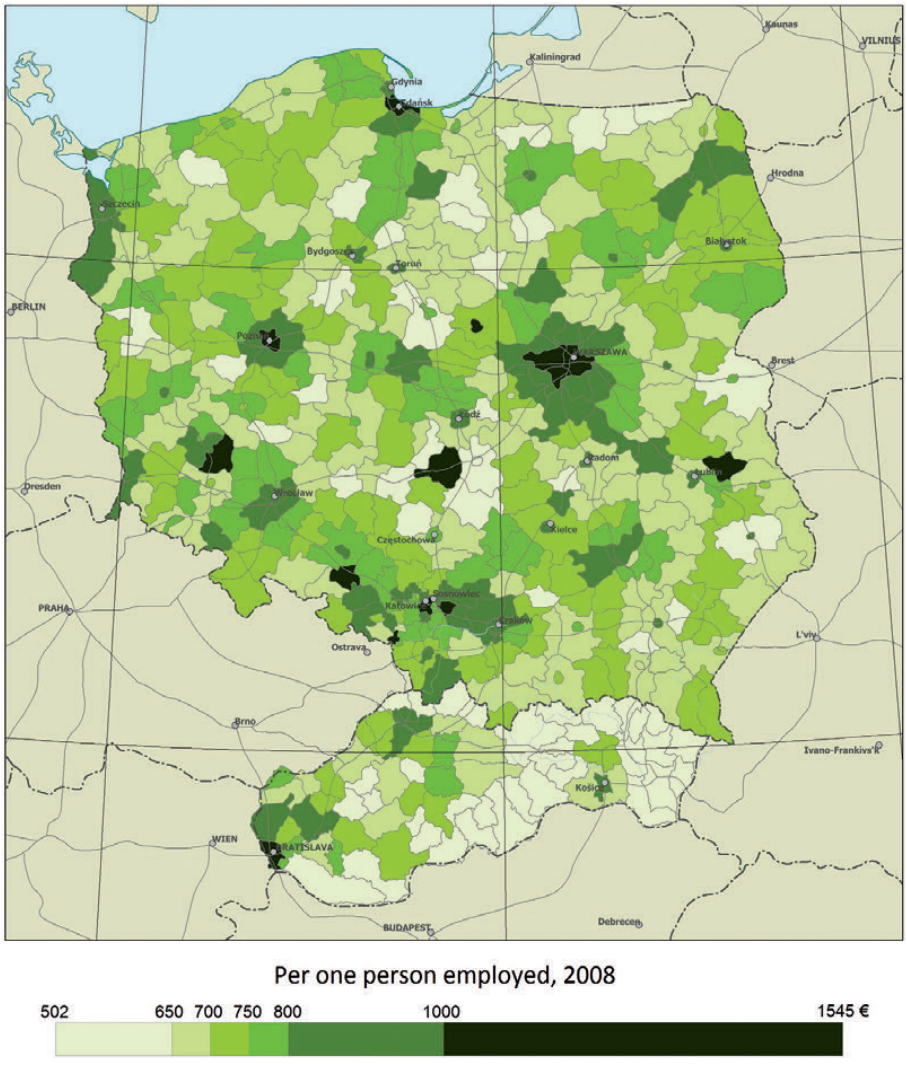

Figure 2.3. Average monthly salaries in Poland and Slovakia in 2008

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland; authors' elaboration.

areas of south-eastern Poland on one hand, while the phenomenon is compensated by a significant share of grey economy.

Since the modern appearance of unemployment, this phenomenon has immediately ranked among the most sensitively perceived negatives of the political and economic transformation of society. The rate of registered unemployment reflects the mismatch between demand

and supply of labour, between the number of job seekers and the number of vacancies. The registered unemployment rate, whose values are an indirect indicator of the socio-economic level of regions, highlights not only the dynamic changes reflecting the overall economic development, including the global financial and economic crisis of recent years, but also significant differences between the western and eastern parts of the Slovak side of the Polish-Slovak borderland (Tab. 2.3).

Table 2.3. Registered unemployment rate in 2001–2010 (in %)

area (NUTS3)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Slovak Republic	18.6	17.5	15.6	13.1	11.4	9.4	8.0	8.4	12.7	12.5
Žilina Region	16.4	14.7	13.2	11.1	9.3	7.0	5.6	6.2	10.9	10.9
Prešov Region	24.0	23.0	19.6	17.5	15.8	13.7	12.1	12.9	18.3	17.8
Poland	–	–	–	19.0	17.6	14.8	11.2	9.5	12.1	12.3
Nowosądecki Subregion	–	–	–	21.1	19.4	16.6	13.3	11.4	13.8	14.8
Oświęcimski Subregion*	–	–	–	17.7	16.6	13.9	10.7	9.0	11.7	12.4
Bielski Subregion	–	–	–	13.6	12.6	10.1	7.1	6.4	8.8	9.3
Krośnieński Subregion	–	–	–	21.6	20.4	18.0	15.1	14.4	17.5	17.5
Przemyski Subregion	–	–	–	20.8	20.4	18.9	17.1	16.0	19.1	19.2
Rzeszówski Subregion*	–	–	–	17.0	16.6	14.7	13.0	11.0	12.9	13.1

* These subregions partially extend beyond the borderland area. In addition, there are no data for the Kraków and Tyski Subregion, which only partially extend into the investigated area.

Source: Statistical Office of the Slovak Republic, Central Statistical Office in Poland; authors' elaboration.

On the Polish side of the investigated area, the unemployment rates are generally higher in its eastern part. In 2010, the highest unemployment rate was in Przemyski Subregion (19.2%) and the lowest unemployment rate was in Bielsko Subregion (9.3%). The two-fold difference in unemployment is mainly conditioned by the decline of the economic base of the small and medium-sized cities in the current Podkarpackie Voivodeship as well as by poor development of

non-agricultural activities in rural areas (including tourism). Even in relatively well-developed Nowosądecki Subregion the unemployment rate reached 14.8% at the end of 2010, but as already mentioned, the increase is partly due to the large share of grey economy in the tourism sector.

It is clear at first glance that the development and fluctuations in regional unemployment rates in the last decade mirrored the turbulence of development at the national level. Until 2008, the unemployment rate gradually decreased. Since 2009, due to the impact of the global crisis on the behaviour of employers the unemployment rate has considerably increased, and the increased rate was enhanced especially in problem areas.

Differences between the western and eastern part of the Polish-Slovak borderland are evident. While the unemployment rate of the Žilina Region was always lower than the national rate, the unemployment rate of the Prešov Region significantly exceeded the national rate. It was due to several factors whose synergies made the Prešov Region one of the most problematic regions of Slovakia. Its unfavourable geographic position represented by the considerable distance from the major political-economic centre of Slovakia – Bratislava, fragmentation of the settlement structure, demographic structure specifications, inappropriate industrial structure as a reflection of the lower educational level of the population, insufficient technical infrastructure and the obvious consequences of the previous historical development, which did not support the economic development of the area, are reflected in the current problems of high unemployment and job creation.

The two regions lying on the border with Poland are significantly differentiated in terms of the unemployment rate. In 2010, the unemployment rate in the Žilina Region ranged from 8.4% (Žilina District) to 14.9% (District Bytča). In the Prešov Region the internal differences were even higher and ranged in the interval from 10.6% (Poprad District) to 26.2% (Kežmarok District). The extremely large difference between the neighbouring districts is mainly due to differences in the proportion of Roma, less qualified people with ongoing problems in relation to the labour market.

The southern parts of the Śląskie, Małopolskie and Podkaprackie Voivodeship are undoubtedly developed due to the concentration of

services in tourism, as further described in the Chapter 4. However, the development of trading at markets, which was itself the engine of the economy in many borderland areas in the last decade of the 20th century, has now lost part of its meaning. It revives only locally and in certain periods, depending on the fluctuations of currencies.

Industry is more developed in larger cities, while a considerable share of foreign capital is characteristic for both countries. The largest manufacturing companies in the region on the Polish side include: Fiat Auto Poland (Bielsko-Biała), Grupa Żywiec (Żywiec), Grupa Maspex (Wadowice), Company Chemiczna Dwory (Oświęcim), Nowy Styl (Krosno), Lotos Czechowice (Czechowice-Dziedzice), Grupa Kety (Kęty), Lotos Jasło (Jasło), Valeo Electric & Electronic (Czechowice-Dziedzice), Scandinavian Tobacco (Myślenice), WSK PZL Rzeszów (Rzeszów), Rafineria Nafty Jedlicze (Jedlicze) and Alumetal (Kęty) .

The Slovak part of the Polish-Slovak borderland is also characterized by the concentration of industry mainly in the largest settlement centres as a result of historical development (Žilina, Martin, Poprad, Prešov), or by the concentration of industry in the close vicinity of the largest settlement centres. The major novelty is a development dependent on foreign investors, who became the majority owners of major industrial enterprises.

The preference for the big city background is characteristic for the new driving sector of the Slovak economy – the automotive industry, which plays an important role in the industrial structure of the Žilina Region. The automotive industry is mainly represented by the South Korean automaker Kia Motors Slovakia, which is located close to Žilina. The car production is linked to a number of vertically and horizontally integrated suppliers and subcontractors (a significant proportion is represented by South Korean producers organizationally integrated into the Hyundai Business Group) who are trying to respond to the introduction of the organization of industrial production using the system of so-called just-in-time by localization near the assembly plants. Another representative of the automotive industry is Volkswagen Martin plant producing automotive components.

The manufacturing of transport equipment also has its own important representative in the Prešov Region. Tatravagónka Poprad, which produces goods wagons and carriages, is one of the leading engineering

companies of the region. Poprad has another major engineering operation – Whirlpool Slovakia which manufactures washing machines and is part of a multinational corporation. The Prešov County itself is rather typical for sizing and sector diversification of industrial operations dominated by medium traffic engineering, electronics and clothing industries with smaller salaries. The city seeks to attract foreign investors, who would substantially improve its image as a progressive city by creating jobs for highly skilled labour.

The other major industrial companies of the Slovak part of the Polish-Slovak borderland include: Cellulose-paper company Mondi SCP (Ružomberok), a company group of Chemical-textile company Chemosvit (Svit), Chemical company Nexis Fibers (Humenné), Electronics company Tesla (Stropkov), Pharmaceutical company Imuna Pharm (Šarišské Michaľany) and others.

The food industry is one of the major industries of the Polish-Slovak borderland.

The entry of Slovakia into the Eurozone and price changes on both sides of the border

Prior to 2003, prices in Slovakia were relatively low for the Poles. In 2003–2008, the rate of the Slovak koruna and Polish zloty ranged from 0.1 to 0.12 PLN/SKK (Fig. 2.4). After joining the European Union in 2004 both national currencies were strengthened against the euro. In 2004, Slovakia increased VAT and food tax, resulting in the increase of some product prices by several percent and purchases on the Slovak side gradually ceased to be advantageous for the Poles.

The pronounced strengthening of the Slovak koruna against the Polish zloty happened in the early months of the financial crisis (August–December 2008), which was associated with relatively stronger speculative attacks towards the Polish zloty than the Slovak koruna as well as with the prospect of imminent adoption of the euro in Slovakia. The entry of Slovakia into the Eurozone on 1 January 2009 was of great importance for the formation of prices on both sides of the border. The entry of Slovakia into the Eurozone with the conversion rate of SKK / EUR 30.1260 (and further weakening of the zloty) in the situation of the financial crisis made Polish products become from day to day more competitive compared with Slovak products. Prices in Slovakia in terms of the adoption of the euro rose slightly. (There was a larger increase before the currency change already in 2008). The inflation in January 2009 was the lowest in Slovakia in the previous few months. However, the drastic weakening of the zloty caused deepening of price differences between Poland and Slovakia and the purchasing power of Polish tourists was substantially weakened for several months. These differences were most notable in the first half of 2009.

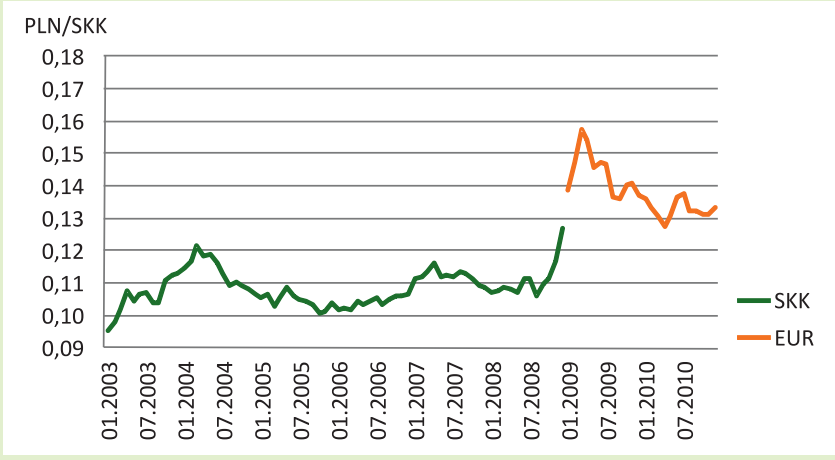

Figure 2.4. Rate PLN/SKK (2003–2008) and PLN/EUR (2009–2010)*

*Euro exchange rate calculated to SKK using the conversion rate 1 EUR = 30.1260 SKK since 1 January 2009.

Source: www.nbp.pl; authors' elaboration.

Along with the gradual strengthening of the zloty against the euro in the years 2009–2011 and while sustaining the trend towards appreciation of the Polish currency, we can assume a balance of prices between the two countries in the longer term. The aforementioned development is also indicated by the comparable indicators of inflation in the two countries (3–4% at the turn of 2010–2011), and by the fact that adoption of the strong euro in Slovakia forced Slovak entrepreneurs residing in the borderland to adjust their prices and quality of services (e.g. the extension of the ski infrastructure) to compete.

2.4. TERRITORIAL AND REGIONAL DEVELOPMENT AND PLANNING

The last decade has brought an increased interest in the issue of territorial and regional development and planning of the development taking into account several thematic aspects. There are many reasons, out of which the most important are – an increase of regional disparities (including deterioration of living conditions) and public interest of different levels in the issue of space. The socio-economic polarization is characteristic not only for the economies of the Central and Eastern Europe in transition since 1989, but also for the whole of Europe and most countries in the world. In the case of Poland and Slovakia the

deepening of the above-mentioned process after the countries' accession to the European Union brought negative effects. However, the growth of interest of state and local governments in planning issues shows a significant increase of both spatial and territorial awareness, but it is in its way the "side" effect of the European money supply, as the acquisition of the supply is dependent on the preparation of a detailed strategic-planning, economic, territorial, urban or other documentation.

In Poland and Slovakia, the political, social and economic changes in 1989, that brought hope of coping with the hopeless economic situation of the last decade of socialism, gradually deepened the crisis even more. This was mainly due to the ideological perception of spatial planning as a "relic of a bygone era" and rejection of hierarchy of planning in practice. This was significantly reflected mainly in Poland, where the growing chaos in general contributed to the low efficiency of the socio-economic system, which permanently restricts the possibility of urban and regional development. For example, one of the last documents of the State Urban Planning Board[2] (in this period it was the chief advisory body) in this context refers to: a) weakness and inefficiency of the planning system, which prevent the objectives of development policy from being achieved, b) insufficient continuity of the planning level with the operational level, c) lack of a strong coordination centre for development policies, lack of engagement of political leadership of public administration units in the programme-strategic works; d) separation of urban planning from socio-economic planning; e) insufficiently defined relationships between the development policy and regional policy; f) lack of a transparent system of development policy financing. Increasingly, we encounter the views that increasing costs of operation (particularly infrastructure), together with the deterioration of the quality of life (e.g. territorial accessibility) may be the cause of undercutting of investment interests.

The deepening interest in the issue of territorial development is unfortunately associated with increasing systemic and organizational complexity. Planning systems of regional and territorial development are becoming increasingly complex, multi-aspect and generally poorly

[2] Opinion of the State Urban Planning Board (*Państwowa Rada Gospodarki Przestrzennej*) on the system of territorial economy and planning published at the assembly of the Board on 30 May 2011.

inter-connected. It is also apparent in the interactions between state institutions and local government authorities and more and more frequently also between social institutions, which usually have individual aspirations for formulating goals and visions of development.

The long process of document preparation and adoption is a serious problem. For example, updating and development of the new Polish Concept of State Territorial Development (CSTD; *Koncepcja Przestrzennego Zagospodarowania Kraju*) took place in 2003–2005 (the government did not adopt the update) and in 2006–2011 (new document), while the document from the end of the 20th century was still valid by 2011 (the Concept of Policies for the State Territorial Development – CPSTD (*Koncepcja Polityki Przestrzennego Zagospodarowania Kraju*), adopted by the Parliament of the Republic of Poland in 2000). The long period of preparation and adoption of documents means that, there is parallel production of documents that should be theoretically related both professionally and hierarchically, which is of course impossible. It was A. Noworól[3] who last calculated that there was an obligation to prepare 36 documents only at the regional level (among which 24 were related to the territorial policy), and another 30 kinds of a voluntary nature. However, it does not interfere with the respective institutions and bodies which like using this option.

The three-stage system of territorial planning is generally mandatory in Poland, and the system follows the territorial-administrative division of the state. The required documents must be made for the state, voivodeship and gminy, while subjects at other levels of the hierarchical structure (districts, associations of gminy, functional areas) can voluntarily develop documents.

Currently, the most important policy document on the socio-economic development of Poland is the State Development Strategy (SDS; *Strategia Rozwoju Kraju*). The *Act on Rules of Development Policy Management* (2006) states that the higher-level strategic document is the Long-term State Development Strategy (LSDS; *Długookresowa strategia Rozwoju kraju*), whose conclusions must be taken into account by the Medium-term State Development Strategy (MSDS; *Średniookresowa*

[3] A. Noworól (2011) *Kierunki i zmiany niezbędne do stworzenia docelowego systemu zarządzania polityką rozwoju na poziomie regionalnym (Directions and Changes Necessary for Creation of Regional Policy Development* taking into account already adopted strategic documents*)* – expert opinion prepared by the Ministry of Regional Development, Kraków.

strategia Rozwoju kraju). Currently (2011) its role is ensured by the State Development Strategy for 2007–2015, which is analysed in this text. All sector strategies, the National Regional Development Strategy (NRDS; *Krajowa Strategia Rozwoju Regionalnego*) and subregional strategies will be under the control of the MSDS. Based on the adaptation of strategic documents from the years 2010–2011, there were 8 state sector strategies and so-called intersector NRDS developed (adopted by the Council of Ministers in July 2010).

The guiding document in the field of territorial policy is the Concept of the State Territorial Development (CSTD; *Koncepcja Przestrzennego Zagospodarowania Kraju*) presenting a vision of Poland's land management. During the preparation of the SDS it is necessary to take into account the conclusions of the CSTD (*Act on Rules of Development Policy Management*, 2006), while a considerably out of date document from 2001 is still binding (The Concept of Policies for the State Territorial Development, Monitor Polski of 2001, No. 26, Item 432).

Another important document on the state level developed in connection with Poland's membership of the European Union and as a result of the need for state regulation of European Cohesion Policy is called the National Strategic Reference Framework (NSRF; *Narodowe Strategiczne Ramy Odniesienia*). This is a basic strategic document setting out the priorities and areas of use of EU funds. It takes into account the conclusions of the SDS and is applied via operational programmes (e.g. OP Infrastructure and Environment, OP Cross-border Cooperation Poland – Slovak Republic, regional operational programs).

The basic strategic frameworks for the respective sectors (segments) of the economy or policy area are based on national sector strategies (e.g. Tendency of Tourism Development until 2015, State Environmental Policy, and State Transport Policy). Sector strategies must be in accordance with the SDS, while the implementation takes place via operational programs (*Act on Rules of Development Policy Management*, 2006).

The below-mentioned overview of selected national strategies, concepts and programs presents how the most important documents determining the direction of the state development perceive the Polish-Slovak borderland, the importance of tourism, cross-border cooperation and the availability of transport and its role in tourism. The overview includes the following documents: State Development Strategy 2007–2015 (2006), National Strategic Reference Framework (2007),

Concept of the State Territorial Development[4] (2011), State Regional Development Strategy (2010), Tendency of Tourism Development in 2015 (2007), II Environmental policy of the State (2000), National Strategy of Protection and Balanced Use of Biological Diversity (2007), State Transport Policy for the years 2006–2025 (2005), Operational Programme Infrastructure and Environment (2007) and Operational Programme of Cross-border Cooperation Poland – Slovak Republic.

The State Development Strategy (SDS – 2006) perceives the issue of cross-border cooperation as one of the conditions for increased investment attractiveness and competitiveness. It should be pointed out that this document perceives national borders not only as a determinant of remoteness, but the document also highlights their current role as a factor providing development opportunities, as confirmed by the National Strategic Reference Framework (2007). The cross-border cooperation of regions is here regarded even as a precondition for the increase of investment attractiveness and consequently of economic development as well. This also confirms its cultural significance. In addition, the document points to the important role of tourism within the borderland areas that may, among other sectors of the economy, have a dominating role in creating new jobs.

The State Development Strategy (2006) highlights the importance of the mountains of the Małopolska, Podkarpackie and Śląskie Voivodeship for tourism. The adopted state regional policy directions for the Małopolska and Podkarpackie Voivodeship mention activities supporting the use of the natural environment potential and also the preservation and improvement of the potential's quality and landscape value. We can assume that this is all about exploiting the potential for tourism development, which is important for the economic development of the area. The main lines of regional policies for Silesia are supporting the improvement of the environment; however there are no activities ameliorating the economic exploitation of natural resources.

The Concept of the State's Territorial Development (CSTD – 2011) highlights the problematic and peripheral nature of the borderland areas and the need for the elimination of the adverse effects of a peripheral position in order to increase the state's coherence. Cooperation leading to creation

[4] The Concept of the State's Territorial Development (CSTD) was adopted by the Government of the Republic of Poland in December 2011 based on the CSTD Project elaborated by the Ministry of Regional Development.

of cross-border functional regions should be one way of overcoming the peripheral nature. This issue relates primarily to the Polish-German, Polish-Czech and partially to the Polish-Slovak borderland (the parts of the borderlands are not specified). According to the Concept, the intensification of integration processes should mainly cover Germany and the Czech Republic. In the case of Slovakia, there is a barrier in the form of the Carpathians, which hinders the integration processes. Therefore the authors refer even more to the important role of Polish-Slovak co-operation, particularly in the area of tourism and culture. Finally, the actual Operational Programme of the Cross-border Cooperation Poland – Slovak Republic shows the wide range of potential and desirable forms of cooperation in tourism development and integration of the borderland tourism. In accordance with the State Environmental Policy II (2000, with a view to 2025), the cooperation in the borderland should include joint programs of environmental protection and sustainable development including protection of biodiversity, cross-border and from the natural perspective particularly valuable areas via joint management (National Strategy on Protection and Balanced Use of Biodiversity, 2007).

The CSTD defines different categories of functional areas, which are subject to various policies (approaches) taking into account their specific features. Areas near the border with the Slovak Republic belong to two separate categories of macro-regional level – borderland and mountain areas. It is necessary to positively evaluate the functional approach towards territorial policies, which should also be applied in the case of smaller territorial units and at lower levels of public administration.

The important role in regional development planning should be played by the National Regional Development Strategy (NRDS), where the issue of cross-border ties is formulated in one of the partial targets (Objective 2.4: overcoming disadvantages associated with the position of the borderland areas, especially those located on the EU's external border). Activities towards the borderland areas within the regional policy should focus primarily on improving mutual access at the national and international levels and also on promoting endogenous development using possibilities offered by cross-border cooperation. Specific activities in the borderland areas should include the development and promotion of joint use of local infrastructure, protection of common natural and cultural heritage, tourism, prevention of natural and technological

threats, promotion of relations between urban and rural areas, reduction of isolation by improving the availability of service facilities, transport and telecommunication networks and supporting local business.

Territorial and socio-economic policies at the regional level in Poland are formed by the administrations of voivodeships. The basic documents of socio-economic policies in the regions are strategies for voivodeship development defining the main objectives of the voivodeship's development and guidelines for the activities of regional authorities and their subsidiary bodies. These documents must be in compliance with the State Development Strategy. The voivodeship strategies are implemented via the voivodeship and regional operational programs (*Act on Voivodeship Administration*, 1998). The most important regional documents of territorial policy are regional management plans for voivodeships, which must address the Concept of the State Territorial Development (CSTD) and must be compatible with the voivodeship development strategies. Voivodeship authorities are allowed to approve sector strategies (e.g. in the area of tourism), which are subject to the voivodeship development strategies as well as relevant national sector strategies (it is enshrined neither in the Act on Voivodeship Administration nor in the Act on Rules of Development Policy Management). The administrations can approve operational programmes for the purpose of the sector strategies implementation.

The regional policy in Slovakia is regulated by a variety of strategic, planning and programming documents with varying degrees of complexity and at different areal levels. The Act No. 539 of 4 November 2008 on Support for Regional Development represents a cardinal document which lays down the objectives and terms of regional development, and it regulates the competence of state administration, regional and local authorities and other subjects of territorial cooperation and the conditions for coordination and implementation of regional development in Slovakia. Similarly to Poland, the development of Slovakia is reflected in documents on the national level from three perspectives: socio-economic (National Regional Development Strategy of the SR, *Národná stratégia regionálneho rozvoja SR*, 2010), spatial-planning (Concept for the Territorial Development of Slovakia – CTDS, *Koncepcia územného rozvoja Slovenska*, 2001 amended in 2006) and aspect of implementation of the European Regional Policy (National Strategic Reference Framework 2007–2013, NSRF, *Národný strategický referenčný rámec*

2007–2013). Documents prepared for the national level must be considered in the development process of corresponding documents at lower hierarchical levels. The National Regional Development Strategy is taken into account by the Economic and Social Development Plans (ESDP) of autonomous regions or municipalities. The Concept for the Territorial Development of Slovakia is considered by territorial plans of autonomous regions or municipalities.

The National Strategic Reference Framework 2007–2013 (*Národný strategický referenčný rámec 2007–2013*) is a strategic document allowing Slovakia to use resources from the EU funds for implementation of two objectives of the EU Cohesion Policy in Slovakia (Convergence and Regional Competitiveness and Employment). Strategy, priorities and objectives of the NSRF are implemented via 11 operational programs (OP): Regional Operational Program, Environment, Transport, Information Society, Research and Development, Competitiveness and Economic Growth, Health, Technical Assistance, Bratislava Self-governing Region, Employment and Social Inclusion, Education).

In addition to these cross-cutting documents, a number of planning documents have been prepared in order to specify the individual steps in the areas of medium and long term development. Although they cannot be considered legally binding for the competent authorities of state and local administrations, their analysis can provide a rough idea about the direction of development policy in terms of individual areas. Within the development of Polish-Slovak cooperation, such a document is represented by the Programme for Cross-border Cooperation PL-SK 2007–2013, worked out in 2006, also for the purpose of drawing EU funds. The National Strategy for Sustainable Development of the Slovak Republic (*Národná stratégia trvalo udržateľného rozvoja SR*) was adopted in 2001 in order to address the complex issues of mutual harmonization of environmental, social, cultural, economic and institutional development with emphasis on the quality of life. The strategic planning of transport development is worked out in the document Transport Development Strategy until 2020 (*Stratégia rozvoja dopravy do roku 2020*). Comprehensive planning of tourism development at the national level is addressed in Regionalization of Tourism in Slovakia (*Regionalizácia cestovného ruchu v SR* – 2004) and New Strategy for Tourism Development of Slovakia until 2013 (*Nová stratégia rozvoja cestovného ruchu SR do roku 2013*–2006).

In terms of balancing regional disparities the National Regional Development Strategy (2010) briefly reflects the need for targeted cross-border cooperation and an appropriate strategy towards the borderland regions. These regions are explicitly labelled as economically underdeveloped. The document also provides a prospective analysis of the potential economic development of Slovakia on the basis of three variant scenarios of the application of specific regional policies. The most suitable in the overall evaluation seems to be the scenario oriented towards "primary support for regional centres with moderate cohesion policy using supporting resources of greater efficiency via regional administration." If transparent functioning of regional administration (self-governing regions) is occurring, the principle of subsidiarity will undoubtedly be correct. The prognostic variant is preferred not only in terms of overall sustainability of economic development with the gradual reduction of regional disparities through a process of diffusion of innovations, but also in terms of building technical infrastructure, tourism development and environmental protection as sector policies. Overall, the document provides a relatively sober look at the possibilities of cross-border cooperation in tourism development and transport infrastructure for the borderland regions.

In spite of several upgrades, the Concept for the Territorial Development of Slovakia – CTDS (2001) as a strategic territorial planning document is influenced by the period of its establishment, but a new version is being prepared. The issue of cross-border cooperation is mentioned only marginally in the otherwise quite comprehensive document and only in the pan-European visionary concepts with questionable outcome and application value. The period of the CSTD establishment was characterized by the preference for application of regional policy via Euro regions. On the other hand, the document's structure is relatively balanced in terms of emphasis on the aspects of economy, society and environment. A separate chapter is devoted to the concept of sustainable development and its consistency with the objectives declared in the document.

The National Strategy for Sustainable Development (2001), which is the sole binding conceptual document, is interesting because it provides a relatively comprehensive analysis of almost all aspects of the earlier development of Slovakia, it raises polemic questions concerning the dominant neo-liberal growth model, and it proposes environmentally sensitive solutions for the regions as well. One of the document's

priorities is a preferential development of problem regions; however the possibility of cross-border cooperation is missing among development factors. Less attention is given to tourism and transport. It is questionable how much real impact the document has had regional policy. In 2005, the extension of the document was prepared – Action Plan for Sustainable Development in the SR for 2005–2010.

The National Strategic Reference Framework 2007–2013 as an essential tool for preparing the programming of the EU funds in the period of 2007–2013, defines the key disparities in Slovakia (low competitiveness of production and services, insufficient quality of human resources, poor quality and availability of public infrastructure). Development of infrastructure improving accessibility of regions and environmental quality is considered one of the main factors for overcoming these disparities. The document defines topics and areas that should be supported in terms of utilization of funds. Despite the technology development and quality improvement of human resources, one of the main themes is building and modernization of public infrastructure. Specific priorities Transport Infrastructure and Public Transport as well as Environmental Infrastructure and Protection of the Environment apply to the entire territory of Slovakia.

The document focusing primarily on the application of the third objective of the EU Cohesion Policy, which is the European territorial cooperation, is the Programme of Cross-border Cooperation Poland – Slovakia 2007–2013 (2007). It builds on the previous pre-accession programme Phare CBC (2000–2003) and the Community Initiative INTERREG IIIA (2004–2006). The cross-border strategy emphasizes the value of the natural environment in the area and its importance for tourism, investors and the public. However, the weaknesses mentioned by the strategy are the inadequate transport infrastructure and accessibility, as well as deterioration of the environment. The cultural potential of the region generally remains untapped. Moreover, the potential for the creation of networks and joint projects is also still unused.

2.5. POLISH-SLOVAK CROSS-BORDER COOPERATION

International cooperation between local administrations (i.e. authorities of self-governing administrative) is one of the characteristic features of integration in contemporary Europe. The most common

form is the cross-border cooperation, which has proved to be the most effective form of international cooperation, particularly at local and regional levels (*Growing Regions* ..., 2008, p. 6). Within three types of operational programs of European Territorial Co-operation (ETC), Poland has seven programmes of cross-border cooperation, two programmes of transnational cooperation, and a program of interregional cooperation. Slovakia has four programmes of cross-border cooperation, two programmes of transnational cooperation, and a program of interregional cooperation. The cross-border co-operation with countries outside the EU is supplemented by the ENPI programmes (European Neighbourhood and Partnership Instrument) – two in Poland and one in Slovakia. The most important aim of the ETC is to promote the territorial integration of the European Union, including through the development of joint local and regional initiatives, environmental protection, development and sharing of infrastructure, business support, improvement of the transport network, exchange of experience and best practices, for example, from the area of promotion of innovation and knowledge economy (www.ewt.gov.pl).

Euro regions represent a form of cross-border cooperation. The Legal basis of their operation consists of three legal documents:

- European Outline Convention on Transfrontier Co-operation between Territorial Communities or Authorities (so-called Madrid Convention adopted on 21 May 1980)
- European Charter of Local Self-government (until 2006: European Charter of Regional Self-government; adopted on 15 October 1985 in Strasbourg);
- European Charter for Border and Cross-Border Regions (until 1995: European Charter for Border Regions; adopted on 19 November 1981).

Within the Polish-Slovak borderland, the bilateral cooperation is developed in three Euroregions: Carpathian Euroregion (Poland, Slovak Republic, Hungary, Ukraine, Romania), Tatras Euroregion (Poland, Slovakia) and Beskydy Euroregion (Poland, Czech Republic, Slovakia).

The Carpathian Euroregion was the first created in the Polish-Slovak borderland. It was developed in 1993 as an initiative from above in order to integrate the peripheral area of the respective countries. The founding members were Poland, Ukraine and Hungary; Romania joined the initiative in 1997. Slovakia became a full member in 1999.

An important objective is to protect the environment as well as developing and facilitating contacts between the people of the Euroregion. In 1994 there was an interesting initiative in the form of establishment of the Association of Universities of the Carpathian Region, based in Košice, which aims to facilitate cooperation between universities, carry out joint projects and assist in making scientific contacts with research institutes from Western Europe and the USA (Lewkowicz 2010).

The Association of the Tatras Euroregion, founded in 1994, consists of 31 self-governing units in Poland and 107 in Slovakia. The main objectives include cooperation in the fields of environmental protection, socio-cultural contacts and tourism in relation to historical experience. As part of its activities, the Association organizes international events, particularly in the area of culture.

The Euroregion Beskydy includes autonomous units of three states. It was founded in 2000, but from the early 1990's, the region had many activities directed towards cooperation between the inhabitants of the Czech-Polish-Slovak borderland. The main objective of the Euroregion is economic development activated by building cross-border cooperation links, care for natural resources and environmental protection, optimum development of human potential and improvement of the quality of life in the Euroregion.

The admission of Poland and Slovakia into the European Union has brought new impetus to the development of cross-border cooperation and also opened new possibilities for funding of joint projects. The admission of both countries into the Schengen Area of free movement across the borders, has contributed significantly to the improvement of cooperation. There are also new opportunities for institutional cooperation, including those within the EU Programme INTERREG IIIA Poland-Slovak Republic 2004–2006, and within the Programme of Cross-border Cooperation Poland-Slovak Republic 2007–2013 (Fig. 2.5.).

The questionnaire survey in Polish gminy of the Polish-Slovak borderland declares that 75% of gminy are cooperating with Slovak municipalities[5]. On the other hand, 51% of Slovak municipalities declare cooperation with Polish gminy. The difference is due to two reasons,

[5] The methodological background of the questionnaire survey and its other results are presented in Chapter 5.

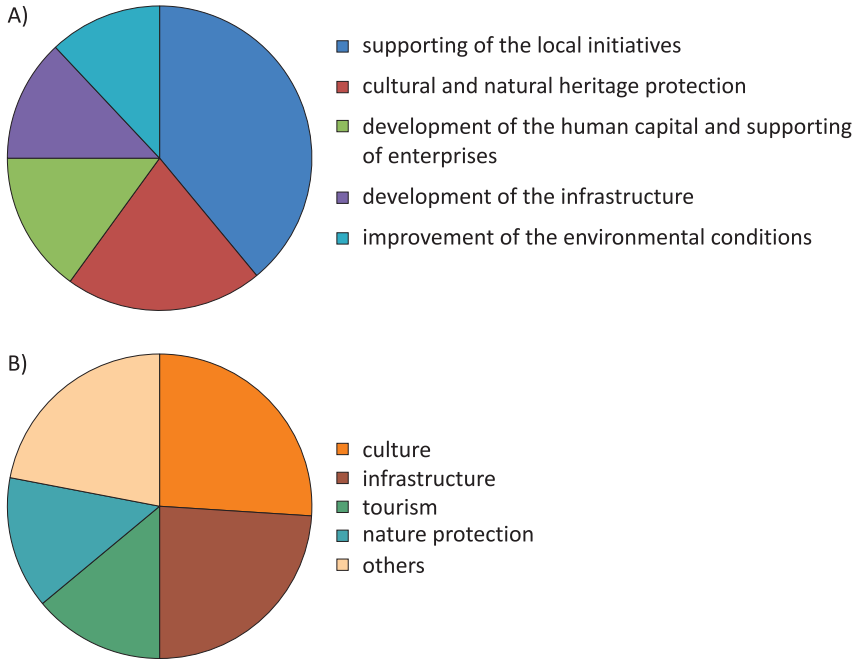

Figure 2.5. Thematic structure of the projects realised within the EU Programme INTERREG III A Poland-Slovak Republic 2004–2006 (A), and within the Programme of Cross-Border Cooperation Poland – Slovak Republic 2007–2013 (B)

firstly, the examined self-governing units did not represent the whole set of administrative units, and secondly, the studied units were of different sizes (the basic administrative units on the Slovak side (municipalities) are much smaller than their equivalent on the Polish side (gminy); given the above-mentioned fact there are more municipalities than gminy in the area of comparable size – 280 gminy on the Polish side and 981 municipalities on the Slovak side). The cooperation at the lowest administrative level between gminy and municipalities is not always formal; the cooperation is often in the form of joint activities such as issuing printed materials (brochures, leaflets), but also in the form of shared infrastructure projects such as construction of cycling road, maintenance of a cultural centre or information centre.

The research respondents had the opportunity to comment on issues that facilitate, or on the contrary worsen the cooperation or even make the cooperation impossible. Both sides of the borderland selected the following facilitating factors: geographical proximity, common

problems, or belonging to one of the natural and geographical areas such as the Tatras. It is worth noting that the linguistic proximity was relatively little considered as a positive factor affecting cooperation, even though it is making contacts between Slovak and Polish entities much easier. Among the factors negatively influencing the cooperation in the first place there were infrastructural and communication constraints: the lack of roads or poor quality of roads between the respective municipalities, poor awareness of the potential partners for cooperation, differences in potential (area, population) between the partners, but also the lack of activity or poor financial situation of the self-governing units.

Finally, it should be noted that over the last 20 years, the generally understood Polish-Slovak cross-border cooperation is of the upward trend. In addition to formal cooperation of legal and administrative nature there are emerging initiatives of NGOs and companies, whose cooperation is at the local level. An important role in the implementation of these activities is played by the EU programs, including the INTERREG IIIA Programme. Most of the bodies implementing joint projects, admit that there will not be cooperation without the EU support. In addition to projects aimed at building infrastructure, the projects in the field of local initiatives are also of great importance (including tourism and culture) and the projects contribute to a closer acquaintance of local leaders from the other side of the border, which may lead to future joint activities.

Regarding the cooperation between self-governing authorities, the contracts of Slovak cities with the Polish side are in the third place in the number of negotiated contracts (after contracts with Hungary and the Czech Republic). However, in terms of partnership contracts awarded by the Polish cities, the Slovak partners appear only in the sixth place (after Germany, France, the Czech Republic, Lithuania and the Netherlands). This shows the stronger position of Polish cities as potential partners for cooperation for Slovak cities than the other way round; the Slovak cities look for partners in Poland more often.

3. TRANSPORT IN THE POLISH-SLOVAK BORDERLAND

3.1. EUROPEAN AND NATIONAL LEVEL

3.1.1. TRANSPORT INFRASTRUCTURE

The position of the Polish-Slovak borderland within the pan-European transport system has been significantly influenced by historical and physical-geographical factors with surface morphology (see Chapter No. 2.) being the most important one. By the end of the 18th century this area was the border of the then Poland and the Kingdom of Hungary. Business contacts between the two countries were relatively intense and the routes used included routes leading through the territories of Spiš and Orava as well as mountain passes of the Eastern Carpathians (Dukelský and Użocki passes). At that time Kraków dominated the transport. For example, in 1604 up to 79% of horses used for trading with the then Kingdom of Hungary came from Kraków (Historia Polski w liczbach – History of Poland in Figures, 1995). In the period of the first intense development of the transport infrastructure in the form of railways, which occurred in the second half of 19th century, the Polish-Slovak borderland was situated on the territory of one political unit, namely the Austro-Hungarian Empire. This theoretically favourable situation, however, contributed to the development of mutual interconnections only partially. The development was hindered especially by the physical-geographical conditions, in particular the orographic barrier of the Carpathians. Moreover, the classification of the Polish part of the borderland to the Austrian part of the Austro-Hungarian Empire caused that the main transport corridor connecting former Galicia (Halič) with the rest of the country (including Vienna) was crossing the Moravian Gate (Moravská brána). The second important route went through the territory of present-day Slovakia and another one via the Użocki Pass to Lvov. Direct interconnections crossing the Carpathians were especially of local character and as such they did not initiate fast development of infrastructure in this terrain which would

require high initial costs for its building. In this period there were four railways in the North-South direction built crossing the analysed part of the Carpathians of which three (Żywiec – Žilina completed in 1884, Muszyna – Prešov completed in 1876 and Sanok – Medzilaborce completed in 1872) still exist. The fourth railway Nowy Targ – Trstená (built in 1904) was fully disassembled on the Polish side in 1991 (Taylor 2007), with the operation on the route Trstená – Suchá Hora already terminated in 1971.

The existence of Czechoslovakia in the period 1918–1992 (except for the period of the Slovak State in the period 1939–1945) influenced the development of road network in the 20th century. After the Second World War, the mutual political relations focused on Prague and economic relations focused on the Ostrava Region. This had a positive impact on preference for transport connections leading through the Moravian gate (Moravská brána). The majority of connections between Poland and Hungary and Austria went in the same direction. The need for extension of direct roads in the North-South direction originated at the time of the establishment of the Slovak Republic in 1993. In this period, however, both countries considered relationships with Western Europe to be a priority which naturally supported development of roads in the East-West direction. Such corridors were supported by the European Union not only in the pre-accession phase but also immediately after the accession of both countries to the EU. After the period of opening the borders with the countries of the former Soviet Union and after accession to the European Union, the capacity of the Ukrainian border was restricted. This fact has significantly affected the peripheral character of the eastern part of the territory subject to the analysis.

The transport background on the Slovak side of the borders area is conditioned to a great extent by the distribution of the mountain ranges with roads and railways copying the curves of the valleys and passes. Close to the Slovak part of the borders the valley areas spread only in Eastern Slovakia. The territory of the borderland in Poland is practically identical with the territory into which mountain ranges interfere. At its edge there are no significant restrictions for transport network development in terms of environment. Certain meaning may be attributed to the barrier in the form of the Vistula (Wisła) River on which there are few bridges in the section between the city of Kraków and Tarnobrzeg. On the Slovak side, there are no similar hydrological

barriers. Another factor limiting the development of the transport infrastructure network is presence of the protected areas including national parks, protected landscape areas NATURA 2000 network areas.

Regarding the analysed natural and historical conditions the most important corridors crossing the Polish-Slovak borderland include the following:

- west-east corridor in Poland (historical Via Regia from Germany via Kraków to the Ukraine) copying the external perimeter of the Carpathians which centres routes from the Polish part of the mountain valleys,
- east-west corridor in Slovakia leading inside the Carpathian range along the valleys of the Hornád, Poprad and Váh rivers, from East Slovakia to Bratislava, Vienna and further via Salzburg to Western Europe,
- Polish-Czech corridor with a North-South route connecting the central area of Poland (Warsaw) with Prague and Vienna and also Bratislava and Budapest leading across Upper Silesia and Ostrava,
- West-East corridor in the Czech Republic leading from Germany via Prague and Brno (alternatively via Pardubice) to Ostrava and Žilina.

Within the European transport system there are three West-East corridors deciding on accessibility of the region from the western part of the continent. The North-South corridor is significant especially regarding relations with Central and Northern Poland or Scandinavia. At present, further North-South corridors are also significant for Poland, Slovakia and Hungary:

- Warsaw – Kraków – Banská Bystrica – Budapest corridor,
- Warsaw/Lublin – Rzeszów – Košice – Miskolc corridor.

The biggest airports with inter-continental or Community importance neighbouring the Polish-Slovak borderland include the airports in Budapest, Vienna, and Kraków. Further airports are of regional importance. The analysed territory lacks significant inland water transport.

Pan-European Corridors and Trans-European Transport Networks (TEN-T)

Several transport routes of international significance included in the Pan-European transport corridors and Trans-European Transport

Networks (TEN-T) cross the Slovak-Polish borderland. In 1992, the European ministers of transport proposed a system of transport corridors for Central and Eastern Europe (the system was supplemented in 1997). It became the basis of the so called TINA network, later TEN-T network. This system was supplemented by so called additional corridors/routes. The Polish-Slovak borderland is crossed by or situated close to two East-West Pan-European corridors and one North-South corridor.

On the Polish side, there is West-East corridor III leading from Germany (Dresden) via Wroclaw and Kraków to Lvov and then to Kiev. It includes the A4 motorway in the territory of Poland (on sections where it is not provided for use, DK4 state road) and the E-30/CE-30 railway line. The corridor runs outside the borderland territory but it crosses territory in its immediate neighbourhood (its section in the Rzeszów region and it is situated on the borderland territory).

The most important route on the Slovak side of the borderland is Pan-European transport corridor Va (Bratislava – Žilina – Košice – Uzhorod – Lvov) which is formed by the D1 motorway in the territory of Slovakia (Bratislava – Trnava – Žilina – Košice – state border SK/UA, Vyšné Nemecké) and the railway on the route Bratislava – Žilina – Košice – Čierna nad Tisou – Čop – state border SK/UA.

Corridor VI shows a North-South routing (Gdańsk – Katowice – Žilina) and it leads from the Baltic ports of Gdańsk and Gdynia through Central Poland (route through Łódź and railway line through Warsaw) and Katowice with Brno (connection with corridor IV) and Žilina (connection with Va corridor). The line from Katowice via Bielsko-Biała, Żywiec and Zwardoń to Žilina is an important Polish-Slovak interconnection. The main part of the corridor on the Polish side is formed by the A1 motorway (where currently intense construction is being carried out; partially the S1 expressway) and CE-65 railway lines (goods transport) and E-65 (passenger transport). On the territory of Slovakia it is formed by the D3 motorway (Žilina – state border PL/SK) and railway route consisting of the state border PL/SK, Skalité – Čadca – Žilina.

The overall accessibility of the Polish-Slovak borderland from the south (south-west) is also influenced by corridor IV leading from Dresden or Nuremberg via Prague and Brno to Bratislava.

The aforementioned Pan-European transport corridors are also a part of the Trans-European Transport Networks (TEN-T). Apart from

transport routes crossing Pan-European corridors, the TEN-T network also includes other routes of the so called additional network. In the Polish part of the borderland (or in its neighbourhood) this network also includes the road Rzeszów – Barwinek (a part of the planned S19 expressway) and the railway line Opole – Ostrava and Prešov – Nowy Sącz via Muszyna (with expected extension in the form of a new section to Kraków).

In the Slovak part of the borderland, the TEN-T network includes, moreover, corridors copying expressways R3 (Martin – Žiar n. Hronom – Zvolen – Levice – state border SK/MR, Šahy) and R4 (state border PL/SK, Vyšný Komárnik – Prešov – Košice – state border SK/MR, Milhosť). Within the railway network the TEN-T network includes also the railway line from Poland in the section Plaveč – Prešov – Košice – Kechnec.

Furthermore, the TEN-T network includes also the 10 selected airports. In the analysed part of the borderland these cover airports in Poprad and in Rzeszów and in the neighbourhood of the analysed area there are airports in Kraków, Katowice, Ostrava and Košice.

There were 30 priority projects selected within the TEN-T network, and the EU states are obliged to concentrate available resources for their implementation. Only two of them cross the Slovak-Polish borderland. The priority project No. 23 is represented by the railway axis Gdańsk – Warsaw – Brno/ Bratislava – Vienna which in Slovakia involves railway lines No. 120 (Bratislava – Žilina) No. 127 (Žilina – Čadca) and No. 129 (Čadca – Skalité). A part of the railway line No. 120 in the section Bratislava – Nové Mesto nad Váhom has already been upgraded to the speed 160 km/h. The priority project No. 25 is represented by the motorway axis Gdańsk – Brno/Bratislava – Vienna which is formed by the D3 motorway and completed D1 motorway in the section Bratislava – Hričovské Podhradie in Slovakia.

In 2011, Poland and Slovakia proposed to the Council of the European Union the extension of the TEN-T network (both basic and additional one). The result was inclusion of the North-South route along the eastern border of Poland (planned route S19), including the section of Rzeszów – Barwinek (currently additional network) in the basic network. This initiative is welcomed by the representatives of regional government in several states which support development of the route leading from Baltic countries to South-East Europe. Many expert analyses criticize

this idea for several reasons, including limited demand, high external costs of goods transit and numerous conflicts related to environment protection (especially in the southern part of the Polish section of the route). In terms of transport serviceability of the Polish-Slovak borderland the proposal for inclusion of the road route S7 Gdańsk – Warsaw – Kraków – Chyżne and the route Kraków – Bielsko-Biała – Cieszyn into the additional network is very important. Moreover, Slovakia requested extension of the TEN-T network by the section R3 Kraľovany – Trstená and by the entire expressway R1 Trnava – Nitra – Zvolen – Banská Bystrica – Ružomberok, while the Slovak-Polish borderland is related only to the section Banská Bystrica – Ružomberok).

Road network

Four international roads belonging to the network of the "E" European roads have the greatest importance for the Polish part of the borderland. Two of them belong to the basic network and two to the network of connecting roads:

- E40 from Calais via Cologne, Dresden, Wrocław, Kraków to Kiev and further to Russia and Central Asia. Only a part situated in the region of Rzeszów runs directly through the borderland territory. The Polish roads – A4 motorway and DK4 state road correspond to the mentioned route,
- E77 from Pskov via Riga, Kaliningrad, Gdańsk, Warsaw, Kraków, Chyżne and Ružomberok to Budapest. The expressway S7 and state road DK7 in Poland correspond to this route,
- E371 (connecting road) from the town of Radom via Rzeszów and Barwinek to Prešov; on the territory of Poland the Polish state road DK9 corresponds to it,
- E462 (connecting road) from Kraków via Cieszyn to Brno; in the territory of Poland the Polish state road DK52 corresponds to it.

Moreover, in the direct neighbourhood of the Polish part of the analysed territory the European route E75 goes from Northern Norway via Finland, Gdańsk, Katowice, Cieszyn, Žilina, Bratislava, Budapest and Belgrade to Greece. In the territory of Poland it includes: A1 motorway, S1 expressway or DK1 state road.

In compliance with the European agreement on main roads with international traffic, in Slovakia there are 11 roads included in the "E" network of European roads: E50, E58, E65, E71, E75, E77, E371,

E442, E571, E572, E575 with a total length of 1,535km of which five cross the Slovak-Polish borderland. The class "A" of the main roads includes the following:

- E50: (D1, I/50, I/61, I/11, I/18, I/18A, I/68) state border CZ/SK – Drietoma – Trenčín – Žilina – Prešov – Košice – Michalovce – Vyšné Nemecké – state border SK/UA,
- E75: (I/11, I/18, I/61, D1, I/2, D2) state border CZ/SK – Čadca – Žilina – Považská Bystrica – Trenčín – Trnava – Bratislava – state border SK/H.

Class "A" additional roads includes:

- E77: (I/59, I/18, I/50, I/66) state border H/SK – Šahy – Zvolen – Banská Bystrica – Dolný Kubín – Trstená – state border SK/PL.

Class "B" roads include:

- E371: (I/18, I/73) Prešov – Svidník – Vyšný Komárnik – state border SK/PL,
- E442: (I/18) state border SK/CZ – Makov – border of districts of Čadca/Bytča – Žilina.

Apart from roads with European numeration, some Polish state roads also have an important role in transport in the Polish-Slovak borderland. The most important route is DK69/S69 connecting Bielsko-Biała and Zwardoń on the border with Slovakia (direction of Žilina). The DK28 road (connecting Bielsko-Biała and Przemyśl) leading along the border or the routes leading to border crossings in Jurgow (DK47/DK49) and Muszyna (DK75/DK87) are of great significance as well. As for the eastern part of the borderland with Central Poland, road DK73 Kielce – Tarnów – Jasło is of irreplaceable significance.

The most important currently implemented investments in road infrastructure in Poland, Slovakia and in the Czech Republic (especially those co-financed from the European Union funds) are related to the main West-East routes. The construction of the A4 motorway in Poland, D1 motorway in Slovakia and the route from Olomouc to Ostrava in the Czech Republic continues well. The building works focus on construction of the E75 motorway section (A1 motorway in Poland) among the North-South routes. Other North-South connections are mentioned in the numerous strategic documents but their implementation is only gradual, they are mostly in the preparation phase of projects. This is true not only about the sections in the actual borderland (see below) but also about the routes in its hinterland. The decisions restricting

the range of the Polish programme of state road construction (related to the budgetary difficulties in 2011) decelerated among others the preparation of further sections of the North-South route S7 (Warsaw – Kraków – Chyżne).

In 2005[6], the roads leading from Kraków and Upper Silesia and the entire road A4/DK4 from Katowice via Kraków to Rzeszów, road D7/S7/DK47 from Kraków to Zakopane and road S1 from Katowice to Bielsko-Biała were the most burdened routes by car traffic in South and South-East Poland. The smaller burden on S7 section north of Kraków is to certain extent a result of the fact that road traffic on the route Kraków – Warsaw was shifted to the route with better technical parameters via Piotrków Trybunalski and Katowice (DK8/DK1/A4). A different situation existed in freight traffic, which is significantly concentrated in the direction Warsaw – Katowice – Cieszyn and Wroclaw – Katowice – Kraków – Rzeszów. Further routes in the Polish part of the borderland were not burdened by freight traffic to such a significant extent what can be deemed positive in terms of the accessibility of regions from the tourism point of view (smaller traffic density) as well as in terms of their attractiveness (smaller transportation costs when travelling to the borderland).

The input results of the 2010 traffic census point out the increase in traffic density on the selected state roads (designated as international ones, Tab. 3.1). The increase of traffic in the whole of Poland on these routes in the period 2005–2010 was similar to the increase of density within the entire road network. The differences among individual roads were, however, quite significant. The most burdened route from among the routes securing access to the Polish-Slovak borderland is the E-40 (A4 motorway). The biggest increase of traffic in the whole of Poland was recorded here. A great increase of the traffic density was recorded in Rzeszów though the cross-border section in the direction of the border with the Ukraine in the period 2005–2010 showed a decrease of traffic intensity. Almost identical traffic density was found on the North-South E-75, but in this case a smaller increase compared to the average increase on international roads was recorded but on the sections in the

[6] To evaluate the demand in terms of development of the conditions for development of infrastructure the results of the traffic census, which is conducted every 5 years in accordance with the single methodology adopted in the whole European Union, are used the most. In the course of the publication preparation, the research results from y. 2010 began to be stricter and thus they are considered only partially.

analysed cross–border territory, the traffic intensity increased in the town of Pszczyna (maximum traffic) as well as on the section near the Polish-Czech border in Cieszyn.

There as a relatively high increase in traffic on the North-South route E-77 leading from North Poland via Kraków to Chyżne. In the cross-border section in Chyżne the vehicle traffic approached almost 5,000 vehicles a day. This is probably partially caused by commissioning of sections of the S7 expressway on that route (between Warsaw and Radom and between Myślenice and Lubień). A significantly smaller burden and traffic increase were also recorded on road E-371 (apart from the surrounding of Rzeszów). The average traffic density in Barwinek in 2010 was lower compared to 2005.

Table 3.1. Traffic intensity on selected roads in 2005 and 2010 in the Polish part of the borderland (number of cars per day in thousands)

international road/road No.	maximum intensity in 2005 (cross-border sections)	minimum intensity	maximum intensity in 2010	minimum intensity in 2010 (cross-border sections)
E-40/A4	23743 (Rzeszów)	3650 (Korczowa)	29703 (Rzeszów)	3210 (Korczowa)
E-75/E-462/ S1 (DK1)	33116 (Pszczyna)	7059 (Cieszyn)	39646 (Pszczyna)	11782 (Cieszyn)
E-77/S7 (DK7)	23697 (Myślenice)	4036 (Chyżne)	27270 (Myślenice)	4923 (Chyżne)
E-371/S9 (DK9)	16368 (Rzeszów)	3614 (Barwinek)	21839 (Rzeszów)	3361 (Barwinek)

Source of data: Generalny Pomiar Ruchu (Traffic Census) 2005, 2010, GDDKiA; own elaboration.

According to the results of the 2010 Traffic Census, the most burdened road in the Slovak part of the borderland is road I/18 (state border SK/CZ – Bytča – Žilina – Poprad – Prešov– Michalovce). The greatest intensity is on its sections in the biggest cities and their close surroundings. In the area of Žilina, more than 30,000 vehicles (max. almost 37,000) pass on this road per day on average. In Prešov, maximum average values amount to 30,000, in Ružomberok 29,000, in Vrútky 27,000, in Liptovský Mikuláš 21,000, in Vranov nad Topľou 20,000 and in Poprad 19,000 vehicles per day. On the section Strečno – Vrútky there

are approx. 25,000 vehicles per day. The biggest traffic density on the D1 motorway in the territory of the Žilina and Prešov Regions is on the section D1 Bytča – Žilina (on average 23,000 vehicles per day). These data also reveal that construction of the D1 motorway which would eliminate the burden on the current road network is very much required. Completion of the motorway construction in the surroundings of Žilina is currently planned for 2017. Another burdened road is road I/11 (state border CZ/SK – Čadca – Žilina), especially in the section Žilina – Čadca (max. values amount on average to 23,000 vehicles per day). Construction of the D3 motorway and a short section of R5 expressway would also be necessary here to reduce the current traffic intensity.

Railway network

In the Polish part of the borderland and in its immediate vicinity there are two major railway lines of the European system:

- E-30/CE-30 from Germany via Wroclaw and Kraków to the border with the Ukraine (in the analysed territory a part of the railway in the Rzeszów area). It has a branch: railway C-30/1 leading from Tarnów to Muszyna on the border with Slovakia
- E-65/CE-65 from Gdańsk via Bydgoszcz (CE65) or Warsaw (E-65/CE-65) to Katowice and Cieszyn and further to Vienna
- C-63 from Czechowice-Dziedzice to Zwardoń and further to Bratislava (actually a branch of railway line E-65).

Moreover, the lines connecting the Central Main Railway Line (CMK; line E-65) with Kraków and Kraków with Zakopane play an important role in the transport service in the Polish part of the borderland. The railway line Skarżysko-Kamienna – Tarnobrzeg – Przeworsk is significant for external transport service of the eastern part of the Polish Slovak borderland. The significance of other railway lines is currently very limited.

Among the currently performed upgrade works on Polish railway lines, the works carried out on line E30 /CE30 (section Kraków – Rzeszów) and on the section between the Central Main Railway Line (CMK) and Kraków are important for the transport service of the borderland. The accessibility of the borderland by railway transport in Poland could be improved by raising the standard of the Central Main Railway Line (CMK) to the level of high-speed railways and upgrading of the North-South connections in the territory of the Carpathians

in the future including construction of the missing section Kraków – Limanowa.

The development of the railway infrastructure of Slovakia stems from the obligation of the Slovak Republic as the EU member state (TEN-T) and from other international agreements such as AGC (European Agreement on International Main Railway Lines) and AGTC (European Agreement on the Most Important Routes of International Combined Transport and the Related Objects). According to AGC the European railway network in Slovakia includes 863.9km of railway lines, according to AGTC there are 1,033km of railway lines and the network of Trans-European Multi-modal corridors includes 916.4km of railway lines.

The system of international transport corridors according to the AGC and AGTC agreements on the ŽSR network in the Slovak-Polish borderland covers the following:

- C 30/1 – Muszyna – state border PR/SR – Plaveč – Prešov – Kysak – Košice – Čaňa – state border SR/MR – Hidasnémeti,
- CE 40 – Ostrava – state border ČR/SR – Čadca – Žilina – Poprad Tatry – Košice – Čierna nad Tisou – state border SR/Ukraine – Čop,
- Horní Lideč – state border ČR/SR – Lúky pod Makytou – Púchov – Žilina,
- CE 63 – Czechowice – state border PR/ SR – Skalité – Žilina – Leopoldov – Bratislava.

3.1.2. GENERAL STRUCTURE OF TRANSPORT IN POLAND AND IN SLOVAKIA

In the countries of Central-Eastern Europe, including Poland and Slovakia, a significant shift in demand for different types of transport occurred after 1989. The passenger transport influenced (similarly as in other countries of the European Union) very fast increase of the motorization level in Poland from 138 cars per 1,000 inhab. in 1990 to 432 in 2009 and in Slovakia from 166 to 293 cars per 1,000 inhab. In the 1990's the values of the motorization level in both countries were growing at approximately identical pace, but in the first decade of the 21st century more significant increase was recorded in Poland while in Slovakia the growth decelerated in the same period. Bus transport was used the most in the 1980's in Slovakia, but demand for it has since declined.

Poland and Slovakia differ in terms of trends in mobility of the population. In 1995, the inhabitant of Slovakia travelled 6.8 thousand km by passenger car, by bus or by railway on average and the inhabitant of Poland only 4.5 thousand km, but in 2009, the inhabitant of Slovakia only 6.3 thousand km, while the inhabitant of Poland up to 8.6 thousand km on average (EU transport in figures, 2011, Statistical Pocketbook 2011). The transportation performance per one inhabitant of Slovakia remained on the same level while in Poland it doubled (Fig. 3.1). It is highly probable that it has been caused by the situation in the labour markets and by the sub-urbanization range. The transformation period in Poland was reflected to a greater extent than in Slovakia in spatial de-concentration of jobs (fast development of small enterprises) which results in a bigger distance which the employees had to travel to get to work. In the period 1995–2005, this distance grew from 9.8 to 12.7km in towns with high levels of motorization, in centres with lower levels of motorization from 8.2 to 9.7km (the research was conducted only using a sample of car owners; Komornicki 2011). In Poland, construction in the surroundings of urban centres began to develop at a high pace, while in Slovakia this process was carried out especially in Bratislava and in some greater centres. In the northern part of the Carpathians, the suburbanization also occurred in smaller towns and construction became distributed into rural areas. Since the basic level of urbanization in Poland was lower, both these phenomena led to the increase of mobility in Poland.

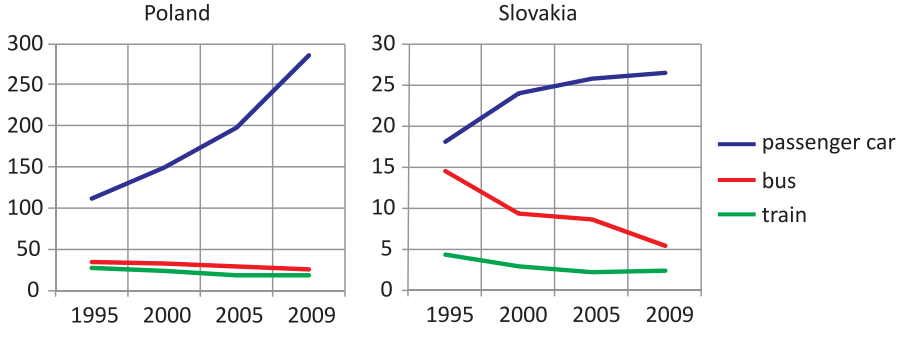

Figure 3.1. Development of the transport performance according to individual means of transport in Poland and in Slovakia in the period 1995-2009 (billion person per km)

Source: EU transport in figures, 2011, Statistical Pocketbook 2011, pp. 44, 45, 47.

In 2009, the share of particular means of transport in the transportation performance in Poland and in Slovakia was similar differing in the fact that in Slovakia the bus transport is still the strongest one (Tab. 3.2).

Table 3.2. The share of means of transport in the transportation performance in Poland and in Slovakia compared to EU-27 in 2009 (person per km, in %)

	passenger car	bus	train	tram and subway
Poland	85.8	7.3	5.6	1.3
Slovakia	76.9	15.6	6.6	0.9
EU-27	82.6	8.8	7.0	1.5

Source of data: EU transport in figures, 2011, Statistical Pocketbook 2011, s. 44; own elaboration.

A relatively high share of bus transport is obvious with roads for recreational purposes (Fig. 3.2). According to Eurostat, the inhabitants of Slovakia travel by bus on 23% of their trips lasting more than 4 days. Moreover, in 2008 the inhabitants of Slovakia were using air transport more frequently than inhabitants of Poland (21% share from roads in Slovakia and only 9% in Poland). On the other hand, compared to the average in the EU27, Poland has a high share of train transport when travelling for recreational purposes (18%).

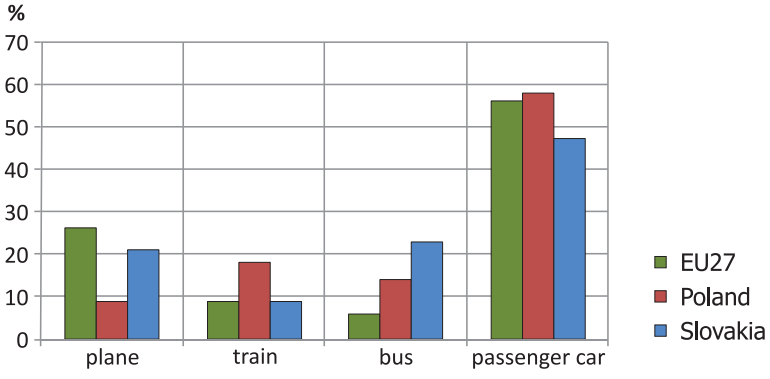

Figure 3.2. Use of means of transport when travelling for recreational purpose in 2008 (journeys lasting for more than 4 days; tourists older than 15 years of age)

Source of data: Tourism Statistics in the European Statistical System – 2008 data, 2010, Eurostat, p. 37; own elaboration.

3.2. ROAD TRANSPORT IN THE POLISH-SLOVAK BORDERLAND

3.2.1. ROAD ADMINISTRATION

In terms of administration and ownership criteria, the roads in Poland may be divided into four categories: state roads, voivodeship (regional) roads, district (Powiat) roads and local (municipal) roads (Tab. 3.3). **State roads** belong to the state. The central body of the state administration administering the main road network formed by the state roads is the Directorate General for National Roads and Motorways (GDDKiA). It performs the tasks of an administrator of state roads and it provides for investment of finances from the state budget into state roads including expressways and motorways except for those administered by the licensee. On the voivodeship level, the **voivodeship roads** are the property of the respective voivodeship authority. The obligations of the administrator are fulfilled by the so called Administrations of Voivodeship Roads which are organizational units set up by the voivodeship session. On the Polish side of the borderland these include: Administration of Voivodeship Roads in Katowice and in Kraków and the PodkarpackieAdministration of Voivodeship Roads in Rzeszów. **District (Powiat) roads** connecting settlements of powiats and gminy (principal administrative unit in Poland – municipality, hereinafter "gmina", pl. "gminy") are the property of the powiat government. **Local roads** (roads of local significance) are the property of local government. In cities with the rights of a powiat, all types of roads (except expressways and motorways) are administered by the respective municipal authority.

Roads in Slovakia are divided into motorways, expressways, Ist class roads, IInd class roads and IIIrd class roads and local roads. Ist class roads are the property of the state and they are administered by the state apart from the exceptions below while the execution of the administration is being provided for by the Slovak Road Administration (SSC). Since 1 January 2004, IInd and IIIrd class roads have been owned and administered by the self-governing regions[7]. Since 1 February 2005, the motorways, expressways and some of the Ist class roads have been

[7] In terms of the entire territory of Slovakia, there are exceptions in road administration especially in the territories of Bratislava and Košice. Ist, IInd and IIIrd class roads in the territory of Bratislava are administered by the city of Bratislava, while IInd and IIIrd class roads in the territory of Košice are administered by the city of Košice

owned and administered by the Národná diaľničná spoločnosť a.s. (National Motorway Company inc. – NDS a. s.). Local roads are administered by particular municipalities.

Table 3.3. Division of road network in the Polish-Slovak borderland according to the Administrator

Poland		Slovakia	
road category	road administrator	road category	road administrator
motorways	GDDKiA*	motorways	Národná diaľničná spoločnosť (NDS)
expressways	GDDKiA	expressways	Národná diaľničná spoločnosť (NDS)
state roads	GDDKiA	Ist class roads	Slovenská správa ciest (SSC)
voivodeship (regional) roads	Voivodeship Road Administration – ZDW in Katowice (Voivodeship of Silesia), ZDW in Kraków (Voivodeship of Małopolskie) and Podkarpackie ZDW in Rzeszów (Podkarpackie Voivodeship)	IInd class roads	– Road Administration of the Žilina Self-Governing Region (Žilina Region) – Road Administration and Maintenance of the Prešov Self-Governing Region (Prešov Region)
roads in towns having the rights of districts (powiat)	Municipal Authority having the rights of districts (powiat)	–	–
district (powiat) roads	District Authority (Powiat Office)	III rd class road	– Road Administration of the Žilina Self-Governing Region (Žilina Region) – Road Administration and Maintenance of the Prešov Self-Governing Region (Prešov Region)
local (gmina) roads	Municipal Authority (Office of gmina)	local roads	municipal authority

*GDDKiA – the Directorate General for National Roads and Motorways is the Administrator of motorways except for those that are charged and whose administrator (after signing the License Agreement) is a licensee.

Source: own elaboration.

3.2.2. ROAD INFRASTRUCTURE

From among the roads of higher category (motorways and expressways), A4 motorway in the section between Kraków and Przewor powiat, crossing the borderland only in the territory of the Rzeszów powiat, is important for the Polish side of the borderland. Although it crosses the borderland only in a short section, it was considered in the analysis. Moreover, the Polish side of the borderland is crossed or will be crossed in the future by expressways S1, S7, S19/S9 and S69 (details are available in Chapter 3.1). There is intense construction on each of the above-mentioned routes in the financial perspective of years 2007–2013, and it should be more intense in 2012 (Tab. 3.4).

In the period 2007–2010, only 50km of expressways and motorways were put into use on the Polish side, comprising 20km of the A4 between Kraków and Szarow, 16km of expressway S7 (called Zakopianka) and 14km of expressway S69 (some sections between Żywiec and the border with Slovakia at Zwardoń). In 2011, on the Polish side of the borderland, probably up to 57km of roads of higher category will be put into use (together with the A4 motorway) which means 20% of all roads of the higher class commissioned in 2011 in Poland. Construction of A4 motorway (including 23km section Szarów – Brzesko and 10km of the motorway bypass of Rzeszów) is the most significant. In the surroundings of Rzeszów the construction of S19 is almost finished (access road to the airport in Jasionka and motorway A4 – together almost 12 km). In terms of improvement of the time accessibility to the border with Slovakia at Zwardoń, great importance can be attributed to the opening of a 12km section of the South-East bypass of Bielsko-Biała (they will become parts of expressways S1 and S69). In 2012, the work on construction of A4 should be accelerated. Except for the 20km section Brzesko – Wierzchosławice (for which a public procurement tender was called in July 2011), the whole section between Kraków and the Polish-Ukrainian frontier will be put into use. In 2012, construction of the section of the S69 expressway between Bielsko-Biała and Żywiec should be completed. The list of reserve projects of the Programme for Infrastructure Development and Environment for the years 2013–2015 also includes the section of expressways S1 Kosztowy – Bielsko-Biała, S 19 Rzeszów – Barwinek and S7 Lubień – Rabka. The implementation of investments from this list is, however, questionable because of problems with financing and it will probably be postponed until the period 2014–2020.

Table 3.4. Sections of motorways and expressways on the Polish side of the borderland and in its surrounding under construction in the period 2007–2012

year of commissioning	motorway (A) or expressway (S)	voivodeship (region)	length (km)
2007	**S69** Żywiec – Przybędza; Szare – Milówka	Śląskie	10.5
2008	**S7** Zakopianka: Myślenice – Lubień	Małopolska	12.2
	S69 Szare – Laliki (1x2)	Śląskie	2.0
	S69 Laliki – Zwardoń (1x2)	Śląskie	1.8
2009	**S7** Zakopianka: bypass Lubnia	Małopolska	4.0
	A4 Krakov/Wieliczka – Szarów	Małopolska	19.9
2011	**S1** Bielsko-Biała, Komorowice crossroads – Rosta crossroads	Śląskie	2.8
	S69 Bielsko-Biała, Rosta crossroads – Mikuszowice crossroads	Śląskie	9.1
2012	**A4** Wierzchosławice – Krzyż	Małopolska	13.0
	A4 Krzyż – Dębica Pustynia	Małopolska / Podkaprackie	34.8
	A4 Dębica Pustynia – Rzeszów Zachodni	Podkarpackie	32.8
	A4 Rzeszów Wschód – Jarosław	Podkarpackie	41.2
	A4 Jarosław, križovatka Wierzbna – Radymno	Podkarpackie	25.0
	A4 Szarów – Brzesko	Małopolskie	23.1
	A4 Rzeszów West – Rzeszów Central	Podkarpackie	3.5
	A4 Rzeszów Central – Rzeszów East	Podkarpackie	6.9
	A4 Radymno – Korczowa	Podkarpackie	22.0
	S19 (1x2) Stobierna – Jasionka	Podkarpackie	3.8
	S19 Jasionka – Rzeszów East	Podkarpackie	3.1
	S19 Rzeszów West – Świlcza	Podkarpackie	5.0
	S69 Bielsko-Biała – Żywiec	Śląskie	15.3

*The investments in the borderland also includes construction of the whole eastern section of the A4 (to Kraków to the border with the Ukraine).

Source of data: http://www.skyscrapercity.com/showthread.php?t=1142261; own elaboration.

In terms of development of the territory, the existence of the superior transport infrastructure will be important. On 1 January 2011, on the Slovak side of the borderland there were 149 km of motorways

commissioned (D1 and D3), 4.3km of motorway feeders and 22.3km of expressways (R3 and R4). The most significant road is the D1 motorway, the entire route of which from Žilina to Košice should be completed in 2017. Construction of the D3 motorway is also on of the priorities of the Programme of Continuation of Preparation and Construction of Motorways and Expressways for the Period 2011–2014 (2011). Construction of the majority of its missing sections should commence by 2014.

The transport skeleton of the territory is formed by Ist class roads with a total length of 1,133.373km. The most important of them in the Polish-Slovak borderland is road I/18 on the route state border SK/CZ – Makov – Bytča – Žilina – Liptovský Mikuláš – Poprad – Levoča – Prešov – Vranov nad Topľou – Michalovce. It is a basic communication axis of the entire borderland in the West-East direction and in the section Bytča – Prešov it is parallel to the route of the D1 motorway. Other Ist class roads, which are a part of the international European roads in the North-South direction, such as road I/11 (state border CZ/SK – Čadca – Žilina), I/59 (Banská Bystrica – Ružomberok – Dolný Kubín – Trstená – state border SK/PL) crossing the saddle of Donovaly and I/73 (Lipníky – Prešov – Giraltovce – Svidník – Vyšný Komárnik – state border SK/PL) are also important. In terms of interconnection with Poland there are also significant roads leading to the border with Poland I/11A (Čadca – Skalité – state border SK/PL), I/78 (Oravský Podzámok – Námestovo – Oravská Polhora – state border SK/PL), I/67 (Telgárt – Poprad – Kežmarok – Tatranská Javorina – state border SK/PL), I/68 (Prešov – Sabinov – Stará Ľubovňa – Mníšek nad Popradom – state border SK/PL).

In the east part of the borderland, from regional point of view the road I/77 Spišská Belá – Stará Ľubovňa – Bardejov – Svidník) goes along the border with Poland and roads I/15 (crossing with I/73 – Stropkov – Hencovce) and I/74 (Strážske – Humenné – Snina – Ubľa – state border SK/PL) is important. In the west part of the studied region, the roads I/64 (Žilina – Rajec – Prievidza) crossing the Fačkovské sedlo saddle, I/65 (Martin – Turčianske Teplice – Kremnica) and I/72 (Kráľova Lehota – Podbrezová) crossing the Čertovica saddle are significant.

The most significant roads of the higher category on the Slovak side of the borderland include the D1 motorway and R3 and R4 expressways. The most important route in the borderland is, of course, the D1

motorway in the West-East direction connecting Bratislava and Žilina, Poprad, Prešov and Košice the construction of which also requires the most funds. In the period 2007–2012, there were up to 67km of the D1 motorway built. Moreover, there were 18km of R3 expressway built and 5km of R4 expressway. The total figure amounts to approx. 90km of roads of the higher categories (Tab. 3.5).

Table 3.5. Motorway and expressway sections on the Slovak side of the borderland under construction in the period 2007–2012

year of commissioning	motorway (A) or expressway (S)	region	length (km)
2007	**D1** Vrtižer – Hričovské Podhradie	Trenčín/ Žilina	12.9
	R3 Horná Lehota – Oravský Podzámok	Žilina	6.4
2008	**D1** Važec – Mengusovce	Žilina/ Prešov	12.2
	D1 Mengusovce – Jánovce, IInd section (km 8,000–14,230)	Prešov	6.2
	D1 Mengusovce – Jánovce, IIIrd section (km 14,230–25,850)	Prešov	11.6
2009	**D1** Mengusovce – Jánovce, Ist section (km 0,000–8,000)	Prešov	8.0
2010	**D1** Jablonov – Studenec	Prešov	5.2
	D1 Studenec – Beharovce	Prešov	3.3
	D1 Svinia – Prešov, West	Prešov	7.9
	R4 Svidník – bypass	Prešov	4.6
2011	**R3** Trstená – bypass	Žilina	7.2
	R3 Horná Štubňa – bypass	Žilina	4.3
2012	**D1** Jablonov – Studenec (second profile)	Prešov	5.2

Source of data: http://www.ndsas.sk; own elaboration.

It is also necessary to add further investments to the aforementioned most important investments in the network of motorways and expressways due to which the conditions for travelling in the borderland can get improved. They include investments in the roads of lower categories, namely state and voivodeship roads and to a smaller extent also investments in roads in powiats and gminy (district and municipal ones). Further investments in the network of state and voivodeship roads in Poland and in Ist, IInd and IIIrd class roads in Slovakia are provided in the frame below.

Investments in further state and voivodeship roads in Poland and in Ist and IInd class roads in Slovakia

Investments in the Polish part of the borderland

In the period 2008–2011, the reconstruction of the DK4 state roads from Machowa to Łańcut (54km) was carried out in the Podkarpackie Voivodeship. The bypass of Jarosławie on the DK4 state road with a length of 11km was constructed. The important investments in voivodeship roads completed in 2010 includes the following:

- reconstruction of DW 890 in the section of Kuźmina – Krościenko (25km),
- reconstruction of DW 992 in the section of Jasło – Nowy Żmigród (16km),
- reconstruction of DW 993 in the section of Nowy Żmigród – Dukla (14km).

In 2010, 17km of the DK 28 state road were reconstructed in the Małopolskie Voivodeship in sections of Nowy Sącz – Mszalnica, Cieniawa – Ptaszkowa, Grybów – Biała Niżna and Świnna Poręba – Skawce. In July 2011, reconstruction works were carried out on a 10km section of the DK 28 in Kasinie Wielkie and Gruszowiec and behind Limanowa in the direction to Nowy Sącz, and the construction of a new route across the Biała river in Grybow (in the section Nowy Sącz – Gorlice). In 2011, the public discussion was carried out about the investment in the state road DK52 Bielsko-Biała – Głogoczow in the Voivodeship of Małopolskie in the section of 64km (continuation of works from 2010). Moreover, in the period 2007–2009, the surfaces were reinforced on important sections of Zakopianki (state road DK7) and on important sections of Krakov – Myślenice and Rabka – Chyżne. In 2011, the road junction DK7 in Mogilany was constructed. In the field of construction of voivodeship roads the significant projects implemented within the Operational Programmesof Małopolskie cover the following:

- upgrade of the voivodeship road No. 957 Białka – Nowy Targ,
- construction of other lanes in the Snozka pass (DW 969),
- construction of a bridge in Muszyna (DW 971),
- upgrade of the voivodeship road DW 981 Zborowice – Krzyżówka together with construction of a viaduct in Bobowa,
- construction of bypass round the town of Stary Sącz,
- upgrade of the voivodeship road DW 977 in the section of Tarnów – Moszczenica.

In February 2011, the partnership agreement covering upgrade of the road Jabłonka – Lipnica Wielka – Bobrov – Zubrohlava (so called Oravská cesta (Orava Road)) consisting of the voivodeship road DW 962 from the DK7 state road to the state border Winiarczykówka – Bobrov and road No. III/520013 in Slovakia leading from the state budget via the municipality of Bobrov and Zubrohlav to the road No. I/59.

The most important investments in the Śląskie Voivodeship include the already mentioned investments in the S69 and S1 expressways. Furthermore, upgrading was done on voivodeship roads including the DW 941 between Herbutowice and Ustronie (repair in 2008) and between Wisła Głębce and the Kubalonka pass (in 2009 this section was subject to complete reconstruction).

Investments in the Slovak part of the borderland

Apart from the construction of motorways and expressways, the most significant investment in the road network in the Slovak part of the borderland in the course of the last decade is construction of the II/520 Nová Bystrica – Oravská Lesná connecting the regions of Orava and Kysuce. The road was opened in 2008, renewing the road connection between these regions lost after commencement of construction of the water reservoir Nová Bystrica in 1983. This road also influences better accessibility of the regions of Orava and the Tatras from the Czech Republic and a part of Poland. Another significant investment is reconstruction of the road I/67 Poprad – Kežmarok, Ist phase which commenced in 2008. It is worth mentioning that in 2011 reconstruction began of the road I/68 Mníšek n/Popradom – state border SK/PL. This is part of the works preceding the construction of a new road connection and the border bridge across the Poprad under the Agreement between the Government of the Slovak Republic and the Government of the Polish Republic which has been in force since 19th June 2005. Other investments in the transport infrastructure were aimed mainly on reconstruction of bridges, crossings and road sections destroyed by floods and landslides.

The transport infrastructure development in the Polish-Slovak borderland was also positively influenced by funds from the EU pre-accession and Structural Funds. In terms of pre-accession funds the most important task can be attributed to the PHARE fund (Programme Phare CBC) and in the case of the Structural Fund it was especially European Regional Development Fund (ERDF) within the INTERREG IIIA – SK-PL 2004-2006 Programme and the Programme of Cross-Border Cooperation Poland – Slovak Republic 2007–2013. With contributions from the EU funds a new road and border crossing Palota – Radoszyce (completed in 2003), Vishegrad Bridge on the border crossing Čirč – Leluchów (2003), road Nižná Polianka – Ożenna (2010) were built. Moreover, the existing roads in the borderland were reconstructed, and some of them lead to the border with Poland (e.g. Kurov – border with Poland, Zborov – border with Poland, road Oravice – Zuberec, Trstená – Suchá Hora, Osturňa – state border – Niedzica etc.).

3.2.3. BUS TRANSPORT ORGANIZATION

In March 2010, 19 bus transport companies established after the change of the ownership conditions of PKS (Przedsiębiorstwo Komunikacji Samochodowej – Bus Transport Company) were operating in the Polish part of the borderland (Tab. 3.6). The passenger transport is performed also via buses and microbuses of private carriers especially in recreational centres and on intensely used routes such as Kraków – Zakopane. There are also companies focusing on urban mass transport carrying out transport in the touristic centres.

Table 3.6. PKS companies in the Polish part of the borderland according to the state as of 31 march 2010

company name	registered office
1. PKS in Bielsko Biała S.A.	Bielsko-Biała
2. PKS in Cieszyn sp. z o. o.	Cieszyn
3. PKS in Jarosław S. A.	Jarosław
4. PKS in Jaślo sp. z o. o.	Jasło
5. PKS in Krośno S. A.	Krosno
6. PKS "Pasyk & Gawron" sp. z o. o.	Limanowa
7. PKS in Myślenice sp. z o. o.	Myślenice
8. PKS in Nowy Sącz S.A.	Nowy Sącz
9. PKS in Nowy Targ	Nowy Targ
10. Przedsiębiorstwo Komunikacji Samochodowej i Spedycji Oświęcim S. A.	Oświęcim
11. PKS in Przemyśl sp. z o. o.	Przemyśl
12. PKS in Pszczyna sp. z o. o.	Pszczyna
13. PKS in Rzeszów S. A.	Rzeszów
14. Przedsiębiorstwo Przewozowe Podkarpackiej Komunikacji Samochodowej sp. z o. o.	Rzeszów
15. PKS "Beskidus" sp. z o. o.	Sucha Beskidska
16. PKS in Wadowice S. A.	Wadowice
17. PKS Zakopane sp. z o. o.	Zakopane
18. Przedsiębiorstwo Państwowej Komunikacji Samochodowej	Żywiec
19. Veolia Transport Bieszczady Sp. z o.o.	Sanok

Source of data: Taylor and Ciechański (2010); own elaboration.

From 1 January 2004, responsibility for the field of public bus transport were taken over by the self-governing regions. The task of the self-governing region is to provide for transport services using bus transport for the region's inhabitants in order to meet their basic transportation needs such as travelling to work, for educational purposes, to health care facilities, to authorities and public institutions. The self-governing region finances performance in the public interest on bus lines whose distance does not exceed 100km. Moreover, it regulates maximum prices and tariff conditions of the passenger transport. The self-governing region allocates transport licenses to particular carriers and it approves the timetable. It should consider the situation, so that

the transport services can provide mutual interconnection of the public regular bus transport and public passenger railway transport and in order to avoid provision of parallel public passenger transport. The self-governing region provides for compensation of losses from provision of services in the public interest for bus carriers in the region in the interest of the suburban bus transport.

In the Prešov Self-Governing Region bus transport is being provided by four carriers – SAD Prešov, SAD Humenné, SAD Poprad and BUS Karpaty Stará Ľubovňa. In the Žilina Self-Governing Region these include SAD Žilina and SAD LIORBUS Ružomberok. Moreover, there are many private carriers providing bus transport in the borderland.

3.2.4. CROSS-BORDER BUS CONNECTIONS

The most significant bus carrier between Slovakia and Poland is the Polish company STRAMA in Zakopane which operates the lines Zakopane – Poprad and Zakopane – Liptovský Mikuláš.

The Zakopane – Poprad bus operates four times a day in the seasons of the year when Zakopane records the biggest number of tourists – in winter tourist season (23 December – 9 January, 18 January – 5 March) in the period of Easter and public holidays in Poland at the beginning of May (21 April – 8 May) and during the summer tourist season (16 June – 15 October). The Zakopane – Liptovský Mikuláš bus operates four times a day only during the summer holidays. These lines cater to Polish tourists going to the Slovak part of the Tatras. They provide direct connection of Zakopane and significant attractions such as aqua parks (Oravice, Liptovský Mikuláš, Poprad), the Belianska jaskyňa cave, ski and tourist centres (Ždiar, Oravice, Zuberec) and the most significant centres in the Slovak part of the Tatras (Poprad an Liptovský Mikuláš).

The Slovak carrier Eurobus, a.s. Košice operates the connection on the route Spišská Nová Ves – Levoča – Spišský Štvrtok – Vrbov – Kežmarok – Spišská Belá – Vysoké Tatry (Tatranská Kotlina) – Ždiar – Nowy Targ. This connection operates on Thursday and Saturday and it transports inhabitants of the Slovak part of the borderland to the markets in Nowy Targ.

The Hungarian carrier OrangeWays Zrt., Budapest provides for transport on the route Budapest – Zvolen – Banská Bystrica – Kraków.

The bus operates four times a week. This connection, however, does not serve to connect the borderland since it has not stop in the borderland.

The buses of the Polish carrier – Wactur travel agency, Nowy Sącz travel across the Slovak-Polish border on the route from Poland (South-East part) to Italy with stops also in the territory of Slovakia (Trstená, Tvrdošín, Dolný Kubín, Kraľovany, Martin, Žilina, Považská Bystrica, Trenčín and Bratislava). Since prices of transport between Slovakia and Poland are PLN 110-130, the use of these connections for shorter distances is not budget-priced.

3.3. RAILWAY TRANSPORT IN THE POLISH-SLOVAK BORDERLAND

3.3.1. RAILWAY TRANSPORT ORGANIZATION

In 2000, the Polish State Railway Company, a. s. (*Polskie Koleje Państwowe S. A.* – PKP SA) was divided into several specialized companies. The tasks related directly to the passenger transport in the borderland are currently performed by the following companies: PKP InterCity S.A., Przewozy Regionalne Sp. z o.o. and Polskie Koleje Liniowe S.A. (mountain rope railways). PKP Polskie Linie Kolejowe S.A. (Tab. 3.7) is the administrator of infrastructure and railway stations.

Table 3.7. Railway transport organization in Poland and in Slovakia

Poland		Slovakia	
company	notes	company	notes
Przewozy Regionalne Sp. z o.o.	carrier – transport on the territory of the voivodeship (passenger trains) and transport between voivodeships (interREGIO and REGIOexpres trains)	Železničná spoločnosť Slovensko, a.s. (ZSSK)	carrier on the entire territory of Slovakia – trains of categories EuroCity, InterCity, EuroNight, express trains, local express trains, passenger trains
PKP InterCity S.A.	carrier –EuroCity (EC), Express (Ex) and Express InterCity (EIC) trains and express trains between voivodeships (TLK – Twoje Linie Kolejowe)		

Poland		Slovakia	
company	notes	company	notes
PKP Polskie Linie Kolejowe S.A.	administration of the state network of railways (infrastructure)	Železnice Slovenskej republiky (ŽSR)	administration and operation of railway transport route
Polskie Koleje Liniowe S.A.	administration of mountain rope railways	Tatry mountain resorts, a.s.	owner and operator of cableways belonging under Tatranské lanové dráhy in the past

Source: own elaboration.

In Slovakia, the public railway transport is provided by the state via the Contract on Performance in the Public Interest upon Operation of Transport on the Railway concluded by and between the Ministry of Transport, Construction and Regional Development of the Slovak Republic and the Železničná spoločnosť Slovensko, a. s. which quantifies the scope of performances and compensation of loss due to their implementation. At the end of 2011, the only private carrier in passenger railway transport in Slovakia was RegioJet which provided for one pair of trains in the IC category on a daily basis on the route Žilina – Ostrava – Praha.

3.3.2. RAILWAY INFRASTRUCTURE

The current network of railway lines in Poland and in Slovakia is a result of approximately 150 –years of development carried out in various state, political, and economic conditions and for various economic and strategic objectives and priorities.

On the Polish side of the borderland, there are three railway lines with international significance (AGC and AGTC). These are railway line 91 Kraków – Medyka (a part of the line E-30 Zgorzelec – Wrocław – Katowice – Kraków – Rzeszów – Medyka), railway line 96 Tarnów – Leluchów, and railway line 139 Katowice – Zwardoń. The territory of Pszczyń and Cieszyn Powiat is also crossed by railway line 93 Trzebinia – Zebrzydowice. As a result of the character of the relief, the borderland has a low density of railway lines. They are few in number and of relatively small significance. Moreover, the speed reached by trains is

not sufficient to persuade potential passengers to decide in favour of travelling by train. For example, the average speed on railway line 106 Rzeszów – Jasło is 35 km/hr.

The functioning railway lines on the Polish side of the borderland include: railway line 190 Bielsko-Biała – Cieszyn, railway line 191 Goleszów – Wisła Głębce, railway line 117 Kalwaria Zebrzydowska Lanckorona – Bielsko-Biała, railway line 97 Skawina – Żywiec, railway line 98 Sucha Beskidzka – Chabówka, railway line 99 Chabówka – Zakopane, railway line 105 Muszyna – Krynica, railway line 106 Rzeszów – Jasło, railway line 107 Nowy Zagórz – Łupków, railway line 108 Stróże – Krościenko (via Jasło, Zagórz) and railway line 101 Munina – Hrebenne (via Lubaczów) (see Fig. 6.29).

The list of investment projects of the Programme for Development of Infrastructure and Environment also includes the project "Upgrade of the Railway Line E 30/C-E 30, section Kraków – Rzeszów whose IIIrd phase should be implemented in Voivodeship of Małopolskie and the Podkarpackiein the period 2011–2014. Moreover, there are plans for preparation of pre-project documentation for the station Czechowice Dziedzice, Zebrzydowice and Zwardoń on the railway line CE65 connecting Grodzisk Mazowiecki – Kraków/Katowice – Zwardoń/Zebrzydowice and Polish-Slovak border. One of the projects is also purchase of train sets (19 pieces of EZT) to serve the connections between the voivodeships in South-East Poland. The list also includes a project: "Upgrade of Railway E 65/C-E 65 in the section Czechowice Dziedzice – Bielsko-Biała – Zwardoń – state border" and the project "Improvement of Quality of Services Via Improvement of the Technical State of the Railway Line No. 91 (E 30) Kraków – Medyka in the section Rzeszów – Medyka.

The most significant route in Slovakia is the railway line Bratislava – Žilina – Košice (consisting of the railway lines of the first category No. 120 and 180) which together with the southern connection Bratislava – Zvolen – Košice forms the basic skeleton of the railway network in Slovakia. The above mentioned route is the West-East axis of the Slovak part of the borderland. The superior railway infrastructure includes railway lines No. 127 (Žilina – Čadca – border SK/CZ Mosty u Jablunkova) and No. 129 (Čadca – border SK/PL – Zwardoń) and railway line No. 188 (Kysak – Prešov – Plaveč – border SK/PL – Muszyna). The railway infrastructure of the borderland is supplemented by railway lines of the third and fourth categories (regional and local railway

routes). Regional railway lines include railway lines No. 126 Žilina – Rajec, No. 128 Čadca – Makov, No. 145 Horná Štubňa – Sklené pri Handlovej (Prievidza), No. 171 Vrútky – Diviaky – Horná Štubňa (Zvolen) and Diviaky – Čremošné (Banská Bystrica), No. 181 Kraľovany – Trstená, No. 191 Strážske – Humenné – Medzilaborce – Palota, No. 192 Vranov nad Topľou – Trebišov, No. 193 Prešov – Strážske – Humenné, No. 195 Poprad – Studený Potok – Tatranská Lomnica/Plaveč and No. 196 Humenné – Stakčín. The local railway lines also include TEŽ lines No. 182 Štrba – Štrbské Pleso, No. 183 Poprad – Starý Smokovec and No. 184 Tatranská Lomnica – Starý Smokovec – Štrbské Pleso and other railway lines in the Prešov Region No. 194 Kapušany pri Prešove – Bardejov, No. 186 Spišská Nová Ves – Levoča and No. 187 Spišské Vlachy – Spišské Podhradie. Railway lines of local significance cannot be found in the Žilina Region.

Upgrading of railway lines in Slovakia is focused mainly in West Slovakia. The section Bratislava-Rača – Nové Mesto nad Váhom with length of 92km has been upgraded to a speed of 160 km/h. In 2009 upgrading of the section Nové Mesto nad Váhom – Púchov (two parts Nové Mesto nad Váhom – Zlatovce and Trenčianska Teplá – Ilava – Beluša) began. In the analysed territory only a part of the railway line in the section Žilina – Krásno nad Kysucou was upgraded to the speed 120 km/h.

3.3.3. DIRECT TRAIN CONNECTIONS TO THE SELECTED TOURIST CENTRES

Good organization of public transport depends not only on the state of infrastructure but also on the number of connections, especially direct train connections connecting tourist centres (places in the Polish-Slovak borderland) with places where potential visitors live (the biggest cities in Poland and Slovakia). For the purposes of analysis of direct transport connections, the following towns and municipalities in the Polish-Slovak borderland were selected: Zakopane, Wisła, Krynica, Sanok, Zwardoń and Nowy Targ in Poland and Poprad, Starý Smokovec, Bardejov, Liptovský Mikuláš, Oščadnica and Žilina in Slovakia. The source of data was internet timetables on the PKP websites.

The number of direct connections to cross-border centres on the Polish side is much lower than the number of direct connections to

centres on the Slovak side. This stems especially from the fact that the railway connection between Poprad and Žilina is a part of the main railway line from Bratislava to Košice while on the Polish side the main railway line of international significance connecting Wroclaw and Katowice, Kraków and Rzeszów is more distant from the border. Thus the selected centres on the Slovak side of the borderland are more easily accessible via railway transport compared to the Polish centres (Fig. 3.3.).

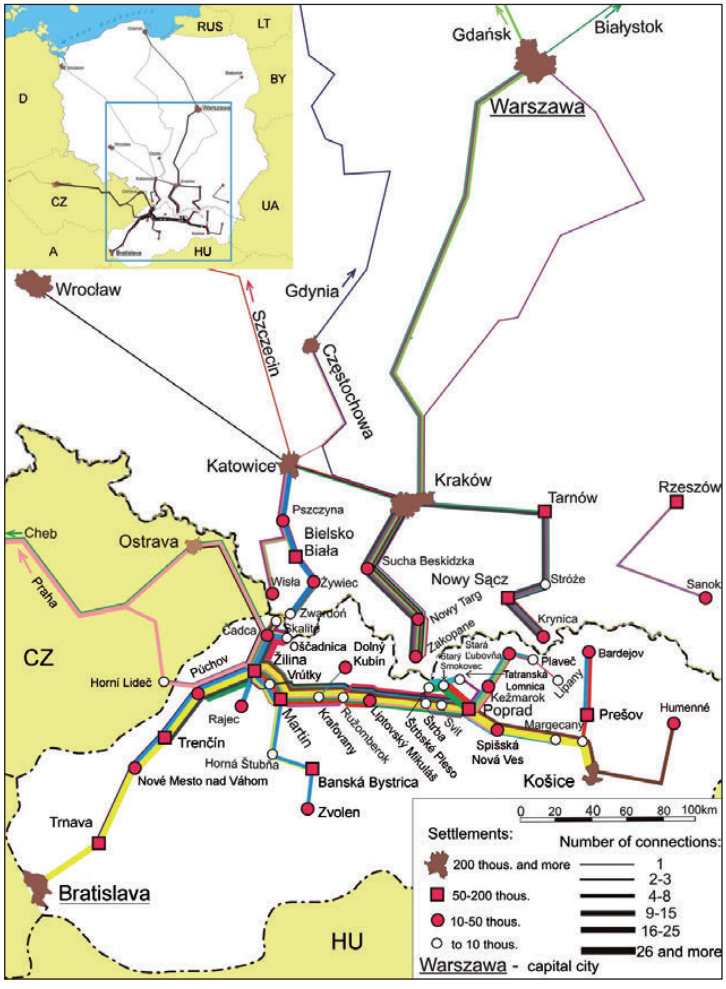

Figure 3.3. Direct train connections from chosen Polish and Slovak cities (August 2011)

Source of data: internet timetables on the PKP websites; own elaboration.

In terms of tourists using railway transport the most significant are trains enabling travel at night so that the train can arrive at the relevant centre in the borderland in the morning (by 11:00 a.m.) and depart in the evening (after 6:00 p.m.).

The biggest number of train connections on the Polish side go to Zakopane. In the case of night trains, from August 2011 it is possible to arrive in Zakopane by TLK trains from Warsaw (via Radom, Kielce), Szczecin (via Poznań, Katowice) and Gdynia (via Bydgoszcz, Łódź). Moreover, there are also two morning passenger trains arriving to Zakopane from Kraków before noon (a possibility to change in Kraków). From Zakopane it is possible to leave in evening hours also by TLK trains to Gdynia (via Warsaw), Szczecin, Sopot (via Łódź) and Warsaw (via Radom). There are two morning trains from Katowice to Wisła and one from Częstochowa. The return in the evening hours is enabled by two evening trains to Katowice. There is a passenger train from Nowy Sącz to Krynica and also two TLK trains from Kraków and Katowice. In the evening it is possible to travel only on one TLK train to Kraków. There are two passenger trains from Rzeszów to Sanok, in the evening there is one going to Rzeszów. Based on the aforementioned, it can be stated that the only tourist centre to which it is possible to arrive directly by an evening train in the early morning from the majority of big towns in Poland is Zakopane.

In Slovakia, it is possible to arrive in Poprad in the morning hours from many Slovak towns. There are three express trains from Bratislava, seven trains from Košice, express trains from Humenné and Žilina as well as many passenger trains in all directions heading for the tourist centres (e.g. Štrbské Pleso). Furthermore, two international trains from the Czech Republic (from Prague and Cheb) arrive in Poprad in the morning. In the evening, the Železničná spoločnosť Slovensko (ZSSK) provides for the return to all the aforementioned destinations. Passenger trains from Poprad, Tatranská Lomnica and Štrbské Pleso arrive in Starý Smokovec. The return by an evening train to Poprad is not very problematic since trains operate more or less every hour. Bardejov has two morning connections from Prešov and one evening connection from Kapušany near Prešov. Evening returns to Prešov are enabled by three passenger trains. Liptovský Mikuláš and Žilina are situated on the main railway line and the number of direct connections even exceeds the number of connections to Poprad. Passenger

trains from Žilina, Čadca and from the station in Skalité-Serafínov go to Oščadnica. In the evening, as in case of Starý Smokovec and Poprad there are frequent railway connections back to Žilina and Čadca.

To conclude, it is possible to state that in Slovakia there is a network of railway connections (passenger trains) between towns on the main railway line Žilina – Poprad and tourist centres more developed compared to Poland which has far fewer trains in the morning and in the evening.

3.3.4. CROSS-BORDER TRAIN CONNECTIONS

There are three railway lines with border crossings to Poland crossing the Polish-Slovak border: railway line No. 129 Čadca – Skalité – Zwardoń, railway line No. 188 Košice – Plaveč – Muszyna and railway line No. 191 Michaľany – Medzilaborce – Łupków.

In 2011, on the line Čadca – Skalité – Zwardoń, there were just two trains going to Poland – one of them on a daily basis and the other one only on working days.

Since 2010, no trains have crossed the border crossing Plaveč – Muszyna due to damaged railway infrastructure in the territory of Poland after floods.

In 2010, there were summer train connections from Slovakia to Poland operating via the border crossing Medzilaborce – Łupków. The trains were operating on Friday, Saturday and Sunday in the period from 19.VI. to 29.VIII. After the timetable changes applicable as of 1 May 2011, the operation on the railway line Medzilaborce – Łupków was cancelled due to uneconomic operation.

It is possible to state that passenger railway transport between Slovakia and Poland is very weak despite the existence of cross-border railway lines. This is probably caused both by unsatisfactory technical condition of the railway infrastructure and by bad organization of railway transport by the railway companies in Poland and in Slovakia. In terms of tourism development as well as the entire borderland, it would be at least appropriate to introduce extraordinary and seasonal trains. The connections between border stations only are ineffective, connections to bigger towns with potential tourists are more suitable.

3.4. MAIN FLOWS OF CROSS-BORDER MOVEMENT OF PERSONS AND THE SELECTED MEANS OF TRANSPORT

3.4.1. THE NUMBER OF BORDER CROSSINGS ON SELECTED ROADS AND RAILWAYS

In 2007, after accession of Poland and Slovakia to the Schengen Area, the control on the Polish-Slovak border ceased to exist. Due to this reason, the last available data on cross-border movement of persons on particular border crossings are from 2007. For analysis purposes the road and railway border crossings operated on the Polish-Slovak border (border crossings established especially due to local border traffic were not considered) were selected. Border crossings were grouped in six corridors:

- Žilina – two road and one railway border crossing Zwardoń – Skalité,
- Żywiec border crossing – two border crossings Korbielów – Oravská Polhora and Ujsoły – Novoť from Żywiec to Orava,
- Orava border crossing – three road border crossings Chyżne – Trstená, Chochołów – Suchá Hora and Winiarczykówka – Bobrov from Podhale to Orava,
- Spiš border crossing – three road border crossings Łysa Polana – Tatranská Javorina, Jurgów – Podspády and Niedzica – Lysá nad Dunajcom situated between the range of the Tatras and Pieniny,
- Poprad valleys – four road border crossings (Leluchów – Čirč, Piwniczna – Mníšek nad Popradom, Konieczna – Becherov and Muszynka – Kurov) and one railway border crossing (Muszyna – Plaveč) situated between Pieniny and the border of the Voivodeship of Małopolskie and the PodkarpackieVoivodeship,
- Bieszczad-Beskydy – two road border crossings Barwinek – Vyšný Komárnik and Radoszyce – Palota and one railway border crossing Łupków – Medzilaborce on the border of Slovakia and Podkarpackie Voivodeship.

The total number of cleared persons (inhabitants of Poland departing Poland and foreigners arriving in Poland)[8] at the 19 monitored

[8] Up to 2007, the number of persons arriving in the Slovak Republic as well as departing the Slovak Republic and similarly the number of persons arriving in and leaving Poland were monitored at the border crossings on the Polish-Slovak border. The data on the number

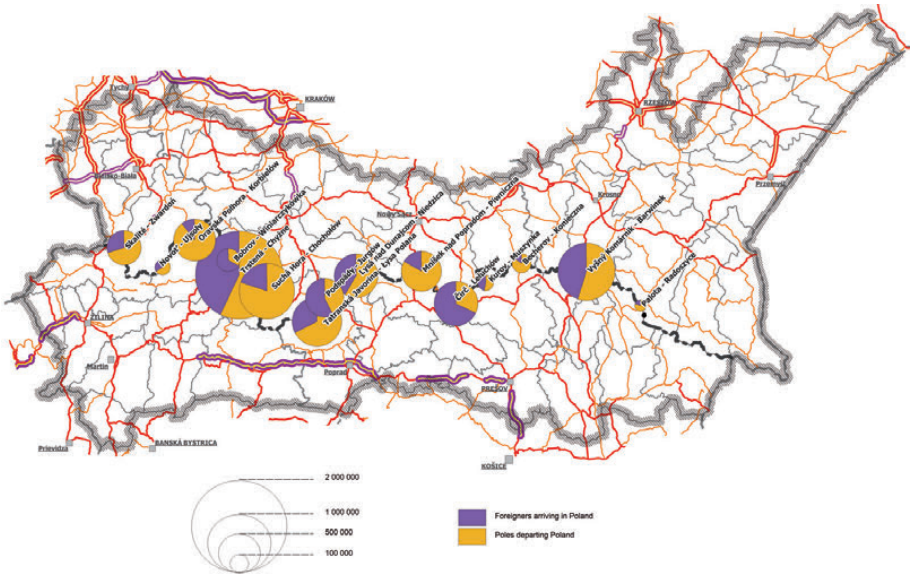

Figure 3.4. Volume of Polish-Slovak border crossings – number of inhabitants of Poland departing Poland, number of foreigners arriving in Poland in 2007

Source of data: Headquarters of the Border Guard (*Komenda Głównej Straży Granicznej*); own elaboration

border crossings (Fig. 3.4) in 2007 was 8.4 million, of which 5.2 mil. were inhabitants of Poland departing Poland and 3.2 mil. of foreigners arriving in Poland. In 2007, the biggest number of persons crossed the border via Orava (more than 3 mil. persons – 2/3 at the border crossing Chyżne – Trstená) and via the Spiš corridor while altogether there were 58% services persons recorded out of the total number of the services persons on the Polish-Slovak border. Almost 1.4 mil. persons were cleared at the border crossings in the corridor of the Poprad valley (with dominating crossings Leluchów – Čirč, Piwniczna – Mníšek nad Popradom) and more than 1 mil. in the Bieszczad-Beskydy corridor (mainly Barwinek – Vyšný Komárnik). More than 1.1 mil. persons

of the persons served at road and railway border crossings in 2007 were taken from the Headquarters of the Main Frontier Guard on the Polish side. When finding out the number of persons crossing the state border, one person was usually counted twice: when arriving in Poland and when departing from Poland. In order to find out the number of persons crossing the border at further analysis, only the number of inhabitants of Poland departing Poland and the number of inhabitants from other countries (including Slovakia) arriving in the territory of Poland was monitored.

Table 3.8. Number of persons at road and railway border crossings according to corridors in 2007 (in thousands of persons)

corridor name	border crossing name	type of border crossing	categorization of the border crossing in 2007	Number of inhabitants of Poland departing Poland	number of foreigners arriving in Poland	number of inhabitants of Slovakia arriving in Poland	total
Žilina	Zwardoń – Skalité	road	O, N (do 7,5 t), MPS	200.6	90.9	79.5	291.5
	Zwardoń-Myto – Skalité	road	O. N (do 7.5 t), MPS	70.7	25.0	22.4	95.7
	Zwardoń – Skalité	railway		41.1	37.8	–	78.9
Żywiec	Korbielów – Oravská Polhora	road	O, N (do 7.5 t w godz. 5–22 i do 3.5 t w godz. 22–5), MPS	498.7	58.8	45.4	557.5
	Ujsoły – Novoť	road	O, N (do 7.5 t w godz. 5–0 i do 3.5 t w godz. 0–5), MPS	61.4	32.1	25.9	93.5
Orava	Chyżne – Trstená	road	O, N, MPS	1142.7	861.7	553.4	2004.4
	Chochołów – Suchá Hora	road	O, N (do 7.5 t), MPS	718.7	179.0	124.5	897.7
	Winiarczykówka – Bobrov	road	O, N (do 7.5 t), MPS	60.7	123.0	117.1	183.7
Spiš	Łysa Polana – Tatranská Javorina	road	O, N (do 7.5 t), MPS	492.4	239.5	105.5	731.9
	Niedzica – Lysá nad Dunajcom	road	O, MPS	347.8	248.2	219.5	596.0
	Jurgów – Podspády	road	O, N (do 7.5 t), MPS	200.3	268.4	233.3	468.7
Poprad valley	Leluchów – Čirč	road	O, N (do 7.5 t), MPS	196.6	414.3	408.3	610.9
	Piwniczna – Mníšek nad Popradom	road	O, MPS	442.1	89.4	79.4	531.5
	Konieczna – Becherov	road	O, N (do 7.5 t), MPS	114.6	20.6	17.7	135.2
	Muszynka – Kurov	road	O, N (do 7.5 t), MPS	45.0	40.1	39.1	85.1
	Muszyna – Plaveč	railway		11.7	25.3	4.2	37.0
Bieszczady-Beskydy	Barwinek – Vyšný Komárnik	road	O, N. MPS	516.8	427.0	268.1	943.8
	Radoszyce – Palota	road	O, N (do 7.5 t), MPS	50.9	12.5	10.6	63.5
	Łupków – Medzilaborce	railway		0.8	2.2	0.05	3.0

*O – passenger cars, N – freight vehicles, MPS – local border traffic.

Source of data: Headquarters of the Main Frontier Guard; own elaboration.

crossed the border in the Žilina corridor (more than 460,000) and Żywiec (more than 650,000–560,000 of Poles). It is interesting that the Żywiec corridor especially the Korbielów – Oravská Polhora corridor is the only one with obvious significant dominance of departures of Poles compared to arrival of foreigners (significantly exceeding the statistical data for the entire Polish-Slovak border).

The share of the three railway border crossings Zwardoń – Skalité, Muszyna – Plaveč and Łupków – Medzilaborce in the number of persons cleared when crossing the Polish-Slovak border was ca 1% of Poles and ca 2% of foreigners in 2007, while the number of persons cleared on the border crossing Łupków – Medzilaborce was low and the border crossing Zwardoń – Skalité recorded double the number compared to the border crossing Muszyna – Plaveč (Tab. 3.8).

3.4.2. CHANGES IN THE NUMBER OF PERSONS SERVED AT THE BORDER CROSSINGS IN THE PERIOD 1990–2007 ACCORDING TO THE CORRIDORS

In terms of the number of persons served on the Polish-Slovak border (Fig. 3.5), at the beginning of the 1990's the most significant share was attributed to the corridors situated east of Pieniny (the Poprad valley and Bieszczady-Beskydy). Up to the end of the 1990's, the Bieszczady-Beskydy corridor was an important section for foreigners crossing the Polish-Slovak border.

In 1992, the prevalence of the Orava and Spiš corridor commenced. After opening border crossings Zwardoń – Skalité and Korbielów – Oravská Polhora in 1995 the western part of the borderland was more active while in 1996 the number of persons served in Žilina corridor was comparable to the corridor of the Poprad valley. From the beginning of the existence of the Žilina and Żywiec corridors, both corridors were, in general, dominated by Poles in the number of persons served.

The biggest number of persons served in the corridor of the Poprad valley was recorded in the period 1999–2001. It was the period of significant increase of interest of the inhabitants of Poland in travelling across the Polish-Slovak border and loss of interest in travelling to Poland by foreigners. The increase in departures of Poles was most obvious on the section of the border in the corridor of the Poprad valley. The use of the Orava and Spiš corridor increased immediately after

accession of Poland and Slovakia to the European Union, namely in the period 2004–2006.

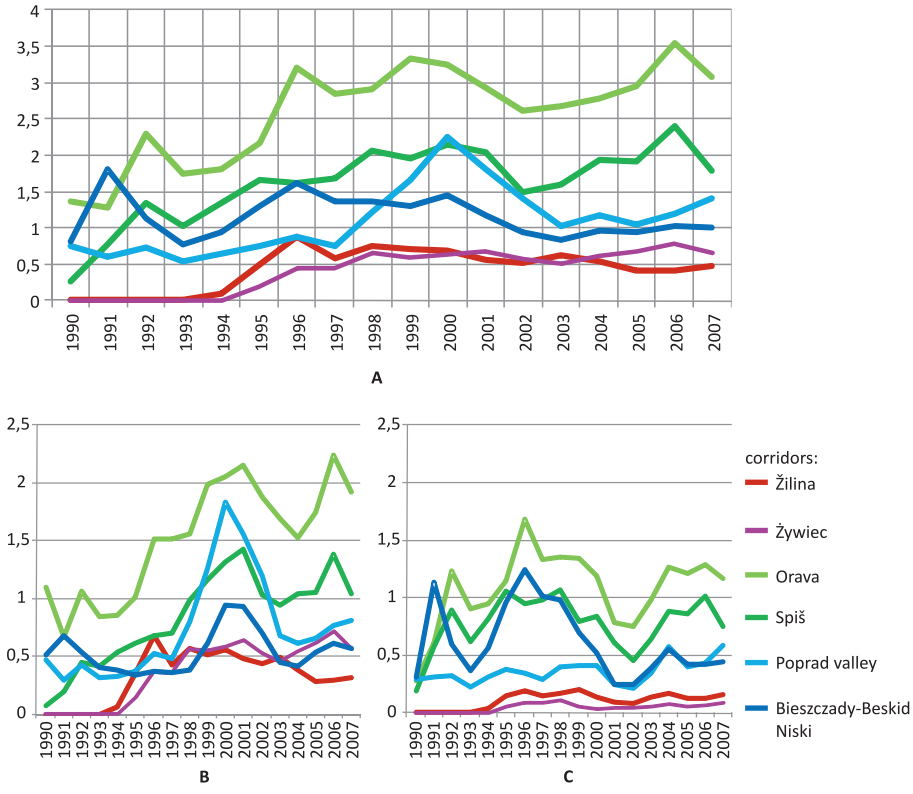

Figure 3.5. Number of persons served at road and railway border crossings on the Polish-Slovak border in the period 1990-2007 according to corridors (in million of persons)

a) Number of Inhabitants of Poland Departing from Poland and Number of Inhabitants of Other Countries Arriving in Poland; *b)* Number of Inhabitants of Poland Departing from Poland; *c)* Number of Inhabitants of Other Countries Arriving in Poland (including inhabitants of the Slovak Republic).

Source of data: Headquarters of the Main Frontier Guard; own elaboration.

Among the persons arriving in Poland in 2007 via the Polish-Slovak border the inhabitants of Poland formed 61% of persons, inhabitants of Slovakia formed 29% and the remaining 10% were inhabitants of other countries especially of Hungary, of the Czech Republic and to a smaller extent Germany as well as Austria, Rumania and Lithuania (Fig. 3.6). The inhabitants of Hungary crossed the Polish-Slovak border

especially via the border crossings: Chyżne – Trstená, Barwinek – Vyšný Komárnik and Lysá Poľana – Tatranská Javorina, the inhabitants of the Czech Republic used mainly the border crossings Chyżne – Trstená, Lysá Poľana – Tatranská Javorina, Chochołów – Suchá Hora and Niedzica – Lysá nad Dunajcom, the inhabitants of Germany used the border crossings Lysá Poľana – Tatranská Javorina and Chyżne – Trstená, the inhabitants of the Ukraine used the border crossings Barwinek – Vyšný Komárnik and Chyżne – Trstená.

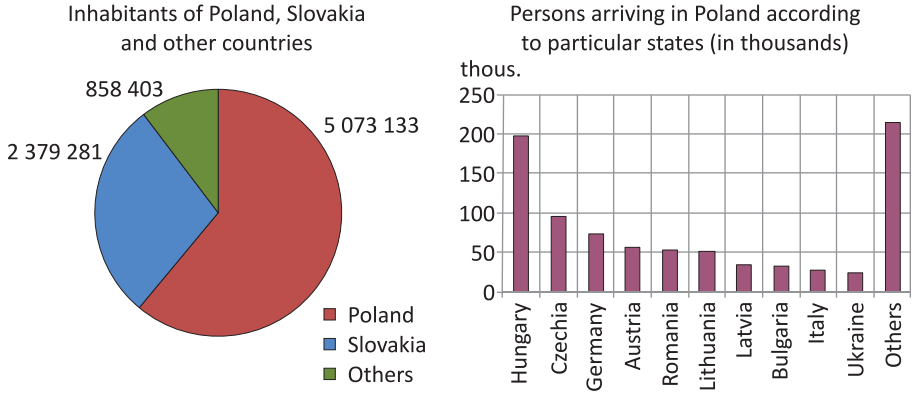

Figure 3.6. Number of persons arriving in Poland via the Polish-Slovak border in 2007 (Including the Small Border Traffic) according to particular countries

Source of data: Headquarters of the Main Frontier Guard; own elaboration.

3.5. AIR TRANSPORT IN THE POLISH-SLOVAK BORDERLAND

3.5.1. INFRASTRUCTURE AND NUMBER OF PASSENGERS TRAVELLING BY AIR

Potential visitors to the Polish-Slovak borderland may also arrive in the Polish part of the borderland by air while using the airports at Kraków-Balice (the Voivodeship of Małopolska), Katowice-Pyrzowice (Voivodeship of Silesia) and Rzeszów-Jasionka (Podkarpackie Voivodeship). The territory subject to the analysis includes only Rzeszów-Jasionka out of the three mentioned airports. Katowice-Pyrzowice Airport as well as Rzeszów-Jasionka are situated

a relatively small distance from tourist regions. In 2009, the capacity of the mentioned three airports was estimated as 4 mil. passengers in Katowice, 3 mil. in Kraków and 1.2 mil. in Rzeszów. Within the Programme for Development of Infrastructure and Environment 2007–2013, significant investments potentially resulting in their increased capacity are expected in all airports.

In 2010, airports in Kraków and Katowice cleared 2.8 mil. or 2.4 mil. of passengers. In 2010, "Rzeszów-Jasionka" Sp. z o.o. airport was the seventh biggest airport in Poland with 452,000 served passengers. Out of the aforementioned airports, Rzeszów airport is characterized by the highest and also continuously growing number of passengers (more than sixfold growth from 2004) (Fig. 3.7).

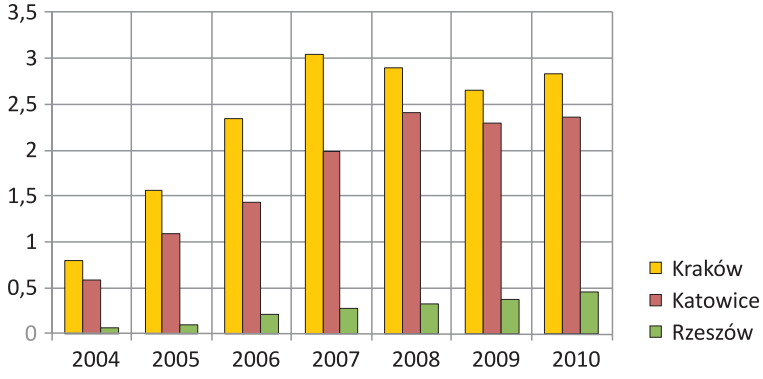

Figure 3.7. Number of passengers at Kraków-Balice, Katowice-Pyrzowice and Rzeszów-Jasionka airports in the period 2004–2010 (in million of passengers)

Source: own elaboration based on airport data.

In the Slovak part of the borderland there are two international airports Poprad – Tatry and Žilina which as of 29 March 2008 were included in the category of international Schengen airports.

The Poprad airport belongs to the basic TEN-T network. It is the highest-positioned airport for airlines for short and medium distances in Central Europe (718 above sea level). The airport operation is provided by the Letisko Poprad – Tatry joint-stock company. Since 1 May 2011, ČSA (The Czech Airlines) company has operated direct flights to Prague three times a week. Further development of the airport requires

reconstruction of the runway and landing area which is already 40 years old.

The Žilina airport at Dolný Hričov serves the needs of the region of North-West Slovakia. The operator of the Žilina airport is Letisková spoločnosť Žilina, a.s.. At present, there is one regular flight to Prague operated by České aerolínie (currently 5 times a week) at the Žilina Airport. The development of the number of passengers at the airports in Poprad and in Žilina is demonstrated in Fig. 3.8.

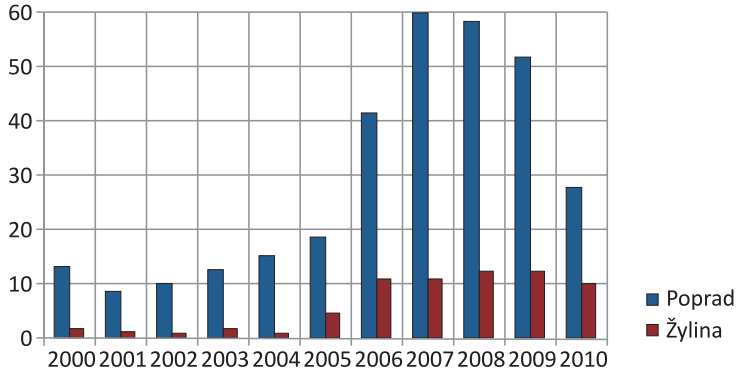

Figure 3.8. Development of the number of passengers at the airports in Poprad and Žilina in the period 2000–2010 (thousands of passengers)

Source: own elaboration based on airport data.

3.5.2. CROSS-BORDER CONNECTIONS IN AIR TRANSPORT

A regular air connection between Bratislava and Warsaw was introduced in May 2002 for the first time by LOT. In 2004, two companies (LOT and Sky Europe) were operating flights to Warsaw. In March 2006, the air connection between Bratislava and Warsaw was cancelled. From March 2010 to March 2011, the connection was operated again by LOT. The air connection between Bratislava and Warsaw was relatively rarely used since there is the possibility of using the connection Vienna – Warsaw.

In the past, there was an air connection between the Poprad-Tatry airport and airport in Warsaw. According to the flight schedule the connection operated 3 times a week in the period from 25 October 2009 to 19 February 2010 and it was operated by Danube Wings. The regular

connection on airline Poprad-Tatry – Warsaw was re-commissioned on 8 December 2011 by the Polish regional air company Eurolot, which also opened the route Poprad-Tatry – Gdańsk at the same time. For these connections to work, the prices need to be competitive. The cheapest one-way flight costs approx. EUR 50–60 which almost reaches competing prices of air tickets to Alpine destinations.

3.6. TRANSPORT IN THE SELECTED REGIONS

3.6.1. THE BESKIDY MOUNTAINS

The accessibility of the selected region of Beskydy is relatively the best among all the selected regions due to its position along the North-South transport corridor connecting Upper Silesia and North Slovakia and the North-East part of the Czech Republic (three borders). The main transport corridor in the Polish part of the region consists of the intensely modernized state road/expressway DK69/S69 Bielsko-Biała – Żywiec – Zwardoń towards Čadca and Žilina and the parallel E65 railway.

In the Slovak part of the region, the most significant 1st class roads are No. I/11, I/11A and I/12. Road No. I/11 leads to the region from Žilina and Kysucké Nové Mesto and it crosses Oščadnica, Čadca and Svrčinovec to the border with the Czech Republic (border crossing Svrčinovec – Mosty u Jablunkova) in the area of the Jablunkovský priesmyk pass. This section is also a part of the international road E 75. The road No. I/12 crossing the municipalities of Čierne and Skalité to the border with Poland (border crossing Skalité – Zwardoń) connects to road No. I/11 in the municipality of Svrčinovec.

In terms of the development of relationships between Slovakia and Poland, the construction of the D3 motorway Žilina – Čadca – Skalité – state border SK/PL is important. Currently, only the sections Oščadnica – Čadca, Bukov and bypass of Čadca (designated as road No. I/11A) are completed in the half profile. The section Skalité – state border SK/PL is currently under construction. Construction of other sections (including Čadca, Bukov – Svrčinovec and Svrčinovec – Skalité) is in various preparation phases. According to the Programme for the Continuation of Preparation and Construction of Motorways and

Expressways for the Period 2011–2014 (2011), by 2014 the construction of the majority of missing sections of the D3 motorway including the short section of the R5 expressway (Svrčinovec – state border SK/CZ) should commence. The D3 motorway is a part of the motorway axis Gdańsk – Brno/Bratislava – Vienna, namely the route classified among priority projects within TEN-T as priority project No. 25.

The railway network of the Slovak part of the Beskydy region consists of railway lines No. 127, 128 and 129. The most significant of them is railway line No. 127 Žilina – Čadca – Mosty u Jablunkova which together with the railway line No. 129 (Čadca – Skalité) is a part of the railway route Gdańsk – Warsaw – Brno/Bratislava – Vienna selected as priority project No. 23 within the TEN-T network. On the railway line No. 127, the section Žilina – Krásno nad Kysucou was upgraded to the speed of 120 km/h, upgrading of the section Krásno nad Kysucou – Čadca – state border SK/CZ should commence after 2014 and it should take approximately three years.

The nearest airports, which can be used for the journey to the Beskydy region, are in Žilina, Ostrava and Katowice.

The local government authorities in the region possess a favourable position at the crossing of three borders rationally using the possibilities for acquiring money from the European funds. Due to that the local roads have been recently upgraded to a great extent. In terms of transport in the region the problem is driving on some voivodeship roads in Poland.

There is a possibility to construct new cross-border roads in the region such as the Čierne – Jaworzynka crossing the Čadečka valley and Oščadnica-Vreščovka – Bór which ends on the Slovak side.

3.6.2. THE TATRAS

The Tatras region is the biggest in area among the six selected regions and in terms of tourism it is the most attractive. The Polish part of the region is characterized by relatively weak road and railway availability from other regions of Poland. Compared to the Beskydy region, there have been relatively few investments in transport infrastructure in the Polish part of the Tatras and in Podhalie. Transport in the Polish part of the selected region is based especially on bus transport and

transport by microbuses. The great increase of traffic density in this territory results in frequent repairs of road surface, even on the roads which have recently been upgraded from the foundations (e.g. on state road No. 49 to Jurgów). As a reaction to the growing traffic in Podhalie, an Intelligent system of traffic management has been built. On roads leading to the Tatras, light boards with information on the current traffic density, weather conditions and current time of transport to the selected towns have been installed.

In contrast to the Polish part of the Tatras with its unfavourable accessibility from the rest of Poland, the Slovak part of the selected region can be deemed to be easily accessible from the territory of Slovakia. The region is crossed by the Pan-European transport corridor Va (Bratislava – Žilina – Košice – Uzhorod) consisting of the D1 motorway and railway on the route Bratislava – Žilina – Košice – Čierna nad Tisou. The most significant road in the region is the D1 motorway between Liptovský Mikuláš and Poprad. A part of the D1 motorway Ivachnová – Hybe was built even before 1989. In 2000, the section Hybe – Važec was completed, in 2008 Važec – Mengusovce and Mengusovce – Jánovce, IInd section (km 8.00–14.23) and Mengusovce – Jánovce, IIIrd section (km 14.23–25.85) and in 2009, Mengusovce – Jánovce, Ist section (km 0.00–8.00). In parallel with the D1 motorway there is Ist class road No. I/18 from Žilina, through Liptovský Mikuláš and Poprad to Levoča, Prešov, Vranov nad Topľou and Michalovce. The D1 motorway and road No. I/18 are a part of the international road E 50. Another significant Ist class road is road No. I/67 from Rožňava to Poprad which continues through the selected region via Kežmarok and Spišská Belá to the border with Poland (border crossing Tatranská Javorina – Łysa Polana). From other roads, the roads forming so called small Tatra circle – No. II/537, No. II/584 and No. III/520019, are important for the region.

The Slovak part of the selected region is crossed by the railway of the first category No. 180 Žilina – Košice of national significance included in the system of international transport corridors according to the AGC and AGTC agreements. In the future, it should be upgraded to the line speed 120 km/h while in some sections the line speed 140–160 km/h is being considered. At Poprad the regional railway line No. 195 Poprad-Tatry – Studený Potok – Tatranská Lomnica – Plaveč is connected to it. In terms of the traffic in the Tatras region, the railway lines

TEŽ No. 182 Štrba – Štrbské Pleso, No. 183 Poprad – Starý Smokovec and No. 184 Tatranská Lomnica – Starý Smokovec – Štrbské Pleso, which rank among local railways, are of special significance.

Poprad airport is classified in the basic TEN-T network in the Tatras region. The nearest airport on the Polish side is Kraków. In terms of transport accessibility it should be emphasized that the time distance when travelling by a passenger car from Poprad to Zakopane is smaller than the time distance from Kraków to Zakopane.

3.6.3. THE PIENINY MOUNTAINS

On the Polish side of the selected Pieniny region, there have been relatively many investments in transport infrastructure (including bridges) implemented in order to make the region more attractive for tourists. The most significant roads in the Slovak part of the Pieniny region include IInd class roads. The main communication axis of the region is road No. II/543 which leads into the region from the east of the municipality of Hniezdne located close to Stará Ľubovňa, to Spišská Stará Ves to the border crossing with Poland (Lysá nad Dunajcom – Niedzica). Road No. II/542 crossing the Magurské sedlo saddle (949 above sea level) in the mountain region of Spišská Magura connects the towns of Spišská Stará Ves and Spišská Belá. The most significant IIIrd class roads is road No. III/543042 from Veľký Lipník to Lesnica, which continues to the border with Poland. At the border crossing Lesnica – Szczawnica situated in the Pieniny National Park only pedestrian and cycle tourists may cross the border. The walking bridge crossing the Dunajec river connecting Červený Kláštor and Sromowce Niżne which was opened on 12th August 2006 serves for pedestrian and cycle tourism. There is no railway line leading to the region. The nearest railway line on the Slovak side of the borderland is line No. 185 Poprad-Tatry – Stará Ľubovňa – Plaveč.

3.6.4. THE POPRAD RIVER VALLEY

The region called the Poprad Valley was formed from the municipalities situated close to the border section of Poprad river which is a significant natural barrier for transport infrastructure development.

Internal accessibility in the region of the Poprad Valley is relatively weak on the Polish side since the possibility of crossing from Piwniczna to Krynica exists practically via the only voivodeship road via Muszyna.

The most significant roads in the Slovak part of the region are Ist class roads No. I/68 and No. I/77. Road No. I/68 goes from Prešov via Sabinov, Lipany, Ľubotín to Stará Ľubovňa from where it continues to the North to the state border with Poland via the border crossing Mníšek nad Popradom – Piwniczna. The border crossing was established here in 1971 and it is intended for passenger and freight motor vehicles not exceeding the weight of 3.5t. Road No. I/68 and also the related road in Poland cross territory with frequent landslides. Some sections are so damaged that the transportation speed had to be reduced and the transport was directed to one driving lane. Solving this situation requires construction of new cross-border interconnection which also includes building of a new bridge across the Poprad river. The construction of a new bridge connecting Mníšek nad Popradom and Piwniczna which would be intended also for buses and freight vehicles with weights up to 7.5t is being prepared (under the Agreement between the Government of the Slovak Republic and the Government of the Republic of Poland applicable from 19 June 2005), while on the Slovak side the works concerning reconstruction of the road leading to the river commenced.

Road No. I/77 starts in Ľubotín, crosses municipalities in the eastern part of the region and continues to Bardejov and Svidník. In 2003, a new bridge was built (Vishegrad Bridge) with access road (road No. I/77A) and a new road border crossing Čirč – Leluchów was opened close to the municipality of Čirč. The project constructing the new bridge was supported from EU funds within the Phare CBC Programme. The bridge capacity is larger than necessary and part of the funds could have been used for another project.

There is no road section of IInd class road in the region. Thus, only IIIrd class roads lead to several municipalities in the region. The municipalities of Sulín, Malý Lipník, Starina and Legnava are peripheral from the transport point of view. The transport to the municipality of Sulín as well as to some parts of the municipality of Mníšek nad Popradom (Kače, Medzibrodie) is hindered by repeated floods on the Poprad river. The development of the central part of the region should be encouraged by the implementation of the project for construction of the footpath for pedestrians and cyclists across the Poprad river to Poland between the municipalities of Sulín – Muszyna-Żegiestów.

There is a railway line of international significance No. 188 Kysak – Prešov – Plaveč to Poland with the border crossing at Plaveč – Muszyna. It is part of the Trans-European transport network TEN-T and it is included in the AGTC system of lines, leading across the eastern part of the region. However, after floods in 2010, the cross-border trains to Poland ceased operating although the damaged bridge on the Polish side has already been repaired.

3.6.5. THE BESKID NISKI MOUNTAINS

From the cross-border point of view, the transport accessibility is the best at the edges of the selected territory. The road corridor DK9 leading via the Dukliansky priesmyk pass in Barwinek crosses the western part. This road should be upgraded in the future in order to reach the parameters of an expressway (current state of the DK9 surface is not satisfactory). In the eastern part of the region, there is a relatively good district road leading to the border crossing Radoszyce – Palota.

The most significant road in the Slovak part of the region is road No. I/73 from Svidník via Vyšný Komárnik to Poland crossing the Dukliansky priesmyk pass. This road belongs to the network of European roads designated as E371 and it is a part of the TEN-T network. In the future, the R4 expressway should be built. In terms of traffic intensity the border crossing into Poland at Vyšný Komárnik – Barwinek is one of the most burdened crossings on the Polish-Slovak border. The road on several places has unsatisfactory technical condition.

The eastern part of the region includes the most significant IInd class roads as follows. Road No. II/559 stems from the town of Humenné and in the region it crosses Krásny Brod, Medzilaborce and it ends in the municipality of Čertižné. From the municipality of Čertižné the road continues in the direction of the border with Poland (the Čertižské sedlo saddle), formerly the location of a tourist border crossing Čertižné – Jaśliska. This road, however, is not suitable for passenger cars, there is also potential for building a new cross-border road connecting Slovakia and Poland.

Road No. II/575 connects the region with the town of Stropkov and it crosses the municipality of Malá Poľana in the direction of the municipality of Krásny Brod in the region and from Medzilaborce it continues to the border crossing at Palota – Radoszyce which was opened in 2003,

while the construction of the cross-border road was supported by the financial contribution from the Phare CBC programme. At present, it is the easternmost road border crossing between Slovakia and Poland suitable for passenger cars. According to the traffic intensity on individual road border crossings, in 2007 it was the least used road border crossing between Slovakia and Poland.

The edge of the region is touched by IInd class road No. II/567 from Medzilaborce to Snina. The IIIrd class roads in the selected region have a length of 37.5km. In terms of interconnection of the eastern and western part of the region, the important roads are the roads connecting the municipalities of Krajná Poľana and Staškovce and the road from Staškovce to Malá Poľana.

The regional railway line No. 191 Michaľany – Trebišov – Humenné – Medzilaborce – Łupków which is the easternmost railway line crossing the Polish-Slovak border leads to the region of Nízke Beskydy. On the Polish side it continues in the form of the railway line Łupków – Nowy Zagórz. This railway line is in very bad technical condition on the territory of Poland but concurrently it has great potential in terms of tourism which, however, has not been used to a substantial extent so far.

There are nine train connections operating on the railway line Humenné – Medzilaborce on a daily basis. This railway line is one of three cross-border railway lines between Slovakia and Poland. After the changes to the timetable applicable as of 1 May 2011, the operation on the part of the railway line in the section Medzilaborce-town – Łupkóv was cancelled because it was uneconomic to continue, although even in 2010 the train connections between Slovakia and Poland were operating during summer (on Friday, Saturday and Sunday in the period from 19 June to 29 August).

3.6.6. THE BIESZCZADY MOUNTAINS / POLONINY

The selected region of Poloniny (on the Polish side designated as Biesczady) is one of the most peripheral regions both in Poland and in Slovakia (cf. Horňák 2006).

The majority of towns situated on the Polish side have recently been upgraded thus contributing to the enhancement of comfort when travelling in this territory. The Bieszczady Powiat is characterized by the least density of district and local roads in Poland. This is influenced

on one hand by low density of population and on the other by the relief of the territory.

The most significant road leading to the Slovak part of the region is road No. I/74 from Snina to Stakčín, which continues to the municipality of Ubľa and to the border crossing with the Ukraine, Ubľa – Malyj Bereznyj. The transport axis of the selected territory is road No. II/558 from Stakčín to the municipality of Ulič crossing the Uličská dolina valley. From this road there are IIIrd class roads leading to further municipalities situated in side valleys – a road from the municipality of Ulič to the municipality of Nová Sedlica, a road to the municipality of Ruský Potok, to the municipalities of Topoľa and Runina and to the municipality of Jalová.

The road network of IIIrd class roads was reduced in the region after construction of the Starina water reservoir in 1987. Due to created zone of hygienic protection of the Starina water reservoir the roads leading to seven extinct municipalities (Ruské, Smolník, Veľká Poľana, Zvala, Ostružnica, Dara, Starina) were reclassified as special purpose roads and the entry of motor vehicles to this territory was limited at the same time.

The region has no Ist-IIIrd class road leading to the border with Poland. This is caused mainly by the existing natural barrier in the form of the main ridge of the Bukovské vrchy hills. Practically, the only place via which a road connection to Poland could be built is Ruské sedlo saddle. In the past, there was a historical road crossing this place between the Austro-Hungarian Empire and Porta Rusica in Małopolskie. Construction of this road for car transport is currently, however, not feasible especially due to nature protection in the Poloniny national park as well as due to the existence of the Starina water reservoir.

There is a regional railway line No. 196 Humenné – Stakčín leading to the Poloniny region with ten train connections per day in both directions. In terms of tourism development, the interesting thing in recent years has been the use of the Bieszczady forest railway line between Balnica and Majdan.

3.7. POSITION OF TRANSPORT IN THE STRATEGIC DOCUMENTS

3.7.1. TRANSPORT IN THE STRATEGIC DOCUMENTS ON THE NATIONAL LEVEL IN POLAND

The basic strategic documents concerning the development of transport infrastructure on the national level on the Polish side were characterized in Chapter 2. Among these documents, the key significance can be attributed to the Strategy for Development of the Country (*Strategia Rozwoja Kraju* – SRK, 2006) and in December 2011 a new Concept for Territorial Development of the State by 2030 (*Koncepcja Przestrzennego Zagospodarowania Kraju do roku 2030* – KPZK) adopted by the Government of the Republic of Poland. In the further text the greatest attention is focused on these documents. For the period 2007–2013, the Operational Programme Infrastructure and Environment (*Program Operacyjny Infrastruktura i Środowisko*), which resulted from negotiations with the EU, was also important. It formed the basis for the use of finances from the European Regional Development Fund and the Cohesion Fund for construction of big transport investments. The chief investments were provided in the list of key projects of the afore-mentioned Programme. The list was relatively vast and it was supplemented by a list of reserve projects. The great part of the plans mentioned in the list shall not be implemented in the current EU programming period.

In practice, the decisive documents were the Regulation by the Ministry of Infrastructure covering the course of motorways and expressways (from 2004 as amended) and the construction plan of roads for the period 2011–2015 from January 2011 (limiting the original plans regarding the situation in the state budget). In the case of railway infrastructure, the 2008 Strategic Plan for Railways 2008, the so called "Master Plan" is still applicable.

The Strategy for State Development (*Strategia Rozwoja Kraju* – SRK, 2006) points out the significance of transport accessibility as a factor for development of tourism and the missing transport infrastructure (motorways, expressways and airports) is considered to be one of the barriers preventing the inflow of foreign visitors. One of the elements of the State Transport Policy (*Polityka Transportowej Państwa*, 2005) is development of the road network which should also consider the

existence of regions with a high concentration of features attractive to tourists and thus securing their good transport accessibility.

New Concept of the Territorial Development of the State (*Koncepcja Przestrzennego Zagospodarowania Kraju* – KPZK, 2011) emphasizes the inevitability of improvement of the territory's accessibility on various spatial levels by building better transport infrastructure. The importance of the accessibility issue is also proved by the fact that it is one of six main objectives of the state territorial planning policy. Within this objective the significance of accessibility for the development of tourist regions is emphasized. Concurrently, the concept confirms the fact the that majority of the territory in the Polish part of the Carpathians shows bad or very bad travel time accessibility to regional centres.

The issue of accessibility in tourism development is emphasized in the document Tendency of Tourism Development by 2015 (*Kierunki rozwoju turystyki do roku 2015*). The improvement of the region's accessibility via the transport development is one of 12 operational objectives. Positive evaluation can be related to the plans for improvement of transport accessibility, which consider vulnerability of the natural environment also by preventing concentration of transport infrastructure in the territories attractive for tourists. On the territories with especially precious natural environment it is proposed to introduce preference for public rather than individual transport. The documents also point out the need of the railway transport development. The proposed solutions are justified, but their implementation is not easy. Since railway companies face financial, administrative and technical problems, it is difficult to expect effective development of railway transport. Even in case of significant enhancement of the mass transport system and the use of economic stimuli for environment-friendly transport, the increase of the share of tourists using public transport will be difficult to achieve since the trend in this respect is entirely opposite.

The Concept for Territorial Development of the State by 2030 (KPZK) assumes that there will be four North-South expressways crossing the territory of the Polish-Slovak borderland. Bieszczady (Poloniny) will be the farthest region from the expressway since the planned expressway should end in Sanok. If we do not considering only the economic aspect, this does not necessarily have to be perceived only negatively. In general, it can be stated that construction of the planned roads, which will significantly reduce the time required for transfer from

metropolitan centres to the borderland situated from the Silesian Beskydy to the Nízke Beskydy, will contribute not only to increasing the number of visitors (including weekend ones), but also to increasing the extent of the built-up area since the majority of the analysed area will be within the reach of daily commuting to the regional centres. If the road infrastructure development is not in compliance with progress in the field of sustainable town and country planning, chaotic construction may have significantly negative impact on the natural system of the Carpathians. The scope of the road network mentioned in the KPZK project is wider compared to other governmental programmes which do not assume building of expressways in the sections of Krosno – Sanok and Tarnów – Piwniczna by 2030.

The Concept for State Town and Country Planning (KPZK) and the Operational Programme Infrastructure and Environment – in a closer extent – assume construction of new or upgrading of the existing railway lines which will improve accessibility to the western part of the Polish-Slovak borderland. In the eastern part of the borderland, neither such construction, nor upgrading is planned except for the section Rzeszów – Medyka, which, however, shoulds not have greater meaning in terms of tourism in the eastern part of the Carpathians. As a result part of the borderland will remain a marginal region for at least 20 years and probably longer in terms of accessibility by railway transport.

3.7.2. TRANSPORT IN THE STRATEGIC DOCUMENTS ON THE NATIONAL LEVEL IN SLOVAKIA

The basic document specifying the basic long-term objectives and priorities for transport development in the Slovak Republic, the tools and resources necessary for their implementation is the Strategy for the Development of Transport of the Slovak Republic until 2020 (*Stratégia rozvoja dopravy Slovenskej republiky do roku 2020*, 2010). The current strategic document approved by the Government of the Slovak Republic with mentioned development priorities in the field of construction of the superior road network for the coming period is the Programme of Continuation of Preparation and Construction of Motorways and Expressways for the Period 2011–2014 (*Program pokračovania prípravy a výstavby diaľnic a rýchlostných ciest na roky 2011–2014*, 2011). In the EU programming period 2007–2013, the Operational Programme Transport (*Operačný program Doprava*) is playing an important role in

transport development. It enables withdrawal of EU finances from the European Regional Development Fund and from the Cohesion Fund for construction of motorways, construction of expressways, upgrading and construction of Ist class roads, upgrading of railway lines and development of public passenger railway transport. Its annex contains an indicative list of the chief projects which should be supported within the OP Transport.

The National Strategy for Regional Development (*Národná stratégia regionálneho rozvoja*, 2010) emphasizes especially road transport in the analytical part dealing with the issue of transport. According to the document the investments in road transport in the period 1998–2007 were growing the most in the Žilina and Trnava Regions. The Žilina Region experienced a great increase in the number of cars in this period, coming immediately after the Bratislava Region in this. It has been stated that in terms of securing serviceability of the territory by the public transport the situation is getting worse since in some regions the numbers of persons transported in the 10-year period of monitoring is being reduced by half. The document, however, fails to provide for more complex analysis and proposals, apart from the several strategic statements below.

In spite of its date of origin, The Concept for the Territorial Development of Slovakia (*Koncepcia územného rozvoja Slovenska*, 2001) may partially serve as a reference point even today, because of the slowness of construction of big transport infrastructure such as motorways and expressways or upgrading of railway lines. It also deals with the issue of transport development with regard to tourism. Apart from specification of multi-modal corridors of the TINA network, the document also contains global evaluation of risks of the transport sustainability in terms of spatial, economic and social aspects as well as environmental carrying capacity. East Slovakia in the North-South direction is deemed the most risky area. The recommended procedure is to strengthen the service function of the route from Poland via Stará Ľubovňa, Svidník to Medzilaborce. In the area of North-West Slovakia, strengthening of the service function for Horná Orava from the direction of Čadca – Námestovo – Suchá Hora – Poland is recommended. There are two road corridors and one railway corridor specified as main transport corridors for international tourist transport while both running in the North-South direction from the Polish border to

the Hungarian border. The western road route leads from Kraków via Orava, Donovaly, Zvolen and Šahy to Budapest. The eastern road route also leads from Kraków via Northern Spiš, Slovenský raj (the Slovak Paradise) and Rožňava to Hungary. The additional tourist corridor designated as the Small Tatras Circle from Suchá Hora, via Vitanová, Zuberec, Liptovský Mikuláš, Starý Smokovec, Ždiar to Javorina is (quite feasibly) mentioned only as a road route with the exception of freight transit within the whole section. The only proposed railway tourist corridor is the route from Kraków via Orava, the Turčianska kotlina valley, Banská Bystrica and Šahy to Budapest. The newer documents, however, do not consider reconstruction of the railway connection Trstená – Suchá Hora – Nowy Targ and this is confirmed by the current state. The West-East road leading through the entire Polish borderland from the borders with the Czech Republic via Čadca, Nová Bystrica, Oravská Lesná, crossing to Poland via Suchá Hora and then via Spišská Stará Ves, Stará Ľubovňa, Bardejov to Svidník is an interesting road corridor of the national level which, surprisingly, is not designated as a tourist route.

The National Strategic Reference Framework 2007–2013 (*Národný strategický referenčný rámec 2007–2013*, 2007) specifies three strategic priorities, one of which is Infrastructure and Regional Accessibility. Drawdown of EU funds in order to improve transport accessibility is thus reasonable. Transport Infrastructure and Public Passenger Transport is one of four specific priorities within this strategic priority. There is obvious interest in the development not only of the road infrastructure for individual transport but also in the enhancement of accessibility by public transport. The significance of transport networks for inflow of foreign capital is emphasized, but the relation to tourism is absent. Apart from building the D1 motorway, the document gives priority to construction of the D3 motorway (Žilina – Čadca – state border SK/PL) and R4 expressway (Prešov – Svidník – state border SK/PL). The R3 expressway via Orava to Poland is not mentioned. According to document, the only railway connection with Poland which should be upgraded is the TEN-T corridor VI (Žilina – Skalité).

The Operational Programme Transport 2007–2013 deals with the issue of transport development in detail. The system of international transport corridors according to the document includes the railway lines Prešov – Plaveč – Poľsko (Muszyna), Žilina – Čadca – the Czech

Republic (Ostrava) and Čadca – Skalité – Poland (Zwardoń). As a positive aspect with regard to accessibility, the high density of the railway network, stations and stops is mentioned. Within the TEM road network, the significance of the route E75 (Gdańsk – Katowice – Žilina – Bratislava) is emphasized. As with the railway transport, this assumes concentration of transit in the region of Kysuce. The connection from Poland via the R3 expressway through Orava has two alternatives from Dolný Kubín – to Kraľovany and Ružomberok. The expressway already built on the Polish side is thus connected to a road of insufficient quality at Skalité. The relationship between the development of transport infrastructure and environment protection is understood in an interesting way in the document. The reduction of adverse impacts of transport on the environment according to the document is conditioned by the development of the motorway network, upgrading of railway lines, construction of bypasses etc. The term "environment" in the documents definitely lacks the final definition.

In compliance with the Strategy of the Transport Development in the Slovak Republic until 2020 (2010), the main priority in the field of railway infrastructure is upgrading of the TEN-T railways: (state border SK/PL – Žilina – Bratislava by 2016 and Žilina – Košice – state border SK/PL by 2020. In the field of road infrastructure the priorities include completion of construction of sections within the TEN-T network: D1 motorway (Bratislava – Žilina – Košice) and D3 motorway (including the R5 expressway Svrčinovec – the Czech Republic) by 2014 as well as completion of the R4 expressway by 2017. The R4 expressway (state border SK/PL – Svidník – Prešov, a part of the TEN-T network, in 2017) is preferred to the R3 (via Orava, completion by 2020 in dependence on allocated funds). This document also mentions environmental aspects of transport as well as the significance of transport accessibility for inflow of investments, but there is no mention of the significance of transport for tourism.

Despite the Strategy for the Transport Development of the Slovak Republic until 2020, approved in 2010, the completion dates for construction of the motorways and expressways mentioned in it were repeatedly postponed to later dates. According to the Programme for Continuation of Preparation and Construction of Motorways and Expressways for the Period 2011–2014 (2011) the completion of the D1 motorway (Bratislava – Košice) is scheduled in 2017, while the entire

D1 motorway up to the border with the Ukraine will be completed in 2020. Similar situations will probably occur during implementation of some other sections of motorways and expressways.

The Programme of Cross-Border Cooperation between SK – PL 2007–2013 (2007) emphasizes the significance of the transport infrastructure for development of the borderland in relation to tourism development. It states that the road network in the Slovak part of the borderland has a much lower density, but is in better condition.

3.8. SUMMARY

The position of the Polish-Slovak borderland within the European transport system is not advantageous as a result of historical conditions and the mountain character of the territory. Thus, the transport accessibility may seem to be a key factor for development of many economic functions including the one which attracts the highest interest – that of tourism. The position of the analysed territory within the national transport systems of Poland and Slovakia is a bit better. The improvement of the position of the borderland in the transport system which occurred in recent years is to a great extent caused by investments in the transport infrastructure implemented outside the analysed territory of the borderland (e.g. A4, S7, S69, S19, D1). This concerns especially Poland where there was a relatively low number of big projects implemented in the borderland – especially the investments in the S69 expressway. Concurrently, the construction of the West-East motorway routes (namely the A4 motorway on the Polish side and D1 motorway on the Slovak side) is significantly improving accessibility of the borderland on the European level. In the context of the cross-border interconnections, the plans of the Polish Government especially lack continuation of implementation of the expressway in the section Rabka – Chyżne with the highest density of traffic in the cross-border area. In 2010 it meant almost 5,000 vehicles a day, while in Barwinek there were only 3,300 and on the S69 in Zwardoń almost 1,000 vehicles.

In terms of roads of the lower category (state, voivodeship, district and local roads in Poland and Ist, IInd and IIIrd class roads and local roads in Slovakia), the finances from the European Union funds helped to improve the surface condition on many roads in a substantial manner, and this has been reflected in the improvement of the travelling

conditions in the tourist regions. In many places (also in the borderland), however, there are asymmetries in the standard of roads of various categories administered by various administrators. In the future, it is assumed these asymmetries may even get worse because budgetary problems in Poland and in Slovakia will definitely lead to reduction of the volume of investments intended for roads of higher categories administered by state organizations, while the access of local or regional government authorities to the finances from the European Union funds and the possibility of the use of funds within the programmes of cross-border cooperation will enable local government to continue investments in the roads of the lower category.

It is interesting that due to upgrading of some roads especially in transport corridors leading via Spiš and Orava, so called generated traffic occurred also in the form of freight vehicle transport. The invested funds are, however, still insufficient especially on the Polish side with still missing bypasses of larger and smaller settlements. Thus, in the conditions of fast growth of motorization, extremely heavy traffic and big traffic jams occur on some routes with both local and transit traffic, especially during the tourist season.

One of the possible solutions to the extremely heavy traffic is more investment in public transport especially in the field of the railway transport which is in compliance with the policy of sustainable development. In terms of the railway infrastructure great asymmetries between the Polish and Slovak side are obvious. The system of the railway transport in Slovakia resisted the economic and organisational changes in the period of transformation much better. Network decapitalization occurred to a smaller extent with smaller losses within the market of freight and passenger transport. Moreover, the East-West route of the main railway network connecting Poprad, Košice and especially Žilina and Bratislava is of great significance for tourists who due to direct railway connections may get to the Slovak tourist centres in the Tatras. At present, there are only promises of changes on the Polish side but the frequency of connections, comfort of travelling and the number of direct railway connections from Zakopane, Żywiec or Krynica are still insufficient. The railway transport from cross-border point of view is only of marginal significance. The three cross-border railway connections via Skalité – Zwardoń, Plaveč – Muszyna and Łupków – Medzilaborce are in relatively bad technical condition and the plans for

their upgrade are questionable. Upgrading of the international railway line from Katowice via Bielsko-Biała, Żywiec and Zwardoń to the state border with Slovakia with continuation to Čadca will probably come first. Change in the use of particular types of transport to cross the Polish Slovak border cannot be expected, and in the near future as at present the majority of tourists will use individual car transport.

The airports at Poprad and Žilina situated in the borderland may serve tourists travelling to the towns on the Polish side of the borderland. The airports at Kraków, Katowice or Rzeszów (only the last is actually in the analysed territory of the borderland) are too far away to be able to offer the transport especially for tourists heading for the borderland. The situation could be changed if the transport infrastructure (mainly roads but also railways) enabled fast and comfortable transfer from these airports to the tourist centres.

4. TOURISM ON THE POLISH-SLOVAK BORDERLAND

4.1. SPECIFICS OF TOURISM IN POLAND AND SLOVAKIA FROM THE EUROPEAN PERSPECTIVE

At present, tourism is one of the most important parts of the economy in many regions, including the Polish-Slovak borderland. Its mass development is connected with the increasing amount of free time, the growth of the population's income, and the need for rest and recreation. Tourism can develop mainly in areas which are attractive for tourists and easy to get to as well. Accessible transport has a significant influence on the length and frequency of tourist trips and stays.

Tourism dominates in both Poland and Slovakia. Domestic tourists in Poland account for more than 80% of all tourists (one of the highest rates in Europe). In Slovakia it is less than 60%. The rate of foreign tourists on the borderland is even lower: 32.7% on the Slovak side and less than 15% on the Polish.

The number of foreign tourists (Fig. 4.1a) in Poland and Slovakia places both countries on the lower reaches of the European tourism chart. In regards to revenue from foreign tourism the situation is similar – 11 billion USD in Poland; 2.6 billion USD in Slovakia (Fig. 4.1b).

Major growth in the number of foreign tourists was characteristic for Slovakia in 2003–2008 – on average around 5% per year. The value of this indicator in Poland was much lower and the growth rate in 2003–2007 was 2.2% per year; but in 2008 it radically decreased by 13.5%. Over the next years the number of tourists in Slovakia decreased (mainly connected with the introduction of the new euro currency and with the relative growth of prices for services in the tourism sector). Meanwhile, the number of foreign tourists in Poland remained at around the same level.

Accessible transport is a particularly serious problem regarding the development of tourism on the Polish-Slovak borderland. The figures behind the particular means of transport used by the citizens of Poland

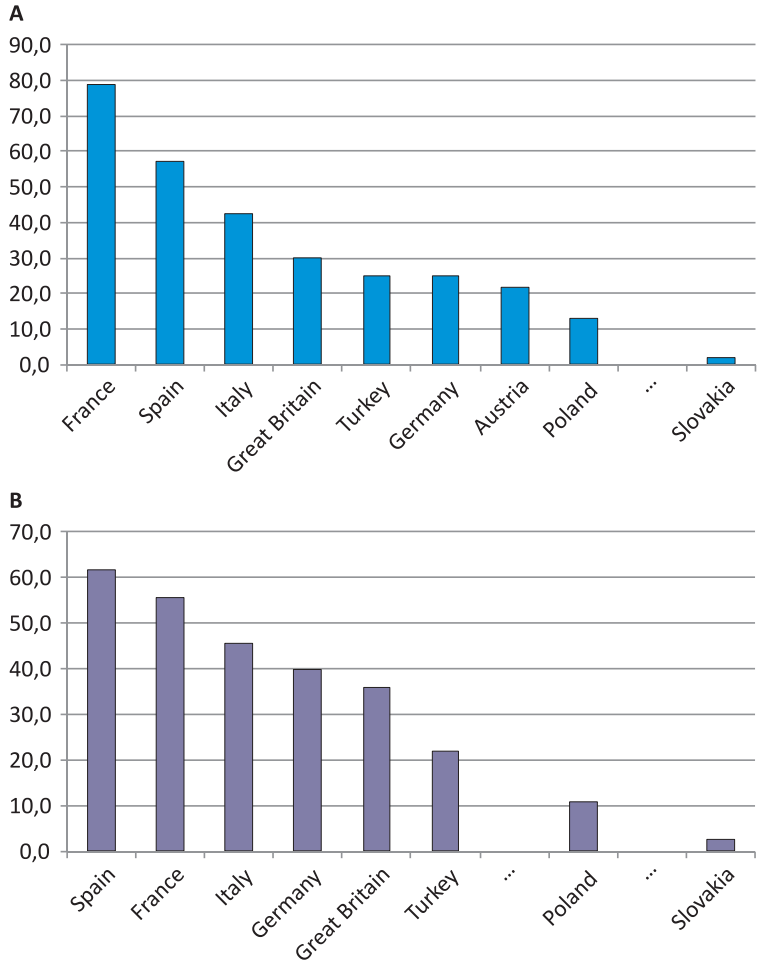

Figure 4.1. a) Volume of foreign tourism in millions of tourists and b) amount of revenue from foreign tourism in billion USD in Poland and Slovakia compared to other selected European states

Data source: WTO 2010; own elaboration

and Slovakia during their tourist stays are stated in Section 3.1.2. The chart showing the figures of the particular means of transport used by foreign tourists coming to Poland and Slovakia is pictured below. All the analysed data show that there is a significant dominance in road transport, for which cars are almost solely used (Fig. 4.2) as a means of transport (domestic and foreign, as well as cross-border between Poland and Slovakia).

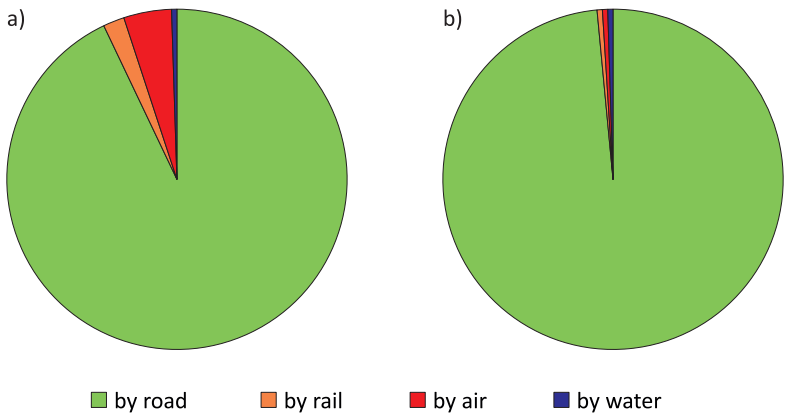

Figure 4.2. Kinds of transport used by foreign tourists coming to a) Poland and b) Slovakia

Data source: WTO 2010; own elaboration.

4.2. SPECIFICS OF THE DEVELOPMENT OF TOURISM ON THE POLISH-SLOVAK BORDERLAND

The entire borderland, on the Polish side as well as on the Slovak side, is a mountainous area with an attractive natural environment. In comparison to the other areas of Poland and Slovakia, the mountains in this area attain higher altitudes (Tatras, Low Tatras). The Polish-Slovak border measuring 541 km passes mainly through the ridges of the Carpathian Mountain Range. The Carpathian Mountains account for only less than 6% of Poland's surface area, which mostly has a lowland character. From this point the small mountain regions in Poland are unique and differ from the remaining area. The mountains in Slovakia account for a significantly larger part of the area and based on geomorphologic classification, 71.4% of the area is part of the Carpathian Mountains. Only the Danubian, Záhorská, and Eastern Slovak Lowlands are part of the Pannonian Basin, which takes up 28.6% of Slovakia's surface area.

The Carpathian Mountains are among the most important regions of tourism in Poland, as well as in Slovakia. Due to its natural environment it is mainly designated for the development of hiking and skiing. In recent years other kinds of tourism, e.g. mountain biking, paragliding, rafting and so on, have begun to gain importance. The recreational season lasts almost all year long. The amount of tourism particularly

increases in the winter and summer seasons. These two crucial seasons are being lengthened though: the summer season extends into the autumn period (until October) and the winter season extends into the spring months (April). Short-term tourism, mainly during weekends and holidays, still receives higher importance.

4.2.1. ATTRACTIVENESS OF THE BORDERLAND IN TERMS OF TOURISM

The Polish-Slovak borderland is, apart from some localities, a region relatively little transformed by economic activities. There are a large number of regions with a valuable natural and cultural environment that creates a huge potential for the development of tourism. Many factors contribute towards the touristic attractiveness of the Polish-Slovak borderland. The most important of them can be considered:

- Varied forms of relief
- Climatic conditions (e.g. snow conditions in the winter season)
- Forest and other plant cover
- Surface water (rivers used for rafting – the Dunajec and in recent years the Poprad, Orava and Váh; rivers used for kayaking; lakes and man-made reservoirs, e.g. Rożnowská, Solińská, Czorsztyńská, the Orava Reservoir, Liptovská Mara, and Veľká Domaša)
- Mineral and thermal waters
- High aesthetic value of the country
- Particularly valuable natural environment (to which legal protection is applied in many places, e.g. national and landscape parks. See Section 2)
- Important cultural riches (sacred and secular architecture, museums, folk art, places of national remembrance),
- Organizing various types of events
- Developing a varied and complex offer of accommodation, restaurant facilities and other touristic amenities, mainly for skiers.

The Polish-Slovak border divides natural homogenous and socio-economic territories which were administered and used for tourism in different ways throughout several centuries. The process of connecting these two areas has lasted for almost 20 years thanks to new transport infrastructure, common initiatives, events, promotion, etc. (e.g. Więckowski 2004, 2010a, Michniak 2011). The significant decrease of the barrier

effect on the state border is a very important factor in the development of tourism (Komornicki 1999, 2002, Ptaszycka-Jackowska and Baranowska-Janota 2003, Ptaszycka-Jackowska 2007, Więckowski 1999, 2002, 2004, 2010a, b).

Natural environment as a tourist attraction

Tourism on the borderland in the long-term has developed mainly due to the potential of the natural environment (Warszyńska 1971, 1985, Groch and Kurek 1995, Pietrzyk-Sokólska 2006, Zawilińska 2010, Michniak 2010) (Fig. 4.3). The especially valuable natural environment is protected through the national and landscape parks, along with other areas protected by law (see Section 2). The main attraction of the borderland is the mountain ranges, in which the Tatras (Tatry) dominate. They are characterised by a deep symbolism, rooted in culture and traditions. Moreover, they are an attractive trademark and have had a good position in the tourist market for more than two centuries. Other mountain ranges on the Polish-Slovak borderland, e.g. Oravské Beskydy (the Orava Beskids), the Pieniny, the Poloniny/Bieszczady, and on the Slovak side Nízke Tatry (the Low Tatras), Slovenský raj (Slovak Paradise), Malá Fatra (the Lesser Fatra) and Veľká Fatra (the Greater Fatra) – also have a unique natural environment that can attract tourists.

Peaks, summits, passes and mountain saddles are to be found in these mountains. They offer panoramic views and have attracted tourists for ages. The views from Babia Hora, Rysy, Turbacz, Veľký Choč, Veľký Rozsutec, Kriváň and Lomnický Štít belong among the most famous. Many summits are also tourist attractions and are regarded as tourist symbols within the Polish-Slovak borderland. Giewont, Babia hora, Rysy, Trzy Korony (Three Crowns), Kriváň, Lomnický štít, and Veľký Rozsutec are some of the most important.

An important tourist attraction of the borderland, mostly on the Slovak side, is caves. Four caves open to the public with organized tours are located there – the Belianska, the Važecká, the Demänovská Cave of Liberty (the most visited in Slovakia) and the Demänovská Ice Cave (the cave system in Demänová measuring 35 km is the longest in Slovakia). Another eight caves were declared as accessible to the public – two in each of the Spišská Magura, Belianske Tatry and Strážovské vrchy mountain ranges; and one in each of the Branisko, Low Tatras and Veľká Fatra ranges. Caves designed to be experienced with miners helmets are

the Stanišovská Cave in the Low Tatras and the Zlá diera Cave (Bad Hole Cave) in the Branisko mountain range. Caves accessible to the public on the Polish side are mainly in the Tatras (the Ciemna and Mroźna).

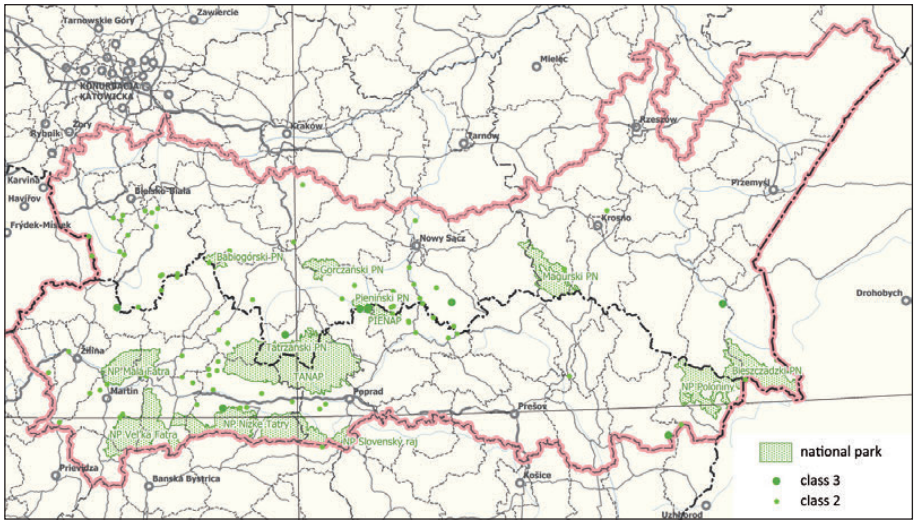

Figure 4.3. The most important natural attractions on the Polish-Slovak borderland

Source: own elaboration.

There are many river gorges, ravines and valleys in the mountain area on the borderland. The most beautiful parts of the river gorges are used for rafting (mainly on the Dunajec and Poprad, the Orava near Orava Castle, and on the Váh near Strečno). The Belá River flowing from the Tatras is mostly used for rafting. Sailing on the Váh is less demanding in the area of Liptov between the Kráľova Lehota and Uhorská Ves villages (11 km). This also applies to the meandering stretch Lipovec-Strečno (13 km), the Orava River (which is navigable from Tvrdošín to Kraľovany), and Dunajec in Pieniny.

Winter sports and ski resorts

The natural environment on the Polish-Slovak borderland creates perfect conditions for skiing, which include mainly a high snow cover and rugged mountain relief, as well as other factors enhancing the aesthetics of the country, with a positive influence on the health of visitors (e.g. forest environment). Several constantly developing ski resorts were built on the borderland. This area is, in both countries, the most

important territory concerning favourable conditions for winter sports (Sudetenland is a region with similar importance in Poland).

There are 98 ski resorts on the Polish side of the borderland, 13 of them with an overall transport system capacity for more than 5,000 people/hour (in 36 the capacity exceeds 2,000 people/hour). The majority of the Slovak ski resorts are located on the Slovak side of the borderland (around 90) with an overall transport system capacity of approximately 225,000 people/hour. The overall transport system capacity in 13 Slovak ski resorts is more than 5,000 people/hour, and in 38 resorts it exceeds 2,000 people/hour.

The biggest and best equipped resorts in Slovakia (assessed by 5 stars[9]) are Jasná in the Low Tatras, Vrátna in the Malá Fatra, Ružomberok – Malinô Brdo in the Veľká Fatra, Oščadnica – Veľká Rača in Kysucké Beskydy, and Štrbské Pleso and Tatranská Lomnica in the High Tatras. Apart from the resorts in the Tatras, the resorts in the Malá Fatra and Kubínska Hoľa are located at the highest altitudes (Vrátna and Martinské Hole) (Tab. 4.1).

The expansion of some ski slopes and the building of new ski lifts in the High and Low Tatras conflicts with the interest of nature protection (see Section 4.3.2. the Tatras).

Table 4.1. Ten biggest ski resorts in the Slovak part of the region based on transport capacity

name	district	*[1]	capacity[2]	ski slopes[3]	systems[4]	vertical drop[4]	price[5]
Jasná (Chopok north)	LM	5	19 240	22/22,8	10/7	950–2004	31
Vrátna	ZI	5	10 798	17/14,5	12/2	600–1709	24
Tatranská Lomnica	PP	5	10 142	9/9,0	0/7	889–2196	26
Oščadnica – Veľká Rača	CA	5	9 700	13/15,9	3/3	630–1050	26
Kubínska Hoľa	DK	4	9 000	9/14,0	8/2	720–1396	18,5
Malinô Brdo	RK	5	8 130	8/10,5	8/2	545 – 1209	23,5
Bachledova Dolina –Jezersko	PP	4	8 110	13/11,1	8/2	820–1160	17

[9] Assessment of the interest association LAVEX

name	district	*[1]	capacity[2]	ski slopes[3]	systems[4]	vertical drop[4]	price[5]
Martinské Hole	MT	3	6 120	12/13,3	5/1	1150–1456	23
Jasenská Dolina	MT	4	6 100	8/5,3	7/1	540–810	16,9
Ždiar – Strednica	PP	3	6 080	7/2,1	9/0	940–1057	14,5

Note: [1] assessment by LAVEX (1–5 stars) [2] transport capacity in people/hour [3] number/length of ski slopes in km [4] lowest and highest point (height above sea level) [5] price of ski pass for 1 day (€, adult, main season).

Data source: web pages of ski resorts and www.slovakia.travel, (November 2011); own elaboration.

Zakopané, Szczyrk and Krynica Górska (Tab. 4.2) belong among the most developed ski resorts on the Polish side. In the last years new (and in Polish conditions, modern) ski resorts have been built, e.g. Bukowina Tatrzańska, Białka Tatrzańska, Wierchomla Mała, Piwniczna-Sucha Dolina and Zawoja. Korbielów has the largest capacity, but most of the ski lifts are obsolete. The building of new infrastructure for skiing is complicated by the conflict between the interests of ski resort operators and environmental protection in the Pilsko area.

Table 4.2. The biggest ski resorts on the Polish part of the borderland – according to transport capacity in people per hour

name	capacity (people/hour)	number of ski lifts	length of ski slopes (m)
Korbielów	36 200	17	22 200
Zakopané	33 060	48	18 790
Bukowina Tatrzańska	20 150	22	8 180
Szczyrk	16 560	26	44 080
Krynica-Zdrój	13 609	23	10 060
Wisła	11 950	19	9 980
Wierchomla Mała	10 350	8	9 070
Białka Tatrzańska	8 300	22	9 670
Ustrzyki Dolne	7 025	9	3 790
Zawoja	6 230	11	3 390
Zwardoń	6 010	14	6 560
Piwniczna – Sucha Dolina	5 020	11	4 610
Istebna	5 000	8	2 460

Data source: web pages of the ski resorts (data for the season 2010/2011); own elaboration.

Cable cars and cog wheel railways in Zakopane and Krynica in Poland, and Tatranská Lomnica in Slovakia, were among the items of ski infrastructure (Otrubová 1998, Madziková et al. 2011). Although the first ski lift in Slovakia was built in 1943 (Štrbské Pleso – Solisko), the dynamic development of ski resorts is connected to the period between 1960 and 1989. The number of ski lifts/cable cars increased gradually from 38/11 (1964), up to 976/34 (1993). Growth stagnated in the 90s. However, after 2001 the modernization of ski resorts increased because the obsolete transport system was not able to satisfy more demanding skiers. Old ski lifts were put out of circulation and new cable cars were built. While the number of ski lifts between 1996 and 2007 decreased from 993 to 800, the number of cable cars increased from 31 to 45. Their number increased to 55 until 2011. The highest number of modernised resorts is in Orava. In the coming period, despite climate changes, we can expect the modernization of other resorts. Some of the new ski resorts were built "on a Greenfield site" – the Valčianska Valley (transport capacity 5,450 people/hour), and Oravice (4,150 people/hour). The improvement of the quality of services meant a partial increase in the competitiveness of Slovak ski resorts compared to Alpine ones. However, the inhabitants of the Bratislava region, with the highest purchasing power in Slovakia, are increasingly starting to use the offer of Austrian Alpine resorts due to the quality of transport infrastructure, proximity, and quality of services. The focus on international clientele has become more and more important in the large Slovak resorts. But the Polish and Czech clientele are very sensitive to prices, which manifested in 2009 after the introduction of the euro, when there was a significant decrease in the number of tourists from these countries. More unstable winters and the financial crisis are other causes for wariness when expanding the ski offers in Slovakia. Political and ownership factors also play an important role in the development of resorts. The expansion of many resorts was realized or planned with the help of European funds with a doubtful rate of transparency concerning the designation of the projects to be supported. The high financial burden of investment in the large resorts caused their ownership to be concentrated on some capital-strong and mutually interconnected companies. The result of this selective policy can be the closing down of smaller resorts, like during the 2011/2012 season in Liptovská Teplička. In this village it got to the point in which

job opportunities were scarce and small local entrepreneurs developed an aversion towards the large investor whose reach covered the entire Tatra region.

In the past the ski resorts on the Polish part of the Carpathian Mountains were operated mainly within particular municipalities. The ski slopes reduced the possibilities of using other slopes, along with alternatives for skiers (Warszyńska-Jackowska 2007). In the last years attempts to create a system to interconnect the lifts and slopes among municipalities based on the example of the Alpine countries have appeared. However, the requirements of nature protection have obstructed its realization[10]. Current problems with the operation of ski resorts are caused by legally unresolved regulations concerning the opening of slopes to the public on private agricultural lands for the purpose of downhill skiing, as well as the settling of compensation for the owners. The problem is connected mainly with artificial snowmaking on the ski slopes, which causes long-lasting snow or ice covers, affecting the plant cover (Warszyńska-Jackowska 2007).

Spas, aqua parks and thermal pools

During the summer season there are favourable conditions for swimming in several reservoirs on the borderland – on the Slovak side, the touristically most attractive Liptovská Mara, the Orava Reservoir and the Veľká Domaša; on the Polish side in the reservoirs of Solina, Czorszty, and Żywiec. Numerous thermal springs are also located on the borderland. Tourists can use them in a number of spas (Rajecké Teplice, Turčianske Teplice, Lúčky, Liptovský Ján, Lučivná, Vyšné Ružbachy and Bardejov) (see Fig. 4.4), several aquaparks (e.g. Tatralandia Liptovský Mikuláš, Aquacity Poprad, Thermal Park Bešeňová and Meander Thermalpark Oravice), or at some thermal outdoor swimming pools. Although the curative function of the spas remains an important motive for their visit, strengthening their recreational and entertainment functions attracts a new and more solvent clientele. The Polish clientele makes up a considerable part of visitors (around 40%) mainly in the case of aquaparks. In contrast to the aquaparks mentioned above, the AquaRelax Dolný Kubín does not use a thermal spring but warmed water. Thermal pools are a new

[10] E.g. connection of ski resorts Krynica Górska and Wierchomlą via ski lifts and cable cars.

phenomenon on the Polish side and have been built in recent years (Bukowina Tatrzańska, Poronin and Zakopane). Mineral waters contributed to the building of many spas, which has attracted tourists for more than two centuries. The highest number of spas on the Polish side is located in the region of Beskid Sądecky, and on the Slovak side they are distributed more evenly.

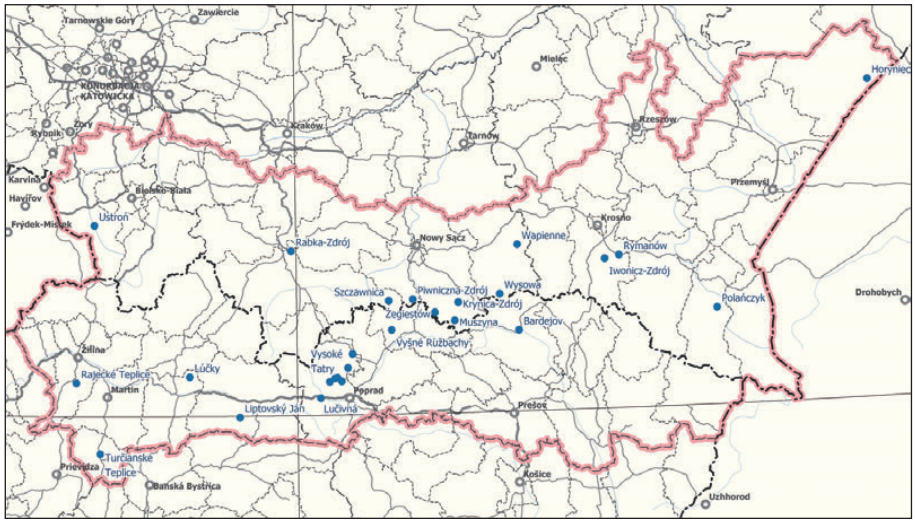

Figure 4.4. Spas on the Polish-Slovak borderland

Source: own elaboration.

The cooperation of aquaparks and ski resorts has materialized in the region in recent years. They cooperate in marketing and promotion not just in winter, but also in the summer season when ski resorts offer various "adrenaline" attractions. When it's the same owner the greatest interconnection regarding the offers of aquaparks and ski resorts is achieved: as in the case of Tatralandia Liptovský Mikuláš, which was bought by the company Tatry Mountain Resorts, in the season of 2010/2011, or the Meander Ski and Thermal Park Oravice. The Thermal Park in Bešeňová claims close ties with the Ski Park Ružomberok (Malinô Brdo) resort. There was an effort to build a spa complex directly in the cadastral area of the municipality in the Oščadnica – Veľká Rača resort. However, this project was not realized due to the negative outcome of its environmental impact assessment.

Cultural-historical heritage as a tourist attraction

The Polish-Slovak borderland is particularly valuable also from the point of cultural heritage. The religious and secular architecture (yeoman manors), historical urban structures and provincial buildings, manors with parks, archaeological sites, museums and traditional folk art, belong among the cultural riches of the Carpathian Mountains (Groch, Kurek, 1995). A total of 11,538 immovable historical buildings are located on the Polish-Slovak borderland: 6,736 on the Polish part of the borderland and 4,802 on the Slovak. Especially interesting should be considered the structures registered on UNESCO's World Heritage List, historical towns, open-air museums and wooden architecture (Fig. 4.5).

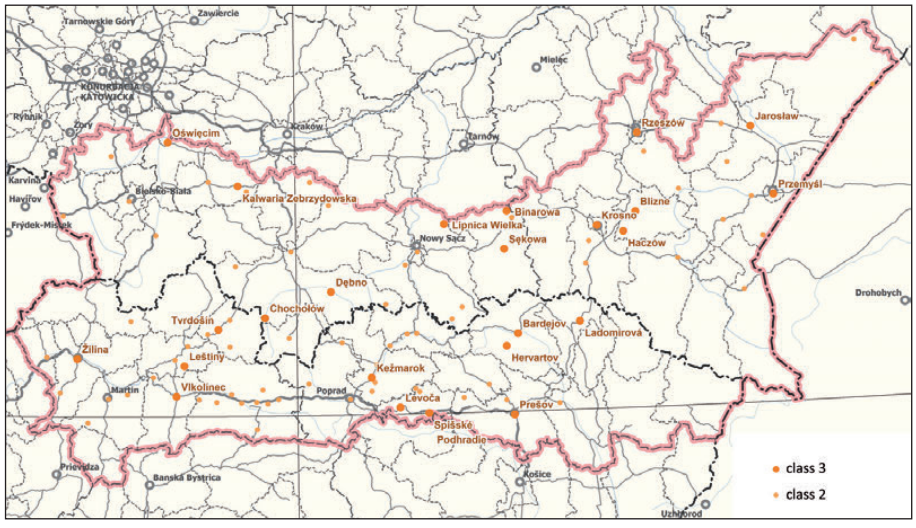

Figure 4.5. The most important cultural-historical sights on the Polish-Slovak borderland

Source: own elaboration.

The numerous sights registered on UNESCO's List of Cultural and Natural Heritage are located on the borderland. On the Polish side it is the monastery complex in Kalwaria Zebrzydowski, the wooden churches of the Małopolskie Voivodeship (Binarowa, Blizno, Dębno, Haczów, Lipnica Murowana and Sękowa) and the Auschwitz concentration camp. There are a lot more structures on the Slovak side: Vlkolínec, Bardejov, the wooden churches of the Carpathian Arc (Hervartov, Tvrdošín, Kežmarok, Leštiny, Bodružal and Ladomírová), Spiš Castle,

Levoča and other cultural sights in the vicinity (the Spiš Chapter, Spišské Podhradie, the Church of St. Spirit in Žehra). Although, it is important to state that Spiš Castle and the Ghotic church in Žehra belong to the region of Košice.

The traditional architecture of towns and villages was disturbed during socialism on the Slovak part of the borderland, as well as in other parts of Slovakia. The majority of monuments are in the regions of Spiš and Šariš. There are in total 11,379 movable historical objects and 5,510 movable cultural monuments in the regions of Žilina and Prešov. The districts of Levoča, Kežmarok and Prešov are mainly distinguished in the Slovak scale. The regions of Kysuce, Orava and northern Zemplín are significantly poorer from this point. There are eight urban conservation areas (Bardejov, Kežmarok, Levoča, Prešov, Spišská Kapitula, Spišská Sobota, Žilina and Podolínec), five conservation areas of vernacular architecture (Čičmany, Vlkolínec, Podbiel, Osturňa and Ždiar), six preserved castles (the most visited are Orava Castle and Castle Ľubovňa) and 28 castle ruins (the most visited are Spiš Castle and Strečno).

Levoča, Ľutina, Gaboltov, Rajecká Lesná, Turzovka (Živčák Hill) and Litmanová (Zvir Hill) are the most important Virgin Mary pilgrimage sites in the region. Other known Roman Catholic pilgrimage sites are Višňové, Oščadnica, Trstená, Bobrov, Zákamenné, Stropkov, Veľký Šariš, Vranov nad Topľou and Prešov (Calvary). Among the Greek Catholic pilgrimage sites located solely in the region of Prešov are Krásny Brod, Buková Hôrka, Šašová, Čirč and Rafajovce. Pilgrimage sites on the Polish side are, apart from others, Kalwaria Zebrzydowska, Kalwaria Pacławska and Ludźmierz.

More than 50 wooden temples (Eastern Orthodox church architecture) are located in the region of Prešov. 26 of them were declared national cultural monuments. Four of them were registered on the UNESCO World Cultural Heritage List (Hervartov, Bodružal, Ladomírová and Kežmarok). Apart from open-air museums in Humenné, Stará Ľubovňa, Bardejov and Svidník, the best examples of vernacular architecture can be found in the "living open-air museums" – the municipalities Ždiar and Osturňa. Some Evangelical wooden churches (Leštiny, Svätý Kríž and Istebné) and Roman Catholic churches (Tvrdošín and Žilina – Trnové), as well as open-air museums (Zuberec – Brestová, Pribylina, Nová Bystrica – Vychylovka and Martin – Jahodnícke Háje) can also be found in the Žilina region.

Among the most important monuments on the Polish side are churches and monastic complexes (e.g. in the towns Stary Sącz, Nowy Sącz, Sanok, Przemyśl, Bielsko-Biała and Rzeszów) and also small wooden churches and Eastern Orthodox churches (e.g. in Kwiaton, Powroźnik and Bereści). The urbanistic complexes of Cieszyn, Biecz, Stary Sącz, Bielsko-Biała, Nowy Sącz, Przemyśl, Rzeszów and Lanckorona are valuable from a historical and touristic view. The wooden architecture complex in Chochołów is also unique. Touristically, the most attractive castles and palaces are located in Nowy Wiśnicz, Niedzica, Czorsztyn, Bielsko-Biała, Żywiec and Sucha Beskidzka. Open-air museums can be seen in Sanok (the biggest open-air museum in Poland, additionally expanded in 2011), Zubrzyca Górna, Nowy Sącz and the Museum of the Oil Industry in Bóbrka near Krosno.

An important factor in the attractivity of the Polish-Slovak borderland is the cultural uniqueness and variety in the fine art and folk trades. The features of the traditional folk culture are preserved in many villages (ceremonies, customs, religious traditions and dialects). Lacemaking (Koniaków and Istebna), glass painting (Żywiec Region, Orava, Podhale and Spiš), woodcarving (Podhalie) and art smithery (Maków Podhalański, Miejsce Piastowe and Ustroń) can be found in the region of the Carpathian Mountains. Needlecraft and embroidery (e.g. folk dresses and costumes), lacemaking, tinkery (Veľké Rovné), wood processing (e.g. the production of shingles and woodcarving), the processing of metals and the treating of hides, basketry, the decoration of Easter eggs and pottery making are known on the Slovak part of the borderland.

Events

Various types of events, especially those which are held regularly, are one of the most important motives when deciding on a trip, excursion or tour. Cultural or sporting events can be the main reason for the trip or an important factor when planning the spending of free time. Events have different importance and range – from international events to ones with local importance. But an event declared as "international" does not have to be the most visited[11].

[11] For the needs of the project a database of regularly held events was created. It contains more than 200 folk, music, sport, dance, art, film, theatre and other events of various importance and level (international, national, regional, local). It turned out to be very

The International Folk Festival Ziem Górskich, the Winter Ski Jumping World Cup (both events held in Zakopane), the European Jan Kiepura Festival in Krynica-Zdrój, Beskid Culture Week (a series of events taking place in different municipalities e.g. Wisła, Żywiec, Ujsoły and Istebna) belong among the most important events on the borderland and they are also among the most important tourist attractions. These events are very popular – e.g. the concerts and performances which were held during the 41st Beskid Culture Week in 2010 were watched by more than 250,000 spectators in nine municipalities. The ski jumping competition in the World Cup is yearly visited by several tens of thousands of spectators (the competition in 2002 was watched by around 80,000 people).

Przemyśl, Rzeszów, Krosno and Iwonicz-Zdrój are the most attractive resorts with the highest number of cultural events in the Podkarpackie Voivodeship. Some of the events are organised within the ongoing projects of the Poland –Slovak Republic 2007–2013 Cross-border Cooperation Programme. The most active resorts in the analyzed area of the Małopolskie Voivodeship are Zakopane, Krynica-Zdrój, Nowy Sącz and Nowy Targ. The most events in the Silesian Voivodeship are held in Bielska-Biała, Cieszyn, Istebna, Ustroń, Wiśla and Żywiec.

The most visited folk festivals on the Slovak side of the borderland are annually organized in Terchová (Jánošík Days), Východná and Zuberec (Podroháčske Folklórne Slávnosti – Folk festival Under Roháče). Apart from this, many cultural events of particular regions are held annually (the Beskid Folk Festival in Turzovka, the Goral Folklore Festival in Orava, Kysuce in Skalité, the Valaský Folk Festival in Dolný Kubín, the Zamagurský Festival in Červený Kláštor, the Šariš Folk Festival in Raslavice, the Hornozemplínsky in Vranov nad Topľou, and the Hornotorysský Festival in Krivany). There are also events concerning national or linguistic minorities (Ruthenians and Ukrainians in

difficult to verify the gathered information, therefore we remind that this database does not have to be complete and some events can be missing from it. The quality and reliability of the prepared materials and information in particular regions on the borderland and the publishing of information about the events on the Internet had a considerable influence on the final content of the database. The dissemination of information about a particular event has a considerable influence on the fact that the event is known by potential tourists. The data concerning number of visitors are missing in a large number of organized events. Based on them we could estimate the range of influence of a particular event and place it in the corresponding category.

Svidník, Miková and Kamienka, Romany in Humenné and Kežmarok, Carpathian Germans in Kežmarok). Other interesting events are the International Festival of Bobbin Lace in Prešov, the International Sheep Shearing Championship in Liptovská Lúžna, the Opening of Dunajec in Červený Kláštor and numerous craft fairs. From the territorial point of view the concentration of large cultural events in the region of the Tatras is obvious. On the contrary, the events of local or regional importance are distributed more evenly.

Dominant kinds of tourism

There are favourable preconditions for the development of various kinds of tourism on the Polish-Slovak borderland (literature, see Section 5). Recreational tourism on the Polish-Slovak borderland is focused on relaxation in a natural environment, mainly in the mountain areas, on hiking and relaxation on water, e.g. at man-made reservoirs, some rivers and aquaparks. In particular mountain hiking, mountain climbing, cyclotourism, winter sports (downhill and cross-country skiing), water sports (sailing on mountain rivers) are being developed within the active and specialized tourism on the Polish-Slovak borderland. Another kind of tourism which has been developed in recent years is horse-riding tourism (hipotourism). Cultural tourism is also popular. It relies on the rich cultural heritage of the borderland. Sightseeing tourism is focused on the discovery of cultural heritage. Pilgrimages and visits to cultural events in the cities can also be categorized as cultural tourism. In the rural areas and in the ones with a valuable natural environment rural tourism is developing, mainly agrotourism, ecotourism, and excursion tourism, focused on getting to know animate and inanimate nature. The rich amounts of mineral water contributed to the development of spa and health tourism in some centres. A special kind of tourism focused on spa and wellness has been developing in the last years, though still undervalued. Congress tourism and business trips (e.g. the Economic Forum) still have secondary importance for the Polish-Slovak borderland. An important kind of tourism, also undervalued, is tourism connected with the attendance of various events. Shopping and transit tourism are also important in the vicinity of the state border.

4.2.2. INFRASTRUCTURE OF TOURISM (ACCOMMODATION FACILITIES)

Accommodation facilities are the main prerequisite for functioning tourism on the entire borderland. Most accommodation facilities are concentrated in the vicinity of the Polish-Slovak border (more on the Polish side), mainly in the immediate surroundings of the Tatras (see Map no.3 in the appendix). The offer of accommodation facilities is varied and there is every basic type of accommodation for visitors, including modern five-star hotels, pensions, sanatoriums, private accommodation and camping.

Private accommodation and to a lesser extent accommodation in agrotourist farms has a significant importance on the Polish side. The rate of private accommodation out of the overall capacity of all accommodation facilities is 50% or more.

Hotels of higher category on the Polish side are mainly concentrated in the Wisła Valley in the Silesian Beskid (Ustroń and Wisła), in Zakopane, Krynica and also in larger towns (mainly in Rzeszów). Hotel facilities suitable for congress tourism on the Slovak side are concentrated, apart from the main regional cities Žilina and Prešov, in the area of the High Tatras and Demänovská Valley (Fig. 4.6). However, it is also possible to find congress hotels in other regional towns (Martin, Ružomberok, Liptovský Mikuláš, Čadca, Poprad, Levoča, Bardejov, Spišské Podhradie, Humenné and Snina), as well as in many spa centres (Liptovský Ján, Bešeňová, Rajecké Teplice and Vyšné Ružbachy).

1,384 accommodation facilities (Statistical Office of the Slovak Republic, 2011) with over 60,000 beds are located on the Slovak part of the borderland. Most of them (17%) are in hotels of medium category (***). In pensions there are 16%, in hotels of lower category (* and **) 15%, in tourist hostels 13%, and in private accommodation 6%. Hotels of higher category (**** and *****) make up 9% of the vacancies. The number and structure of accommodation facilities in the region of Žilina and Prešov are very similar. The utilization of accommodation capacities is rather low, although for Slovakia it is average (approximately 25%). The most visited hotels are those of higher category (approximately 50%). The least used are pensions, tourist hostels and private accommodation. However, there could be a problem with the insufficient record keeping of accommodated guests in these types of facilities.

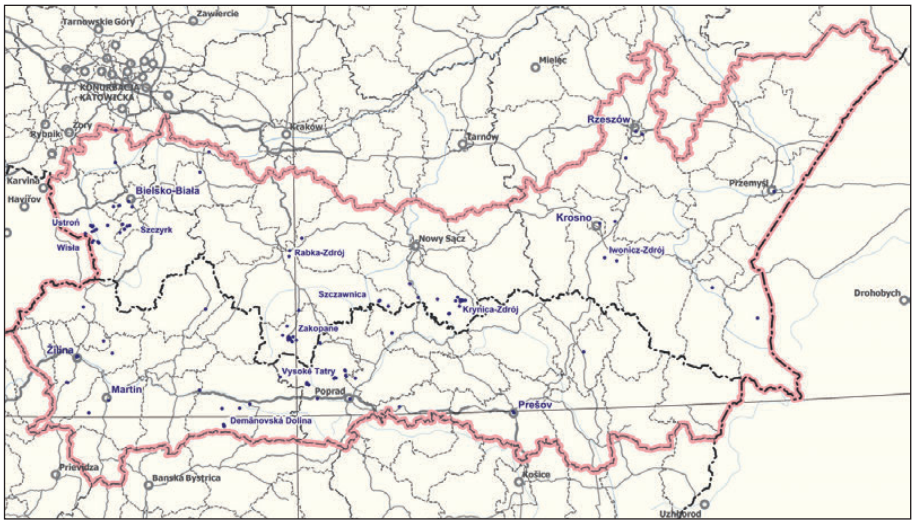

Figure 4.6. Distribution of higher category hotels on the Polish-Slovak borderland (4 and 5 – stars hotels)

Source: own elaboration.

The area is strongly differentiated from the perspective of tourist infrastructure and turnout. Almost one third of all accommodation capacity, 39% of the bed capacity and half of the amount of overnight stays[12] are concentrated in two Tatra districts – Liptovský Mikuláš and Poprad. From the perspective of the number of overnight stays the facilities in the districts of Tvrdošín, Žilina, Ružomberok, Turčianske Teplice, Stará Ľubovňa and Bardejov are important too. The least visited districts are Bytča, Kysucké Nové Mesto, Námestovo, Stropkov, Svidník and Snina. In 2001–2008, the turnout in the Žilina region increased by 21%; however, in the Prešov region it decreased by almost 16%, which was the biggest slump out of all the regions in Slovakia. The eastern part of the borderland, especially the Nízke Beskydy, has relatively low accommodation capacities (on both sides of the borderland). The growing interest of tourists in this part of the Carpathian Mountains has created great opportunities for the general development of tourism in the area.

[12] By an overnight stay we mean the overnight stay of a natural person in the facility providing services of temporary accommodation, which was registered in the state statistical register by the service provider, paying local tax for the accommodation to the municipality

The largest concentration of chalets is on the Polish-Slovak borderland, in the territory of Poland, as well as in Slovakia. The chalets remain the traditional place for accommodation despite the fact that accommodation facilities located outside of the mountain area – e.g. in the valleys, hollows, towns – receive bigger importance for mountain hiking. Chalets are usually located in higher areas of the mountains and are interconnected by a network of tourist pathways. They enable tourists to experience immediate contact with mountain nature, provide the opportunity to stay in the mountains from sunrise to sunset, and make treks among particular chalets without leaving the mountains. The chalets located relatively near the border are important concerning the possibilities of developing cross-border hiking in the mountainous environment. Remote chalets (located more than a few hours' walk away) are suitable as starting points for getting to know the more remote parts of the neighbouring state.

4.2.3. TURNOUT OF THE POLISH-SLOVAK BORDERLAND

The turnout of particular regions of the Polish-Slovak borderland is spatially differentiated. In the Tatra region there is a large concentration of visitors, in Poland as well as in Slovakia. Other often-visited areas are Pieniny (mainly sailing on the Dunajec River), the Low Tatras, the Malá Fatra, the Veľká Fatra and the western part of the Beskydy on the Polish side (the Silesian Beskid and the Żywiec Beskid).

The number of tourists on the Polish part of the borderland exceeds 2 million per year, more than 85% of them citizens of Poland. The Slovak part of the borderland was visited by almost 1.27 million visitors in 2010. Domestic visitors made up almost two thirds of visitors (65.9%). The region of Žilina (658,000) is, after the Bratislava region (768,000), the second most visited. The region of Prešov (611,000) is the third most visited in Slovakia. 37.4% of all the tourists in Slovakia visited the Žilina and Prešov regions.

Some of the particularly attractive places and regions (mainly the Tatras) are also often the target of foreign tourists, mainly from Germany, the Czech Republic and Poland in Slovakia; in Poland mainly from Great Britain, Germany and Ukraine. The cross-border tourism between both countries is very important for the Polish-Slovak borderland. However, it shows large disproportions. When visiting Slovakia,

Polish inhabitants use the services of accommodation facilities more often than Slovak visitors in Poland.

Turnout of Polish citizens in Slovakia

The overall number of Polish citizens who crossed the border to Slovakia in 2007 was 5.5 million. Since 1993 (establishment of an independent Slovak Republic) Polish citizens ranked at third place after Germany and the Czech Republic. However, the number of Poles in Slovakia who were also accommodated during their stay (at least one overnight stay) was a lot lower and, e.g. based on the estimates in 2007, it was 450,000 people (Fig. 4.7). The amount of Polish tourists among all the people crossing the border to Slovakia was therefore only around 8%.

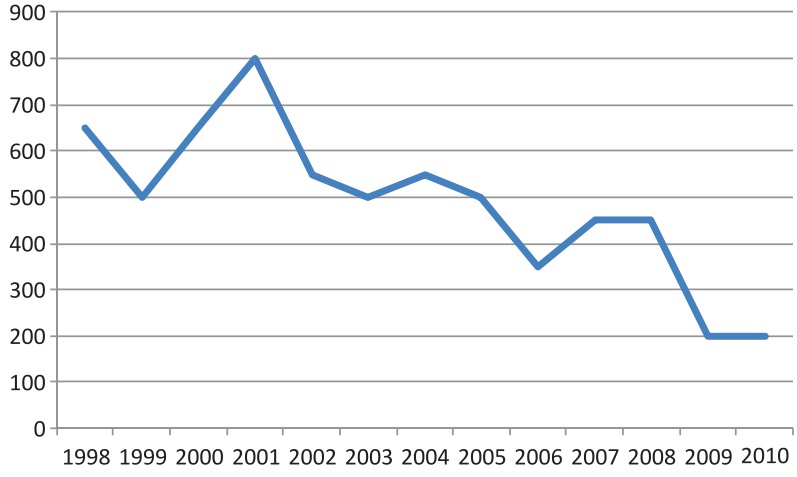

Figure 4.7. Number of Polish citizens who visited Slovakia and stayed there for at least 24 hours in the years 1998–2010 (in thousands)

Data source: Institute of Tourism (Instytut Turystyki); own elaboration.

In regard to the number of accommodated tourists and the number of overnight stays within the last ten years there were the least Polish visitors in Slovakia in 2004 and the most were in 2008 (Tab. 4.3). After a period of growth (2004–2008) there was again an decrease in the number of Polish visitors to Slovakia mainly due to the introduction of the new euro currency and the consequences of the world economic crisis.

Table 4.3. Development of the number of Polish visitors in accommodation facilities in Slovakia (in thousands)

	2002	2003	2004	2005	2006	2007	2008
Number of visitors	266,9	215,4	179,1	198,5	224,2	243,9	308,4
Number of overnight stays	940,8	703,1	563,4	607,9	719,8	762,9	942,0
Average length of stay	3,5	3,3	3,1	3,1	3,2	3,1	3,1

Data source: Ministry of Economy of the Slovak Republic, Department of Tourism; own elaboration.

The number of Polish tourists spending at least one night in Slovakia at official public accommodation facilities (e.g. hotels, camps, tourist chalets) is even lower. Data about the number of overnight stays are provided by the Statistical Office of the Slovak Republic (2011). In 2010 the number of tourists from Poland who spent a night in Slovakia was 161,851. In total, they spent 453,067 nights with the average length being 2.8 nights. Almost 40,000 Polish tourists visited the region of Bratislava. In the Prešov region it was 31,900 and in the Košice region 12,300. The highest amount of Poles in the overall turnout was noted in the regions of Žilina (8.9%), Prešov (5.2%), Bratislava (5.2%) and Košice (4.4%). In the regions of Banská Bystrica, Nitra, Trenčín and Trnava the number of Polish visitors is relatively low (from 4,200 to 5,500). Their percentage in the overall number of visitors in these regions represents only 2.1%. A large number of Polish tourists come to Slovakia alone (85–90%).

The most visited region in Slovakia by Polish tourists is that of Žilina. 58,463 Poles stayed overnight in 2010. The number of overnight stays reached 201,816, with the average length being 3.5 days, which is higher than the average for all of Slovakia. According to nationality most foreign tourists were from the Czech Republic: 16.1%. Their number, in comparison with 2009, increased by 3.6%. The overall number of Polish tourists reached 8.9% out of all visitors; but in comparison with 2009 their number decreased by 6.8%. Three quarters of the number of stays by Polish tourists in the region of Žilina fell in the districts of Liptovský Mikuláš and Ružomberok (Fig. 4.4), which proves their definite preference for the Liptov region (mainly the Tatras and the Tatralandia and Bešeňová aquaparks) as a tourist destination. A relatively small number of Polish tourists head to the western part of the region (apart from the Malá Fatra range and the municipality of Oščadnica). The highest

amount (14.2%) was attained in the district of Tvrdošín where Roháče Mountain and the aquapark in Oravice are often visited.

In 2010, the region of Prešov was visited by 31,797 Polish tourists (4.9% of the overall number of visitors), who together made up more than 99,122 overnight stays (in average 3.1). Two thirds of the number of overnight stays was in the district of Poprad. The number of Polish visitors in this area was half in comparison to the district of Liptovský Mikuláš. Then there were the districts of Kežmarok (the region below the Tatras and Pieniny) and Stará Ľubovňa (Pieniny). The highest amount (10.5%) was attained in the district of Stropkov, where tourists were attracted mainly by the Veľká Domaša reservoir. The low amount of Polish tourists in the district of Bardejov (less than 1%) is also interesting. It is possible to explain it by the preference for spas on the Polish side of the borderland and also by the high amount of one-day visitors from Poland. The relatively small number of overnight stays in the district of Levoča can be, apart from the high cultural-historical attractivity, explained by the lack of additional activities for which visitors would be willing to stay longer. There is a very low turnout in the eastern part of the region – the infrastructure of tourism is lacking compared to the Polish side and the attractions are similar – wooden churches and primeval beech forests in Poloniny National Park.

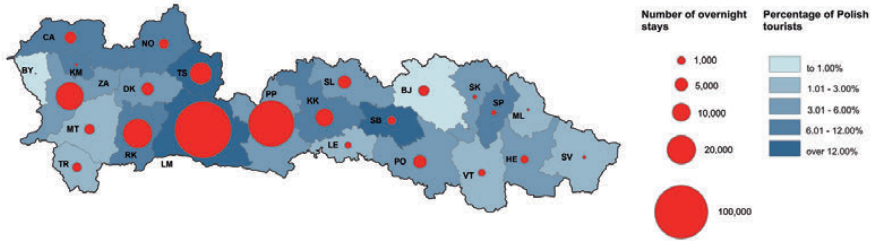

Figure 4.8. Turnout of Polish tourists in the Slovak part of the borderland in 2010

Data source: The Žilina and Prešov self-governing regions; own elaboration.

Turnout of Slovak citizens in Poland

When analysing the turnout of Slovak citizens in Poland we can use three categories of data: the number of people crossing the state border; the overall number of Slovak citizens travelling to Poland who spend at

least one night there; and the number of Slovak citizens staying overnight in public accommodation facilities.

The number of Slovak citizens who crossed the border into Poland reached 3.1 million in the last year of complete record keeping concerning the number of people crossing the Polish-Slovak border (2007). In the majority of cases visits to the borderland prevail. The aims of these visits differ, but mostly they are shopping trips and ones lasting just several hours. The citizens of Slovakia visiting Poland (without accommodation) only rarely travel further than 50 km from the border.

The number of Slovak citizens who stay in Poland overnight is considerably lower than the number of visitors who go there only for several hours. According to the estimates of the Institute of Tourism (Fig. 4.9) the number of visitors from Slovakia with at least one overnight stay reaches around 80,000 yearly, which is the least from all the countries neighbouring Poland (cf. Więckowski 2010a).

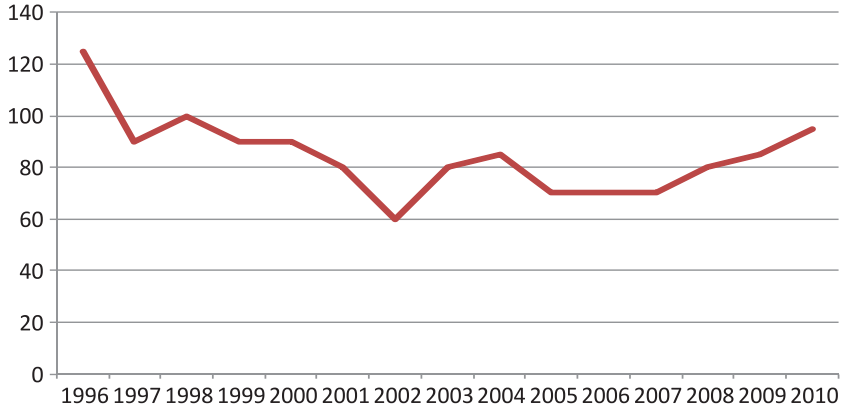

Figure 4.9. Number of Slovak citizens who spent at least one night in Poland in the years 1996–2010 (in thousands)

Data source: Institute of Tourism (Instytut Turystyki); own elaboration.

The purposes of a journey to Poland among this group of visitors from Slovakia are business meetings, visiting of family and friends, and recreational tourism. Slovaks visit mainly the bigger cities (Kraków, Warsaw) and the towns in the Silesian Voivodeship.

Most Slovak tourists stay overnight in the Masovian Voivodeship, the Małopolskie Voivodeship and the Silesian Voivodeship. There were a growing number of visitors to Kraków and the medium-sized and

small municipalities in the Silesian Voivodeship (Cieszyn, Ustroń), the Małopolskie Voivodeship (Zakopané, Krynica) and in Rzeszów. Visitors from Slovakia account for around 0.9% of all foreign visitors coming to Poland. A higher turnout from Slovakia in comparison with this average was recorded in the Małopolskie, Silesian, Opole, Lublin and Greater Poland Voivodeship.

4.2.4. CROSS-BORDER DIMENSION OF TOURISM

From the natural and socio-economic view the Polish-Slovak border is a homogenous area which was, during many decades, used differently in terms of economy and tourism on both sides of the border. The process of the unification of both sides began approximately 20 years ago, mainly due to the changed political situation, new infrastructure, common initiatives, events, promotion, etc. The development of tourism is one of the most important developmental factors of the entire Polish-Slovak borderland. At the same time, tourism is an area with a direct influence on the creation and strengthening of cross-border relations between Poland and Slovakia. The cross-border dimension of tourism can have the form of cooperation and also competition. The cooperation is visible in two aspects, which is the creation and common promotion of thematic trips (trips for tourists using car and bicycle routes), starting from both sides of the borderland through places with important natural and cultural-historical attractions, as well as the organization of the number of various meetings and events (cultural, sport, tourist, etc.). In contrast, there is competition when the same or similar potential for tourism is used on both sides of the borderland.

The Slovak Agency for Tourism (SACR) has had official representation in Poland (Warsaw) since 2002 – *Narodowe Centrum Turystyki Słowackiej.* Its role is to promote Slovakia as a tourist destination to the Polish public, journalists and professionals with the organization of presentations, conferences, info-tours and cultural events.

Cross-border tourist routes

An important function of cross-border tourist routes is their integrating function in relation to the municipalities and people living on the borderland. They also help to popularise the cultural and natural heritage. Tourist routes can help with the activation and development of local companies and organizations which are on the borderland,

Tripoint

Factors of cooperation with the aim of creating a common tourist product are visible in the case of the so-called tripoint, i.e. the place where the borders of the three countries meet: Poland, Slovakia and the Czech Republic. Before 1993, that is before the division of Czechoslovakia, this area was not attractive and was located on the Polish-Czechoslovak border. The division of Czechoslovakia caused the creation of a place where the three state borders meet. The point where the borders meet created a special tourist attraction, although there was not good access to it. The Tripoint Development Programme was created from the initiative of three neighbouring municipalities. The financial resources (Istebna gmina) from the INTERREG IIIA Poland – Slovak Republic 2004–2006 Programme and the Microprojects Fund of the Czech Republic – Polish Republic 2007–2013 Cross-border Cooperation Programme (via the Euroregion Cieszyn Silesia – *Śląsk Cieszyński*), enabled the creation of basic road and tourist infrastructure (paths for pedestrians, bicycle routes, shelter for tourists, a wooden bridge above the stream, etc.). Three symbolic marble memorials were also built there. Promotional materials were published, as well as a single tourist map (instead of three different maps of the Polish-Czech-Slovak borderland). The map also contains descriptions of tourist attractions, routes and events. Via the web page the region invites you on an "original trip through three countries connected by the imbibing of Czech, Polish and Slovak beer, three currencies in your wallet, and three different languages with the Goral dialect mixing everywhere." The Valy archaeological site is located in the vicinity of the Slovak side. Its deficiency is the absence of an interconnection with the tripont. The appearance of the Slovak part is negatively influenced by the numerous drastic clearings compared to the mosaic structure of the country in the Polish and Czech parts.

and can also contribute to the development of business. The direct cooperation in this area is not very intense, limited mainly to setting the route and the dissemination of information regarding tourist attractions. However, it seems that this is not enough to reach the stated goal. Its result is the offer of a cross-border route leading through the places with the most important attractions for tourists Selected cross-border tourist routes on the Polish-Slovak borderland are Cross-border cyclotourist route "Beskid Museums", Carpathian Wine Route, Trip to Carpathian temples and sanctuaries, Gothic route (in the Polish-Slovak borderland) and Intercultural tourist route on the Polish-Slovak borderland. A well-promoted tourist product can stimulate the development of the stated area.

Meetings through various sports, cultural, and other events have different dimensions in cross-border tourism. They are usually connected with the cooperative realization of projects or microprojects financially

supported from EU funds through the Poland –Slovak Republic 2007–2013 Cross-border Cooperation Programme. A particular problem of cooperation through the organization of events is the continuity of such meetings, because some of them are held only once, i.e. during the period of project financing.

The competitive factors in cross-border tourist relations are mainly specialized kinds of tourism such as sailing, aquaparks, spas and winter sports, and mainly downhill skiing. A typical example of competition is rafting through the Dunajec River Gorge, which is organized by the Polish as well as the Slovak side (see the frame in the section 4.3.3. Pieniny).

Ski resorts

A visible sign of competition between the Polish and Slovak side of the borderland is the competition among winter sport resorts. There are significant differences in the natural conditions for downhill skiing on both sides of the borderland. There is only one mountain ski resort on the Polish side of the Tatras (Kasprowy Wierch, 1,987 metres above sea level) while on the Slovak part there are three of them: Tatranská Lomnica – a ski resort located at the highest altitude in Slovakia (2,196 metres above sea level), Štrbské Pleso (tracks reach a height of 1,823 metres above sea level) and the Roháče – Spálená Dolina resort in the Western Tatras where the tracks reach a height of 1,454 metres above sea level. Another alpine ski resort is located in the Low Tatras (Chopok, 2,024 metres above sea level). There are also significant differences in the organization and infrastructure of the ski resorts. Small resorts with several ski lifts and ski slopes up to 2 km long prevail on the Polish side. For example there are more than 20 ski lifts in Bukowina Tatrzańska, but the best ski pass includes the possibility of using only 5 of them (Olczański Wierch). There are almost 40 cable cars and ski lifts in Zakopane and Kościelisk, and the biggest resort Nosal, has five ski lifts. This is the biggest organizational problem in the development of tourism in Polish ski resorts. There's also a similar situation in other Polish ski resorts, e.g. the ski passes in Korbielow are valid only at the resort in which they were bought. In contrast, since the 2006/2007 season, in Slovakia it has been possible to buy the Slovakia Super Skipas, which is valid for the six most important ski resorts – Jasná, The Low Tatras, The High Tatras – Tatranská Lomnica,

Štrbské Pleso, Park Snow Donovaly, Snowparadise Veľká Rača and Ružomberok – Malinô Brdo. And the 10-day, 15-day or whole-season ski pass enables visitors to ski on 94 km of ski slopes and use 24 cable cars and 55 ski lifts.

A great advantage of Slovak resorts is good promotion and easily accessible tourist information (in Polish as well) about upcoming attractions, accommodation possibilities, transport and other useful information. In the case of Polish resorts the level, amount and accessibility of information is insufficient. An important competitive factor in some Slovak resorts is easy, trouble-free accessibility, e.g. special ski buses from Zakopane, Katowice and Kraków. The difference in quality of provided services is seen through companies offering one-day trips to the resorts on the Slovak side.

The Slovak resorts are bigger and offer downhill ski slopes of various difficulties, which are less overcrowded in comparison to the ski slopes in Poland. The average price of ski passes on the Polish side of the Tatras is 70–80 PLN/day. The prices of ski passes in Slovakia depend on the resort and date, and in the main season the price for an all-day ski pass ranges from 13 to 29 €. There's a system of ski passes connecting several resorts in Slovakia. Apart from the higher quality of offered services and longer downhill ski slopes, Slovak resorts also offer well-prepared cross-country tracks as well as a wide variety of other attractions, e.g. a sledge track, and climbing walls, downhill paths for bikes, and aquazorbing in the summer season.

The actual exchange rate for the euro directly influences the number of Poles visiting Slovakia. Until 2008, Polish ski resorts were unsuccessful at competing with Slovak resorts offering better services for a lower or comparable price. The situation changed in 2009 after the introduction of the euro in Slovakia. The considerable fluctuation of the exchange rate caused Polish tourists to stop visiting Slovak resorts; moreover, Polish ski resorts were benefiting from this. Slovak resorts started to compete with Polish ones to get Polish customers through various discounts, the lowering of prices for Polish tourists, service packages, and even with the introduction of special ski buses bringing tourists from selected towns in southern Poland. The new offers were accompanied by the increasing quality of prepared ski slopes and provided services. The offer of Slovak resorts is also more attractive because resorts on the Polish side often have legal and administrative

problems reflected in the quality of provided services. Problems with the fencing of ski tracks, large pressure from protective organizations to preserve the forest cover, insufficient interconnection of small ski resorts and restrictions connected with the usage of artificial snowmaking, all add up to the fact that, concerning the readiness of ski slopes, the Polish resorts are less successful than the Slovak ones.

Aquaparks

There is a small number of aquaparks on the Polish side which could successfully compete with the ones in Slovakia. Only 17 parks are in operation on the Polish side of the borderland, while we also offer pools for sport and recreation, along with pools in sanatoriums. In Poland, they are usually small facilities with a limited number of attractions. The bigger aquaparks are only in Zakopane, Bukowina Tatrzańska, Szaflary and Białka Tatrzańska. The natural potential of thermal waters is much more intensively used on the Slovak side. There are 62 such facilities if we also include other outdoor swimming pools. The biggest aquaparks are in Liptovský Mikuláš, Poprad, Bešeňová, Oravice, Dolný Kubín and Turčianske Teplice. Aquaparks themselves are a sufficient tourist magnet, enriching the offers on the borderland, and they are also an addition to skiing during the winter season. Apart from the higher number of facilities on the Slovak part of the borderland, i.e. aquaparks and swimming pools (including thermal), their prices are also more favourable. For example, the all-day ticket for an adult to Aquacity Poprad or Tatralandia in Liptovský Mikuláš costs 17 and 19 €, while an all-day ticket to similar facilities in Poland, like at the thermal pools in Bukowina Tatrzańska, cost 22 €.

4.3. TOURISM IN SELECTED REGIONS

4.3.1. THE BESKIDY MOUNTAINS

The selected region of the Beskydy consists of five municipalities on the Slovak side (Čierne, Skalité, Oščadnica, Čadca, Svrčinovec) and three gminy on the Polish side (Istebna, Milówka, Rajcza), located in the western part of the Polish-Slovak borderland near the border with the Czech Republic. The region of the Beskydy is created by parts of the Silesian Beskid and Żywiec Beskid mountains on the Polish side and

the Kysucké Beskydy on the Slovak side. A large part of these mountain ranges belongs to a network of protected areas – Krajobrazowy Beskidu Śląskiego Park (Silesian Beskid Landscape Park), Żywiecki Park Krajobrazowy and Kysuce Landscape Park. A specific feature of the area is the spatial vicinity of the large conurbation of Upper Silesia – Katowice and Ostrava, with a population of more than 5 million inhabitants representing an important source of tourist demand (potential tourists). The region of the Beskydy is characterized by rather good road infrastructure in comparison to other analysed areas. There are good conditions for the development of summer as well as winter tourism, but the latter prevails.

The Veľká Rača massif (1,236 metres above sea level) dominates the Slovak part of the region. During the last twenty years one of the most important ski resorts in Slovakia (see the frame) was created in the cadastral area of the Oščadnica municipality. A smaller ski resort is located in the village of Čierne. The Skalité-Serafínov resort, a short time ago still interconnected with the Zwardoń Polish one, is not in operation due to unclarified proprietary matters. The small Husárik ski resort on the edge of the town of Čadca was in the same situation. The trend of using ski resort transport (mainly cable cars and ski lifts) for various "adrenaline" activities is also visible in Kysuce, mainly in the resort of Oščadnica – Veľká Rača. The longest bobsleigh track in Central Europe is located there. During the summer season the resort also has a rope park, climbing walls, downhill mountain bike and scooter rentals, and archery.

The ski resorts located in the Silesian Beskid and the Żywiec Beskid are one of the biggest in Poland (Szczyrk and Korbielów). The biggest ski resort in the area of three analyzed gminy is Zwardoń. Skiers can use more than ten ski lifts measuring more than 7 km. Apart from the Zwardoń resort smaller ski lifts are located in Kamesznica, Sól, Rycerka Dolna, Rycerka Górna, Ujsoły and Laliki. For the Polish ski resorts there is significant competition in the intense development of the above-mentioned Snow Park Veľká Rača ski centre on the Slovak side (see Section 4.2.4. Cross-border dimension of tourism).

Important tourist resorts are located in both Polish mountain ranges reaching into the selected region, as for example Wisła, Szczyrk, Istebna, Zwardoń and Korbielów. Apart from the aesthetics of the land, the territory of the three analyzed gminy (Istebna, Milówka and

Rajcza) is typical for its cultural values connected with the preservation of regional traditions (regional folk costumes and folk art). An important factor enriching the tourist offer are numerous events (mainly folk and sport), as for example the Days of Koniakow Lace, the Festival of Istebna, International Ski-tourist Travel "To the Springs of Wisła" (Istebna gmina), and the Wawrzyńca Markets (Rajcza gmina).

The region of Kysuce is relatively poor in cultural-historical monuments. The Kysucké Museum in the town of Čadca offers an exhibition of the history and nature of the region, Gallery of Kysuce residing in the manor house in Oščadnica. An event of international character is the Goral Festival in Skalité where folk groups from Slovakia, the Czech Republic and Poland perform annually. Other events are mainly of regional to local importance like the trade fairs in Čadca, Oščadnica and Skalité.

The southern part of the landscape park of Kysuce, Bystrica River Valley, is interesting from the perspective of potential tourism. The open-air museum of Kysuce village in Vychylovka with a unique headland narrow-gauge forest railway is one of the biggest attractions in Kysuce. The headland railway in the section of Zbory nad Bystricou – Nová Bystrica has, with financial support from the EU, been reconstructed into a cycling route. The astronomical clock in Stará Bystrica is the biggest wooden statue in Slovakia.

In the region there are good conditions for hiking, road and mountain cycling, and cross-country skiing. There is a relatively dense network of tourist pathways and chalets. Part of the main Beskid tourist track in Poland goes through the Silesian Beskid and the Żywiec Beskid. It leads from the Ustroń resort (beginning of the path) in the Silesian Beskid through Czantoria, the Kubalonka mountain saddle, and from Barania Góra to Węgierska Górka. From there, in the territory of the Żywiec Beskid, it passes through Hoľa Rysianka, and Babia Hora to Rabka-Zdroj. The development of tourism in the Slovak part of the region in the last years has been negatively influenced by intense deforestation due to the bark-beetle calamity. Due to the clearings in various localities the aesthetic quality of the mountain country was considerably disrupted and tourist marks are often missing. This can be an obstacle in the development of rural tourism and agrotourism, which has certain potential in the villages, however untapped till now.

In the Slovak part of the region, there is a dense network of local and special-purpose routes suitable for the development of cyclotourism, road and mountain. The main cyclotourist track is the Kysuce cycling route, passing through the entire region of Kysuce. In Skalité the Kysuce cycling route joins with the cycling route to Poland, crossing the border on the road Skalité – Zwardoń-Myto.

Oščadnica – Veľká Rača Ski Resort

One of the most important ski resorts on the Polish-Slovak borderland is Oščadnica, located below the highest peak of Kysucké Beskydy, Veľká Rača. This municipality was at the time one of the most intensely developed (around 2002–2007), positioned as an example to other rural municipalities in Slovakia concerning the generation of job positions in the tourism sector. At the beginning of the millennium, unemployment in the municipality decreased from 27% to less than one-third. Since 2002, the resort has increased its transport capacity approximately fourfold (to 9,700 people/hour) and its turnout increased tenfold in ten years (to approximately 350,000 people in 2006). An important factor in the success rate of this kind of development was the cooperation of the municipality and the investor, and also the entrepreneurial spirit which they succeeded in creating. The vision of a decent living from running private accommodation led many inhabitants to do business. The prices of estates and the interest of investors in building new accommodation have rapidly increased. Apart from profit, intensive marketing, as well as organized transport by ski buses from many cities in Slovakia, Poland and the Czech Republic, also caused an excess in capacity that the area could not bear. Transport and service infrastructure became insufficient. Based on the vision of the mayor and an investor, until 2020 the resort should have increased its transport capacity to more than 33,000 people/hour, which would have made it the biggest in Slovakia. The bed capacity was supposed to have increased to 9,000 beds. And financing was supposed to have been largely covered from EU funds. However, the realization of these plans was halted due to disagreements among the involved entities and the resort's bankruptcy, the relatively higher prices for Polish visitors after the introduction of the euro, unstable winter weather, and finally the global economic crisis.

Today, nobody, including the resort operator, is thinking about the mass expansion of the resort, which was also supported in the update of the municipality's local plan, as well as approved by the management of the Kysuce Landscape Park. The prices of the premises along with the turnout continuously decreased, many accommodation construction projects remaining unrealized. During the last years many new facilities for individual tourism have been created (cottages), including a 7.2 km long nature trail through the Veľká Rača massif as well as a "greenway" path along the whole municipality, which can be a precondition for the development of "gentler" forms of tourism in Oščadnica. The case of this resort shows what the possibilities are, but it also shows the limits in the development of tourism in the submontane municipalities of the Polish-Slovak borderland.

One of the biggest tourist attractions in the region of the Beskydy is the tripoint, i.e. the point where the borders of three countries meet: Poland, Slovakia and the Czech Republic. Projects which were realized there are good examples of cross-border cooperation with the aim of promoting new tourist products (see Section 4.2.4. Cross-border dimension of tourism).

There is a well-developed network of accommodation facilities in the Silesian and Żywiec Beskid. Based on official statistics in 2010, there were 41 public accommodation facilities with an overall capacity of 2,100 beds in the three analyzed Polish gminy. More than one half of them were in the Rajcza gmina. More than 51,000 tourists used accommodation facilities in 2010. However, based on the information published on the official Internet sites of the gminy, the overall number of public accommodation facilities in these gminy is 224: more than half of which are to be found in the Istebna gmina.

Based on the data of the Statistical Office of the Slovak Republic (2010) there were 76 accommodation facilities with 2,312 beds in the district of Čadca, part of which is also our stated area. After the boom from 2005 to 2008, when the number of overnight stays went up to 75,000 yearly, the number of overnight stays in 2010 decreased to the 2004 level due to the economic crisis. A significant amount of bed capacity is registered in the Oščadnica municipality (36 facilities and 830 beds). In 2010, a selected area of 5 municipalities was visited by 14,377 tourists, who spent 31,962 nights there. Almost one-third of visitors in the area were foreign tourists.

4.3.2. THE TATRAS

The Tatras, known as "the smallest high mountains in the world" are, thanks to their high-mountain (alpine) character, the biggest natural and tourist magnet in Slovakia and in Poland. It is the oldest national park in Slovakia (Tatra National Park (TANAP), 1949) and one of the first in Poland (TPN, 1954). In 1993, the area of the Tatras was declared a biospheric reserve by UNESCO. The Slovak part comprises 738 km^2 (along with a protected area of 1,045 km^2) and the Polish part comprises almost 212 km^2.

The Tatras are the most-visited mountain range in both countries. Due to the larger area and lower turnout, the Slovak part is relatively less influenced by tourist infrastructure than the Polish side.

Hiking (mainly in summer) and skiing dominate in the Tatras. Visitors of the Polish part of the Tatras can use 275 km of marked tourist trails with various levels of difficulty from very easy to very demanding, provided with fixed safety aids. More than 110 different types of ski transport devices are in operation in the region of the Tatras during the winter season (mainly outside the National Park). The overall capacity of the devices is more than 81,000 people/hour. The overall length of the ski tracks is more than 49.5 km and most of them are floodlit. The biggest ski resorts are Zakopane, Białka Tatrzańska and Bukowina Tatrzańska. A dense network of cross-country tracks is located in the upper part of Dolina Bystra (Dolina Goryczkowa and Dolina Kondratowa). Moreover, the ski cross-country track leads from Hala Gąsienicowa to Kuźnic and through the Dolina Chochołowska Valley.

There are 600 km of marked tourist tracks, 17 chalets in operation, and 35 high mountain valleys available to the public and 18 peaks with an altitude exceeding 2,000 m in the Slovak part of the Tatras. More than 100 tarns, and lakes of glacial origin, are located in the area of Tatra National Park. The most important starting points for hiking in the Western Tatras are Zverovka (Roháče), Žiar and Pribylina. In the High Tatras these are Podbanské, Štrbské Pleso, Vyšné Hágy, Nová Polianka, Nový and Starý Smokovec, Tatranská Lesná and Tatranská Lomnica, while in the Belianske Tatras they are Tatranská Kotlina, Ždiar and Tatranská Javorina. According to the number of tourists in the high mountain area the most frequently visited areas is Štrbské Pleso, Solisko, located in its vicinity, and Mlynická Dolina (the Mlynická Valley), Popradské Pleso (Poprad Tarn), Hrebienok and Skalnaté Pleso (Rocky Tarn). In the Western Tatras these are the Roháčska and Žiarska valleys. Despite the high attendance of Slovak areas, some of the less accessible valleys (Tichá, Kôprová and Javorová) are relatively little-visited even in the main season.

The Tatra region belongs among areas with good conditions for the development of skiing. Skiing itself has a long tradition in the region of the Tatras. The first cable car (cable railway from Starý Smokovec to Hrebienok) has been in operation since 1908. The first suspension cable car was built in 1937 from Tatranská Lomnica to Skalnaté Pleso and since 1940, to Lomnický Štít. The first skiing season in Slovakia was in the winter of 1936/1937, when the first downhill ski slope from

Skalnaté Pleso to Tatranská Lomnica opened. The first ski lift designed especially for skiers was built from Štrbské Pleso to Solisko in 1943. A significant increase in the number of transport machines occured from the 60s to 80s. During socialism the cable lines were operated by the Czechoslovak State Railways company. After 1989 they were operated by the Railways of Slovak Republic. These devices were privatised in 2004. The three most prestigious resorts (Štrbské Pleso, Starý Smokovec and Tatranská Lomnica) are being operated by the company Tatry Mountains Resorts.

Naturally, the most attractive ski resorts situated in the alpine environment are Tatranská Lomnica, Štrbské Pleso, Starý Smokovec – Hrebienok, Zverovka – Spálená and Ždiar – Strednica. The resorts in the Tatras have in total 73 downhill ski slopes, with an overall length of 64 km. The transport capacity totalling 44 ski lifts and 16 cable cars in the Tatra resorts is more than 52,000 people/hour. The massive development of ski resorts in the Tatra National Park is impeded by several objective factors e.g. environmental protection and the unfavourable down slope of the relief. Despite that, the transport capacities of ski lifts and cable cars are being increased and mainly in the Tatranská Lomnica resort (Tab. 4.4). The company Tatry Mountain Resorts also operates many other attractions in the summer and winter seasons.

The region of the Tatras has good preconditions for the development of cyclotourism. The most important cycling routes on the Slovak side are the Oravská, Liptovská Popradská and Podtatranská cycling routes. One of the most significant investments in the cycling route network was the building of an individual cycling path on the Spišská Belá – Tatranská Kotlina track measuring 9 km. The Tatra region offers very good conditions for mountain cyclotourism, like cycling routes to Popradské Pleso, Sliezsky Dom, Hrebienok and others.

Besides the growth of tourist offers in some mountain localities (Štrbské Pleso, Hrebienok and Skalnaté Pleso), investments in the development of tourist infrastructure are coming to the lower localities with better accessibility. The biggest and most successful aquaparks in Slovakia are located in the submontane of the Tatras – in Liptovský Mikuláš (aquapark Tatralandia), Poprad (Aquacity Poprad), Bešeňová (Thermal Park) and Oravice (Meander Park). The highest yearly turnout is achieved by Tatralandia and Aquacity Poprad. The number of

visitors in Bešeňová is slightly lower[13]. The resorts on the northern side of Liptovská Mara also offer a large variety of aquatic activities during the summer season.

Table 4.4. Ski resorts in the Slovak part of the Tatra region (November 2011)

ski resort	district	*[1]	capacity[2]	ski slopes[3]	facilities[4]	vertical drop[4]	price[5]
Tatranská Lomnica	PP	5	10 142	9/9,0	0/7	889–2196	26
Bachledova Dolina – Jezersko	PP	4	8 110	13/11,1	8/2	820–1160	17
Ždiar – Strednica	PP	3	6 080	7/2,1	9/0	940–1057	14,5
Starý Smokovec – Hrebienok	PP	3	4 340	6/6,9	4/0/1[6]	1017–1480	26
Štrbské Pleso	PP	5	4 150	3/7,3	0/3	1383–1825	26
Oravice	TS	n/a	4 150	6/5,9	3/1	785–1055	n/a
Vitanová	TS	n/a	3 650	7/7,6	3/1	725–968	15
Roháče – Spálená	TS	4	3 200	5/4,6	3/1	1030–1500	20
Zuberec – Janovky	TS	3	2 506	4/4,5	3/0	750–955	15[7]
Zuberec – Milotín	TS	3	2 420	4/1,7	3/0	780–955	15[7]
Ždiar – Strachan Ski Centrum	PP	n/a	1 610	3/1,0	3/0	965–1116	12[7]
Žiar – Dolinky	LM	2	1 250	2/0,9	2/0	810–902	n/a
Tatranská Javorina – Taja	PP	2	900	4/1,3	3/0	1020–1150	n/a

Note: [1] LAVEX assessment (1–5 stars), [2] transport capacity in people/hour, [3] number/length of ski slopes in km, [4] highest and lowest point (metres above sea level), [5] price of ski pass for 1 day (€, adult, main season 2011/2012), [6] rack railway, [7] figure per season 2010/2011, n/a unknown fact.

Data source: web pages of ski resorts and www.slovakia.travel; own elaboration.

The complex tourist offer in the Tatra region is complemented by many cultural attractions – the open-air museum in Zuberec (Museum of Orava village) and Pribylina (Museum of Liptov village), the city

[13] In 2007 Aquacity Poprad was visited by 892,673 tourists, Aquapark Tatralandia by 752,627 tourists and Thermal Park Bešeňová by about 488,000 visitors (source: Trend 22.5.2008: "People are not fed up with aquaparks")

conservation area in Kežmarok and Spišská Sobota, the conservation area of vernacular architecture in Ždiar, and the Havránok open-air archaeological museum near Bobrovec.

Tourists are attracted to the Tatras and Podhalie not only by natural attractions, but also by the number of various events, mainly sports and folk events. The biggest events (based on the number of visitors) are regularly organized competitions in the Ski Jumping World Cup held in winter, and also the summer season. Similarly important events are the International Festival of Mountain Folklore (Festiwal Ziem Górskich) in Zakopane or "Sabałowe Bajania" in Bukowina Tatrzańska. These events are often the main target of tourists coming to the Tatras.

The transport accessibility on the Polish side of the Tatra region is at a very high level. There is a very well-developed network of bus lines which is supported by minivans belonging to private companies on the Polish side. They connect the most important municipalities of the analysed area with places attractive for tourists. The frequency of lines is very high mainly during the tourist season. However, the outer accessibility (road and railway as well) of the Polish part of the Tatras from other cities and regions is worse. The accessibility of the Slovak part of the Tatras from other regions (outer accessibility) is at a good level. In particular the biggest resorts of the region, Poprad and Liptovský Mikuláš, are accessible by public transport as well as individual vehicle transport. The accessibility within the selected region of the Tatras (among particular resorts) varies. There is good interconnection by public transport in the resorts located on the lines of the Tatra electric railway and also the bigger rural municipalities and cities located by the main roads. Some of the smaller municipalities located in the peripheries of the region have problems with public transport. More information about accessibility is in Section 6.

Based on official statistics, 264 public accommodation facilities are located in the Polish part of the surveyed region, which comprises six gminy of the Tatra district (Biały Dunajec, Bukowina Tatrzańska, Czarny Dunajec, Kościelisko, Poronin and Zakopané). Most of the facilities (70%) are located in the Zakopane gmina. The overall number of beds in these facilities is more than 19,500. 8 chalets are in the Polish Tatras with the overall number of beds exceeding 650. According to the Polish Statistical Office, the number of tourists accommodated in these facilities in 2010 exceeded 660,000, more than 10% of whom were

foreign tourists. Based on the data of the Statistical Office from 2007 we can get information concerning foreign tourists accommodated in the areas of the Tatras according to particular countries (Tab. 4.5). The tourists from Great Britain and Germany (in total 25.6%) dominated in the Polish part of the Tatras. The number of Slovak tourists was relatively low – only 929 people in total (1.4% of all foreigners) and that is why Slovakia placed 19th in the rankings of all countries. It is necessary however, to take into consideration that these are official statistical data based on the information from public accommodation facilities which do not comprise a large number of beds in the six analysed gminy, mainly in Zakopane. These are the private accommodation facilities. Their providers offer accommodation services unofficially and the number of overnight stays in these accommodation facilities is difficult to estimate.

Table 4.5. Foreign tourists accommodated in the Polish part of the Tatra region (2007) (more than 1, 500 tourists)

	state	number of accommodated tourists	number of overnight stays	percentage from the overall number of tourists
1.	Great Britain	9 614	31 313	14,3
2.	Germany	7 626	20 937	11,3
3.	USA	5 964	10 596	8,9
4.	Hungary	5 332	12 102	7,9
5.	Ukraine	5 038	28 322	7,5
6.	France	4 790	11 617	7,1
7.	Russia	3 284	16 654	4,9
8.	The Netherlands	1 995	5 251	3,0
9.	Spain	1 811	4 243	2,7
10.	Italy	1 726	4 389	2,6

Data source: Central Statistical Office of Poland; own elaboration.

In 2010, over 20,000 beds in approximately 1,000 accommodation facilities located in the Slovak part of the selected Tatra region. The highest number of registered beds was in the High Tatras (town) (6,003), Štrba (2,634), Liptovský Mikuláš (2,593), Poprad (1,837), Stará Lesná (1,104), Zuberec (970) and Pribylina (754). The number of visitors reached almost 530,000 and the number of overnight stays was more

than 1.6 million. The incomparably higher turnout in contrast to the other areas of Slovakia is also obvious from the amount of overnight stays and the number of inhabitants, which increased tenfold compared to the other areas (Tab. 4.6). The Tatras are also specific for the highest number of foreign tourists – more than 41% while above-average values are reached mainly in the municipalities on the plateau of Roháče Hill (Zuberec, Vitanová); and in the vicinity of Liptov relaxing aquatic attractions (Liptovský Mikuláš 65 %, Liptovská Sielnica 57 % and Liptovský Trnovec 76 %). The majority of foreign tourists coming to the Tatras are from the Czech Republic, Poland and Germany.

Table 4.6. Number of accommodated tourists in the Slovak part of the Tatra region in 2008–2010, according to selected countries

state	2008	2009	2010
1. Slovakia	258 154	238 764	255 854
2. Czech Republic	64 479	47 657	50 397
3. Poland	38 615	19 226	17 998
4. Germany	14 940	13 150	11 652
5. South Korea	11 126	3 634	8 829
6. Hungary	16 270	9 366	8 467
7. Ukraine	6 248	3 395	3 279
8. Austria	3 359	1 803	2 437
9. Russia	2 094	`1 922	2 114
10. Great Britain	3 081	1 854	1 680

Data source: Tatranský dvojtýždenník (Tatra Biweekly) no. 8/2011.

The division of the area of the Žilina self-governing region (Liptov, Západné Tatry) and the Prešov self-governing region (Popradská Kotlina, High Tatras) presents a certain institutional obstacle to the coordination of tourism in the Tatra region. However, there is an association in the western part of this region – the Liptov Cluster, whose aim is to coordinate and provide single marketing to various entities in the field of tourism. Due to the sale of accommodation packages (year-on-year growth of 350% between the 2009/2010 and 2010/2011 seasons), the number of visitors to the Liptov region increased more than 8%, which is significantly above-average when making an all-Slovak comparison in the period of the economic crisis.

A big problem in the Polish part of the Tatras is the compliance with nature protection and the effort to open more parts of the area of the national park for tourists. Based on the estimates of the Tatra National Park, the Polish side of the Tatras is annually visited by 2.5 million tourists (Environmental Protection, 2010) and accordingly it belongs among the most visited areas in Poland. Tourism in the Tatras is not evenly distributed. One of the most visited places is the surroundings of Morskie Oko ("Eye of the Sea"), the Five Polish Lakes Valley (Dolina Pięciu Stawów Polskich) and Kasprowy Wierch. Hiking trails to Giewont (leading up to the peak in the summer season), Svinica and Rysy are the most overburdened alpine parts of the Tatras.

A significant natural phenomenon which left a deep imprint on the aesthetic qualities of Tatra National Park (TANAP) was the calamity of 19 November 2004. The whirlwinds which devastated 12,600 hectares of mainly monocultural spruce also brought a (partially ideologically-based) discussion about the remedies for damages. A 4.5 kilometre-long nature trail thematically devoted to the calamity running between Rakytovské Plieska and Jamské Pleso under the Kriváň massif was opened in June 2011. Visitors can observe the natural renewal of 250 hectares of forest left to self-development.

4.3.3. THE PIENINY MOUNTAINS

The main attraction in the selected region of Pieniny on the Polish side as well as on the Slovak side is Pieniny National Park (*Pieniński Park Narodowy*). Pieniny National Park (PIENAP) is the smallest (37.5 km^2) and the second-oldest (1967) national park in Slovakia. However, it is also the cradle of international nature protection – the first cross-border protected area in Europe was announced there in 1932. The Polish part of the national park stretches over an area of 23.46 km^2.

The area of Pieniny is comprised from three parts divided by the Dunajec River Gorge:

- Spišské Pieniny with the highest peak, Branisko/Żar (883 metres above sea level)
- Central Pieniny with the Tri Koruny (Three Crowns) massif (982 metres above sea level)
- Malé Pieniny (Small Pieniny) with the highest peak Vysoké Skalky (1,050 metres above sea level), which is as well the highest peak in all Pieniny.

Central Pieniny is the most attractive part of the area regarding nature and landscape. From the geological point of view Pieniny is, typical and touristically, the most attractive part of the cliff area. Their complicated geological structure (resistant limestones extending from softer clays and flysch) conditioned the formation of an attractive relief comprised of rocky walls, spires, and cliffs of various shapes.

The most-visited part of Pieniny is the Dunajec River Gorge where exceptionally attractive rafting is offered (for more see the frame and Section 4.2.4. Cross-border dimension of tourism). The valley with steep cliffs and greatly winding Dunajec River is typical for its floristically high representation of endemics, varied mosaic of forest covers, and rare fauna. The symbol of Pieniny is a rare kind of butterfly living there, the Apollo Butterfly. Besides wooden rafts sailing can be done by kayak.

The Tri Koruny limestone cliffs (Three Crowns, 982 metres above sea level) located on the Polish side is the landmark and symbol of the national park. Particularly attractive is the view from the southern and eastern limestone walls which descend into the river from a height of 300 metres. The Wąwóz Homole reserve and the Biała Woda reserve (in Small Pieniny) belong among the biggest natural attractions on the Polish side.

Approximately 35 km of hiking pathways are marked in the Polish part of Pieniny National Park. Mainly three scenic places are attractive for tourists: Tri Koruny, Sokolica and Czertezik. Access for cyclists is allowed only at two sections of the pathways: the red-marked, so-called "the Pieniny route" measuring approximately 10.5 km, from Szczawnica Niżna to Červený Kláštor; and the green-marked (so-called "the Route of Kras"), from Krościenko nad Dunajcem to the village of Kras (measuring 2.5 km). Both cycling routes are the same as the pathways for hikers.

Resorts located on the foothills of Pieniny, which are Szczawnica (an important spa and ski resort) and Krościenko nad Dunajcem (mineral springs), are also attractive for tourists. There are interesting architectonic structures located in Grywałd, Jaworky, Sromowce Niżne and Czorsztyn.

Three national nature reserves are located in the Slovak part of Pieniny: Haligovské Skaly, the Gorge of Lesnícky Potok, and the Dunajec River Gorge. The carstic cave Aksamitka is not open to the public due to nature protection.

The main tourist centre at National Park Pieniny (PIENAP) on the Slovak side is the village of Červený Kláštor (the Red Monastery) – the entrance gate to the park (2 hours of walking to the Tri Koruny peak, 2 hours by the Dunajec River Gorge to Lesnica) and the starting point for rafting. Two information centres for the national park are there, the third information centre being in the village of Lesnica near the Lesnícky Potok Gorge. A Carthusian monastery, where a museum is established, is a significant national and cultural monument. In 2006, a footbridge over the Dunajec River connecting Červený Kláštor and Sromowce Niżne was built there. It enables tourists to visit attractions on both sides of the border.

In winter, three ski resorts of local importance are in operation on the Slovak side. They are in Spišská Stará Ves, Červený Kláštor and Lesnica. According to local businessmen the turnout in Pieniny is directly dependent on the number of tourists in the High Tatras, Slovak Paradise and the Bardejov Spa. The reconstructed spa named Smerdžonka in Červený Kláštor will be opened after more than half a century during the 2012 summer season.

The Spiš cycling route goes through the Slovak part of the region. It begins at the border with Poland in the village of Lesnica, continues through the Dunajec River Gorge to Červený Kláštor, then to Spišská Stará Ves and out of the region through the saddle Magurské Sedlo to the village of Slovenská Ves, and from there to the towns of Spišská Belá and Kežmarok.

Based on the official data provided by the Polish Statistical Office, 85 public accommodation facilities with approximately 5,900 beds were located in the three gminy in the region of Pieniny (Szczawnica, Krościenko nad Dunajcem and Czorsztyn) in 2010. Almost 143,000 tourists were accommodated there during 2010, 98.8% of whom were Polish tourists. The data by the Polish Statistical Office do not include private accommodation and agrotourist accommodation, which are the most important categories of accommodation facilities concerning tourists. Based on the data from Pieniny National Park about 700,000 tourists visit Pieniny yearly (www.pieninypn.pl). This is almost five times more than is stated in the official statistics, which are based on data provided by public accommodation facilities. However, it is necessary to realize that not all the tourists coming to Pieniny National Park stay there overnight in the accommodation facilities in the three

Rafting on the Dunajec River from the Slovak and Polish view

Rafting on the Dunajec River has a long tradition on both sides of the borderland. The transport of people on wooden rafts dates back to the 18th century and their use for the purposes of tourism dates since the middle of the 19th century. The most beautiful and most frequently used stretch measuring 9 km is between Červený Kláštor and Lesnica. On the Polish side the main route for rafting is the Sromowce-Kąty – Szczawnica stretch, with the possibility of lengthening the route to Krościenko. The hiking path with 10 information boards by which it is possible to return on foot or by bicycle runs through the gorge on the Slovak side. The length of the rafting depends on the starting point, which again depends on the selection of the rafting company. The rafting business on the Slovak side is considerably fragmented because several competitive entities operate there. Mutual conflicts as well as the effort to maximize profit at the price of endangering the safety of visitors have been recorded in the last years. However, the fragmentation is bad for everybody because the synergic effect of common marketing and promotion is missing. Based on PIENAP's statistics, about 450,000 tourists rafted in the 2008 summer season (however, this number can be overestimated because it was counted from the two-day turnout counting in August). The capacity for Slovak wooden rafts was less than 24%. While there are only around 60 rafts in operation on the Slovak side, there are 250 rafts on the Polish side.

Rafting on the Polish side starts in the village of Sromowce-Kąty and ends in Szczawnica or Krościenko nad Dunajcem. There are around 250 wooden rafts which can take 4–5,000 tourists daily during the season. The main provider is the Polish Association of Pieniny Rafters (Polskie Stowarzyszenie Flisaków Pienińskich). There are several rafting organizations on the Slovak side, e.g. the 1st Rafting and Tourist Company on Dunajec, Rafting Dunajec Červený Kláštor, The Association of Dunajec – Majere Rafters, Rafting Dunajec Nokle Spišská Stará Ves, Antiqua Villa, and Dunajec Tour, which offer rafting from Spišská Stará Ves, Majerov and mainly Červený Kláštor to the mouth of the Lesnicky Potok River.

There is a significant difference in the price of the tickets between the Polish and Slovak offerings (ticket for adults to Szczawnica costs 46 PLN – around 12,5 €, a ticket for rafting on the Slovak side being 9 €, so around 36 PLN). The difference in price arises from the various lengths of rafting, but for an ordinary tourist it can be important that on the Slovak side he will pay less for sailing on the Dunajec than on the Polish side. It is also important to state that none of the providers have web pages in the language of their neighbour (e.g. Polish rafters have web pages in English, German, French, Italian, Russian and Hungarian, but not in Slovak). The competition intensified after the opening of the footbridge for pedestrians and cyclists through Dunajec Sromowce Niżne – Červený Kláštor. Concerns of Polish rafters who were afraid that Slovak competitors would take part of their revenue were connected with this investment. Therefore a port was built near the footbridge where it is possible to join the rafting starting in Sromowce-Kąty.

above-mentioned gminy. These statistics also do not include tourists who come to Pieniny for just one day (without accommodation). The highest number of public accommodation facilities is located in Szczawnica and Czorsztyn.

Based on the data from the Statistical Office of the Slovak Republic, only 20 accommodation facilities with 396 beds were in the Slovak part of the region in 2010. Most of them were in Červený Kláštor and in Lesnica. According to the statements of the municipality's mayor, the revenue from the accommodation tax comprise about 10% of the municipal budget. In 2010, less than 8,000 tourists were accommodated in the area with the number of overnight stays less than 20,000. On average, one tourist slept 2.5 nights in the area. The amount of foreign tourists, despite the vicinity of Poland, is rather low – 16.67%. The prices for accommodation are considerably lower in comparison to the regions of the Tatras and the Beskydy. A characteristic feature of the turnout at Pieniny National Park (PIENAP) is its significant seasonality – the focus on the summer season lasting about 4 months. Dependence on the weather is also high due to the absence of alternative activities for visitors. The average turnout of the park was calculated on the two-day count of tourists in the Dunajec River Gorge made in August every year by PIENAP administration. In 2008 there were 78,000 hikers, 118,000 cyclists, 107,000 rafters on Slovak wooden rafts, 344,000 on Polish wooden rafts, 22,000 on rafts and 4,000 on kayaks[14]. According to this calculation the amount of Polish tourists in the Slovak part of Pieniny decreased from 57% in 2007 to 36% in 2008. A risk from the point of environmental protection is the high tourist concentration in the Dunajec River Gorge which makes up, based on the national park's zones from 2004, a significant part of Zone A – an area with original or little-changed biotopes of European importance.

4.3.4. THE POPRAD RIVER VALLEY

The centre line of the selected region is the bordering Poprad River which divides the mountain range Beskid Sądecki on the Polish side and Ľubovnianska Vrchovina on the Slovak side. The Poprad River

[14] Source: PIENAP Yearbook 2008. Published by the State Agency for the Environmental Protection of the Slovak Republic, Administration of the National Park of Pieniny Červený Kláštor, available at www.pienap.sk

creates the border between Poland and Slovakia at two stretches: first is the stretch starting near the border-crossing Mníšek nad Popradom – Piwniczna to Legnava, and the second is the stretch between the Muszyny (Muszyna-Poprad) part, almost to the Čirč – Leluchów border-crossing.

Numerous mineral springs are to be found in the Poprad Valley, which are the basis of the development of spa treatment facilities (Muszyna, Żegiestów-Zdrój, Piwniczna-Zdrój). The bottled mineral water called "Muszynianka" is produced there. Sulinka mineral water is known in the Slovak part of the region. The Poprad Valley on the Polish side is a protected area within the landscape park Popradzki Park Krajobrazowy (landscape area of Poprad). Part of the Pasmo Radziejowej and Pasmo Jaworzyny Krynickej belongs to this landscape area with an area of 54,200 hectares. The area on the Slovak side does not belong to any of the large protected areas.

The selected region on the Slovak side is created by 12 rural villages from the district of Stará Ľubovňa (with approximately 4,300 inhabitants), which are located near the Poprad River. The Poprad is the river with the biggest elevation difference in Slovakia (1,567 altitude metres). The river beautifully meanders at the selected area, therefore offering ideal and unique conditions for the development of tourism (mainly for paddlers and fishermen). However, the tourist potential of the river remains insufficiently tapped on the Slovak side. Similarly unused is the admirable potential of the country which presents a challenge for various types of ecological tourism (e.g. hiking and cyclotourism). The reasons lay not only in the difficult transport accessibility of this area, but also in the absence in the material-technological basis for tourism (accommodation and restaurant facilities), which would enable ordinary tourists to spend at least short-term stays in the Slovak part of Poprad. The generally criticized insufficient promotion of this area has also done its share regarding its current unflattering state.

The variety of the country in the analysed area, to which the Muszyna gmina belongs on the Polish side, creates favourable conditions for the development of tourism in the summer as well as the winter period. The pathways for hikers run into the Jaworzyna Krynicka and Leluchow areas. The potential of the Poprad River is also used for the development of tourism. Sailings are organized in the stretch from Leluchow to

Nowy Sącz (the most popular is sailing on the Piwniczna-Zdrój – Nowy Sącz stretch; apart from this, traditional international family sailing on the route of the partnering towns Stará Ľubovňa – Nowy Sącz is also popular). Besides this, the river offers possibilities for canoeing and rafting. Several tracks are marked for cyclists, e.g. the Carpathian cycling route (Piwniczna – Muszyna – Leluchów), the "Around Kotylniczy Wierch", circuit, the cross-border route (Muszyna – Tylicz), and the Muszyna – Leluchów – Wojkowa – Powroźnik – Muszyna circuit. The Toryská cycling route runs through the Slovak part of the region. It goes from Prešov, Sabinov and Lipany to Poland through the Mníšek nad Popradom – Piwniczna border-crossing.

There is a riding centre in the village of Złockie offering riding courses and attractive horse rides into the surrounding nature.

Historical monuments are located in the municipalities of Muszyna, Szczawnik, Wojkowa, Andrzejówka, Leluchów, Dubne, Złockie and Powroźnik. They are part of the "Route of Wooden Architecture", which includes 237 architectonic monuments (e.g. churches, Orthodox churches, chapels, barns, farmhouses, and cottages).

There are several ski lifts and about 4 km of ski slopes available in the Muszyna gmina in the winter season. The neighbouring municipalities however, offer better conditions for downhill skiing: Krynica-Zdrój (including Jaworzyna) and Piwniczna-Zdrój (including the Wierchomla ski resort). In the winter season of 2008/2009 a ski resort in Szczawnik was opened, its name being "Dwie doliny Muszyna – Wierchomla." It is a part of the project aimed at interconnecting the seven valleys (Wierchomla, Szczawnik, Jasieńczyk, Czarny Potok, Słotwiny, Roztoka and Łosie) through a system of chairlifts and ski lifts to one large ski resort (Plan for the Development of the Muszyna Spa for the Years 2009–2015, 2009).

There are no ski resorts in the Slovak part of the region. The Wierchomla and Kosarzyska ski resorts are located on the Polish side near the village of Mníšek nad Popradom, which is a road border-crossing to Poland. These resorts are an alternative for Slovak citizens, to the nearby resort in Litmanová. Thousands of visitors, whose target is Zvir Hill, come to Litmanová every year. Litmanová, also known as the Slovak "Fatima" (place of apparition of the Virgin Mary), became one of the most important pilgrimage sites in Slovakia after 1990.

The district town of Stará Ľubovňa lies in the close vicinity of the surveyed area. The prominent landmark of the town is Castle Ľubovňa, located on a high rock with a rich history (during 1655–1661 the Polish crown jewels were kept there). The castle, with its exhibits and summer programmes, is a particularly attractive tourist target. Its uniqueness attractiveness are appropriately enhanced by an open-air museum of vernacular architecture and a medieval military camp established below the castle. Ľubovňa Castle, together with the museum of vernacular architecture, is yearly visited by more than 100,000 tourists, one-third of whom is comprised from foreign tourists (mainly from the Czech Republic and Poland).

Based on the data from the Polish Statistical Office there are 42 accommodation facilities with 3,800 beds in Muszyna gmina (2010). Almost 62,000 tourists were accommodated in these facilities in 2010. Based on the register of accommodation facilities stated on the official web site of the gmina, there are 99 public accommodation facilities in the town of Muszyna and its vicinity. Private accommodation facilities make up the biggest category out of them (including those which are registered as agrotourist) – 50.5% and out of recreational resorts – 31.3%.

Based on the *Plan for the Development of the Muszyna Spa for the Years 2009–2015* (2009), almost half of the visitors organized their trip individually. Medical stays create another category. Regarding the length of stay the three-week (47%) and one-week (21%) medical stays dominate.

The Slovak part of the region is, due to its size, the least-visited from all the analyzed regions. In 2009 there were 52,135 inhabitants living in 44 municipalities in the district of Stará Ľubovňa and only 4,340 inhabitants (8.3%) in 12 municipalities which create the selected region. This corresponds with the low amount of accommodation facilities (4) and number of beds (77). The population is concentrated in the district town of Stará Ľubovňa, located on the edge of the analysed territory. But the biggest accommodation capacities are connected to the Vyšné Ružbachy spa (a heterogeneous structure of accommodation facilities) and Nová Ľubovňa in the cadastral area of which a large labour union hotel was built.

4.3.5. THE BESKID NISKI MOUNTAINS

The Low Beskydy belong among the least-visited and naturally best well-preserved mountain ranges in Poland and Slovakia. Their biggest value is the unpolluted environment, cultural variety and historical monuments of religious architecture. The dominant forms of tourism in the Low Beskydy are hiking, cyclotourism and hipotourism. Magura National Park was created in the central part of the area on the Polish side. In the park are protected unique forest areas (90% of the park's area) and it creates a transitional area between the Western and Eastern Carpathians. However, it is located outside the selected area. Jaśliski Park Krajobrazowy (Jaśliski Landscape Park) with nature protection in the area from which the Ruthenian (Lemkos) inhabitants were displaced after World War II, is located within the selected region (the Dukla, Jaśliska[15] and Komańcza gminy). As a consequence of the displacement the uncultivated area again became wild. The second landscape park is Ciśniańsko-Wetliński Park Krajobrazowy (Ciśniańsko-Wetliński Landscape Park), which is part of the International Eastern Carpathians Biosphere Reserve. Numerous Ruthenian (Lemkos) wooden churches, mainly in the villages of Daliowa, Chyrowa, Tylawa and Komańcza, belong among the unique architectonic treasures of the Low Beskydy. Military cemeteries from World War I belong to the country as well.

The Slovak part of the selected region of the Low Beskydy can attract tourists with its cultural-historical sights, out of which the most popular are the masterpieces of religious wooden architecture – wooden churches or Eastern Orthodox Wooden Architecture. They are located in Vyšný and Nižný Komárnik, Mirola, Bodružal and Príkra. These are small rural municipalities which are inhabited by the Ruthenian nationality. The border part of the selected region on the Slovak side belongs to Eastern Carpathians Landscape Park.

The gentle slopes of the Low Beskydy mountain range with long and flat ridges create favourable conditions for the development of cyclotourism. Another attraction for tourists is the deserted Ruthenian (Lemkos) villages. Marked cycling routes go mainly along the local, unpaved, and forest roads. The rather dense network of local roads which

[15] The gmina was established on the 1st January 2010. It was separated from the gmina of Dukla. (Gazette no. 120, item 1000, year 2009).

do not belong to the system of state roads create favourable conditions for cyclotourism.

In the Slovak part of the region of the Low Beskydy, there are also good conditions for cyclotourism mainly on the less-frequented second and third-class roads. Two sections of the Carpathian cycling route pass through this area, while one of them runs from Poland through Dukla Pass, the village of Vyšná Pisaná, Svidník, and from Bardejov to Prešov. The second runs from Poland through Čertižné to Medzilaborce, and Snina from where it continues to Snina and to Ukraine through the border crossing in Ubľa.

It is surely interesting that the interest in the culture and life of the Ruthenians in this area was inspired by a famous person who never lived there. Despite being the biggest tourist attraction in the area, American-born Andy Warhol (1928–1987), the son of Ruthenian parents coming from Miková (unfortunately, visitors trying to gather information about the "king" of Pop Art see only a small information board at the entrance to the village) is presented to tourists in the unique Andy Warhol Museum of Modern Art in Medzilaborce. Visitors can acquaint themselves with the life and work of the artist whose work was connected not only to fine art, film and music, but also with advertising and fashion.

While the visitors in Medzilaborce admire sacred monuments like the mighty, aesthetically attractive Orthodox temple, they can also be attracted to nearby Krásny Brod by the ruins of one of the oldest (from the 14th century) and the most important monasteries (monasteries belonging to the Orthodox denomination) in Slovakia. The ruins of an important pilgrimage sites belonging to the Slovak Byzantine Catholics was destroyed during World War I. There's also the new Orthodox monastery of the Holy Spirit of Revelation under the administration of the Order of Saint Basil the Great.

A characteristic feature of the Slovak part of the selected region of the Low Beskydy are the numerous sights commemorating the battles of World War II (e.g. in Kalinov and Palota), which became a magnet for people interested in military history. The most popular is the "Memorial and Military Cemetery of the Members of the 1st Czechoslovak Armed Corps," located in the vicinity of the important road border-crossing to Poland (Vyšný Komárnik – Barwinek) in the Dukla Pass. The memorial is a national cultural monument which should commemorate the

difficult battles of thousands of soldiers in the Carpathian – Dukla operation in 1944, during the liberation of Czechoslovakia. A view of the battlefield is possible from the nearby observation tower. Exhibits of the heavy combat technology spread along the road leading to the Pass are part of the open-air military museum, completing the overall atmosphere of the World War II site.

Official data from the Polish Statistical Office (2010) state that in the area of three gminy (Dukla, Jaśliska and Komańcza) there are only 12 public accommodation facilities (excluding private accommodation) with the overall number of beds being 540. In 2010 there were more than 5,700 tourists accommodated in these facilities. There is a list of more than 50 agrotourist farms published on the web pages of these three gminy. However, other accommodation facilities are not included on the list. Therefore, it is difficult to estimate the real number of tourists visiting this region and the actual number of overnight stays.

The selected area reaches into three Slovak districts: Svidník, Stropkov and Medzilaborce. In general, we can say that the interest in discovering this part of Slovakia is particularly low. The existing accommodation capacities are due to the absence of private accommodation, concentrated only in larger towns like Medzilaborce, while their use falls significantly behind the existing possibilities.

The position of the selected region in the broader area is completed by selected statistical data. In the 19 municipalities of the stated area (which are by their size proportional to the Polish side of the selected area of the Low Beskydy) live only 10,129 inhabitants (15.4% of the inhabitants on the border districts). The small number of accommodation facilities corresponds with the low number of inhabitants (one hostel at the school in Habura and 5 accommodation facilities in Medzilaborce) and beds (approximately 400). The population as well as accommodation capacities are concentrated in the district towns, out of which only Medzilaborce is part of the selected area.

4.3.6. THE BIESZCZADY MOUNTAINS / POLONINY

The eastern part of the Polish-Slovak borderland (on the Slovak side it's named Poloniny and on the Polish side Bieszczady) is characterised mainly for its geographical and economic periphery, the positive consequence of which is the protected natural environment. The natural

environment, together with the cultural monuments (mainly the wooden churches), are the biggest attractions of the selected region.

Due to the protection of the natural environment, Bieszczady National Park (*Bieszczadzki Park Narodowy* – BdPN), with an area of 59.55 km^2, was created on the Polish side in 1973. Since then the area of the park was expanded fourfold and at present has an area of 292.02 km^2, BdPN becoming the third-largest national park in Poland. In the Slovak part of the region, National Park Poloniny was established in 1997 and has an area of 29,805 hectares. Both national parks are part of the international Polish-Slovak-Ukrainian East Carpathian Biosphere reserve: mainly the unique pastures located on the flat ridges of the mountain range above the timber line (polininy) and the preserved parts of the Carpathian forests with original vegetation (the most valuable of them on the Slovak side are the Stužica National Nature Reserve, Havešová, Riaba Skala, Rožok, Pľaša, Stinská and Pod Ruským) and with the presence of large wild animals (e.g. the European brown bear, deer, wild wolf, the European lynx and others). The Slovak (and Ukrainian) primeval beech forests of the Eastern Carpathians are registered on UNESCO's World Cultural and Natural Heritage List under the name Primeval Beech Forests of the Carpathians. Besides this the natural environment is protected within the Ciśniańsko-Wetlińska Landscape Park, which creates the protective area of National Park Bieszczady.

Hiking (summer and winter) dominates in Bieszczady, then cyclotourism and horse-riding (hipotourism). The biggest numbers of tourists visit the area of the Tarnice massif, Połonina Caryńska and Połonina Wetlińska. Tourists can use approximately 120 km of hiking trails and natural roads of around the same length. Cyclotourists can use more than 50 km of marked trails passing through generally accessible roads and several sections of paved roads within the national park (BdPN). Five lots for bicycles are located in the park, namely: Bukowiec, Ustrzyki Górne, Wołosate, Brzegi Górne and Przełęcz Wyżniańska. Hipotourism in the area of BdPN is developed based on the cooperation with Zachowawcza Hodowla Konia Huculskiego (Organization for Preservation and Protection of the Breeding of the Hutsul Horse) in the village of Wołosate and the Centre for Hipotourism in Tarnawa Niżna. It is possible to set for the tourist trails only from these two centres. People coming to the park with their own horses can use these roads only in exceptional cases (after gaining appropriate permission). About

65 km of tracks are designated for people interested in hiporoutism (www.bdpn.pl).

A big attraction of the summer season (May-October) in the Polish part of region is the Bieszczady forest railway. The narrow-gauge railway was created at the end of the 19th century and its function was to collect wood. During the last years the infrastructure of the railway has been systematically renewed and modernized, and therefore it is a unique addition to the tourist offer in the region. Additional attractions of the region are also cultural events, mainly the annually organized festival "Natchnieni Bieszczadem" (Inspired by Biesczady). Its aim is to present and promote the culture of the borderland and stimulate the local community. The association which organizes the festival cooperates with partners from Slovakia and Ukraine.

The cross-border initiative GoToCarpathia was established in the region. Its aim is to promote sustainable forms of tourism. The Organisation Carpathian Centre for Green Tourism with its quarters in Snina and Ustrzyky Dolne organizes projects aimed at studying visits, participation in the tourism fairs, and cross-border events (Carpathian Days of Green Tourism). Ecomuseums named Shapes of Fire, Through the Track of Smugglers and Tracing Duchnovič, as well as the green trails Tracing Švejk and the Green Bicycle, are being prepared on the Slovak side of the region. Part of the project is also the certification of touristic services and products sensitive to the Eastern Carpathians environment.

The natural uniqueness of the area is completed not only by the Starina reservoir, which is the source of potable water for the area of eastern Slovakia, but also by the unique wooden churches and national cultural monuments located in Topol, Uličské Krivé, Ruský Potok and Jalová. One of the ways of promoting these wooden churches is also their integration into the so-called Wooden Carpathian Church Road, whose sections pass through both parts of the borderland.

The region's peripheral location, the low amount of vehicular traffic and roads in the surroundings of the Starina with limited access to cars are suitable preconditions for the development of cyclotourism. Two cycling routes are the most used by cyclists. Those are cycling route R61 – Green Bicycle (from Poland through Ruské Sedlo – Jalová – Kolonické Sedlo – Ubľa, continuing to Ukraine and back to the Polish

Lesk) and the Pathway of Icons (on the Stakčín – Jalová trail, the Príslop – Topoľa crossroad, and the Kolbasov – Uličˇ – Uličské Krivé – Zboj – Nová Sedlica crossroads). Apart from that one of the sections of the Carpathian cycling route goes through Snina (from Poland through Čertižné – Medzilaborce – Hostovice – Pčoliné – Snina – Sninské rybníky – Strihovce – Dúbrava – Ubľa, continuing to Ukraine, Romania and Hungary).

Based on the available data of the Polish Statistical Office there are 31 public accommodation facilities with a capacity 1,655 beds in the Cisna gmina (the analysed area on the Polish side, 2010). Both data are much undervalued. Based on the database for accommodation in the village of Cisna published on the official web sites of the village, visitors can use 169 accommodation facilities, 74.5% of which make facilities registered under agrotourism and private accommodation. The majority of the accommodation facilities are located in the village of Cisna (49), Wetlina (39) and Smerek (17). Based on the official data more than 35,500 tourists were accommodated in the public facilities in 2010.

According to the official data from the Statistical Office of the Slovak Republic there were 11 accommodation facilities with 1,377 beds in the district of Snina, part of which is the stated area, in 2009. They were visited by 5,009 tourists, who spend in total 10,712 nights there. The estimated turnout of National Park Poloniny is around 20,000 people yearly, which does not present a significant danger to the natural ecosystems if they behave well.

4.4. THE ROLE OF TOURISM IN STRATEGIC DOCUMENTS

One of the priorities in the Poland-Slovak Republic 2007–2013 Cross-border Cooperation Programme is the socio-economic development of the borderland, part of which is also the development of cross-border cooperation in the field of tourism. The document assumes that tourism, sport and recreation can become important factors in the development of the Polish-Slovak borderland in the long-term, and cross-border cooperation is perceived as a factor in the growth of the number of jobs in tourism. The program counts with the support of common projects in the field of ecotourism, agrotourism, recreational and spa tourism, cross-border tourism products, the building of tourism infrastructure, safety and rescue services. Even though the text

of the document is rather general and disorderly, tourism has a significant importance in it and it is connected with other specialized activities such as the protection of natural and cultural heritages and the improvement of accessible transport. The cooperation between Slovak and Polish entities is perceived as mutually advantageous in the development of regional and local tourism.

4.4.1. TOURISM IN STRATEGIC DOCUMENTS ON THE NATIONAL LEVEL IN POLAND

In The Polish Conception of Territorial State Development (*Koncepcja Przestrzennego Zagospodarowania Kraju* – KPZK, 2010) not a great deal of attention is paid to tourism. However, it stresses that an important precondition in terms of sustainable development in areas of tourism, based on natural attractivity, is the decrease of encumbrances in the most valued areas and intensification in the development of the areas in its vicinity, the tool of which should be territorial planning in recreational areas. It seems that this problem concerns mainly the Polish-Slovak border, because there are large differences in the burdening of the area and long-term programs focused on the optimal use of the Carpathian Mountains for the purposes of tourism are needed. *The State Strategy of Biodiversity Protection* (*Krajowa Strategia Ochrony Różnorodności Biologicznej*, 2007) considers the growing pressure of tourism to the valued natural area as one of the main threats to biodiversity in Poland. In *The Strategy of the Development of the State* the excessive pressure of tourism on the nature of the Tatras is considered one of the principal ecological problems of the Małopolskie Voivodeship. The elaboration and application of developmental regulations concerning tourism in these areas, and environmentally-friendly promotion and education of tourism and service providers, in compliance with the State Strategy of Biodiversity Protection (2007), should be the tools which should prevent the decrease of biodiversity. However, it seems that the steps and tools with real legal power are inevitable there, because the effects of inconsistent measures can be revealed when it is too late.

The principal document of Polish state policy in the field of tourism for 2008–2015 is the document Directions for Tourism Development Until 2015 (*Kierunki rozwoju turystyki do 2015 r.*). The system of suggested

priority areas, aims and activities, takes into consideration tourism in border areas as well as the cooperation of border regions in the field of tourism. These issues are expressed in four operation targets concerning the infrastructure of tourism, the main kinds of tourism, and the integration of offers of tourism in regions and marketing.

Among the seven main kinds of tourism, which should comprise the strategic paths of its development in Poland, tourism in border areas is mentioned as well. It is necessary to stress that the authors of the document present the southern and eastern border areas of Poland as those in which the development of tourism should be particularly supported. The position of tourism in the border areas in the strategic planning of tourism seems to be very good – its important role in Poland's tourist economy is recognized. The possibility of creating and developing new products that can have strategic importance for Polish tourism is considered as important in cross-border tourism. In the need for the cross-border integration of projects of tourism development, including the creation of common offers and common projects in the specialized infrastructure of tourism, cross-border promotional projects are being stressed. The requirement for the support of common activities is being stressed mainly in the case of Euroregions. The Polish-Slovak borderland, within the context of tourism, is not explicitly stated in the analyzed government document because it is a general document that does not apply to particular regions of tourism. However, based on the importance of border and cross-border tourism stressed by the authors in the area of southern Poland, we can assume that the role of our selected area in Poland's tourism is being perceived in the right way.

4.4.2. TOURISM IN STRATEGIC DOCUMENTS ON THE NATIONAL LEVEL IN SLOVAKIA

The development of tourism's infrastructure and the development of tourist products among the priorities for increasing the country's competitiveness in connection to the specifics of the region and their cultural and natural wealth, is stated in The National Plan of the Regional Development of the Slovak Republic (*Národná stratégia regionálneho rozvoja SR*, 2010). The use of cultural heritage for the needs of tourism is, according to the document, promising mainly for rural areas, and

from the regions mainly for Prešov. It also draws attention to respecting the limits of functional use for the area concerning the quality of the environment. In connection with this the importance of cooperation on an EU level via a common institutional framework is also mentioned. Insufficiently coordinated and modernized marketing concepts and the level of cooperation among the entities working in tourism are stated as barriers to development. The development of technical infrastructure is recommended to be tightly bound with the real comparative advantages and competitiveness of the regions. It sees the risk in not understanding the value of national or regional identity or in excessive commercial pressure in utilizing cultural heritage. The tendency to perceive the development of tourism in a sustainable way is evident in the document. However, the analysis is to a considerable extent limited to certain kinds of tourism, leaving out tourism in mountainous environments, especially important in the Polish-Slovak borderland.

On the contrary, The Concept of the Territorial Development of Slovakia (*Koncepcia územného rozvoja Slovenska*, 2001) briefly analyses various kinds of tourism with respect to the possibilities of developing incoming tourism, the condition of which is improved marketing and accessible transport to tourist destinations. In the 2009 updated version of the document, the combination of spa tourism and wellness centres with ski resorts is implemented.

The support of the building of complex resorts for tourism financed from EU funds is also visible in The National Strategic Reference Framework for the Period of 2007–2013 (*Národný strategický referenčný rámec 2007–2013*, 2007). The priority should be their year-round use (summer and winter sports) and territorial concentration in the regions of Prešov, Žilina and Banská Bystrica. A negative trend based on the document is the relatively low turnout from abroad and insufficient focus on domestic tourism as well. Despite the year-on-year growth of the number of accommodated visitors, the average length of their stay is declining. Based on the document, it is a consequence of selling services individually and not in "packages." The unused potential of mainly the Prešov and Banská Bystrica regions should be tapped via the building of complex resorts or the completion of those that already exist. The importance is placed on using the natural conditions in these regions for the purpose of hiking and winter sports.

The eastern part of the Polish-Slovak borderland is also mentioned in the Poland – Slovak Republic 2007–2013 Cross-border Cooperation Programme (*Program cezhraničnej spolupráce Poľsko – SR 2007–2013*, 2007) in connection with the unused potential in the development of tourism. The document supports cooperation in the organizing of international cultural and sport events, too. An interesting statement is that Slovakia, in regards to the borderland, has better tourist infrastructure, but the tourist infrastructure in Poland is used more extensively. The problem is the declining efficiency and performance of tourism mainly in the Slovak part of the borderland. The document connects the very low extent to which the accommodation facilities are being used (30–40%) compared to the EU average, with the low quality of services as well as the low quality of cross-border infrastructure. The opportunities for the development of tourism are defined rather one-sidedly as the "creation of new, bigger and better hotel offers." On the contrary, the weakening of the region's competitive position due to dynamically-developing tourist services in other areas can become a threat.

The most voluminous document from the regional-development aspect of tourism is the Regionalization of Tourism in the Slovak Republic (*Regionalizácia cestovného ruchu v SR*, 2005). Its main contributions are setting the regions of tourism, the evaluation of the potential for tourism, the categorization of regions and in defining the developmental priorities of the regions. The areas of tourism were mainly based on cultural-historical specifics and natural determinateness; therefore their borders do not comply with the territorial-administrative division of Slovakia. The surveyed area of the Polish-Slovak borderland in the region of Žilina and Prešov includes the Upper Váh region (partially), Turiec, Orava, Liptov, Tatra, Šariš, the Upper Zemplín and the Spiš region (partially). The potential for tourism in particular regions was calculated with a complex weight matrix based on the importance of different kinds of tourism. The highest potential values were reached in the regions of Liptov, Tatra and the Upper Váh. These were marked as regions with international importance. The regions of Orava, Turiec and Šariš are regions with national importance, but there are only some localities with international importance. Interesting is the assessment of the Spiš region as one with more than regional importance with internationally important localities. The Upper Zemplín received

the lowest grading in regards to regional importance. The document defines also sub-regions of tourism and assesses them concerning the potential of cross-border bonds. From the long-term view, the western Kysuce region has potential for cooperation (only with the Czech Republic), the Western Tatras and northern Spiš as well (Pieniny and the Stará Ľubovňa surroundings). In the medium-term mainly the Tatras and Pieniny have the potential for cross-border cooperation. Based on the combination of the potential of cross-border cooperation in regards to the unemployment rate four levels of priority in the development of tourism were defined for these regions. Among the regions with the highest priority are the regions of Šariš, Tatra and Liptov; among the regions with high priority are the regions of Spiš and the Upper Váh; among the regions with medium priority are the Upper Zemplín, Orava and Turiec. None of the regions from the surveyed area belong to the group with low priority.

The New Strategy of the Development of Tourism Until 2013 (*Nová stratégia rozvoja cestovného ruchu do 2013*, 2006), due to the change of government, replaced the just one-year-old document because the previous strategy "did not take into consideration the new social dimension of European documents on tourism, and neither the policy of sustainable development." However, the document uncritically emphasizes the development of large ski resorts, which should be connected with many other investments. An important factor in the development of tourism is also the building of transport infrastructure: highways, speedways and the modernization of railway lines. On the other hand, the document recommends creating conditions for the regular system support of careful kinds of tourism – besides rural tourism, cyclotourism and others, it also mentions golf tourism.

In The National Strategy for Sustainable Development (*Národná stratégia trvalo udržateľného rozvoja*, 2001) the development of tourism is assessed as highly ineffective (due to the low quality of services) but with a large opportunity to realize the targets of sustainable development (the significantly negative impacts of mass development of tourism had not arisen yet). Based on the document, tourism under certain conditions (focused on domestic and active foreign tourism, the support of small and medium-sized domestic businesses) can help the Slovak economy pass into the trajectory of sustainable development.

An important document adjusting the support of tourism in the Slovak Republic, the rights and duties of natural and legal persons working in tourism, the creation of conceptual documents and financing the development of tourism, is the *Tourism Support Act* no. 91/2010 Coll. In compliance with this law, after 1 December 2011 (the date the law went into effect) new regional and area organizations of tourism were established. The main function of these tourism area organizations is the cooperation of various entities working in the field of tourism (municipalities, business entities), with these organizations having the opportunity to receive a subsidy from the state for their operation when fulfilling state-defined conditions.

4.5. SUMMARY

Tourism is one of the most important economic sectors on the Polish-Slovak borderland. The number of people visiting the borderland reaches 3.2 million a year (according to the estimate this number is even higher and can reach 5 million). On the Polish as well as on the Slovak side the turnout is concentrated mainly in the Tatra region. Other frequently-visited regions are Pieniny (including rafting), the Low Tatras, the Malá Fatra, the Veľká Fatra and the western part of Beskydy mainly on the Polish side (the Silesian Beskid and the Żywiec Beskid).

Tourism on the borderland is developing mainly due to the potential of the natural environment creating varied topography, the climatic conditions (the number of days with snow cover), forest cover, surface water and groundwater (including mineral and thermal waters) and the high aesthetic value of the country. The borderland is also rich in terms of cultural heritage (cultural-historical monuments, museums, folk trades). The large number of various types of events is organized for visitors to the borderland.

Recreational and active tourism dominates on the Polish-Slovak borderland (relaxation and hiking), in particular mountain hiking and climbing, cyclotourism, water sports (sailing mountain rivers). In recent years hipotourism has been developing as well. Cultural tourism is also popular (sightseeing, pilgrimages, discovery of cultural heritage); in the rural areas and in areas with valued nature rural tourism, mainly agrotourism and ecotourism.

There are a large number of ski resorts being developed on the borderland. In both countries the borderland is the most important part regarding favourable conditions for winter sports (in Poland, a region with similar importance is also Sudetenland). The biggest and best equipped ski resorts on the Slovak side of the borderland are: Jasná in the Low Tatras, Vrátna in the Malá Fatra, Ružomberok – Malinô Brdo in the Veľká Fatra, Oščadnica – Veľká Rača in the Kysucké Beskydy, Štrbské Pleso and Tatranská Lomnica in the High Tatras. Among the best-developed ski resorts in Poland are mainly Zakopane, Szczyrk and Krynica-Zdrój (to a lesser extent also Korbielów), and in recent years there have been new ski resorts such as Bukowina Tatrzańska, Białka Tatrzańska, Wierchomla Mała, Piwniczna-Sucha Dolina and Zawoja.

Spa centres and aquaparks using the rich thermal springs also have a large importance concerning the development of tourism on the Polish-Slovak borderland. On the Slovak side the spa centres are in Rajecké Teplice, Turčianske Teplice, Lúčky, Liptovský Ján, Lučivná, Vyšné Ružbachy, Bardejov and the aquaparks Tatralandia Liptovský Mikuláš, Aquacity Poprad, Thermal Park Bešeňová, Meander Thermalpark Oravice, and AquaRelax Dolný Kubín. The thermal pools are a new phenomenon on the Polish side and have been built just in recent years (Bukowina Tatrzańska, Poronin and Zakopane). Most of the spa centres on the Polish side are located in Beskid Sądecky, while on the Slovak side they are distributed more evenly.

5. PERCEPTION OF THE CURRENT STATE AND NECESSITY OF CHANGES IN THE DEVELOPMENT OF TOURISM AND ACCESSIBILITY OF THE POLISH-SLOVAK BORDERLAND

The outcomes of two questionnaire surveys, which differed not only in their content but also in the selection of target group of respondents, are presented in this chapter. The questions in the first questionnaire were answered by the representatives of local government in the border region. The questions in the second questionnaire were aimed at real as well as potential visitors to the Polish-Slovak borderland. These were persons whose place of permanent residence was not identical with the stated area of interest.

The main aim of the first questionnaire was to get answers about the perception of the importance of tourism (its various forms, attractions, etc.) and transport accessibility for the development of the Polish-Slovak borderland in general, as well as its particular gminy and municipalities (gmina – principal administrative unit in Poland – municipality; hereinafter "gmina", pl. "gminy"). The selection of respondents, local government representatives, was done intentionally – these persons are to a higher or lower extent responsible for the development of the regions administered by them.

The aim of the second questionnaire was to acquaint with the perception of the functioning of tourism (selection of destination and length of stay in relation to chosen economic criteria) from the point of view of tourists, visitors who also assessed the importance and current state of the transport accessibility from the point of view of the rational selection of tourist destination.

5.1. PERCEPTION OF THE POTENTIAL OF TOURISM AND TRANSPORT ACCESSIBILITY OF THE POLISH-SLOVAK BORDERLAND BY THE REPRESENTATIVES OF LOCAL GOVERNMENT

The aim of the survey was to ascertain the perception of the cross-border territory from the point of tourist attractiveness, accessibility and development of tourist infrastructure. Apart from other things the survey focused on the perception of cross-border cooperation, analysis of local needs within internal and external accessibility or obstacles and factors supporting the development of tourism and cross-border cooperation in the area of the Polish-Slovak borderland.

The target groups of the questionnaire survey were people whose decisions influence the character and economic utilization of the stated area. The respondents were chosen from among the representatives of local government from Poland as well as from Slovakia (gminy or municipalities are located at the distance of a maximum of 15 km from the state border). For a more comprehensive view of the possibilities of proper comparison, the survey in Slovakia was also carried out among selected representatives of institutions with a regional scope of authority. The survey was carried out in the period from September 2010 to March 2011[16].

To gain the answers we used a standardized questionnaire which was mainly completed by the employees of the departments of promotion and tourism development of the gmina authority (in Poland) or by mayors of the municipalities or employees of institutions with a regional scope of authority (in Slovakia). The questionnaire was firstly distributed by post, later, due to the low number returned, by

[16] The reason for a differentiated approach towards the selection of a target group of surveyed representatives of local or regional government and institutions with regional scope of authority was the size as well as power incomparability of the principal administrative units – gminy and municipalities. The Polish gmina is several times bigger than the Slovak municipality (by the number of inhabitants, administered area, administration personnel, financial budget) and its representatives have wider possibilities to influence the socio-economic development of their area. Therefore, in the case of Slovakia we decided to ascertain the opinions of authorized persons from the institutions with a regional scope of authority. We use them for better understanding of the prevailing moods in the Polish-Slovak borderland. They are stated only when they significantly differ from the opinions of local government representatives.

e-mail with prior phone request for active participation in the survey. In the end we obtained 76 questionnaires from the Polish side and 75 completely or partially completed questionnaires from the Slovak side.

In Slovakia half of the questionnaires were completed by municipality representatives (37 questionnaires) and the remaining completed questionnaires (38) were gained from the representatives of institutions with regional scope of authority. In Poland the local self-government was represented by 43 representatives of principal administrative units – gminy. Despite increased effort the number of completed and returned questionnaires in Slovakia was rather low – in the case of addressed municipality representatives it reached only the level of 25%. A considerably higher level of returns was achieved from the representatives of institutions with regional scope of authority – 63.3%. The proportion of completed and returned questionnaires from the representatives of Polish border gminy reached 91.5%, after repeated, multiple requests for participation in the survey. Therefore we can express contentment with the returnability from the representatives of the Polish border gminy.

5.1.1. ASSESSMENT OF THE DEVELOPMENT OF BORDER GMINY AND MUNICIPALITIES

Within the general characterization of surveyed gminy and municipalities the respondents had to assess the development and quality of the municipality (gminy) in five areas: transport infrastructure, municipal infrastructure, tourism, quality of life and quality of the environment. In each of the assessed areas the respondents could choose one of the following answers: significantly developing, developing, stagnating, gradually deteriorating and significantly deteriorating.

The development of Slovak municipalities is assessed mainly positively within all areas. The answers "developing" accounted for the highest percentage (Tab. 5.1). The most positive assessment was achieved in the area "quality of environment" – 59.5% of respondents marked their municipality as an area which is "significantly developing" or "developing". The quality of life (in total 54.1%) and municipal infrastructure (in total 54.0%) were assessed as good or very good in a relatively large group of municipalities. The development of municipalities in the

analysed regions is often assessed as stagnating: when assessing the largest group of municipalities concerning the tourism (43.2%), transport infrastructure (35.1%) and municipal infrastructure or quality of environment (32.4%). From all the surveyed areas the respondents perceived as most negative the state of transport infrastructure which was assessed as "gradually deteriorating" or "significantly deteriorating" by almost one fifth of municipality representatives participating in the survey (18.9%), mainly municipalities located away from main routes. The negative perception of tourism is connected mainly with peripheral geographical locations (the region of Zamagurie). The relatively high "indifference" in assessment of the municipal infrastructure is rather interesting – 13.5% of surveyed municipality representatives did not manage to adopt a definite attitude.

Table 5.1. Assessment of the development of gminy and municipalities in the Polish-Slovak borderland (share of answers in %)

assessment	technical infrastructure				tourism		quality of environment		quality of life of inhabitants	
	transport		municipal							
	PL	SK	PL	SK	PL	SK	PL	SK	PL	SK
significantly developing	18.6	5.4	27.9	10.8	32.6	2.7	27.9	2.7	29.6	2.7
developing	60.5	40.5	60.5	43.2	55.8	40.5	55.8	56.8	61.3	51.4
stagnating	11.6	35.1	9.3	32.4	9.3	43.2	14.0	32.4	9.1	27.0
gradually deteriorating	2.3	16.2	0.0	0.0	2.3	5.4	0.0	2.7	0.0	13.5
significantly deteriorating	0.0	2.7	0.0	0.0	0.0	5.4	0.0	5.4	0.0	2.7
missing answer	7.0	0.0	2.3	13.5	0.0	2.7	2.3	0.0	0.0	2.7

Source: own elaboration based on the questionnaire survey.

The representatives of institutions with a regional scope of authority assessed the state of development of the border region more positively. They perceived it mainly as an administrative unit (the region of Žilina or Prešov). This concerns mainly the development of transport infrastructure and the quality of life of inhabitants which were perceived by almost 2/3 of respondents as "developing". The development of tourism

is perceived in the same positive way. On the other hand, the most critically assessed was the area of quality of the environment. It was assessed as rather stagnating or gradually deteriorating than showing features of gradual development.

Particular areas of the development and quality of the principal administrative units (gminy) in Poland are perceived in a slightly different way. The majority of respondents assessed them as "considerably developing" or "developing". Most gminy are assessed in this way in the area of the quality of life of inhabitants (93.0%), technical municipal infrastructure and tourism (88.4%). Most of the Polish gminy were highly positively assessed even in other areas (79.1% transport infrastructure, 83.7% quality of environment). From 9.3% to 14.0% of gminy were assessed as stagnating in each analysed area. The development of transport infrastructure is assessed as gradually deteriorating only in 2.3% of the surveyed gminy on the Polish side (among others also in the important tourist centre of Szczawnica). This also concerns tourism – although in these gminy there are other surveyed areas assessed on a satisfactory level (technical infrastructure, quality of environment and quality of life of inhabitants). More than 11.6% of the surveyed gminy are stagnating or not developing in the area of tourism (among others Baligród, Jabłonka and Poronin). From the point of the survey outcomes it is surely interesting that none of the municipalities and gminy on both sides of border was perceived negatively in the area of municipal infrastructure. Although the respondents on the Slovak side perceive a higher number of municipalities as stagnating in comparison to the statements of the respondents from the Polish gminy.

We can state that in general the assessment of development of the surveyed municipalities on the Slovak side is less favourable than on the Polish side. We get the stagnating description of the development more often on the Slovak side than on the Polish side. The reasons for this can vary. Apart from other things they can result from the differentiated size of the surveyed territorial units. Significant differences in the field of budgets or authorities, which these lowest units of territorial-administrative structure of the neighbouring states of the Polish-Slovak borderland have available, derive from their differentiated size.

5.1.2. TOURIST ATTRACTIONS AND THE IMPORTANCE OF TOURISM FOR THE DEVELOPMENT OF BORDER GMINY AND MUNICIPALITIES

Among the tourist attractions which were most often visited by tourists in the territory of the surveyed gminy and municipalities (or in their vicinity), sacred buildings, national parks and natural objects and in the third place cultural-historical attractions (open air museums and museums in Slovakia or other attractions in Poland) were most frequently mentioned in both states. Respondents from Poland also stated thematic or nature trails, castles, palaces or summer sports among the attractions. On the other hand, the respondents from Slovakia mentioned these attractions and others such as aquaparks and spas very rarely. The question dealing with tourist attractions had an open character (answers referring to the tourist attractions located on the other side of border appeared sporadically – as an attraction the Slovak respondents mentioned the spa of Szczawnica, and the Polish respondents mentioned TANAP) and presented outcomes represent the created categories of the stated tourist attractions.

Respondents think that 60% of the surveyed Polish gminy have unknown attractions in their territory which could potentially attract the tourists. A slightly higher ratio of respondents in Slovakia (71%) think that there are attractions which were not yet discovered by tourists in the Slovak border municipalities[17]. Among the attractions the respondents stated most often were churches and chapels, natural phenomena as well as cultural and historical monuments. Unfortunately, the majority of these attractions have only local importance from the cultural, historical or tourist view and play only a marginal role in the context of influence on increasing the attractiveness of the surveyed area for tourists.

In gminy and municipalities from which representatives participated in the survey the decisive kind of tourism is widely perceived as hiking (mountain hiking, walks in the nature, gathering of forest fruit and

[17] It is obvious (and natural as well) from the outcomes gained in Slovakia that considering the character of the municipality and region (smaller area of the municipality than the region) the perception of the tourist attractions by the representatives of organizations with the regional scope of authority or range is higher in number. An important fact is the finding that a relatively large group of respondents (almost one third of the municipality representatives and 18.4% of the representatives of regional organizations) think that the existing touristically interesting places are explored and well-known to the public.

others), followed by developing cycle tourism. The majority of the prevailing kinds of tourism can be found on both sides of the border. So called shopping tourism stated only by the Slovak respondents was an exception at the time this survey was conducted. On the other hand, horse tourism and religious tourism almost solely attract the tourists on the Polish side of the borderland. However, it does not mean that these (or other) kinds of tourism do not develop. It is necessary to realize that the respondents had the tendency to state the most probable behaviour of tourists which is to a decisive extent influenced by the objective existence and the subjective assessment of the attractions in the stated areas.

A higher ratio of cultural sight-seeing tourism is noticeable among the kinds of tourism stated by the Slovak respondents. On the other hand, winter sports, horse tourism and agrotourism were more frequently stated as important kinds of tourism by the respondents from Poland.

Tourism has significant importance in the context of the development of 68% of surveyed Polish gminy. Respondents from the Slovak side of the Polish-Slovak borderland attach considerably lower importance to tourism in the development of their municipalities. Based on their statements, this factor has considerable importance in the development of only 43% of municipalities participating in the survey on the Slovak side. It is highly probable to assume that the effect of the difference in size of the principal administrative units and facilities connected to that has affected the answers. It is obvious that in the considerably smaller Slovak municipalities and mainly in those municipalities where the tourist infrastructure is missing, this kind of economic activity does not bring any decisive income to the municipality or its inhabitants or the economic effect from tourism is very low. This is confirmed by the answers to the question dealing with development where the respondents pointed out the fact that municipalities in which the tourism plays only a marginal role stagnate or gradually deteriorate from the point of development of tourist infrastructure.

Tourism as an economic activity is considerably more positively perceived in the opinions of the Polish respondents. According to them an average of 20% of households in each surveyed gmina state this activity as their main source of income. However, some gminy representatives stated that the ratio of households in which tourism is the main source of income represent 80–90% from the overall number

of households in the gmina (Szczawnica, Czarna, Zakopane, Cisna, Bukowina Tatrzańska). Despite this, for the majority of households in gminy in the Polish-Slovak borderland the income from tourism is not the decisive income. According to the outcomes of the survey we can assume that this statement refers to approximately 68% of surveyed gminy.

The absolute majority of the respondents on the Slovak side estimate that the ratio of households in which the incomes from tourism are decisive for the household is maximally up to 20%. However there are also extreme cases. On one hand, there is the representative of Vysoké Tatry who believes that the income from tourism plays the decisive role for 95% of households. On the other hand, 35% of border municipality representatives state that there is no household in their territory in which the main economic activities are connected with tourism[18]. For proper interpretation of the outcomes it is inevitable to remember that we are dealing with subjective statements of the respondents which are not supported by any quantitative statistical data (the principal territorial-administrative units on both sides of the Polish-Slovak borderland do not have such statistics).

In connection with the role which the tourism plays in the social and economic life of the surveyed gminy and municipalities, the respondents had to express their opinion on the topic of which activities could contribute to their development. The answers were divided into four groups: improvement of tourist infrastructure, improvement of transport infrastructure, broadening and enhancing of the quality of information and promotional activities and other activities. Answers concerning the improvement of transport infrastructure were divided into two subcategories: the first deals with cross-border connections; the second deals with domestic infrastructure.

The improvement of infrastructure for tourism was perceived as the most useful and the most effective form of support in both states. 46% of respondents expressed this opinion on the Slovak side. Respondents from Poland tend to incline to this opinion to an even larger extent – up to 57% of respondents ascribe a significant role in the further development

[18] Representatives of the Slovak municipalities evaluate the importance of employment in tourism considerably worse than the representatives of regional organizations. More precisely, the results show that the importance of the region from the point of view of creation of job positions in tourism is considerably bigger than the importance of the selected municipalities. This is another proof of markedly worsened compatibility of the achieved results from the representatives of the principal administrative units in Poland and Slovakia.

of tourism in their territory to the issues connected with improvement of infrastructure. The need to expand accommodation capacities (56% of answers belong to this group) was most often mentioned in their answers (Fig. 5.1). The need to enhance the quality of transport infrastructure[19] emerged as another form of support for the development of tourism in the stated borderland. Its relevance was considerably more perceived in Slovakia than in Poland (31.5% vs. 16.3% of respondents). In both cases the cross-border infrastructure (e.g. building of new or maintenance of old roads, bridges, building of new border crossings) can be found only in some answers (4.4% in Poland and 9.7% in Slovakia). In the context of other answers connected with the quality of existing infrastructure enabling mutual interconnection of both parts of the Polish-Slovak borderland, we can state that there is not sufficient awareness about the possibilities of use of the (partially hidden) potential of the stated area. It is necessary to stress that in certain cases the respondents were able to

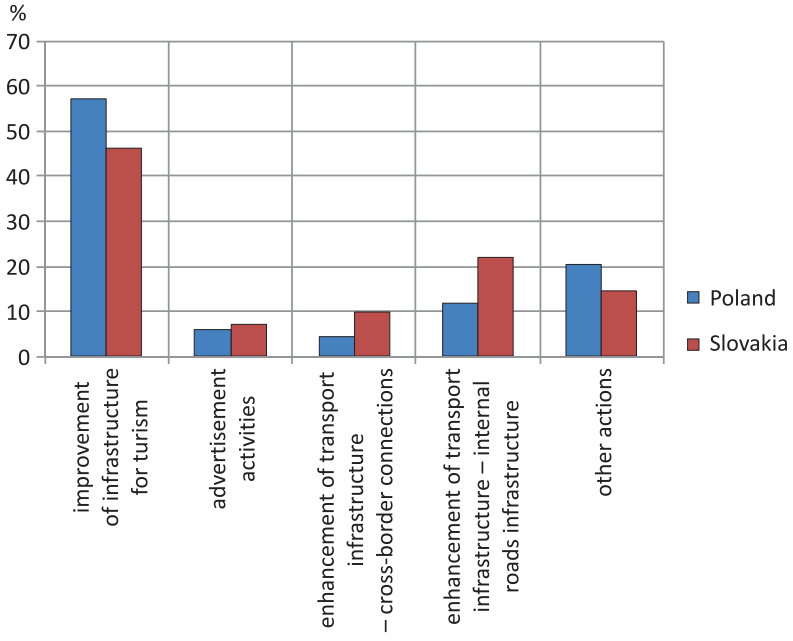

Figure 5.1. Activities which can contribute to the development of tourism in the surveyed municipalities and gminy under review

Source: own elaboration based on the questionnaire survey

[19] Some respondents explicitly enumerated specific investments in transport (mainly road) infrastructure, and they considered the roads of different hierarchic level – from international to local.

enumerate specific investments to the international, domestic, regional as well as local road communications which could positively influence the development of tourism in the surveyed area.

The respondents attached relatively low weight to the possibilities of stimulation of tourism development by various organizational or legal changes (e.g. tax reduction and reduction of local fees, facilitation of business registration, help with promotion, etc.) which are undemanding in terms of investments but require inevitable change in thinking of the decisive state and regional parties. On the other hand, it is also a proof of the dominant perception of the necessity to solve the problems of an infrastructural character.

5.1.3. CROSS-BORDER COOPERATION

The perception of cooperation of the surveyed Polish gminy and Slovak municipalities with entities on the other side of border can be assessed as good. It spontaneously came to mind and was afterwards stated in the questionnaires by 75% of Polish and 52% of Slovak respondents. An important factor determining the cross-border cooperation is the proximity of the border[20]. This relative geographical location means that despite the existence of the border the neighbouring principal administrative units of Poland and Slovakia become natural partners for cooperation. Among the stated reasons affecting the passivity or abortiveness in establishing cross-border cooperation were stated among other reasons lack of financial resources[21], excessive distance from the border or problems arising from the perception of the cooperation itself, such as disunion in setting common priorities. From the point of Slovak municipalities there is a problem with the existing human and social capital in some cases. The municipalities are small and do not have suitable age structure of inhabitants – they are superannuated. Another problem seems to be the high number of Romany inhabitants which is perceived as a barrier to the development of not only tourism but also of generally perceived cross-border cooperation.

[20] The surveyed gminy and municipalities are located in the so called border area which was delineated for the needs of the project INFRAREGTUR – maximum distance from the border was stated as 10–15 km

[21] For example, the representatives of two Polish gminy declared that they were trying to get financial resources for the support of common projects but they did not get financial support from external sources.

Projects supporting cultural activities (in Poland 26%, in Slovakia 16%) are one of the most numerous groups (Fig. 5.2) among the realized cross-border projects in both states. They lay in fulfillment of common intentions which emphasize the specifics of local culture, protection of cultural heritage but also organizing of events, festivals and concerts. The second group of realized projects (in Poland 25%, in Slovakia 15%) is connected with support for tourist activities, which are represented among other things by the modernization and building of infrastructure of tourism (tourist centres, nature trails, cycle routes, building of houses of Polish-Slovak cooperation, etc.) and/or by promotion of tourist attractions in the stated territory via various information-promotional materials, building of so called tourist information points, and others. The third most numerous group of projects is dealing with societal and sport events (exchange stays of young people, meetings of sport clubs, etc.). Around 15% of the overall number of cross-border projects was connected to the infrastructure, including building or reconstruction of roads, sewerage systems and others. A specific group of projects realized by the entities on both sides of the border is connected to the protection of nature. Their realization was among other things within the program Natura 2000 (improvement of the state of water in the River Dunajec and its tributaries). Such activities as well as activities supporting cultural activity show the responsibility of the

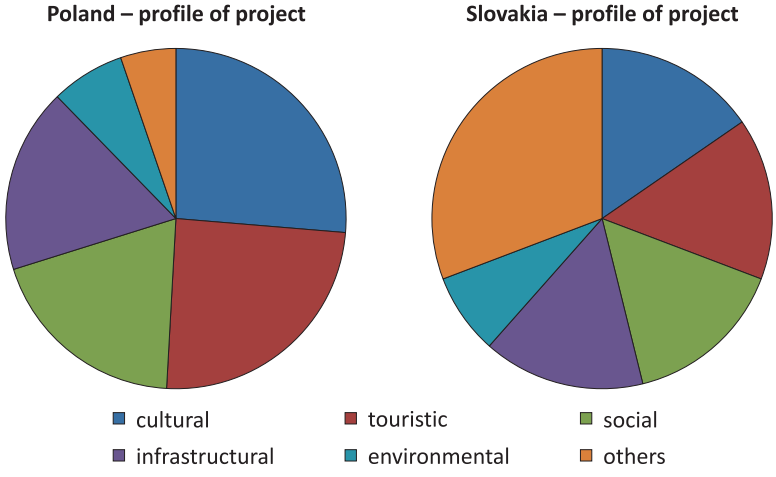

Figure 5.2. Polish-Slovak projects realized in the surveyed municipalities and gminy

Source: own elaboration based on the questionnaire survey

local authorities for the territory administered by them and maintenance of the quality of natural attractions which create the potential for increasing of attendance and development of tourism.

As we assumed, the most often mentioned factor supporting the cross-border cooperation between Polish gminy and Slovak municipalities is their geographical vicinity (Tab. 5.2)[22]. Entities often establish cooperation based on previous experience. According to the opinions of the respondents, realized publishing activities in the past as well as jointly prepared promotion of tourist attractions on both sides of the border support the idea of further cooperation and willingness to participate in it. A factor of the same importance, positively affecting the cross-border cooperation which is noticeable mainly on the Slovak side, is the existence of informal societal relations (private and family relations) due to which activities of a formal-institutional character are initiated. A factor which also facilitates the mutual cooperation but is relatively underestimated in the perception of the respondents is the language and cultural closeness of Poles and Slovaks.

According to the respondents, the main cause complicating cross-border cooperation is the lack of public communication connections (Tab. 5.3). Another important obstacle was the retardation in promotional and tourist awareness which is shown in insufficient or improper and undirected promotion of strong points of the neighbouring territory to the groups of potential visitors. A relatively low ratio of respondents pointed out the negative influence of too big distance between the surveyed gminy and municipalities for the development of the cross-border cooperation (in comparison to the positively perceived geographical proximity as a factor significantly supporting this form of cooperation). The most serious concerns were caused by the declaration of unwillingness to cooperate which was significantly stronger in the answers of the respondents from Slovakia. However, it is very difficult to evaluate the causes of this outcome based on the present survey. In any case we perceive this finding as a certain warning and, at the same time, as an impulse for further improvement of conditions

[22] The representatives of Polish gminy were more complex and sensitive when declaring active factors. Slovaks, in contrast to Poles, were not able to explicitly express the factors supporting the cross-border cooperation (therefore there are significant differences in the statements about factors).

for cross-border cooperation. However, detailed analysis of the stated issue would require more detailed research.

Table 5.2. Factors facilitating cross-border cooperation (in % from the overall complex of gminy and municipalities participating in the survey)[23]

	geographical proximity	language and cultural proximity	Common promotion and publishing activities	mutual cooperation/ common projects	cross-border tourist infrastructure	financial subsidy from the EU	good transport infrastructure	tourist attractions	societal relations	other
Polish gminy	90.69	25.58	58.13	51.16	6.98	9.30	23.26	0.00	0.00	0.00
Slovak municipalities	45.95	16.22	10.81	18.92	0.00	2.70	5.41	5.41	21.62	2.70

Source: own elaboration based on the questionnaire survey.

Table 5.3. Factors impeding the cross-border cooperation (in % from the overall set of gminy and municipalities participating in the survey)[24]

	large distance from the border	unwillingness to cooperate	insufficient promotion and tourist awareness	insufficient cooperation of institutions	insufficient infrastructure for tourism	insufficient financing	different currency	legal differences	insufficient public transport	other
Polish gminy	9.30	2.33	48.84	4.65	6.98	2.33	11.63	4.65	95.35	0.00
Slovak municipalities	2.70	13.51	24.32	2.70	8.11	8.11	8.11	0.00	54.05	5.41

Source: own elaboration based on the questionnaire survey.

[23] It was possible to state more answers, more factors facilitating cross-border cooperation to the open question.

[24] It was possible to state more answers, more factors impeding the cross-border cooperation.

Tourists who come to the Polish side of the Polish-Slovak borderland and are accommodated in gminy whose representatives participated in the survey, have higher interest to know the territory and people living on the other side of border. They cross the border more often than the tourists from Slovakia. In both cases the ratio of stated travelling across the border is high – 78% of tourists accommodated in Polish gminy and 54% of tourists accommodated in Slovak municipalities during their stay visit tourist attractions on the other side of the border. Among the destinations most often visited by Polish tourists on the Slovak side were Bardejov, Oravice, The Red Monastery (Červený Kláštor) and the Slovak Paradise. Concerning the kind of activities, visits to thermal pools and aquaparks prevail (more than 68% of answers), historical-cultural attractions (30.2%) and ski resorts (21%). For the tourists coming to Poland from the Slovak side of the borderland the most often visited destinations are Krynica, Niedzica Castle, Zakopané, Nowy Targ and Krakov.

5.1.4. TRANSPORT ACCESSIBILITY

Among the most serious reasons why tourists from one side of the Polish-Slovak borderland do not visit gminy or municipalities located on the other side of the border is most often mentioned difficult access, accessibility. Problems with accessibility are caused by the distance from the border as well as insufficient transport infrastructure enabling crossing of the Polish-Slovak border (this concerns mainly its eastern part). As the second reason for the lack of interest to visit "the neighbours" the respondents stated insufficient awareness about the attractions on the other side of the border.

How to improve this situation and how to attract the tourists from the other side of the border? According to the opinions of the respondents the prime task is to improve the transport connection and transport infrastructure[25]. This solution was preferred by a whole third of them. Another 30% of respondents think that the quantitative growth of visits to both sides of the Polish-Slovak borderland could be assured by using existing reserves for directed and quality knowledge of the

[25] Concerning Slovakia, it is necessary to realize that building of highways can lead to significant strengthening of the peripheral characteristic of the majority of small border municipalities with a negative influence on visits to them.

potential clients. Respondents also highlighted the need to increase the offer of organized trips to Slovakia (requirement from the Polish side) and improvement of specific tourism infrastructure, which could enable crossing of the border. The requirement to build or widen the tourist routes and cycle routes appeared most often.

Table 5.4. Average evaluation* of the possibility of access to the surveyed gminy and municipalities

access to gminy and municipalities	from Poland				from Slovakia			
	by car	by train	by bus	other	by car	by train	by bus	other
Polish	4.33	1.41	2.83	4.50	4.45	0.94	1.50	3.75
Slovak	3.49	0.32	1.74	3.67	3.91	0.55	2.60	3.67

*respondents evaluated on the range from 0 (non-existence of connection) to 5 (very good possibility of access).

Source: own elaboration based on the questionnaire survey.

From the possibilities of access by all means of transport to the surveyed gminy and municipalities (from the territory of Slovakia as well as from the territory of Poland), the possibilities for access from the home country are partially better assessed (Tab. 5.4). It seems that the long-term existence of the border and the following perception of it as a barrier has not been completely uprooted from the thinking of people. This is true despite the obvious improvement of transport infrastructure. The differences in perception of access are not very big among the Slovaks and Poles and they differ in connection to the kind of means of transport.

Polish respondents think that the surveyed gminy and municipalities are best accessible by private transport (by cars) – that is for the tourists coming from Poland as well as from Slovakia. The accessibility by regular bus services and other means of transport was assessed less positively. Among other means of transport by which the tourists come to the surveyed gminy and municipalities (or to their vicinity) the respondents also mentioned air transport (mainly Poles) which is in contrast to transport on foot or with the use of bicycle (this form of transport was more often stated by the respondents from Slovakia). The accessibility by railway transport was perceived the most negatively.

On one hand it resulted from the limited possibility to connect a larger number of gminy and municipalities by railway transport (in contrast to the transport using the road network), but on the other hand it resulted also from the lack of railway connections in the stated area of the Polish-Slovak borderland.

The basic means of transport which is used by tourists coming to the Polish border gminy from Slovakia is car (Fig. 5.3). Bus was stated as a basic means of transport only in one gmina (Istebna). We have assumed the gained outcomes about the most important means of transport for access to the stated territory due to the current strong highlighting of the individual transport and due to the knowledge about the current state of the possibilities to use the public transport. The other most often used means of transport identified by the respondents are bus transport (64.2%) and transport by bicycle (28.6%). The last was stated only by the representatives of gminy located near the border with Slovakia. Transport on foot as an alternative, actively used means of crossing the border was stated only by the representative of one gmina.

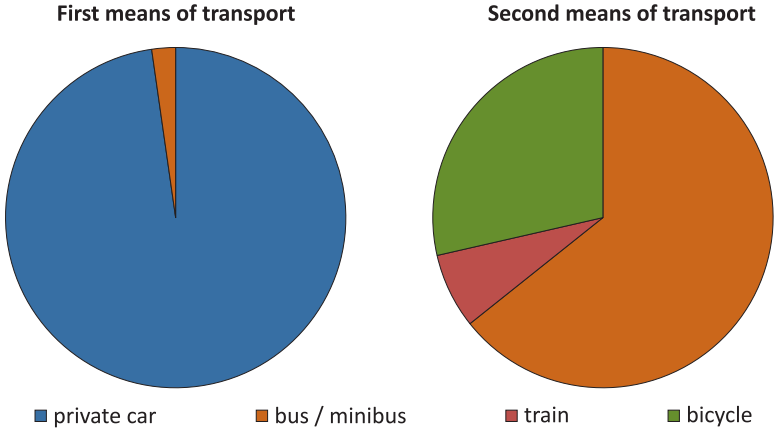

Figure 5.3. Means of transport from Slovakia to the Polish part of the Polish-Slovak borderland (in % of the gained answers)

Source: own elaboration based on the questionnaire survey.

Representatives of the Slovak municipalities offered more heterogeneous answers. The car was identified as the basic and most important means of transport used by Poles to access the Polish part of the

borderland (Fig. 5.4). However, the ratio of cars is lower (86.5%) and the overall structure of the used forms of transport to the Slovak municipalities is more diversified. In the case of the most important means of transport it is connected with bicycles and transport on foot. In the case of the second most important means of transport apart from using the bicycle, the ratio of bus transport and organized bus tours is surely interesting. Likewise, the percentage of municipalities visited by Poles on foot is higher than the percentage of gminy visited on foot by Slovaks. Despite the existing potential the use of railway transport is only marginal.

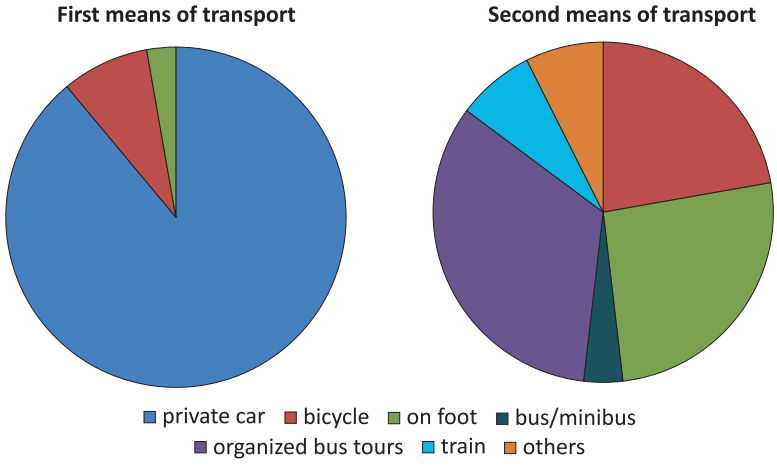

Figure 5.4. Means of transport from Poland to the Slovak part of the Polish-Slovak borderland (in % of the gained answers)

Source: own elaboration based on the questionnaire survey.

We assumed that the best assessment of transport within the territory of the surveyed gminy and municipalities would be the same as in the case of border crossing – that the best assessment would be achieved by the individual vehicular traffic. This assumption was confirmed by the survey (Tab. 5.5). Respondents from Poland slightly better assessed the possibilities of transport across the border by cars than the respondents from Slovakia. However, the assessment of internal accessibility (within the municipality) by car was better than the possibility of access to the stated municipality by crossing the border. In general we can state that the internal as well as external accessibility of the territory by the used means of transport was on average assessed higher in Poland than in Slovakia.

The possibilities of transport by bicycle were highly assessed by the respondents from both countries. The positive assessment involved transport within the territory of the surveyed gminy or municipalities (internal accessibility) as well as the possibilities of crossing the border (external accessibility). It is noteworthy that the average values of assessment were numerically close to the values which the respondents stated for the possibilities of individual transport by cars. The possibilities of transport on foot were similarly highly evaluated. This slightly exceeded the possibility of transport by bicycle in the case of the internal accessibility. The lowest assessment of public transport (bus transport), mainly in the sense of cross-border use could be perceived as a significant challenge.

Table 5.5. Average evaluation* of the possibilities of transport in the local territory as well as in the territory on the other side of the border

	in the territory of the surveyed gmina and municipality					on the other side of the border				
	car	bus	bicycle	on foot	other	car	bus	bicycle	on foot	other
PL	4.39	3.25	4.01	4.15	0.00	4.39	1.88	3.50	3.03	0.00
SK	3.82	2.70	3.53	3.38	1.00	3.77	2.10	3.22	2.62	1.00

* the respondents evaluated at the range from 0 (non-existence of connection) to 5 (very good possibility of access).

Source: own elaboration based on the questionnaire survey.

The representatives of gminy and municipalities concur in many cases on the question of solving the improvement of accessibility of their territory. The overwhelming majority of mainly Polish respondents (70.2%) think that it is mainly necessary to improve the quality of the road infrastructure. This opinion was shared by 52.9% of the Slovak respondents (Fig. 5.5). By improvement we mean mainly building of new roads (82% in Poland and 92% in Slovakia). Stressing the necessity to improve the surface of existing roads was more or less occasional – technically only one person out of ten respondents was able to see the possibilities of improvement of accessibility in improvement of the existing state of the road network with considerable lower financial expenses and minimalized negative influence on the soil and quality of the environment. Part of the answers of the respondents concerned with transformational- organizational changes (organizing activities)

mainly in the public transport. The need to increase the number of the existing regular services or rational changes in organization based on the needs of local inhabitants and tourists resonated the most among them. Respondents from Slovakia connect the improvement of accessibility of their municipalities with the building of pedestrian pathways and cycle routes (35.2% of answers) which could enable their connection with neighbouring gminy in an undemanding way it terms of capital.

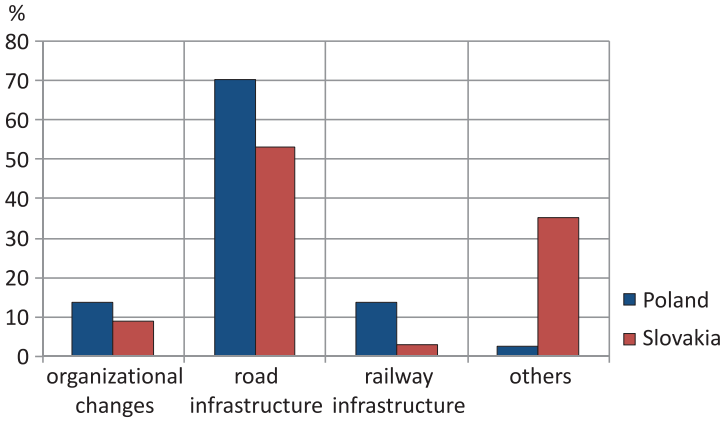

Figure 5.5. Activities which need to be undertaken to improve the accessibility of the surveyed gminy and municipalities

Source: own elaboration based on the questionnaire survey.

Among the activities which should help to improve the accessibility of tourist attractions in the territory of the surveyed gminy and municipalities, recommendations connected to the improvement of transport infrastructure repeatedly dominated with more than one third of answers. This meant mainly road infrastructure (Fig. 5.6) with respondents thinking about building of roads and facilities such as carparks. The same support in Slovakia (slightly lower in Poland) was gained by recommendations connected to the necessity to widen the existing infrastructure of tourism (building and modernization of existing pedestrian pathways and cycle routes as well as widening and improving existing accommodation capacities). Respondents also stressed the need to improve the tourist awareness which could make the chosen gmina (municipality) more attractive to tourists. As was clear from the answers to other questions, mainly Poles saw the problem of their

low awareness or completely insufficient awareness in insufficiently marked tourist attractions in the territory of gminy.

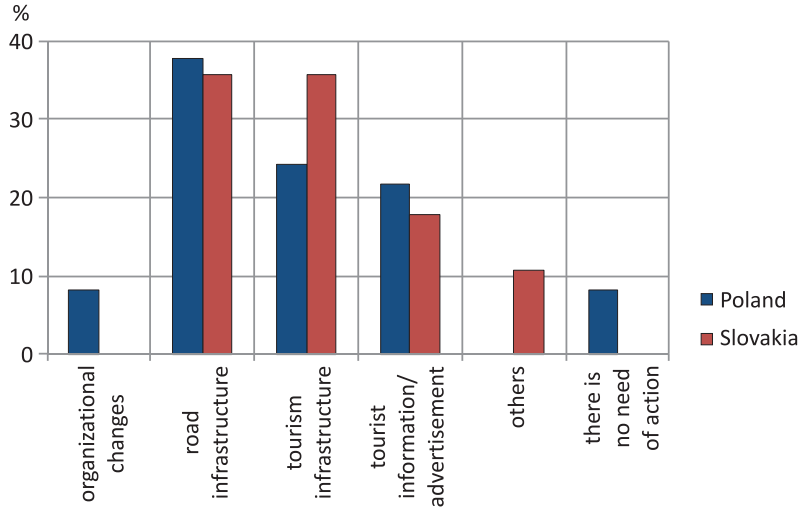

Figure 5.6. Areas in which it would be appropriate to undertake activities focused on improvement of the accessibility of tourist attractions in gminy and municipalities

Source: own elaboration based on the questionnaire survey.

Concerning the possibilities of improvement of transport across the border, the Polish respondents to a higher extent tend to think that the biggest reserves are in improvement of transport organization (Fig. 5.7). They most critically perceived mainly the irregularity and insufficient frequency of bus services. Slovak respondents repeatedly saw the solution in improvement of the road infrastructure. Suggested recommendations concerned mainly the reconstruction and modernization of existing roads as well as building of new road stretches enabling easier crossing of the border. More sensitive perception of the need to improve the infrastructure of tourism from the side of the representatives of Slovak municipalities is the reflection of the real state of existing, in some cases too noticeable differences in the Polish and Slovak borderland. It is also interesting that almost 10% of surveyed Poles and less than 5% of Slovaks were satisfied with the current state and did not express the need to undertake certain activities which should lead to improvement of the possibility to cross the border.

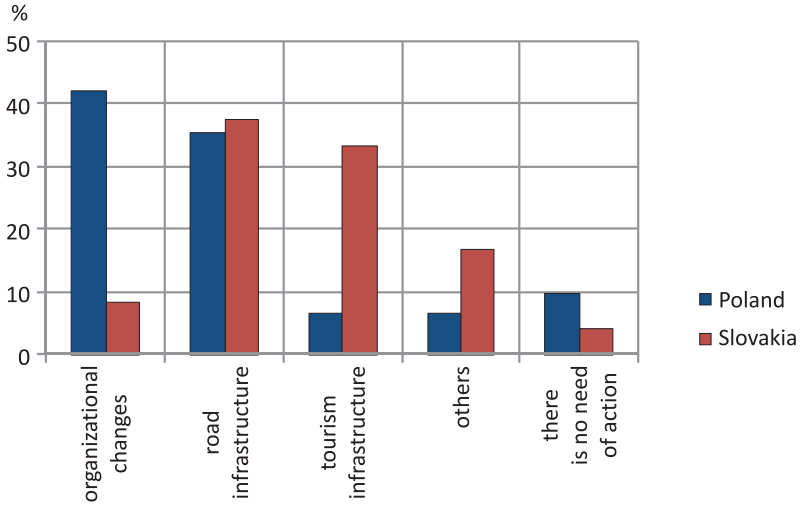

Figure 5.7. Areas in which it would be appropriate to undertake activities focused on improvement of the possibilities of transport across the border

Source: own elaboration based on the questionnaire survey.

5.1.5. CONCLUSION

On the basis of subjective assessment of particular areas of socio-economic life in the surveyed Polish gminy and Slovak municipalities we can state that there has been an improvement in the perception of their representatives. This is caused by objective changes mainly in the area of transport infrastructure and technical and social municipal infrastructure which have improved life in the Polish-Slovak borderland. Since the particular areas are closely interconnected, the positive assessment also affects the quality of life and conditions made for the development of tourism.

The churches, chapels and other cultural-historical and natural attractions were identified by the respondents as less known tourist attractions in the territory of the surveyed gminy and municipalities. However, the overwhelming majority of these attractions have only local importance from the cultural, historical or tourist view. Therefore, they did not and do not belong to the important attractive factors which could raise the attractiveness of these territories for tourists. On the other hand, despite the fact that the attractions by themselves do not

have high "tourist potential", creation of thematic routes or interconnected (thematically and by organization) groups of tourist targets they can become part of interesting (alternative) tourist activities.

The declared cooperation between the entities on both sides of the border (mainly between gminy and municipalities) is assessed as active. Respondents mentioned many common projects of infrastructural (building, i.e. so called "hard" infrastructure) as well as of organizational character (so called "soft" projects). Among the organizational obstacles to cooperation (and development of tourism too), we can especially mention the deficiencies in the existing range and quality of transport infrastructure and the possibilities of transport connection. Respondents partially see the solution of improvement of the current state not only in building of new roads but also in organizational changes (compliance with the needs of clients and increased frequency of lines) of public transport.

The accessibility of the surveyed territory is diverse. The differentiating factor is always the surveyed type of accessibility (outer, inner, border) as well as the means of transport. The possibility of transport by individual means of transport is assessed as the best. It is connected with the necessity of improvement of the road infrastructure. The respondents do not trust the public transport and in their opinion it plays a more or less only marginal role in satisfying the needs of tourists. Its critical assessment corresponded with this, in both the domestic and cross-border contexts.

According to the opinions of the representatives of the surveyed gminy and municipalities the Polish tourists in the Polish-Slovak borderland more often visit tourist attractions on the other side of the border. On the contrary, the tourists accommodated on the Slovak side of the stated borderland are considerably less likely to visit the Polish tourist attractions. An important exception, however, is the behaviour of so called "shopping" tourists from Slovakia who like to go to Poland with the aim of more favourable shopping in terms of price.

A relatively new discovery is the finding of the increasing importance of hiking and cycle tourism when crossing the border on the local level. Respondents place relatively high emphasis on the building and maintenance of pedestrian pathways and cycle routes.

5.2. PERCEPTION OF TOURISM AND ACCESSIBILITY FROM THE POINT OF VIEW OF TOURISTS

The aim of the survey via electronic questionnaire was to get information about visiting the Polish-Slovak borderland in the year 2010. The needed information included the time and financial resources the respondents are willing to pay for the trip to the tourist destination, preferred forms of tourism and some aspects of the tourist stay in the area of the Polish-Slovak borderland (frequency, means of transport, kind of tourism). Moreover, we wanted to study the tourists' experience of the areas of the Slovak and Polish borderland by the respondents, character of the visit to the Polish-Slovak borderland, factors which attract or discourage the respondents from visiting the Slovak or Polish part of borderland and what should change to increase visits to the Slovak or Polish parts of the Polish-Slovak borderland.

The survey was conducted via an electronic questionnaire in the Slovak and Polish languages. The questionnaire in the Slovak language was available at www.iankety.sk from April to June 2011. A total of 268 answers were gained. The respondents could answer the questions published in the Polish language from February until the end of July 2011 at the webpage www.net-ankiety.pl. A total of 441 questionnaires were filled in at the Polish server. 69.4% of them contained answers to all the questions.

Answers to the Slovak questionnaire were provided by 95.4% of Slovak respondents, 2.7% of Czech respondents and 0.8% of the respondents from Poland and other countries 1.1%. The majority of respondents were from the Bratislava region (53.4%). Representation of respondents from other regions was as follows: Žilina region (12.4%), Trnava region (10.0%), Trenčín region (6.8%), region of Banská Bystrica (6.0%), Košice region (4.4%), Prešov region (4.4%) and Nitra region (2.8%). The majority of respondents were people with university education, employed persons and persons with the average monthly salary per capita in the household at 500–1000 €. Women slightly prevailed among the respondents. The age structure was rather balanced, however answers by respondents from the age range of 25–29 years appeared most often.

Answers to the Polish version of the questionnaire were provided by 96.9% of Polish respondents, 1.4% of respondents from Germany, 1.0% of respondents from Slovakia and 0.7% of respondents from other

countries. The biggest group of respondents from Poland were inhabitants of Warsaw 33.8% and other big cities located in the area (or in the vicinity) of the Polish-Slovak borderland (Bielsko-Biała 8,6 %, Kraków 7,2 %, Rzeszów 2,5 % and Lublin 2,5 %). Larger groups of respondents were also from the districts in the vicinity of Warsaw – from the district of Western Warsaw (6.8%), district of Pruszkow (2.9%) and Grodzisk district (2.2%). More than 80% of respondents who filled the questionnaire in the Polish language had university education and 18.6% had secondary education. Groups of employed people prevailed (42.4%), then pupils and students (13.8%). The monthly per capita income in the households had an average level from 2000 to 4000 PLN (500–1000 €). Women prevailed in the surveyed population (59.2%).

5.2.1. LENGTH OF STAY AND ASSUMED EXPENSES FOR TRANSPORT TO THE TOURIST DESTINATION

According to the Slovak respondents short-term stays of one-day without accommodation were most frequent in 2010. They happened 7 or more times (Tab. 5.6). More than 70% of respondents stated that they made medium-term stays at least once a year, most often two to three times a year. More than 60% of respondents decided for long-term stays of 5 days or more, most often once or twice a year.

Table 5.6. Number and length of the tourist stays made in 2010

number of tourist stays	one-day (without accommodation) – in %		medium-term (2–4 days) – in %		long-term (5 and more days) – in %	
	SK (n=150)	PL (n=325)	SK (n=150)	PL (n=322)	SK (n=150)	PL (n=322)
0	18.7	16.9	26.7	16.8	39.4	18.6
1	10.0	11.1	14.0	16.4	21.3	33.9
2	10.0	11.1	20.7	20.5	25.3	23.9
3	13.3	9.5	18.0	17.7	8.0	12.7
4	7.3	8.6	7.3	9.6	3.3	4.3
5	8.7	10.2	5.3	5.0	0.7	2.2
6	4.0	1.8	1.3	2.8	0.7	1.9
7 and more	28.0	30.8	6.7	11.2	1.3	2.5

Source: own elaboration based on the questionnaire survey.

The most frequent forms of recreation stated by the respondents from Poland were one-day excursions without accommodation. Exactly 31%

of respondents stated more than 7 stays during the year 2010. A relatively high ratio of persons stated that they travel for long-term stays (more than 80%) but their frequency was much lower (most often once or twice a year). More than half of the respondents had one to three medium-term stays a year.

An important part of the analysis is the determination of the acceptable time needed for travelling to the tourist destination depending on the length of stay. Concerning the one-day stays the most often stated opinion in the questionnaires filled in by the Slovak respondents (more than 44.0% of respondents) was that they think the acceptable length of journey is 2 hours (Tab. 5.7). On average every fourth respondent was willing to accept the duration of journey of 3 hours, but the considerable time limit for this kind of travelling to holiday places (according to the respondents in Slovakia) was 4 hours. Within the medium-term stays the preference of 4–5 hours prevailed. For long-term stays more than two fifths of respondents from Slovakia (42.0%) preferred more than 10 hours.

Table 5.7. Time the respondents are willing to spend travelling to the tourist destination (according to the length of stay)

number of hours	one-day stay (without accommodation) – in %		medium-term stay (2–4 days) – in %		long-term stay (5 and more days) – in %	
	SK (n=219)	PL (n=356)	SK (n=219)	PL (n=346)	SK (n=219)	PL (n=346)
1 hour	9.1	7.3	7.3	0.3	0.3	0.0
2 hrs.	44.3	36.5	36.5	2.0	2.0	1.2
3 hrs.	27.4	32.6	32.6	14.2	14.2	1.7
4 hrs.	9.1	12.6	12.6	23.4	23.4	2.9
5 hrs.	7.3	5.6	5.6	20.5	20.5	4.6
6 hrs.	1.8	1.4	1.4	13.3	13.3	4.1
7–8 hrs.	0.5	2.3	2.3	13.0	13.0	14.7
9–10 hrs.	0.0	0.6	0.6	4.6	4.6	15.9
> 10 hrs.	0.5	1.1	1.1	8.7	8.7	54.9

Source: own elaboration based on the questionnaire survey.

Concerning the stays where the respondents did not assume the need for accommodation the majority of Polish respondents was willing to travel 2 to 3 hours to the place of stay. In the case of medium-term stays

the time spent travelling was usually 4 to 5 hours. Within long-term stays, similarly to Slovak respondents, most persons were able to accept destinations with times of transport of more than 10 hours (55% of respondents).

As we assumed, the time the respondents would be willing to spend travelling to the place of recreation is proportionate to the amount of time intended for relaxation.

Apart from the time needed for travelling another important factor influencing the decision is the price which the respondents are willing to pay for the journey (per capita) to the tourist destination (from the place of residence to the target place).The majority of Slovak respondents stated that prices in the ranges 5–12 and 12–25 € (for one person there and back) were acceptable for one-day stays (Fig. 5.8). In the case of medium-term stays (from 2 to 4 days) the limit of price acceptability was higher than in the case of the one-day stays. The majority of respondents stated two price ranges: 12–25 € and 25–50 €. For long-term stays the limits of price acceptability for the transport were significantly higher. One fourth of the respondents was willing to pay 50–125 € per capita, 12% of respondents stated the sum exceeding 500 € per capita for a long-term stay.

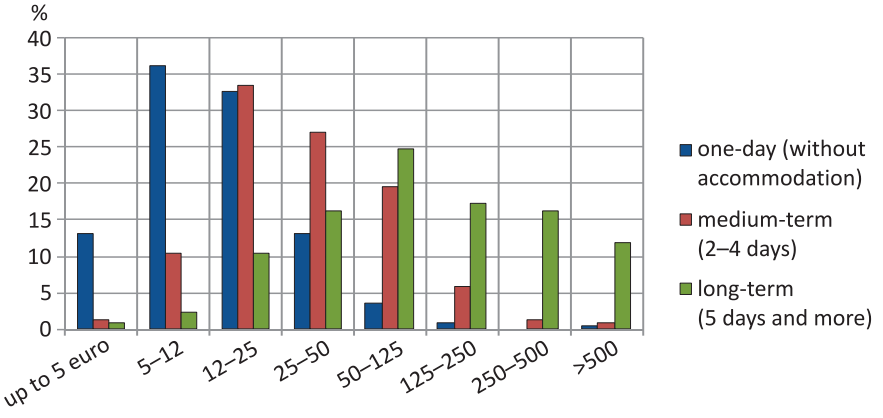

Figure 5.8. The sum the Slovak respondents are willing to pay for the journey to the tourist destination (per capita there and back) according to the length of stay

Source: own elaboration based on the questionnaire survey.

For the biggest group of respondents from Poland the acceptable price for transport for a one-day stay per capita (without accommodation) is 20–50 PLN[26] (Fig. 5.9). Concerning the medium-term stays the most often stated answer was a sum ranging from 100 to 200 PLN (34.2 %). The upper limit of expenses for this type of transport was stated at PLN 2 000. In the case of long-term stays the biggest group of respondents is willing to accept expenses ranging from 200 to 500 PLN per capita. A similar ratio of respondents (from 15.6% to 19.4%) accepted the expenses in the range of 100–200, 500–1000, 1000–2000 and more than 2 000 PLN.

Similarly to the time needed for travelling the acceptable prices for transport are proportional to the length of stay.

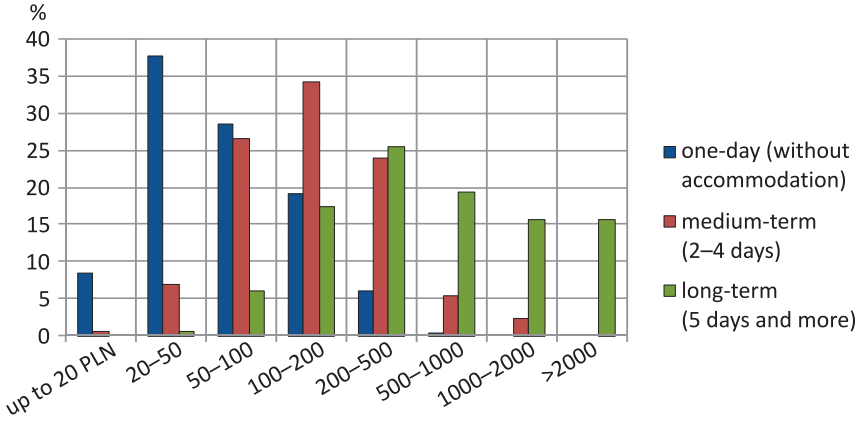

Figure 5.9. The sum the Polish respondents are willing to pay for the journey to the tourist destination (per capita there and back) according to the length of stay

Source: own elaboration based on the questionnaire survey.

5.2.2. PREFERENCES FOR PARTICULAR KINDS OF TOURISM ACCORDING TO THE RESPONDENTS

The respondents were firstly addressed in connection with travelling in general in order to be able to get the answer to the question which kinds of tourist stays they prefer (Fig. 5.10). Slovak respondents prefer active forms of spending free time (hiking, cycle tourism, water sport,

[26] Note: Sums in EUR and PLN are comparable. At the time the questionnaire was filled in the rate was 1 EUR = 4 PLN

winter sports). Less than one fourth preferred sight-seeing tourism (cultural, festival, discovering the country and nature); and less than one fifth preferred recreational forms such as agrotourism or holidays by the sea.

Respondents from Poland preferred sight-seeing tourism (more than half of the answers). Apart from this they also stated specialized tourism (trekking, cycle tourism, water sports, winter sports) (22.9%) and recreational forms of tourism (22.4%). None of the respondents stated health tourism (stay in spas, treatment) which could be affected by the age of the respondents or by the fact that this kind of recreation is perceived as additional (respondents were asked to state the most preferred kind). Business tourism (congresses, fairs, exhibitions) appears in the answers rather rarely.

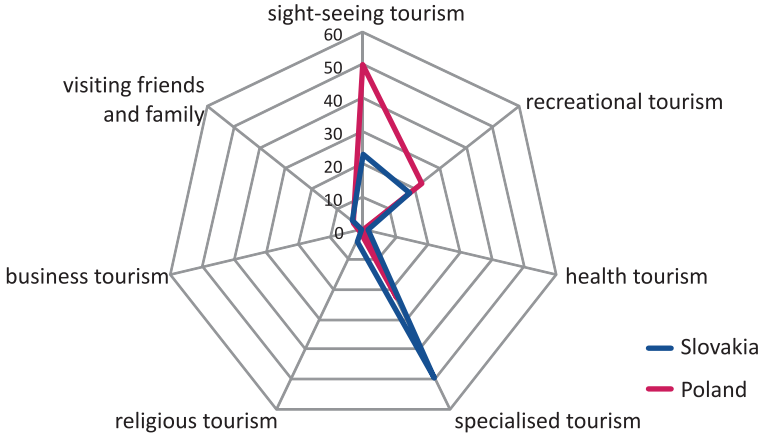

Figure 5.10. Most favourite kinds of tourism (in general)

Source: own elaboration based on the questionnaire survey.

5.2.3. NUMBER OF TOURIST STAYS AND THE KIND OF TRANSPORT WHEN TRAVELLING TO THE POLISH-SLOVAK BORDERLAND

Almost 17% of persons in Slovakia, who participated in the survey, visit the area of the Polish-Slovak borderland once a year for one-day stays (Tab. 5.8). The ratio of the realized journeys to the region within a year is higher in the case of medium-term stays (30.1%). The survey showed that only a small part of the respondents choose the borderland for the destination of their long-term tourist stay (almost 20% once

a year, 6% twice a year). 69.4% of the analysed answers attests to the fact that the respondents did not decide for long-term relaxation in the Polish-Slovak borderland.

Among the answers of the Polish respondents to the questions about tourist stays in the Polish-Slovak borderland, in all three analysed types of journey (one-day, medium-term and long-term) the negative answers dominated (Tab. 5.8). This means that the sample of respondents relatively rarely considered the journey to the Polish-Slovak borderland as its target for recreation. Even if they decided for this destination, it was most often for one-time journeys mainly with medium-term and long-term stays. A relatively small number of respondents decided to repeat the tourist stay in the borderland.

Table 5.8. Number of tourist stays in the area of the Polish-Slovak borderland

number of stays during the year	one-day stay (without accommodation) – in %		medium-term stay (2–4 days) – in %		long-term stay (5 and more days) – in %	
	SK (n=183)	PL (n=260)	SK (n=183)	PL (n=253)	SK (n=183)	PL (n=243)
0	55.3	58.1	43.7	47.4	69.5	52.3
1	16.9	16.1	30.2	26.5	19.7	32.1
2	12.0	9.2	16.9	15.4	6.0	9.9
3	3.3	6.2	2.7	5.5	3.3	3.3
4	0.0	2.7	1.1	0.8	0.5	0.8
5	1.6	1.9	1.6	0.8	0.5	1.2
6	1.6	0.4	1.1	1.2	0.0	0.4
7 and more	9.3	5.4	2.7	2.4	0.5	0.0

Source: own elaboration based on the questionnaire survey.

The questionnaire survey provided information about the means of transport which were used when travelling from the place of residence to the area of the Polish-Slovak borderland (Tab. 5.9). According to the Slovak respondents cars or motorbikes (58.9%) and trains (26.9%) were most often used for the one-day stays. A similar situation was also recorded in the case of medium-term and long-term stays. Plane as a means of transport appeared in the answers in the case of the long-term stays of only a very small ratio of respondents.

The most important means of transport used for travelling to the Polish-Slovak borderland according to the Polish respondents was the car or motorbike (63.3% one-day, 24.5% medium-term and 23.1% long-term stays). Travelling by public transport (bus and train) is stated in average by every third respondent (in the categories specified based on the length of stay). Only one respondent stated air transport as a means by which he got to the vicinity of the border. It is connected with the relatively limited air connections in the vicinity of the border, location of airports and price of this form of transport.

Table 5.9. Means of transport used when travelling from the place of residence to the Polish-Slovak borderland (according to the length of stay)

means of transport	one-day stay (without accommodation) – in %		medium-term stay (2–4 days) – in %		long-term stay (5 and more days) – in %	
	SK (n=183)	PL (n=175)	SK (n=183)	PL (n=182)	SK (n=183)	PL (n=166)
bus	10.9	15.8	13.4	17.4	10.9	15.0
train	26.9	11.8	28.6	22.6	24.4	27.3
car/motorbike	58.9	63.3	56.4	56.9	57.2	54.5
bicycle	2.5	1.7	0.8	0.5	0.8	0.5
plane	0.0	0.6	0.0	0.0	4.2	0.0
other	0.8	6.8	0.8	2.6	2.5	2.7

Source: own elaboration based on the questionnaire survey.

The information about means of transport most often used when crossing the border was also surveyed. During one-day stays the respondents from Slovakia most often used cars and motorbikes (60%) and bus tours (less than 15%) – Table 5.10, while a similar situation was also ascertained in the case of medium-term stays. However, a different situation was found with long-term stays. The car or motorbike still dominated when travelling across the border, but train was stated in second place.

Similar results were obtained from the surveys conducted in Poland. The most frequently used means of transport was car or motorbike (63.5% in the case of one-day stays, 60.5% in the case of medium-term stays and 56.7% in the case of long-term stays). The second most frequently stated means of transport (for all kinds of journeys) was bus

tours. Journeys by railway play a relatively small role. Tourists most often use this means of transport for long-term stays (10.2%).

Table 5.10. Means of transport used when travelling from one side of the border to the other

means of transport	one-day stay (without accommodation) – in %		medium-term stay (2–4 days) – in %		long-term stay (5 and more days) – in %	
	SK (n=94)	PL (n=175)	SK (n=94)	PL (n=182)	SK (n=94)	PL (n=166)
bus line	14.9	17.1	12.8	22.0	7.4	20.5
bus tour	5.3	6.3	6.4	4.9	6.4	6.6
train	7.4	3.4	13.8	4.9	17.0	10.2
car/motorbike	59.6	63.5	58.5	60.5	57.5	56.7
bicycle	1.1	2.3	1.1	1.1	1.1	0.0
other	11.7	7.4	7.4	6.6	10.6	6.0

Source: own elaboration based on the questionnaire survey.

5.2.4. KINDS OF TOURISM IN THE POLISH-SLOVAK BORDERLAND

It was possible to state more than one answer to the question about the most frequently experienced kind of tourism in the Polish-Slovak borderland. According to Slovak respondents it is hiking (66.4% of respondents), followed by cultural sight-seeing tourism (36.4%), winter sports (29.2%), visits to friends and family (24.1%) and shopping tourism (20.2%). Other kinds were cultural sight-seeing tourism (52.2%) and recreational tourism (38.1%). Winter sports are also very popular (34.1%). Horse-tourism and congress tourism are among the least used ways of spending free time.

The most often visited areas from the surveyed regions (regions of the Slovak part of the borderland where the analyses within the project were conducted) were according to the Slovak respondents the Tatras (94.5%), Orava (87.0%) and Liptov (81.4%). Concerning the visits of the Polish respondents to the Slovak part of the borderland the Tatras definitely dominate (62.4% of respondents). Kysuce and Horný Zemplín were stated among the least popular areas. Among the regions of the Polish borderland, the Polish respondents most often mention the Tatras (69.1%). Tourism in other regions was stated equally in the

regions of the Sliezske Beskydy, Żywiecke Beskydy together with the range of Babia hora, Pieniny, Beskid Sądecki and Bieszczady. The region of Nízke Beskydy was an exception because it was the least visited by the respondents. The Tatras also dominate in the visits of Slovak respondents to the Polish part of the borderland (62.1%). Other regions, apart from Pieniny (39.1%), were rarely stated by the Slovak respondents.

After crossing the border with Poland respondents from Slovakia engaged in several kinds of tourism. Most often it was hiking (more than 50% of respondents stated this answer) – Table 5.11. (it was possible to state more answers in the questionnaire). Shopping tourism as well as cultural sight-seeing tourism were also very popular. A very low ratio engaged in horse-tourism, agrotourism, visits to spas and congress tourism. The answers of the Polish tourists who visited the Slovak part of the borderland had a similar character. Most often stated was hiking (67.1%) and cultural sight-seeing tourism (42.2%). Winter sports, recreational tourism, spa and shopping tourism were stated less often. The lowest number of respondents engaged in horse-tourism, pilgrimage tourism and visit to friends and family (in every case less than 2%).

Table 5.11. Kinds of tourism which the tourists experienced after crossing the border

kinds of tourism	after crossing the border from Poland (in %)	after crossing the border from Slovakia (in %)
hiking	67.1	50.6
cycle tourism	9.7	6.3
winter sports	24.9	6.3
spas and aquaparks, water sports	17.3	3.6
horse-tourism	0.8	0.4
recreation tourism	20.7	13.0
agrotourism	3.4	1.6
cultural sigh seeing tourism	42.2	29.2
pilgrimage tourism	1.7	8.7
congress tourism	5.1	5.1
shopping tourism	15.6	33.2
visits to friends	1.7	5.9
other	3.0	0.4

Source: own elaboration based on the questionnaire survey.

In the Slovak part of the borderland the Slovak respondents are mainly attracted by tourist attractions of the localities (85.7%) and personal contacts and family relations (54.1%) – see Figure 5.11. Among other factors which attract visitors is the distance, transport accessibility and prices of services. The tourists in the Slovak part of the borderland are turned off mainly by the quality of services (55.1%) and their prices (39.8%) as well as transport accessibility (37.7%).

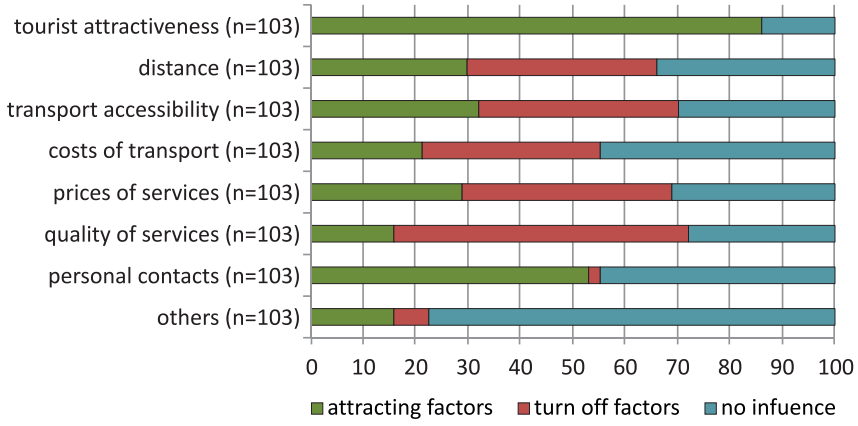

Figure 5.11. Factors which attract or turn off Slovak respondents from visiting the Slovak part of the borderland

Source: own elaboration based on the questionnaire survey.

Among the most important categories in terms of incentives to visit the Polish part of the borderland the Polish respondents stated tourist attractions (88.7%) and distance (53.6%) – Figure 5.12. In the case of factors which turn respondents off visiting this area, the first place is taken by the high prices of services (accommodation, tickets, etc. – 36.5%) and unfavourable transport accessibility (33.7%). Personal contacts (family, friends, etc.) are considered unimportant when choosing the Polish-Slovak borderland as a place for a tourist stay – 57.9%).

Slovak respondents are mostly attracted to the Polish part of the borderland by tourist attractions (75.7%) and language closeness (54.4%) – Figure 5.13. Quality and prices of services are also an important factor. According to the respondents the factors which turn them off visiting the borderland are mainly the transport accessibility (54.4%), distance (51.5%) and price of transport (35.0%). Personal contacts were the most often mentioned factor which has no influence on deciding (72.8%).

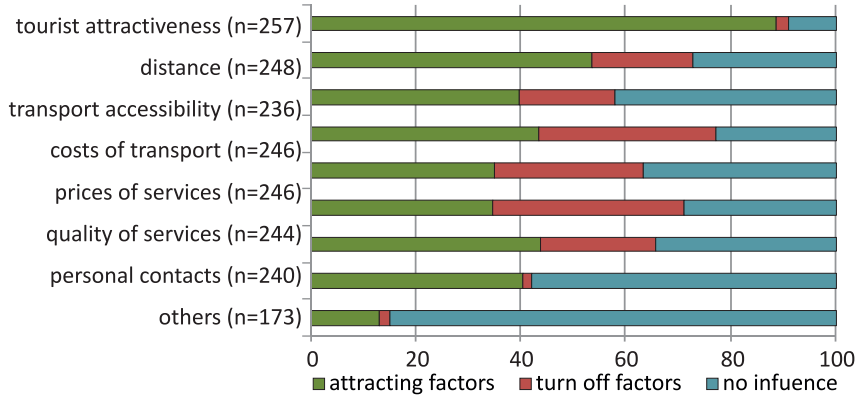

Figure 5.12. Factors which attract or turn off the Polish respondents from visiting the Polish part of the borderland

Source: own elaboration based on the questionnaire survey.

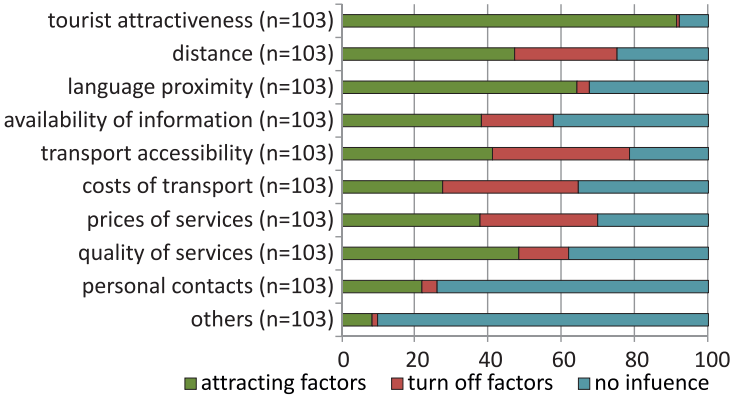

Figure 5.13. Factors which attract or turn off Slovak respondents visiting the Polish part of the borderland

Source: own elaboration based on the questionnaire survey.

Concerning the factors which attract Poles to visit the Slovak part of borderland, they are the same as in case of the answers of the Slovak respondents on the topic of travelling to the Polish part of the borderland. The most positive answers were gained in the category "tourist attractions" (88.3%) – Figure 5.14. Language closeness was assessed very highly (59.4%) as a factor supporting travelling. The most negative responses were gained in the categories of transport accessibility (34.4%) and transport expenses (33.2%). Personal contacts seem to be

the least important factor (64.8% of respondents stated that this factor is not important). A big group of respondents stated that access to information about the attractions in the Polish language does not have significant importance (37.1%). It disproves the statement that the lack of this information is associated with growth of organized tourism (see chapter 4).

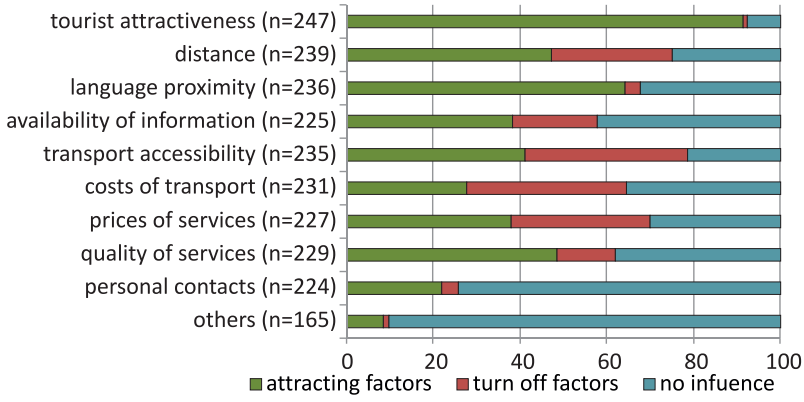

Figure 5.14. Factors which attract or turn off Polish respondents from visiting the Slovak part of the borderland

Source: own elaboration based on the questionnaire survey.

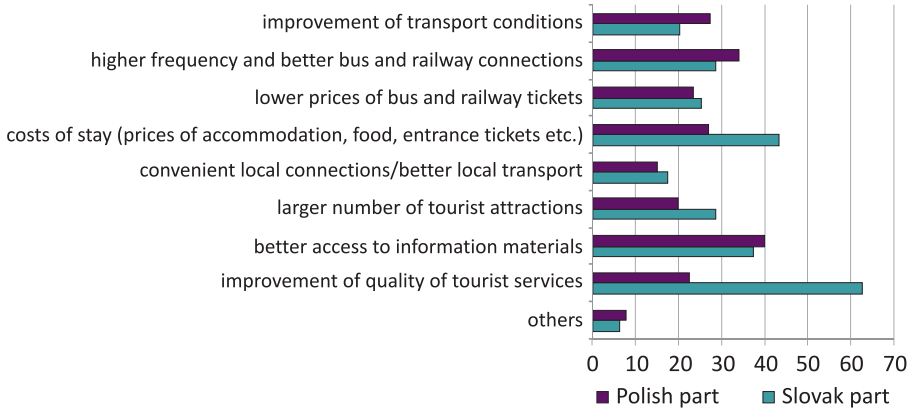

Figure 5.15. Factors which would contribute to more frequent visits to the Polish-Slovak borderland according to the respondents of the questionnaire in the Slovak language (n=252)

Source: own elaboration based on the questionnaire survey.

According to the Slovak respondents the factors which would motivate them to visit the Slovak part of the borderland more often (it was possible to state more answers to the question concerning the factors which would motivate the respondents to visit the borderland more often) were mainly: improvement of the quality of tourist services (more than 62%), lower prices of services (e.g. accommodation, restaurant services, admission fees, etc. – 43.1%) and better accessibility of information materials (37.1%) – Figure 5.15. The most often appeared suggestions for change in the Polish side of the borderland made by the respondents from Slovakia were better accessibility of information materials (39.9%), increase of bus lines and railway transport lines (34.0%) and improvement of accessibility by car (27.3%).

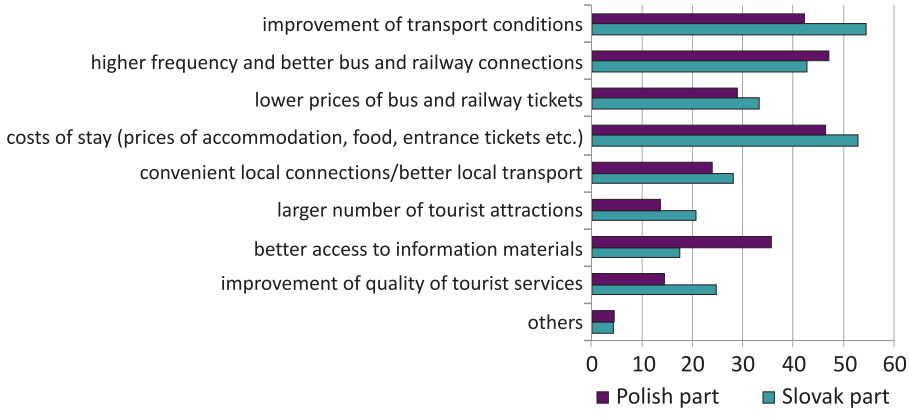

Figure 5.16. Factors which would contribute to more frequent visits to the Polish-Slovak borderland according to the respondents of the questionnaire in the Polish language (n=263)

Source: own elaboration based on the questionnaire survey.

In the case of changes in the Polish part of the borderland the respondents from Poland most often highlighted the need to improve the conditions of accessibility by car (54.4%) and decreasing the expense of a stay (52.9%) – Figure 5.16. Improvement of transport organization, decreasing prices of public transport (prices of railway transport and bus), and improvement of transport within the borderland are also perceived as important. Concerning the changes which would increase the number of visits to the Slovak side, the Polish respondents stated mainly increase of frequency and better bus and railway connections

(47.1%), decreasing the cost of accommodation (46.4%) as well as improvement of accessibility by car (42.2%). Accessibility of information materials about Slovakia published in the Polish language had rather large importance (35.7%).

5.2.5. SUMMARY

Surveys conducted via the electronic questionnaire enabled comparison of the differences in opinions of the Polish and Slovak respondents on visits to the borderland in 2010, time and financial resources which they are willing to pay for the journey to the tourist destination, preferred forms of tourism and various aspects of stays in the area of the Polish-Slovak borderland (frequency, means of transport, kind of tourism). They enabled us to compare the tourist visits by the respondents to the areas of the Slovak and Polish parts of the borderland, character of the visit, factors attracting or turning off the visitors from the Slovak or Polish parts of the borderland and things that should change to increase tourism in the Slovak and Polish parts of the Polish-Slovak borderland.

Certain differences were ascertained in the preferences for particular kinds of tourism. The most frequent kind of tourism in the Polish-Slovak borderland according to the answers of the Slovak and Polish respondents is hiking. Polish respondents stated this form of tourism more often and the sight-seeing tourism is more preferred as well. The train is more often used as a means of transport when travelling from the place of residence to the Polish-Slovak borderland by respondents from Slovakia and bus lines are more preferred by Polish tourists. Concerning the factors encouraging visits by Poles to the Slovak side of the borderland the most important were tourist attractions and language closeness. Slovak respondents stated the tourist attractions and not large distance among the most important categories in terms of incentives to visit the Polish side of the borderland. The thing that repels Slovak visitors from visiting the borderland is mainly the transport accessibility, distance and price of transport.

In the answers to the question: According to you what should change so that you visit the Slovak or Polish part of the Polish-Slovak borderland more often? Polish respondents stated mainly increase of frequency and better bus and railway connection, decreasing of expenses

needed for the stay and improvement of conditions of accessibility by car. According to Slovak respondents the most important factors were mainly: improvement of quality of tourist services, lower prices of services and better accessibility of information materials. The suggestions for improvement on the Polish side from Slovak respondents were dominated by better accessibility of information materials, increase of number of bus lines and railway transport and improvement of accessibility by car. Respondents from Poland most often highlighted the need to improve conditions for accessibility by car and lowering of expenses for the stay.

6. ACCESSIBILITY OF THE POLISH-SLOVAK BORDERLAND

6.1. INTRODUCTION

The term "accessibility" may be defined as the ease of reaching a destination, which may be a place of recreation or of a tourist trip. Accessibility plays a significant role in the choice of the destination of a planned journey, which makes it one of the most important drivers in the development of tourist regions.

Scientific research and practical applications offer a number of examples of models describing temporal and spatial accessibility. In Poland there are more than a dozen publications that contain summaries and categorisations of indices. These are primarily the works of T. Lijewski (1967), R. Domański (1963), W. Sobczyk (1985), K. Warakomska (1992), W. Pietrusiewicz (1996), W. Ratajczak (1998), Z. Taylor (1999), R. Guzik (2003) and T. Komornicki *et al* (2010). In geographical research in Slovakia the issue of accessibility was addressed by D. Kusendová (1996), L. Tolmáči (1998, 2002), D. Michniak (2002, 2003, 2006, 2009, 2010 a,b,c), F. Križan (2005, 2007), F. Križan and D. Gurňák (2008). S. Liszewski (1989) applied isochrones in order to determine potential transport connections to the town of Augustów. This approach is very useful in determining tourist demand. Indeed, knowing the potential number of people within the various isochrones makes planning of the size and the structure of a tourist base a more accurate exercise.

For a majority of tourists the accessibility of a tourist area is regarded as good when the area can be reached, and explored, quickly, cheaply and comfortably (e.g. by car or using public transport). A tourist considering a journey to the Polish-Slovak borderlandss differentiates, therefore, between an external accessibility, linked with getting to a place of accommodation, and an internal accessibility linked with moving around when on holiday within the target area. This division into the external and internal accessibility was introduced in this study. Each of these two types of accessibility was assessed by different methods.

In this volume the most detailed analysis was applied to accessibility by road, as cars constitute the basic means of tourist transport. Railway and air transport accessibilities were also analysed. In several cases multimodal transport accessibility was analysed, e.g. railway and road transport or air and road transport. The greatest range of methods was applied to the accessibility by road. The analyses were performed in three time periods, i.e. for the years: 2010, 2015 and 2030, broken down into the "government" and "extended" variants, as well as for particular variants. The following research methods have been used: (1) time required for access "from" and "to" a given destination (e.g. to cities); (2) potential accessibility, in which the attractiveness of a destination depends on the tourist's perception of the time required for travel; (3) cumulative accessibility, which in its simplest form consists of presenting the isochrones of transfer on a map (where an isochrone connects points having the same transfer time to a given place) and in its more advanced form becomes a supply and demand analysis that determines the total number of, for instance, places of tourist emission (demand analysis) or tourist attractions (supply analysis) located within a given isochrone (e.g. a 30-minute transfer); (4) effectiveness of the transport network by comparing the current condition of the network with the variant described as its "optimal" condition of development (Tab. 6.1).

Table 6.1. List of the analyses performed

methods applied	current condition (2010)	condition of roads in 2015	condition of roads in 2030	
			entire network	variants
Potential accessibility	v	v	v	v
Accessibility using isochrones	v	v	v	v
Transfer time from cities/towns outside the borderlands	v	v	v	v
Transfer time from cities/towns within the borderlands	v	v	v	v
Transfer time from and to the tourist destination	v	v	v	v
Demand analysis	v	–	v	v
Supply analysis	v	–	v	v
Effectiveness	v	–	v	v

Source: own elaboration.

A traffic-speed model was developed that makes use of the operational and technical parameters of various road categories and the official speed limits in Poland and Slovakia. In Poland and in Slovakia the speeds of passenger vehicles (necessary both for the potential accessibility and for isochrone research) were determined on the basis of the traffic-speed model developed at the IGiPZ PAN (Institute of Geography and Spatial Organization at the Polish Academy of Sciences). The speeds assumed were adjusted down for driving impediments (topography and population density). The model includes 14 categories of road[27] in Poland and 5 categories[28] of road in Slovakia. Then logit functions were used and in this way the average speed in Poland and in Slovakia was calculated for parts of the road network taking account of traffic regulations and some other variables influencing the speed of vehicles such as, for instance, the number of inhabitants in a buffer zone of five kilometres around that part of the network and the topographic features of the area. For each road category and for each variable influencing the speed of travel different parameters were applied in the logit functions producing the appropriate speed-limit-related reductions of the travel speed. (Further details of the factors taken account of in the traffic speed model can be found in: Komornicki *et al.* 2010). In other European countries, speeds were assumed in an arbitrary way on the basis of particular categories of roads (motorways, other dual-carriageway roads, main roads and minor roads) depending on the traffic regulations in force in a given country.

The driving speeds adopted in the model for particular sections of road on 31st December 2010 are presented in Figure 6.1.

External accessibility was researched primarily by using a model of potential accessibility incorporating a number of assumptions (see: explanations in Chapter 6.2). In this manner the accessibility situation in 2010, 2015 and 2030 was assessed. A simulation of the influence of selected transport projects on the changes in accessibility of the Polish-Slovak borderlands area was also performed. The accessibility of the area was calculated separately for short-term tourism (a recreational stay of several hours without any accommodation), medium-term

[27] I.e. motorways, single and dual expressways, dual national roads, dual voivodship roads, four categories of national single roads and four categories of single voivodship roads, depending on the lane width, and local roads (poviat and community ones).

[28] I.e. motorways, expressways and the 1st, 2nd and 3rd category roads.

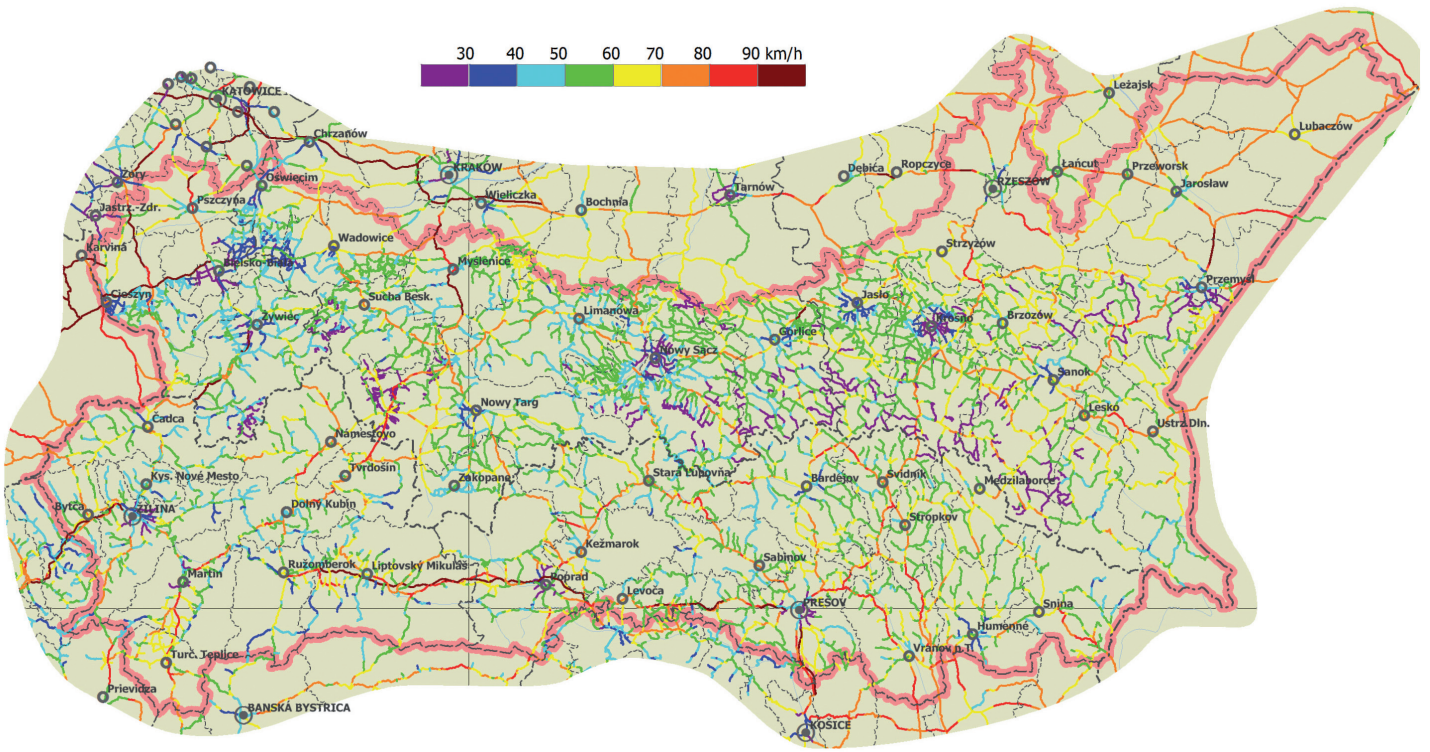

Figure 6.1. Speed model for the roads of the Polish-Slovak borderlands area (network condition as on 31st December 2010)

Source: own elaboration.

tourism (long weekends, 2–4 days) and long-term tourism (going on one-week holidays and vacations). Simulations of the influence of investment road projects were performed based on a measurement of the change in the level of potential accessibility. For the whole network they were performed for all three kinds of tourism, while the influence of particular road projects simulated using the index of potential accessibility for only medium-term tourism. It was decided for simulations at particular investment projects, the most important thing was to show the variation in effects between the individual investment projects as seen from a relative perspective rather for short-term and medium-term tourism. At the same time, the scale of the analysed investment projects (roads often reaching very far into the territories of Poland and Slovakia) suggested that the short term variant should be ignored. For long-term tourism, on the other hand, the variability of the index for particular investment projects is smaller (and less representative) and, also, for this sort of trip transport accessibility plays a less significant role in the choice of such destinations.

The analysis of external accessibility was improved by presenting the isochrones of transfer time to the Polish-Slovak border and the transfer time to the study area from the main "potential" locations from which tourists could depart, i.e. selected cities/towns in Poland, in Slovakia and in other neighbouring countries. Each time three conditions were compared – those in 2010, 2015 and 2030.

The current condition reflects the arrangement of the road network as on 31st December 2010. A map of the whole road network on this date was prepared and a speed model was developed (Fig. 6.1).

As far as 2015 is concerned, it was assumed that on the Polish side the completed investment projects (motorways, expressways) would be those, which were at least at the stage of tender procedures in 2011. The confirmed road construction programme, including the amendments introduced in January 2011 by the Ministry of Infrastructure, was taken into account. In addition, the central section of the future A2 motorway (Piotrków Trybunalski–Pyrzowice), which is to be completed through a system of concessions, was also considered. On the Slovak side all investment projects, which were to be completed by 2015, according to the data from the National Motorway Agency (www.ndsas.sk), were included.

For 2030 the implementation of more ambitious versions of infrastructure development was assumed both in Poland (the planned layout of expressways and motorways corresponding to the Regulation of 2004 amended to include the investment projects added by the new 2030 National Spatial Organization Concept) and in Slovakia (the development of the motorway and expressway network included in the document entitled "New Plan for Motorway and Expressway Construction" of 2000 and its further updates and amendments), as well as in the Czech Republic (according to the resolution of the Government of the Czech Republic no. 741/1999 on transport network development).

The measurements of internal accessibility concerned the analyses of transfer times to selected cities/towns in the Polish-Slovak borderlands area (isochrone method similar to the one applied to external accessibility). Next, cumulative accessibility was analysed from the demand perspective (sources of tourist traffic) and supply perspective (supply of tourist attractions). The research on internal accessibility ends the estimation of the general effectiveness of the transport and settlement system by introducing a classification according to the different types of transport – i.e. into the road and rail networks.

Travel time was selected as the measure of distance decay in all the methods applied – both in the case of external and internal accessibility. (Other measures of "impedance" possible include, according to the specialist literature, the cost, effort or comfort of travelling).

The specific premises of the traffic model, and the methods of analysis of potential and isochrone accessibility, are always presented at the beginning of each subchapter, before the presentation of the results obtained by applying a given method.

6.2. EXTERNAL ACCESSIBILITY OF THE POLISH-SLOVAK BORDERLAND

6.2.1. RESEARCH METHOD – MODEL ASSUMPTIONS

The external accessibility of a tourist area has to take into account the largest possible area from which potential tourists may come. Since the area of the Polish-Slovak borderlands may be visited not only by tourists from Poland and Slovakia, but in fact by any of the inhabitants

of the European continent, a decision was made, in respect of the empirical research undertaken as part of the project using the potential model, to investigate external accessibility considering the entire area of Europe. In the case of isochrone accessibility, the research involved the broadly understood surroundings of the Polish-Slovak borderlands (primarily including the main centres of demographic concentration located in that area and, therefore, the most important source areas of tourist traffic).

The principal means of transport used by tourists coming to the Polish-Slovak borderlands area is the car. Thus the analysis made use of the European road network with its division into road categories. Therefore both potential and isochrone external accessibility may be equated with road accessibility.

An isochrone is a line connecting points situated at the same time distance from a selected place, e.g. a city acting as a source of tourists (visual presentation from the demand perspective) or a given tourist attraction (visual presentation from the supply perspective). An isochrone map is generated as a result of marking out isochrones in equal time intervals (e.g. every 15 minutes or every half an hour). Furthermore, the isochrone analysis becomes a starting point for the cumulative accessibility research described in more detail in the next subchapter dedicated to internal accessibility.

The main method chosen for transport accessibility analysis is the so-called potential accessibility. It gives us information about the accessibility of the area for all "potential" tourists in the entire territory of Europe. It was assumed that, irrespective of the income and mobility of the population, all inhabitants on the European continent are considered potential tourists. The whole area of Europe (along with the Polish-Slovak borderlands) was divided into transport regions in compliance with a methodology developed by technical scientists (traffic engineering). In this manner 133 regions were marked out, including 49 in the borderland area (out of this number 25 were in Poland and 24 in Slovakia). Each of these 133 transport regions was given a mass equivalent to the population living in a given region (it is assumed that this is the number of potential tourists). Then any nodal town was identified in each region and for each of them the transfer time from all nodal cities/towns in the Polish-Slovak borderlands (49) was calculated in accordance with the traffic speed model (Tab. 6.2).

Table 6.2. Transport regions and nodal cities in the model of potential external accessibility

communication regions in the Polish-Slovak borderlands:	number	names of the nodal cities/towns
Poland	25	Myślenice, Gorlice, Limanowa, Nowy Sącz, Nowy Targ, Zakopane, Oświęcim, Sucha Beskidzka, Wadowice, Bielsko-Biała, Cieszyn, Żywiec, Pszczyna, Ustrzyki Dolne, Brzozów, Jasło, Krosno, Sanok, Lesko, Jarosław, Lubaczów, Przemyśl, Przeworsk, Rzeszów, Strzyżów
Slovakia	24	Vranov nad Topľou, Snina, Humenné, Medzilaborce, Stropkov, Svidník, Sabinov, Prešov, Bardejov, Stará Ľubovňa, Kežmarok, Levoča, Poprad, Liptovský Mikuláš, Dolný Kubín, Ružomberok, Námestovo, Tvrdošín, Turčianske Teplice, Martin, Kysucké Nové Mesto, Bytča, Žilina, Čadca
The Polish-Slovak borderlands in total	49	
other communication regions:	number	names of the nodal cities/towns
Poland	16	Kraków, Katowice, Stalowa Wola, Łódz, Warsaw, Lublin, Białystok, Kielce, Gorzów Wielkopolski, Poznań, Szczecin, Wroclaw, Opole, Bydgoszcz, Gdańsk, Olsztyn
Slovakia	6	Banska Bystrica, Košice, Bratislava, Trnava, Trenčín, Nitra
Czech Republic	7	Pardubice, Olomouc, Zlín, Ostrava, Brno, Ihlava, Prague
Ukraine	7	Lvov, Łuck, Uzhhorod, Ivano-Frankivsk, Tarnopol, Czerniowce, Kiev
Hungary	7	Budapest, Székesfehérvár, Győr, Pecs, Miskolc, Debrecen, Szeged
Austria	3	Graz, Vienna, Linz
Germany	6	Hamburg, Berlin, Dresden, Frankfurt on Main, Munich, Cologne
Romania	2	Cluj-Napoca, Bucharest
Other countries	30	Tirana, Brussels, Minsk, Sarajevo, Sofia, Zagreb, Podgorica, Copenhagen, Tallinn, Helsinki, Paris, Athens, Madrid, Amsterdam, Pristina, Vilnius, Luxembourg, Riga, Skopje, Kishinev, Oslo, Lisbon, Moscow, Belgrade, Lubljana, Berne, Stockholm, Istanbul, London, Rome
Outside the Polish-Slovak borderlands area in total	84	
All communication regions in total	133	

Source: own elaboration.

Short-term tourism

It was assumed, in accordance with the methodology of potential accessibility, that as the length of a journey gets longer, the probability that a tourist may come for a short-term visit to the Polish-Slovak borderlands area being studied decreases. In specialist literature, the function, which describes this phenomenon is referred to as the so-called distance-decay function. For this reason the greatest weight in the short-term potential accessibility index is represented by those tourists who live the shortest distance away from the nodal cities/towns in the borderland area. Assuming that around 100,000 people live within a distance of about 90 minutes from a tourist attraction, the model of potential considers only 30,000 (0.3x100,000), while, for instance, out of 200,000 people living within a distance of about 2 hours from a place attractive for tourists, 20,000 (0,1x200 000) are included in the model of potential. This may be interpreted as follows: the highest probability of a short-term tourist appearing in a given nodal town/town is noted among the local population, while for a nodal town/town located 1.5 hours (90 minutes) drive away it is reduced to 30% and for a 2-hour drive (120 minutes) it is reduced to 10%. The shape of the distance-decay function for short-term, medium-term and long-term trips is determined by the curves presented in Figure 6.2.

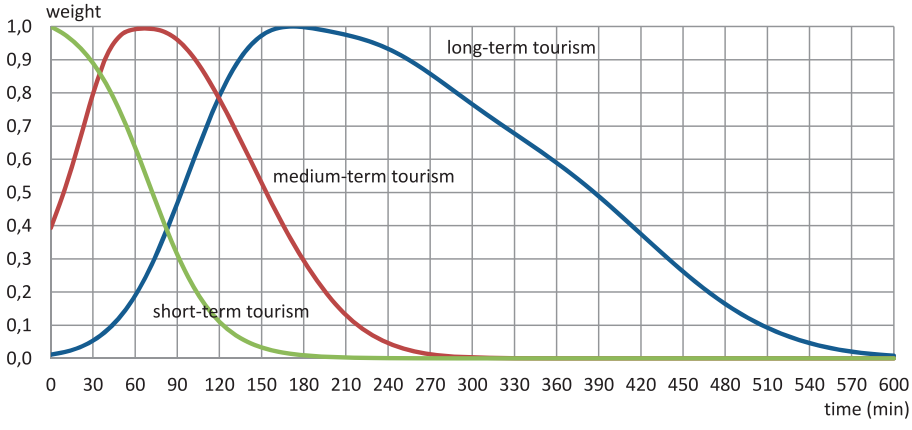

Figure 6.2. Shape of the distance-decay function depending on the transfer time

Source: own elaboration.

Medium-term and long-term tourism

For a medium-term tourist who comes to the Polish-Slovak borderlands and intends to spend 2–4 days there the curve of the distance-decay function is no longer a declining curve, but resembles a Gaussian curve. Medium and long-term tourist trips are the only situations where the motivation for travel is such that the significance of the attractiveness of destinations is not a decreasing function in respect of increasing transfer time. This suggests that only a very limited number of travellers who go away for 2–4 days would be willing to spend a weekend in a locality situated "only" within a 15–30-minute drive. It was assumed that the highest probability of weekend trips is characteristic of people who live about 45–90 minutes by car from the destination. For places whose location requires a drive of more than 90 minutes, the probability of being chosen as a weekend destination decreases. When a ride takes three hours, the probability amounts to 30% only and in case of 5 hours it is basically close to nil (very few people decide to travel for 5 hours in a passenger car in order to spend a weekend in the mountains or at the seaside). However, it follows from the polls conducted that Poles are willing to travel even longer by car in order to spend a weekend in a place attractive to tourists (see Chapter 5.2).

In case of long-term trips (5 days or more), the probability of such a trip is also described by a function whose shape resembles that of a Gaussian curve. The highest probability of making use of tourist services is typical of people who live within a three-hour a time distance. For longer distances the probability of the appearance of tourists decreases only to get close to zero when the travel time amounts to 10 hours. Like in the case of medium-term trips, the shape of the above curve here also diverges slightly from the results obtained during the polls.

The travel time between any pair of transport regions was calculated by applying the method of identifying the shortest travel routes according to Dijkstra's algorithm. Eventually the potential accessibility of a transport region situated in the borderland was calculated using the following index:

$$A_i = M_i f\left(t_{ii}\right) + \sum_j M_j f\left(t_{ij}\right) + \sum_k M_k f\left(t_{ik}\right)$$

Where:
A_i – accessibility of a transport region i,
M_i – own mass (population size) of a transport region i,
M_j – mass (population size) of a transport region j belonging to the polish-slovak borderland,
M_k – mass (population size) of a transport region k located outside the polish-slovak borderland,
t_{ii} – time of an internal journey within a transport region i,
t_{ij} – transfer time between the transport regions i and j,
t_{ik} – transfer time between the transport regions i and k.

This formula describes the general potential accessibility of 49 communication regions located in the Polish-Slovak borderlands. The accessibility index has three parts: **own potential**, i.e. $M_i f\left(t_{ii}\right)$, **internal potential**, i.e. $\sum_j M_j f\left(t_{ij}\right)$ and **external potential**, i.e. $\sum_k M_k f\left(t_{ik}\right)$. While calculating the external potential, the masses (population sizes) of 84 communication regions situated outside the borderland area were used.

The potential accessibility index was not only used in order to calculate the differences in the external accessibility of 49 communication regions from the borderland area but also to perform the simulation of changes of external accessibility of these units resulting from completion of particular infrastructure investment projects in the road network.

6.2.2. ACCESSIBILITY OF THE AREA ACCORDING TO EUROPEAN RESEARCH

The area of the Polish-Slovak borderlands is situated on the periphery of the European Union. The values of the potential accessibility index investigated with the ESPON spatial arrangement at the NUTS3 level are low for the units situated on both sides of the border. Therefore, the differences in the accessibility levels in the Polish and in the Slovak parts of the area are minimal. According to European research, the western part of the area analysed is more accessible. This accessibility decreases towards the east, both in Poland and in Slovakia. Thus, the concentric distribution of potential accessibility is maintained in respect of the economic nucleus of the European Union. The better accessibility of the western part of the area analysed is also

determined by the investment projects carried out outside the area of the Polish-Slovak borderlands. Evidence for this is provided by the changes in the level of the all-European index determined in the years 2002–2006 (see Spiekermann, Schürmann, 2007). The improvement results from the investment projects completed in the first half of the first decade of the twenty-first century in the region of Bratislava and Vienna, in the Czech Republic, in western Poland and even in Germany. The improvement of European indices mainly consists of the parallel relations with the demographic and economic potential. Longitudinal investment projects will not improve the perceived accessibility. The changes described concern road accessibility only. No similar transformations were noted in respect of railway transport.

Research done to meet the needs of the Fifth Cohesion Report of the European Union shows that the potential for improving accessibility as a result of transport investment projects in the entire study area lies in one of the zones with the highest rated potential in the European Union (the so-called low base effect) (see Fifth Cohesion Report, p. 56)

6.2.3. EXTERNAL ISOCHRONE ACCESSIBILITY OF THE POLISH-SLOVAK BORDERLANDS

It was assumed in the study that time accessibility (the isochrone map) of the Polish-Slovak borderlands is identical with the accessibility of the state border itself (Fig. 6.3). In the event of an even distribution of the road network across a given area the isochrones should take the shape of ellipses arranged along the east-west axis. Deviations from such an arrangement testify to the existence irregularities in the quality of infrastructure. With the assumptions adopted, a high concentration of isochrones on the eastern side of the area analysed is caused by the spatial barrier, which is presented by the border with the Ukraine. Moreover, in the close vicinity of the Polish-Slovak borderlands, the arrangement of the isochrones is partly disrupted by orographic factors.

Directions with better accessibility to the borderland may be regarded as “access channels”. They are primarily visible to the west of the study territory. The most distinct, by far, are four channels – those through Bratislava, Prague, Wroclaw and Lodz. The general differences in the transfer time to the state border from the north and from the south are insignificant. Taking into account the previously mentioned

orographic layout, this means, however, that there exists a relatively better infrastructure on the Slovak side. Particularly visible is the lack of external access channels towards Warsaw and Budapest, which beside Vienna are the largest metropolises located within a distance shorter than 500 km from the study area.

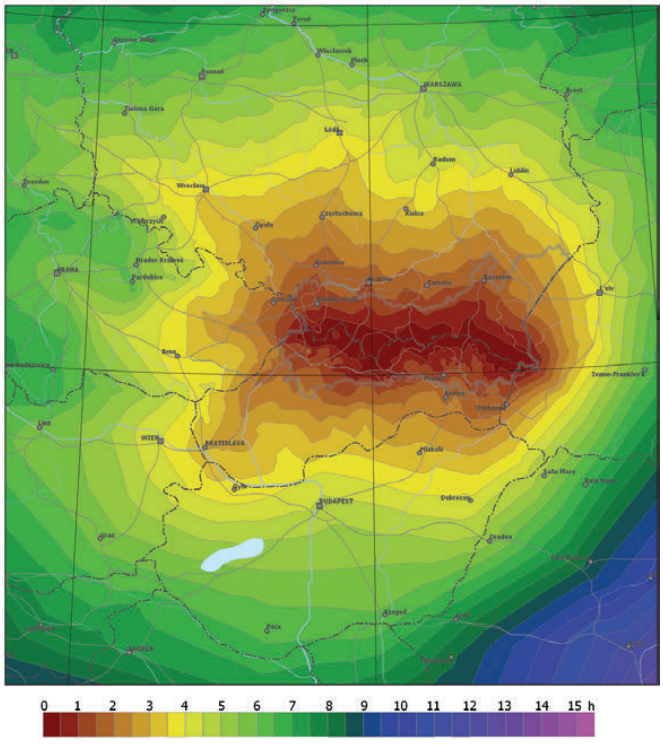

Figure 6.3. Isochrones of access to the Polish-Slovak border

Source: own elaboration.

A detailed analysis in the three above-mentioned time periods (2010, 2015, 2030) was applied to the location of the Polish-Slovak borderland within the layout of the isochrones showing the accessibility of the largest centres in Central Europe potentially constituting the main sources of tourist traffic. Six cities were taken into account: Warsaw, Bratislava, Berlin, Prague, Budapest and Gdańsk. Such an analysis was not carried out for the source areas situated in the immediate vicinity of the borderland (including Kraków, Katowice, Košice), since directly or indirectly they were covered by other accessibility research.

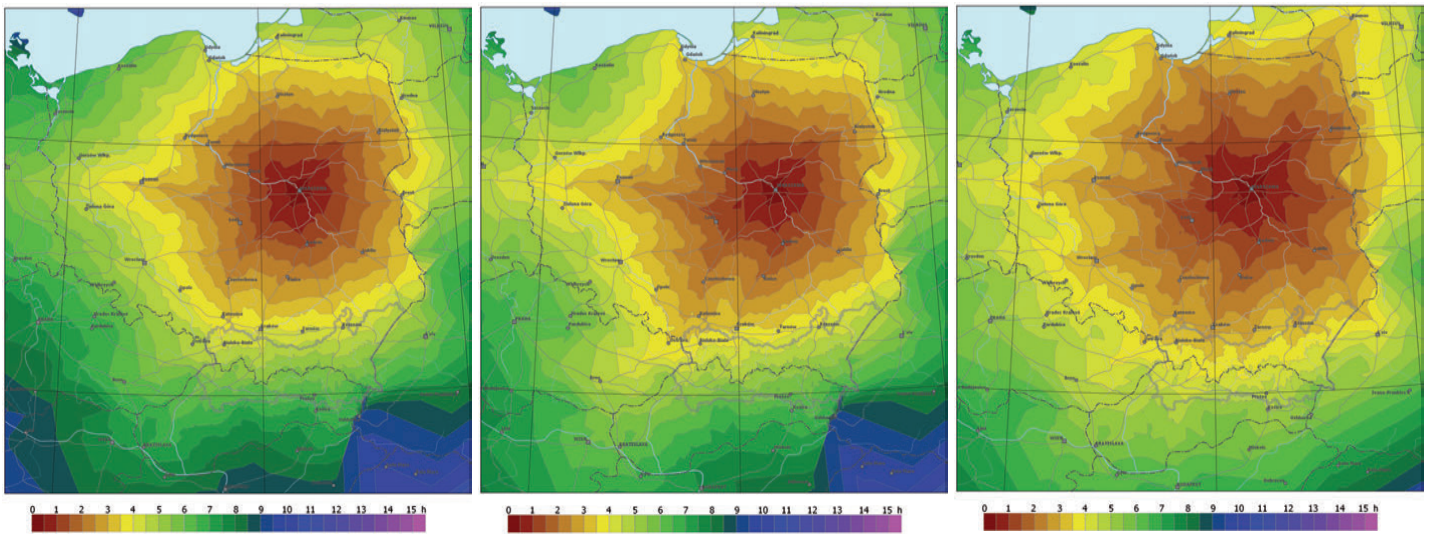

Figure 6.4. Isochrones of access from Warsaw (for the years: 2010, 2015, 2030)

Source: own elaboration.

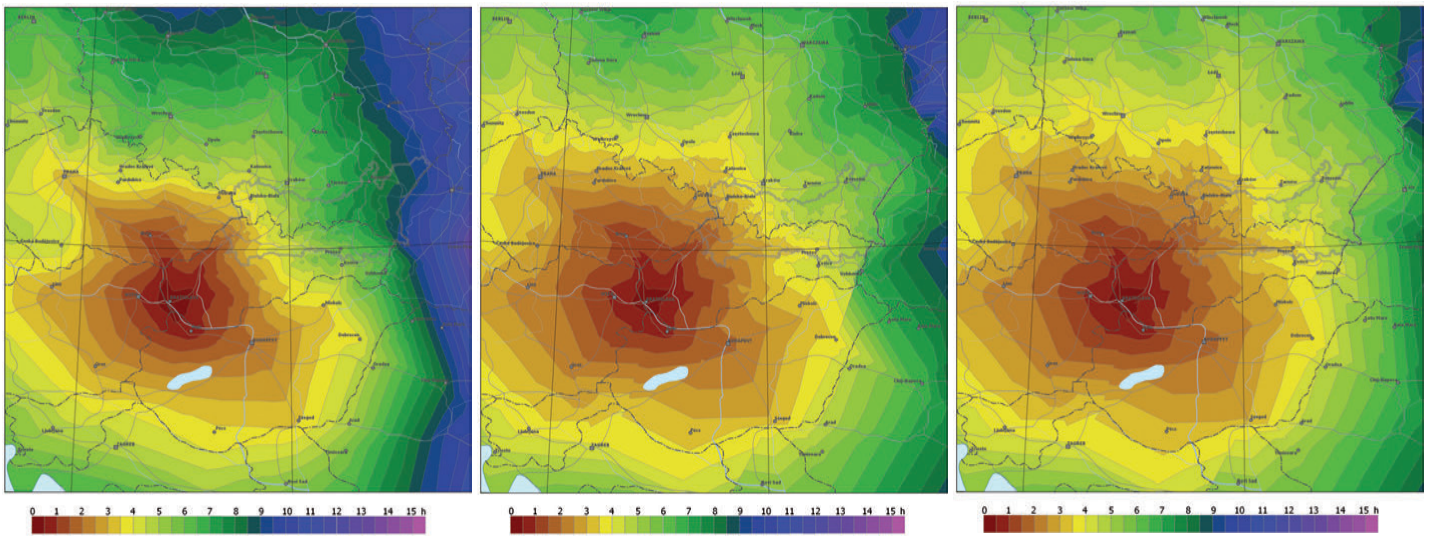

Figure 6.5. Isochrones of access from Bratislava (for the years: 2010, 2015, 2030)

Source: own elaboration.

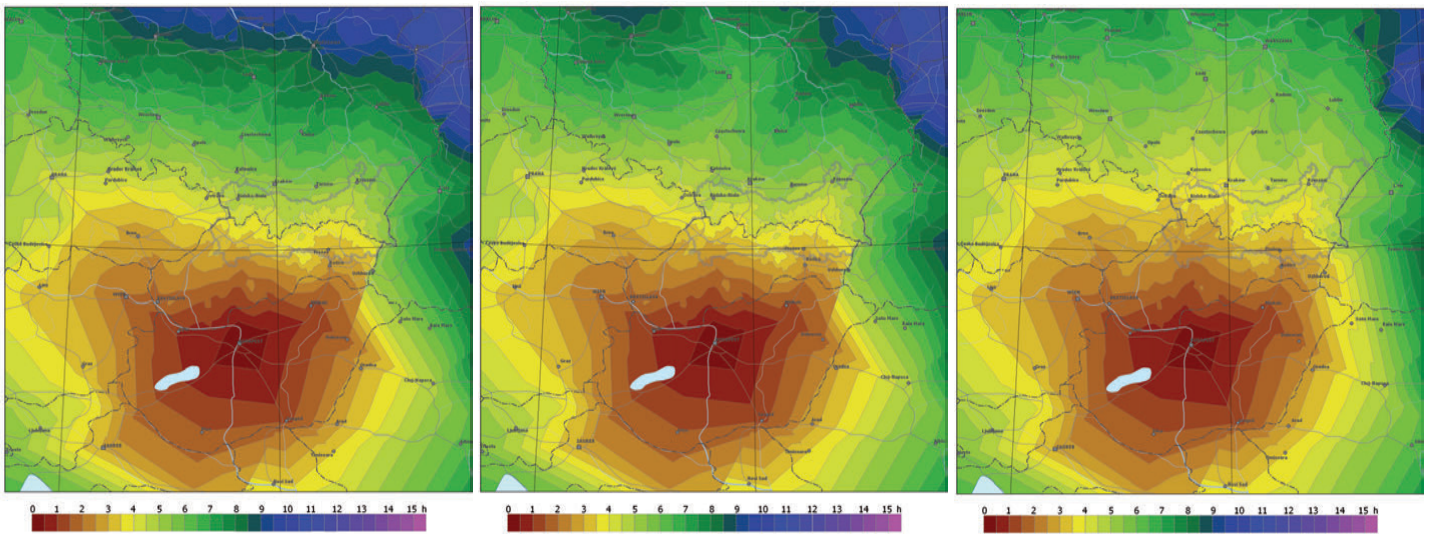

Figure 6.6. Isochrones of access from Budapest (for the years: 2010, 2015, 2030)

Source: own elaboration.

It was pointed out that the accessibility of the study region from Warsaw (Fig. 6.4) is relatively poor. What is more, the investment projects currently being carried out investment projects do not significantly change this situation (apart from the improvement on the western peripheries of the borderland owing to the anticipated completion of the Polish A1 motorway. After 2015 the transfer time from the capital of Poland to the Slovak part of the borderland will still exceed 7 hours. Significant changes will only occur if the sophisticated road investment projects planned for 2030 were to be implemented. The layout of the isochrones would then lose its original concentric nature and there would be considerable internal variation in the accessibility of the region from Warsaw. Most of the borderland area would then find itself within the 5-hour isochrone.

Owing to the considerable advancement that has taken place in the construction of the D1 motorway, the accessibility of the western part of the Polish-Slovak borderlands from Bratislava (Fig. 6.5) is clearly better than that from Warsaw. These differences become smaller as one moves towards the east where the lack of modern road connections with the capital of the country is similar in both Poland and Slovakia. It should be emphasized that in the case of Bratislava a noticeable improvement in the situation will already have taken place by 2015 while the changes in subsequent years will be less significant. This means that from the point of view of accessibility of the study area, the investment process in the territory of Slovakia is more advanced than that in Poland. Therefore, it may be anticipated that after 2015 the Polish-Slovak border will become, to a larger extent than is now the case, a line separating the areas having different transfer times from Bratislava. Considering the fact that accessibility from Bratislava may, to a certain extent, be identified with accessibility from Vienna, this means that for a potential tourist from both these cities, the Polish part of the study area will obviously remain poorly accessible.

Prague, the capital and by far the largest city of the Czech Republic, has been a significant source of tourists visiting the Slovak part of the Polish-Slovak borderlands. During the transformation period the development of the road infrastructure in the Czech Republic was (and to a certain extent still is), like that in Poland, focused mainly on connections with the "old" European Union member states (Germany and Austria). This resulted in the fact that the accessibility of the

Polish-Slovak borderlands from that direction is moderate. What is more, the effects of the investment projects, which are to be completed by 2015, also seem to be limited. Some minor improvement in accessibility will, in this case, only take place in the Polish part of the borderland owing to the connection between the Brno–Ostrava motorway and the Polish A1 motorway and, farther on, with the A4. The lack of a convenient road connection in the northern part of the Czech-Slovak border area will still be very visible (as indeed it is now). More significant changes will only take place by 2030. It is also still significant that, for a tourist from Prague, the study area will remain less accessible in terms of time than the potentially competitive recreational and skiing resorts in the Alps in Austria for all the time spans analysed.

The accessibility of the Polish-Slovak borderland from Berlin is relatively good considering the geographical distance involved. The transfer time from the capital of Germany to the western peripheries of the study area amounts to only about 5–6 hours (less than from Warsaw) due to sections of motorway already completed in Poland. The investment projects implemented or planned investment projects will not change the situation much in this respect. The main access channel in the following period of time will still be the Polish A4 motorway. Certain changes will become evident by 2015, after the completion of its eastern section. The condition for the improvement of access to the Slovak part of borderland will then be the completion of the southern cross-border expressways (S7/R3, S9/S19/R4). The Tarnów–Prešov road, which unfortunately does not appear in Slovak documents, would also be very significant.

The layout of isochrones is very characteristic in the case of Budapest (Fig. 6.6). This looks visibly "flattened" to the north. The accessibility of the Slovak part of the study area is good (3–4 hours), yet it mostly results from the short physical distance. Nevertheless, it is worth emphasising that the transfer time from the Hungarian capital to the Tatra Mountains is longer than to the nearer ranges of the Alps in Austria. By 2015 one should not expect any visible improvement in accessibility in this direction. As it is now, the border of Poland will remain the line beyond which transfer time increases significantly. Changes will only become visible as a result of further investment projects (2030). The zone of better accessibility will then be expanded and will comprise

Poland, mostly on the S7/R3 and S9/S19/R4 axes. The transfer times to the central part of the area will not in fact change in both these anticipated time spans.

The analysis of isochrone accessibility for Gdańsk was to show the variation in accessibility of the study area from the various regions of Poland. At present the transfer time from the Tri-city to the Polish-Slovak borderland area ranges from 7 hours in the case of the Beskid Żywiecki and Śląski Mountains to 13–14 hours in the case of eastern Slovakia. Therefore, it may be stated that the study area is very poorly accessible by road from northern Poland. Some visible improvement in this respect will take place as a result of investment projects in the A1 motorway (2015) and later thanks to the S7/R3 road and the diagonal sequence of roads S7/S17/S19/R4 (2030). Only these changes will bring about the situation that the Polish-Slovak borderlands clearly becomes the nearest highland region to northern Poland (nowadays the travel times may not be much shorter than to the Alps if we assume a transit through Germany).

In summary, it should be said that access to the study area by means of the road network is "channel"-based. There are access channels from the south-west, west and north-west. The lack of such channels from the north (Warsaw) and from the south (Budapest) is very clearly visible. It must be emphasised that accessibility from central and northern Poland is particularly significant, since these are the only areas from which there is no competitive transfer time to other highland regions (the Alps). In years to come the development of infrastructure on the Slovak side will probably be quicker. In Slovakia, the borderland with Poland, and in particular its western and central parts, are not treated so peripherally in the infrastructure plans as is the case of the Polish Carpathian areas. The varying pace of the investment process may contribute to the fact that in years to come the Polish-Slovak border becomes a more considerable infrastructure barrier than it is now.

6.2.4. EXTERNAL POTENTIAL ACCESSIBILITY IN 2010 AND 2030

The analysis of potential accessibility was carried out in two time spans corresponding to the current condition and to the hypothetical full development of the road system (2030). The results of the

comparison of the situations produced over this time should be interpreted as the maximum improvement in accessibility attainable

The distribution of short-term potential accessibility remains determined by location with respect to large urban centres, mainly the Upper Silesian conurbation and Kraków and, to a lesser extent, also Bratislava (Fig. 6.5). The highest index level is noted in the western part of the Polish side of the borderland. These values decrease towards the east and south. In the central part of the Polish-Slovak borderlands (the widely defined Tatra region) the value of the index is clearly higher on the Polish side and relatively very low on the Slovak one. This demonstrates that the Slovak sub-Tatra region remains less attractive for weekend tourists from the largest cities in southern Poland because of the limited transport accessibility. In practice the transport conditions in the entire eastern part of the study area are unsuitable for the development of short-term tourism.

The differences in the potential accessibility of the study area described above are also visible in the case of medium-term tourism, though obviously in a milder form (Fig. 6.8). Nevertheless, from the point of view of a potential tourist base Zakopane has a better situation than Poprad or Vysoké Tatry. On the other hand, the situation in the south-western (Slovak) part of the area has improved noticeably owing to the influence of the population potential of Bratislava and Vienna. The indices for the eastern part of the Polish-Slovak borderlands are not better than in the case of weekend tourism. The transport distance to these areas also remains a significant barrier, even for longer trips.

The better position of the Polish side of the borderland only tends to get worse when considering long-term tourism (Fig. 6.9) where the distribution becomes clearly dependent on location in respect of the demographic potential of more distant centres. The value of the index decreases at a steady rate towards the east on both sides of the border.

The significant development of road infrastructure on both sides of the border (the 2030 variant) will result in the greatest changes in terms of accessibility for short-term tourism (Fig. 6.9). They will primarily affect the Slovak part of the study area, including, in particular, the regions of the towns of Martin, Ružomberok and Liptovský Mikuláš, which would profit from the construction of expressways on the Kraków–Chyżne–Banská Bystrica route (the R3 on

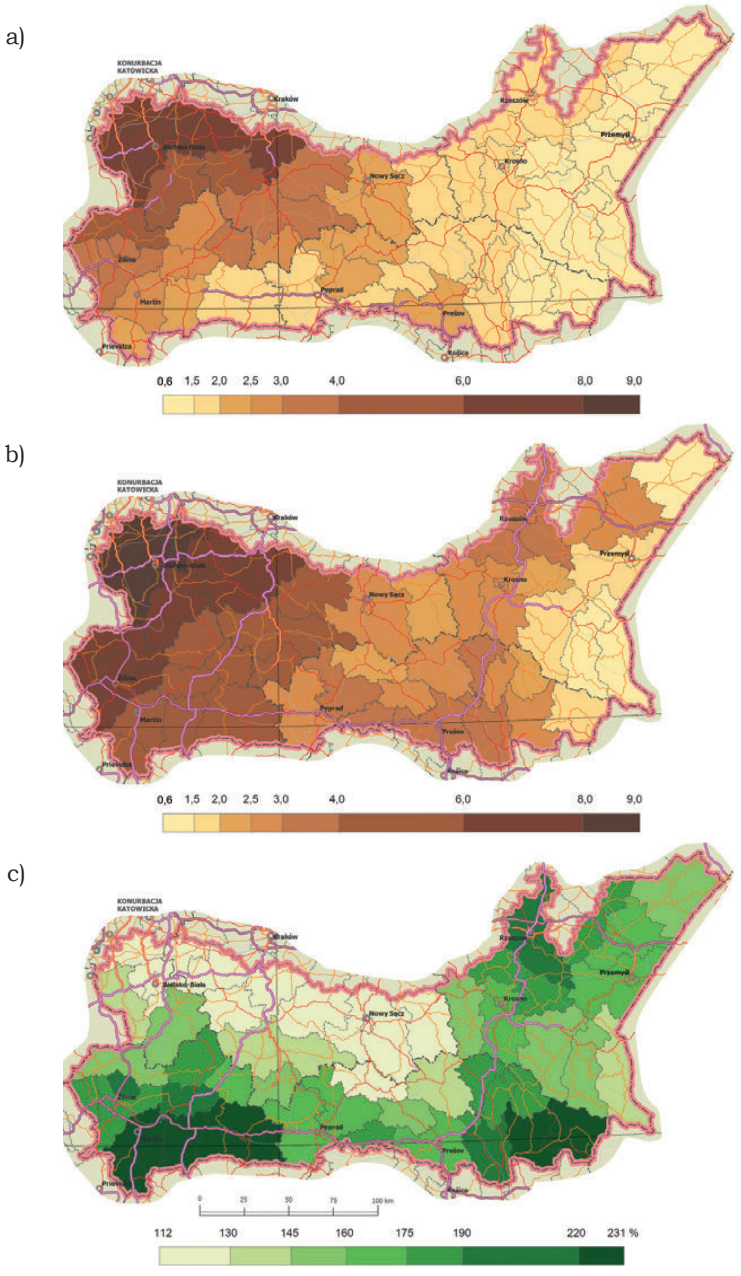

Figure 6.7. Potential road accessibility in short-term tourism in 2010 (a) and in 2030 (b) and the changes in potential road accessibility in short-term tourism from 2010 to 2030 (c)

Source: own elaboration.

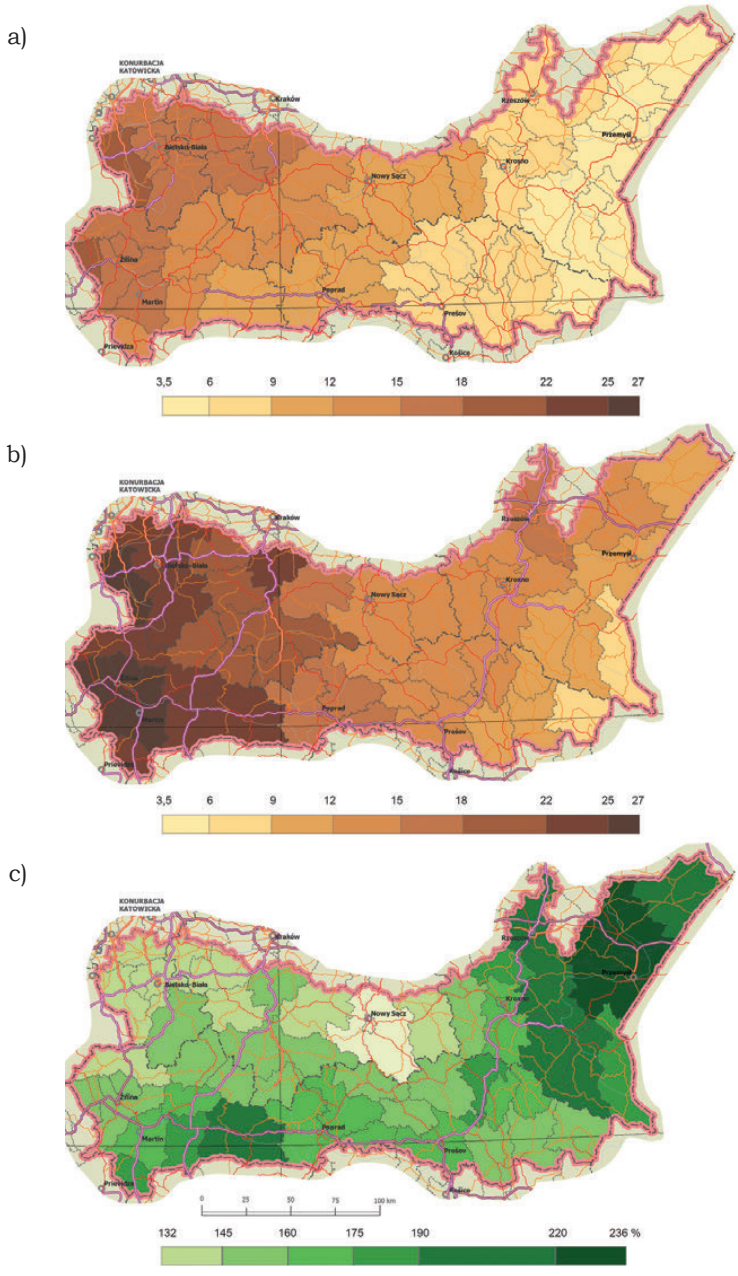

Figure 6.8. Potential road accessibility in medium-term tourism in 2010 (a) and in 2030 (b) and the changes in potential road accessibility in medium-term tourism from 2010 to 2030 (c)

Source: own elaboration.

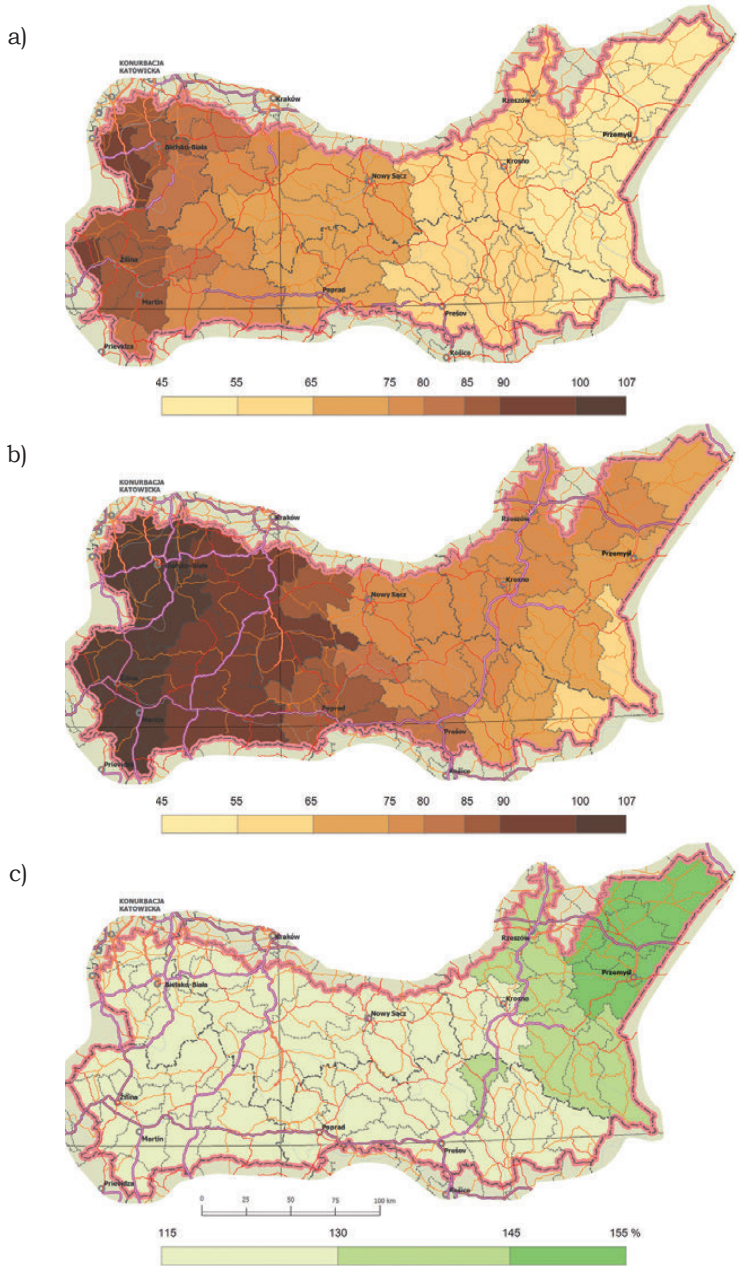

Figure 6.9. Potential road accessibility in long-term tourism in 2010 (a) and in 2030 (b) and the changes in potential road accessibility in long-term tourism from 2010 to 2030 (c)

Source: own elaboration.

the Trstená–Dolný Kubín–Martin–Banská Bystrica route; the R1 section of the Banská Bystrica–Ružomberok route, which connects the D1 and the R1). The great increase in potential accessibility in the region of Snina from the point of view of short-term tourism is surprising, an area which is crossed by none of the planned routes. This is mainly due to the influence of the planned construction of the D1 motorway from Košice to the Ukrainian border. On the Polish side, the eastern peripheries, including Rzeszów, will profit the most in terms of shorter visits.

The changes in medium-term tourism are less spectacular (Fig. 6.8). They still have slightly more effect in the Slovak part of the study area, but a decided increase in the index value is also noted in the east of the Polish part of the borderland, especially in the Bieszczady Mountains and in the region of Przemyśl and Lubaczów.

It is characteristic that in the case of long-term tourism (Fig. 6.9) even the largest plans for the development of the road network will bring about virtually no changes in potential accessibility. Some minor effects will be visible exclusively in the east of the borderland, mostly on the Polish side. This leads us to a more general observation, namely that the development of the transport network in the study region will mainly serve to promote the possible intensification of weekend and several-day tourism. Thus the battle to develop the major infrastructure bringing traffic to the Polish-Slovak borderlands should be carried out taking account of local strategies for tourism development (which focus on tourists who stay in a given area for a longer or shorter time). On the other hand, it is also necessary to take one particular trend in contemporary tourism into account. It manifests itself in shorter but more frequent stays during the year.

6.2.5. SIMULATION OF CHANGES IN POTENTIAL ACCESSIBILITY AS A RESULT OF ROAD INVESTMENTS

The forecasts of accessibility changes described in this paper are dependent on the implementation of the full development programmes for road infrastructure. The objective of the detailed simulations was to determine which of the planned investments are most significant for particular sub-regions and tourist centres. The results obtained may be used as the basis of transport policy on the national and regional level. They may also constitute an important guideline for the policy

of local authorities with regard to the development of future tourist functions (traffic forecasts) and also to lobbying for particular central government funded investments.

Each of the simulations carried out reflects an accessibility change which results from two situations: (1) before completion of the construction of the expressway or motorway and (2) after the commissioning of a given investment for use. It should be noted that the simulations of the influence of road network investments on changes in the potential accessibility of the area were carried out on the basis of the assumption *ceteris paribus*, i.e. the invariability of other factors. Therefore, it is assumed that an accessibility change results exclusively from the fact that a given road was built (or upgraded). Other transformations resulting, for instance, from network, social or economic changes were not part of the analysis.

For the purposes of the simulation, only the analysis of medium-term potential accessibility was applied. Selected simulations for the most important projects are shown in figures 6.10–6.16.

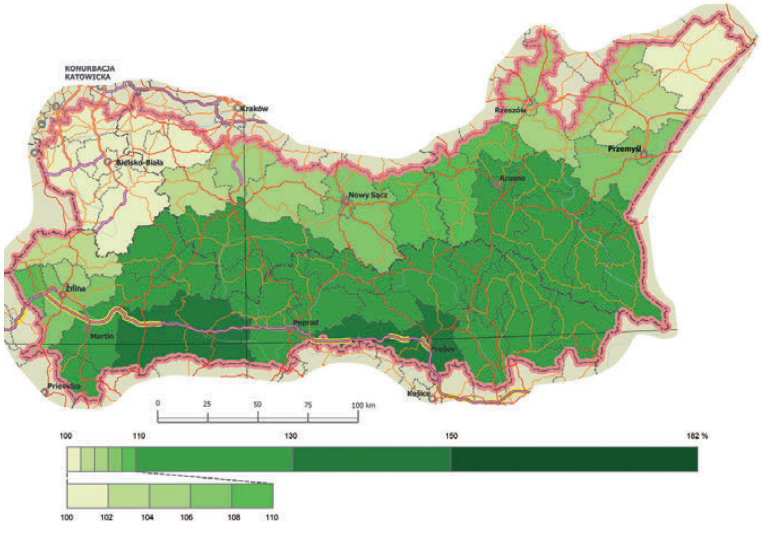

Figure 6.10. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Slovak D1 motorway (to the Ukrainian border)

Source: own elaboration.

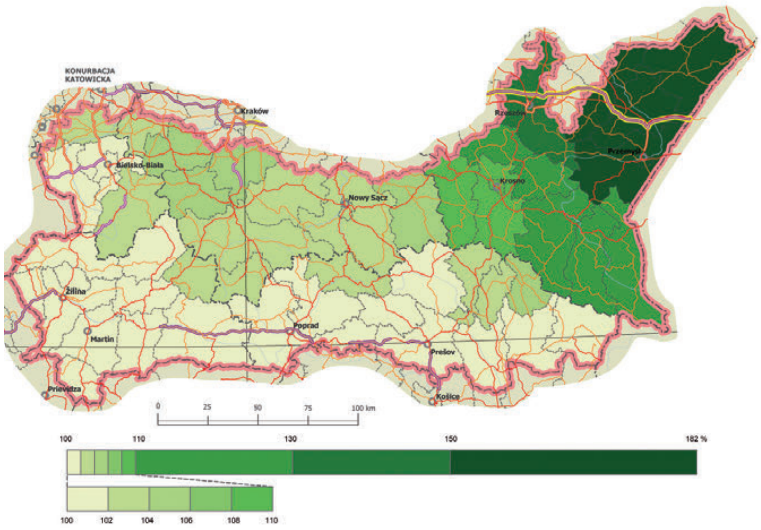

Figure 6.11. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Polish A4 motorway

Source: own elaboration.

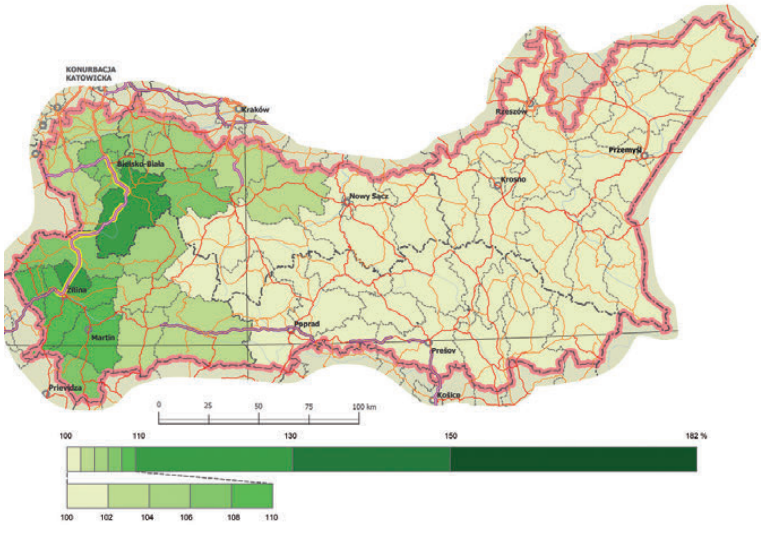

Figure 6.12. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the S69 expressway and the D3 motorway

Source: own elaboration.

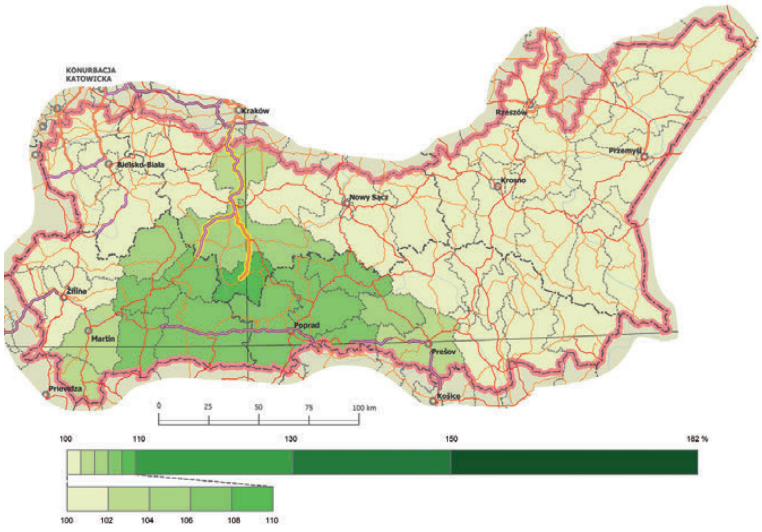

Figure 6.13. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Polish S7 expressway to Chyżne in conjunction with the completion of the Rabka–Zakopane section

Source: own elaboration.

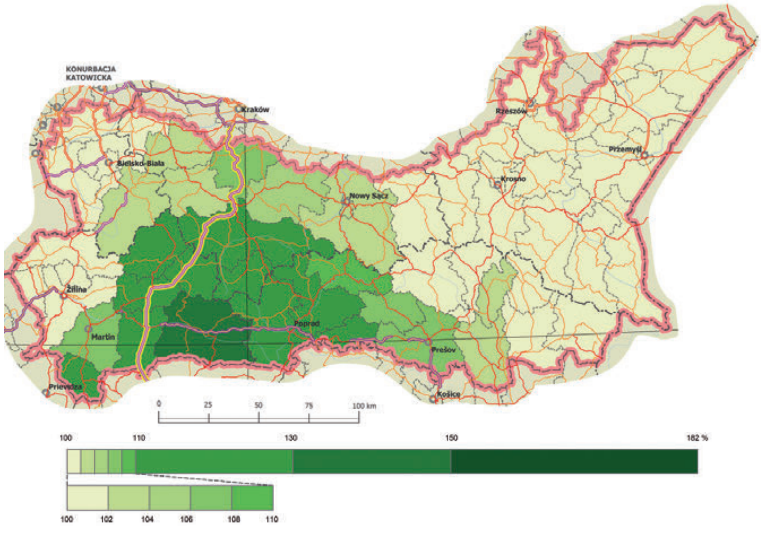

Figure 6.14. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Warsaw–Kraków–Chyżne–Banská Bystrica expressway

Source: own elaboration.

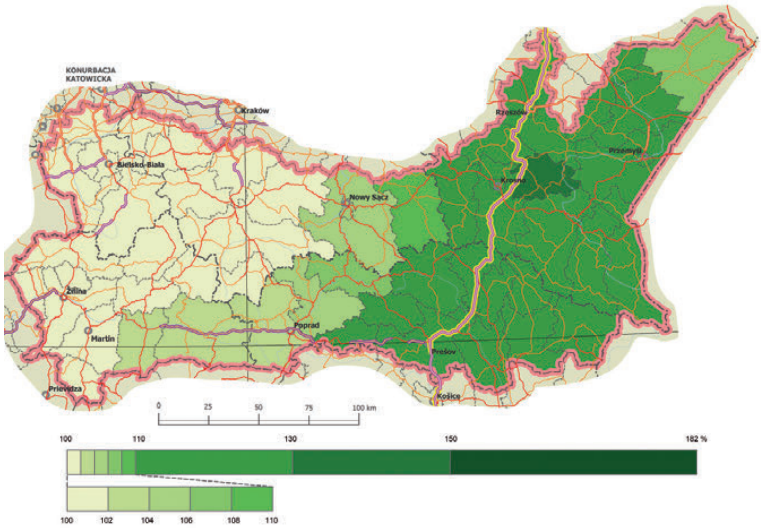

Figure 6.15. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Lublin–Rzeszów–Košice–Miskolc expressway

Source: own elaboration.

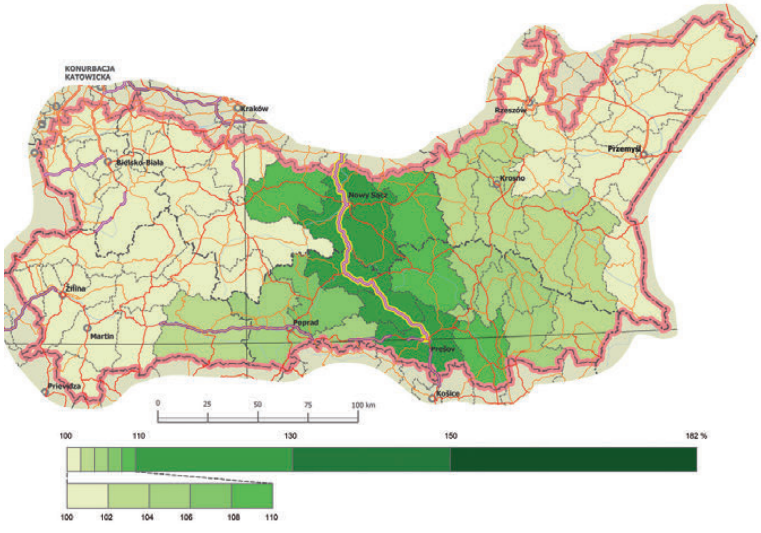

Figure 6.16. Simulation of changes in potential accessibility for medium-term tourism as a result of completion of the Kielce–Tarnów–Prešov expressway

Source: own elaboration.

The results obtained clearly show that the completion of the Slovak D1 motorway will make a considerable contribution to the improvement of accessibility, mainly on the Slovak side of the border, in practically all parts of the area. The improvement of accessibility owing to this investment will also take place in the Polish part of the study area. This primarily concerns the Podhale region, and in the variant in which the D1 gets as far as the Ukrainian border, (Fig. 6.10) also the Bieszczady Mountains. It is almost exclusively Polish regions that will benefit (mostly the ones located in the east of the study area), following completion of the parallel A4 motorway (Fig. 6.11). Thus we may risk making a statement that the Slovak D1 route may result in an equalisation of the potential of attractive tourist areas on both sides of the border. The completion of the A1 motorway will also mainly benefit Polish regions and in Slovakia only the area of Čadca. The completion of sections of the Polish single S69 expressway currently being built will have a very limited spatial influence on the improvement of accessibility (only affecting the poviat of Żywiec). A more visible change of the situation will take place after the completion of the whole Bielsko-Biała–Žilina route. The benefits will then affect areas on both sides of the border (6.12).

It would be difficult to overestimate (from the point of view of transport accessibility of the Polish-Slovak borderlands) the importance of the construction of the Kraków–Chyżne–Ružomberok–Banská Bystrica expressway (with its branch to Zakopane; Fig. 6.14). All the variants of this investment analysed show extensive spatial benefits in respect of the improvement in accessibility for medium-term tourism. On the basis of the simulation carried out one may claim that the Slovak regions are the main beneficiaries of this investment. This is also true for the variants which assume that construction of the new road will only take place in Poland (Fig. 6.13). The centres located south of the Tatras will find themselves within the reach of several-day visits from Kraków and from the Upper Silesian conurbation as a result of the decrease in transfer time. The greatest "winner" in connection with these investments will be the area of Liptovský Mikuláš.

The construction of the Rzeszów–Košice–Miskolc expressway brings about considerable benefits to areas on both sides of the border. The variant assuming the construction of the Polish section only is more beneficial for the Polish regions. If the whole route is completed (Fig. 6.15), significant improvement in accessibility is also visible in

the central part of the Slovak side of the borderland (Poprad). It then becomes much more accessible from the relatively densely populated areas in south-eastern Poland.

The influence of the possible construction of the Tarnów–Prešov expressway (Fig. 6.16) is also surprisingly extensive, in terms of area. Significantly enough, benefits are visible in poviats in which they were not generated (to this extent) by any of the simulated investments. The largest beneficiary of such a solution would be the town of Nowy Sącz with its surroundings. The results obtained may be considered a strong reason for making efforts to include the route in the Polish long-term vision of the expressway network and to agree upon its continuation on the Slovak side. An important argument in this respect is the inclusion of this route in the new Polish National Spatial Organization Concept (of 13th December, 2011).

The construction of large infrastructure (motorways and expressways) is crucial for the further development of the eastern part of the Polish-Slovak borderlands. The motorway to the Ukrainian border, the A4 in Poland and the D1 in Slovakia and the Rzeszów– Košice – Miszkolc expressway (the S19 and R4) should be completed first.

Out of the individual planned investments, the construction of roads belonging to the Kraków–Trstená–Ružomberok–Banská Bystrica traffic route (the S7, R3 and R1) is very significant, especially for weekend tourist traffic. This will produce an improvement in accessibility from Kraków and Upper Silesia, i.e. from the areas from which the largest groups of potential tourists arrive.

6.2.6. CHANGES IN ACCESSIBILITY OF TOURIST CENTRES AS A RESULT OF ROAD INVESTMENTS

Table 6.3 presents the total influence of road investment projects on the improvement of accessibility in these poviats and regions, in which the most important tourist centres of the Polish-Slovak borderland are located.

The completion of the investments which are currently being carried out (the 2015 variant) on the Polish side of the border will bring the largest benefits to the centres situated in the eastern part of the study area (e.g. Iwonicz-Zdrój, Cisna and Solina). On the Slovak side,

Table 6.3. Change in the level of potential accessibility for medium-term tourism (%)

country	region/ poviat	tourist localities	change in the level of potential accessibility for medium-term tourism as compared to 2010			
			2015 variant	"government" 2030 variant	"extended" 2030 variant	"extended" 2030 variant taking into account the opening of the Ukrainian border
Poland	Cieszyn	Wisła	11.2	36.6	38.1	38.3
	Krosno	Iwonicz -Zdrój	19.5	65.5	66.5	80.2
	Lesko	Cisna Solina	21.8	92.2	104.5	144.9
	Nowy Sącz	Krynica-Zdrój Piwniczna-Zdrój	8.5	28.5	71.2	75.1
	Nowy Targ	Szczawnica	10.1	50.6	52.2	52.9
	The Tatras	Białka and Bukowina Tatrzańska Zakopane	8.8	55.1	56.9	57.4
	Żywiec	Zwardoń	9.1	45.2	47.0	47.3
Slovakia	Bardejov	Bardejov	6.1	47.0	63.0	66.5
	Čadca	Oščadnica	7.3	39.1	40.9	41.0
	Kežmarok	Červený Kláštor	13.7	62.7	69.0	69.7
	Liptovský Mikuláš	Jasná Liptovský Mikuláš	22.0	93.8	94.4	94.6
	Poprad	Ždiar Starý Smokovec	14.0	63.6	67.1	67.5
	Snina	Snina	7.4	53.6	56.7	61.4
	Tvrdošín	Zuberec	9.9	57.3	57.3	57.7
	Žilina	Terchová	6.2	47.6	49.4	49.4

Source: own elaboration.

on the other hand, the beneficiaries will include the sub-Tatra centres (Liptovský Mikuláš, Jasná, Starý Smokovec). The largest differences in the level of potential accessibility between the distribution of motorways and expressways proposed in this study (the "extended" 2030 variant) and the one provided for in government ordinances occurs in the centres in the poviat of Nowy Sącz (Krynica-Zdrój and Piwniczna-Zdrój) in Poland and in the town of Bardejov in Slovakia. These towns benefit relatively little from the officially planned investments. For each of them

the possible construction of the Tarnów–Nowy Sącz–Prešov expressway (considered only in the "extended" variant) would result in a considerable improvement in spatial accessibility. The effect of the change of status of the Polish-Ukrainian border (i.e. its opening) would be visible primarily in the eastern part of the Polish-Slovak borderlands, namely in such centres as Iwonicz-Zdrój, Cisna and Snina and, to a lesser degree, also in the central part (Bardejov, Krynica-Zdrój).

The comparison of the percentage changes in accessibility of the most important centres as a result of completion of road investments (in various variants) (Tab. 6.4) provides a basis for determining investment "priorities". Their implementation should be something that local authorities should fight for as a first priority if they are truly concerned with improvement of their external accessibility. This analysis allows us to identify those routes which would contribute the most to the development of the pre-existing centres. The ranking of types has, however, to be interpreted cautiously, since some other routes may also play a role in activating those tourist areas which at present do not have developed infrastructure. Moreover, the policy of tourist centres does not always have to be based on increasing the absolute number of visitors.

For the centres situated in the west of the Polish part of the borderland (Wisła, Zwardoń) the S69 expressway is of considerable significance, yet the effect will only be visible after the completion of its extension on the Slovak side (the D3 motorway). The towns listed will also benefit from the possible construction of the S50 expressway from Kraków to Bielska-Biała. The positive effects will be even greater than those resulting from the construction of the S69 road (also in Zwardoń). Moreover, for both these centres the improvement of accessibility will also be relatively large in consequence of the completion of the Polish A1 motorway. The influence of the further development of the A4 motorway is negligible. Also Oščadnica, situated on the Slovak side, will benefit the most from the list of investments, including the ones implemented on the Polish side. Apart from the completion of the traffic route of the S69 expressway and the D3 motorway, the greatest improvement in the accessibility of Oščadnica will be guaranteed by the S50 route from Kraków to Bielska-Biała. The role of the investments on the Slovak side is marginal in this case (like for Wisła and Zwardoń). The closeness of the large conurbations of Upper Silesia and Kraków, which still have poor transport connections, brings about the situation

Table 6.4. Variant-based change in the level of potential accessibility for medium-term tourism (in %)

country	region/poviat	tourist localities	change in the level of potential accessibility for medium-term tourism as compared to 2010).(variant no.)													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
Poland	Cieszyn	Wisła	1.3	1.2	1.5	6.0	0.1	3.8	0.0	0.0	0.1	0.2	0.0	0.0	0.1	10.5
	Krosno	Iwonicz-Zdrój	9.7	1.5	12.7	0.8	0.0	0.0	0.1	0.1	0.2	0.7	14.8	24.0	2.9	–
	Lesko	Cisna Solina	14.8	1.1	22.2	0.2	0.0	0.0	0.0	0.1	0.1	0.4	20.4	27.9	2.1	–
	Nowy Sącz	Krynica-Zdrój Piwniczna-Zdrój	3.9	2.1	7.4	2.9	0.2	1.3	0.2	0.6	0.6	2.7	3.0	4.3	22.3	–
	Nowy Targ	Szczawnica	3.3	7.0	11.4	2.5	0.4	1.1	3.0	3.8	5.6	10.3	0.2	0.7	1.6	–
	Tatry	Białka and Bukowina Tatrzańska, Zakopane	2.6	8.5	13.3	1.2	0.1	0.9	3.6	4.2	8.6	11.3	0.1	0.8	1.2	–
	Żywiec	Zwardoń	2.1	0.8	1.4	2.8	2.1	10.1	0.2	0.2	0.3	2.6	0.0	0.1	0.2	12.6
Slovakia	Bardejov	Bardejov	0.1	4.9	17.5	0.6	0.1	0.2	0.1	0.1	0.1	1.9	8.2	14.5	8.1	–
	Čadca	Oščadnica	0.6	2.2	3.1	3.3	0.4	7.6	0.2	0.2	0.2	0.4	0.0	0.1	0.1	8.1
	Kežmarok	Červený Kláštor	1.1	17.3	27.6	0.5	0.2	1.3	3.9	4.7	6.7	10.9	1.5	5.8	7.6	–
	Liptovský Mikuláš	Jasná, Liptovský Mikuláš	0.2	26.7	34.5	0.1	0.1	2.5	3.2	7.6	7.6	33.4	0.7	3.7	2.1	–
	Poprad	Ždiar, Starý Smokovec	0.7	17.0	26.9	0.2	0.1	1.7	3.8	4.5	6.3	12.4	1.0	3.8	5.7	–
	Snina	Snina	1.7	4.0	25.5	0.0	0.0	0.1	0.0	0.0	0.0	1.3	8.7	10.6	3.2	–
	Tvrdošín	Zuberec	2.3	11.1	13.8	0.9	0.1	1.3	3.1	7.1	7.1	16.7	0.1	0.5	0.3	–
	Žilina	Terchová	0.2	5.0	7.1	1.6	0.5	9.6	0.2	0.4	0.4	1.8	0.0	0.3	0.3	5.5

Numbers of variants: 1 – completion of the A4 motorway to Korczowa; 2 – completion of the D1 motorway in Slovakia (to Košice); 3 – completion of the D1 motorway in Slovakia (to the Ukrainian border); 4 – completion of the A1 motorway; 5 – completion of the S69 expressway (Bielsko-Biała – Zwardoń, single carriageway); 6 – completion of the expressway Bielsko-Biała–Zwardoń–Žilina (the S69 in Poland, the D3 in Slovakia); 7 – completion of the S7 expressway to Rabka; 8 – completion of the S7expressway to Chyżne; 9 – construction of the dual carriageway road Rabka-Zakopane (along with the completion of S7 to Rabka); 10 – completion of the traffic route of expressways: Kraków–Chyżne–Rużomberok–Banská Bistrica–Bratislava (the S7 in Poland, the R1 and R3 in Slovakia); 11 – completion of the S19 expressway (from Lublin to Barwinek); 12 – completion of the traffic route of expressways/motorways: Lublin–Rzeszów–Prešov–Miskolc (the S19 in Poland, the R4 and fragments of the D1 in Slovakia); 13 – construction of the Kielce–Tarnów–Nowy Sącz–Prešov expressway; 14 – completion of the traffic route of the Kraków–Bielsko-Biała expressways.

Source: own elaboration.

in which the improvement of the accessibility of tourist centres in the western part of the Polish-Slovak borderlands is possible primarily as a result of Polish investments. Slightly better equilibrated values of the index changes were noted for the locality of Terchová, where the influence of completion of the Slovak D1 motorway is clearer.

The future changes of accessibility of the Tatra region depend on the investments on both sides of the border. The Polish S7 expressway plays a significant role together with the Slovak R1 and R3 expressways and the Slovak D1 motorway. Among all the investments analysed the most beneficial option for Zakopane consists of getting the Slovak D1 motorway as far as the Ukrainian border. The advantages of the S7 construction manifest themselves only when accompanied by the construction of the Rabka–Zakopane express section. The region of Podhale will also be a minor beneficiary of construction of the S50 expressway from Kraków to Bielsko-Biała. On the Slovak side, the most considerable effects will be brought about by the completion of the D1 route. As far as the town of Liptovský Mikuláš is concerned, the improvement in accessibility so obtained exceeds 34% and in the locality of Starý Smokovec it is close to 27%. In both cases the influence of the possible construction of the S7, R3/R1 road is very significant (its entire route from Kraków via Chyżne, Ružomberok to Banská Bystrica). In the locality of Liptovský Mikuláš the effect of this investment is, however, considerably greater and almost equals the effect of construction of the D1 (an increase in accessibility of more than 33%). The construction of the S7 and R3 expressways would be the most important investment from the point of view of the tourist centres of Orava (Zuberec, Tvrdošín). The noticeable benefits for the Tatra centres in Slovakia manifest themselves even when the construction of the S7 route ends at Chyżne (i.e. when the R3 route in Slovakia is not built). They are then greater than for Zakopane which is situated on the Polish side. The centres of the eastern sub-Tatra region (Ždiar, Starý Smokovec) and of the Slovak Pieniny Mountains (Červený Kláštor) will additionally benefit from the possible construction of the Tarnów–Nowy Sącz–Prešov expressway. This influence, however, is not visible in the Polish Pieniny Mountains (Szczawnica), probably because of the lack of a road connection between the valleys of the Dunajec River and the Poprad River (between Szczawnica and Piwniczna-Zdrój). In order to improve the accessibility of Szczawnica it is important, under these

circumstances, to complete the Slovak D1 motorway and the Polish section of the S7 expressway.

The central part of the Polish borderland area (centres: Krynica-Zdrój and Piwniczna-Zdrój) is marked by the relatively weak effect of the various projects proposed by the Polish and Slovak governments. The largest impact will stem from the planned extension of the Slovak D1 motorway to the Ukrainian border. This is indirect proof of the poor communication between that region and the Polish tourist base. Under such circumstances the level of accessibility begins to be determined by the geographically distant destinations in Slovakia and even in Austria and Hungary that are about to become much closer in terms of travel time. This constitutes a significant reason for considering the construction of the Kielce–Tarnów–Prešov expressway. This investment would increase the accessibility of the region of Nowy Sącz by more than by 22 % and it would also bring benefits for the town of Bardejov on the Slovak side. As far as this centre is concerned, however, the key issue is the construction of the D1 motorway on the Slovak side and of the cross-border S19/R4 expressway.

The only tourist centres of the borderland that would significantly benefit from the completion of the Polish A4 motorway are Iwonicz-Zdrój, Cisna and Solina. The transfer time from Kraków and Upper Silesia to the Beskid Niski Moutains and the Bieszczady Mountains will be considerably reduced. Other routes that are very important for the areas cited include the S19 and the R4 in Poland and the D1 motorway in Slovakia. The project having the greatest positive impact (higher than 22%) on the accessibility of Cisna and Solina, apart from the S19 road, is the completion of the D1 motorway to the Ukrainian border. When completed, the S19, R4 and D1 roads stand to markedly improve the accessibility of Snina.

In summary, it should be stated that from the point of view of the majority of the centres examined, the most important large road investments are: the Slovak D1 motorway (full length) and the traffic route of the S7 and R3 expressways (together with the Rabka–Zakopane branch) (Tab. 6.5). The significance of other routes is smaller. Among the shorter sections, the role of the potential S50 expressway from Kraków to Bielsko-Biała stands out. The analysis carried out also confirmed the effectiveness of the possible Kielce–Tarnów–Prešov route

for the health resorts in the region of Nowy Sącz and for the town of Bardejov. The existing centres (both Polish and Slovak) will obtain relatively less benefit from the Polish A4 motorway and the S19 and R4 expressways. Only the localities in the Bieszczady Mountains constitute exceptions (Tab. 6.5).

Table 6.5. Investment priorities for selected tourist centres

country	region/ poviat	tourist localities	priorities	
			1st rank	2nd rank
Poland	Cieszyn	Wisła	S50	A1
	Krosno	Iwonicz-Zdrój	S19/R4	D1
	Lesko	Cisna Solina	S19/R4	D1 i A4
	Nowy Sącz	Krynica-Zdrój Piwniczna-Zdrój	Kielce–Prešov	D1
	Nowy Targ	Szczawnica	D1	S7/R3/R1 with a branch to Zakopane
	Tatry	Białka Tatrzańska and Bukowina Tatrzańska Zakopane	D1	S7/R3/R1 with a branch to Zakopane
	Żywiec	Zwardoń	S69/D3	S50
Slovakia	Bardejov	Bardejov	D1	S19/R3/R1
	Čadca	Oščadnica	S69/D3	S50
	Kežmarok	Červený Kláštor	D1	S7/R3/R1 with a branch to Zakopane
	Liptovský Mikuláš	Jasná Liptovský Mikuláš	D1	S7/R3/R1 with a branch to Zakopane
	Poprad	Ždiar Starý Smokovec	D1	S7/R3/R1 with a branch to Zakopane
	Snina	Snina	D1	S19/R4
	Tvrdošín	Zuberec	S7/R3/R1	D1
	Žilina	Terchová	S69/D3	D1

Source: own elaboration.

Generally speaking, it may be said that in the western part of the borderland, the road investments to be implemented on the Polish side are more important (and this is also true for the Slovak side). In the Tatra region these proportions are more equally balanced. Towards the east they change in favour of the possible completion of investments in Slovakia (in particular the D1 motorway).

6.2.7. RAILWAY ACCESSIBILITY

External railway accessibility of the area of the Polish-Slovak borderlands is not satisfactory. It is better on the Slovak side than in Poland. At present, the transfer time by train to the borderland from the capitals of the two countries is more than 4 hours from Warsaw (6 hours to Zakopane) and about 2 hours from Bratislava (4 hours to Poprad). Research on the travel time by train from the largest cities/towns neighbouring the borderland was carried out as part of the analysis of railway accessibility. Figure 6.17 shows the real transfer time by train to the Polish-Slovak borderlands from Katowice, Kraków, Rzeszów, Trenčín, Banská Bystrica and Košice. The travel time by train to particular localities is determined by two main factors – the distance and the condition of the railway infrastructure. The travel time from each of these cities/towns to tourist centres in the borderland exceeds two hours, which should be considered an unsatisfactory result. The best situation is in the west of the Slovak part of the borderland, on the

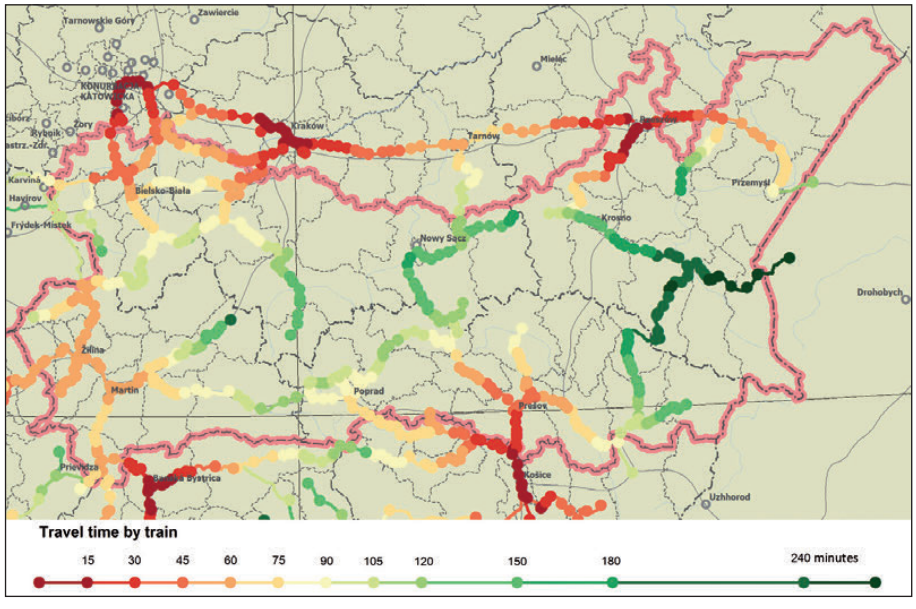

Figure 6.17. Railway accessibility of the Polish-Slovak borderlands measured by the actual travel time by train in 2010 from the main cities/towns in the vicinity of the area (Katowice, Kraków, Rzeszów, Trenčín, Banská Bystrica, Košice)

Source: own elaboration.

renčín–Žilina–Čadca–SK/CZ border (Mosty u Jablunkova) route. The journey by train to Slovak Orava and to Zakopane takes a very long time, especially from the Polish side (3 hours from Kraków and by the cross-border Nowy Sącz–Muszyna–Plaveč line). The worst situation is in the east of the area, where the travel time may even exceed 4 hours.

As opposed to road investments, the scope of the planned new rail transport projects is limited on both sides of the border. Moreover, the upgrade plans mainly cover the routes, which are parallel to the borderland, running from the Upper Silesian conurbation and Kraków in the direction of the Ukrainian border and from Bratislava via Žilina to Košice. Plans relating to the cross-border lines, or the lines just running towards the border, are very limited. In a number of cases they are restricted to activation of the local connections to serve the needs of tourism and therefore, at their best, they have influence on accessibility between the centres and tourist attractions. They do not, however, influence the level of external accessibility of the region. Two exceptions that need to be addressed here are two new railway lines planned in Poland:

- Piekiełko–Podłęże (connecting Kraków and Nowy Sącz by a new route that would make it possible to shorten the train journey to Zakopane and to the border with Slovakia in Muszyna);
- Busko–Żabno (connecting Kielce and Tarnów by a new route, along with the construction of a new railway bridge over the Vistula River).

The latter route is situated outside the borderland area subject of this study, but has a potential influence on its external accessibility from central Poland. The first of the two routes was included in the 2008 Railway Master Plan as a route with a target design speed of 140–160 km/h. Both routes are included in the new National Spatial Organization Concept, adopted by the Polish government in December 2011. Their completion is planned to take place between 2020 and 2030 (stage III of the railway infrastructure development).

The effects of both the above-mentioned investments on the improvement of spatial accessibility were not analysed separately because of the above-mentioned limitations related to methods. The analysis of changes of potential railway accessibility was, however, carried out for the entire country to serve the needs of the Strategy for Transport Development (Komornicki et al. 2010). The index of multi-modal

transport accessibility (WMDT) was subsequently applied and the research was carried out at the level of poviats. The study only took account of the "masses" of the centres situated in the territory of Poland. The nominal changes in the accessibility level resulting from railway investments are small. This, however, is the result of the very structure of the index itself. The influence of particular modes of transport on the final result is proportional to the share of each of these modes in the current transport sector (2010). The dominant role of road transport means that even the new railway lines do not change the value of the index very much. Nevertheless, the results obtained enable an assessment to be made of the regional variation in effects (specifying the units which particularly benefit from the investments).

The distribution of effects on the Piekiełko–Podłęże line is presented in Figure 6.18. By far the greatest beneficiaries of the new section are the poviats of Limanowa and Nowy Sącz along with the town of Nowy Sącz itself. In the area of the Polish-Slovak borderland benefits were also identified in the poviats of Nowy Targ, Tatras and Myślenice, and outside the area studied in the city of Kraków and the poviat of Kraków. As a result of completion of the new line on the Podłęże–Szczyrzyc–Tymbark/Mszana section, the length of the railway line from Kraków to Zakopane could be reduced from the current 147 km to 117km, and of the line from Kraków to Nowy Sącz from 167 to 92 km (to Muszyna from 217 to 140 km) (www.plk-sa.pl). In each of these cases the upgrade of the existing lines to Zakopane (via Chabówka) and to Nowy Sącz and Muszyna was also anticipated in addition to the construction of the Piekiełko–Podłęże section itself.

According to these data the proposed investment would reduce the distance from Kraków to Zakopane by 30 km, to Nowy Sącz by 75 km and to Muszyna by 67 km. This would also produce a tangible effect in terms of time taken. It can be assumed that the implementation of the Piekieło–Podłęże line would be the most important issue for the improvement of the accessibility of the Polish-Slovak borderland by rail. The main barrier to completion of this project is the cost, which according to various estimates oscillates between 6 and 9 billion zloty. This investment may, to a certain extent, be treated as an alternative to the construction of the Kielce–Tarnów–Prešov expressway. In both cases the objective consists of improving the accessibility of the central part of the Polish-Slovak borderland, including that of the Carpathian

health resorts (Krynica-Zdrój, Piwniczna-Zdrój, Bardejov). At the same time it would be a mistake to treat the railway investment as an alternative to the construction of the S7/R3/R1 expressway corridor, since it also covers other parts of the borderland, and besides the demand generated by the Tatra region is, and will remain, higher than that in the region of Nowy Sącz.

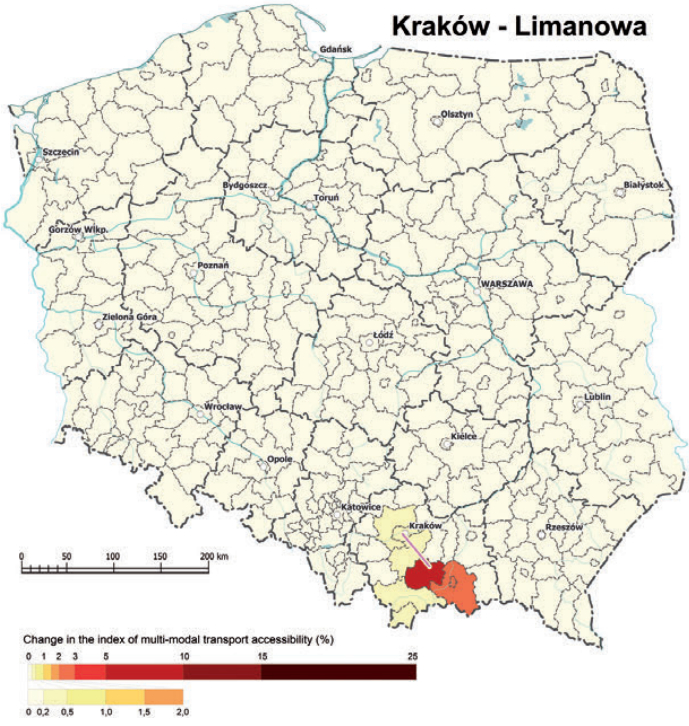

Figure 6.18. Simulation of improvement in accessibility (WMDT) as a result of the construction of the new Piekiełko–Podłęże railway line

Source: Komornicki et al. 2010.

The analysis carried out in 2010 to serve the needs of the Transport Development Strategy, demonstrates that the significance of the other new railway investment being considered (Busko–Żabno) for the borderland region is decidely smaller (Fig. 6.19). The project will bring benefits to the poviats of Nowy Sącz and Gorlice and the city of Rzeszów in the study area. The benefits in Nowy Sącz are, however, clearly smaller than in case of the Piekiełko–Podłęże line. The benefits of the route from Kielce to Tarnów are more extensive in terms of area affected

but less spectacular in terms of the increase of the WMDT index. The greatest beneficiaries would be, in this case, areas situated outside of the Polish-Slovak borderlands study area.

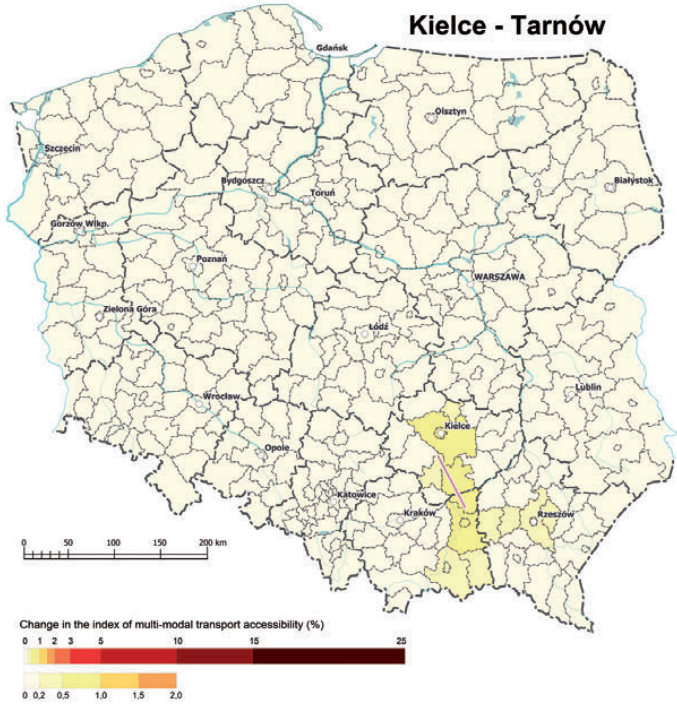

Figure 6.19. Simulation of improvement in accessibility (WMDT) as a result of construction of the new Busko–Żabno railway line

Source: Komornicki et al. 2010.

The upgrade of the Žilina-Košice railway line will produce very significant changes in accessibility on the Slovak side as a result of the anticipated speed of the trains which will travel at up to 120 km/h and in some places even 140–160 km/h.

6.2.8. AIR TRANSPORT ACCESSIBILITY

Air transport becomes more and more important in tourist trips. This is affected by a number of factors, including the drop in air fares, the increase in the number of connections (both the number of flights on existing connections and the commencement of new connections), the demand for a comfortable journey (the wish to get quickly and

comfortably to a tourist locality in one way eliminates other means of transport which offer a long and tiring journey). In this context the number of tourist trips by air will grow. This will also result from the increasing wealth of societies and from "opening to the outside world" i.e. to foreign tourists who, instead of travelling by car for a dozen hours or so, may opt for an air journey which takes 1–2 hours. The changes in the significance of accessibility by air transport will also influence changes in the choices of destination by tourists. The opportunity to get to a given airport (its location and the so-called connections network) is important from this point of view as well as the possibility of getting from the airport to the tourist locality of one's choice (the distance and transfer time – affordable transport which is also convenient in terms of time and which offers proper standards of comfort). Air transport may also have an impact on the increase in frequency of tourist trips and it may create better conditions for shorter stays (for an inhabitant of Warsaw a weekend car trip to the Carpathians is almost unrealistic, the minimum travel time being 6 hours, while a journey by plane combined with a two-day stay, provided that the flights are properly timed and the prices are low, is possible and tempting). It should also be remembered that air transport is usually a choice made by more open and well-to-do people who also take advantage of a more comprehensive range of tourist products on offer at the destination. Thus it is an important group of clients who the tourist centres will be struggling to attract.

Currently, there are six airports with regular air traffic in the area of the Polish-Slovak borderlands and in its close neighbourhood (see Chapter 3). In addition there is Lvov airport not far away from the Polish-Ukrainian border, but the control/check-in procedures at the land border-crossing, which take 2 hours on average, for the time being eliminate this airport as a significant place of access to the Polish-Slovak borderlands[29]. The airport in Vienna (and to a lesser extent the one in Bratislava) because of the rich network of connections and the relatively convenient access to the Carpathians (mostly thanks to the motorways[30]) already serves tourists coming to Slovak mountains.

[29] The transfer time from the airport in Lvov, e.g. to the Bieszczady Mountains may currently be as long as four hours.

[30] The sample transfer time to Vel'ká or Malá Fatra amounts to about 2 hours (maximum – 3 hours) – compare Figure isochrones from Bratislava – no. 6.5

The central part of the borderland, has the best accessibility via airports (2010) mostly thanks to the airport operating in Poprad (Fig. 6.20). It is the nearest airport for 11 of the 20 tourist centres analysed in the Polish-Slovak borderlands, and for another three it is the second nearest airport. This group contains also Polish tourist centres (including Zakopane, Krynica-Zdrój, Szczawnica).

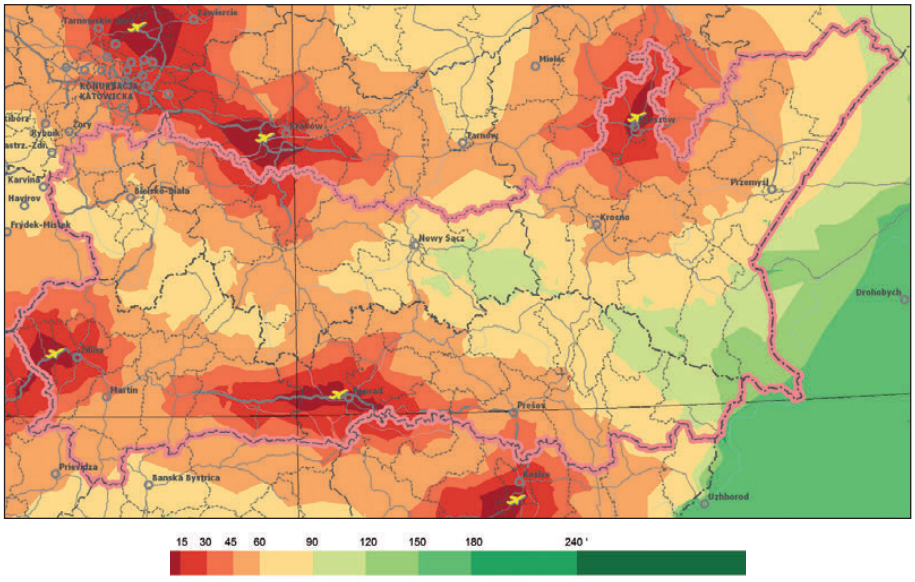

Figure 6.20. Road transport accessibility of airports on the Polish-Slovak borderland in 2010 (the airport in Lvov was not taken into account. This airport would only change the transfer time to the area on the Ukrainian side which is not an area covered by this research)

Source: own elaboration.

Apart from the airport in Poprad one should also mention the one in Žilina, currently the nearest airport for Zwardoń, Wisła and other centres in the Beskid Śląski Mountains. The Beskid Żywiecki Mountains and part of the Beskid Śląski Mountains have, relatively, the poorest accessibility when compared to the surrounding areas. The peripheral nature of the borderland zone is visible in this case. One half of the centres analysed are located within a maximum of 60–65 minute ride from the airports. The centres in the Tatra Mountains and their surroundings, especially on the Slovak side (e.g. Starý Smokovec – 17 minutes, Liptovský Mikuláš – 26 minutes) (Tab. 6.6) are located nearest to the airports. The poorest accessibility to air transport is characteristic

of the eastern part of the Polish-Slovak borderlands (e.g.. Cisna – 126 minutes to the nearest airport, Snina – 101 minutes).

Table 6.6. The two nearest airports for 20 selected tourist localities in the Polish-Slovak borderland area (2010)

name of the tourist centre	nearest airport	transfer time (minutes)	second nearest airport	transfer time (minutes)
Bardejov	Košice	84	Poprad	93
Bukowina Tatrzańska, Białka Tatrzańska	Poprad	56	Kraków	78
Červený Kláštor	Poprad	61	Kraków	99
Cisna	Rzeszów	126	Košice	157
Iwonicz-Zdrój	Rzeszów	66	Košice	128
Jasná	Poprad	42	Žilina	109
Krynica-Zdrój	Poprad	91	Košice	111
Liptovský Mikuláš	Poprad	26	Žilina	93
Oščadnica	Žilina	46	Katowice	133
Piwniczna-Zdrój	Poprad	65	Kraków	107
Snina	Košice	101	Poprad	134
Solina	Rzeszów	103	Košice	175
Starý Smokovec	Poprad	17	Košice	117
Szczawnica	Poprad	84	Kraków	105
Terchová	Žilina	41	Poprad	82
Wisła	Žilina	80	Katowice	89
Zakopane	Poprad	73	Kraków	83
Ždiar	Poprad	39	Kraków	94
Zuberec	Poprad	71	Kraków	112
Zwardoń	Žilina	74	Kraków	118

Source: own elaboration.

The Slovak part of the borderland has better accessibility to air transport, which may have consequences for the further development of tourism, especially as far as competition is concerned (competition between the two sides of the borderland). None of the Polish airports is the nearest airport for any of the tourist centres in Slovakia.

Further analyses were designed to check the direction of change in accessibility of airports in 2030 assuming that all road projects are

implemented. The changes that can be seen concern, in particular, the extension of the zones surrounding airports as a result of the construction of expressways and motorways. In addition, there is a change in of the area lying in the one-hour-plus travel distance from the nearest airport. In the western part of the borderland all tourist destinations are located less than a one-hour ride from the nearest airport. The reduction of the transfer time to tourist destinations is found to be considerable: 26 minutes from Zwardoń and 25 minutes from Wisła. Also the poorly accessible areas in the eastern section of the borderland tend to get smaller.

Table 6.7. Two nearest airports from 20 selected tourist destinations in the Polish-Slovak borderland area (2030)

name of the tourist destination	nearest airport	transfer time (minutes)	second nearest airport	transfer time (minutes)
Bardejov	Košice	61	Poprad	74
Bukowina Tatrzańska, Białka Tatrzańska	Poprad	56	Kraków	67
Červený Kláštor	Poprad	61	Kraków	89
Cisna	Rzeszów	107	Košice	128
Iwonicz-Zdrój	Rzeszów	44	Košice	87
Jasná	Poprad	42	Žilina	61
Krynica-Zdrój	Košice	90	Poprad	91
Liptovský Mikuláš	Poprad	26	Žilina	45
Oščadnica	Žilina	30	Poprad	96
Piwniczna-Zdrój	Poprad	64	Kraków	90
Snina	Košice	76	Poprad	113
Solina	Rzeszów	84	Košice	130
Starý Smokovec	Poprad	17	Košice	79
Szczawnica	Poprad	84	Kraków	95
Terchová	Žilina	37	Poprad	74
Wisła	Žilina	55	Katowice	75
Zakopane	Kraków	69	Poprad	72
Ždiar	Poprad	39	Kraków	84
Zuberec	Poprad	71	Žilina	79
Zwardoń	Žilina	47	Katowice	89

Source: own elaboration.

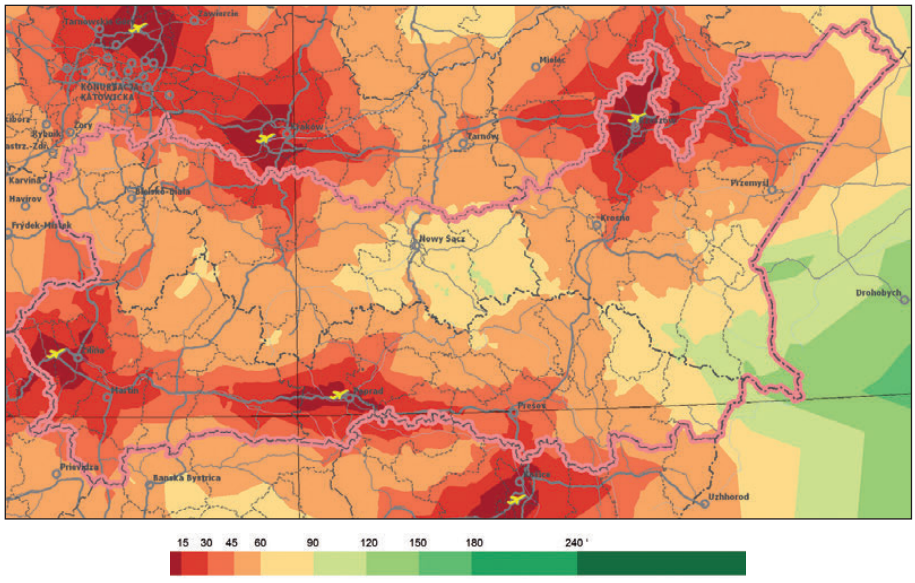

Figure 6.21. Road transport accessibility to airports in the Polish-Slovak borderlands in 2030 (the airport in Lvov was not taken into account, which would only change the transfer time to the area on the Ukrainian side of the border which is not covered by this research)

Source: own elaboration.

Table 6.8. Changes in transfer time to airports from 20 selected tourist destinations in the Polish-Slovak borderlands area in the years 2010–2030

name of the tourist destination	nearest airport	difference of transfer time 2010–2030 (minutes)	second nearest airport	difference of transfer time 2010–2030 (minutes)
Bardejov	Košice	–23	Poprad	–19
Bukowina Białka	Poprad	0	Kraków	–11
Červený Kláštor	Poprad	0	Kraków	–10
Cisna	Rzeszów	–19	Košice	–29
Iwonicz-Zdrój	Rzeszów	–22	Košice	–41
Jasná	Poprad	0	Žilina	–48
Krynica-Zdrój	*Košice*	–1	*Poprad*	–20
Liptovský Mikuláš	Poprad	0	Žilina	–48
Oščadnica	Žilina	–16	*Poprad*	–37
Piwniczna-Zdrój	Poprad	–1	Kraków	–17

name of the tourist destination	nearest airport	difference of transfer time 2010–2030 (minutes)	second nearest airport	difference of transfer time 2010–2030 (minutes)
Snina	Košice	–25	Poprad	–21
Solina	Rzeszów	–19	Košice	–45
Starý Smokovec	Poprad	0	Košice	–38
Szczawnica	Poprad	0	Kraków	–10
Terchová	Žilina	–4	Poprad	–8
Wisła	Žilina	–25	Katowice	–14
Zakopane	*Kraków*	–4	*Poprad*	–11
Ždiar	Poprad	0	Kraków	–10
Zuberec	Poprad	0	*Žilina*	–33
Zwardoń	Žilina	–27	Katowice	–29

Change of airport is indicated in italics.

Source: own elaboration.

By 2030, two tourist destinations will change their nearest airports. Zakopane will find Kraków nearer than Poprad, which is a significant development in the competitive relationship of the two countries. The airport in Nowy Targ will be nearer still, but will remain incomparably smaller than Kraków Airport (the relationship will be similar with Białka Tatrzańska, Bukowina Tatrzańska and Szczawnica). For Krynica-Zdrój the airport in Košice will nominally replace Poprad as the nearest airport, but only by the smallest of margins (1 minute, i.e. within the error margin) and on condition that the Tarnów-Prešov expressway is completed. In several cases the change will concern the second nearest airport as far as distance is concerned (this affects the following localities: Zakopane, Krynica-Zdrój, Zwardoń, Oščadnica, Zuberec).

6.2.9. AIRPORTS VERSUS RAILWAY TRANSPORT

In Western Europe a popular form of getting to tourist destinations involves covering the longer distance by plane and then accessing the tourist destination by train from the airport. This helps avoid less-comfortable buses and having to hire a car at the airport thus making the transfer cheaper wherever railway fares are reasonable.

All airports are located in the vicinity of railway lines, both running parallel to the border (Katowice–Kraków–Rzeszów route in Poland and Žilina–Poprad–Košice in Slovakia) and crossing it from north to south (Katowice–Žilina; Rzeszów–Košice and Kraków–Zakopane with the possibility of Kraków–Bielsko-Biała–Žilina connections; and for Nowy Sącz a connection with the airport in Poprad).

The airports in Kraków, Žilina and Poprad stand the best chances of developing such a combined transport system (plane+train). The airport in Poprad has the best location, as it is situated barely minutes away from a large railway junction in the town centre. Poprad has railway connections with the largest tourist destinations in the Slovak Tatras (with the exception of Ždiar and Zuberec) and larger towns (e.g. Ružomberok, Liptovský Mikuláš or Žilina). Direct connections with Krynica-Zdrój and Piwniczna-Zdrój are also possible, but that would require the creation of a positive image of this kind of transport to promote demand among both long-term visitors and those making day-trips to the Tatras from the Polish spas. The present railway transfer between Poprad and the locality of Plaveč (on the border with Poland) takes 90 minutes.

The airport in Žilina has a good situation with regard to railway connections (in Žilina town centre) both with other Slovak cities/towns and tourist destinations (e.g. Liptovský Mikuláš, Poprad, Čadca) and with tourist destinations in Poland (especially with Zwardoń and Żywiec). The time currently required for a train transfer from Žilina to the locality of Čadca is about 23 minutes by a fast train service and about 35 minutes by slow train, to Zwardoń nearly 80 minutes, and to Żywiec about 2 hours and a half. After an upgrade to the railway line, this time may be reduced by up to half to the Polish destinations.

On the Polish side the railway line to Katowice constitutes an extension of this line. The Pyrzowice airport is, however, quite remote from the railway infrastructure (though the Katowice–Bielsko-Biała–Zwardoń–Žilina connection is possible). Much more important, and possible to carry out efficiently, is the improvement of the railway connections from the airport in Kraków to localities in the Polish-Slovak borderlands. A railway line connects the Kraków Airport in with the city's main railway station from where a train can be taken to Zakopane, but the latter leg takes about 3 hours making it less competitive as a means of transport.

Airports in Rzeszów and Košice serve a relatively small number of passengers and the areas near the Rzeszów–Medzilaborce–Prešov–Košice railway line are not that attractive for tourists to make the start-up of railway connections worthwhile.

6.3. ACCESSIBILITY OF TOURIST DESTINATIONS IN THE POLISH-SLOVAK BORDERLAND

This subchapter focuses on detailed analyses of the development of tourism in the Polish-Slovak borderland and on the influence of transport accessibility on the development of this area. The isochrone analyses applied for this purpose identified areas of identical time accessibility – car travel time according to the assumed traffic speed model (Chapter 6.1):

- In respect of individual localities;
- Carried out simultaneously in respect to a number of localities (accessibility of a network of facilities of the same type).

The sizes of the populations and numbers of tourist facilities were calculated within isochrones. These data were presented using a cumulative curve method that can also be referred to as a cumulative accessibility analysis. This was designed to obtain data concerning the expected demand for or supply of tourist services and attractions.

Owing to the use of multi-criteria analysis it is possible to show the complexity of the phenomenon and to draw conclusions from various points of view, e.g. in respect of tourist destinations, tourists, as well as the expected anthropopressure, especially in areas of natural value. Conclusions may also be formulated concerning the transport (accessibility) determinants related to the development of various kinds of tourism and to competitiveness (both between destinations and between countries).

All the results of the analyses carried out which are presented here were obtained in several time spans for selected variants of the planned roads. The current situation, in 2010, was considered the starting point. This kind of diagnosis is here made for the first time for the Polish-Slovak borderlands area – on the Polish side, Slovak side and in the cross-border system. A large body of information was obtained, which may be used for both scientific research and practical purposes

by bodies responsible for the planning of the infrastructure network and tourist development.

In order to research the accessibility of particular localities, 27 towns as well as tourist destinations located in the borderland area were selected. In addition 5 large cities in the vicinity of the area (Katowice, Kraków, Tarnów, Banská Bystrica, Košice[31]) were also taken into account. In total, the analysis involved 32 localities – 17 in Poland and 15 in Slovakia. As part of the isochrone analyses of internal accessibility, 207 series of detailed calculations were performed. They documented the changes of time and spatial accessibility depending on the variant-based development of the road network (Tab. 6.8). These analyses were carried out for all localities in the base variant A (condition in 2010), B (condition that the projects will be implemented by 2015) and C (the target maximal variant of the road network development which takes into account all planned projects and those which are likely to be accomplished around 2030).

Partial variants allow us to better analyse the influence of particular changes in the road network on changes in travel time and spatial accessibility in the regions with significant projects, and to compare this with the 'officially' planned construction plans and upgrades (appendix). Also the analysis of several variants of roads whose plans are not part of any official documents was proposed.

Table 6.9. Selection of isochrone simulation in spatial accessibility research at the internal level in the Polish-Slovak borderlands

locality	entire network	variant									total
	A	B	C	D	E	F	G	H	I	J	K	
Banská Bystrica	+	+	+		+		+	+	+	+		8
Bardejov	+	+	+			+		+		+	+	7
Bukowina Tatrzańska/ Białka Tatrzańska	+	+	+	+	+				+	+		7
Červený Kláštor	+	+	+	+	+				+	+	+	8
Cisna	+	+	+			+						4

[31] Additional cities/towns were selected because they are important destinations (among others for administrative reasons) of the so-called surroundings of the Polish-Slovak borderlands – also places generating tourist traffic.

locality	entire network			variant								total
	A	B	C	D	E	F	G	H	I	J	K	
Iwonicz-Zdrój	+	+	+			+						4
Jasná	+	+	+	+	+		+	+	+	+		9
Katowice	+	+	+	+	+		+		+	+		8
Košice	+	+	+			+		+		+	+	7
Kraków	+	+	+	+	+		+		+	+	+	9
Krynica	+	+	+			+				+	+	6
Liptovský Mikuláš	+	+	+	+	+		+	+	+	+		9
Nowy Targ	+	+	+	+	+				+	+		7
Oščadnica	+	+	+				+	+				5
Piwniczna-Zdrój	+	+	+							+	+	5
Poprad	+	+	+	+	+	+		+	+	+	+	10
Prešov	+	+	+			+		+		+	+	7
Rzeszów	+	+	+			+					+	5
Sanok	+	+	+			+						4
Snina	+	+	+			+		+			+	6
Solina	+	+	+			+						4
Starý Smokovec	+	+	+	+	+			+	+	+		8
Szczawnica	+	+	+	+	+				+	+	+	8
Tarnów	+	+	+								+	4
Terchová	+	+	+		+		+	+		+		7
Wisła	+	+	+				+					4
Zakopane	+	+	+	+	+				+	+		7
Ždiar	+	+	+	+	+			+	+	+		8
Žilina	+	+	+				+	+	+	+		7
Zuberec	+	+	+	+	+				+	+		7
Zwardoń	+	+	+				+					4
Żywiec	+	+	+				+					4
Total	32	32	32	13	15	11	11	13	15	21	12	207

Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków–Banská Bystrica expressway; F – the Rzeszów–Košice expressway; G – the Bielsko-Biała–Žilina expressway; H – completion of the whole D1 motorway along with projects on the Czech side of the border; I – the Kraków–Zakopane expressway along with a tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and operational traffic parameters; K – the Tarnów–Prešov expressway.

Source: own elaboration.

Cumulative accessibility – method of analysis

An assessment of so-called cumulative accessibility was used for the research into transport accessibility whose results are presented in this chapter. This method has been used for research at the IGiPZ PAN for several years (among others by Komornicki and Śleszyński, 2009 and Komornicki *et al*, 2008). Cumulative accessibility differs from potential accessibility (the method of research of external accessibility presented in Chapter 6.1) by the fact that it does not differentiate (weight) the attractiveness of the masses as dependent on the travel time which is necessary to get somewhere. It only sums up all journey destinations (e.g. the number of inhabitants or enterprises or the number of tourist attractions) accessible within a given isochrone, e.g. of 15, 30 or 45 minutes. Therefore, all journey destinations located within a given isochrone are considered equally attractive for a traffic participant. Examples of differences between potential accessibility and cumulative accessibility (while adopting, for cumulative accessibility, the maximum isochrone of 45 minutes and the starting isochrones plotted for 15 and 30 minutes) are presented in Figure 6.22.

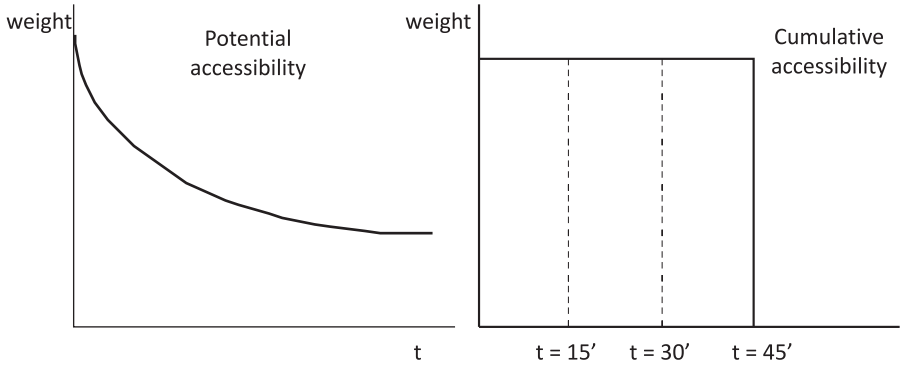

Figure 6.22. Weight of mass of a journey destination in potential and cumulative accessibility in relation to increasing transfer time

The calculations of the cumulative accessibility transfer times were performed in a manner similar to that applied to potential accessibility, using the traffic speed model constructed to serve the needs of this project (Chapter 6.1).

Cumulative accessibility was used for the demand and supply analysis. The demand analysis shows the changes of ranges of influence on tourists

(attraction) of particular tourist destinations depending on the variants of the development of the road network. The demand analysis showed how particular variants of the development of the road network affect the efficiency of the transport and settlement system. This is also essential from the point of view of general social and economic development also including considerations of enterprise, trade, internal transport and deliveries of goods since these indirectly stimulate the development of tourism.

The supply analysis, on the other hand, after calculating the number of tourist attractions according to their significance and generic categories, allows us to appreciate the range of tourist products on offer within reach of the main places where tourists stay and where there is a concentration of sleeping accommodation within a specified transfer time.

6.3.1. ISOCHRONES OF ACCESS TO SELECTED CITIES/TOWNS WITHIN THE AREA OF THE POLISH-SLOVAK BORDERLANDS

Spatial accessibility was analysed using isochrones to identify access ranges (zones of equal time accessibility) to particular localities (transfer time in hours) and future changes due to particular projects. These measurements were primarily important for short-term and medium-term trips. The isochrones the show accessibility zones of tourist destinations selected by visitors who stay in the borderland. In this case 15-minute isochrones gain in importance and the 60-minute isochrones seem to constitute the limit. This approach is useful in determining access zones in both a single country and across two countries.

The figures presented in appendix show the spatial accessibility isochrones for three selected towns – Zakopane, Jasna and Snina. In the case of Zakopane a considerable enlargement of the isochrone areas is visible for the variants with expressways leading to Zakopane and with a tunnel under the Tatras. The latter solution would create the shortest way from Poland to Slovakia but, as will be shown in other analyses, would offer no significant advantage over other variants, e.g. the Kraków–Chyżne–Banská Bystrica expressway.

As far as the change in accessibility of the Jasná area is concerned, the Kraków–Chyżne–Banská Bystrica expressway and the D1 motorway will have a beneficial influence which will be particularly clearly seen once the new road has been entirely completed.

The town of Snina has a peripheral location and an improvement in its accessibility may be one condition for an improvement in its tourist potential. Generally this could only happen as a result of completion of the D1 motorway and, indirectly, after the construction of the Rzeszów–Barwinek–Košice expressway. In the latter case, Snina will find itself less than 90 minutes distant from Košice and Prešov. This will considerably increase the potential of the area, especially for short-term tourist trips.

6.3.2. DEMAND ANALYSIS

The demand analysis was carried out on the basis of the population size available within 60 and 120 minute isochrones in three alternatives for the development of the road network (A, B, C) and in particular individual variants. Only 27 selected tourist destinations[32] were analysed because the calculations are very time-consuming. The size of the market for short-term tourism was determined, including, in particular, one-day tourism for the 60-minute isochrone and several-day tourism for the 2 and 3-hour isochrones. The relevant maps showing the size and nationality structure of the population within the 60-minute isochrone are presented in Fig. 6.23 and the effects of the construction of the road network within the 60, 120 and 180 minute isochrones in Fig. 6.24 and in Tables 6.9 and 6.10.

The analyses also covered the variety of origin according to the country of residence. Such information may be useful for diversifying the tourist products on offer to various categories of tourists. It also shows the changes in the numbers of potential tourists from other countries resulting from the construction of the road infrastructure.

Carrying out the demand analysis allows us to get acquainted, in more detail, with the influence of the construction of the road network on the access the inhabitants have to tourist destinations in the Polish-Slovak borderland. From the 2015 investment perspective the changes amount, on average, to a growth in population within the 0–60 minute zone of 9% (this growth is largest for the localities of Jasná,

[32] These were 11 poviat capital towns in Poland and in Slovakia (*okresné mesta*) and 16 assitional localities – Bukowina Tatrzańska/Białka Tatrzańska, Červený Kláštor, Cisna, Iwonicz-Zdrój, Jasná, Krynica-Zdrój, Oščadnica, Piwniczna-Zdrój, Solina, Starý Smokovec, Szczawnica, Terchová, Wisła, Ždiar, Zuberec and Zwardoń.

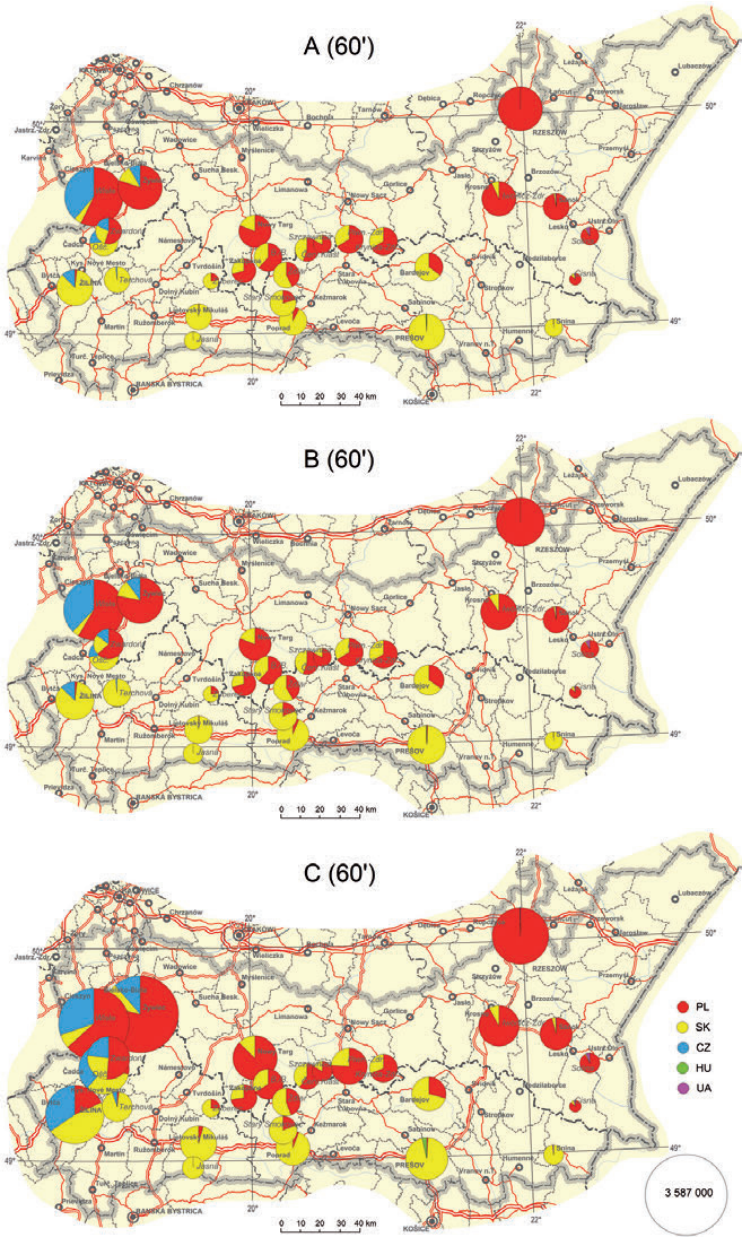

Figure 6.23. Size and structure of population according to country of residence within the one-hour isochrone from 27 selected tourist destinations in the A (condition in 2010), B (2015), C (2030) variants for the development of the road network

Source: own elaboration.

Poprad and Zwardoń – around 25%). From the 2030 perspective (variant C – government plans), on the other hand, the population growth is much higher (59%) and the increase will be greatest for the localities of Oščadnica, Žilina, Zwardoń and Żywiec (but not for Wisła, for instance).

Initially, the changes affecting the 60-minute isochrone are not large, but they grow considerably over the longer time span. The record-breaking absolute values concern Żywiec, in whose case the population size within the isochrone analysed would exceed 2 million. A double increase of the isochrone reach results in the increase the expected benefits to a maximum of 5.8 million people (Žilina).

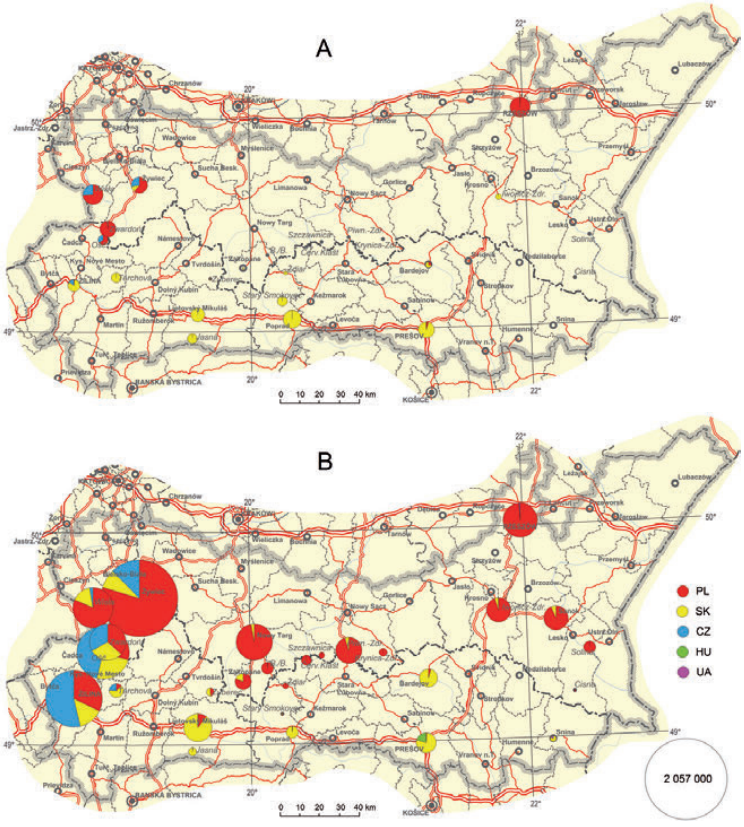

Figure 6.24. Increase in the size of population and its structure according to country of residence within the one-hour isochrone from 27 selected tourist destinations between 2010 and 2015 (A) 2015 and 2030 (B) variants for the development of the road network

Source: own elaboration.

Table 6.10. Population size within the 2-hour isochrone from selected tourist destinations and its change with various variants for development of the road infrastructure (population size in thousands)

tourist destination	population size				% increase	nr	main. variant	no.	variant ii
	A	B	C	C–A			population size		population size.
Bardejov	3 580.7	3 775.1	4 820.2	1 239.5	34.6	F	4 014.7	H	3 976.3
Bukowina Tatrzańska, Białka Tatrzańska	5 263.9	5 621.9	7 946.8	2 682.8	51.0	I	7 331.8	J	7 174.9
Červený Kláštor	3 791.7	3 862.0	5 261.6	1 469.9	38.8	J	5 036.9	K	4 639.3
Cisna	1 689.1	1 768.4	2 081.2	392.1	23.2	F	1 917.3	–	–
Iwonicz-Zdrój	3 857.5	4 339.2	5 467.2	1 609.7	41.7	F	4 944.6	–	–
Jasná	2 024.8	2 834.8	5 348.9	3 324.2	164.2	I	3 773.2	E	3 585.5
Krynica-Zdrój	3 880.4	3 950.4	5 279.9	1 399.5	36.1	K	4 948.9	J	4 133.6
Liptovský Mikuláš	3 136.6	4 097.8	8 780.1	5 643.5	179.9	E	5 827.8	I	5 637.0
Nowy Targ	6 577 .1	7 135.6	9 688.6	3 111.4	47.3	I	8 878.6	J	8 516.9
Oščadnica	6 461.8	7 265.9	11 695.8	5 234.0	81.0	G	8 733.8	H	7 503.4
Piwniczna-Zdrój	4 333.7	4 467.5	6 771.1	2 437.4	56.2	K	6 355.3	J	5 000.5
Poprad	3 392.1	4 180.8	6 435.2	3 043.2	89.7	I	5 297.8	J	4 809.6
Prešov	3 538.1	3 979.8	5 667.6	2 129.5	60.2	H	4 587.4	K	4 427.9
Rzeszów	3 901.3	5 878.5	8 328.8	4 427.5	113.5	F	6 523.9	K	6 018.9
Sanok	3 017 .2	3 250.1	4 422.1	1 404.8	46.6	F	3 601.7	–	–
Snina	1 725.3	1 873.3	2 430.1	704.8	40.9	H	2 269.7	F	1 939.6
Solina	2 150.0	2 260.9	2 780.5	630.4	29.3	F	2 421.1	–	–
Starý Smokovec	3 262.8	3 846.9	5 756.9	2 494.1	76.4	J	4 484.6	E	4 376.7
Szczawnica	3 153.3	3 184.7	4 180.6	1 027.3	32.6	J	4 368.7	J	3 634.3
Terchová	4 934.1	5 397.7	9 261.1	4 327.0	87.7	E	6 218.8	G	5 849.1
Wisła	9 463.5	9 973.9	12 200.7	2 737.2	28.9	G	10 503.8	–	–
Zakopane	4 488.9	4 739.4	7 543.8	3 054.9	68.1	I	7 384.5	J	6 704.9
Ždiar	4 031.5	4 384.6	6 372.9	2 341.5	58.1	J	5 503.8	I	5 294.1
Žilina	7 223.4	8 069.5	13 857.6	6 634.2	91.8	G	9 967.6	H	8 453.2
Zuberec	2 750.1	3 081.1	4 655.8	1 905.7	69.3	J	4 447.6	E	3 956.6
Zwardoń	6 477.1	7 541.7	10 846.3	4 369.2	67.5	G	8 282.6	–	–
Żywiec	8 931.7	9 567.6	12 544.8	3 613.2	40.5	G	10 237.6	–	–

Source: own elaboration.

Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków–Banská Bystrica expressway; F – the Rzeszów–Košice expressway; G – the Bielsko-Biała–Žilina expressway; H – completion of the whole D1 motorway along with the projects on the Czech side of the border; I – the Kraków–Zakopane expressway along with the tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and operational traffic parameters; K – the Tarnów–Prešov expressway.

Table 6.11. Population size within the 3-hour isochrone from selected tourist destinations and its change in various variants of the development of the road infrastructure (population size in thousands)

tourist destination	population size				% increase	nr	main variant	no.	variant ii
	A	B	C	C–A			population size		population size.
Bardejov	8 836.4	9 495.9	14 808.6	5 972.2	67.6	K	11 057.5	H	10 871.1
Bukowina Tatrzańska, Białka Tatrzańska	13 682.9	15 449.9	19 766.9	6 084.0	44.5	I	18 006.4	J	17 121.6
Červený Kláštor	11 793.3	13 104.4	17 306.2	5 512.9	46.7	J	15 377.3	I	14 949.1
Cisna	5 306.9	5 502.9	6 869.8	1 562.9	29.5	F	5 814.9	–	–
Iwonicz-Zdrój	9 452.9	11 416.9	16 824.2	7 371.3	78.0	F	13 393.3	–	–
Jasná	9 080.6	12 140.9	21 931.4	12 850.8	141.5	E	16 121.2	I	15 514.2
Krynica-Zdrój	10 764.7	11 415.5	15 857.5	5 092.7	47.3	K	13 463.4	J	11 761.3
Liptovský Mikuláš	12 572.6	15 926.6	26 632.5	14 059.9	111.8	E	20 990.1	H	20 002.1
Nowy Targ	14 581.6	16 360.7	21 483.8	6 902.2	47.3	I	19 296.0	E	18 543.3
Oščadnica	17 040.9	18 105.9	25 874.1	8 833.2	51.8	G	20 254.3	H	18 745.8
Piwniczna-Zdrój	12 089.1	13 425.7	19 405.7	7 316.6	60.5	K	16 540.3	J	15 010.5
Poprad	12 258.0	14 800.6	22 743.5	10 485.5	85.5	H	17 410.6	I	16 875.3
Prešov	10 381.2	12 014.8	18 262.3	7 881.1	75.9	H	13 765.3	K	13 281.9
Rzeszów	12 090.5	16 992.9	21 918.6	9 828.2	81.3	F	17 800.9	K	16 967.7
Sanok	8 312.3	9 152.1	13 614.7	5 302.5	63.8	F	10 287.1	–	–
Snina	5 142.9	5 508.7	7 858.2	2 715.3	52.8	H	6 752.2	F	5 867.4
Solina	6 367.5	7 141.6	9 715.9	3 348.4	52.6	F	7 994.8	–	–
Starý Smokovec	11 633.2	14 220.3	20 613.1	8 979.9	77.2	H	16 683.6	J	15 471.4
Szczawnica	10 503.1	11 451.2	15 686.4	5 183.3	49.4	J	14 337.5	I	13 283.1
Terchová	17 581.2	18 870.9	23 922.3	6 341.1	36.1	E	19 829.4	G	19 393.1
Wisła	18 065.8	20 440.8	26 175.6	8 109.8	44.9	G	21 251.2	–	–
Zakopane	13 162.9	14 721.6	20 146.4	6 983.5	53.1	I	18 291.7	J	16 685.2
Ždiar	12 528.4	14 617.0	19 035.2	6 506.8	51.9	J	16 354.9	I	16 138.4
Žilina	19 560.6	21 075.7	29 722.8	10 162.3	52.0	G	22 250.9	H	22 039.9
Zuberec	11 507.9	13 034.3	18 651.1	7 143.2	62.1	J	15 496.3	E	15 170.8
Zwardoń	15 414.8	16 426.7	23 596.7	8 181.9	53.1	G	18 353.9	–	–
Żywiec	16 951.8	19 279.1	27 643.1	10 691.3	63.1	G	20 935.1	–	–

Source: own elaboration.

Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków– Banská Bystrica expressway; F – the Rzeszów–Košice expressway; G – the Bielsko-Biała– Žilina expressway; H – completion of the whole D1 motorway along with the projects on the Czech side of the border; I – the Kraków–Zakopane expressway along with the tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and operational traffic parameters; K – the Tarnów–Prešov expressway.

The road expansion and upgrades to be carried out during the first period (from 2015) offer more advantages to Slovak destinations, while those envisaged for the second period (up to 2030) would provide more benefits on the Polish side. Larger differences in the size of the population present within the range of influence of tourist destinations manifest themselves in the case of the 2-hour isochrone.

At present, the highest internal demand is visible in the region of Żywiec and Žilina and this will only increase by 2030. This creates grounds for encouraging this region to specialise in short-term tourism and particularly in weekend trips.

The size of the population living within the 2-hour access zone ranges from 1.7 million (Cisna) to 9.5 million (Wisła) and within the 3-hour zone from 5.1 million (Snina) to 19.6 million (Žilina). After implementation of the planned projects by 2030 (variant C), these values will change for the 2-hour isochrone from 2.1 million (Cisna) to 13.9 million (Žilina) and for the 3-hour isochrone from 6.9 million (Cisna) to 29.7 million (Žilina) (Tab. 6.9).

The issue of changes in the distribution of particular nationalities in particular isochrones is interesting. For the destinations located in the western part of the borderland the growing share of Czechs is a significant change, especially within the 2-hour and 3-hour isochrones (mainly in the Slovak destinations – Žilina, Oščadnica). In the Polish destinations the most significant changes in the number of Czechs, who live in within a distance of 2–3 hours, are noted in the localities in the Beskid Śląski Mountains – Wisła and Ustroń.

At present (2010), the largest population groups, within time distances of both up to 2 and up to 3 hours from the destinations examined are found in the localities situated in the western part of the borderland (Wisła, Żywiec, Žilina). After the implementation of all the variants (C) the largest population potential will be that of Žilina and then of Wisła and Terchová (within the 2-hour isochrone) and Żywiec and Liptovský Mikuláš (within the 3-hour isochrone) (Fig. 6.25).

The benefits enjoyed by the localities in 2030 will be considerable. For the 2-hour isochrones the changes in the absolute values range from 0.4 million (Cisna) to 6.6 million (Žilina), while the percentage changes range from 23% (Cisna) to 180% (Liptovský Mikuláš). For the 3-hour isochrones the analogous changes range from 1.6 million

(Cisna) to 14.1 million (Liptovský Mikuláš) and from nearly 30% (Cisna) to 141.5% (Jasná) (Fig. 6.26).

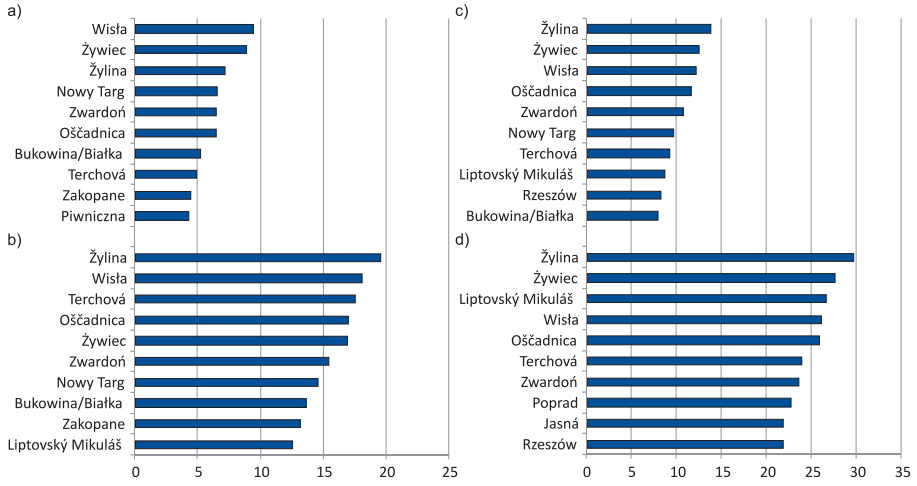

Figure 6.25. Destinations with the highest population potential within the 2-hour isochrone (a – 2010; b – 2030) and the 3-hour isochrone (c – 2010; d – 2030)

Source: own elaboration.

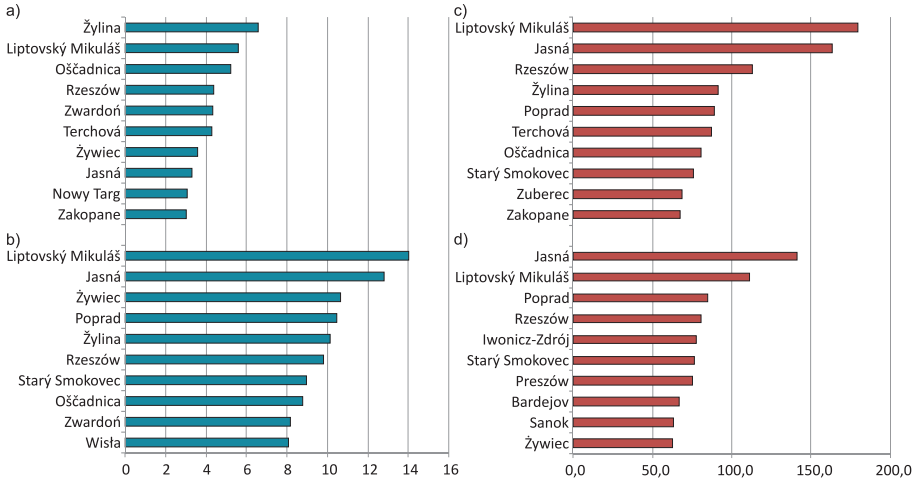

Figure 6.26. Destinations with the largest changes in the population potential between 2010 and 2030 (absolute value: a – 2-hour isochrone, c – 3-hour isochrone) and the percentage increase (b, – 2-hour isochrone, d – 3-hour isochrone)

Source: own elaboration.

The changes that may take place as a result of expanding the road infrastructure are beneficial for the development of the western part of the borderland and of the Tatra region. The destinations in Slovakia will benefit the most, mainly because of the expanded motorway in Slovakia (and because of including Bratislava within the 3-hour isochrone) and of the expressways to Poland, which will significantly increase the number of Poles within reach of the 3-hour isochrone. The greatest beneficiaries on the Slovak side will be Žilina and Oščadnica, Liptovský Mikuláš, Jasná and Poprad. On the Polish side Żywiec, Zwardoń, Rzeszów and Iwonicz-Zdrój may benefit the most from these changes.

The smallest increase in the population size within the 2-hour and 3-hour isochrones will be noted in the destinations located in the east of the borderland (Cisna and Snina). This may, on the one hand, influence the continued peripheralisation of the area, but on the other hand it may result in smaller pressure of tourists on these attractive areas.

In the case of some individual projects, the roads running along the east-west axis and the D1 motorway on the Slovak side have the greatest significance for particular localities. The list of projects bringing about the largest changes in population size within the 2-hour and 3-hour isochrones is presented in Tables 6.9 and 6.10.

The method presented for researching demand provides data related to identifying the areas where potential consumers live. That is why a decision was made to include a more detailed analysis concerning two model destinations (see chapter 6.6.2).

6.3.3. THE INFLUENCE OF THE CHANGES IN ACCESSIBILITY ON AREAS OF NATURAL VALUE

It should be remembered that in the Polish-Slovak borderland it is practically impossible to build roads without interfering with areas of natural value (compare Chapter 2). There are virtually no possible alternatives which make roads avoid areas in close proximity to natural areas under legal protection, such as national and landscape parks or other areas included in the "Natura 2000" project. For the purpose of this study the analysis of accessibility was carried out only for those national parks, which have the highest status as far as the large areas of protected nature are concerned. In the central part of

the borderland there are no areas that would be situated more than 30 minutes away from the nearest road, including the planned expressways. The areas furthest from national parks are located in the Beskid Żywiecki Mountains (especially in the Vistula River valley) and in the north-eastern part of the Polish borderland. A larger area very distant from national parks is the Poprad River valley (Fig. 6.27).

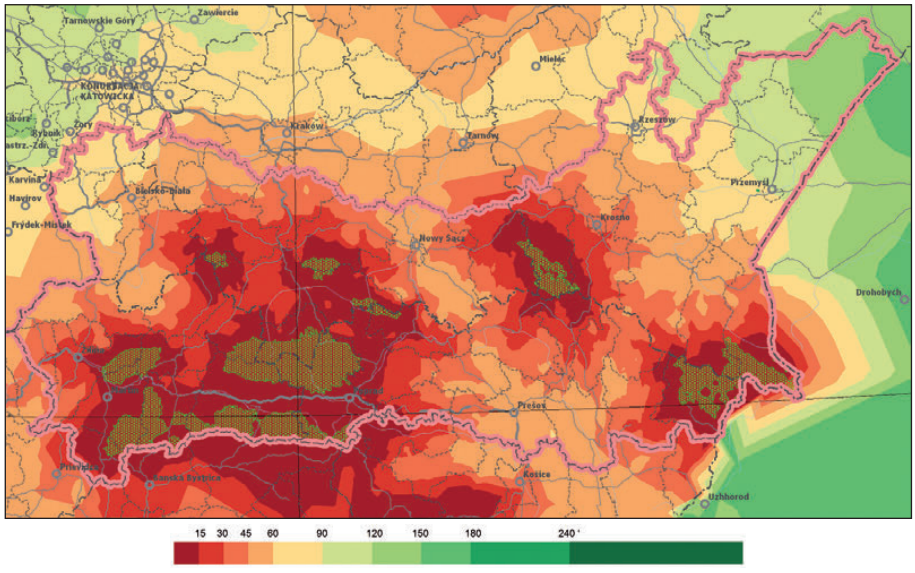

Figure 6.27. Transport accessibility of national parks in the Polish-Slovak borderland in 2010

Source: own elaboration.

At present the pressure on areas of natural value is considerable and is bound to increase after construction of the planned roads. The already intense tourist traffic in the vicinity of the most attractive and heavily promoted places (mainly the Tatra Mountains National Park and the Pieniny Mountains National Park) may become even more intense. Some projects will bring about a significant increase in the population potential.

Particularly important may be the dramatic increase in the number of potential tourists within the 4-hour isochrone. These would primarily be those people who can come for short-term and medium-term stays, which means often.

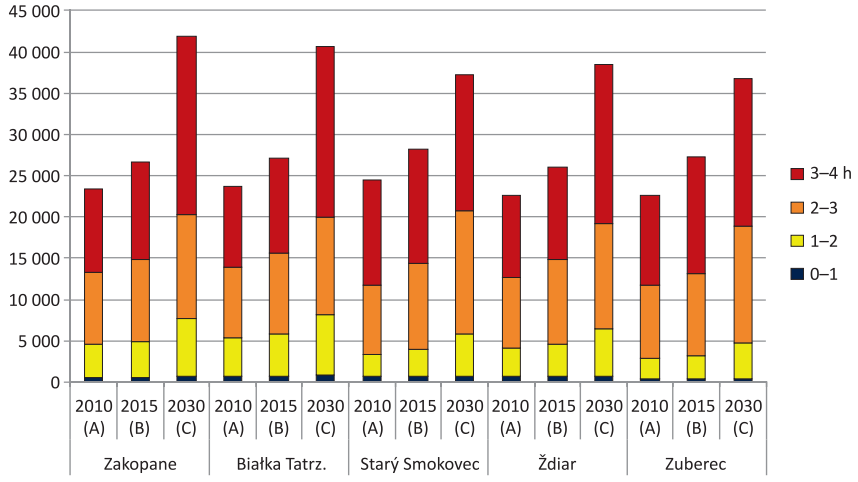

Figure 6.28. Population potential within the 1–4-hour access isochrones of the tourist destinations neighbouring the Tatra Mountains National Park (Zakopane, Białka Tatrzańska, Zuberec, Starý Smokovec, Ždiar) in 2010, 2015 and 2030

Source: own elaboration.

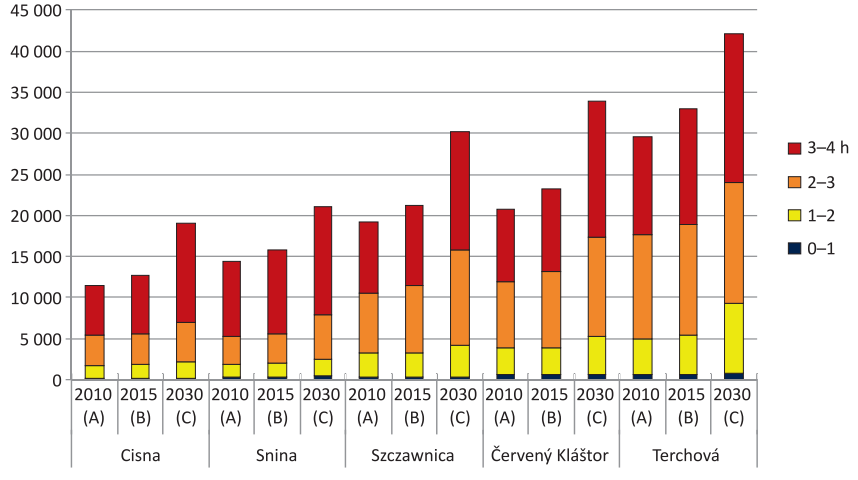

Figure 6.29. Population potential within the 1–4-hour access isochrones of the tourist destinations neighbouring the Bieszczady Mountains National Park (Cisna) and the Połoniny National Park (Snina), the Pieniny Mountains National Park (Szczawnica and Červený Kláštor) and the Malá Fatra National Park (Terchová) in 2010 (variant A), in 2015 (variant B) and in 2030 (variant C)

Source: own elaboration.

6.4. ACCESSIBILITY OF TOURIST ATTRACTIONS

6.4.1. ACCESSIBILITY OF A NETWORK OF SIMILAR TOURIST ATTRACTIONS AND SUPPLY ANALYSIS

As mentioned in Chapter 4, a database of more than 1800 tourist attractions was established in the course of the research. This included locations classified in eight categories. Subsequently, within each of the categories they were divided into three groups according to their rank. The database of tourist attractions thus prepared was used for the demand analyses and for the presentation of the accessibility of a network of similar tourist attractions.

The analysis of accessibility of thematically similar tourist destinations was carried out in order to show their distribution and the potential choices available to tourists. The accessibility of skiing destinations was presented separately and so was the accessibility of natural attractions and high quality hotels.

The transport accessibility of all ski destinations presented by means of isochrones is used both to present the spatial variety of their location and to identify the places where they can be established, for example as part of a drive to disperse tourist traffic.

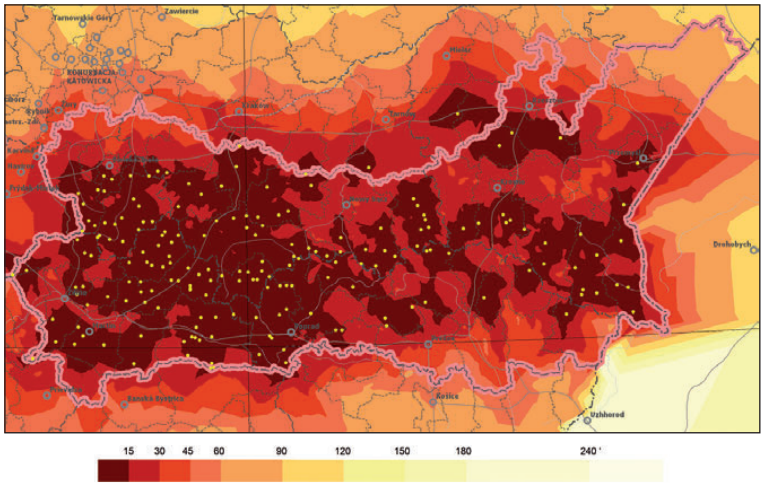

Figure 6.30. Transport accessibility of all ski destinations in 2010 in the Polish-Slovak borderland

Source: own elaboration.

All ski destinations and their accessibility are shown in Figure 6.30. Clearly visible is the concentration of destinations in the western and central part of the borderland (Tatra region). Most of the destinations are located within a distance not exceeding 15 minutes from a ski centre.

Only the analysis of the largest destinations (having a capacity greater than 5 thousand people per hour) shows a greater variability. The largest ski destinations are also the largest tourist attractions in the borderland in wintertime (Fig. 6.31). The eastern part of the borderland, where the conditions for setting up ski stations are poorer, clearly lacks large destinations and the demand is lower.

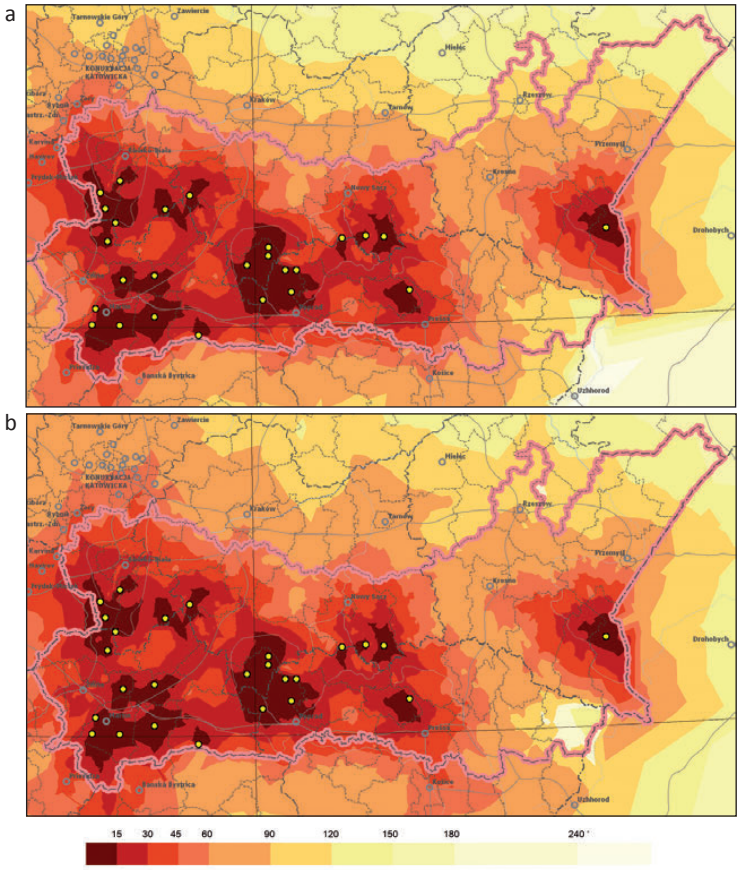

Figure 6.31. Transport accessibility of the largest ski destinations (having a capacity of more than 5 thousand people per hour) in the Polish-Slovak borderland in 2010 (a) and in 2030 (b)

Source: own elaboration.

The results of the analyses of accessibility of natural attractions and of high quality hotels are presented below (Fig. 6.33).

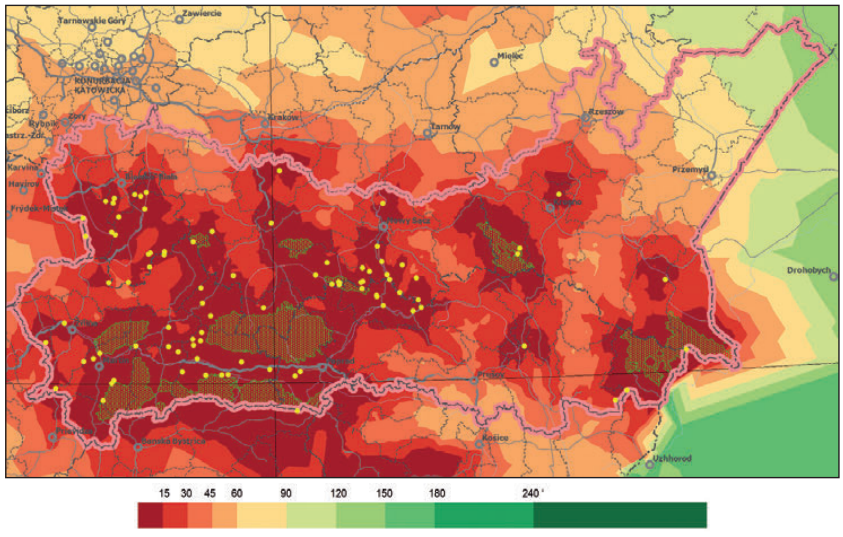

Figure 6.32. Transport accessibility of natural attractions in the Polish-Slovak borderland in 2010 (attractions of class II and III)

Source: own elaboration.

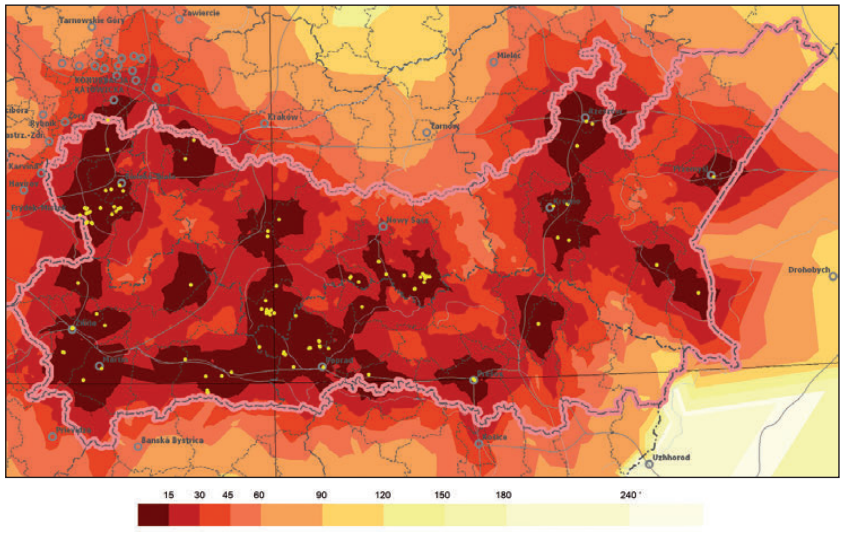

Figure 6.33. Transport accessibility of high quality hotels in 2010

Source: own elaboration.

The supply-side analysis followed the same cumulative method as the demand-side analysis. The main objective was to identify the destinations with the highest number of tourist attractions and their accessibility within the 15, 30, 45 and 60-minute isochrones. In addition, the changes in accessibility of tourist attractions connected with the expansion of the road network were demonstrated.

The calculations of the number of attractions falling within individual categories were carried out for isochrones at 15-minute intervals for all the 27 destinations in 207 alternative simulations. In the first place the presentation of the calculation results focused on the traditional division with respect to the kind and size (significance) of attractions and then all the attractions were aggregated. The unified classification used a logarithmic scale of quantitative categories (category 1 – value 1, category 2 – value 3, category 3 – value 9). In addition to this, several comparative trials were carried out concerning the number and structure of attractions, eventually making a decision about the final presentation of the results within the 15 and 45-minute isochrones, thus presenting an image of the "quicker" (shorter) and the "slower" (longer) time accessibility. The former shows the accessibility for tourists from their place of temporary residence, the latter measures the additional effort which is made in connection with longer transfer times. The time of 45 minutes seems to be an intuitively acceptable limit which allows tourists to make satisfying explorations into the hinterland.

Calculations show that the largest numbers of features within the 45-minute isochrone are at present (i.e. in 2010) found in: Poprad (333) and Liptovský Mikuláš (144) on the Slovak side and Nowy Targ (173), Zakopane (133) and Żywiec (132) in the Polish section. The supply of tourist attractions on the Slovak side is much better.

The variants for the development of the road network significantly modify the number of attractions within a given isochrone, but the influence of the new conditions of time and spatial accessibility is rather selective. Besides, the increase in the number of attractions, in particular those of higher rank, is small.

In the locality of Bardejov, the number of attractions only increases to a great extent in variant K (Kielce–Tarnów–Prešov expressway) (from 144 to 158), but the number of attractions of the highest category (III) remains the same (10). In the case of the town of Liptovský Mikuláš

the number of attractions within the 1-hour isochrones is influenced by all variants of the macro-scale expansion of the road system and, to the greatest extent, by variant I (the expressway to Zakopane and the tunnel under the Tatras). Should it be constructed, the total number of attractions would increase to 386, including in particular the ones belonging to the highest category to 67 (from the current number of 34). For Nowy Targ variant I is also the most beneficial one (with an increase from 173 to 294). The next one is variant J – the Tvrdošín–Czarny Dunajec bypass road with considerably increased technical and operational traffic parameters (up to 220). The remaining ones are of lesser significance. In Poprad the influence is similar – variant I is the most beneficial one. Then it is variant J (with an increase in the number of attractions from 333 to 375 and 344 respectively), but it is not a spectacular change. In the case of Prešov the best ones are variant C (the total network according to the government variant) and variant F – the Rzeszów–Košice expressway (an increase from 33 to 78 or 80 attractions respectively). Sanok would only have minimal benefits and Snina no benefits at all from any of the variants. The situation in Zakopane is varied. In its case variant I brings about an increase from 133 to 316 attractions, including an increase from 27 to 55 within the highest category. Also Žilina obtains a high percentage increase – in variant C (from 143 to 284) and similarly Żywiec, though to a slightly lesser extent (from 132 to 204).

The cartographic analysis for the 15-minute isochrone (Fig. 6.34–6.36) shows that the improvement in accessibility of attractions in the local system in the near future (comparison of variants A and B) would only take place in the town of Liptovský Mikuláš (especially as far as historic monuments are concerned) and Żywiec (events). In the more distant future (variant C), on the other hand, the improvement in accessibility of attractions should be more evenly spread, but it should also be limited to selected destinations (Žilina, Zakopane, Nowy Targ, Sanok). Like in the comparison of variants A and B (2015), the increase is mainly associated with historic monuments and events and this suggests a possible increase in demand for long-stay and sightseeing types of tourism.

Stronger effects of the increase in time and spatial accessibility of attractions are only visible when longer isochrones (30-, and in particular 45-minute isochrones) are investigated, however this mostly concerns

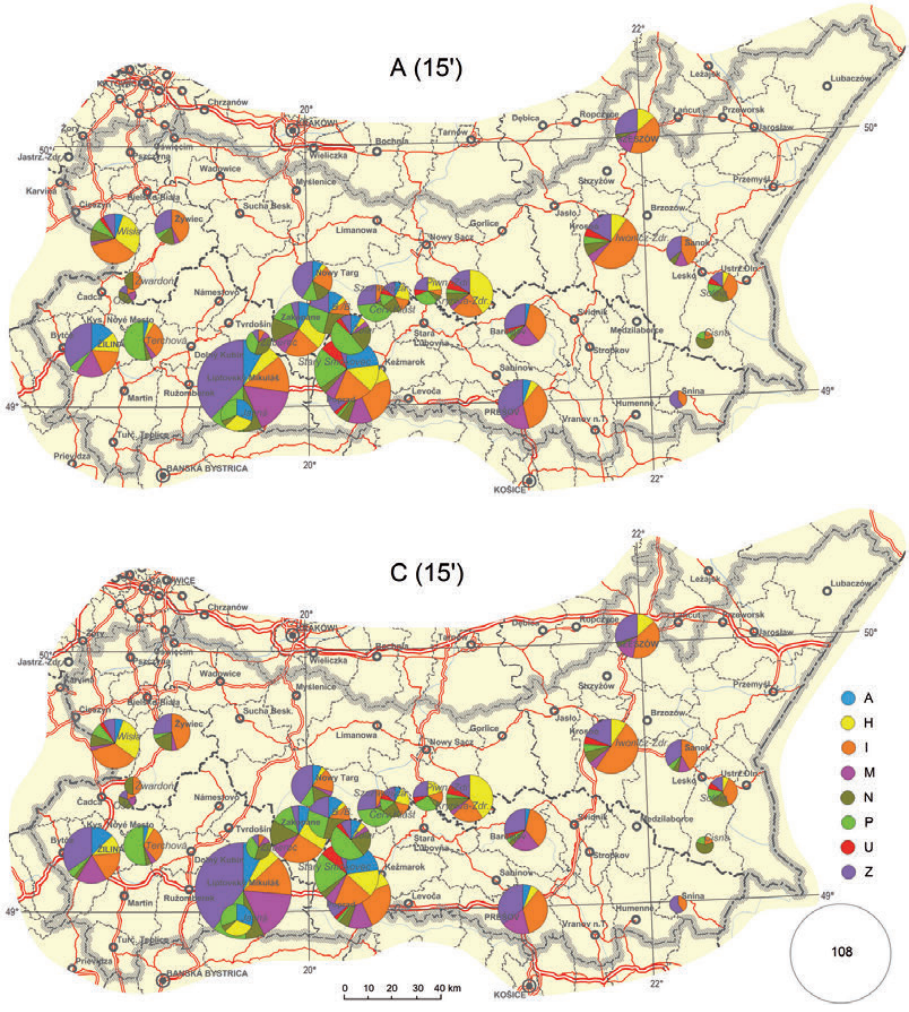

Figure 6.34. Number of attractions within the 15-minute isochrone for selected tourist localities according to the division into kinds of attraction in variant A (2010) and variant C (official, government 2030 variant)

Source: own elaboration.

A – aquaparks; H – 4 and 5-star hotels; I – events; M – museums; N – ski destinations; P – natural attractions; U – health resorts; Z – cultural heritage monuments

historic monuments and events, which, with such travel times, do not necessarily have to be reflected in increased demand. A detailed analysis was made in which the figures for supply within the 45-minute isochrone were calculated on the basis of the summary indicator. The

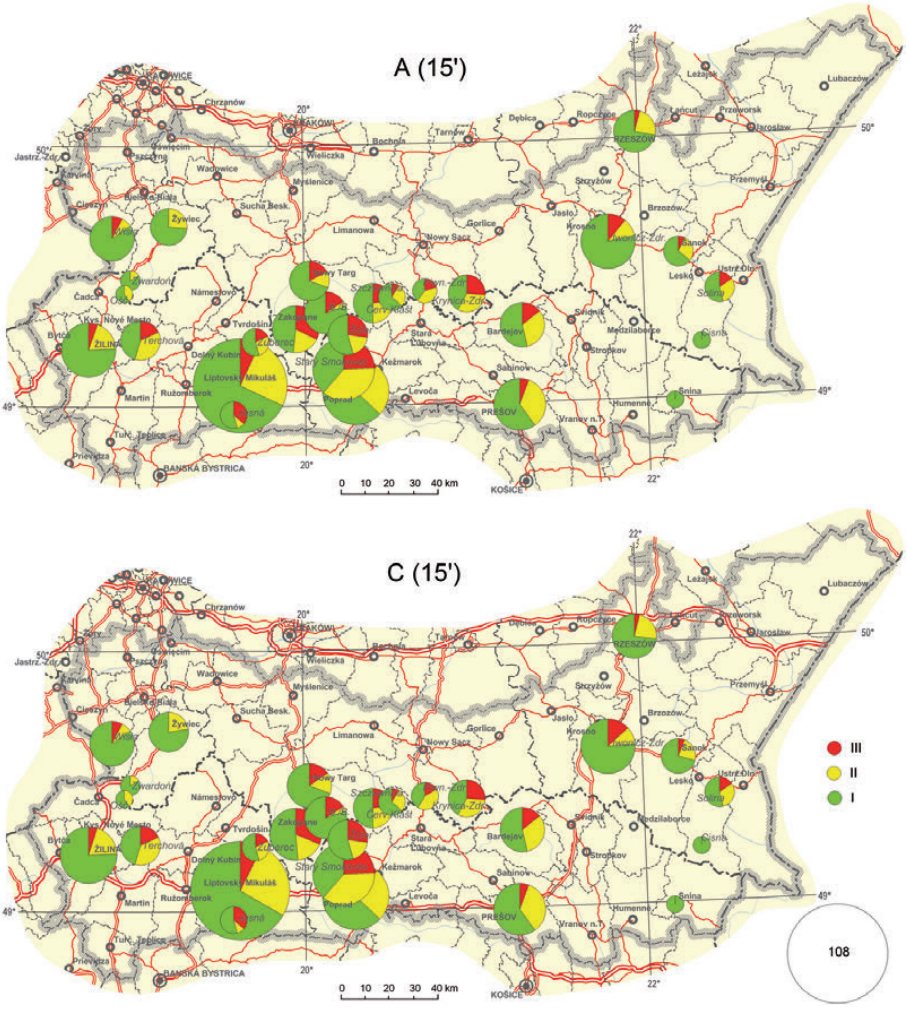

Figure 6.35. Number of attractions in the 15-minute isochrone for selected tourist localities according to the division by quantitative categories of attraction in variants A (2010) and C (official, government 2030 variant)

Source: own elaboration.

I –lowest category of tourist attraction; II –medium category; III –highest category.

facilities were weighted according to the square of their rank as follows: (category I – value 1, category II – value 3, category III – value 9). The results of these calculations are presented in Figure 6.37, and the comparison of the effects of particular variants with respect to the base variant B in Figure 6.38.

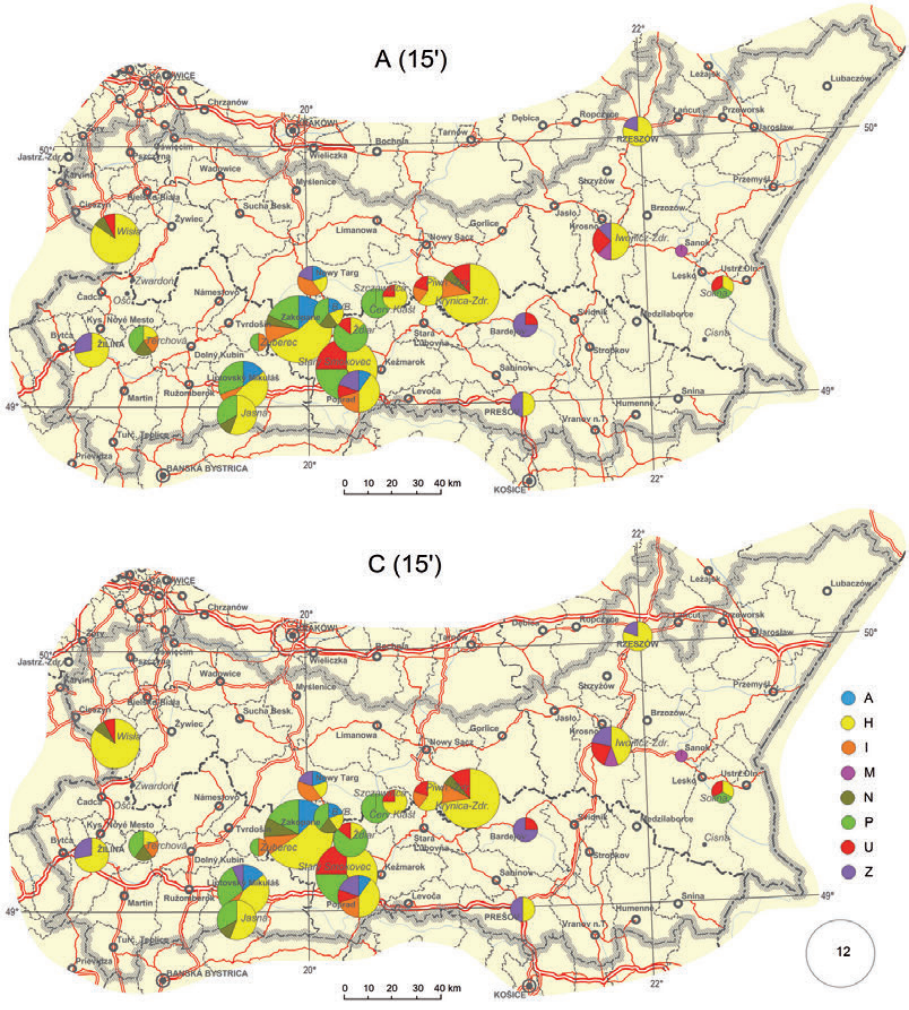

Figure 6.36. Number of attractions within the 15-minute isochrone for selected tourist localities in the highest quantitative category (III) in the division of kinds of attraction in variants A (2010) and C (official government 2030 variant)

Source: own elaboration.

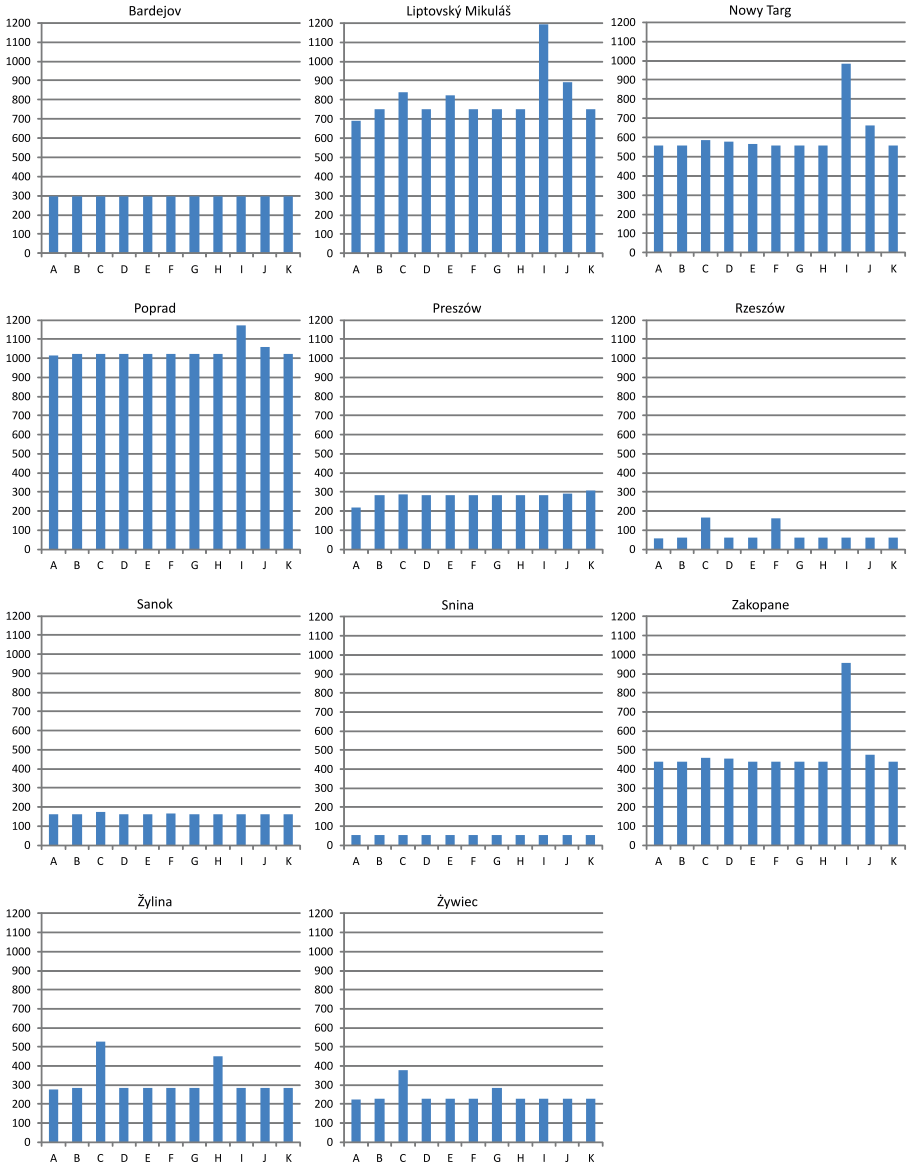

Figure 6.37. Summary supply of tourist attractions within a 45-minute isochrone at selected destinations according to the composite metric, which calculates the total values of attractions by quantitative category

Source: own elaboration.

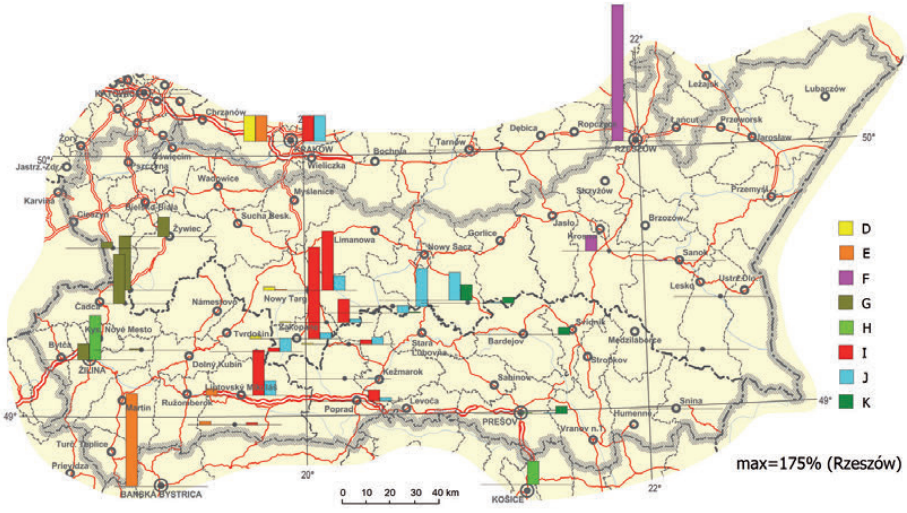

Figure 6.38. Influence of changes in the macro-scale road system on the accessibility of tourist attractions within the 45-minute isochrone (the supply of attractions according to the summary indicator taking into account the rank of the item; changes are calculated with respect to variant B – 2015)

Source: own elaboration.

Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków– Banská Bystrica expressway; F – the Rzeszów– Košice expressway; G – the Bielsko-Biała– Žilina expressway; H – completion of the whole D1 motorway along with the investments on the Czech side of the border; I – the Kraków–Zakopane expressway along with the tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and functional traffic parameters; K –the Tarnów–Prešov expressway.

6.4.2. ATTRACTIVENESS OF TOURIST LOCALITIES IN TERMS OF TRANSPORT ACCESSIBILITY

The next element of the research was the analysis of access to particular tourist attractions from 27 selected tourist localities in the Polish-Slovak borderland. The isochrones selected for the analysis were plotted at 15minute intervals (0–15; 15–30; 30–45 and 45–60 plus the cumulative values, i.e. 0–15; 0–30; 0–45; 0–60 minutes). Only those tourist attractions were taken into account, which might have particular interest to a tourist during their stay in the borderland, e.g. natural and cultural attractions, museums, aquaparks and events. The most

important part of the analysis concerns the group of most important attractions, i.e. the ones included in categories II and III.

Furthermore, owing to the omission of group I, i.e. the usual and common attractions, the results are more representative and not distorted by the subjective nature of choice. From the point of view of tourists large and popular attractions have the greatest significance. Smaller and relatively obscure attractions may still be chosen when staying in the area, but are less of a magnet attracting tourists to a given locality in the fist place. The summary results are presented in Table 6.12.

Tourist destinations are very varied in terms of accessibility of tourist attractions. The largest number of tourist attractions in the Polish-Slovak borderlands is situated in the region of the Tatra Mountains (with the Slovak part having an advantageous position). Therefore, the best accessibility of tourist attractions in all time-based bands is found in the destinations close to the Tatra Mountains, mainly on the Slovak side. The localities of Poprad, Liptovský Mikuláš and Starý Smokovec fall among the selected destinations which are significantly ahead of the competition, within all ranges of accessibility.. The largest number of attractions within the shortest isochrone (up to 15 minutes) can be found in Liptovský Mikuláš (as many as 32 in categories II and III and 101 in all categories). This is connected with its position close to the Tatra Mountains and the Niżny Tatry (with its caves), the closeness of the Tatralandia aquapark and the historic monuments of the town itself. Within the 30-minute isochrone the destinations close to the Tatry Wysokie Mountains have a clear advantage (Poprad – 87 attractions from categories II and III and Starý Smokovec – 84). A similar situation prevails with the 45-minute isochrone (Poprad – 170, Starý Smokovec – 153). After extending the range to 1 hour Starý Smokovec becomes the destination with accessibility to the largest number of attractions (236). This location is then followed by Poprad (232) and by Liptovský Mikuláš (228), but the differences become insignificant (Fig. 6.39. a,c,e).

After construction of the planned roads the situation does not change much. The Tatra destinations are still dominant, but Liptovský Mikuláš benefits considerablymoving several positions higher on the list within all isochrone ranges and within the range of the 15- and 60-minute isochrones has the largest number of attractions (Fig. 6.39. b,d,e,).

Table 6.12. Number of tourist attractions of category II and III, within the 15, 30-, 45- and 60-minute isochrones of selected (27) tourist destinations in the Polish-Slovak borderlands in 2010 and 2030, along with the magnitude of changes

	15 minutes		30 minutes				45 minutes				60 minutes			
	A	C	A	C	C–A		A	C	C–A		A	C	C–A	
					no.	%			no.	%			no.	%
Bardejov	12	12	21	21	0	0.0	53	53	0	0.0	84	88	4	4.8
Bukowina Tatrzańska, Białka Tatrzańska	3	3	39	40	1	2.6	131	132	1	0.8	206	209	3	1.5
Červený Kláštor	11	11	33	33	0	0.0	66	66	0	0.0	147	157	10	6.8
Cisna	0	0	1	1	0	0.0	7	7	0	0.0	16	16	0	0.0
Iwonicz-Zdrój	6	7	12	13	1	8.3	26	31	5	19.2	40	46	6	15.0
Jasná	4	4	30	30	0	0.0	57	64	7	12.3	128	154	26	20.3
Krynica-Zdrój	8	8	20	20	0	0.0	46	47	1	2.2	75	75	0	0.0
Liptovský Mikuláš	32	36	59	69	10	16.9	138	167	29	21.0	228	284	56	24.6
Nowy Targ	6	7	22	29	7	31.8	82	87	5	6.1	185	193	8	4.3
Oščadnica	1	1	6	12	6	100.0	20	33	13	65.0	49	78	29	59.2
Piwniczna-Zdrój	5	6	31	32	1	3.2	64	70	6	9.4	114	118	4	3.5
Poprad	19	19	87	90	3	3.4	170	171	1	0.6	232	253	21	9.1
Prešov	14	14	19	23	4	21.1	46	57	11	23.9	74	105	31	41.9
Rzeszów	7	7	7	14	7	100.0	15	26	11	73.3	27	39	12	44.4
Sanok	5	5	7	8	1	14.3	19	20	1	5.3	30	43	13	43.3
Snina	0	0	2	2	0	0.0	7	7	0	0.0	11	11	0	0.0
Solina	4	4	7	7	0	0.0	10	10	0	0.0	18	24	6	33.3
Starý Smokovec	24	24	84	84	0	0.0	153	156	3	2.0	236	250	14	5.9
Szczawnica	3	3	13	13	0	0.0	25	25	0	0.0	58	66	8	13.8
Terchová	11	11	13	13	0	0.0	38	45	7	18.4	93	122	29	31.2
Wisła	2	2	11	11	0	0.0	27	31	4	14.8	41	56	15	36.6
Zakopane	15	15	31	32	1	3.2	81	84	3	3.7	167	179	12	7.2
Ždiar	7	7	64	64	0	0.0	143	146	3	2.1	209	209	0	0.0
Žilina	9	10	14	31	17	121.4	49	82	33	67.3	64	143	79	123.4
Zuberec	5	5	22	22	0	0.0	51	51	0	0.0	118	119	1	0.8
Zwardoń	0	0	2	3	1	50.0	16	29	13	81.3	43	61	18	41.9
Żywiec	5	5	17	18	1	5.9	38	61	23	60.5	70	84	14	20.0

Source: own elaboration.

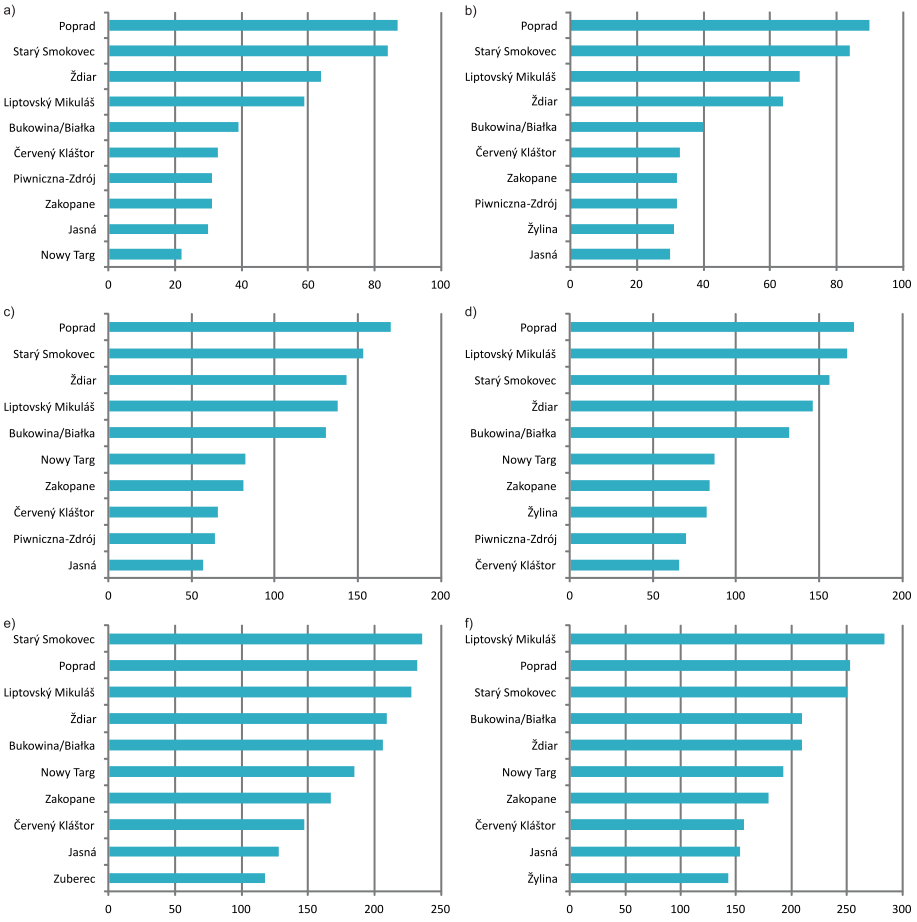

Figure 6.39. Localities with the largest number of tourist attractions within the 30, 45 and 60-minute isochrones in 2010 and 2030 (for the 30-minute isochrone: a – 2010, b – 2030; for the 45-minute isochrone: c – 2010, d – 2030; for the 60-minute isochrone: e – 2010, f – 2030)

Source: own elaboration.

It is worth analysing the changes in the number of attractions resulting from the construction of new roads by 2030 (variant C). As is only natural, the changes in the numbers of attractions within the 15-minute isochrone are the least significant. Their number increases in just five destinations. The largest number can be observed in the town of Liptovský Mikuláš (as many as 4), and the highest

percentage change is noted in Piwniczna (by 20% – a change from 5 to 6 attractions – only occurring in the event of the construction of the Tarnów–Piwniczna-Zdrój–Prešov expressway). Thanks to the expansion of roads, as many as 61 additional tourist attractions appear within the 30-minute isochrone from tourist destinations. The largest change in the number of attractions is noted in Žilina (17), Liptovský Mikuláš (10) and Rzeszów and Nowy Targ (7 each). The highest percentage change is found in Žilina (121.4%), Rzeszów and the locality of Oščadnica (100% each).

Within the 45-minute isochrone as many as 180 tourist attractions are added in total – out of that number nearly one half lie in just three localities (Žilina – 33; Liptovský Mikuláš – 29, Żywiec – 23). The number of attractions also increases in the localities of Oščadnica and Zwardoń both in absolute and in relative terms (13 attractions each representing an increase by 65.0% and 81.3%, respectively). Apart from this, changes exceeding 60% are also characteristic of Rzeszów (73.3), Žilina (67.3) and Żywiec (60.5%) (Fig. 6.40).

Within the most distant of the isochrones that were plotted (up to 60 minutes), the changes in the number of attractions are significant, but it should be remembered that one-hour access to attractions is of limited significance during a tourist stay in one place. Within this isochrone the accessibility of 419 tourist attractions is increased for all the 27 localities – the largest number in the localities of Žilina (79), Liptovský Mikuláš (56), Prešov (31), Oščadnica and Terchová (29 each). The largest percentage change is found in Žilina (123.4%), the locality of Oščadnica (59.2%), Rzeszów (44.4%), Sanok (43.3%) and Prešov and Zwardoń (41.9% each).

The results of the research confirm the conclusions from the former analysis and provide more details. The simulated changes show that the variants of expansion of the roads quite significantly influence the supply of tourist attractions, but the range of this is obviously limited to particular regions. The most significant benefits result from variant I for Nowy Targ, Zakopane and Poprad, large benefits result from variant G for the localities of Oščadnica and Zwardoń and just a bit smaller in Żywiec. Variant J will influence the change of the situation in the destinations located in the Tatra and Pieniny Mountains – mainly in Piwniczna-Zdrój. Among other simulations, the influence of variant F

on Rzeszów is significant (with an increase in the summary indicator of supply of attractions by 175%) as well as of variant E on Banská Bystrica (120%). In the case of the other destinations analysed, the influence of the expansion of the road network is generally either minimal or the number of attractions is so large anyway that its increase will not affect the improvement in the attractiveness of the locality.

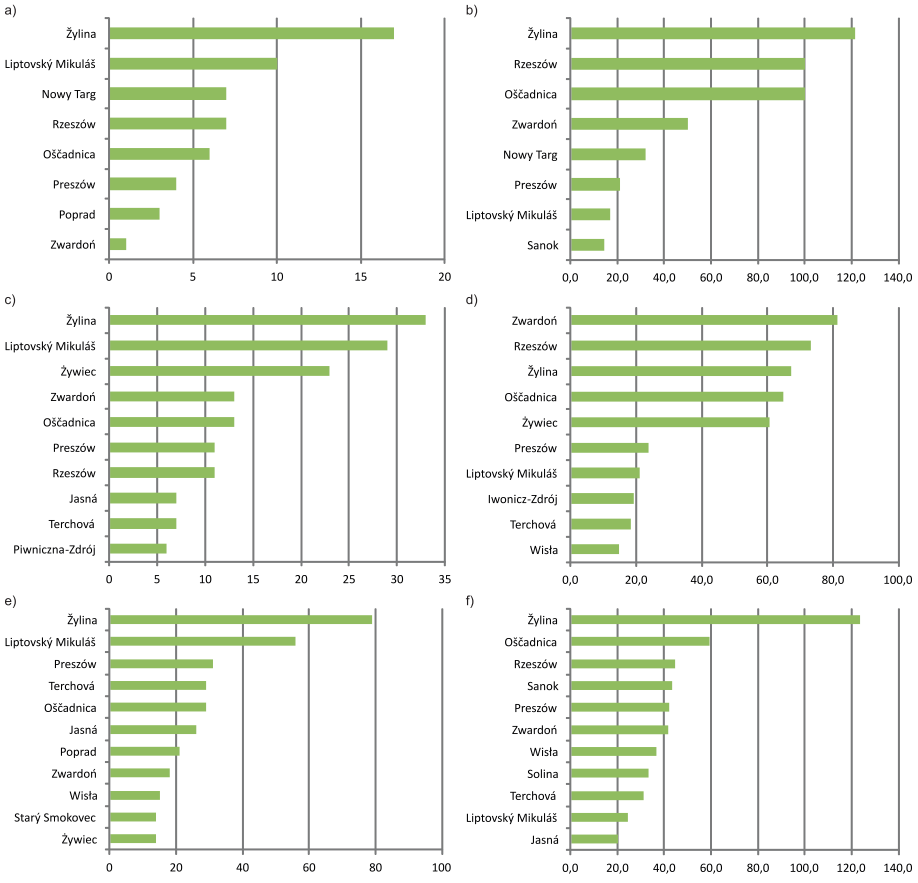

Figure 6.40. Localities with the largest change in the number of attractions within the 30, 45 and 60 minute isochrones in the years 2010–2030 (for the 30-minute isochrone: a – absolute value, b – percentage change for the 45-minute isochrone: c – absolute value, d – percentage change; for the 60-minute isochrone: e – absolute value, f – percentage change)

Source: own elaboration.

6.5. NETWORK EFFECTIVENESS

6.5.1. METHOD OF ANALYSIS

The results of the research on network effectiveness identify the places where shortage and deficiencies of infrastructure occur (between localities) and where improvement of the current condition is possible. In order to show these elements in the Polish-Slovak borderlands, the transfer time matrices formerly calculated were supplemented with the values of the index of so-called network effectiveness (Śleszyński, 2011). It is calculated by comparing the optimal transfer time (along a straight line of the Euclidean space between two destinations at a speed of 90 km/h) with the real travel time using the existing network obtained from the traffic speed model (where car connections are concerned) or on the basis of the scheduled speed (in the case of railway connections). The calculations were made for a different set of destinations than the one used for the isochrone analyses. Apart from 32 localities of a tourist nature, the remaining poviat towns in the Polish-Slovak borderland were taken into account (in Slovakia they are called *okresné mestá*). In total a set of 70 localities was obtained for which the mutual transfer times were calculated in all variants (in total nearly 2.5 thousand connections). For further more detailed studies around 300 connections were selected representing pairs of adjoining towns.

The formula of the network effectiveness index has the following form:

$$E = \frac{t_o}{t_r} \times 100\%$$

Where:
E – network effectiveness,
t_0 – optimal transfer time (access along a straight line at a speed of 90 km/h.),
t_r – real travel time using the existing network.

6.5.2. ROAD NETWORK EFFECTIVENESS

The effectiveness of the transport and settlement system was analysed in two supplementary ways. Firstly, the real simulated transfer time was examined in particular variants as compared to the ideal

transfer defined as an unlimited transfer along a straight line from one locality to another at a constant speed of 90 km/h. Secondly, the time and changes in the transfer time between these localities were compared.

The average changes in transfer time and transport and settlement effectiveness are presented in Tables 6.13 and 6.14. It follows from the analyses performed that variant C[33] is the most effective one in overcoming the accessibility barriers as it combines the majority of individual changes of the road network. Where individual destinations are concerned, the differences in simulations based on the more comprehensive road variants are clearly visible.

Poviat tourist destinations analysed in terms of relationships with all poviat capitals have an average transfer time in variant A, valid for 2010, ranging from 120 minutes (Bardejov, Prešov) to 162 minutes (Žilina). This gives an average of 137 minutes and this time is reduced to 122 minutes in variant B and to 111 minutes in variant C. In the remaining variants describing the reconstruction of the road system this would amount to: D – 120 minutes, E – 119 minutes, F – 119 minutes, G – 120 minutes, H – 120 minutes, I – 117 minutes, J – 118 minutes and K – 120 minutes. The conclusion is that the changes introduced are minor but that the influence of the development of the road network in the central part of the area, in the Tatra Mountains, on the total number of connections in the area analysed is visible.

Table 6.14 also shows how large the reserves are in the expansion of the road network. Currently (2010), the index of transport and settlement effectiveness amounts to barely 58% for the connections between all poviat towns and (1 per cent) less for the selected 11 tourist destinations. It should be noted that this index in the most extensive variant C increases to 70%, which is already quite a satisfactory result. Rzeszów (83%) and Žilina (87%) are the towns which benefit the most in this variant.

[33] Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków–Banská Bystrica expressway; F – the Rzeszów–Košice expressway; G – the Bielsko-Biała–Žilina expressway; H – completion of the whole D1motorway along with the investments on the Czech side; I – the Kraków–Zakopane expressway along with the tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and functional traffic parameters; K –the Tarnów–Prešov expressway.

Table 6.13. Average time for transfers between 11 selected poviat towns having a developed tourist function and all the 49 poviat capitals in the area of the Polish-Slovak cross-border cooperation programme in the variants of the development of the road network analysed

city/town	variant										
	A	B	C	D	E	F	G	H	I	J	K
	in minutes										
Bardejov	120	112	105	112	112	110	111	111	112	111	111
Liptovský Mikuláš	125	109	99	108	104	106	108	107	102	105	107
Nowy Targ	123	112	104	109	109	111	112	111	103	104	111
Poprad	121	107	99	106	106	104	106	105	99	100	104
Prešov	120	106	99	106	105	104	105	105	104	105	104
Rzeszów	151	127	109	125	124	117	126	126	125	125	125
Sanok	148	132	119	132	131	129	131	131	131	131	131
Snina	164	151	145	150	150	149	150	149	148	150	149
Zakopane	131	119	110	115	116	119	119	118	105	112	118
Žilina	162	133	114	133	131	132	127	125	132	132	133
Żywiec	143	129	117	128	127	128	127	129	128	128	129
Average for 11 x 49*	137	122	111	120	119	119	120	120	117	118	120
Average for 49 x 49**	143	126	114	125	124	124	125	125	124	124	124
With respect to A (%)	0.0	11.6	20.0	12.2	13.2	13.2	12.8	12.8	13.4	13.3	12.9
With respect to B (%)	–13.2	0.0	9.5	0.7	1.7	1.7	1.3	1.3	2.0	1.8	1.5

* The average calculated between 11 poviat towns having a developed tourist function and all the 49 poviat capitals.

** The average calculated for all 49 poviat capitals.

Description of variants as in footnote 33.

Source: own elaboration.

Of course, particular variants strengthen the position of those destinations, which are situated close to the routes being constructed or upgraded, but sometimes the effects are very remote. Variant D (the Kraków–Rabka–Zakopane expressway) very much improves the situation in Nowy Targ and Zakopane (by 6 %), but even more Rzeszów and Žilina (by 11 %). In the remaining variants these two destinations also benefit the most – probably because of the fact that they are located outermost with respect to the Polish-Slovak borderlands area.

The next step consisted of dealing with the connections between the nearest destinations selected, yet the set of 49 poviat towns was

Table 6.14. Average indices of transport and settlement effectiveness between 11 selected poviat towns having a developed tourist function and all the 49 poviat capitals in the area of the Polish-Slovak cross-border cooperation in the variants of the development of the road network analysed

city/town	variant										
	A	B	C	D	E	F	G	H	I	J	K
	%										
Bardejov	56	59	63	59	60	60	60	60	60	60	60
Liptovský Mikuláš	60	66	71	66	68	67	67	66	68	65	66
Nowy Targ	54	58	63	60	60	58	58	59	64	63	59
Poprad	58	65	69	65	66	66	66	66	68	67	67
Prešov	62	69	74	69	69	70	69	70	70	68	70
Rzeszów	60	70	83	71	71	78	70	70	71	71	71
Sanok	58	64	71	64	64	65	64	64	64	64	64
Snina	56	61	63	61	61	61	61	61	62	61	61
Zakopane	51	55	60	57	56	55	55	55	63	59	55
Žilina	58	69	87	69	70	69	72	76	69	70	69
Żywiec	56	61	72	61	62	61	64	61	61	61	61
Average for 11 x 49*	57	63	70	64	64	65	64	64	66	65	64
Average for 49 x 49**	58	65	73	65	66	66	66	66	66	66	66
With respect to A (%)	0.0	12.2	26.6	13.0	14.2	14.2	13.9	14.1	14.4	14.1	14.0
With respect to B (%)	–10.9	0.0	12.8	0.7	1.8	1.8	1.5	1.6	1.9	1.7	1.5

* The average calculated between 11 poviat towns having a developed tourist function and all the 49 poviat capitals.

** The average calculated for all 49 poviat capitals.

Description of variants as in footnote 33.

Source: own elaboration.

increased by several large cities not very distant from the border of the area of the Polish-Slovak borderlands examined (Katowice, Kraków, Tarnów, Banská Bystrica, Košiće). The results of the analyses are presented in Figure 6.41.

The methods applied allow us to easily interpret the changes between particular variants of development of the road network. In the base variant A, which shows the current road network, the effectiveness achieved in most connections is at the level of 50–60% (green colours on the map) or 40–50% (light blue colours). The warm colours,

indicating an effectiveness above 60%, concern only some connections. In variant B, the connections in the northern and southern part of the area improve to the greatest extent. The maximal variant C, on the other hand, shows a higher increase in the western region, especially between Bielsko-Biała and Banská Bystrica.

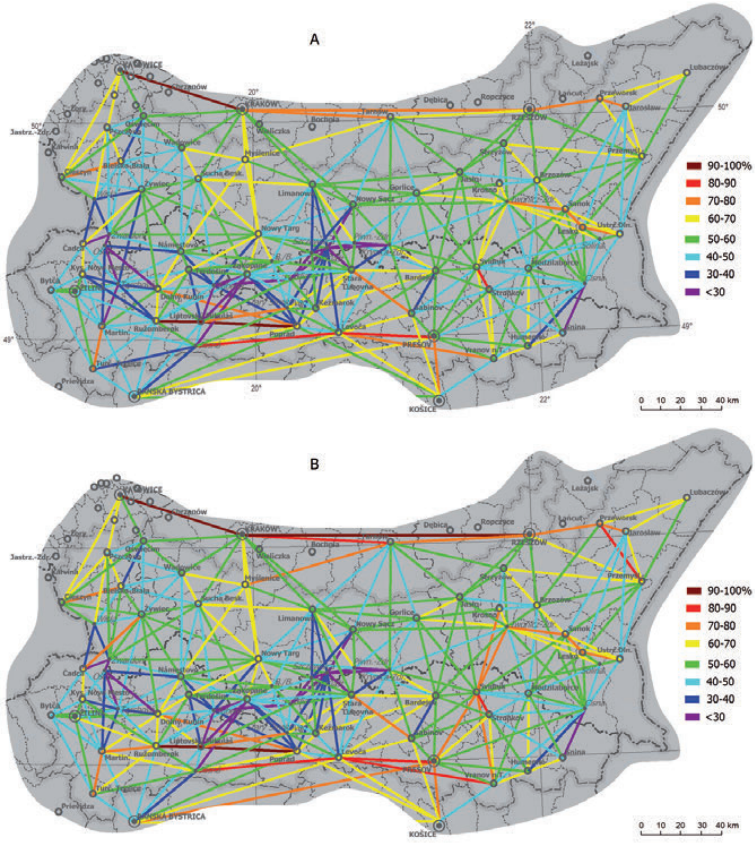

Figure 6.41(A–B). Transport and settlement effectiveness between selected pairs of poviat destinations in the variants of the development of the road network analysed

Source: own elaboration.

Description of variants: A – 2010; B – 2015; C – 2030 official, government; D – the S7 Kraków–Rabka–Zakopane expressway; E – the Kraków–Banská Bystrica expressway; F – the Rzeszów–Košice expressway; G – the Bielsko-Biała–Žilina expressway; H – completion of the whole D1 motorway along with the investments on the Czech side of the border; I – the Kraków–Zakopane expressway along with the tunnel under the Tatras connected on the Slovak side with the D1 motorway; J – the Tvrdošín–Czarny Dunajec–Piwniczna bypass road with considerably increased technical and operational traffic parameters; K – the Tarnów–Prešov expressway.

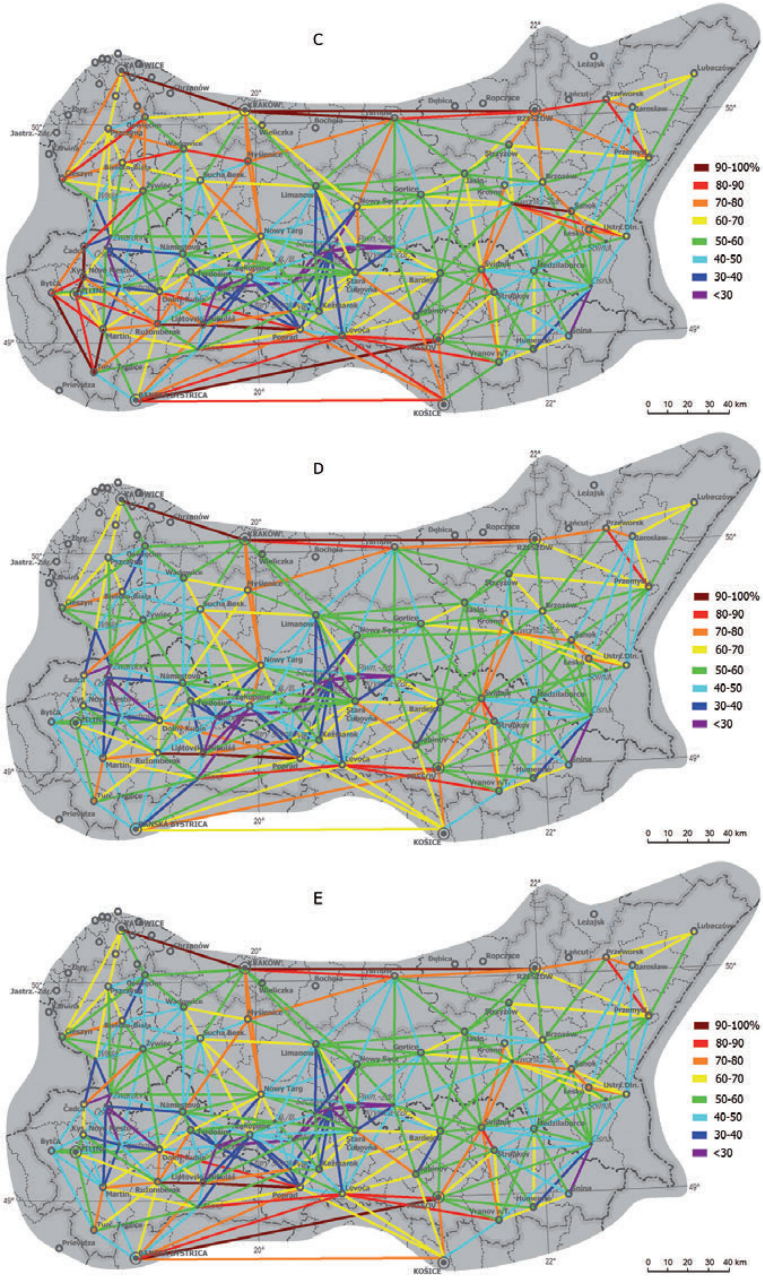

Figure 6.41(C–E). Transport and settlement effectiveness between selected pairs of poviat destinations in the variants of the development of the road network analysed

Source: own elaboration.

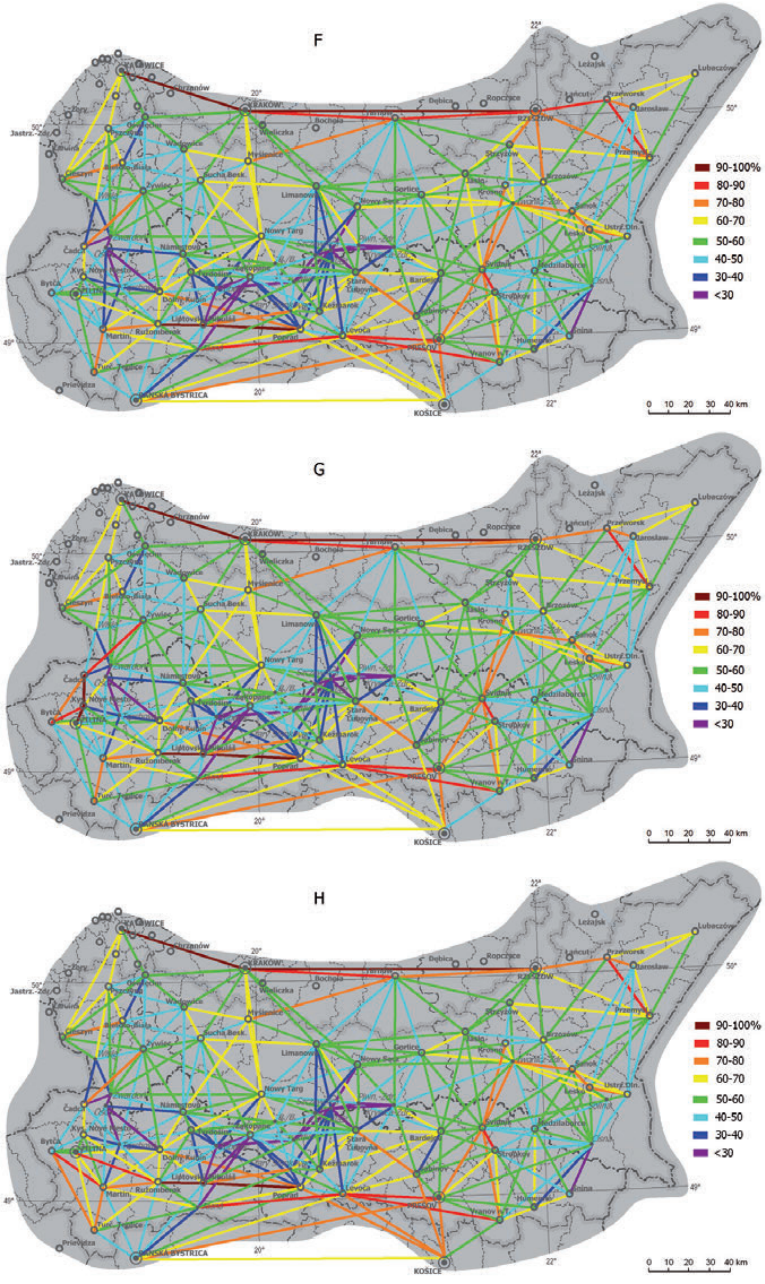

Figure 6.41(F–H). Transport and settlement effectiveness between selected pairs of poviat destinations in the variants of the development of the road network analysed

Source: own elaboration.

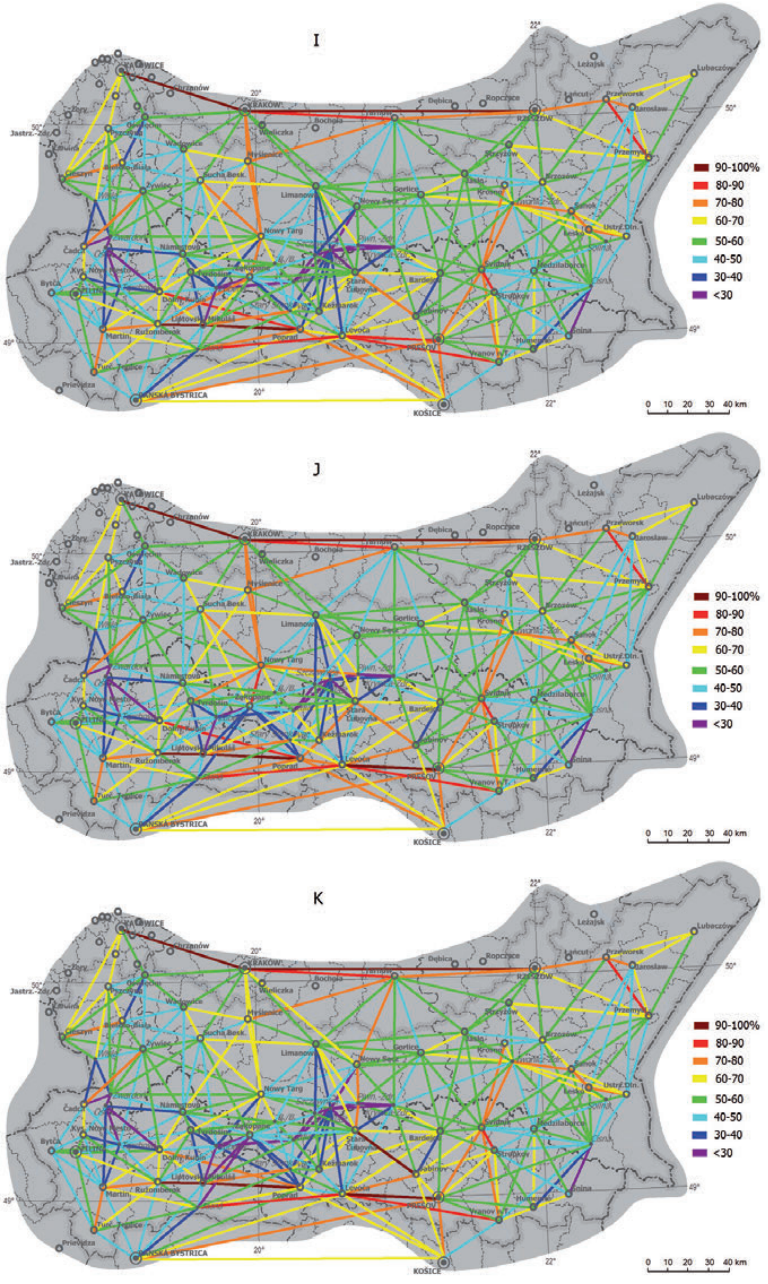

Figure 6.41(I–K). Transport and settlement effectiveness between selected pairs of poviat destinations in the variants of the development of the road network analysed

Source: own elaboration.

The regional variants, D–K, are less significant, but there are some spectacular instances of increase in effectiveness. This is true, for instance, for variant H and the area of Žilina, for variant I and the region of the Tatra Mountains, and also, though to a slightly lesser extent, for variant J and the region of the Tatra and Pieniny Mountains. In the remaining cases the profits from the expansion of the road network are of a local nature and limited to a small number of towns.

6.5.3. EFFECTIVENESS OF THE RAILWAY NETWORK

In the research on the transport and settlement effectiveness of railways the same methods were applied as in the case of individual car transport. The calculations were based on the real transfer time from the valid, updated schedules (beginning of 2011). The quickest possible connections on weekdays were selected for the analyses.

The condition of effectiveness is presented in Figure 6.42. It turns out that this index is very low, especially in the highland areas, where it usually does not exceed 30%, and for some trains it amounts to less than 10%. Only a few connections attain values within the range between 70 and 90% (Poprad– Liptovský Mikuláš, Przeworsk–Jarosław, Martin– Turčianske Teplice).

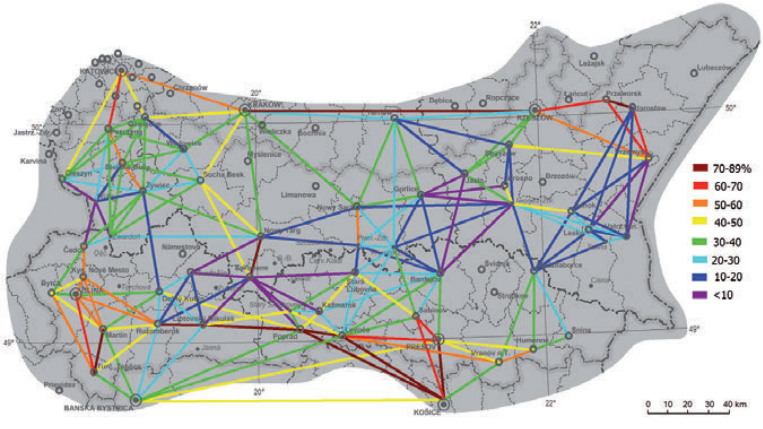

Figure 6.42. Current transport and settlement effectiveness for railways (2010/2011)

Source: own elaboration.

A comparison of the railway transfer time and the corresponding car journey is presented in Figure 6.49. This analysis suggests that the

railway is deficient, especially in the regions having the most varied surface features. In general, the possibilities of railway transport are much worse than those of car transport. Only a few instances occurred where the advantage of a train journey over a car journey was recorded. This is even true in Slovakia where the condition of the railway infrastructure is better than in Poland.

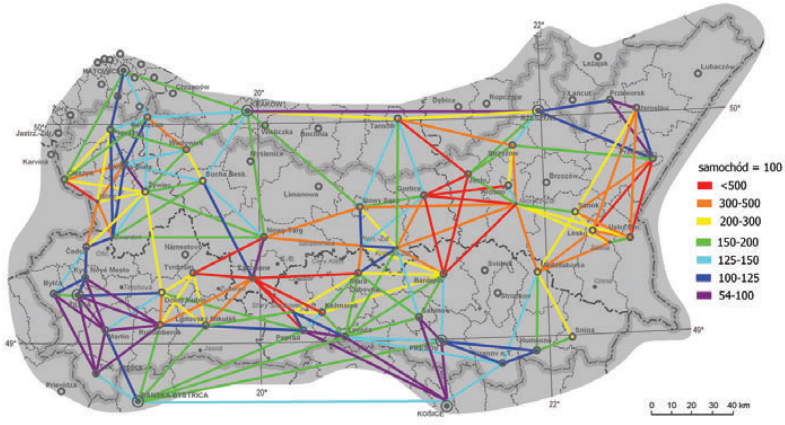

Figure 6.43. Difference of current time accessibility of car and railway transport (2010)

Source: own elaboration.

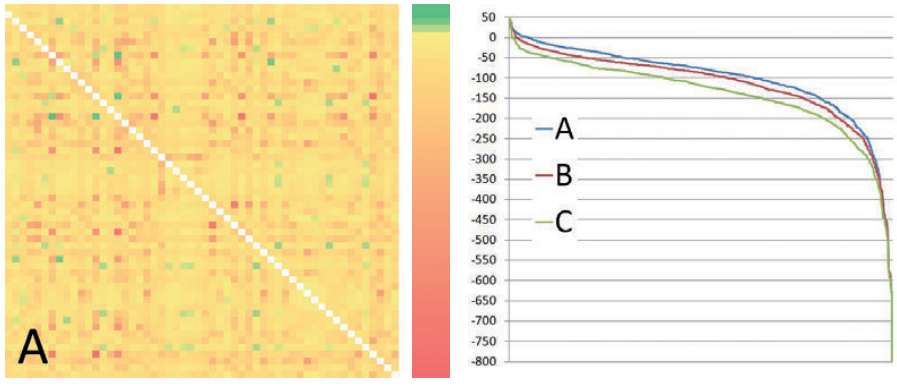

Figure 6.44. The matrix of all railway connections in their present condition (a: variant A, 54x54 connections) and the diagram illustrating the comparison of railway transfer times and passenger car transfer times (b – variants A, B and C). Green colours show the advantage of railway, yellow, orange and red colours – the advantage of a passenger car

Source: own elaboration.

When we take into account the average railway transfer times they are two times worse than those typical of road transport. The deficiency of the railways is higher in Poland, on average by about 10 per cent, as compared to Slovakia (109.1% : 89.0%). Should there be no upgrade to the railway infrastructure and should no proper organizational activities be implemented, the future decline in significance of railway as compared to individual car transport is only to be expected. This is presented in Figure 6.44. Detailed calculations show that the decline will be more severe in Poland than in Slovakia.

6.6. TRANSPORT ACCESSIBILITY IN THE CASE STUDY AREAS

6.6.1. THE BESKIDY MOUNTAINS

A north-south corridor running across the Beskidy Mountains links Upper Silesia with north-western Slovakia and the north-eastern Czech Republic. Thanks to this the region enjoys the greatest level of transport accessibility among those discussed, including access by both private and public transport (road and rail). Also the distance between the Beskidy Mountains and the nearest large cities, in particular those of the Upper Silesian conurbation, is shorter than in the case of other regions. Therefore the region has the highest population potential for the development of tourism.

Čadca, the main Slovak town of the region, can be accessed by roads and railway lines from several directions, including from Žilina, from the Czech Republic (to the west and north-west) and from Poland via Skalité (see Chapter 3.6.1). Čadca has the best public transport accessibility from the direction of Žilina (28 direct railway connections and 27 bus connections on weekdays between Žilina and Čadca). On weekdays there are 13 direct railway connections and 4 bus connections from Ostrava to Žilina. The route Čadca–Skalité is served by 10 trains a day. Only three out of that number go through to Poland. In the opposite direction, on the route Zwardoń–Čadca, there are only 4 regional trains on weekdays and as few as 2 on weekends. The connections with Poland by public transport are insufficient. On the other hand, the railway line to Poland is underused along the stretch Skalité-Serafínov and generates high losses. At the time of the study, further reductions

were being considered in the number of connections to be implemented in the timetable after May 1st, 2011, even though in previous years this was the route of trains to Kraków, Katowice and Warsaw.

Zwardoń has connections going in two directions only – to Slovakia and in the direction of Bielsko-Biała and Katowice. At present (2012) there are 12 daily connections to Katowice (transfer time – 3 h 20 minutes) and 3 to Žilina (transfer time – around 1 h 20 minutes) and one to the locality of Čadca. Żywiec is the communication node within the Żywiec Basin. Buses to most localities in the mountains leave from here. The largest number of connections is offered to Rajcza (over a dozen) and there are several buses a day going to other localities.

There is no railway in Istebna and the nearest railway station is in Wisła. This railway line offers connections with Katowice, as well as Warsaw and other large cities.

Istebna has good connections with Wisła (more than 30 connections a day, basically every half an hour) and also with the north – with Cieszyn and Katowice. Other local connections include to Koniaków and the vicinity of the Jaworzynka Trzycatek (junction of three borders – 15 connections a day). There are additional bus connections run by the company WISPOL (14 connections a day – both to Cieszyn and to Koniaków).

The level of internal accessibility by public transport is good in the Slovak part of the borderland. The localities in the region generate sufficient demand for public transport connections to function, albeit that the high level of dispersion of the region's settlements causes its peripheries to suffer from poorer accessibility levels.

The size of the potential tourist demand is shown using the model of Zwardoń, because it is situated in the centre of the region. The current population within the 4-hour isochrone is 30.3 million, out of which 16.7 million are Poles, 5.2 million Slovaks and 4.8 million Czechs (Fig. 6.51). The expansion of the road network by 2030 will produce an increase of about 50% in the population (within the 4-hour isochrone – 44.6 million people). Completion of the S69 expressway and its Slovak and Czech motorway extensions will bring 22.3 million Poles, 5.4 million Slovaks and 7.3 million Czechs within the within the 4-hour isochrone from Zwardoń.

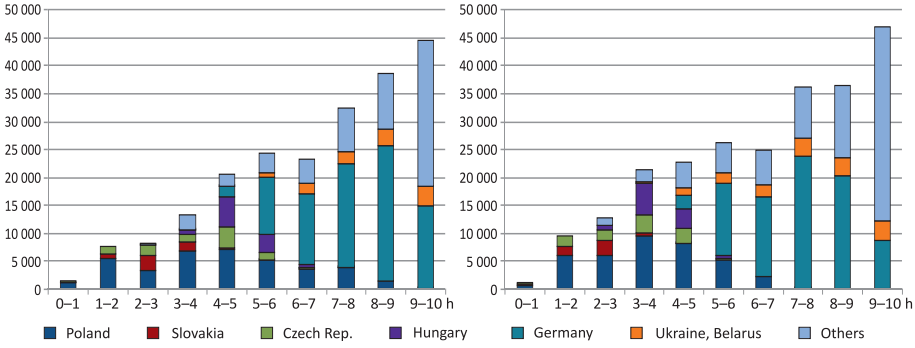

Figure 6.45. Population size and structure according to country of residence within one-hour isochrones of access to Zwardoń in 2010 and in 2030. (in thousands)

Source: own elaboration.

Žilina is the nearest airport for the localities situated in the study area (including Oščadnica, Zwardoń, Wisła). The travel times between the airport in Žilina and the various towns include: 74 minutes to Zwardoń, 80 minutes to Wisła and 46 minutes to Oščadnica. As a result of expansion of the infrastructure all tourist destinations will find themselves within the 1-hour access isochrone to the nearest airport. The reduction of the transfer time to the tourist destinations will be considerable, e.g. 27 minutes in the case of Zwardoń –and – 25 minutes for Wisła.

6.6.2. THE TATRAS

The Tatras are a relatively easily accessible region although this accessibility is better on the Slovak side. The accessibility situation is poorer using the cross-border transport system. The largest towns in the Slovak part of the Tatras, in particular Poprad and Liptovský Mikuláš, have the best accessibility by both public and private transport (Michniak, 2009). This convenient situation results from their location in the transport corridor running along the D1 motorway and the Žilina–Košice railway line (for detailed information concerning transport in this region see Chapter 3.6.2). Poprad and Liptovský Mikuláš have international bus connections. In addition Poprad has air connections with Prague, Warsaw and Gdańsk.

On the Polish side, Zakopane – the capital of Podhale and the Tatras – has the best accessibility. It has many bus connections with the

larger cities in Poland (the largest number with Kraków – 90 connections a day plus 5 mini-bus connections). There are also railway connections but the journey to Kraków takes as long as 3 hours (to Warsaw about 6 hours).

The level of accessibility by public transport (external and internal) differs a lot between individual localities and tourist destinations in the Tatra region. Poorer external accessibility is typical of the municipalities and destinations situated in the outskirts of the region (e.g. Zuberec, Oravice, Ždiar, Tatranská Javorina). The main towns and larger villages situated near towns and near to the main communication routes as well as to destinations along the Tatra Electric Railway line (Tatranské Elektrické Železnice) generally have good accessibility by public transport. The small localities in the periphery of the region have the poorest accessibility.

On the Polish side, the public transport network is very well developed. Also the frequency of connections is high (e.g. Kościelisko – 82 buses and minibuses a day, Palenica Białczańska – 91, Chochołów – 51).

There are also two cross-border bus lines. The connections between Zakopane, Poprad and Liptovský Mikuláš are served by the Polish operator STRAMA.

The destinations in the Slovak part of the Tatras are located very close to airports (e.g. Starý Smokovec – 17 minutes, Liptovský Mikuláš – 26 minutes). The transfer time to Zakopane from the nearest airport in Poprad is currently about 73 minutes. The completion of an airport in Nowy Targ would provide a chance to improve the accessibility of airports (but it would not have a very significant range of international destinations). An expressway from Kraków, would also improve accessibility to airports but this would only slightly reduce the transfer time to the Tatras (to about 69 minutes).

A detailed demand analysis was carried out for two tourist localities[34]. Zakopane the largest tourist destination of the Polish part of the Carpathians and Liptovský Mikuláš, which has one of the largest aquaparks in this part of Europe (Tatralandia) were selected for the purpose of this analysis, and. in both cases the influence of the expan-

[34] The demand analysis for the Tatra destinations is presented in Chapter 6.4.

sion of the road network in all the variants analysed was illustrated (Fig. 6.46, 6.47).

A total of 447 thousand people live within the 1-hour isochrone from Zakopane. They are mainly Poles (316 thousand) and Slovaks (131 thousand). Within the next isochrone (1–2 hours), the number of inhabitants increases to as many as 4 million, the majority of whom are also Poles. A small number of inhabitants of the Czech Republic also appear within this range. Within the 2–3 and 3–4-hour isochrones there are already Czechs and Hungarians, 4–5 hours – Ukrainians and 5–6 hours – Germans. In total, there are 13.1 million people in the area located within a three-hour journey to Zakopane. This figure goes up to 40 million for the area located within a five-hour journey to Zakopane. As many as 175 million people live within reach of the 10-hour isochrone (this encompasses the whole area of Poland, Slovakia, Hungary and Austria, as well as most of the territory of Germany) (Fig. 6.46). By 2030 the population figures within particular isochrones will increase considerably as a result of the implementation of road projects. There will be 21 million people within a 3-hour journey and 41.7 million within a 4-hour one.

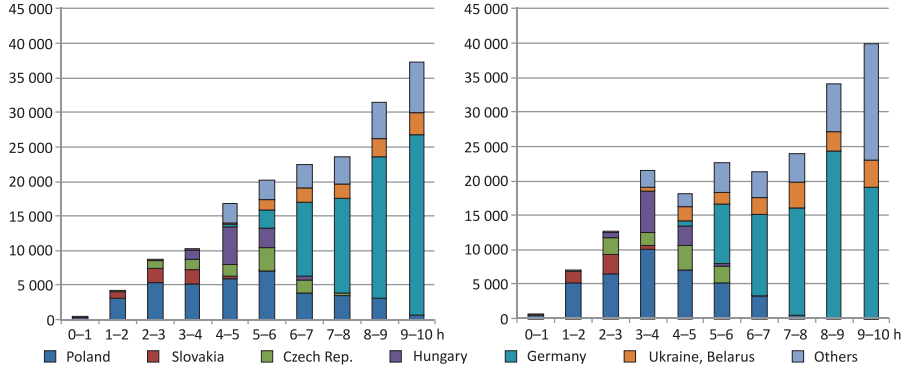

Figure 6.46. Population size and structure according to country of residence within a one-hour isochrone of access to Zakopane in 2010 and in 2030. (in thousands)

Source: own elaboration.

A total of 28 million people live within the 4-hour isochrone from the town of Liptovský Mikuláš. In total 10.4 million of that number are Poles, 5.4 million Slovaks, 3.5 million Czechs and 6.5 million

Hungarians. The expansion of the road network by 2030 will contribute to an increase in the population size within reach of particular isochrones (4-hour– 42.3 million people, 5-hour– 67.1 million people) (Fig. 6.53).

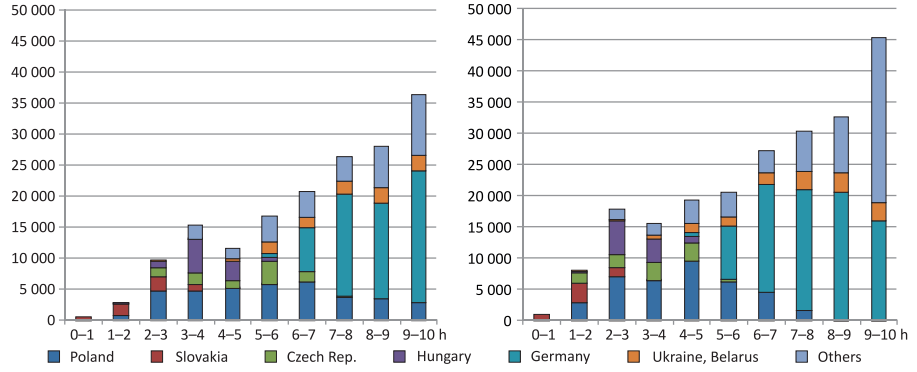

Figure 6.47. Population size and structure according to country of residence within a one-hour isochrones of access to the locality of Liptovský Mikuláš in 2010 and in 2030 r. (in thousands)

Source: own elaboration.

The analysis of particular variants shows that expansion of the whole network (variant C) is particularly beneficial (which is only natural). The data concerning the population increase are, however, also very similar in the case of variant I (the Kraków–Zakopane expressway along with the tunnel under the Tatras connected to the D1 motorway on the Slovak side), and of variant E (the Kraków–Banská Bystrica expressway). Detailed analyses show that the benefits in the case of the destinations discussed would mostly consist of the possibility of attracting a larger number of tourists (Fig. 6.48 and 6.49). This is particularly characteristic of variant I – i.e. the Kraków–Zakopane expressway along with the tunnel under the Tatras. However the construction of the Kraków–Chyżne–Banská Bystrica expressway (variant E) will bring about slightly more significant changes.

The graphic calculations presented show how methodically significant it is to take into account various elements in the demand analysis and how important the detailed nature of these calculations is. The quantity of overnight accommodation sold within the 120-minute

isochrone is similar in particular variants and the difference comes from cumulative values in shorter isochrones.

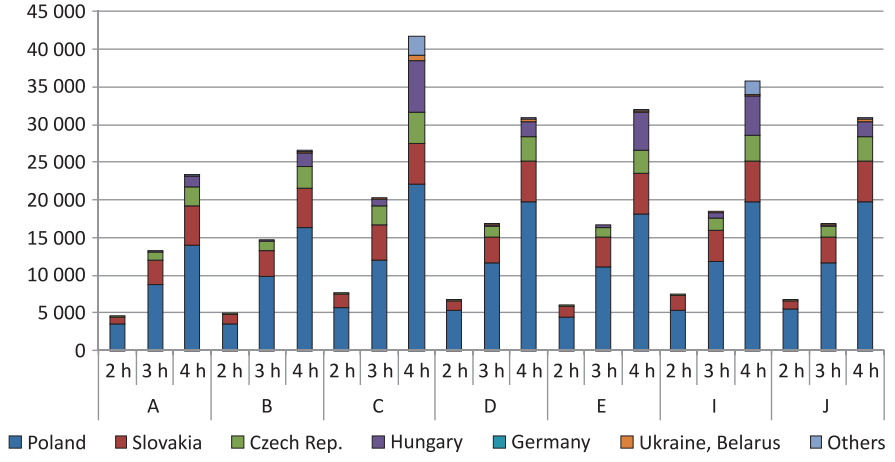

Figure 6.48. Influence of the expansion of the road network in the variants analysed on the population size within the 2-, 3- and 4-hour isochrones from Zakopane (in thousands)

Source: own elaboration.

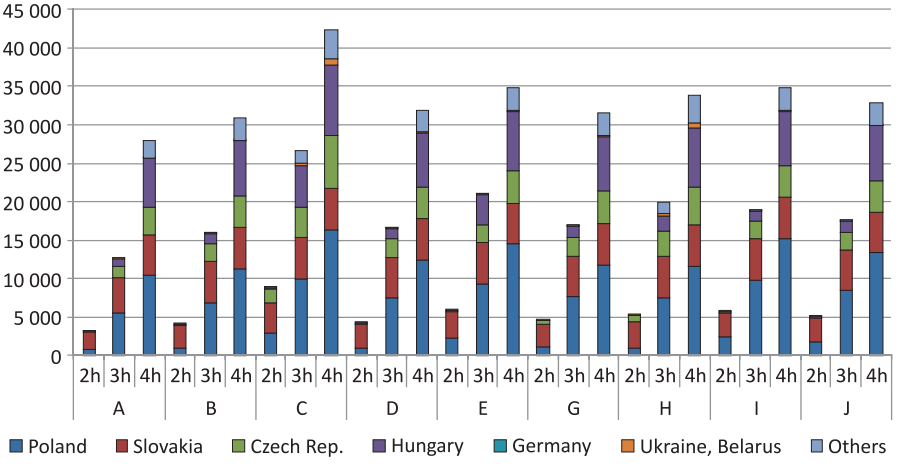

Figure 6.49. Influence of expansion of the road network in the variants analysed on the population size within the 2-, 3- and 4-hour isochrones from Liptovský Mikuláš (in thousands)

Source: own elaboration.

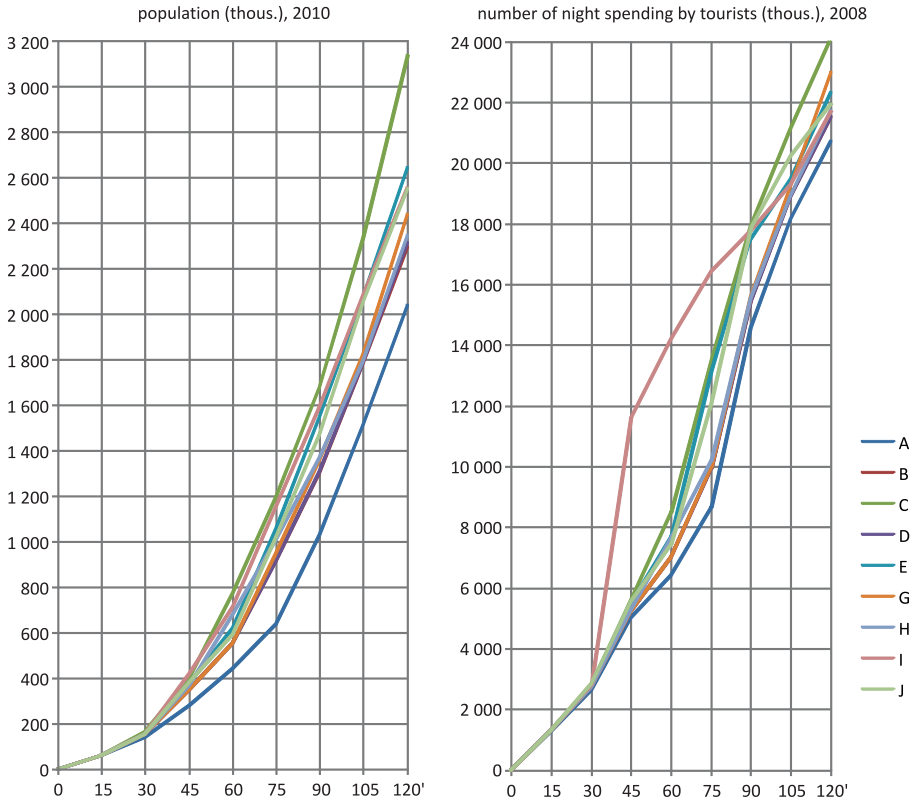

Figure 6.50. Influence of expansion of the road network via the variants analysed (A–J) on population size and the quantity of overnight accommodation sold within the 2-hour isochrone from the town of Liptovský Mikuláš

Source: own elaboration.

6.6.3. THE PIENINY MOUNTAINS

The region of the Pieniny Mountains is situated outside the main transport corridors. It is not possible to get to the Polish part of the study area from the east because of the orographic barrier of the Beskid Sądecki Mountains. The access to Krościenko on the Dunajec River and to Szczawnica is possible only from the north (from Kraków and Tarnów) and from the west. There is also an indirect route from Slovakia, via the border crossing Niedzica – Lysá nad Dunajcom).

There are two II class roads leading to the Slovak part of the region: one from the town of Spišská Belá and one from the locality

of Hniezdne (west of the town of Stará Ľubovňa) and the other from Poland to the locality of Spišská Stará Ves via the border crossing Lysá nad Dunajcom–Niedzica (see Chapter 3.6.3). On weekdays there are 8 bus connections on the Stará Ľubovňa–Spišská Stará Ves route and the town of Spišská Belá via Magurske sedlo has 16 direct bus connections (on weekends the number of connections is smaller – 6 and 8 respectively). Insufficient public transport accessibility is typical, for instance, of Lesnica, which on weekdays has 6 bus connections with the locality of Veľký Lipník. On weekends, but only during the school year, there is only one connection on Sundays. There are 7 daily connections from Szczawnica and from Krościenko on the Dunajec River to Kraków, 12 to Nowy Targ and 5 to Sromowce Niżne. Out of 9 bus connections between Szczawnica and Jaworki only two operate on Saturdays (these are rides meant for the locals). Private minibus connections to Jaworki, Niedzica and Sromowce Niżne are operated for tourists.

Slovak tourists taking a raft ride on the Dunajec River and then going back to their accommodation or to the starting point of the raft ride have to resort to the services offered by private carriers. There is no cross-border public transport in this region. Tourists are obliged to use individual transport. Pedestrians and cyclists may use the Lesnica–Szczawnica road. The internal accessibility of the region clearly improved after the opening of the pedestrian bridge over the Dunajec River connecting Červený Kláštor and Sromowce Niżne in 2006,. In season (and to a limited extent off-season) there are connections by publicly and privately owned public transport (buses and minibuses) from Szczawnica via Krościenko on the Dunajec River to Sromowce Wyżne, Sromowce Kąty and Sromowce Niżne, i.e. to the starting point of the raft ride. Owing to this tourists accommodated in Szczawnica and Krościenko on the Dunajec River have the possibility to make indirect trips, though in one direction only. After 6 p.m. there are no possibilities to return from the western part of the Pieniny Mountains to these localities.

There are no railway connections whose destination is the Pieniny Mountains. Only a combined journey (train and bus) is possible but this solution is inconvenient and the transfer time is much longer than that of a direct journey by bus.

At present the nearest airport for the tourist destinations in the Pieniny Mountains is Poprad (69 minutes to the locality of Červený Kláštor and 84 minutes to Szczawnica). The second nearest is Kraków

(95 and 89 minutes respectively). In practice, none of the planned road projects will considerably improve the situation in this respect (the transfer time from Kraków to both these localities will be reduced by about 10 minutes).

The demand analysis for the destinations in the Pieniny Mountains (Szczawnica and Červený Kláštor) is presented in Chapter 6.4.

6.6.4. THE POPRAD RIVER VALLEY

The Poprad River valley region is peripherally situated with respect to the main transport routes. The most important roads in the Slovak part of the region run on its periphery – the Prešov–Stará Ľubovňa class I road to the border crossing Mníšek nad Popradom–Piwniczna-Zdrój and the Bardejov–Ľubotín class I road where the border crossing, Čirč–Leluchów, is located (detailed information on transport in the region in Chapter 3.6.4).

On the Slovak side, the localities best accessible by public transport are the ones situated on the Bardejov–Stará Ľubovňa route. On weekdays there are 7 bus connections on the Stará Ľubovňa–Mníšek nad Popradom section. The poorest accessibility by public transport is found in small villages situated in the central part of the region and on the Poprad River (e.g. Legnava, Starina and Sulín – only three connections). The accessibility by public transport on the Polish side is relatively good both in the case of Piwniczna-Zdrój (16 connections a day from Nowy Sącz) and of Krynica-Zdrój. The company Szwagropol has also started to operate two new services from Kraków to Piwniczna-Zdrój (twice daily) and to Krynica-Zdrój and Muszyna (twice daily).

The state border between Poland and Slovakia mainly runs along the river-bed of the Poprad River, which constitutes a clear natural barrier for cross-border traffic. The internal accessibility of the region, as far as its cross-border system is concerned, would be considerably improved following the building of the planned bridge in the locality of Mníšek nad Popradom and a footbridge on the Poprad River in the locality of Sulín.

The railway line reaches the towns of Piwniczna-Zdrój and Muszyna where it splits towards the north-east to Krynica-Zdrój and south to Slovakia. At present (2012), there are only 8 train connections a day with Krynica-Zdrój, including 3 from Tarnów, 4 from Kraków (the

transfer time ranges from 4 h 30 minutes to 5 h 40 minutes) and one from Warsaw (the transfer time exceeds 9 h). There are no cross-border railway connections. The railway accessibility can only be stated as very poor. Indeed, neither the travel time, nor its comfort, or the frequency of connections encourages the choice of the train when going to these tourist destinations.

Piwniczna-Zdrój serves as a model for presenting the population potential. Currently, 12.1 million people live within the 3-hour isochrone (including 8.8 million Poles and 2.6 million Slovaks) and 20.8 million within the 4-hour isochrone (including 13.2 million Poles, 3.8 million Slovaks, 2.2 million Hungarians and 1.4 million Czechs). A clear change of the number of tourists who could get to Piwniczna-Zdrój will only be brought about by the Kielce–Tarnów–Piwniczna-Zdrój–Prešov expressway and by motorway development on the Slovak side (mostly the D1). The above-mentioned expressway exists only in the long term plans and only on the Polish side (i.e. going as far as the state border), yet the construction of even this section on the Polish side would considerably increase the potential of the area (Fig. 6.57). After the implementation of these projects, in 2030, 19.4 million people (13 million Poles and 3.5 million Slovaks) would live within the 3-hour isochrone from Piwniczna-Zdrój, and as many as 40 million people (including 22.2 million Poles, 5.5 million Hungarians, 5.3 million Slovaks and 3.5 million Czechs) within the 4-hour one (Fig. 6.51).

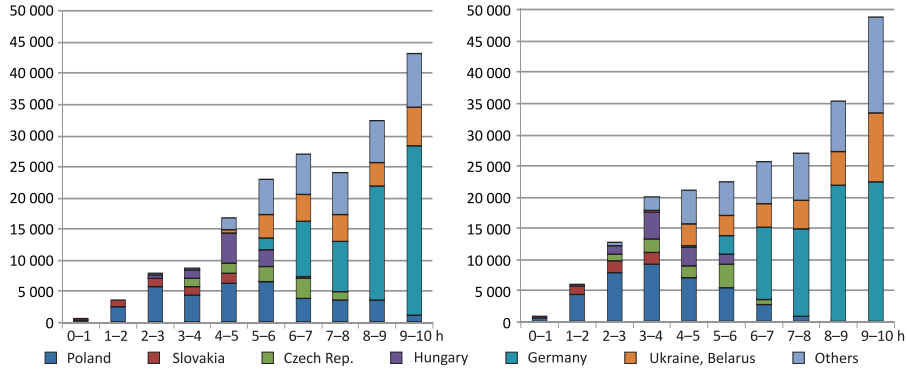

Figure 6.51. Population size and structure according to country of residence within the one-hour isochrone of access to Piwniczna-Zdrój in 2010 and in 2030 (in thousands)

Source: own elaboration.

Muszyna and Krynica-Zdrój belong to those towns in the whole Polish-Slovak borderlands which are located furthest from an airport (about 90 minutes from both Kraków and Poprad). Piwniczna-Zdrój and the Slovak part of the region, having a similar distance to the airport in Kraków (about 90 minutes), are situated much closer to the airport in Poprad (about 60 minutes). The expansion of the road network (by 2030) may result in a reduction in the distance to the airport in Kraków in terms of time by about 20 minutes. The most significant changes for the area would be obtained as a result of construction of the Kielce–Tarnów–Piwniczna-Zdrój–Prešov expressway.

6.6.5. THE BESKID NISKI MOUNTAINS

An important international road, the E371 with the Vyšný Komárnik–Barwinek border crossing, runs through the outskirts of this area. The most important road in the eastern part of the region is the class II Humenné–Medzilaborce road running farther to the Palota–Radoszyce border crossing. These localities are also connected by a railway line (see Chapter 3.6.5). Medzilaborce has good accessibility by public transport. The strongest connections are those with the town of Humenné, thanks to the bus and railway service. The region is marked by poor internal accessibility. The poorest situation, as far as public transport is concerned, is typical of small municipalities. There is just one bus connection on weekdays on the Medzilaborce–Palota route. There are also 10 Medzilaborce–Čertižné connections, 9 Svidník–Vyšný Komárnik connections and 3 Svidník–Pstriná connections. Only one bus a week goes to Príkra (one of the smallest municipalities in Slovakia) but only during the summer and winter vacations. On the Polish side the bus network is poorly developed and the frequency of service is low. There are just several connections with the municipalities in this region, mainly from Rzeszów. Potential tourists are, in most cases, obliged to use individual means of transport, as they are also in the case of cross-border trips.

Time distances to the nearest airports are about 2 hours. Rzeszów and Košice are the nearest international airports.

The accessibility of the region may only be guaranteed by individual transport and improvement of accessibility may only be expected after the upgrade of the E371 road whose parameters should correspond to those of an expressway. Thereafter a journey to this region from outside

will be less time-consuming. The local roads are yet another element requiring improvement as at present, in most cases, it is not possible to drive there at a speed exceeding 40 km/h.

6.6.6. THE BIESZCZADY MOUNTAINS / POLONINY

The Bieszczady Mountains (*Poloniny*) region is one of the most peripheral regions both in Poland and in Slovakia. It has the longest transfer time among the areas of the Polish-Slovak borderlands analysed and the lowest population potential (compare Chapter 6.2). The Slovak part of the region is connected by the category I Strážske–Humenné–Snina–Stakčín road and by the Humenné–Stakčín railway line (see Chapter 3.6.6). The external accessibility of the region (of the municipality of Stakčín as the gate to the region) from the poviat town of Snina, as well as from the town of Humenné, is relatively good, both by public transport (SAD Humenné carrier) and by private transport. Within the region, however, accessibility by public transport is difficult. On weekdays there are only 6 bus connections on the route connecting Stakčín, Ulič and Nová Sedlica and the transfer time ranges from 60 to 100 minutes (see Michniak, 2010a). The connections with the municipalities situated in side valleys are still poorer (Jalová, Topoľa, Runina, Ruský Potok).

Cisna[35], situated on the Polish side, has bus connections with Sanok and Lesko (6 to 12 a day, depending on the season) and on to Ustrzyki Górne (5 in summer season) and to Wołosate (1 in season).

Both on the Polish and on the Slovak side, the bus service is infrequent on weekdays, but becomes particularly poor on weekends and public holidays as a result of the small numbers of potential passengers undermining its viability. The small number of public transport connections in this region may be considered one of the factors limiting the development of tourism. Equally significant are legal barriers, e.g. restricted car access to the Starina reservoir. Some tourist attractions in the region are only accessible by individual transport and cross-border traffic is possible only for pedestrians and bikers.

The eastern part of the Polish-Slovak borderlands is marked by the poorest access to airports. At present Cisna is situated 126 minutes

[35] The demand analysis for the destinations in Cisna and Snina is presented in Chapter 6.4.

away from the nearest airport in Rzeszów and Snina 101 minutes away from the airport in Košice. The planned development of road infrastructure to its maximal variant will influence the improvement of accessibility of the region, including the reduction in the time of transfer to the nearest airports (for Cisna by 19 minutes and for Snina by 25 minutes). Even though the planned projects are situated outside the region discussed, especially the motorways (the D1 on the Slovak side and the A4 on the Polish side) and expressways (Rzeszów–Barwinek–Košice), they will bring about a considerable reduction in the travel time to this region. As a result of this the potential tourist demand will grow considerably (see Chapter 6.2).

6.7. SUMMARY

From the point of view of accessibility the area of the Polish-Slovak borderlands is peripheral on the European scale. In this wide context any differences found in the level of accessibility of the Polish and Slovak parts of the study area are a minor issue when compared to the importance of their connections with Western Europe. This means that the borderland is not a "zone of discontinuity" as far as potential accessibility is concerned. The transport infrastructure, predominantly running along a north-south axis, also does not show any quantum change at the border.

The western peripheries of the borderland will become better accessible by road as a result of the projects planned outside the area (in the region of Bratislava and Vienna, in the Czech Republic, in the west of Poland and even in Germany). For a number of years, there has been almost no increase in railway accessibility levels, as there were only minor improvements on the Slovak side. This low baseline accessibility level means that its scale of improvement will be among the greatest in the European Union.

Summing up the discussion of external accessibility of the study area, the most important development is the opening of new external "access channels" to the Polish-Slovak borderlands. This especially concerns the channels linking the area with areas of high demographic potential (Budapest, Warsaw) and with regions where the travel time may be competitive when compared to the connection with the Alps (northern Poland, Eastern Europe). In the first instance this means:

(a) an absolute priority to the the system of roads Warsaw–Kraków–Ružomberok–Banská Bystrica–Budapest (S7, R3, R1), (b) the improvement of infrastructure between the Czech Republic and Slovakia, on the northern section of their border.

At the same time the support of the local authorities for macro-scale projects should depend on the nature of the tourism in question. Large road projects add further regions to the weekend database of adjacent metropolises. However, their influence on holiday tourism has become much less significant. In the Slovak part of the central borderland the development of infrastructure consists primarily of expanding the base for Polish tourists on weekend or other short-term visits. In the eastern part of the area examined, on both the Polish and Slovak side, the development of "large-scale" infrastructure is a condition and necessary precedent for the further development of all kinds of tourism. Crucial in this case is the completion of the A4 and D1 motorway sections leading to the Ukrainian border, as well as construction of the Rzeszów–Košice–Miskolc expressway (S19 and R4).

The variants for the development of the road network corresponding to the projects included in the government's documents have the greatest share in changing the accessibility in the parallel and/or longitudinal layout. This will reflect the distribution of the new or upgraded road sections. In particular, this concerns the completion of the A4 motorway (on the Polish side) and the D1 (on the Slovak side), as well as the roads crossing the Carpathians: from Bielsko-Biała to Žilina (via Zwardoń and the locality of Čadca), from Kraków to Ružomberok (via Tvrdošín), from Tarnów to Piwniczna-Zdrój and from Rzeszów to Prešor (via Iwonicz-Zdrój and Svidník). In the period to 2015 the accessibility in the parallel system is to improve considerably. Accessibility in the longitudinal system will improve in the later period. Generally speaking, the analyses conducted show that spatial accessibility changes quite significantly, primarily – which is obvious – in the regions marked by investment activities. In order to obtain better effects of accessibility improvement it is necessary to expand the local sections perpendicular to the main routes.

The different pace of projects on the Polish and on the Slovak side, as well as the location of both motorways parallel to the border, contribute to the fact that in several years the common border will probably

become a relative transport barrier to a higher degree in the future. Under such circumstances the introduction of longitudinal connections becomes a necessity if the area examined is to constitute a uniform tourist region.

At present, the time accessibility is better on the Slovak side (several per cent) irrespective of the transport network development (in each of the variants). The target "official" plans aimed at changing the layout and standards of roads, which are to be implemented by 2030, will affect the activation of tourism more in the western part of the region (Żywiec–Žilina) and less in its eastern part (north-east of Prešov and south-east of Rzeszów).

The proposed new variants (D–K) would certainly improve the accessibility of attractions, especially I (the tunnel under the Tatra Mountains) and J (around the Tatras and Pieniny Mountains) – but they are not profitable enough to be supported. The research shows that the tunnel under the Tatras is an unprofitable investment on the scale of the whole central part of the area examined. Comparable effects may be achieved by the construction of the Kraków–Chyżne–Banská Bystrica expressway. Moreover, the very construction of the expressway from Rabka to Zakopane considerably improves the accessibility of the whole area of the Tatras (both on the Polish and on the Slovak side). The Bielsko-Biała–Žilina expressway (analysed variant G) and the Rzeszów–Prešov expressway (mostly for Rzeszów – the considered variant F) constitute very important projects for particular parts of the borderland, as well as for the connectivity of the areas on both sides of the border. The projects planned for implementation by 2030 favour a further increase in the attractiveness of the Tatra region (which anyway has huge resources of attractions as far as the time distances from the main accommodation destinations are concerned), of Žilina and, to a lesser extent, of the Beskid Żywiecki Mountains, Beskid Kysucki Mountains and Beskid Śląski Mountains (the largest benefits are enjoyed by Liptovský Mikuláš and Žilina). This will result in an increase of the competitive advantage of these areas and in a significant increase of tourist demand, which may involve an increased number of tourist visits, especially for short-term stays (1–4 days).

In order to plan the development of tourism further, it is recommended that the projects are dispersed, especially those commercial

proposals having a considerable force of attraction, which may be created "from scratch". This concerns, in particular, such new projects as aquaparks and skiing destinations.

For internal accessibility, i.e. for moving within a given area, not only the construction of new roads to high traffic standards is important resulting in an increase in the average transfer speed (by-roads, improvement of technical and operational parameters). Although this is not readily translated into significant improvement of transfer time, it has a decisive impact on the comfort and safety of driving.

The present high and growing deficiency of railway as compared to individual and public road transport requires certain decisions concerning the closure of some and expansion (upgrade) of other sections and connections. Under such circumstances it is also reasonable to combine the internal demand (commuting to work and universities) with the tourist one. This issue, in terms of obtaining the desirable synergic effects, undoubtedly requires further analysis.

7. SUMMARY AND FINAL CONCLUSIONS

Transport accessibility is an important factor influencing the development of tourism, as well as its diversification and competitiveness. It also influences the development of a number of other economic functions. Therefore a proper investment policy may at the same time constitute an effective tool for various territorial policies. The research conducted on the accessibility of the Polish-Slovak borderlands confirms the assumptions outlined above. It also proves that the actual impact of particular transport projects on the improvement of accessibility may vary considerably depending on their geographical scale and on the types of tourism. The research also confirms the fact that the issue of accessibility should commonly be included in analyses of tourism development as well as in other field-specific studies.

From the point of view of accessibility within the European context, the Polish-Slovak borderlands is located in the peripheries of the continent. The situation of the region is very strongly affected by historical and geographical factors. These, in particular, include topographic features and the orographic barrier. The area in question is distinguished by special natural values, which stimulate the development of tourism. Paradoxically enough, they also hinder this development as they bring about transport impediments.

The research presented in this study shows that the road accessibility (travel time) of the borderland from the most significant cities generating tourist traffic is very varied but in most cases quite poor. The detailed analysis of accessibility from the capitals of Poland and Slovakia and of the modifications, which are to take place in the coming two decades, allows us to see both the similarities and differences between them. In the case of Warsaw the present accessibility is relatively poor and the projects currently being implemented do not change this situation very much (except for the improvement in the western peripheries after the whole of the A1 motorway is completed). In the immediate 1–2 decades the access time to the Slovak part of the Carpathians from the capital of Poland will still, in most cases, exceed 7 hours. At the same time differences will be seen in access times to particular

sub-regions both in the Slovak and Polish parts of the borderland. This effect will be obtained should the S7 expressway and possibly the S17/S19 roads (from Warsaw to Rzeszów via Lublin) be completed.

Accessibility from Bratislava, especially of the western part of the area, is clearly better than accessibility from Warsaw. The investment process on the Slovak side is much more advanced (owing to the D1 motorway). These differences, however, tend to decrease towards the east. Current investments (2010) will considerably improve the situation in the immediate future but further change will be less obvious. After 2015, because of the lack of spatial symmetry in the investment processes, the Polish-Slovak border is going to become, to a more considerable extent than at present, a line separating areas having differing access times from Bratislava.

The change in the time accessibility of the border itself, as well as of the accessibility from particular metropolises, which generate tourist traffic, is significant from the point of view of competitiveness. In this respect several conclusions should be drawn. Within the context of Europe the area examined is more accessible from the south-west, west and north-west. On the other hand, a scarcity of modern infrastructure is evident in the northerly corridor (central and northern Poland, including Warsaw) and the southerly corridor (Budapest). It should be emphasised here that accessibility from central and northern Poland is particularly significant, since it is only from these areas that the access time to other highland regions (the Alps) is clearly longer than the access time to the Carpathians. This accounts for the competitive advantage that is held by the ski resorts in the Polish-Slovak borderlands. Secondly, the analyses show that the development of infrastructure and the resulting increase in accessibility will be quicker on the Slovak side of the borderland. In particular, the western and central part of the borderland is not treated as marginally as is the case with the Polish areas of the Carpathians. Therefore a rather pessimistic conclusion may be formulated at this point. Despite the investment process, the Polish-Slovak border will, within several years, become an infrastructural barrier to a relatively higher extent than it is at present.

Generally speaking the condition of the Polish-Slovak borderlands will improve as a result of road construction or of upgrades to their standards. This will, however, only happen in a long-term perspective and depending on the sequence of completion of particular

investments. This may stimulate the inflow of tourists but also generate some threats. They will be connected with excessive congestion and concentration of traffic (especially during long weekends and holidays), as well as with excessive pressure on the natural environment.

As far as accessibility within the area analysed is concerned, it was found that the "officially" planned investments (which are to be completed by 2015 and by 2020) are mostly aligned parallel to the border. That is why improvement will, in particular, take place along the east-west (and west-east) direction and not within the cross-border system. Also better internal accessibility of the area will be characteristic of the Slovak side.

The simulations that were carried out on a number of variants of development of the road network do not point to any rapid and evenly distributed improvement of spatial accessibility within the entire area. The changes are rather of a regional nature. Accessibility mostly tends to improve along the designated routes. In order to achieve the best effects it is necessary to carry out simultaneous development and upgrade of road sections of lower status, which cross the main routes. This is particularly important in the highland areas in order to increase the average speed of transfer (by-roads, improvement of technical and operational parameters), as well as its comfort and safety. The research shows that one possible solution would involve creating a parallel route for tourist traffic in the form of a 'double sinusoid' on both sides of the border.

It is essential for the planning of the road network to respond to various kinds of internal demand connected not only with tourism but also with commuting to work and educational travel. This will create particular advantages for sub-regional centres such as Rzeszów, Nowy Sącz or Poprad, which are the largest job markets.

The "officially" planned changes in the course and standards of roads will primarily stimulate tourism in the western part of the region (Żywiec – Žilina) and only to a limited extent in the east. Thus the development of major infrastructure (motorways and expressways) is essential for the continued development of the eastern part of the Polish-Slovak borderlands. In the first place, the motorways to the Ukrainian border have to be completed (the A4 in Poland and D1 in Slovakia). The same is true about the Rzeszów–Prešov–Košice–Miskolc

expressway (the S19 and the R4). The anticipated model for tourism development (short-term or long-term) is of great significance for the choice of investment variants in the central part of the Slovak borderland (the Sub-Tatra region). This is connected with the real possibility of including this area within the scope of weekend tourism generated by the metropolises of southern Poland. At the same time several of the variants examined have a different impact on the increase in the potential number of tourists. The most important thing for weekend tourism is the construction of the roads on the Kraków–Trstená–Ružomberok–Banská Bystrica traffic route (S7, R3, R1). This will contribute to the improvement of accessibility from Kraków and from Upper Silesia, i.e. from the areas from which the largest group of potential tourists comes.

Regional planning should focus on the dispersion of investments, especially of commercial tourist facilities, which have a strong power of attraction (e.g. aquaparks, ski resorts). This would allow intensification of their management focusing on tourism, improvement of the product range and the bringing about of decentralisation of the intensity of tourist traffic.

As far as the railway infrastructure is concerned, large disproportions can be seen between the Polish and the Slovak side. The railway transport system in Slovakia, like in the neighbouring Czech Republic, has coped much better with the economic and organisational challenges of the transformation period. The scale of network deterioration and the loss of transport markets were much less significant there for both cargo and passenger transport. Moreover, the parallel layout of the main railway lines connecting Žilina and Bratislava and Poprad with Košice is of immense importance for those tourists who want to get directly to the Slovak tourist destinations in the Tatras. On the Polish side, on the other hand, we have witnessed a severe crisis in the railways after 1990 (which is of a national character). The transfer times, comfort of travelling and the number of direct railway connections from Zakopane, Żywiec or Krynica are insufficient by a long way.

At present the role of railway transport in cross-border relationships is definitely a marginal one. The technical condition of the three cross-border railway lines via Zwardoń, Muszyna and Łupków is very poor and the plans for their upgrade are not very viable. The most likely is the construction of the international line from Katowice to the

Slovak border via Bielsko-Biała, Żywiec and Zwardoń. Thus, as far as the structure of use of the means of transport is concerned, one should not expect any changes in the prevailing trends. The majority of visitors will continue to cross the Polish-Slovak border in their own vehicles.

If we consider the transport and settlement effectiveness ratio, in Poland it is, on average, about 10 per cent smaller than in Slovakia. It is worrying that, in the future, this loss of significance of railway transport, as compared to transport by private vehicles, will continue unless the railway infrastructure is upgraded and the relevant organisational activities are undertaken. This decline will again be more apparent in Poland than in Slovakia. The current increasing disproportion between the significance of the railways and of individual and public motor vehicle transport calls for immediate decisions concerning the discontinuation of certain sections and connections and the development and upgrading of others.

At this point we can put forward a thesis that the development of the railways does not only offer opportunities for tourism development but also becomes a necessity. It is necessary to create additional tourist products based on railway transport. This should possibly involve restoring certain discontinued connections, such as traditional and special trains, e.g. with steam engines. Furthermore, the new timetables should be planned in such a way that they serve the needs of tourists, especially on weekends. Within the context discussed, it also seems advisable to open a large number of special and seasonal train connections. Indeed, the existing services connecting only stations located close to the border are inefficient and it would be more desirable to extend the services to link larger towns that generate tourist traffic.

The research testifies to the high potential significance of the planned Kraków–Limanowa railway line, which would considerably reduce the travel time on the Kraków–Zakopane and the Kraków–Nowy Sącz–Prešov routes.

In order to improve the transport service in the Polish-Slovak tourist regions it is also desirable to develop local public transport (buses) and multi-modal transport (including the system of car parks). This would facilitate the penetration of the cross-border mountain massifs (e.g. returns from the neighbouring country to the place of accommodation). This primarily concerns the Tatras.

As far as air transport is concerned, it should be noted that it may not only serve the wealthier tourists. Travelling by plane may also constitute an alternative for mass tourism, especially when the making of a car journey to the Carpathians would take a long time. The low level of development of road transport and, in particular, of railway transport favours the development of civil aviation. The further development of this mode of transport may take advantage of the attractive spatial niches and market segments, which are appearing.

The research shows that the airports in Kraków, Katowice and Rzeszów are too distant to come up with an offer addressed specifically to the tourists going to the Polish-Slovak borderland. This situation could change if the inland infrastructure, especially the roads, allowed a quick and comfortable transfer from these airports to the tourist destinations.

The airport in Poprad, apart from serving the tourists going to Slovakia, may also be used by Polish tourists who want to get to Zakopane quickly. This is possible thanks to the bus service connecting Zakopane and Poprad.

Irrespective of the further development of other means of transport, the continued increase of air transport requires the undertaking of a number of other coordinated activities. Apart from the connections between the airports and the tourist destinations already mentioned and from the general management of access to these destinations correlated with the arrival and departure schedules, it is necessary to introduce the marketing of tourist centres based on their accessibility by air transport. Other elements also required include a concern with a reasonable network of connections and with affordable airfares which would be competitive with railway and car transport.

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An essential requirement for the development, not only of tourism but also of most sectors of the economy, is the development of transport infrastructure and adequate accessibility of areas. Apart from its relevance for tourism, transport infrastructure is a key factor contributing to economic success based on tourism. As a rule, growing or improving accessibility enhances attractiveness, increasing tourism flows in many tourist regions. Poor or declining accessibility may lead to the marginalisation of towns and whole regions, hindering or completely blocking economic growth.

The authors have evaluated the implications of existing accessibility to determine both the key transport solutions required for successful development of the tourist centres and regions in the Polish-Slovak borderland, and to specify the threats for further growth of tourism and individual regions.

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