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CENTRE FOR DEVELOPMENT OF THE EAST PLANING REGION

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Study: Development of ski-center "Ponikva" on Osogovo

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OSOGOVO MOUNTAINS 2020

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Introduction

Using all opportunities for sustainable development is imperative for all societies. This applies especially to underdeveloped and developing countries. Tourism is a phenomenon, which in the XX century takes on global proportions, and the global scale are characteristic of the XXI century. There are no country or region in the world, which did not develop tourism. For many countries and regions, tourism has become one of the leading industries, which is especially important from a strategic perspective, especially when it comes to employment, the impact on balance of payments and numerous other direct or indirect impacts that tourism has on a country's economy . For some countries tourism meant out of poverty in which they are located. Socio - Economic impact of tourism is particularly high in regions that have limited opportunities for economic development. Tourism industry is one of the industries that produce the largest number of jobs because tourism is a labor intensive job industry.

Eastern Planning Region is one of the least developed regions in Macedonia, while the eastern region has excellent conditions for development of mountain tourism. Osogovo Mountains are just one of the places where they can develop mountainous and other forms of alternative tourism. Natural resources that abound the region are not used for tourism development. Their sustainable use should be imperative for all responsible institutions in the field of tourism. Sustainable use of natural resources will contribute to the development of the region and increase the number of jobs. Osogovo Mountains are a mountain range which offers ideal terrain for developing Alpine skiing. Unfortunately today, the achievements in tourism in the Eastern region are very small compering with the potentials for tourism development. Tourism development starts with defining the possibilities for the development and definition of the concept development of a destination. This study represents the first step in the development of tourism Osogovo Mountains.

Team Leader

D-r. Strahinja Trpevski

Abraviations:

EPR	East Planning Region
CDEPR	Center for development of east planning region
EU	European Union
EC	European Commission
RM	Republic of Macedonia
SSO	State Statistical office
OG	Official Gazette of the Republic of Macedonia
MEPP	Ministry of environment and physical planning
ME	Ministry for economy
MTC	Ministry for transport and communication
SR	State Road Agency
MASA	Macedonian Academy for Scents and Arts
SWOT	Strengths, Weaknesses, Opportunities and Threats
PPP	Public Private Partnership
GDP	Gross Domestic Production
SEE	South East Europe
SC	Sport Center
RSE	Renewable Source of Energy
ULS	Unit of Local self Government
SD	Sustainable Development

Content

Summary

Study for development of the ski center "Ponikva" on Osogovo is prepared by EMS Temos from Skopje, and is commissioned by the Centre for Development of Eastern planning region from Stip.

The main objective of the study is examining the possibilities for development of the ski center Ponikva, and the localities of Carev Vrv and Ruen Peak for development of winter tourism and construction of trails for alpine and nordic skiing. According to the project assignment, contractor had undertaken the following activities: Analysis of characteristics of the site, analysis of existing facilities at the site, stakeholder analysis, market analysis, analysis of the potential development of the ski center and analysis of socio-economic factors .

On the base of the results from the performed analysis, the following elements were definite: program development and implementation phase concept for implementation, potential ski trails with the capacity and location of cable cars and / or ski lifts, with their defining characteristics, characteristics of each proposed lift and ski lift, the surface center and the spatial location of the ski center, the necessary systems for artificial snow, and equipment for the operation of the ski center, accessible infrastructure, parking and communal infrastructure, display the potential for developing various types of winter tourism, a preliminary assessment of environmental impact , expected risks and limiting factors, funding opportunities (including public-private partnership) model proposed management concept as a basis for preparing the master plan and development plan for the center in stages. An analysis of climate data that were available and it is necessary to emphasize that in the region of Osogovo Mountains, no measuring station is located on the sites covered by this study.

In the study, the basic data for the eastern region, and basic statistical data on achievements in tourism in the region for the last five years are presented. Also with the aim to identify problems in tourism development, the SWOT analysis is prepared and presented.

1. Analyze of current situation

1.1. General information for East Region

Natural Characteristic

Location wise, The East Planning Region comprises the catchment area of Bregalnica River, and has an area of 3537 km^2 or 14.2% of the territory of Macedonia. The region consists of 11 municipalities (Berovo, Vinica, Delchevo, Zrnovci, Karbinci, Kochani, Makedonska Kamenica, Pehchevo, Probishtip, Cheshinovo-Obleshevo and Shtip), which, from the aspect of urbanisation, are divided in 217 settlements, 209 of which are characterised as rural settlements.

Municipalities in the East Planning Region[1]

	Municipality	Area km^2	Population / km^2	Settlements	Percentage of urban population in the total population
1.	**Berovo**	598	23	9	50.2
2.	**Vinica**	433	46	16	54.5
3.	**Delchevo**	422	41	22	65.7
4.	**Zrnovci**	56	58	3	
5.	**Karbinci**	229	18	29	
6.	**Kochani**	360	106	28	74.4
7.	**Makedonska Kamenica**	190	43	9	63.5
8.	**Pehchevo**	208	27	7	58.7
9.	**Probishtip**	326	50	36	66.8
10.	**Cheshinovo-Obleshevo**	132	57	14	
11.	**Shtip**	583	82	44	91.3
Total		**3537**	**51**	**217**	**66.3**

The region borders with the Republic of Bulgaria in the east, and communication with the neighbouring country is established through two border crossings, Klepalo in the

[1] Source: State Statistical Office of the Republic of Macedonia

municipality of Berovo and Delchevo in the municipality of Delchevo. There are possibilities for activation of border crossings Ajdutska Cheshma and Crna Skala. The region borders on the North-East Planning Region in the north, the Vardar Planning Region in the west, and the South-East Planning Region in the south.

The following section contains the basic characteristics of the East Planning Region, regarding urbanisation, geographic characteristics, natural resources of the region, natural and cultural heritage, as well as some aspects of environment protection.

As is the case in the other regions of Macedonia, there is a high percentage of rural municipalities in the East Planning Region; however, the majority of the population lives in the larger urban centres, which is an indicator of the uneven concentration of the population within the region. This situation stresses out the need to revitalise and improve the quality of life in rural communities, in order to reduce disparities within the region.

Basic characteristics of the East Planning Region[2]

Region	Area km^2	Population 2006	Population density inh/km^2	Number of municipal-lities	Municipa-lities with seat in village	Number of settle-ments	Percentage of urban population in the total population 2002
Macedonia	25,713	2,040,228	82	84	41	1767	56.7
East	3537	180,938	51	11	3	217	66.3

Relief

The East Planning Region is characterised by a very dynamic relief structure, which includes plains, such as parts of Ovche Pole, Ezhovo Pole, the valleys along the Bregalnica river, the valley Pijanec, Meleshevo valley, Vinica-Kochani valley, Berovo-Pehchevo Pole; hilly areas, consisting of torrential deposits, cones, covered with diluvia soil, which cover large areas and present the dominant agricultural land; and mountainous areas, such as the mountains Osogovo, Plachkovica, Serta, Konechka, Maleshevo, Ograzhden, Vlaina, Obozna and Golak.

Climate

The climate in the East Planning Region is arid, i.e. the area is dominantly arid – dry. Characteristic for this type of climate are the long and dry summers, often with

[2] Source: State Statistical Office of the Republic of Macedonia

temperatures as high as +41°C, and mild, wet winters, with rare occurrences of extremely low temperatures, which can be as low as -22 °C. This is the result of the contact between the influences of the Mediterranean and the continental climate. Continental climate is predominant in the Maleshevo region. Average annual precipitation in the region varies between 506 mm in Kochansko Pole to 672 mm in Maleshevia. Precipitation is distributed unevenly, regarding both time of the year and quantity. Rainfall is maximal in the months of April and May, and minimal in the summer months of July and August. The average mean annual temperature in the plains is 12.9 °C, and in Maleshevia - 8.7 °C. Snow falls from December until March. Fog is rare in this region, except in Maleshevia, where there is an average of 3 to 5 foggy days per year. Climatic conditions in this region are favourable for the development of agriculture, especially for rice growing.

Natural Resources

The East Planning Region has abundant natural resources that could play a significant role in development promotion. This is the case especially with agricultural land, forests, mineral resources, water resources and renewable energy sources. The East Planning Region disposes of significantly large areas of agricultural land and excellent climatic conditions for the production of recognisable agricultural and animal products. In this regard, the natural conditions for rice growing in the East Planning Region are of special significance.

Natural resources of the East Planning Region[3]

	Region	Agricultural land (in ha)	Total arable land (in ha)	Forest (in ha)	Wooden mass / total harvestable quantity	Significant water resources
1.	East	123688	78328	136738	4.8	Rivers Bregalnica and Orizarska, Berovo Lake, Reservoirs Kalimanci and Gradche, warm thermal waters – Istibanja and Kezhovica

The hydrograph of the East Planning Region consists of the river network, man-made reservoirs and natural springs, including mineral and thermal waters. The most significant water resource is the river Bregalnica, with its two large reservoirs Kalimanci and Kochani Lake. The Reservoir Kalimanci has a volume of 120 million m^3, which amounts to 48% of the total annual mean flow of the river Bregalnica. Along the catchment area of the Bregalnica River there are also other, smaller reservoirs, such as Berovo Lake - reservoir Ratevo, Petrashevec, Loshana, Gradche, the reservoir in the village of Pishica and other smaller ones. Especially significant is the reservoir Zletovica – dam Knezhevo, with a total volume of

[3] Source: Regions in Macedonia 2007, SSO, December 2008, Forestry 2008 and Spatial Plan of Macedonia

23,500,000 m^3 of water, which is used for supply of drinking water. Thermal waters in Vinica region (Istibanja) and in Shtip region (Kezhovica) are also very important. In the flat, alluvial part of the region, there is ground water, which the population utilises by digging wells and installation of pumps. Several location suitable for construction of small hydroelectric power plants (up to 5 MGWh) have been identified.

Vegetation

Biotope diversity in the region results in an abundance of plant species on the territory of the East Planning Region. The presence of several endemic species is also evident. Specific climatic conditions, as well as geological diversity in the region, create conditions for a heterogeneous natural vegetation and differentiation of altitude belts.

High-rise plants are predominant, whereas lower plants, such as algae, moss and fungi have not been researched comprehensively. The region is home to multiple diverse plant communities. Furthermore, the East Planning Region has a wealth of numerous medicinal and aromatic plants, forest fruits, seeds and mushrooms. The abundance of dendro-flora can be seen in the presence of 25 tree species, with multiple subspecies. Out of the forest ecosystems, mostly located in the mountains of the region, most common are the deciduous forests with various species of oak and beech, while coniferous forest are more rare, and consist of pine, silver fir and spruce. Mixed forests are present on smaller areas. The forest has a great influence on protection of water and land and on maintaining biological diversity. In part of the region there is a community of dry meadows, spread over flatted gentle slopes.

Fauna

Various animal species of amphibians, mammals, reptiles, birds and insects are an integral part of the bio-conenoses in the East Planning Region. The group of birds and mammals in the specific biotopes consists of numerous associations with a large number of individual animals that can be found from the lowest to the highest altitudes. Fauna in the forests of the region is rich in various species of game. Game with fur includes rabbits, deer, wolfs, wild boars, foxes, wild cats, badgers, otters and ferrets, while game with feathers includes grey and chukar partridges, pheasants, doves, quails, wild ducks, hawk, coots, grouses, European magpies, ravens, crows etc. Mammals are present mostly in the higher, mountainous areas. In the aquatic ecosystems, following species of fish are most common: chub, barbell, dace, crucian carp; less represented species are the common carp and catfish. Due to disturbances in the water regime and the quality of water, the balance in the fish stock has been severely endangered.

Number of game[4]

Type of game:	Roe deer	Wild boar	Rabbit	Grey partridge	Chukar partridge	Pheasant	Fox	Wolf	Marten	Otter
Number of indivi-duals	110	84	495	170	55	155	74	42	83	4

Forests

The East Planning Region has a large area under forest that can be utilised in the development of the wood processing industry, as well as in the development of mountain tourism. However, use of those forests must follow the principle of rational utilisation of the forests, improvement of their condition and securing a high level of protection.

Total area under forest in the East Planning Region is 136,738 ha, or 13% of total area under forest in Macedonia. Forest cover a total of 38% of the territory of the region. The volume of wooden mass is 4.8 million m^3 or 6% of the total wooden mass in Macedonia, the planned harvestable quantity of wooden mass is 250.000 m^3 per year or 18% of the total planned quantity of harvestable wooden mass in Macedonia. Most common types of forest are pine forests (f.Pinacae), oak forest (f. Quercacae) and beeches forest (f. Fagacae). As the result of long-term intensive harvesting of oak forests, they are now in a stage of forming young seedling with various densities. The beech belt stretches in the mountainous and sub-mountainous areas. The latter belt is frequently interrupted and is not continuous. Mountainous beech forests have been preserved in a better condition and are now of great significance for forestry in the region. In the beech forest belt there are acidophilic pine forests, and in the higher regions there are complexes of scots pine (Pinus sylvestris).

Forests in the East Planning Region[5]

Plantation type	Area (ha)
Pure deciduous plantation	**96057**
Pure coniferous plantations	**22859**
Mixed deciduous plantation	**12581**
Mixed coniferous plantations	**539**
Mixed deciduous - coniferous plantation	**4702**
Total	**136738**

[4] Source:State Statistical Office, Forestry 2008

[5] Source:State Statistical Office, Forestry 2008

Mineral resources

Out of all raw materials and other resources this region disposes of, the lead-zinc ore from the mines Zletovo, Dobrevo and Makedonska Kamenica has the greatest economic significance. Annual ore production in these mines amounts to 1,000,000 tones. The presence of copper and iron-titanium minerals has been established in the Osogovo massif. Gold deposits have been found on the territory of municipality Delchevo, as well as alluvial gold in river deposits from the river Bregalnica.

Most common non-metallic minerals are asbestos, kaolin clays, naturally baked clay, granite, limestone, basalt, feldspar, opal breccias, opalised tuff and bituminous schists. The micro region Maleshevia disposes of lignite; a quantity of 10,000 tons annually is extracted through open-cast mining. In the Delchevo-Pehchevo basin there are deposits of coal, with total reserves of 24 million tons. There are some coal deposits on the territories of the municipalities of Probishtip and Makedonska Kamenica also.

Natural, Cultural and Historical Heritage

The region has exceptionally rich natural heritage, which opens possibilities for rural tourism development. Evidence of this rich natural heritage and the opportunities for development it provides are the several natural reserves (Goten, Linak, Malesh, Zrnovska River, Ulomija River), than the natural monuments (Zvegor, Konjska Dupka cave, Morodvis, Machevo, Crna Topola) and the large number of villages.

Apart from the natural resources, the East Planning Region has a rich cultural and historical heritage, which should be utilised as part of the efforts to promote the distinctiveness of the mountain region and develop tourism. Examples of the rich cultural and historical heritage worthy of special notice are: the archaeological site Vinichko Kale and the archaeological site Bargala.

The natural, cultural and historical heritage of the East Planning Region represents an excellent basis for tourism development; however, the East Planning Region is still not being recognised as an attractive tourist destination. According to the data of the State Statistical Office on tourism in Macedonia for 2004 – 2008, a total of 28,449 overnight stays were recorded in the East Planning Region in 2008, 18,137 of which were domestic tourists and 10,312 were foreign tourists. Expressed in percentages, 1.27% of the total number of overnight stays in Macedonia were realised in the East Planning Region. This data point to the fact that tourism is underdeveloped in the East Planning Region.

The basic characteristics of the East Planning Region show that the region has abundant natural resources and interesting cultural and historical heritage, which is

not sufficiently utilised. The concentration of most of the population in the urban areas contributes to a certain extent to the existing situation of insufficient utilisation of development potentials. Furthermore, lack of conditions for a high quality of life in most rural settlements results in migration of the population to the towns.

Environmental Protection

Environmental protection is an exceptionally important segment of regional development policy. The situation regarding quality of the environment in the East Planning Region is similar to that in the other regions of Macedonia. Environmental problems in this region have been identified and grouped according to the media and the areas of the environment, in which they manifest. These are the following: problems in waste management, as a result of the lack of an integrated waste management system; problems in water management, including pollution of water resources and non-existent waste water treatment; air pollution of different intensity in different areas of the region; and soil contamination. The lack of a comprehensive environmental monitoring system is a special problem that affects all media.

Periodic deterioration of air quality and permanently poor quality of waste water recipients is recorded in the cities and in the outlying areas of Shtip and Kochani. Permanent deviation from the desired quality is recorded in part of waterways in the catchment area of Bregalnica River.

Demographic development

Population Size

The East Planning Region has a population growth rate that is almost four times lower than the average national population growth rate. There are drastic discrepancies in population growth and spatial distribution among the regions, and those discrepancies are quite unfavourable. According to the Population Census from 2002, the East Planning Region had 181,858 inhabitants or 1.0% more than in 1994[6]. At the end of 2007[7], the population numbered 180,442. The natural population fluctuation in the region is characterised by below-average birth rate, above-average mortality rate and a negative population growth rate. The rates of population growth for 2006 are negative in all municipalities, except in Delchevo, Makedonska Kamenica and Shtip.

[6] The analysis of changes was carried out on the basis of the last two Censuses of the Population (1994 and 2002.) Population estimates for 2006 were also used.
[7] State statistical Office, Population Estimates on 30.06.2007 and 31.12.2007 according to gender and age, divided by municipalities and statistical regions (NUTS 3 – 2007).

Although the infant mortality rate in the region is below average, it is still exceptionally high in the municipalities of Karbinci, Zrnovci and Pehchevo. The total fertility rate in the region of 1.27 cannot secure population replacement.

Population Density and Spatial Distribution

One of the vital characteristics of the East Planning Region is the population density, which amounts to 51.2 inhabitants/km^2. However, due to the permanent depopulation process, there is a very large number of abandoned villages, villages with a population lower than 100 and villages with exceptionally high aging index. This leads to a concentration of approximately 66% of the population in urban areas.

Basic demographic indicators[8]

Total population	180,938
Men	91,613
Women	89,325
Population density	51.2
Population aged 0 - 14 (%)	16.5
Population aged 65+ (%)	11.8
Age dependency ratio	39.6
Per 1000 inhabitants	
Live born	9.3
Deceased	10.0
Marriages	6.5
Divorces	0.8
Infant mortality rate	8.9
Extramarital births (%)	10.4
Average age of	
Population	38
First time mothers	24
First time brides	24
Deceased	70

[8] Source: State Statistical Office, Regions Yearbook 2007

Migration

Regarding migratory movement, internal or inter-municipal migration is dominant, with a smaller occurrence of local migrations, which are most common in the municipalities of Berovo, Vinica, Delchevo, Makedonska Kamenica and Probishtip. Concerning external migration, emigration is more common than immigration, and this migration tends to be more intense in young people with higher education.

Population according to Gender, Age and Level of Education

A general conclusion regarding age of the population in the East Planning Region, is that the region is in the grasps of an intensive process of demographic aging. During the period of 1994 – 2002, analyses of demographic age show that the population, which was on the threshold of demographic aging, has indeed entered a stage of demographic aging. In 2007, only the population of Makedonska Kamenica was on the threshold of demographic aging, in seven municipalities the population is in the process of population aging, and Berovo, Pehchevo and Cheshinovo are in the stage of deep population aging. These changes lead to a decrease in the percentage of children, and a rice in that of the workforce and the persons older than 65. This points to increased burden on the older workforce, which leads to numerous unfavourable consequences to economic and social development.

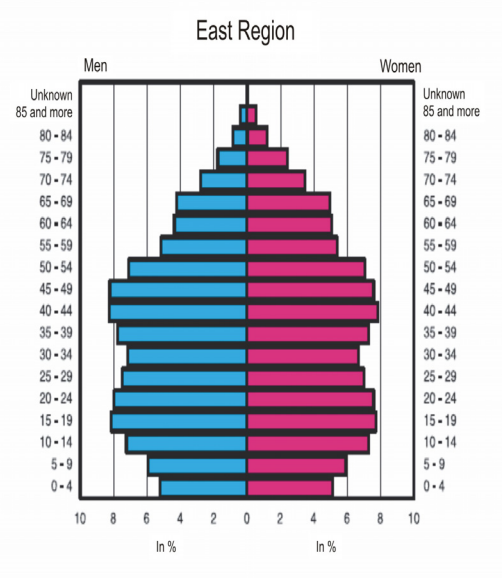
In regards to the other demographic changes, the average number of household and family members is decreasing, intra-regional differences become greater, and the number of singe person households and the percentage of the population living in such households are increasing, a trend that is most obvious in the municipalities of Pehchevo, Berovo and Zrnovci.

Data on culture and education show a reduction in the number of illiterate persons and person with low education level, as well as an increase in the population with secondary of higher education. However, there are quite large differences in the percentage of the population with low education between the municipalities that range form 39.9% in Shtip to 78.1% in Karbinci. This number is higher than 60% in half of the municipalities. This existing situation regarding culture and education is the region is very unfavourable from the aspect of human resources quality and development.

Population according to gender and age[9]

East

Age	All	Men	Women
Total	180422	91374	89048
0	1633	825	808
1 - 4	6801	3538	3263
5 - 9	9476	4845	4631
10 - 14	10719	5448	5271
15 - 19	13115	6634	6481
20 - 24	14177	7436	6741
25 - 29	13922	7230	6692
30 - 34	12959	6825	6134
35 - 39	12492	6543	5949
40 - 44	13531	7061	6470
45 - 49	14211	7332	6879
50 - 54	13998	7305	6693
55 -59	12432	6259	6173
60 - 64	9130	4437	4693
65 - 69	7551	3432	4119
70 - 74	6913	3142	3771
75 - 79	4205	1804	2401
80 - 84	2117	846	1271
85 and more	1015	423	592
Unknown age	25	9	16



Data on population age in the East Planning Region[10]

Region, year	Demographic age indicators					
	Average age (years)	Aged 20 or less (%)	Younger than 40 (%)	Aged 60 and more (%)	Aging index	Rang
Macedonia						
1994	33,3	33,2	64,0	13,0	39,2	4
2002	35,0	29,3	59,6	15,0	51,3	5
2006		26,8	57,4	15,6	58,0	5
East region						
1994	34,5	30,7	61,9	13,6	44,2	4
2002	36,6	26,3	55,7	16,0	60,8	5
2006		23,7	53,5	17,0	71,6	5

Economic Characteristics

The development level[11] of the East Planning Region is presented in the table bellow.

	According to the develop-ment index	According to the economic-social index	According to the demographic index
East	0.67	0.95	0.50

[9] State Statistical Office, Regions in Macedonia 2007

[10] Calculated on the basis of data from the State Statistical Office, Demographic Statistics by Regions (Statistical Overview2.4.6.04,526) and Census of Population, Households and Dwellings in Macedonia.

[11] Source: Decision on the Classification of the Planning Regions according to the Degree of Development for the Period 2008-2012, Official Gazette of Macedonia, no. 162/2008

Economic development in the East Planning Region was influenced strongly by the general economic conditions in Macedonia, with strongly emphasised characteristics of transitional economy, and comprehensive reform efforts in all areas of social life: transformation of ownership, promotion of production of goods, privatisation and company restructuring. The problems of transformation to a market economy brought the former industrial giant of the region in a difficult situation. There are companies from other industries in the region, including companies in the agricultural industry, cattle farms, slaughterhouses with cooling facilities, an alcohol distillery etc. Most important industrial industries in the region are the textile industry, wood industry, shoe-making industry, trade and agriculture. As is the case in the other region, small and medium-sized enterprises are the engine of development in the East region, which make up 72% of total production and 76% of the total number of employees in the non-financial sector for 2006.

In 2006 the annual gross product of the East Planning Region contributed 6.4 % to the total gross domestic product of Macedonia. This indicator shows that economic development in the East Planning Region is at a very low level.

Gross Domestic Product and Economic Development Dynamics

Gross domestic product of the East Planning Region for the period 2000 – 2006 ranged from 250 to 322 million EUR.

Gross domestic product 2000 – 2006[12] (in million MKD)

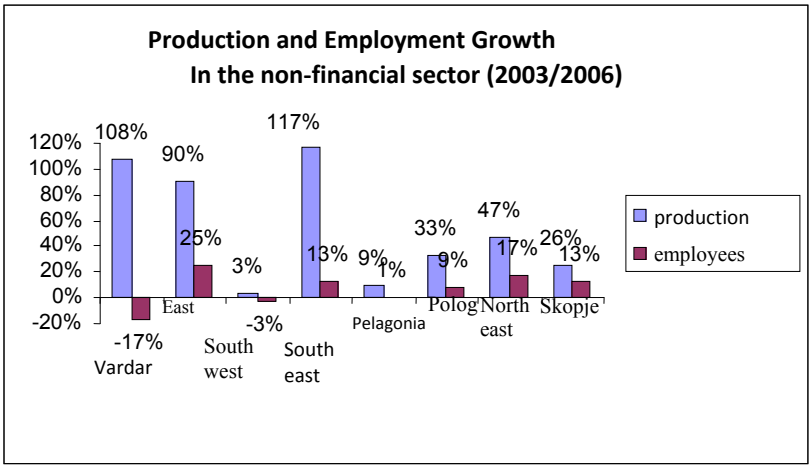
	2000	2001	2002	2003	2004	2005	2006
Macedonia	236,389	233,841	243970	251,486	265,257	286,619	310,915
East Region	16,189	17,866	15,278	15,944	16,832	18,261	19,913
Percentage of Macedonian GDP	6.85%	7.64%	6.26%	6.34%	6.35%	6.37%	6.40%
Growth	/	10.36%	-14.49%	4.36%	5.57%	8.49%	9.05%

In 2006 the East Planning Region had a GDP of 1790[16] EUR per capita, which amounts to 72% of the average of Macedonia, and 6% of the average for EU27 for 2005. Statistically, this region contributes 6.4% to the total Macedonian GDP, and is ranked fifth of the eight planning regions in the country according to the level of development. According to the data on GDP, economic development in the region is at a very low level. In order to overcome this situation, high investments in line with the development potentials of the region are needed. Although the low general economic development, the analysis of economic developments in the non-financial

[12]State Statistical Office, Gross Domestic Product and Investments in Fixed Assets by regions, 2000-2006

sector in the region for the period of 2003 - 2006[13] indicate that the region has positive results regarding the total added value in this sector. A significantly positive development is recorded in services (90%) and industry (86%).

Production and employment[14]



Jobs

The number of jobs in the non-financial sector in the East Planning Region rose by 25% in the period 2003-2006. In the period of the analysis (2003-2006) medium-sized enterprises created 600 new jobs, while small enterprises created approximately 6000 new jobs.

Labour productivity in the analysed period rose an average of 28%; the highest rise of 35% was recorded in medium-sized enterprises, while productivity in small enterprises rose by 27%.

It is important to mention that labour cost per employee for the analysed period remained the same in small enterprises, and increased in medium-sized enterprises by 8%. This leads to the conclusion that small enterprises mostly create low-paying jobs.

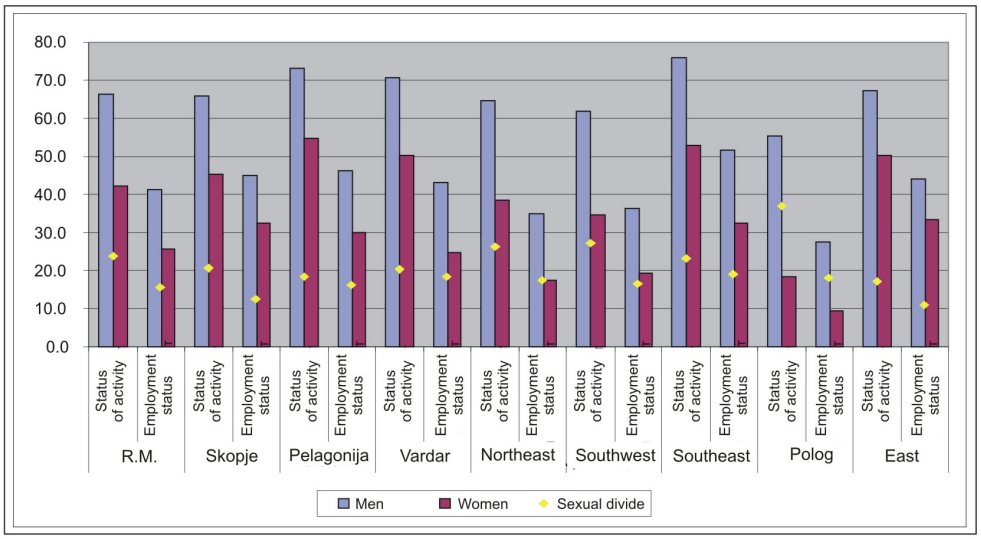
Employment

The employment rate in the East Planning Region in the analysed period decreased form 51.8% (1994) to 38.9% (2002), while unemployment increased from 23.9% to 33.9%. Changes in these two rates are the result of unfavourable economic change in the region, closing of many companies, as well as increase in the number of the working age population. For the period 2003-2006, economic data show positive developments. Hence, in the absence of official statistical data, it can be realistically assumed that the employment rate in 2006 is higher than in 2002. Furthermore it

[13] Available statistical data by regions from the SSO alow analysis only for the non-financial sector.
[14] Source: State Statistical Office

should be taken into account that part of the workers are engaged in the informal sector and in agriculture, i.e. they are not recorded in official statistics. However, unemployment remains one of the most serious problems in the region, and its solution is of crucial importance for the improvement of the economic and social situation in the region.

Economic activity rate and employment rate according to gender and region in 2002[15]



Data from the Population Census 2002 show that in the East Planning Region, as in the other regions, the unemployment rate is higher in the younger age groups and lowest in persons aged over 50. Analysis according to the level of education shows that unemployment is highest in the workforce without education, and decreases with increased level of education. Taking in consideration demographic changes and the educational structure of the population, dominated by the population with a low level of education, it can be concluded that workforce quality will have a significant impact on the dynamics of future economic growth in the region. In this regard, measured for raising the educational level of the population and the workforce are needed.

The combined analysis of employment according to education and gender leads to the above mentioned conclusion, namely employment in both men and women increases together with the level of education. The employment rate in persons with lower level of education in higher in men than in women, while the situation is opposite in persons with higher levels of education. This can be explained, in part, by the fact that the types of employment offered to persons with a lower level of education (requiring greater physical strength) are typical for men, even though in some branches of the economy that do not require high level of education, such as the textile industry, employ almost exclusively women.

[15] Source: State Statistical Office, Population Census 2002.

Employment according to sectors of the economy

Region	Employees	Agriculture as % of workforce	Industry as % of total	Services as % of total	Unknown as % of total
East	49,602	12.3	49.0	38.4	0.4

Unemployment

Unemployment indicators 1994/2002[16]

Regions	Active population		Number of unemployed		Unemployment rate		Increase in active population (in %)	Increase in no. of unemployed (in %)
	1994	2002	1994	2002	1994	2002		
Macedonia	779,097	743,676	186,689	283,132	24.0	38.2	-4.5	51.7
East	81,006	74,875	19,374	25,273	23.9	33.8	-7.6	30.4

Social Development

Households and Families

The number of households in the East Planning Region in 2002 amounted to 57,894 and increased by 7.9% compared to 1994. The total number of household members increased by 1%. The average number of household members in 2002 was 3.2, a reduction of 6%.

Infrastructure

Transport Infrastructure

Roads

The existing road infrastructure in the East Planning Region consists of 1,245 km local roads, 156 km national and 345 km regional roads. The road network in this region is at a medium level of development, and the current condition of national (M-5: Veles – Shtip – Kochani – Makedonska Kamenica – Delchevo) and part of the regional roads (R-523: Delchevo – Pehchevo – Berovo, R-527: Kochani – Vinica – Berovo and R-603: Radovish – Berovo), i.e. the quality of existing national and

[16] Source: State Statistical Office, Population Census 1994 and 2002.

regional rod network in the region is poor; namely almost all national and regional roads are in a poor condition and do not offer apropriate connection between some of the main regional urban centres and the main national roads. The existing condition of national and regional roads does not satisfy the needs for economic development, and does not comply with standards for safety in traffic. Due to a lack of investments and an inappropriate maintenance of the road network, access to main corridors is hindered for part of the municipalities in the region. According to plans, part of the central section of Corridor 8 should pass through the region, which will contribute to an improvement of the situation.

The local road network in the East Planning Region is also insufficiently developed and of poor quality, which is the result of inadequate maintenance and insufficient investment. The local road network is in a poor condition, and in certain section the quality of the local road network is so poor, that its condition is a potential danger to the safety in traffic. Maintenance of local roads is inadequate and insufficient, which is the result, above all, of lack of funds.

The improvement of the road infrastructure is of special significance for the development of the East Planning Region, taking into consideration that the high concentration of the population in rural areas is unfavourable for development, and the inadequate local roads do not allow for development of tourism and other economic activities the regions have potentials for. Construction of the road sections through the region of Osogovo is of special significance.

Transport infrastructure in the East Region (road and railway) [17]

Infrastructure / Region	*Macedonia*	*East*	*% of Macedonia*
Roads			
Local km	9,155	1,245	13.60%
National km	1,123	156	13.89%
Regional km	3,806	345	9.06%
Coefficient roads	0.55	0.49	89.09%
Railway km	682	70	10.26%
km/km^2	27	17.3	64.07%
km'/ 100,000 inhabitants	33.9	9.56	28.20%

Railway

The development of the railway network in the East Planning Region can be assessed as insufficient. Services provided by Macedonian Railways are limited. A section of

[17] Source: State Statistical Office and National Transport Strategy of Macedonia

70 km of the railway line Veles – Kochani passes through the East Planning Region and ends in a dead end. The railway network in the region has a very low density of 17.3 km per 1000 km^2, and railway length per 1000 inhabitants amounts to 9.56 km, well bellow the national average of 33.9 km, and does not provide adequate service to municipalities in the region. From the urban centres in the region, only Shtip and Kochani are connected by rail, with only passenger rail service to Kochani. Other municipality centres are not connected to the railway.

The main obstacle to an efficient railway transport is the incomplete railway network, namely the network of the East Planning Region ends in a dead end. Existing railway infrastructure is in a poor condition and must be urgently reconstructed, so as to secure fast and safe transport of passengers and goods. One of the identified possibilities to improve this type of transport is the development of the combined multimodal transport, which can secure more economic transport and promote investment in the region.

The relatively poor condition of the road network in the East Planning Region and the relatively low coverage by the railway network have a negative impact on the development of the region, especially regarding promotion of economic growth through investment.

Air Travel

In regards to air transport, the region has only one sport airport in the vicinity of Shtip and the airfield *Lakavica*, which are not sufficiently utilised.

The existing international passenger airport in Skopje provides good coverage for part of the East Region, although access to the main national airport *Alexandar the Great* in Petrovec is not fast and simple. Construction of a cargo airport in the Macedonia is needed, which would promote the development of agricultural production. This airport would have special importance for the East Planning Region, but could also serve other region, if appropriate access to it is provided.

Solid Waste

Solid waste management in the East Planning Region encompasses collection transport and disposal on a landfill. Municipal solid waste disposal in the East Planning Region is done on local, i.e. municipal landfills, which do not satisfy the basic sanitary and technical standards for safe waste disposal. In this region there are 17 landfills registered in the National Waste Management Plan, which, according to the risk they pose for the environment, are classified as follows: 3 landfills – high risk, 8 landfills – medium risk and 6 landfills – low risk.

Additionally to these landfills, there is also a large number of so-called illegal landfills in the region. Illegal landfills are found especially in rural areas and present an additional threat to the environment, since they are not covered by waste collection service providers.

Problems in solid waste management can be overcome through introduction of integrated regional solid waste management, according to EU directives.

Energy Infrastructure

The East Planning Region is relatively poor in energy sources. There are two small hydroelectric power plants – Kalimanci and Zrnovci; however, the implementation of a large investment in the construction of the hydro-system Zletovica is underway. This system will provide drinking water for the population, water for irrigation of agricultural land and electricity production in small hydroelectric power plants planned along the system Zletovica, the river Bregalnica and its tributaries: the rivers Orizarska, Zrnovska and Kochanska. There is still potential for construction of small hydroelectric power plants.

According to data for the period 2003-2006, total annual electricity consumption in the East Planning Region was 407 GWh or 8.5% of total consumption in Macedonia.

Renewable sources of energy could play an important role in providing electricity and heating energy in the East Planning Region. Apart from hydro energy, these include solar energy, geothermal energy, biomass and wind energy, the use of which until now is minimal. Taking into consideration natural conditions, the region offer possibilities for utilisation of solar energy, wind and biomass. Geothermal energy have an exceptional significance for the development of agriculture in the East Planning Region. In Ovche Pole, which offers favourable climatic and meteorological conditions, there are possibilities for construction of wind farms.

Kochani region offers opportunities for utilisation of geothermal energy for heating during the winter months and heating of greenhouses for early vegetable production.

In addition to the economic effects, use of renewable energy resources would have a positive influence on environmental protection in the region.

1.2 Osogovo Mountain

Osogovo mountains are high mountain range which dominates in the eastern part of Macedonia. Osogovo mountain is second largest mountain massif in Macedonia, after the mountain Jakupica. The total length (east-west) is about 50 km, with width of about 28 km. They are located among the Slavishka valley in the north, Kumanovo valley in the northwest, Probistip-Zletovo Basin in the west, Kocani valley in the south, on the southeast is Pijanec and Strumica with Kjustendilskata valley on the east of the territory of Bulgaria. Osogovo Mountains are located between the cities Kriva Palanka in north, Delchevo and Kocani on the south, and Probistip and Kratovo on the west. As a natural unit that extends into two states Osogovo mountain range occupies a total area of 1,535 km2, of which the Republic of Macedonia belong to 1,102 km2 or 71.8%, while the 443 km2 or 28.2% belong to the Republic of Bulgaria. The geographical location of Osogovo Mountains is latitude 42.1667 and longitude 22.5. Administratively, the area Osogovo massif belongs to the 7 municipalities (Kriva Rankovce, Kratovo, Probistip Cesinovo-Oblesevo, Kocani and Macedonian Kamenica).

Relief of the Osogovo massif is characterized by broad, massive and rounded peaks, cut by deep valleys and steep. The mountain is rich with water and several rivers originate here: Toranichka river Kamenicka river Orizarska river Zletovska river. Ruen's reef is watershed between Vardar and Strumica basin, while Kostadinechko-Lisechkiot reef is the watershed between the basin of r. Pcinja and r.Bregalnica.

In the lower part, Osogovo has a forest, the most beech is in the middle part, and there are fir and spruce trees in the sub-alpine zone. The upper parts - above 1800 m are rich grass pastures in the past many thousands of sheep dwelt here in the summer period and this mountain was the center for the production of dairy products (cheese).

Osogovo mountains have several peaks, some of these peaks are higher over 2000 m. But those who are lower, have its beauty and challenge to be visited. Here is a list of some important and interesting peaks: Ruen (2252 m, 2154 m), Carev peak (2085 m and 2057 m) and Sokol (2038 m), Kitka, Kalin Kamen, Chepernik, Babina Ceshma, White Stone, Bandera, Peter's Brdo, Orlov Kamen Markova Stupka, Kostadinica, Jalovarnik, Chuka, Lisec, Uvo, Bukovec, Panagur, Ponikva, Cukar, Visoka Cuka, Kula, Breza, Borova Glava, Propotnichki Cukar.

On Osogovo is located sports and recreation center of Ponikva. Ponikva is a tourist center and the weekend settlement located 20 km north of the Kocani on the Osogovo Mountains. Ponikva is located at an altitude of 1560 meters in an area with dense

beech forest and diverse vegetation. Ponikva is set, as one of the 34 winter resorts in the Spatial Plan of Macedonia.

The locality of Carev Vrv occupies area around this remarkable peak, including the highest parts of crest of Kalinkamensko on the north, crest of Kostadinechko in the west, the southeast ridge Kitka and Sokol crest in the east. Also within the site are the highest parts of teatral plate of Kriva River. This area is about 7.2 km2, of which 1.2 km2 are above 2000 m with the highest point of Carev Vrv (Sultan Tepe) 2085 m. The peak Carev Vrv has a central position on Osogovo massif and is an important hydrographic node.

The locality of peak Ruen occupies the area around the highest peak of Osogovo massif: Ruen (2252 m), up to 1700 m, and the border goes head over macadam road Toranica-Sasa. Under the stated range, the site limits area of about 4.7 km2, from which 1.35 km2 are higher of 2000 m. Besides Ruen, the folowing peaks are higher more than 2000m.: small Ruen (2203 m) and Sokol (2038 m).

In the area of Osogovo Mountains several hotel, motels and rest house are located with total capacity of 974 beds.

Municipality	citizens	settlements	Touristic localities	Beds in hotels Name/capacity
Probistip	**16.193**	**37**	Monastery St. Gavril Lesnovski SRC Ponikva Old Macedonian Architecture-v. Zletovo Lesnovo crater	Hotel Sent Nikol / 60 Hotel Creshovo Topce/ 50 Motel Brioni / 15 SD Done Bozinov / 129 **Total 254 beds**
Kocani	**38.092**	**28**	Monastery St. Pantelejmon SRC Ponikva Old Macedonian Architecture Hunting Reservate Osogovo	Motel Sharena Cheshma / 20 Motel Izgrev / 50 Hotel Nacional / 50 Rest house of MI of RM / 220 Motel Dam Gratche / 50 **Total 390 beds**
Cheshinovo - Obleshevo	**7.490**	**14**	Locality Pilavo Spa center Banja Old Macedonian Architecture	/
Makedonska Kamenica	**8.110**	**9**	Monastery in v.Cera Lake Kalimanci	Monastery in v. Cera / 20 Hotel Sasa / 40 **Total 60 beds**

Kratovo	**10.441**	**31**	Locality Kuklica Locality Cocev Stone Kratovo middle century towers Old town Macedonian Architecture Middle centuries bridges	Hotel Kratis / 60
Rankovci	**4.144**	**18**	Kalin Stone Lake Bazjachko Brdo Lake Vlashki kolibi	Motel Krater / 30
Kriva Palanka	**20.820**	**34**	Monastery St.Joakim Osogovski Locality Kalin kamen	Hotel Turist / 120 Motel Macedonia / 30 Monastery St. Joakim Osogovski / 120 **Total 270 beds**

1.3 Inventory of locality of Carev Vrv and Ponikva

The analysis of the characteristics of Osogovo Mountains localities Carev Vrv and Ponikva is based on predefined criteria for the various elements that were analyzed. The following characteristics of the sites were analyzed: topography, slope analysis, slope aspects and climate. In terms of topography, the minimum altitude that has been adopted as suitable for locating ski trails is defined as above 1300 meters.
The Slope Analysis divides the topography of each study area into a range of skiable gradients as they relate to the primary skier/snowboarder skill classes. These are as follows:

0 - 8 %	Too flat for skiing/good for base area development
8 - 25%	Ideal for Beginner skiers/snowboarders and for small scale infrastructure
25 - 45%	Ideal for Intermediate skiers/snowboarders
45 - 70%	Ideal for Advanced and Expert skiers/snowboarders
>70%	Too steep for skiing/snowboarding trail development, increased avalanche hazard

Slope aspects criteria:

- North-facing: ideal for snow retention, minimal wind scour, minimal sun expose
- Northeast-facing: ideal for snow retention, minimal wind scour, minimal sun expose
- East-facing: good for snow retention, some wind scour, morning sun expose
- Southeast-facing: fair for snow retention, moderate wind scour, morning and early afternoon sun expose
- South-facing: poor for snow retention, high wind scour, full sun expose
- Southwest-facing: poor for snow retention, high wind scour, full sun expose
- West-facing: fair for snow retention, high wind scour, late morning and afternoon sun expose
- Northwest-facing: good for snow retention, moderate wind scour, some afternoon sun expose

1.3.1 Ponikva

Topography

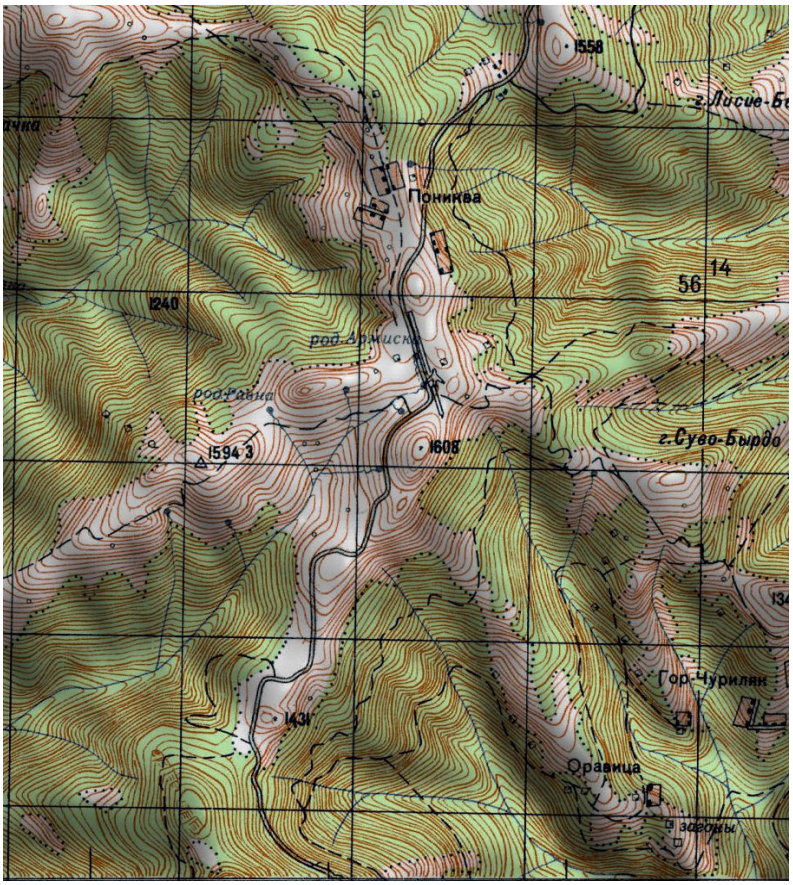
Ponikva is located on summit elevation between 1400 and 1600 meters above sea level. The sport center and the existing ski lifts and slopes are located on elevation between 1496 and 1610 meters above sea level. The topographic characteristics of Ponikva are presented on picture 1.

Slope gradient

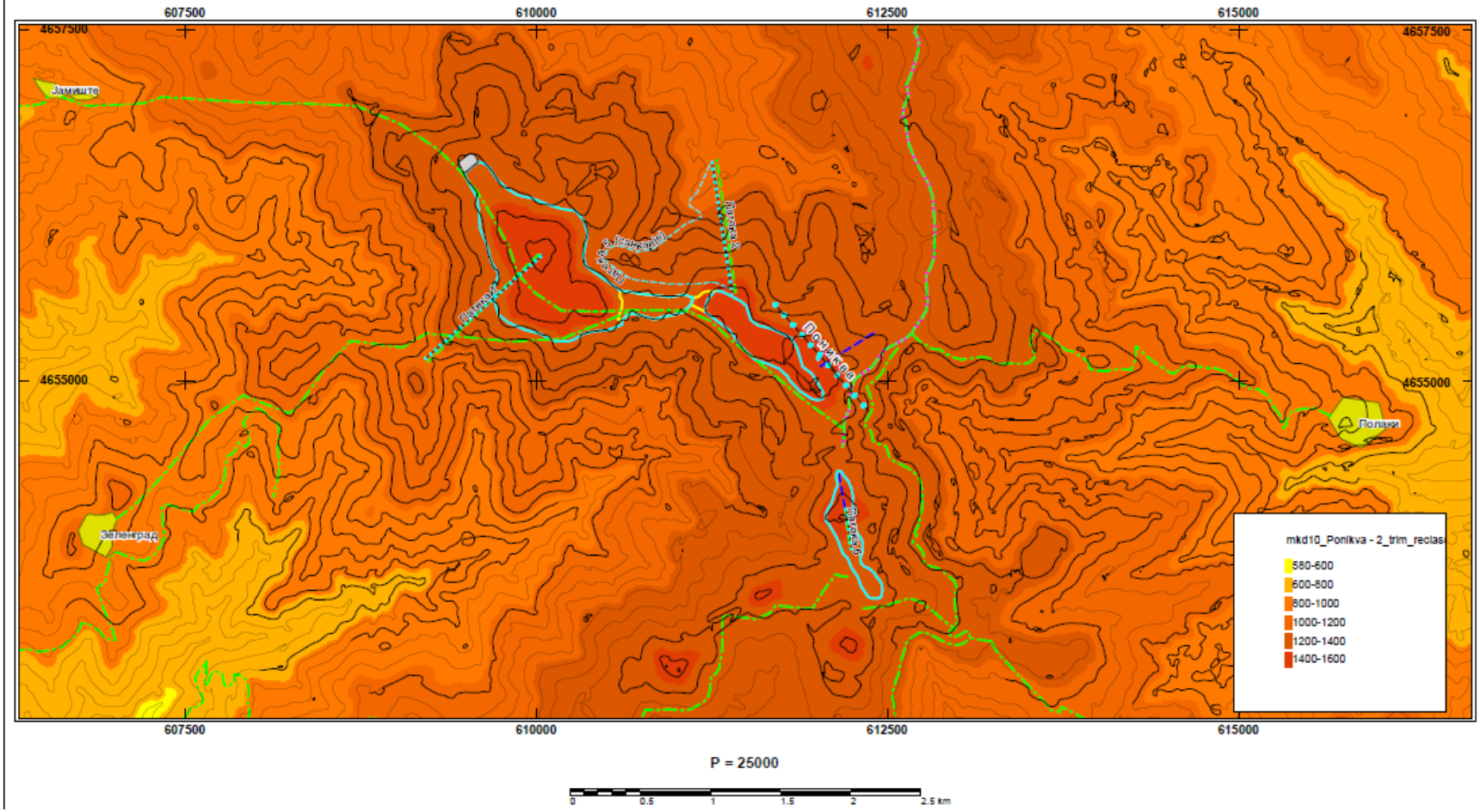
Analysis of the slope gradient of the site Ponikva showed that the highest areas of the site terrain is relatively more flat with an average slope that ranges from 0 to 8%. Terrain that is suitable for construction of ski trails is the slope that ranges up to 25% in certain segments where the slope is 45%, allowing the construction of trails for beginners and advanced beginners in skiing/snowboarding, and only one of trails for average skiers. One ski trail hich requires expert ski knowledge is identified, but on the ground which according to the existing urban plan is predicted for construction of a weekend settlement with all necessary infrastructure. Generally we can say that the terrain is ideal for developing of clasical skiing and biathlon as well as to locate the ski trails that would be intended for beginners and advanced beginners in skiing or snow boarding. Figure 2 shows the slope gradient of the site Ponikva.

Slope aspects

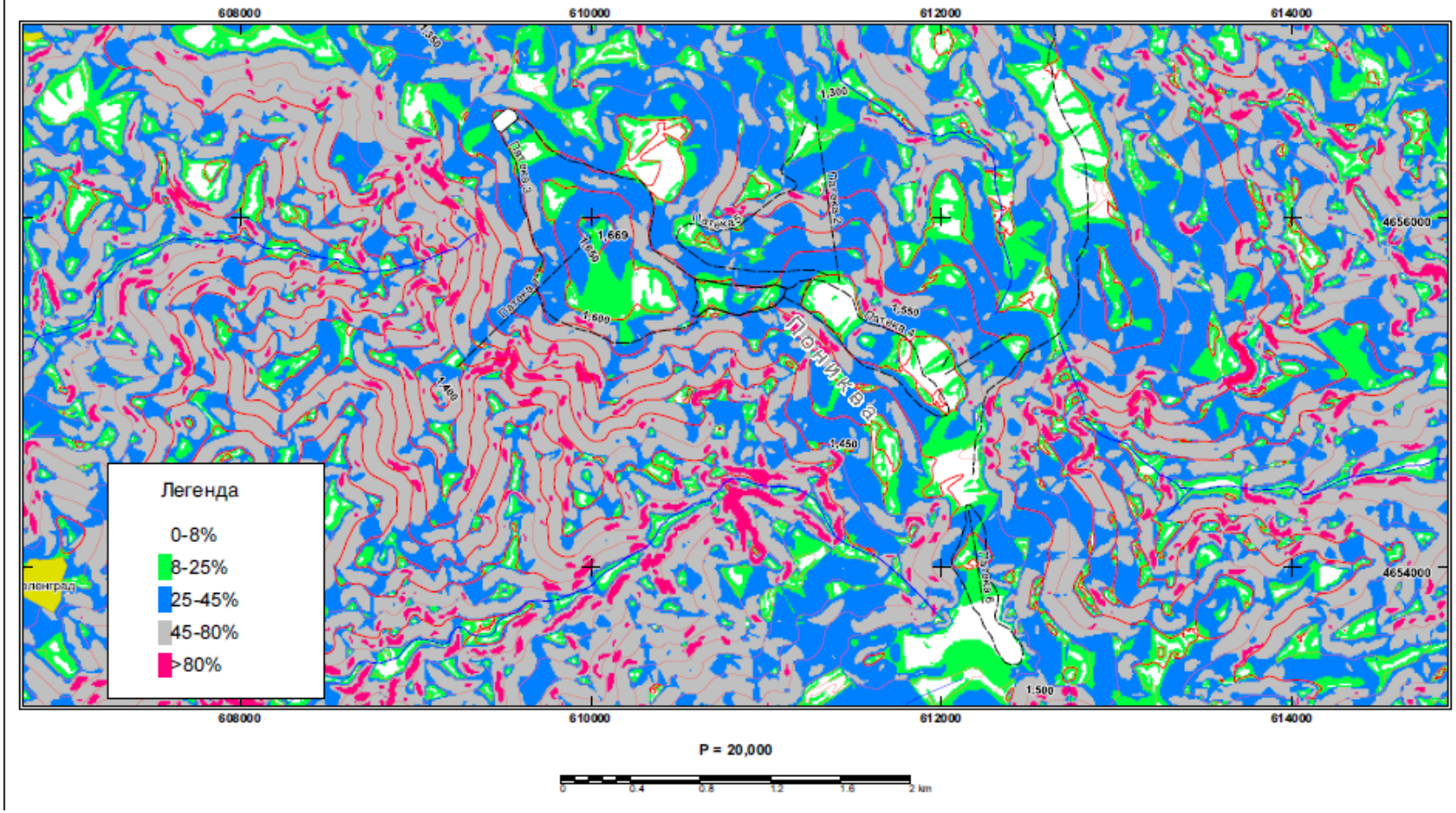
Ponikva is located on a disting range, with exposures predominantly south, sputheast and southwest, which is not good for location of ski trails, but is ideal for location of accomodation facilities and weekend houses. Part of the location has a north and north west orientation and there is located one of the ski slopes. In On the figure 3 the slope aspects of Ponikva is present.



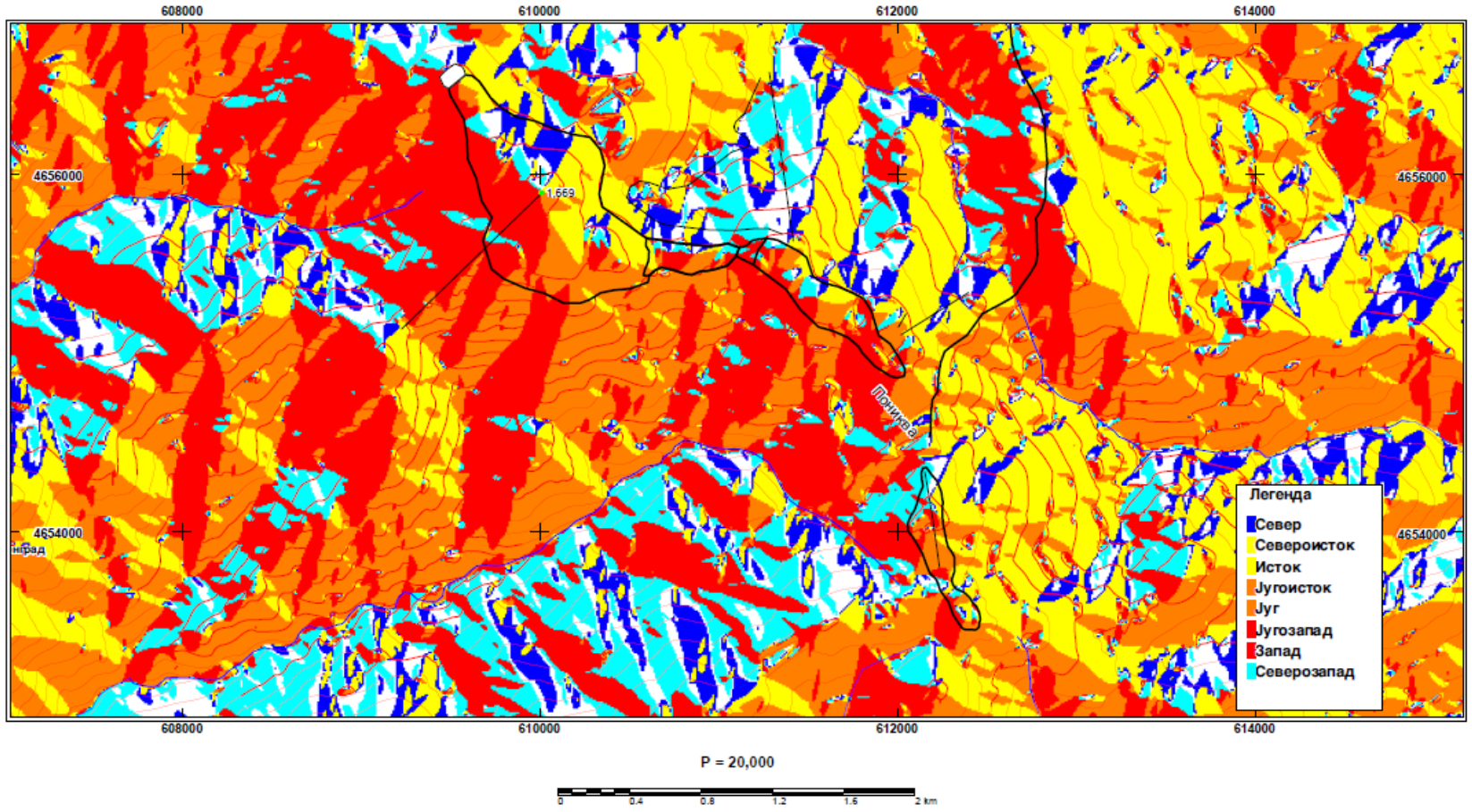
Ponikva



Picture 1. Topography Ponikva

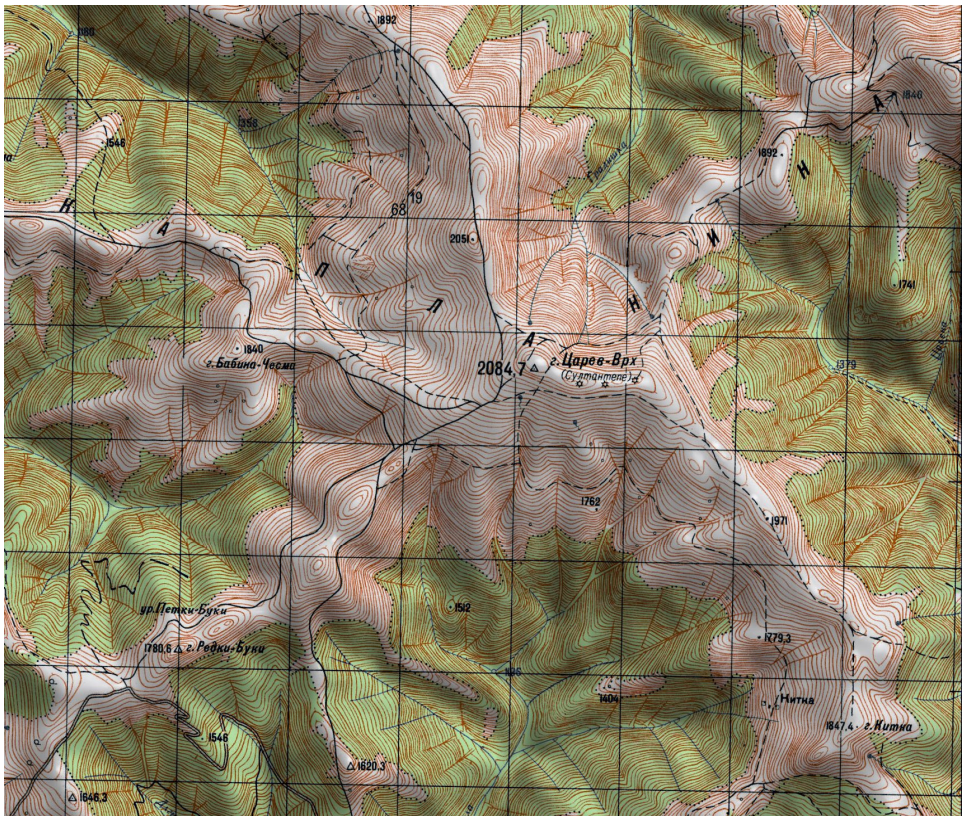


Picture 2. Slope gradient of Ponikva



Picture 3 Slope aspects

1.3.2 Carev Vrv



Carev Vrv

Topography

Carev Vrv is located on summit elevation of 2084,7 meters above sea level. Ski slopes which are identified as adequate for construction of ski trails are between 1379 meters above sea levels and goint up to 2084,7 meters above sea level.The terrain is mountainous and has all necessary elements for the development of a modern ski center. Picture no. 4 shows the topographic characteristic of Carev Vrv.

Slope gradient

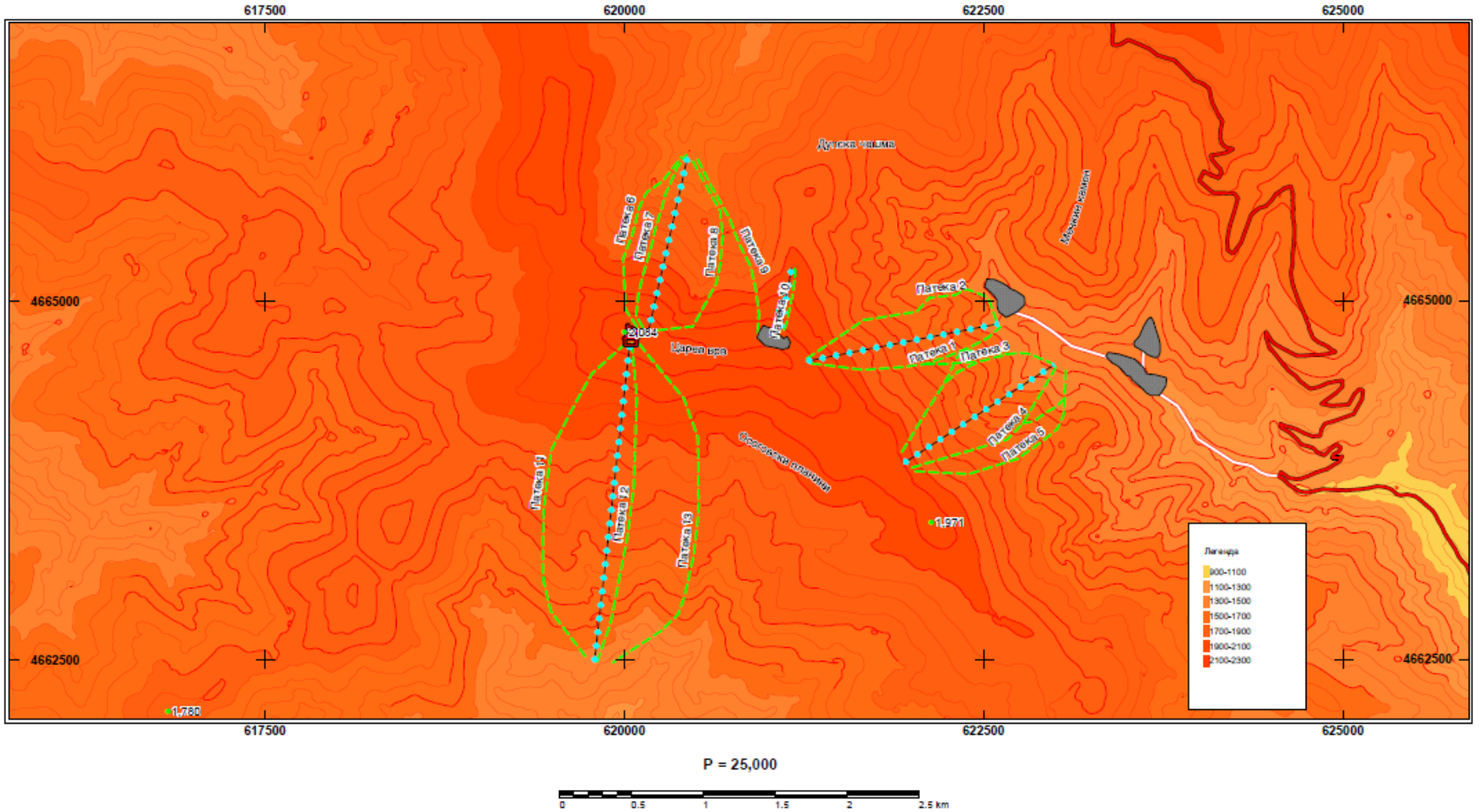
Analysis of the slope of the terrain on the location of Carev Vrv showed that the terrain is quite steep, but the highest areas of the site where certain segments of the terrain is relatively flat with an average slope that ranges up to 8%. Terrain that is suitable for

construction of ski trails is the slope that ranges up to 80%, allowing the construction of trails for all types of skiers and Border. This configuration are ideal natural conditions for development of a ski center. Certain problems appeared in identifying the possible locations of the base district, but it is resolved by locating the settlement of a few scattered locations. Parts of the ground that the slope greater than 80%, and on the terain which is near the ski slopes will need adequated avelange protection infrastructure to be provided or to take measures to reduce the risk of occurrence of avalanches, primarily through the construction of protection fences in accordance with the Guidelines for designing such measures issued by the EU (The design of avalanche protection dams), the introduction of the danger of avalanches and willfully controlled triggering of avalanches. On these grounds, they have to prohibit any kind of skiing or boarding. On the picture 5 the slope of the terrain on Carev Vrv is presented.

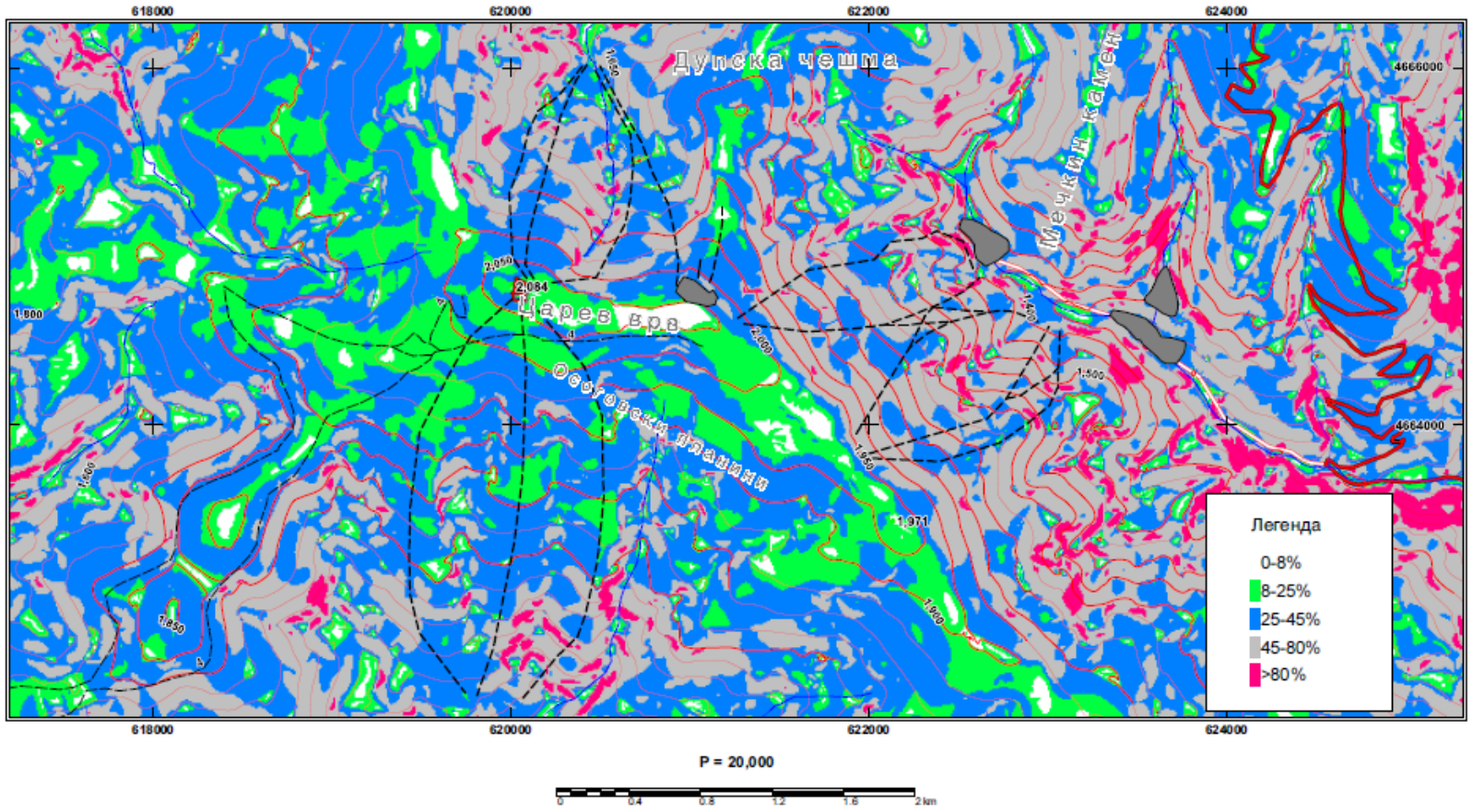
Avelange protection

Slope aspects

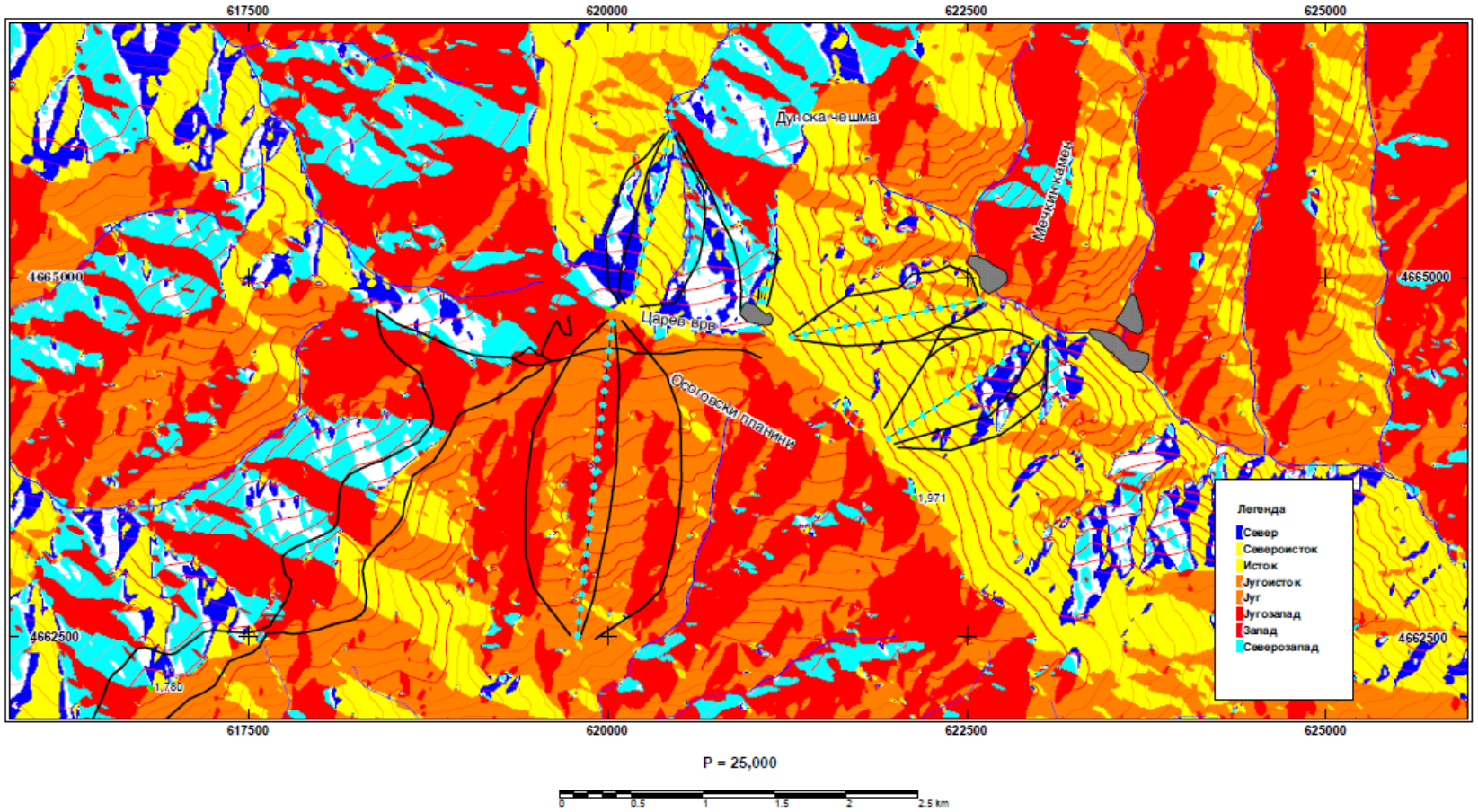
Slope aspect of the terrain is varied due to the spatial location of the site. Identified areas that are with desirable northern orientation and on these areas most of the planned ski trails are located. However in order to provide sustinable use of ideal natural conditions on the terrain with south east facing which are higher than 1300 metres above sea level, some ski trails are planned. The first phase of development of the ski center is based on the ski slopes which are located on the northern side, which will be crucial for success of this project. On picture 6 the slope aspect of terain on locality Carev Vrv are presented.



Picture 4 Topography Carev Vrv



Picture 5 Slope gradient Carev Vrv



Picture 6 Slope aspect Carev Vrv

1.3.3. Climate

Factors affecting climate, measuring stations and physical geographic characteristics of the Osogovo Region

The territory for which the climate is being defined and meteorological conditions analyzed, embraces the mountainous areas of the Osogovo Mountains massif as well as the northeastern parts of Republic of Macedonia that affect the formation of a specific type of mountainous climate, which has its own climate features. Several groups of influencing factors impact the climate formation of this area, such as: physical-geographic factors, radiation factors, circulation factors as well local factors.

The measuring observation network for defining the climate and meteorological conditions on the territory of the Osogovo Mountains, along with their parameters, have been analyzed through data received from the following main climate stations: Stip, Kriva Palanka, Berovo, Kratovo, Kocani, Kumanovo, Sveti Nikole and Delcevo, as well as from several rainfall measurement stations.

It must be noted that the spatial distribution of climate and meteorological conditions are not only determined by the size and allocation of the mountainous region and hydrographic and hydrological conditions, but also by the size of the basins and river valleys, the vegetation and pedological conditions, the influence of the general circulation of the atmosphere manifested through changes in air- mass, as well as by the impact of solar and astronomical factors.

The boundary between the modified continental and continental pluviometric regime (Ristevski P. 1986) lies on this territory, extending on the mountainous regions of the upper river courses of Pcinja and the highest parts of the Osogovo Mountains on one side, the upper courses of the Bregalnica river confluence and northeastern territory of Republic of Macedonia, on the other side, through the influence of the mountain of Kozjak and Siroka Planina that affect the differentiation of the northeastern air-masses and their modification, which in most part are rich in moisture in comparison to other types of northern and northwestern air-masses.

Aside from the eastern and northeastern influence of these mountains on the transformation of the air-masses, by the reduction of the moisture they carry with them, these mountains also have an influence on the average changes in air temperatures and

changes in other climatic conditions, on the amount of snowfall, layer of snow coverage and length of snow retention, all creating specific types of mountainous climate.

Spatial and time distribution of meteorological – climatic elements

For the purpose of defining the climate, air temperatures (with all parameters), rainfalls, snowfalls and snow coverage, along with some specific atmosphere occurrences have all been analyzed.

Within the characteristics of the thermal regime of air, apart from the average and extreme air temperature values, thermal air regime parameters have also been analyzed with the following specific values: number of ice days (minimum air temperatures Tmin < 0° C), number of extremely cold days, (maximum temperatures <-10° C), number of summer days (temperatures with a T max >=25 ° C), and number of tropical days (days with air temperatures T max>= 30° C), as well as their spatial distribution within the area that is subject to analysis. The characteristics of rainfalls, snowfall occurrences and snow coverage have also been analyzed; climate conditions have been defined, as well as the specifics of recent climate changes, according to the longest sequence of data for this region.

Air temperature

In the effort to display the thermal regime of air in the area that is under analysis, available meteorological – climatic information that can serve in determining the thermal field (by months throughout the year) have been used. Average monthly and annual air temperature values were used in the analysis, which were received from several meteorological stations located in the valleys and the mountain massifs near the area being analyzed- Stip, Kratovo, Kriva Palanka and Berovo. The information which was presented shows the average changes in temperatures that occur depending on the altitude, per months and for the entire year. The following chart provides information on the numerical data analysis by meteorological stations, during which the spatial and time characteristics of the thermal conditions of the broader area of the territory under review have been taken into account, through the average and extreme values.

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	T cp
Continental-sub-Mediterranean climatic territory													
Stip	0,7	3,5	7,5	12,5	17,3	21,1	23,4	23,0	19,2	13,4	7,4	2,4	12,6
Kocani	2,1	4,5	8,8	13,3	18,3	22,2	24,1	23,9	19,8	14,4	7,9	3,3	13,5
Sv. Nikole	1,3	3,7	7,4	11,9	17,0	21,2	23,3	23,2	18,8	12,9	6,9	2,6	12,5
Kumanovo	0,4	2,9	6,7	11,8	16,8	20,7	22,6	22,2	18,0	12,1	6,0	1,6	11,8
Warm continental climatic territory													
Delcevo	-0,5	1,3	5,0	9,8	14,6	18,3	20,3	19,8	15,5	10,0	4,7	0,9	10,0
Kratovo	0,3	2,5	6,1	10,9	15,4	18,7	21,0	21,1	17,6	12,2	6,8	2,0	11,2
K. Palanka	-0,6	1,4	5,0	9,8	14,4	17,6	19,8	19,4	15,9	10,7	5,8	1,2	10,0
Cold continental climatic territory													
Berovo	-1,2	0,3	3,5	7,9	13	16,6	18,5	17,8	13,9	8,7	3,8	0,3	8,6

Other specific parameters pertaining to the thermal air regime are given in the chart below, displayed according to climatic territory,and number of frost and ice days that characterize the thermal regime of air.

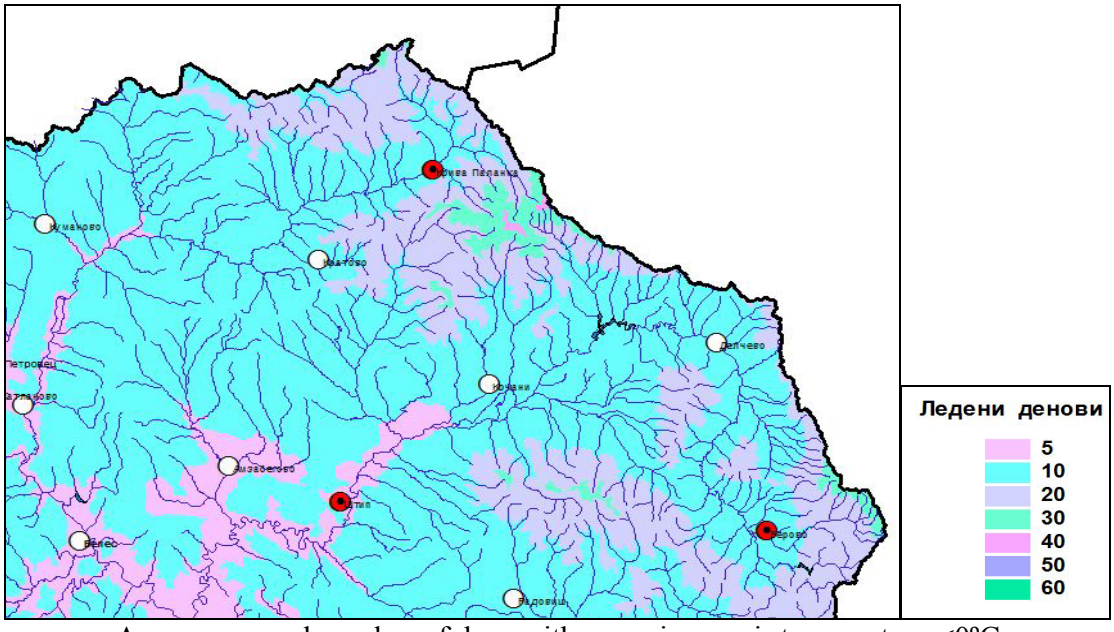
AVERAGE AND ANNUAL NUMBER OF FROST DAYS

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	сума
Continental-sub-Mediterranean climatic territory													
Stip	22	16	8	1						1	8	18	74
Kocani	23	17	9	1	.	.	.	.	.	1	9	20	80
Sv. Nikole	21	17	9	2	.	.	.	.	.	3	10	19	81
Kumanovo	22	16	10	1	.	.	.	.	.	3	10	20	82
Warm continental climatic territory													
Delcevo	25	21	15	4	.	.	.	.	.	6	14	23	108
Kratovo	24	18	10	1						1	9	21	84
K. Palanka	25	19	11	2						2	10	21	90
Cold continental climatic territory													
Berovo	27	22	18	7	.	.	.	.	1	9	16	25	125

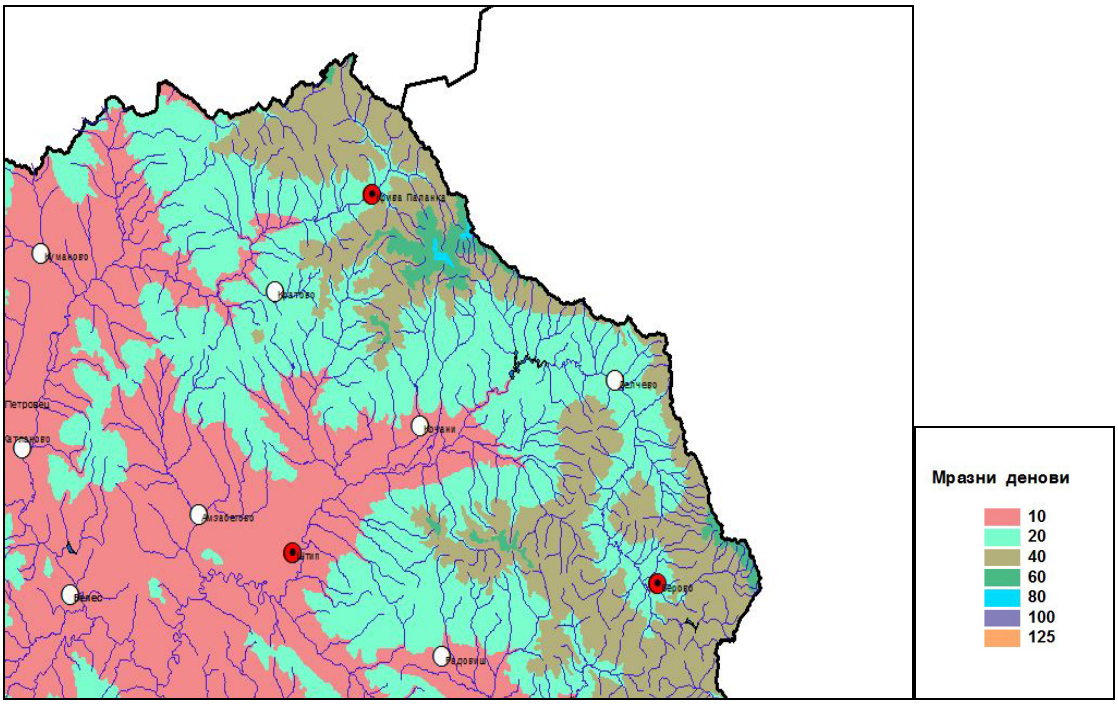
AVERAGE AND ANNUAL NUMBER OF ICE DAYS

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	сума
Continental-sub-Mediterranean climatic territory													
Stip	3	1										1	5
Kocani	3	1	.	.	.	.	.	.	.	.	.	2	6
Sv. Nikole	4	1	.	.	.	.	.	.	.	.	.	2	7
Kumanovo	3	1	.	.	.	.	.	.	.	.	.	1	5
Warm continental climatic territory													
Delcevo	6	4	1	.	.	.	.	.	.	.	.	3	14
Kratovo	3	1	1									1	6
K. Palanka	4	2										1	7
Cold continental climatic territory													
Berovo	7	4	1	.	.	.	.	.	.	.	.	4	16

The parameters of the air temperature are also given in a cartographic presentation.



Average annual number of days with a maximum air temperature <0ºC

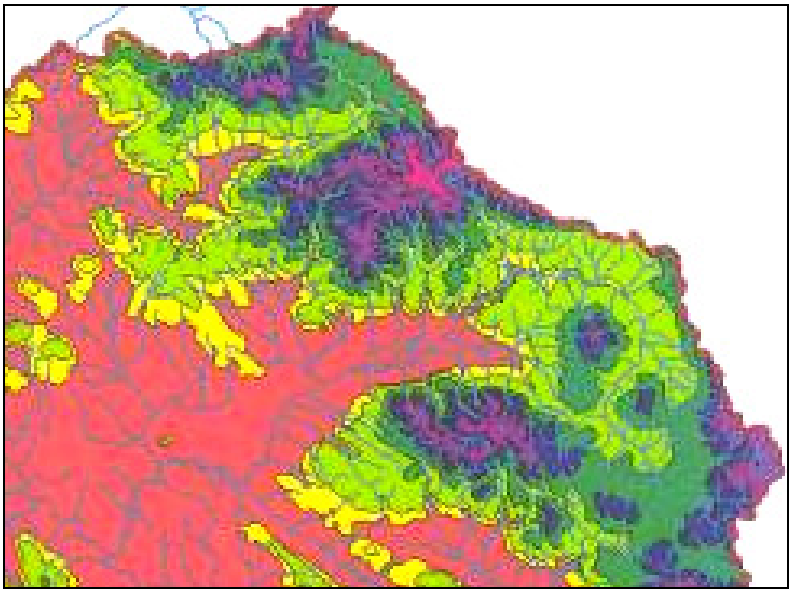


Average annual number of days with a minimum air temperature <0ºC

The analysis of the thermal regime of air was performed based on the results of the temperatures that were measured in the meteorological stations located within the region being analyzed, as well as on the overall available data for the entire territory of Republic of Macedonia, while taking into account the existing or established rules in relation to altitude and the according climate elements and climate parameters : number of ice days, extremely cold, summer and tropical days and other forms of climate parameters within the framework of the thermal regime.

The average annual temperatures in the northeastern part of the territory of Republic of Macedonia, as in the Osogovo region, ranges between 13.5 C^o in Kocani, 10.0 C^o in Kriva Palanka and Delcevo to 8,6 C^o in Berovo.

With the help of isotherms, the following annual isothermal map shows the spatial distribution of the annual air temperatures of every $2C^o$ for the territory that is being analyzed.



Spatial distribution of the types of climate on the Osogovo Mountains

Under the influence of the climatic factors that determine climate (astronomical, circulatory orographic and anthropogenic), the change in the annual air temperature, depending on the altitude, has the following temperature gradient F (x) =1440.6x+2111.8.

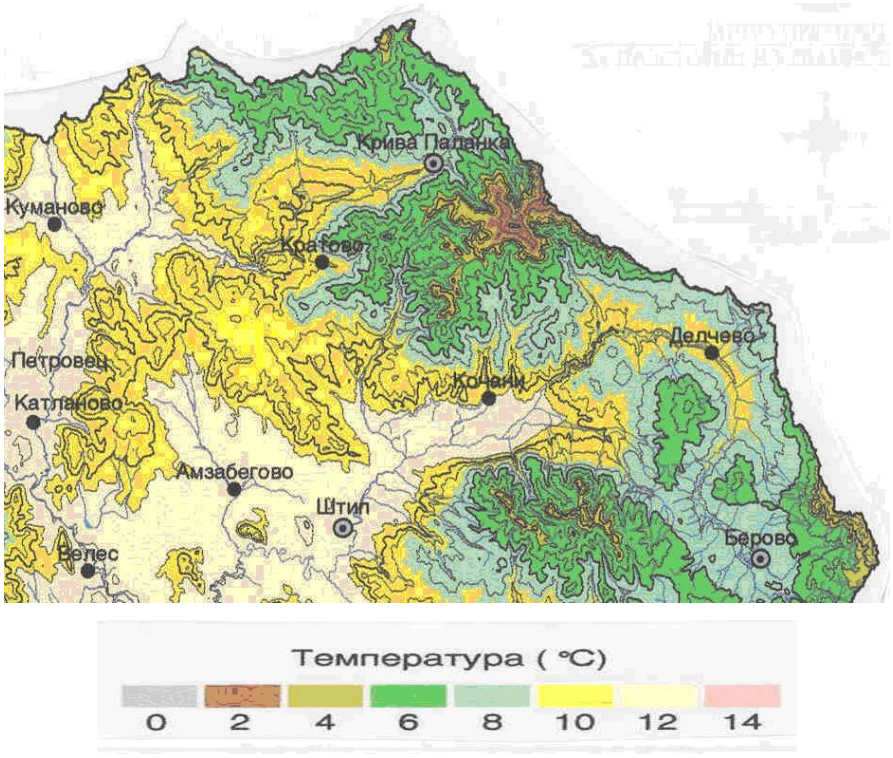
The average annual air temperature in the Osogovo Mountainous area, at an altitude of 700m, is 10^0C, while at an altitude of 1400m it is 6^0C. An isothermal map has been drawn based on the temperature gradient and functional dependence on altitude, which displays the distribution of air temperature in the area under review. The average annual air temperature, at altitudes higher than 1100 m, continues to drop, and at an altitude of 2100m it is 2^0C.

The so-called subalpine and alpine climate types that are characterized with extremely harsh climate conditions on the territory of Republic of Macedonia, are present at altitudes higher than 2000m within the above-mentioned mountains (Filipovski g. and coop. 1996).

The spatial distribution of the air temperature depends on the geographic longitudes, latitudes and altitudes. A general conclusion can be made in regards to the temperature conditions of the area being reviewed, in that this territory is characterized with moderate temperature conditions, with increased annual amplitudes of air temperature (higher than 22°C in Stip, which is a characteristic of the continental type of climate for the central area of Republic of Macedonia), with about 50 tropical days in Stip to 24 tropical days in Kratovo, as well as with a significantly larger number of ice days at higher altitudes

(between 84 in Kratovo, 90 ice days in Kriva Palanka, to 125 days in Berovo). The higher altitudes of the area reviewed are affected by much more harsh thermal conditions with significantly low January air temperatures and a lower number of tropical days.

Distribution of air temperatures depending on altitude



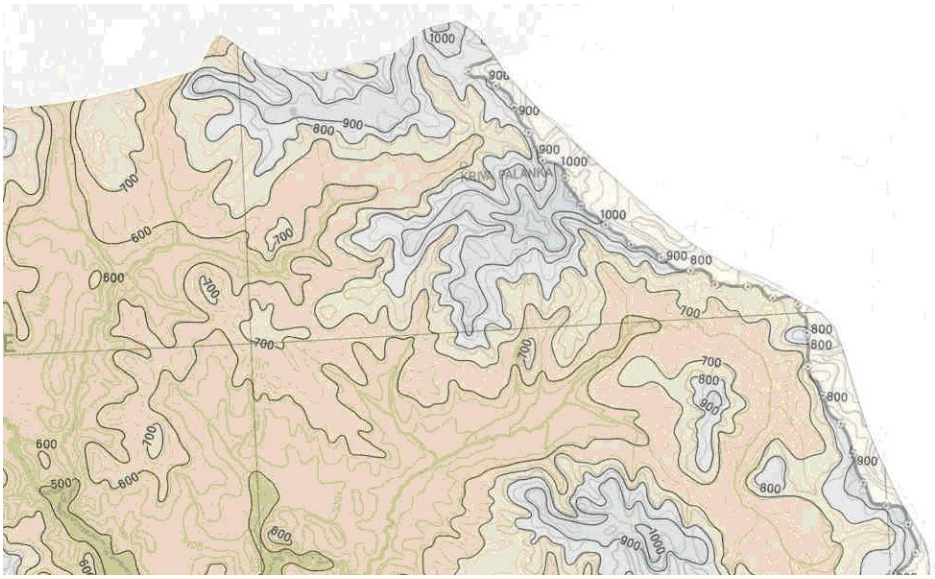
Due to the effects of altitude, the influence of the Mediterranean Sea and other local conditions, the average annual air temperature amplitude decreases with altitude. For example, at higher altitudes it is 20,8°C (in Kratovo), and 20,4°C in Kriva Palanka.

The average **January** air temperatures in the lower parts of the area being analyzed range between 2,1°C in Kocani, -0,6°C in Kriva Palanka, -0,5 °C in Delcevo to -1,2°C in Berovo.

The month of **July** in average is the warmest month within the northeastern parts of the territory of Republic of Macedonia and the Osogovo Mountains. The average monthly air temperature ranges between 23,4 °C in Stip, 21,0°C in Kratovo, to 19,8 °C in Kriva Palanka and 18,5 °C in Berovo. The monthly and annual number of ice days (number of days with a minimum air temperature lower or at 0°C) for this region is 90 days (in Kriva Palanka), 82 (in Kumanovo), 108 days in Delcevo and 125 days in Berovo.

Rainfall and pluviometric regime characteristics

Based on the results of the rainfalls measured within the meteorological stations in Republic of Macedonia (main, standard and several other rainfall measurement stations), while applying methods that are common for this type of task: examining the homogeneity of the sequences, data interpolation, reduction of sequences to the same number of years, for a thirty year period, establishment of the correlative link "annual amount of rainfalls" – "altitude", the following annual isohyetal map has been drawn.



Annual rainfalls

Within the framework of rainfall and pluviometric regime characteristics, further in the text below information is given on the average monthly and annual rainfalls based on available data, which present the conditions in the area being analyzed: annual distribution of the maximum amounts of rainfall, daily maximum in mm per months and per year, absolute maximum snow coverage in cm, average monthly and annual maximum layer of snow coverage, as well as first, median and end date of continous snow coverage.

As a rainfall and pluviometric regime characteristic, further in the text below information is given on the average values of rainfall, obtained through data of the according network of measurement stations and with the assistance of the annual isohyetal map that has been prepared.

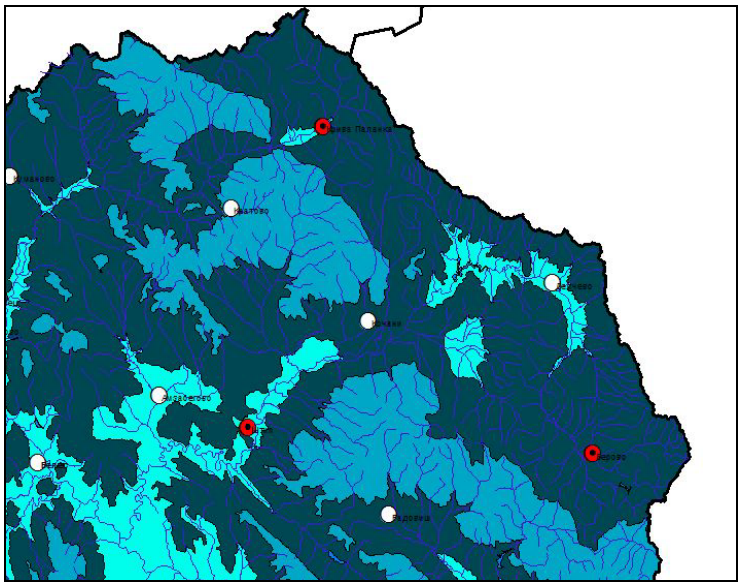
For the purpose of providing a clearer valorization, in regards to the pluviometric regime of the area being analyzed, the monthly and annual rainfalls for a thirty year period are given further below.

AVERAGE MONTHLY AND ANNUAL RAINFALLS IN MM

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	СУМА
Continental-sub-Mediterranean climatic territory													
Stip	30,0	29,0	33,1	39,9	57,6	47,3	37,5	31,7	31,6	45,5	52,2	40,3	475,6
Kocani	27,4	34,2	32,6	43,9	51,3	45,5	45,7	34,7	36,3	43,7	60,2	43,2	498,8
Sv. Nikole	22,1	27,3	31,7	44,3	47,5	42,4	31,7	27,2	37,1	46,9	47,8	37,6	443,7
Kumanovo	30,8	33,4	34,8	41,6	59,6	43,1	52,0	26,1	42,4	41,3	52,9	41,2	499,3
Warm continental climatic territory													
Delcevo	28,5	33,9	32,2	44,7	65,9	56,9	55,2	36,1	43,9	47,2	59,6	44,3	548
Kratovo	52,2	55,6	55,3	62	75,1	67,9	61,4	37,3	43,2	53,4	73,1	63,2	699,7
K. Palanka	40,1	41,5	45,4	51,7	72,7	66	56,5	47,9	45,4	43,5	63,3	50,7	624,7
Cold continental climatic territory													
Berovo	32,1	39,9	37,7	52,5	64,4	59,3	51,8	46,1	43,9	51,6	56,9	50,1	586

The average annual rainfall distribution for the territory undergoing the analysis is displayed according to the data obtained from the nearest meteorological stations.

The annual rainfalls range between 600 to 900mm in the period that was reviewed.



Average monthly rainfall for January

Highest rainfalls are recorded in the mountainous regions of the western parts of the Osogovo Mountains, where adiabatic processes of the winds (rich in moisture of those blown from the south) and air masses take place. This territory has a modified continental and a purely continental pluviometric regime.

According to the average annual isohyetal map, the largest territory of the area that was analyzed has rainfalls in the amount of 500-600mm. The higher mountainous regions

receive an annual rainfall starting from 700mm, 800mm to 900mm, while at altitudes of around 1800m the annual rainfalls begin to decrease.

This conclusion is based on the information that was received from the greater part of the territory of Republic of Macedonia, and can be explained on the basis of the significantly low temperatures at higher altitudes, and on the nature of the rainfalls, which at higher altitudes are usually more drier with snowfalls in considerably low air temperature conditions.

The average annual rainfalls for the past several years in the area under review varies between 475,6 mm in Stip, 498.8mm in Kocani, 624.7mm in Kriva Palanka to 699.7mm in Kratovo (also according to data received from rainfall measurement stations).

The results from the existing measurement locations refer to the measurement stations that are located in the lowest parts of the analyzed area. The highest quantities of rainfalls are recorded in the mountainous regions of the Osogovo Mountains and the southern Serbian mountains, while lower annual values are observed in the lower parts of the respected area, ranging from 500 to 600mm. According to the results from the maximum values that have been measured in the area under review, the following types of pluviometric regimes are present throughout the entire year: continental pluviometric regime modified continental pluviometric regime and purely continental pluviometric regime.

The following table shows the highest (daily) quantities of rainfall, with the date of their occurrence in the period between 1971 – 2000, obtained from 8 different stations within the territory under review, per months and throughout the entire year.

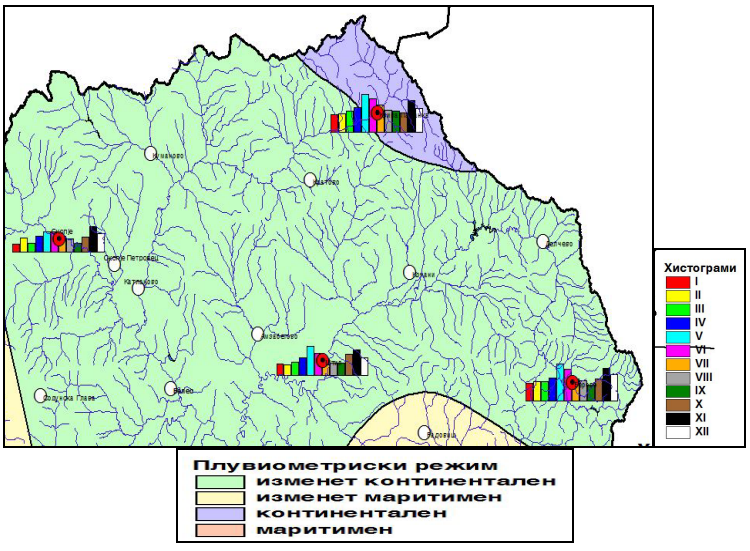
Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	макс
Continental-sub-Mediterranean climatic territory													
Stip	41,7	34,0	40,6	40,6	42,6	59,5	52,4	33,6	48,2	42,6	61,0	23,8	61,0
Kocani	26,2	30,8	25,8	44,0	35,2	82,0	39,5	44,1	41,0	38,5	53,5	34,4	82,0
Sv. Nikole	21,0	25,5	45,0	35,0	68,0	40,0	32,0	35,0	47,5	64,0	69,8	34,0	69,8
Kumanovo	34,0	36,2	33,2	42,8	70,4	34,0	88,2	27,5	48,8	46,4	102,0	42,4	102,0
Warm continental climatic territory													
Delcevo	35,4	32,0	29,0	27,8	48,9	49,6	66,8	44,5	33,0	46,0	95,0	36,2	95,0
Kratovo	51,8	59,4	54,5	52,8	50,2	58,8	69,0	49,0	50,7	67,3	54,3	54,0	69,0
K. Palanka	37,8	49,5	30,4	40,7	39,0	45,2	55,2	50,1	54,0	44,8	62,5	29,8	62,5
Cold continental climatic territory													
Berovo	25,5	42,3	29,5	35	51,8	62,9	57,2	50,1	51,6	47,8	57,1	30,4	62,4

Highest values, with daily rainfall maximums by months for the period of one year, are recorded within the meteorological station of Kumanovo in the amount of 102.0mm, observed for the month of November. Furthermore, a large quantity of rainfall is recorded in the meteorological station of Delcevo (also in the month of November) with a value of 95.0mm measured during a 24 hour time period.

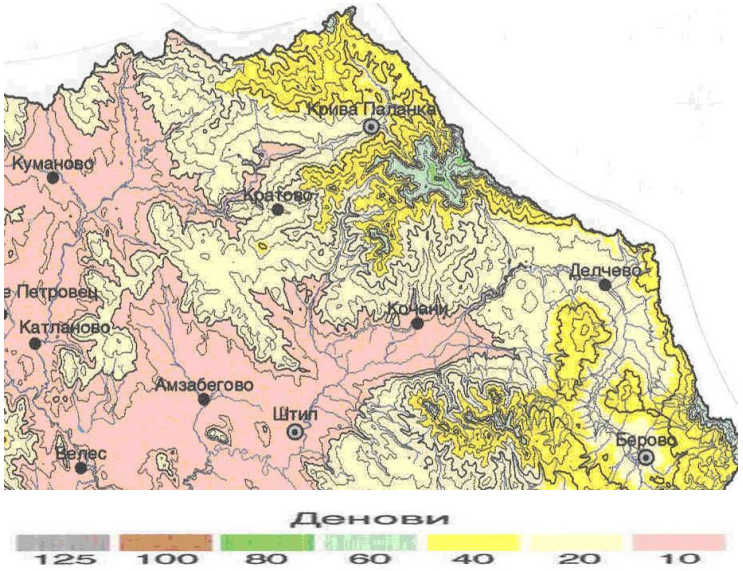
The pluviometric regime (pluviometric regime map) has been defined based on the existing isohyetal maps that show the annual quantities of rainfall, as well as the annual distribution of rainfalls according to months (for the entire year),

Snow and snow coverage characteristics

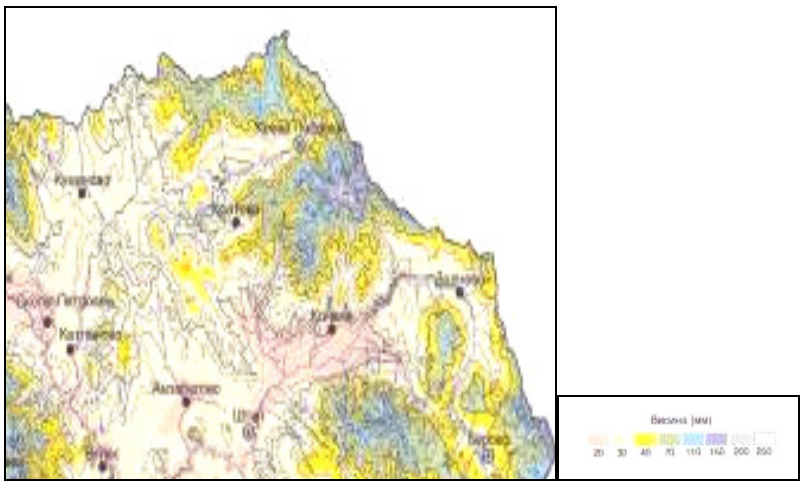
The absolute maximum depth of snow cover in the reviewed area ranges between 33cm in Kocani, 55cm in Kratovo and Kriva Palanka, to 80cm in Berovo. For this purpose, a map is attached which provides information on the situation of these types of climatic parameters, for the area that is analyzed. According to the enclosed map, in the lowest areas of the northeastern part of Republic of Macedonia and the Osogovo Region, there are in average 40 days with a maximum depth of 1cm, whereas in the higher mountainous regions of the Osogovo Mountains this number extends to 150 to 180 days. On the other hand, the average annual number of days with a depth of snow cover of over 10cm (in the lower parts) ranges from 10 to 20 days, while in the highest parts of the mountainous area of the Osogovo Mountains the number is between 120 to 150 days.



The average number of days with a maximum depth of over 30cm and 50cm is between 5 to 0 (more specifically it is 1), while in the higher mountainous regions this number ranges from 70 to 100 days, in particular between 40 to 70 for over 50cm of snow cover.



The average maximum depth of snow cover is displayed on the following climate map that has been prepared on the basis of the data received from the following measurement stations: Kriva Palanka, Kumanovo, Kratovo and Katlanovo. The average maximum depth of snow cover within the lower parts of the Osogovo Mountains amounts to 49.8cm in Kumanovo and 60.1cm in Kratovo, while in the higher parts (mountainous areas of the Osogovo Mountains) it extends to 70 and 110cm.



Snow coverage was observed in the months of November, December, January, February and March with the following specific depths of snow cover.

ABSOLUTE MAXIMUM DEPTH OF SNOW COVER IN CM

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	макс
Continental-sub-Mediterranean climatic territory													
Stip	40	53	20							6	20	51	53
Kocani	33	31	14	3							20	26	33
Sv. Nikole	35	35	9								20	47	47
Kumanovo	50	70	38								20	42	70
Warm continental climatic territory													
Delcevo	46	33	21	5						1	20	29	46
Kratovo	48	34	25	3							52	55	55
K. Palanka	29	55	21	8						7	18	27	55
Cold continental climatic territory													
Berovo	49	61	29	14	29	28				25	80	43	80

AVERAGE MONTHLY AND ANNUAL MAXIMUM DEPTH OF SNOW COVER IN CM

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	сред
Continental-sub-Mediterranean climatic territory													
Stip	11,3	14,2	5,9							6,0	8,1	13,0	9,7
Kocani	8,7	11,6	6,2								11,7	8,8	9,4
Sv. Nikole													
Kumanovo	12,6	10,6	9,2								5,8	11,6	9,9
Warm continental climatic territory													
Delcevo	12,2	10,2	6,2							1,0	7,7	9,7	7,8
Kratovo	13,0	13,4	7,2								10,5	16,0	60,1
K. Palanka	12,9	12,0	6,3							4,5	8,3	11,4	55,4
Cold continental climatic territory													
Berovo	15,8	13,8	8,5							8,3	10,6	16,5	12,2

Median end date of continuous snow cover

The following Tables provide the median end date (spring) of continous snow cover in northeastern parts of Republic of Macedonia, as well as in the reviewed area (region). The median end date of snow coverage in Kriva Palanka was April 4-th. The first date of snow coverage is February 28-Th, and the latest being May 3-rd. The median end date of snow coverage in Kratovo was March 27-th, while the extreme date of the absolute first day is February the 14-th, and the absolute last date was April 8-th. The average length of snow coverage in Kriva Palanka is 138 days, while in Berovo it is 137 days.

FIRST, MEDIAN AND LAST DATES OF SNOW COVER IN CM AND SNOW COVER DURATION

Measurement stations	F. date	Day of year	First date	Last dateД	Median date.	Day of year	First date	Last date	Per..
Continental-sub-Mediterranean climatic territory									
Stip	25.XI	325	28.X	30.XII	8.III	67	12.I	18.IV	95
Kocani	24.IX	267	6.X	27.XII	9.III	68	7.I	8.IV	50
Sv. Nikole									
Kumanovo									
Warm continental climatic territory									
Delcevo									
Kratovo	17.XI	321	6.X	28.XII	27.III	86	14.II	8.IV	115
K. Palanka	17.XI	321	17.X	25.XII	4.IV	94	28.II	3.V	138
Cold continental climatic territory									
Berovo	17.XI	321	17.X	25.XII	4.IV	94	15.II	3.V	137

Moisture of air and fog occurrences

Based on the multi-year values of the relative air humidity, expressed in % and presented in the following Table, it is obvious that Stip has the lowest relative humidity of 67%, while Delcevo and Berovo share the highest value of 75% relative humidity.

AVERAGE MONTHLY AND ANNUAL RELATIVE AIR HUMIDITY IN %

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Rvcr
Continental-sub-Mediterranean climatic territory													
Stip	80	75	68	63	63	59	53	54	59	68	78	82	67
Kocani	79	77	72	67	66	63	60	62	67	72	78	81	70
Sv. Nikole	84	81	75	70	70	66	61	62	67	74	81	84	73
Kumanovo	85	83	75	67	65	64	60	60	67	74	81	85	72
Warm continental climatic territory													
Delcevo	81	80	76	71	72	71	67	68	72	76	80	82	75
Kratovo	83	79	76	68	70	68	64	63	66	72	78	83	73
K. Palanka	76	73	68	63	66	65	61	60	64	69	75	78	68
Cold continental climatic territory													
Berovo	81	80	76	71	72	71	66	68	72	76	80	83	75

The lowest values of relative air humidity have occurred during the summer months of July and August, with a relative air humidity of 53 percent in Stip in the month of July, and 68% in Delcevo and Berovo in August. Maximum values have been recorded during

the winter months of December, January and February and range from 78% in Kriva Palanka in December to 85% in Kumanovo in January.

The occurrence of fog and its intensity varies throughout the different seasons and months, as well as throughout the year. The winter months of December and January have the greatest number of days with fog, whereas in some areas there is no fog at all during the summer period.

MONTHLY AND ANNUAL NUMBER OF DAYS WITH FOG

Measurement stations	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	SUMA
Continental-sub-Mediterranean climatic territory													
Stip	3	1	0	0	0	0	0	0	0	1	2	3	10
Kocani	2	0	0	0	0	0	0	0	0	0	1	2	5
Sv. Nikole	4	1	0	0	0	0	0	0	0	1	3	4	13
Kumanovo	6	2	0	0	0	0	0	0	0	2	3	6	19
Warm continental climatic territory													
Delcevo	3	1	2	0	1	0	0	0	2	3	4	4	20
Kratovo	6	3	3	1	1	1	1	0	1	3	6	7	33
K. Palanka	3	2	1	0	0	0	0	0	0	1	3	4	14
Cold continental climatic territory													
Berovo	1	1	0	0	0	0	0	0	0	1	2	2	7

Climate of the Osogovo Mountain region

The climate in this region is quite specific due to the influence of the altitude, orographic, pedologic and biogeographic factors, considered as constant factors, and also due to the influence of the variable climate factors that are manifested through the influence of the transportation and exchange of air masses, as well as the frequency of atmospheric frontal systems that affect the occurrence, intensity and type of rainfall, the changes in the thermal and hygric conditions, as well as the electric field.

Resulting from the specific physical-geographic and orographic conditions dominating in the mountainous regions of the northeastern areas of the territory of Republic of Macedonia and the Osogovo region, the following types of climate are present across the area (according to the change in the meteorological–climatic elements depending on altitude, as well as the change in the meteorological–climatic values depending on geographic longitude and latitude (Filipovski G. 1996).

1. Continental–sub-Mediterranean climate zone (stretching to an altitude of 600m.),
2. Warm continental climate zone (stretching at an altitude of 600m to 900m)
3. Cold continental climate zone (stretching at an altitude of 900m to 1100m)
4. Continental mountain climate zone (stretching at an altitude of 1100m to 1300m)
5. Continental mountain climate zone (stretching at an altitude of 1300m to 1650m)
6. Subalpine climate zone (stretching at an altitude of 1650m to 2250m).
7. Alpine climate zone (altitude of above 2250m)

The severity and range of the above-mentioned climate zones (territories) is not evenly spread over the area, in regards to the altitude. It differs depending on the different orientations of the mountainous region, on the prevailing currents, sun exposure, altitude and other local factors.

The Osogovo Mountain area is characterized by specific climate and mountainous conditions that result from the influence of the altitude and atmospheric circulation systems, in particular, air masses. The boundary between the continental pluviometric regime and modified continental pluviometric regime lies within the Osogovo Mountains area. This type of pluviometric regime distribution affects the environmental conditions, the hydrological cycle, the surface and underground waters, the grass communities, the pedogenetic processes and the overall conditions of the mountainous region of the Osogovo Mountains.

Conclusion

The climate conditions have been analyzed based on results published in studies, papers and elaborations made through a textual interpretation of the results. Rainfall and pluviometric regime characteristics have been analyzed and elaborated, also the air temperature characteristics, relative humidity and fog occurrences. In general, it can be concluded that the respective locations do have the appropriate conditions of snowfall and snowfall retention that enable the development of winter sports.

1.4 **SWOT Analyze**

SWOT analysis provides real perception of the developmental potential of Osogovo mountains, including the locality of Ponikva. Preparing of concept for development of tourism in one locality, is not possible without analysis of strengths and weaknesses, opportunities and risks. This analysis is prepared taken in consideration the influences of endogenous and exogenous factors in the field of tourism. SWOT analysis is partially the result of primary qualitative analysis, in which with its suggestions was attended by representatives from the existing tourist centers, but also SWOT analysis is result of the basic data obtained in direct talks with representatives of institutions at national and local level who are responsible for the development of tourism, then representatives of tourist agencies, experts and so on. Beside of primary data, the analysis includes secondary data obtained from the strategic documents of municipalities gravitate towards Osogovo Mountains, and numerous literature in the field of tourism.

With the aim to prepare more detailed analysis, SWOT analysis is divided into different thematic sections. Regarding the analysis of internal strengths and weaknesses, SWOT analysis is divided into: natural resources, macro environment, social and economic profile, infrastructure (general, transport and tourism), tourist offer development and marketing initiatives. Regarding the analysis of opportunities and risks SWOT analysis is divided into: trends in tourism, competition, legal and political environment, economic environment and financial resources.

Strengths
Natural resources and attractions Uncontaminated and preserved nature Water resources Climatic conditions allow the development of year-round tourism Landscapes Indigenous cultural values Archaeological sites Monasteries Spatial opportunities for integrated tourism development Good geographical position

Macro environment, social and economic profile

- Awareness of the local population about the prospects for tourism development
- Local government has recognized tourism as an important factor of sustainable development in the region
- Hospitality and kindness of the local population
- Potential labor power
- High expectations from tourism
- Many residents in the vicinity of mountains Osogovo
- Willingness of local authorities to cooperate and develop tourist destination Osogovski Mountains

Infrastructure

- Near the Skopje Airport
- Well-developed road network
- Near the railway station in Stip and Kocani
- Small Airport Ponikva
- Mountain trails
- Bicycle trails
- Accommodation facilities Ponikva

Development initiatives and marketing

- Name Osogovo mountains is known regionally
- Formed a cluster of tourism in the region
- Projects in tourism is identified as one of the priorities in the region
- Interest of the local population in tourism projects
- Local authorities are directly involved in tourism development
- There are private initiatives for development of specific tourism products

Tourist offer

- Basic accommodation and catering facilities on Ponikva
- Winter tourism Ponikva
- Somewhat famous tourist center Ponikva
- Tourist information centers

Weakness

Natural resources and attractions

- Undeveloped and relatively bed behavior to the natural resources
- Insufficient protection of natural environment
- Improper valuation of natural resources for tourism purposes
- Occurrence of unlawful construction in non-urbanized areas
- Occurrence of illegal dumps in certain locations

Macro environment, social and economic profile

- Uneven economic development
- Bad economic situation in the region
- Outflow of labor force in the cities
- Poor demographic structure
- High degree of non employment
- Low level of local tourism consumption
- Lack of international tourism experience
- Lack of trained staff in tourism
- Insufficient knowledge of foreign languages among staff in tourism
- No recognition of the Osogovo as a tourist destination of national and international level
- Poor organization of the tourism industry

Infrastructure

- Poor condition of road network
- Poor condition of railway infrastructure
- Poor transport offer, especially in rail transport
- Poor road connectivity of Osogovieto Ponikva and urban centers
- Unmarked and unprepared bicycle and hiking trails
- Insufficient number of accommodation facilities
- Insufficient ski infrastructure and ski paths
- Lack of infrastructure for other winter sports
- Lack of systems for snowing
- Lack of infrastructure for alternative forms of tourism (sports, adrenaline, etc..)
- Lack of supporting machinery and equipment for skiing
- Small accommodation capacity on Ponikva
- Lack and devastation of traffic and tourist signs
- Inadequate services from local transporters
- Lack of basic sanitation infrastructure in tourist sites
- Lack of shops, restaurants and other objects of Ponikva
- Lack of sports facilities Ponikva (playgrounds, theaters, pools, etc.).
- Insufficient number of parking places
- Unprotected and unaffected tourist sites

Development initiatives and marketing

Insufficient tourist promotional material
Lack of integrated information portal for Osogovo mountains
Untrained staff for marketing and promotion
Weak promotion of tourist potentials
Lack of innovation in marketing
Lack of public-private investment in tourism or insufficient cooperation of public and private sector in tourism
Orientation towards to the domestic market
Lack of a regional system of managing tourism
Small domestic tourism market
Small funds available for marketing
Marketing undefined tourist promotional material

Tourist offer

Modest and inadequate tourist offer
Lack of appropriate tourism programs
A small number of organized events
Lack of thematic tourist tours
Weak development of winter tourism on Ponikva
Lack of services on tourism locations
Poor maintenance of accommodation
Low level of service in some of accommodation and catering facilities
Poorly developed additional offer trade
Poorly defined tourism products

Opportunities

Trends in tourism

Growing demand of mountainous tourism
Demand for new destinations
Shorter, but more frequent trips and vacations
Trends towards alternative forms of tourism
Growth of the tourism market in Southeast Europe
Using the Internet to organize trips
Simplified transport

Competition

Cooperation with national and regional competition aimed at forming international tourist destinations and offers
Learning from the experience of existing centers
Application of international standards in development planning

Legal, Political and Economic Environment

Tourism development is a strategic commitment of the state
Increased legal and political stability
Small, but continued economic growth
Strengthening and modernization of the institutional systems of local and regional level
Changes in business environment-development
Structuring the tourist offer
Integral development of the tourism offer
Development of summer tourism offer
Development of destination tourism organization
Market definition of Osogovo Mountains
Connecting with International Tourism corporations and hotel chains
The combination of mountain and lake tourism
Price competitiveness of the tourism offer
Greater economic power of European Market
Interest of the European market for interesting, still undiscovered countries
Increased mobility of tourists and willingness to detect unknown destinations
Development and marketing of brand

Financial sources

Public private partnership
IPA funds
Private investment
Bilateral donor organizations

Risks

Trends in tourism

Increased expectations of tourists in terms of quality of service
Clear differentiation of tourist destinations
Constant innovation of tourism products
Tendency to the destinations that are easily and quickly accessible
Increasingly demand of quick and high quality rail transport

Competition

Existing developed and positioned tourist centers, especially in neighboring countries
Orientation of the domestic market to existing ski center in Macedonia
Flexibility of the competition in terms of pricing

Legal, Political and Economic Environment

Gray economy in tourism
Low economic power of the population
Requires large investments
Direction of the state towards the development of already promoted tourist centers
Unsolved Property Administration
Political disputes in the Balkans
Lack of integration in international tourism organizations

Financial sources

Lack of available financial resources
Misunderstanding the concept of Public Private Partnership
Small capacity utilization of possible financial sources
High interest rates and short terms for loan

Elaboration of results

Results of the SWOT analysis in terms of the identified elements, suggest several conclusions. In the terms of the internal strengths of the evaluated destination, we can conclude that they are concentrated on the values of natural resources, while weakness are mostly concentrated on the lack of commitment to the protection nature and lack of adequate tourist offer and the lack of an integrated approach to the organization and management of tourism. However if we compare the strong internal elements and external opportunities and risks, we can conclude that Osogovo Mountains as a tourist destination has many positive balance, especially in recent years the general condition on the Balkan in terms of safety and reliability is constantly improving. There is no doubt that there are greatest potentials for development of Osogovo Mountains as a tourist destination, the natural resources available and the overall development of tourism should be based on sustainable utilization of these resources. These natural resources have not been adequately evaluated in terms of tourism, neither significantly used. We should not forget the commitment of the state of encouraging the development of tourism, what happens in the last 3 -4 years and the realization of several major investments in tourism.

1.5 Market assessment

1.5.1 International market

In most European countries, skiing is considered to be one of the most popular recreational sports, especially during the winter season. Alpine skiing has a long tradition in the Region of the Alps that stretches over Austria, Switzerland, Italy, Germany, Slovenia and France. Hence, the enormous interest in skiing in these countries.

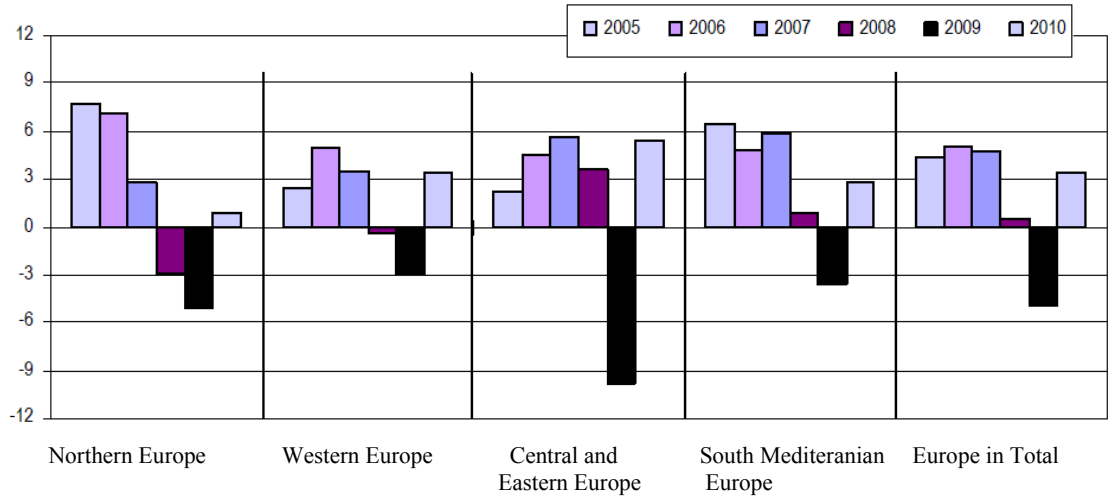
During the past several decades, skiing has become quite popular in many other European countries as well, although the geographic and climatic conditions are not so favorable for skiing in these countries. In most part, the increased numbers of cable car systems and ski lifts are to account for the increased popularity of skiing, as well as the new skiing techniques (carving) that are much easier to learn. Each year there is an increase in the number of people visiting the mountains.

Tourism as a phenomenon, took on global proportions during the XX Century, and has become even more emphasized during the XXI Century. Almost all countries and regions throughout the world, whether at small or large-scale proportions, are putting efforts into developing their tourism. For many countries and regions tourism has become one of the leading business activities, which is of special significance from a strategic perspective, especially in regards to employment and the effects it has on the balance of payments, and many other direct and indirect effects it has over the economy of a particular country.

Tourism represents one of the key sectors in European economy. It involves a large number of various products and destinations and includes numerous stakeholders. Tourism in EU generates over 5% of the EU GDP, including more than 1.8 million companies. The number of employments in tourism is approximately 9.7 million, comprising 5.2% of the total number of employments. Numbers would be even higher if the sectors that are indirectly included in tourism were also to be taken into consideration. Estimations on the total contribution of tourism in the creation of the gross domestic product (GDP) are that tourism generates more than 10% of EU GDP and provides nearly 12% of employments.

Tourism has reached dramatic changes in the past several years, mainly due to the turbulences in the world economy. After the record highs it achieved in 2008, tourism faced a dramatic drop in 2009. The following chart presents the increase in the number of tourists.

Annual increase in the number of tourist[18] in Europe[19]



Tourism began to slowly rise in 2010, especially in Central and Eastern Europe. The forecasts of the World Tourism Organization for 2020 are that the number of tourist visits in Europe will amount to 717 million, or the average annual rise will be 3.0%. At the same time, the forecasts for the annual rise in Southeast Europe are 5.3%.

From the perspective of the potential markets and based on the available information from the European Travel Commission (ETC)[20] and the Austrian National Tourist Office[21], a conclusion can be made that the market in Southeast European will experience an enormous development. For instance, in the past 10 years the number of tourists from Southeast Europe has increased by 2.6 times and currently amounts to 4 million on an annual basis. The participation of tourists from Southeast Europe in the total tourism of Europe is approximately 5,3% of the total number. In some regions of Austria and Germany, where a greater number of ski centers are actually located, the participation of tourist coming from Southeast Europe amounts to 9%.

Although tourism has had major changes in the past 3 years, still, preliminary indicators for tourism in Europe that have been published by the ETC, confirm the previously announced multi-year information on the increase in the number of tourists from Southeast Europe.

[18] Source: UNWTO
[19] The figures for 2010are estimations
[20] European Travel Commission
[21] Austrian National Tourist Office & the Institute for Tourism and Leisure Studies (University of Vienna)

Even though tourism greatly depends on the globalization process and the economy, it can still be concluded that there is a great demand from the markets in Southeast Europe, and these markets are growing faster than the average growth of other European markets.

It is obvious that tourists from Southeast Europe travel much more often to Western Europe, rather than within the region itself. This is mainly due to poverty, causing a lack of inadequate offers to be found in the region. The level of tourism development in Southeast Europe is way behind the level of development of Western Europe. This especially refers to the so-called winter tourism, in particular, ski tourism.

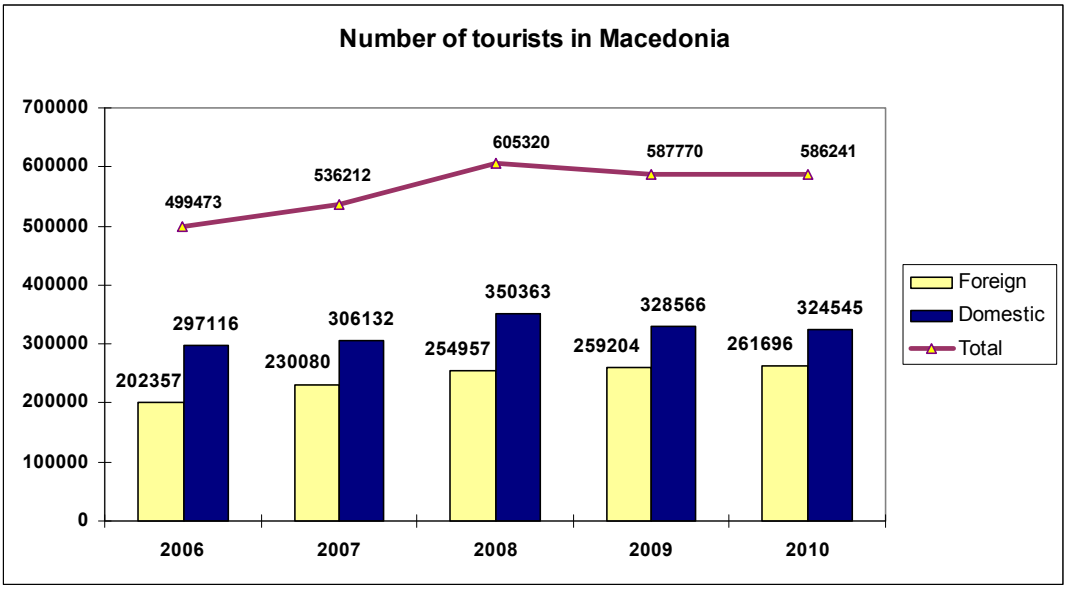
From the aspect of available ski offers, other offers and prices of daily ski passes, which are all presented in the further text of this Study, the comparative analysis performed on more than 50 ski centers in Europe shows that there are very few ski centers in Southeast Europe that have actually reached the development level of the highly developed ski centers in Western Europe. It should be noted that if there where appropriate ski centers in Southeast Europe, a large portion of the tourists from Southeast Europe would reorient themselves to these centers.

1.5.2 Market in Macedonia

Tourism in Macedonia and East region

According to the statistics the number of tourists[22] in the period from 2006 to 2010, at the national level in Macedonia has increased by 17.4%. The following chart shows the total number of tourists in Macedonia, and the number of foreign and domestic tourists for the period from 2006 to 2010.

[22] Source: State Statistical Office, Tourism in the Republic of Macedonia 2006 - 2010

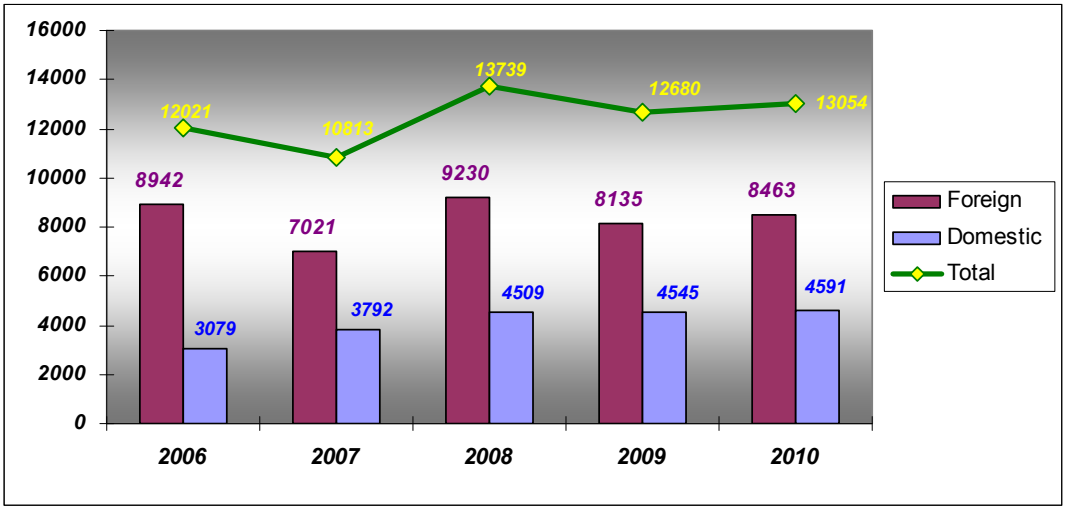


Graph shows that the total number of tourists in the last three years, slightly have been decreasing, due to the number of domestic tourists that has this trend, while the number of foreign tourists is continuously growing. The following table provides the percentages of increase/decrease in the number of tourists compared to the previous year.

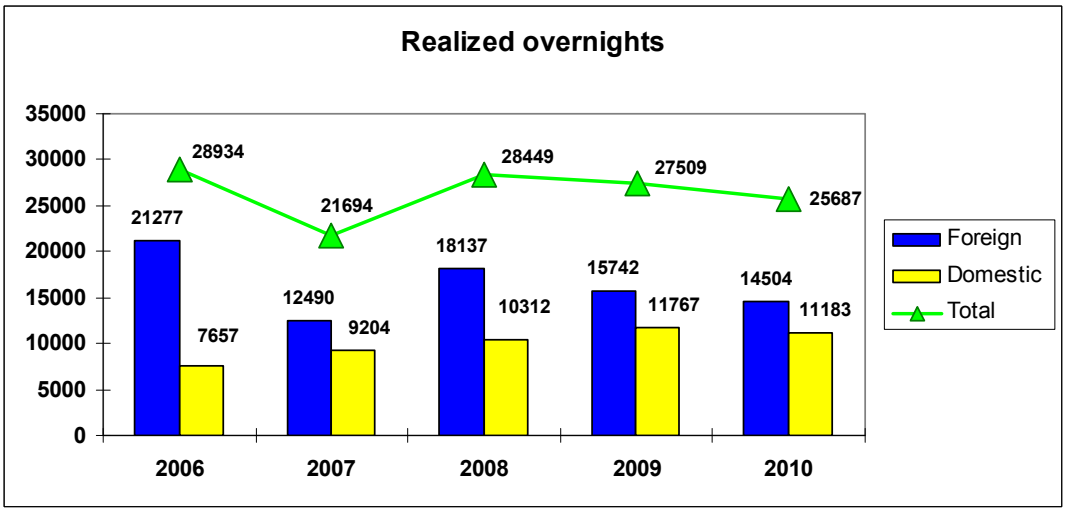
Toursts/year	2007	2008	2009	2010
Foreign	13,7%	10,8%	1,7%	1,0%
Domestic	3,0%	14,4%	-6,2%	-1,2%
Total	7,4%	12,9%	-2,9%	-0,3%

The number of tourists in the Eastern Region compared to 2006 is increased for 50%, but in the last 3 years the number of tourists is on the same level and an average is 13.000 annually. During this period, the number of domestic tourists has decreased and the number of foreign tourists has increased for 50% compared to 2006. In the Eastern Region, the number of tourists as a part of the number of tourists in the Republic Macedonia is very modest 2.2% in the total number of tourists, while number of foreign tourists, as a part of the number of foreign tourists in the Republic Macedonia is even more modest, equal to 1.8%. The following chart shows the number of tourists[23] in the Eastern Region.

[23] Source: State Statistical Office, Tourism in the Republic of Macedonia 2006 - 2010



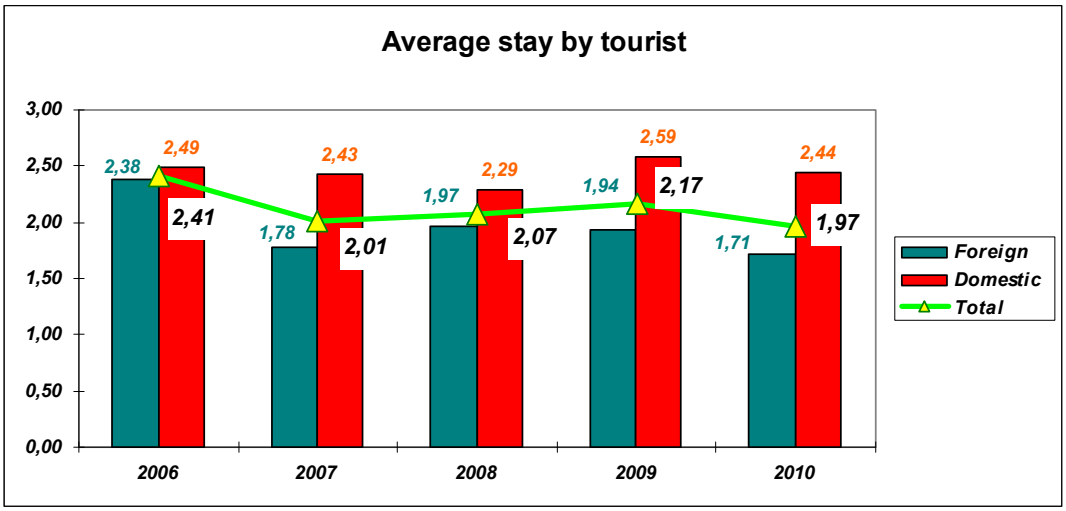
Number of realized overnights[24] in the Eastern Region is shown in the chart below.



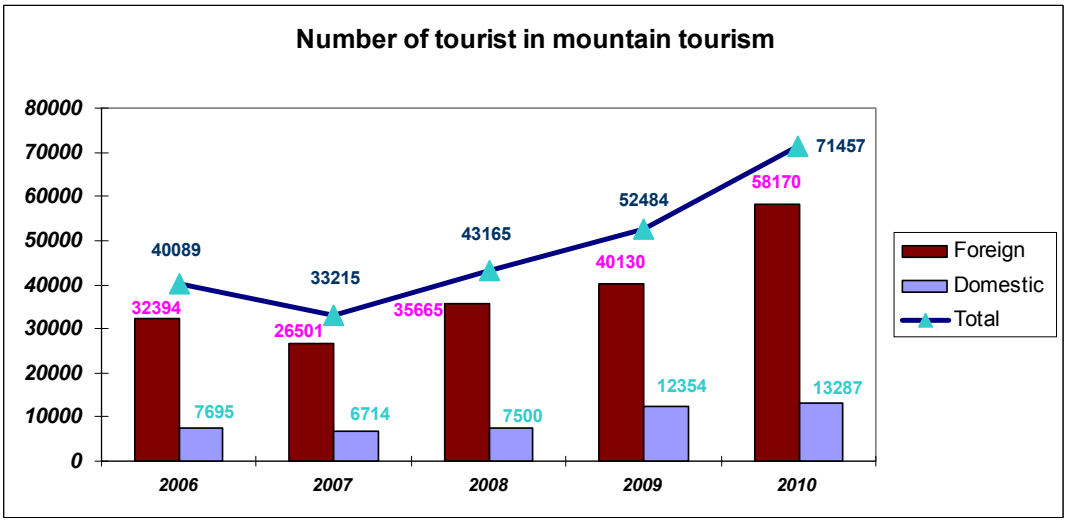
According to the statistical data, the total number of realized overnights has been decreasing continuously in the last 3 years, but positive moment is that the number of overnights realized by foreign tourists has increased. The total number of overnights compared to 2006 have decreased by 12.6%, the number of overnights generated by domestic tourists have decreased by 46.7% and the number of overnight generated by foreign tourists have increased by 46%.

[24] Source: State Statistical Office, Tourism in the Republic of Macedonia 2006 - 2010

The average stay per tourist is approximately 2.1 days. The following chart shows the data concerning the average stay per tourist in the last 5 years.



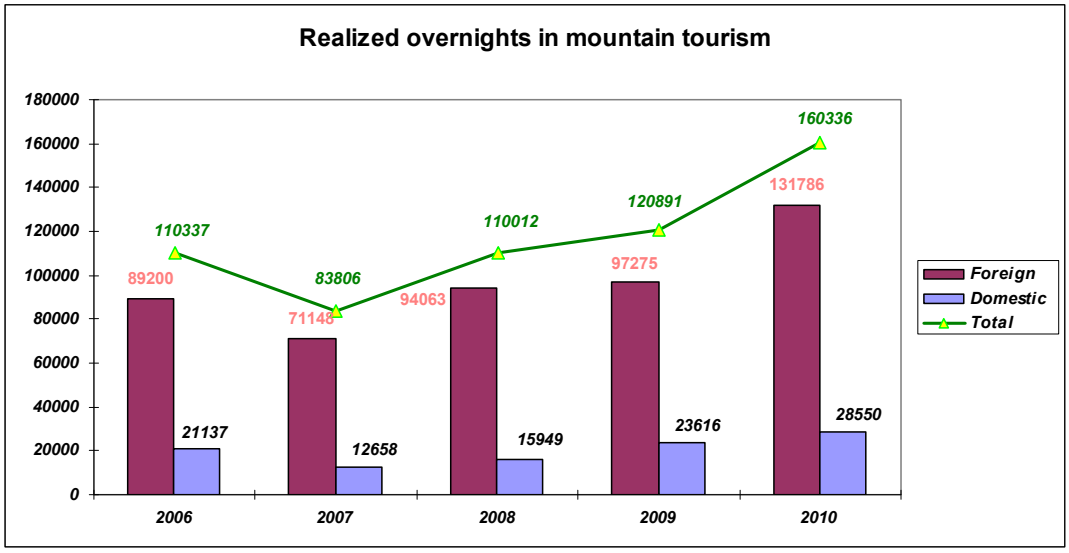
From the aspect of rural or mountain/cycling tourism there are no data for the number of tourists[25] and overnights realized in the Eastern Region. Data on mountain tourism for the Macedonia are shown in the chart below.



The statistical data show an increase of the number of tourists compared to 2006 for 78.3%, while the number of domestic tourists shows growth of 79.6%, and growth of foreign tourists for 72.7%. It is characteristic that the number of tourists in the tourism on the national level has been increasing each year. It is necessary to emphasize that the increase in the number of tourists at the level of Macedonia in the last 5 years was 17.4%, while increasing of the number of tourists in mountain tourism is 78.3%.

[25] Source: State Statistical Office, Tourism in the Republic of Macedonia 2006 - 2010

The number of realized overnights[26] in mountain tourism is shown in the following table.



On the national level, the increase of the number of overnights compared to 2006 is 5.4%, while increasing the number of nights spent in mountain tourism for the same period is 45.3%.

Data on the number of tourists and overnights realized in mountain tourism show a constant increasing in this type of tourism. It can be concluded that the market for this kind of tourism increases every year.

The strategy for tourism development in the Republic of Macedonia (2009 - 2013) the choice of priority and secondary markets on a geographical basis is definited. In terms of segments of particular interest, for the enthusiast, location of destination is not important, if the offer is good enough. If we have appropriate product development and / or presented himself in a good form of marketing, you should consider the following segmented markets:

- Winter Sports
- Climbing
- Extreme sports, including:
  - ❄ Mountain biking
  - ❄ paragliding
  - ❄ canoe
  - ❄ mountaineering / rock climbing

[26] Source: State Statistical Office, Tourism in the Republic of Macedonia 2006 - 2010

- Speleology
- Hunting
- Wild birds watch
- Religious Tourism
- Conferences

1.5.3 Trends in tourism

At the global level, the development of tourism has gone through several phases. Globalization is a process that has an impact on the development of each economic activity, and by that, on tourism as well. Nowadays, each tourist destination participates in the global competition of the various tourist products. What is specific about the development of tourism is its diversification and the development of new trends in tourism, which all influence the tourist industry. The trends in tourism that have been presented are so-called megatrends in Europe[27] .

1. External tourism environment

- Demography

All countries in Europe will be experiencing a constant rise of the elderly population. The elderly will be enjoying better health conditions, and as a result of the good quality pension systems, they will dispose with more incomes than previously. A significant number will also cease the opportunity of early retirement. This is all in relation to the short and medium period of time, however, due to economic turmoil, pension reductions are expected on the long term, as well extensions of the retirement age. The number of tourists that fall under this age group will increase in the short and medium period of time. The time of vacation is not limited for the retired persons within this age group.

In addition to this age group, it is necessary to point out that younger generations, which account for 20% of the total number of tourists, are also experiencing an increase in incomes. Aside from the increase in incomes of younger generations, the

[27] Туристички мегатрендови во Европа, ETC

increase of single member households, and of social structures that enable social and professional bonding, contribute to a higher number of travels made by persons belonging in the age group of 16 to 35 years.

Unlike the elderly persons, younger generations have less free time for travelling, due to their job responsibilities. At the same time, the structure of families has also changed and fewer families are of the type -two parent and two kids, and as a result of the globalization processes many families now live in new places, thus increasing the need for travelling in order to visit friends and families.

The impact on tourism will be as follows:

- A greater demand of tourist products during in-between seasons
- Increased demand for quality, security and comfort
- Number of travels will increase, however, the number of days spent on vacation will decrease (more short trips)
- Due to shorter vacation time, the number of package arrangements will rise, or the so called all - inclusive arrangements
- The less free time and fewer opportunities people have for creative hobbies will all contribute to an increase of active vacations, where they will be able to do something creative
- Elderly persons are becoming more health-conscious, which will contribute to an increase in the demand for health and spa tourism
- Younger persons will be seeking vacations filled with activities and adventure
- The demand for independent type of vacations will rise, in contrary to the classic type of package arrangements

- Environment

Climate changes pose one of the greatest long-term challenges for tourism. These changes may lead to the disappearance of many tourist destinations. Even though much more information needs to be reviewed in order to be able to fully identify the results of these changes, nevertheless, environment protection awareness is at a high level. The media is already promoting the need for social responsibility and responsibility towards the environment.

Impact on tourism:

- The demand for sustainable tourist products will grow
- The effects that tourism has on the environment will have to be reviewed
- All environmental consequences resulting from tourism in the destinations, will need to be assessed
- Costs will increase for reducing the negative environmental impacts of tourism
- Limiting the emission of " greenhouse" gasses will set ground for the introduction of additional taxes, which will increase the costs of transportation
- The demand for organic products will rise
- The demand for eco-tourism will increase
- From the marketing point of view, the sustainability of the tourist destination will have to be promoted

- Macroeconomic trends

The world economic crisis has led to a drastic fall in tourism. The world economy is recovering at a much slower than predicted rate. Nevertheless, gross domestic product is expected to grow over the next years for over 3%, and in some European countries this increase will be quite higher. As a result of the globalization process, there will be a higher level of regional cooperation contributing to a greater demand at the regional level.

Impact on tourism:

- Rise in competition
- Faster growing economies will create new tourist destinations
- Need for market strengthening
- Higher mobility

- Political factors

As a result of the economic crisis, many governments will have to increase in taxes, fees and other spending in order to cover the costs for health protection, education,

pensions and other needs. The need for providing a higher level of security, health protection and lower level of immigration will result in greater control of transportation and travel.

Impact on tourism:

- Greater need for coordination of the security aspects of travelling
- Lower level of elderly population travelling due to the extended retirement age
- Need for destination branding
- Increasing tourist offers through the internet

2. Client trends

- **Travel experience**

As travel grows, people are becoming more aware of the culture and environment of a particular destination. As client experiences expand, so do their needs for travelling, new experiences, and new destinations. This also leads towards changing the guest-host interaction. Tourists are seeking even greater experiences by changing their tourist role preferences, and this is something that can be found in rural and creative tourism.

Impact on tourism:

- More experienced clients seek higher qualities of services at every level
- With a lower number of repetitive guests, some destinations will be facing problems
- Increased demand for alternative forms of tourism

- **Changes of lifestyle**

Lifestyles are changing in almost every society, especially in those of the developing countries. For many people travelling is not a luxury anymore, rather a way of life. As the age extends of young people forming families, so does the freedom for travelling. High prices of medical care services in Western Europe lead towards the development of the so-called medical tourism, where people who are requiring medical services travel to locations that offer these services at a lower cost. The need for tourist

products that are oriented towards better health, stress reduction and fitness programs will grow in the highly developed economies.

Impact on tourism

- Need for development of specific products (niche products)
- Need for new experiences (adventures, exciting experiences)
- Increased demand for spiritual products, spa products and health products

3. Tourist products and marketing

- **Market trends**

Clients are more than ever seeking advice and opinions from others through the internet. This will lead towards greater investments in the development of internet strategies for promotion and new research techniques. Public Private Partnership is becoming more significant, especially in the area of tourism marketing.

Impact on tourism

- The internet will lead the distribution of the future tourist products
- Further understanding will be needed in regards to the motivations and interests of the target groups
- Greater focus on comfort
- Marketing will be based on experience
- The lower budgets that clients have for travelling will lead to the invention of new products

- **Information communication technology**

The higher use of internet in the process of informing clients about tourist products and programs is growing more than ever. Clients will continue to use the available internet tools even more in comparing the prices of the same or similar tourist products. Much more information will be shared through various types of media. New electronic payment systems will be designed.

Impact on tourism:

- Experienced tourists will be giving much more meaning to their vacations and travels on a modular base with direct reservations
- Destination marketing will grow in significance, as a source for visiting the internet sites
- The possibility of "buying" through the internet will lead to making reservations at the last minute
- The role of the travel agents will decrease
- Clients will be much more informed on culture and cultural tourism
- There will be a greater need for developing new services for research and mapping of destinations

- **Transport**

There have been enormous changes in the past few years in the manner of transportation. The need for using high speed trains and low budget air companies is growing. All of this leads to changes in the standard types of travelling. Road transportation, although accounting for 70% of the total number of trips, is facing more blockages.

- Impact on tourism:
  - The greater access to direct and low cost air and train connections will increase the demand for short international vacations
  - Travelling by bus will decrease
  - The demand for high speed busses for medium distances will rise
  - Destinations difficult to reach by direct or intermodal transportation will be less attractive

1.5.4 Local and regional competition

Assessment of competitors

Planning the development of a ski center is not possible without a previous assessment of the regional competition. Currently, aside from the highly developed regions for winter tourism in Austria, Northern Italy, Slovenia, France, Switzerland and Germany, investments are also growing in winter centers of Southeast Europe. The tourist market has started its redevopment, and is expected to grow even more with the growth of the economic power of the population. Taking into consideration the international trends in mountain tourism, it is more than obvious that the region of Southeast Europe is becoming even more attractive. Ponikva, more specifically the Osogovo Mountains, as a ski destination that is part of the region of Southeast Europe, would primarily be competing with similar destinations in Bulgaria, Serbia, Kosovo, as well as with the ski centers in Macedonia. Many of the centers that are located in these countries have implemented or are in the process of implementing various reconstruction or investment plans. Development plans are being prepared for some of the centers in Macedonia, such as for Popova Sapka and Krusevo, whereas the centers of Mavrovo and Pelister already have a development plan. It is necessary to point out that the biggest competition for the ski centers in Macedonia are the ski centers of Republic of Bulgaria.

An analysis has been performed on the more significant regional centers, from the perspective of location, ski capacity, accommodation facilities and offers of products within winter and summer tourism.

Kopaonik (Serbia)

Kopaonik is the largest ski center in Serbia, and undoubtedly one of the best centers in this part of Europe.

Location

Kopaonik is located in the southwestern part of Serbia is located near Krusevac and Kraljevo. Located at 1,770 meters above sea level and Skopje is away about 4 hours drive by car. The highest peak is 2,017 meters above sea level.

Offer

Winter

Ski center Kopaonik offer ski trails for all categories of skiers, from beginners to top-level skiers. Ski center has over 50 km of trails for alpine skiing and 18 km trails for cross-country skiing, and one trail for night skiing "Little Lake" with a length of 450m. There are 21 easy slopes, 9 average slopes and 6 difficult trails. The maximum altitude difference is 512 m and the longest slope is long 3.5 km.

Over 70% of the runs are covered with snowing system. For the youngest skiers and all other beginners, a "ski kindergarten" with conveyor belt, which allows easier learning of basic skiing skills. All trails are connected by a system of ski lifts which have a total capacity of 32,000 skiers per hour. On the Kopaonik there is snow board park. Price of daily Ski Card: 24 Euros (2400 dinars).

Summer

Mountain walks and hiking, bike riding, tennis, basketball, handball, beach volleyball, football field with more fields, rafting on the river Ibar in the Grand Hotel: Squash, walking on the "path of health," riding, schools for various sports.

Total number of beds 6100 (2010)

Data for the operation of ski center

Number of ski tickets sold: 84,736 (2010), 103043 (2009)
Number of visitors: 72,000 per year (average 2005 -2009)
Number of nights: 345,000 per year (average 2005 to 2009)

Coefficients

Total number of beds in respect of the total capacity of lifts

6,100 / 32,000 = 0.19

Capacity of the ski lifts in terms of length of ski runs

32.000/50, 33 = 635.80

The total number of beds in respect of length of ski runs

6,100 / 50.33 = 121.2

Mavrovo (Macedonia)

Mavrovo is the biggest ski center in Macedonia.

Location

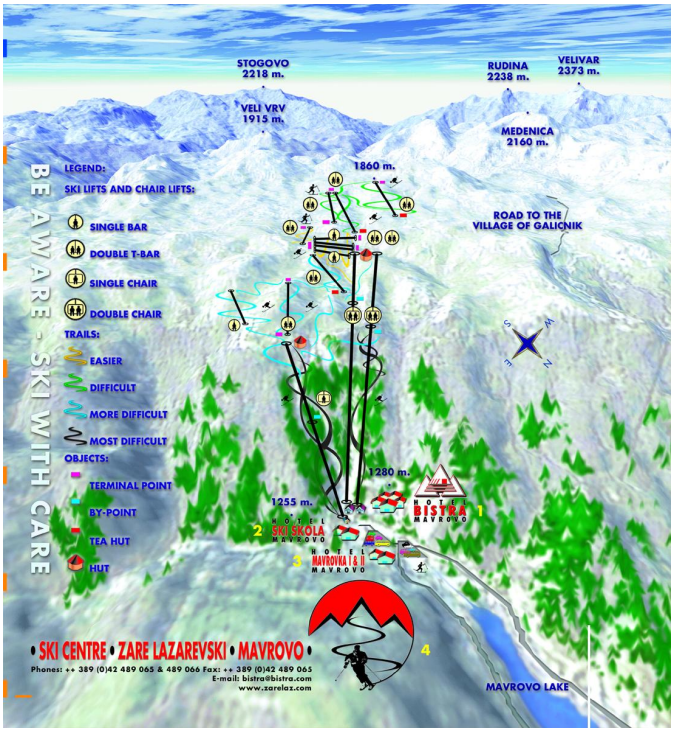
Ski Center "Zare Lazarevski" is located in v. Mavrovo in the southwest part of Macedonia and is near to the Gostivar and Kicevo. It is located from 1,250 meters above sea up to 1850 meters above sea level and is away from Skopje for about one hour drive by car.

Offer

Winter

Ski center "Zare Lazarevski" has 9.27 miles of trails for alpine skiing and 30 km cross-country skiing, and lighted trails for night skiing with a length of 5 km. There are 3 lift and 11 ski lifts. The maximum altitude difference is 420 m and the longest slope is 1.25 km. There is Half-pipe (snowboard). Parts of the trails are covered with snowing system. All trails are connected by a system of lift and ski lifts which have a total capacity of 11,417 skiers per hour. Within the ski center works and skating rink.

Price of daily ski card 18 euro (1100 denars).



Summer

Mountain walks and hiking, riding his bicycle and mount bike, hunting and fishing, tennis, basketball, handball, football playground, kayak on the lake.

Total number of beds 828 (2010).

Data for the operation of ski center

Number of ski tickets sold 24,624 (2010), 36340 (2011)

Number of visitors: 25,000 per year (estimate)

Number of nights: 38,000 per year (estimate)

Coefficients

Total number of beds in respect of the total capacity of lifts
828 / 11,417 = 0.073
Capacity of the ski lifts in terms of length of ski runs
11,417 / 9.27 = 1231.61
The total number of beds in respect of length of ski runs
828 / 9.27 = 89.32

Popova Sapka (Macedonia)

Location

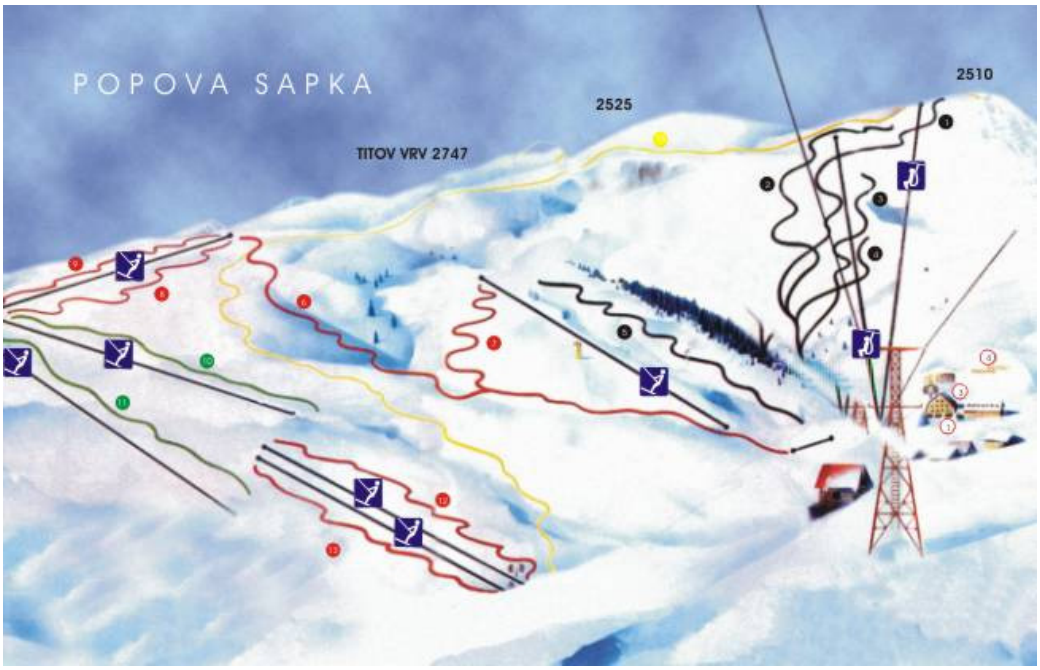
Ski center Popova Sapka is located on south slopes of Shar Mountain, near to the Tetovo. It is located at 1,700 meters above sea level, and the highest peak " Ceripashina" is 2,531 meters above sea level, from Skopje is away about an hour drive by car.

Offer

Winter

Ski center "Popova Shapka" has about 35 h^2 ski slopes, or with 20 km long slopes for alpine skiing, and lighted slopes for night skiing with a length of 300 m. Has 2 lift and 5 ski lifts. The maximum altitude difference is 680 m and longest slopes is 2.1 km. All trails are connected by a system of lift and ski lifts with a length of 6070 m, which have a total capacity of 4000 skiers per hour.

Price of daily ski card: 15 euro (900 denars)



Summer

Mountain walks and hiking, riding his bicycle and mount bike.

Total number of beds 310 (2010).

Data for the operation of ski center

Number of ski tickets sold 18,089 (2010), 16176 (2011)

Number of visitors: 3100 (2010), 2834 (2011)

Number of nights: 7450 (2010), 7183 (2011)

Coefficients

Total number of beds in respect of the total capacity of lifts 310 / 4,000 = 0.078

Capacity of the ski lifts in terms of length of ski runs

4,000 / 20 = 200

The total number of beds in respect of length of ski runs

310/20 = 15,5

Kozuf (Macedonia)

The newest ski center in Macedonia.

Location

Ski center "Kozuf" is located on the slopes of Mount Kozuf near Gevgelija. Located at 1,540 meters above sea level, and the highest peak "Zelen Vrv" is 2,200 meters above sea level. Kozuf is about 2 to 3 hour drive by car from Skopje.

Offer

Winter

Ski Center has 24 km of trails for alpine skiing, as well as 40 kilometers untouched terrains suitable for free ride skiers and boarders. It has one lift and two ski lifts. The maximum altitude difference is 460 m and the longest slope is 3.2 km. 25% of the runs are intermediate and 75% are easy slopes. System for snowing covered 1.8 km of the slopes. All trails are connected by a system of lift and ski lifts with a length of 2600 m, which have a total capacity of 5,400 skiers per hour.

Price of daily ski ticket: 11.4 Euros (700 denars Mon.-Friday), 15 Euros (900 denars satr.-sunday)

Summer

Mountain walks and hiking, riding his bicycle and mount bike

Total number of beds 120 (2010).

Data for the operation of ski center

Since the center was without appropriate access road, several years was open only to visitors who have SUVs. During 2011 the road to the center is built, the center began to work for all visitors. Because of this, there are no relevant data.

Coefficients

Total number of beds in respect of the total capacity of lifts

120 / 5,400 = 0.022

Capacity of the ski lifts in terms of length of ski runs

5,400 / 24 = 225

The total number of beds in respect of length of ski runs

120/24 = 5

Bansko (Republic of Bulgaria)

Biggest ski center in Bulgaria

Location

Ski center "Bansko" is located at the slopes of Pirin mountain near the town of Bansko. It is located at 925 meters above sea level, and the highest peak Todorka is 2,746 meters above sea level, Skopje is 258 km away or about 3 to 4 hours drive by car.

Offer

Winter

Ski Center has 75 kilometers of slopes for alpine skiing, as well as 12 kilometers of trails for classic Nordic skiing and biathlon. Slopes are located between 1100 m asl to 2600 m asl. There are system of one gondola, 6 lifts, 5 ski lifts and 2 baby ski lifts. Some of the slops are prepared for night skiing. There is Half pipe for snow boarders and children's ski park. Also there are possibilities for extreme skiing and paragliding. The maximum altitude difference is 925 m and the longest slope is 10.2 km. There are 5 easy slopes, 10 intermediate and 1 difficult slope or 30% of the slopes are for beginners, 45% for advanced skiers and 35% for experts. System snowing covered 100% of the slopes. All trails are connected by a system of lift and ski lifts with a length of 27 km, which have a total capacity of 17,250 skiers per hour.

Price of daily Ski Cart: 28 Euros (55 euro)

Summer

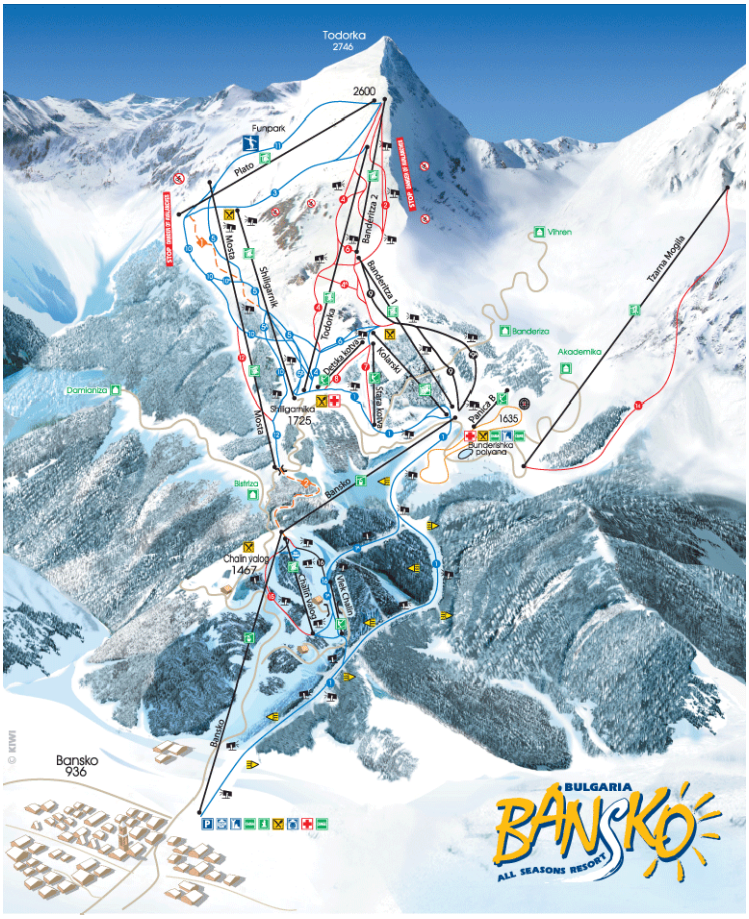
Mountain walks and hiking, riding bicycle and mount bike, horse riding, picnics in the mountains, extreme hiking, paintball, hunting and fishing, visits to the National Park and park bears.

Total number of beds 13,877 (2009).

Data for the operation of ski center

Number of visitors: 352,000 per year (2008)

Number of nights: 650,000 per year (2008)



Coefficients

Total number of beds in respect of the total capacity of lifts

13,877 / 17,250 = 0.804

Capacity of the ski lifts in terms of length of ski runs

17,250 / 75 = 230

The total number of beds in respect of length of ski runs

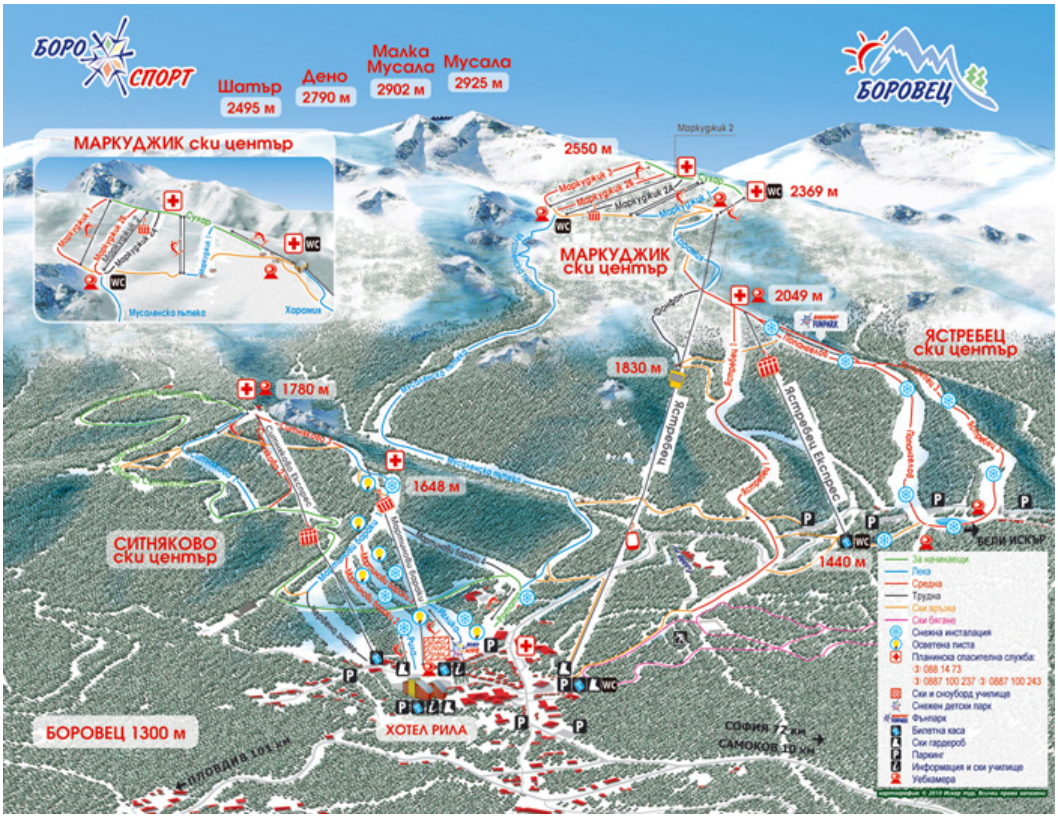
13,877 / 75 = 185.03

Borovec (Republic of Bulgaria)

Oldest ski center in Bulgaria

Location

Ski center "Borovetz" is located on the northern slopes of Rila mountain, near the town of Samokov. Located 1300 meters above sea level, and the highest peak Musala is 2,925 meters above sea level, Skopje is 260 km away or about 3 to 4 hours drive by car.



Offer

Winter

Ski Center has 58 kilometers of slopes for alpine skiing and 35 kilometers of trails for Classic Nordic skiing and biathlon. Slops are located from 1300 m above sea level (asl) up to 2560 meters asl. There are 4 lifts, 10 ski lifts and 5 baby sifts. Some of the slopes are prepared for night skiing. There are ski park and children's ski park and 70-meter long ski jumping.

The maximum altitude difference is 1054 m and the longest slope is 12km. There are 9 easy slopes, 11 intermediate and 5 difficult slopes. System for snowing covered 80% of the runs.

All slopes are connected by a system of lift and ski lifts with a total length of 14.4 km,

and with total capacity of 8,150 skiers per hour.
Cost of daily ski card: 28 euro (55 levs Monday - Friday) and 23 Euros (45 levs Saturday - Sunday)

Summer
Mountain walks and hiking, riding bicycle and mount bike, horse riding, picnics in the mountains, extreme hiking, hunting and fishing, Excursions and more. .
Total number of beds 5195 (2009).

Data for the operation of ski center
Number of visitors: 111,563 per year (2009)
Number of nights: 340,498 per year (2009)

Coefficients
Total number of beds in respect of the total capacity of lifts
5195/8150 = 0.637
Capacity of the ski lifts in terms of length of ski runs
8150/58 = 140,52
The total number of beds in respect of length of ski runs
5195/58 = 89,568

Kranjska Gora (Slovenia)

The most famous ski center in Slovenia.

Location

Ski center "Kranjska Gora" is located in a valley between Karavanki and Juliski Alps, the triangle between Slovenia, Austria and Italy. Ski lifts and ski areas lie along the slopes of Vitranc.

Offer

Winter

Ski Center offers 20 kilometers of slopes for alpine skiing, as well as 40 kilometers of trails for Classic Nordic skiing. Slopes are located between 800 and 1570 m asl. There are 13 lifts and 5 ski lifts. One slope with the length of 1,200 m is prepared for night skiing. There are snow park and children's ski park, and nearby is the world famous ski jumping center Planica. Longest slope is long 3.8 km. There are 10 km of easy slopes, 8 km of intermediate and 2 km difficult slopes. System for snowing covered part of the slopes. All slopes are connected by a system of lift and ski lifts with a total length of 10.2 km, which have a total capacity of 18,941 skiers per hour.

Cost of daily ski card: 29 Euros

Summer

Mountain walks and hiking, riding his bicycle and mount bike, horse riding, picnics in the mountains, rock climbing, kayaking, golf, water sports, rafting, fishing, tennis, Excursions, rural tourism and others.

Total number of beds 3489 (2010).

Coefficients

Total number of beds in respect of the total capacity of lifts

3489/18941 = 0,184

Capacity of the ski lifts in terms of length of ski runs

18941/20 = 947,05

The total number of beds in respect of length of ski runs

3489/20 = 174,45

Conclusions

Based on the analysis performed on a certain number of competitive ski centers within the Balkan region, one can see that currently the largest ski center in the region is located within the vicinity of the Osogovo Mountains. The Bansko Ski Center is relatively well developed and with the conditions it offers, it can compete with some of the smaller centers that are located in the Alps, in particular Austria, Northern Italy and etc. Two centers stand out from the remaining competition, and those are the ski centers of Bansko and Kranjska Gora, which are already established in international offers for this type of tourism. These two centers are hosts to several ski competitions that take place in different categories and are of international significance, the most important being the Alpine Ski World Cup. Kopaonik as the largest ski center in Serbia marks constant growth and has continuous development.

The larger ski centers in Macedonia are far from the desired level of development in Macedonia. It is obvious that these centers lag behind regional competition, in regards to the length of the ski trails as well as accommodation capacities. Because the work of the country's ski centers greatly depends on the amount of snowfall, more specifically, the lack of appropriate systems for additional snow provision does lower the competitiveness of the ski centers in Macedonia. The offer of these centers is mainly based on the possibilities for alpine skiing and snowboarding. Even though in the past several years the ski center of Kozuf has been slowly developing, the investments made in this sector

in Macedonia are practically at a minimum. The ski centers in Macedonia are mainly oriented towards attracting daily visitors, mainly coming from Skopje and other larger cities in Macedonia. The unfavorable economic situation and low economic power of the population are one of the reasons for the lower number of tourist staying more than one day. All of the above-mentioned destinations, except the destinations in Macedonia, have highly competitive offers that are based on diverse and broad scope of tourist offers. In regards to the accommodation capacities, all the destinations except for those in Macedonia have hotels, which depending on their quality (number of stars), are able to offer a wide range of diverse services and amenities. Hotels of high categories (4 and 5 stars) offer the so-called „full service„ a service that is characterized with an added value (Spa, Wellness and sports amenities).

Analysis of the ski centers in Europe from the aspect of prices and offers

The analysis incorporates 43 ski centers in Europe that have ski trails with a length of up to 50 km. The centers are divided into three groups according to the length of their ski trails. The first group includes the ski centers with ski trails running from 1 to 10 km, the second group includes trails that are between 11 and 25 km long and the last group includes the ski centers with a length of trails between 26 and 50 km. These types of ski centers were analyzed from the perspective of reviewing the current ski offers of the centers that have approximately the same size and capacity as with the envisioned ski center of Ponikva. Larger ski centers with trails running over 50 km have not been analyzed.

Ski centers tend to be developing more and more into large and prosperous tourist destinations, with offers lasting all year round. The offer of these centers is carefully selected, all with the aim of attracting various groups of tourists.

In regards to the development of the larger ski centers, the larger ski destinations in the Alps tend to be concentrating into one center with mutual image, joint marketing, technical solutions, joint system of ski passes and etc. Most specific examples are the following: the Dolomite Superski area in Northern Italy, where one ski pass allows you to ski in 12 different centers with a total of 1260km of ski trails (cable car capacity of 200.000 skiers per hour and 1500 artificial snow blowing machines); the SkiAmade Ski Resort in Austria with 860 km of ski trails; The 3 Valleys Ski Resort in France with a 600km total length of ski trails and Megève in France with a 450km length of ski trails. There is also a tendency of developing centers that spread across two different countries

such as Zermatt in Switzerland and Cervinia in Italy, that have a total of 480 km of ski trails. All of the above-mentioned centers have abundant summer offers as well.

The following table presents information on all of the ski centers that have been analyzed.

Number	Name	Country	Slopes in km	Price of daily ski pass	Costs for the familypackage in €	Additional slopes for	Freestyle and deep snow slopes	Funpark	Permanent racing track	Track with time measurement	Mogul slope	Carving slope	Tubing course	Floodlight slope	Other activities	Toboggan run	Cross country ski trails	Skating rink	Indoor pool	Carling	Sledge riding (with Huskies, horses, reindeers)	Snowmobile rentals / snowmobile tours
Ski centers slopes 1 to 10 km																						
1	Vilkaviškio rajono slidininkų klubas	Lithuania	1	7	165						X			X		X		X				
2	Sport areál Klíny	Czech	2	10	198		X						X	X		X	X					
3	Ski Pěnkavčí vrch	Czech	1	10	186		X										X					
4	Ski areál Novako Boží Dar	Czech	1	12	147						X		X	X			X					X
5	Aramon Valdelinares	Spain	10	31	536			X	X	X												
7	Emberger Alm	Austria	10	26	512											X	X			X		
8	Valfjället Skicenter AB Gryttved	Sweden	4	24	574									X		X	X					
9	Sappee Ski Resort	Finland	10	32	595			X				X				X	X	X				X
10	Ski- und Wandergebiet Pfelders	Italy	10	24	511		X		X	X			X			X	X	X	X			
11	Hochhäderich Alpenarena	Austria	10	23	498		X				X	X				X	X				X	
Ski centers slopes 11 to 25 km																						
1	Chepelare	Bulgaria	20	19	306		X		X								X		X			
2	Skigebiet am Kolben / Laber	Germany	11	21	293		X	X						X			X	X	X	X	X	
3	Königsberg	Austria	14	22	300		X		X		X	X				X				X		
4	Forsteralm	Austria	18	22	598		X		X								X	X				
5	Vratna Free Time Zone	Slovakia	14	22	456		X	X				X	X	X			X		X			
6	Rangger Köpfl/Oberperfuss	Austria	17	23	567			X								X						
7	Unterberg	Austria	20	24	618			X										X				

8	Stubalm/Gaberl	Austria	12	24	654		X		X		X					X	X				X	
9	Stuhleck	Austria	24	36	666			X	X	X			X	X		X	X	X	X	X		
10	Eikedalen Skisenter	Norway	15	35	653		X	X			X			X								
11	Wurzeralm	Austria	22	34	629				X								X		X			
12	La Pinilla	Spain	22	34	584		X	X														
13	Werfenweng	Austria	25	33	601			X				X				X	X	X		X	X	
14	Christlum Hochalm	Austria	25	33	610					X	X		X			X	X	X			X	
15	Krippenstein/Dachstein	Austria	11	33	626		X	X									X	X		X	X	
16	Semmering, Zauberberg	Austria	14	32	599			X				X		X		X	X			X		
Ski centers slopes 26 to 50 km																						
1	Pamporovo	Bulgaria	29	25	455		X	X	X				X	X		X	X	X	X	X	X	X
2	Liftverbund Feldberg	Germany	50	27	490		X	X		X	X		X	X		X	X	X	X	X	X	
3	Sella Nevea - Bovec	Italy	30	28	508		X									X		X				
4	Slovenia Kanin, Bovec	Slovenia	30	28	501											X	X	X	X		X	
5	Laterns-Gapfohl	Austria	27	29	424			X				X				X						
6	Tarvisio	Italy	32	29	505			X						X		X	X	X	X		X	X
7	RTC Krvavec	Slovenia	30	29	494					X	X		X			X	X					X
8	S. Oberjoch/Unterjoch	Germany	32	29	567		X	X	X					X		X	X	X	X	X	X	
9	Norway Geilo	Norway	35	44	697		X	X	X	X	X	X		X		X	X	X	X		X	X
10	Hauser Kaibling	Austria	37	42	632			X	X		X	X				X	X	X	X	X		
11	Lauchernalp/Lötschental	Switzerland	33	40	754		X	X				X		X			X		X			
12	Obereggen - Latemar	Iatly	48	39	643			X	X	X				X			X	X				
13	Hochpustertal/Sillian	Austria	45	38	609		X	X			X	X		X		X	X	X	X		X	
14	Schnalstaler Gletscherbahnen	Italy	35	37	675		X	X			X			X		X	X	X	X			
15	Fanningberg	Austria	30	37	598		X	X	X	X	X	X				X	X	X	X	X	X	
16	Lermoos - Biberwier	Austria	47	37	677		X				X					X	X	X	X	X	X	

Results:

Most of the ski centers in Southeast Europe are relatively small and have ski trails in the length of 30km. Prices vary quite drastically within these centers, however, when compared to the prices of similar centers in Western Europe, the prices of the centers in Southeast Europe are much lower. Most of the centers that were analyzed have a variety of offers and do not rely only on the offer for alpine skiing. The characteristic is that all the centers offer family packages, which shows that ski centers of smaller size are mostly oriented towards families with small children. Numerous ski-related texts that have been published in a variety of magazines and other tourist destination web sites, actually recommend the ski centers of Southeast Europe to families with small children, as families with children are mainly oriented towards offers that target the needs of the children.

1.5.5 Level of competitiveness of winter tourism

Characteristics of winter tourism

Key facts on winter tourism

Winter tourism takes place in the period starting from November and lasting until the end of April and beginning of May. The months of January and February are the peak months of the winter tourism season, during which period 45-50% of the total number of overnight stays are realized within the winter tourism.

Unlike summer tourism, winter tourism consumers tend to be somewhat older. The average age of the winter tourism consumers was 42.5 years in 2006, with a tendency of a further rise in the average age of the tourists.

According to age, consumers of winter tourism have the following percentile representation:

- 20 – 29 years +- 17%
- 30 – 39 years +- 25%
- 40 – 49 years +- 28%
- 50 – 59 years +- 13%
- other +- 17%

Consumers of winter tourism have a higher level of education and have higher incomes than consumers of summer tourism.

Based on statistical indicators, consumers of winter vacations usually travel with their partners (40%), although travelling with friends is also quite popular. Travelling with families is a little less popular (together with children at the age of 14) in comparison to consumers of summer vacations.

The following facts are characteristic for consumers of winter vacations:

- 50 % of consumers do not need previous information on their travel destination
- 21% of consumers of winter vacations were informed on their travel destinations by the "word of mouth"
- 22 % use the Internet to obtain the information they need in regards to their travel
- Consumers of winter vacations are mostly individuals, over 90%
- The percentage of direct reservations is 65%, approximately 21% use the Internet and only 7% of reservations are made through travel agencies
- About 65% of tourists prefer hotel accommodations and lodges
- 80% travel by automobile, 10% by air, 6% by train and 4% by bus
- Over 65 % of clients stressed that they either ski or snowboard
- The average daily expenditure per consumer of winter tourism is estimated at nearly 128 Euros, which is over 23% more than the average of the 106 Euros estimated for summer vacation consumers

Main motivations for going on winter vacations are:

- Beauties of nature/environment
- Contents of recreational activities
- Attractiveness of ski center / mountain resort
- Positive experience of previous stay
- Attributes: hospitable, friendly, entertaining, secure

Consumers of winter tourism originate mainly from the following European countries:

- Germany with +- 45% of the total ski and winter vacation demand
- Netherlands
- Great Britain
- Belgium
- East European Non -EU countries

From the perspective of the accommodation occupancy (hotels and similar facilities), European ski resorts have an occupancy rate that varies between 40 to 65% during the key season months (January, February). Top offering accommodations reach a 60-70% rate during the winter season, with an 85 to 95% rate in the months of January, February and first part of March. It is interesting to note the fact that lower quality accommodation facilities (one or two stars) seem to be marking a drop in their accommodation occupancy rate within the past years, while high quality accommodation facilities (4 and 5 stars) are constantly marking an improvement in their accommodation occupancy.

Development of winter tourism in the future

Based upon the previously presented megatrends in tourism, as well as the results of the analysis of the statistical and other data on winter tourism, in the future winter tourism will be characterized by:

- Increasing competitiveness of winter tourist products
    - Competition of ski centers throughout the world
    - Concentration on the price – value relationship
    - Structuring and precise positioning of ski destinations
    - Linking offers, i.e., creating packages
    - Creating an "overall" brand (umbrella brand names)

- Increasing the potential of winter tourism
    - Teaching a larger number of individuals to ski at an earlier age increases subsequent activities
    - The so-called "star" youth group is increasing
    - Easy transport access / ski lifts
    - Guides and animation
    - Family offers
    - Winter sports and "weekly adventures" for children and the younger population (various events)
    - Special packages for the elderly
- Increased demand for a "combined/diverse offer"
- Offering diverse contents in regional positioning

- Integrated chain of services
- Need for an environmentally intact nature and surrounding
- Increased needs of tourists for safety and security
    - Low level of crime / delinquency
    - Good quality of medical services within the vacation vicinity
    - Fast and easy access to the destination
- Electronic access of tourist products through the Internet with the purpose of increasing competitive advantages

In general, the number of skiing days in Europe could increase twice within the framework of only one generation, having in consideration that in Eastern Europe additional ski contents are being developed and the standards of living are improving.

Eastern Europe has a population of 278 million inhabitants and is home to numerous mountains that offer good geographic, terrain and climate (snowy) conditions. Even though Eastern Europe has a relatively low level of gross domestic product and was also struck by the world economic crisis, still, it is realistic to expect that in the near future the Gross Domestic Product will begin to rise by 2 to 5% annually.

If the population of Eastern Europe were to ski or snowboard as their counterparts in Western Europe, in 2030[28] the total number of ski resorts in Eastern Europe would be 719, with a total number of 4907 ski lifts.

In general, people would be learning to ski in the country of their origin, and would later be willing to travel to visit other destinations.

Summer mountain tourism

Basic characteristics of summer mountain tourism

Summer is the main tourist season for the European tourists. A total of 70% of all overnight stays are realized during the summer season. Within the past few years, the summer tourist season has been characterized by a change in the summer vacation destinations, as well as an increase in the offers for new destinations that are not related to beach vacations. Beach vacations accounts for 40% of the total summer vacations, followed by package arrangements with 18%, city tours with 14%, rural and mountain

[28] Based on the vision „What is the future of mountain tourism?„ – Zermatt Symposium 2006

tourism with 6%, more specifically 6.5%. It should be noted that mountain tourism is steadily growing during the summer season. Summer vacation consumers travelling with their partners account for 42%, while travelling with families is also very popular. About 45% of tourists use the Internet in order to obtain information on the desired destination, while the average daily consumption is 106 Euros per tourist.

Some of the more important motivations, i.e., summer vacation factors are as follows: beauties of nature and environment, recreational activities (hiking, biking, swimming and similar), peace and tranquility of the destination, positive experience of previous stay, as well as the following attributes: hospitality, friendliness, secure, entertaining.

The occupancy rate of hotels and other accommodation facilities during the summer season, (July, August) for mountain tourism within the summer mountain vacation destinations, varies between 45 to 70%. Those with best offers realize an occupancy level ranging between 60% and 70% in the summer period, and an occupancy level of 85% and 95% during peak season (July and August). As with winter tourism, summer tourism accommodation facilities that are of lower quality (one to two stars) are also experiencing a drop in their level of occupancy within the past few years, while high quality accommodation facilities (four and five star) are constantly marking an improvement in their accommodation occupancy.

The future of summer tourism

Clients will have the following basic requests in the future:

- Environmentally intact surrounding
- Higher level of safety and security
- Easy access to the destination
- Better services
- Higher level of qualified staff in tourism
- A developed “service mentality” with an „emotional„ component
- A higher demand for “natural” and “authentic” products

Competition is expected to grow in summer tourism also, which will lead to the dissemination of tourist offers through the existing information systems, and also towards increasing the concentration on the “price-value” relationship, to structuring and precise positioning of each destination and creating adequate packages.

From the market perspective, there will be more specialized offers that target specific groups of tourists, such as mountain hikers, bikers and many more. Also, due to the fact that the European population is "aging", the need of offers intended for the elder generations will also be in the rise. There will be more offers of the type "learning is fun" and "animation" in combination with "nature" and "body cult", and more emphasis will be put on around the clock entertainment and creating new thematic offers, primarily for the younger categories of tourists.

1.5.6 Target markets

Based on the results of the analysis on the tourist market, the project for the development of tourism on the Osogovo Mountains will be targeted towards the following relevant tourist markets:

- The primary tourist market for the Osogovo Mountains project is the population of Republic of Macedonia that has a medium to a high level of financial power and mainly lives in the Skopje area and some other cities in Republic of Macedonia. The reasons for this type of orientation towards the local tourism market are as follows:
  - Over 2 million inhabitants live in Macedonia, 60% of them live in cities.
  - Analyses that have been performed at the global level show that the inhabitants that live in cities use vacations much more often than those living in rural area.
  - The increased demand for ski vacations is strongly connected to the education level and financial aspects. The concentration of people with medium and high education and of people with over the average incomes is significantly higher in cities than in the rural areas.
  - Currently, the number of accommodation capacities-hotels is quite limited in Macedonia, especially of those in the mountain destinations intended for the upper-end of the population. Due to the lack of appropriate ski products and high quality hotel accommodations in Macedonia, the population of Macedonia that has middle to a high economic power, spends a significant part of its vacations abroad. As the project for the development of the Osogovo Mountains is targeting this part of the population, it is reasonable to expect that after the completion of the project, a certain portion of the

present tourist demand of the population with a medium to high economic power will actually reorient to the Osogovo Mountains.

- ♦ The market potential of the Osogovo Mountains would mainly be determined by the intact nature and the undiscovered tourist area. The project itself is based on the concept of sustainable development, which is based on Public-Private – Partnership.
- ♦ Aside from the population that has a medium to high economic power, the economically strong enterprises with headquarters in Macedonia are also a primary segment of the market demand for tourist products of the Osogovo Mountains, which will show interest in organizing various types of events, team building programs, seminars, training programs and meetings. Currently, the 50 most successful enterprises in Macedonia employ 25 thousand people, which represent an additional source for a strong market that has a high demand of tourist products.
- ♦ Taking into consideration the projections for the economic growth of Macedonia, it is realistic to expect that the demand of a certain number of enterprises for organizing various events will also rise in the forthcoming period.

- □ The basic, i.e., the primary international markets that are targeted by this project are the markets in some of our surrounding countries, such as: Serbia, Kosovo, Albania, Croatia, as well as some of the EU countries like the Netherlands, Slovenia, Greece and Germany. These are markets that are not able to meet their great demand for mountain and ski products as they exceed their own internal capacities, thus causing clients of this type of tourism to seek international destinations.
- □ The secondary markets of this project for the development of the Osogovo Mountains include the remaining countries in the region, in particular, the remaining regional market that includes the following countries: Bulgaria, Montenegro, Romania, and Bosnia and Herzegovina.

2. Development concept

2.1 Vision and strategic development guidelines

2.1.1 Basic strategic elements

Defining an appropriate and realistically viable vision for the Osogovo Mountains is extremely important, not only for the Macedonian tourism, but also for the promotion of sustainable development of the Eastern Mountain region. In defining the vision it is necessary to take into account the results from the analyses that have been performed on the current situation, geographic and terrain analyses, as well as the analysis of the tourist market. The vision has been defined based on the following strategic elements:

- Regional competition

  The analysis on the regional competition shows that the Osogovo Mountains, as a mountain destination, in comparison to smaller ski centers such as Mavrovo, Popova Sapka, Borovec and Kopaonik, definitely has all the preconditions for developing into a contemporary mountain resort. Sustainable tourism development will enable the market positioning of the Osogovo Mountains, but it is realistic to expect that with the realization of the development concept, new standards will be established for the development of the Balkan region.

- Global tourist trends

  There is a general trend of developing innovative tourist resources, mainly due to the growing global demand for destinations that are characterized by a well protected nature and environment. Not only is market differentiation proof of the growing demand for these types of destinations, but so are the increased number of investments made in the development of tourist centers in locations that have never been known before. Even further developments of existing mountain resorts and tourist – hotel operations are all oriented towards creating a large number of synergies in the development of new offers.

- Economic growth

  In spite of the world economic crisis that has taken place over the past several years, the Macedonian economy is showing a relatively slow but steady growth. The forecasts for the economic growth are that Macedonia will have an average

growth rate of 3-5% at the annual level. Even though these rates are not very significant, they will nevertheless lead to strengthening of the economic power of Macedonia. This will contribute to better standards of living and more economic power of the population. This especially regards the population that is the key factor for the success of the project for the development of Ponikva and the Osogovo Mountains. Even though Ponikva and the Osogovo Mountains are to be positioned on the market in a manner that will attract the attention of tourists from Southeast Europe, targeting the domestic market and especially the middle and up-scale population is actually a key factor for the success of the entire project. Besides Skopje as the basic market, part of the demand is expected to come from other cities in Macedonia as well, primarily from Stip, Kocani, Veles, Delcevo, Negotino, Strumica, Vinica and Kriva Palanka. It is necessary to highlight that currently the tourist market in Macedonia is to say "eager" for high quality tourist offers, in spite of the relatively low purchasing power of the population. The relatively high level of tourist activities of the population must also be taken into consideration, especially foreign travels to the mountain resorts (mainly Bansko in Bulgaria and Kopanik in Serbia), where the growth rate in the past few years has been relatively high.

- Support to the tourism development of the Osogovo Mountains

  Realizing the idea for development of Ponikva and the Osogovo Mountains enables the planning of the tourism development for this destination in a qualitative manner that will improve the competitiveness of tourism in the East planning region and will eliminate the inherited stereotypes referring to quality, skills and competitiveness of tourism on this region. The realization of any given idea or vision is impossible without any greater changes made in the local surrounding area. It is impossible for these changes to happen without the proper support of the appropriate competent bodies. This support is initially expressed through the development of an appropriate infrastructure in the surrounding area, which is essential for the development of the project. This project must rely on the public financing of the external infrastructure, primarily in the construction of an appropriate road infrastructure, as well as the construction of the basic infrastructure that is essential in attracting investors (water supply system, sewage system, solid waste system, electricity and others).

2.1.2 Vision

The vision of any given tourist destination is not just a presentation of the image we would wish to see in the future. The vision needs to be realistic and viable, more specifically, there has to be a baseline for its realization and it has to be accepted at the local and regional level, by the national authorities and also by the investors. By taking into consideration the previous results, a vision has been defined for the development of Ponikva and the Osogovo Mountains as a tourist destination, which represents an objectified image of this destination for the future, and is a rational and systematic baseline for undertaking the following steps and activities for the realization of this project.

The following vision has been defined for the year 2020:

The Osogovo Mountains and Ponikva Desired mountain destination in Southeast Europe

(attractive destination for winter and summer season)

Realizing the vision for development of the Osogovo Mountains and Ponikva will contribute to the economic development of the entire region as well as to increasing the quality of life of the local population. Success will be achieved in accordance to the principles of sustainable development, while taking into consideration the economic standards, through which the Osogovo Mountains will become a best example of a mountain destination.

2.1.3 Strategic development guidelines

Based on the vision that has been defined, and in the direction of creating conditions for realization of this vision, the following development guidelines are provided:

1. The principles of planning and developing tourism must be based on professional rules and standards that are characteristic for the international tourist industry. Satisfying the criteria and standards of quality set by the international market is the foundation for success of any given destination.
2. Development of a winter tourist product that is in accordance with the international standards for planning Alpine and Nordic skiing.
3. Development of the most attractive mountain tourist product for the summer months.
4. Development of an appropriate structure of accommodation capacities.
5. Development of an appropriate management system at the level of the destination.
6. Need for designing the urban plan documentation.

Positioning on the tourist market

The tourist positioning of the Osogovo Mountains is as follows:

The Osogovo Mountains are a sustainable mountain destination that offers tourist products in an intact nature all year round for all types of guests. The Osogovo Mountains are a destination that offers recreation, retreat and business events.

Taking into consideration the previously defined vision, as well as the strategic guidelines for the development of tourism in the Osogovo Mountains, as well as the value of the available natural resources, the development of tourism should be based on the following pillars of positioning:

⇒ Creating a contemporary, universal and diverse tourist product for the winter period

⇒ Creating a unique and attractive tourist product that will be based on the local specifics of the Osogovo Mountains for the summer months

⇒ Tourist products dedicated to families (all year round)

⇒ Business tourism (seminars, conferences, team building)

⇒ Mountain wellness

⇒ Sport, competitions, entertainment and action (all year round)

Products

The sustainable development of any destination, in the long run, has to have a link between its own unique base of attractions and the system of experiencing and experiences, which should actually be based on the unique characteristics of the destination itself. In order for a destination to have successfully commercialization, from the aspect of tourism, adequate answers need to be provided to the following strategic questions:

1. What do I dispose with (key attractions and resources)?
2. What is of benefit for the client or why (system of experiencing and experiences) would anyone visit me?

Many times, due to unclear answers given to the above-mentioned questions, the tourist attractions of a certain destination are overestimated, meaning they are based on wrong perceptions of the system of experiencing and experiences, which the market system does not confirm. In order to succeed in the development of a certain destination, our own views on the values of the tourist attractions of the destination also have to be confirmed by the market. Therefore, it is necessary to pay attention on the realistic experiences that the Osogovo Mountains can actually offer. The following experiences have been identified in respect to the attractions that the Osogovo Mountains and Ponikva can offer:

- Experiencing the mountain (spaciousness, height, climate, clean air)

  ski trails and skiing infrastructure for Alpine skiing, snowboarding and sledging, infrastructure for attractions on snow and in the summer time, various accommodation capacities, facilities for catering services located right on the ski trails, sightseeing points, races, sport, free climbing, winter nature walking, mountain biking, and etc.

- Experiencing an intact nature (biodiversity, nature protection, scenery and sights)

  ski trails and skiing infrastructure for classic/Nordic skiing, walking trails and bike trails, cable car system, thematic trails, bird watching, photo safari, horseback riding, outdoor orientation, outdoor schools, and etc.

- Experiencing calmness and peace (peace, silence, away from the everyday life)

  Appropriate accommodation capacities, spa and wellness center

The entire development of a certain destination, including the system of experiencing and experiences, which can be interpreted in many ways, should in any case be put in context with the global practice of the tourist mountain destinations in Europe. Planning the development of tourism in the Osogovo Mountains is based on the results of analysis that have been performed on similar projects, in order to take into account all the potential products that can increase the competitiveness of a destination. The analysis on the experiences of similar mountain destinations is primarily necessary for the purpose of doing creative copying of the positive experiences of these destinations, and also for the positioning of the Osogovo Mountains as a tourist destination, in relation to the current practice. From the perspective of the development model that is used throughout the mountain tourism destinations in Europe and USA-Canada, it should be noted that the European model is characterized with development that is made in accordance with the existing historic culture of using the Alpine zone for tourism purposes, while the American-Canadian model is characterized by the so-called industrial usage of the mountainous area. Nevertheless, some of the mountain destinations in Europe, especially in France, are also developed based on the pattern of industrial usage of the mountainous area.

Every tourist product has its own value on the tourist market, which can be appropriately exchanged for money by the client. Each product has its own place on the market and development trend. Products that are specific for mountain destination in Macedonia are actually offers for classic vacations with very little recreational activities. Nowadays, these types of classic offers have evolved in the developed mountain destinations into more abundant offers and more contemporary products. Therefore, the choice of products that are to be developed on the entire territory of the Osogovo Mountains has to be made according to the rules of game of the global tourist market.

Starting from the previously elaborated results of all the analyses that have been performed, while taking into consideration the system of tourist experiences that can be generated within the surrounding area of the Osogovo Mountains, it must be emphasized that there is good potential for development and commercialization of the following tourist products:

- **Winter and summer vacation in the mountains**

Within the past 20 years, the mountain tourist centers have been developing in such a way that provides for all year round offers of their capacities and programs. By expanding the period of these offers, these destinations were able to increase their commercialization, which led to greater success in their financial work. The offers

include various vacation and recreational activities adapted accordingly to the period of the year. The main season of this product is from June to September during the summer period and from December to March during the winter. Winter and summer vacations usually last from 7 to 14 days. Winter vacation usually include" Alpine and Nordic skiing, snowboarding, ice skating, sledging, alternative forms of downhill skiing, winter nature walking, riding horse and dog pulled sledges and other activities.

Summer vacations include the following activities: sunbathing, hiking, walking, bike riding, mountain wellness, horseback riding, outdoor activities, various forms of sports and recreation, paragliding, water activities and etc. Below are the strategic elements of vacations:

Opportunities	**Target groups**
Favorable climate during the whole year Various programs and activities Wide range of services Quality of services and activities during the winter holiday Summer vacation in the mountains is the primary replacement of the classic summer vacation Direct contact with nature	Families with children Groups of children Young people active individuals Groups Older couples and families
Markets	**Segments**
Macedonia Kosovo Serbia Albania Balkans Southeast Europe	Family vacation Holidays (religious and governmental) School holidays Activity in the mountains Preparation of athletes Educational activities Active summer and winter holidays
Communication	**Distribution**
Info days Advertising publications Promotional packages and travel fairs Advertisers trips for journalists and tour operators	WEB Page Tour operators Tourist agencies Direct marketing Global system for booking

Tourist infrastructures	
Hotels and private accommodation	Stores
Equipment for activities	Entertainment for children
Restaurants, bars, discos	Center for activities with all necessary services

- **Short vacations**

Within the past few years short vacations have become a part of life for most tourists. The stressful way of living accompanied with an overload of work obligations for some, does increase the market proportion of those taking short trips. Usually these trips last from 1 to 4 days, sometimes maybe even longer and more frequent amounting to two, three even four trips during the year. The main motives for using small vacations are: to escape from the everyday life into a relaxed atmosphere, to connect it with business trips, culture, events, shopping and so forth. Short trips, as products, and based on the above-mentioned motives are not linked to any season. It needs to be quite flexible in regards to the price. Short trip have the following strategic elements:

Opportunities	**Target groups**
Easy market entry Product that most developed in the closing years It achieves a relatively high income per tourist Trend to use more short vacations (1-4 days) that is particularly prominent in recent years	Families without children Young couples Smaller groups of friends Individuals
Markets	**Segments**
Macedonia Kosovo Serbia Albania Balkans	Weekend visits Visit the landmark Workshops and activities in nature Special groups (celebration of events and holidays, honeymoon, annual meetings)
Communication	**Distribution**
Website Advertising publications Catalogs of products Advertisers trips for journalists and tour operators	Website Tour operators Tourist agencies Direct marketing Global system for booking

Tourist infrastructures	
□ Near to the airport (150 km) □ 4 star Hotels □ Shopping	□ Restorans, bars, disko □ Shops □ Equipment for activities

- **Business tourism – MICE (Meetings, Incentives, Conferences and Events)**

Business tourism includes individuals or groups of tourists travelling to a certain destination for professional purposes. It is important to stress that currently on the tourism market the so-called MICE product, which is directed towards business clients, is showing development. This product represents an organized way of travelling that is linked with business motives. This type of tourism includes a well planned agenda directed towards a certain theme and also towards a certain business group or group of stakeholders. To conclude, this product involves all those travelling for business purposes. This product incorporates: individual business trips and meetings, seminars, training programs, workshops, educational programs, annual board meetings, conventions along with business meetings of legal entities, business fairs and presentations, business events, team building events and so forth. The following strategic elements are crucial for the development of this product in the Osogovo Mountains:

Opportunities	**Target groups**
Increasing market demand for this product especially at local and regional level Low level of local competition High level of loyalty that are satisfied with the quality of service Major impact on trade Focus to the customers with high economic power	Business guests of legal entities Individual businessmen State and local public enterprises Business associations and organizations Regional agencies
Markets	**Segments**
Macedonia Southeast Europe	Business meetings Presentations, exhibitions, events Workshops, seminars, conventions team building Corporate sports competitions

Communication	Distribution
Website Marketing Publications Advertisers trips for journalists and tour operators	Marketing entities Associations and agencies for organization of meetings Specialized agencies Direct sales Tourist agencies
Tourist infrastructures	
□ Close to the airport (150 km) □ Hotels with 4* and 5* □ Conference center □ A/V Equipment	□ Restaurants, bars, discos □ Adequate infrastructure for team building □ Equipment for activities

- **Wellness tourism**

This type of tourism involves travelling for the purpose of using wellness vacations, which include preventive health services, diagnosis and treatments for maintaining good health conditions. This tourism type was one of the biggest trends in 2010. Spa tourism, which actually means "health through water", is also a part of the wellness tourism. The focus of this tourism is in preventing and assisting clients to change their lifestyles in order to improve and/or maintain their health conditions. Users of wellness vacations are those striving towards better health conditions, those wishing to reduce the aging process, to decrease the pain and anxiety, as well as decrease stress. These are just some of the motivations for choosing this tourist product.

Opportunities	Target groups
Wellness / Spa becomes larger trend Permanent demand throughout the year Besides coverage of the female population in recent years expanded to male population Higher prices compared to other tourism products	Individual guests who want better health and wellness and spa treatments Couples with children Older couples Small groups People on rehabilitation
Markets	**Segments**
Macedonia	Wellness and spa in the mountains

Balkans Southeast Europe	Rehabilitation and convalescent mountain Gym, sauna, massage, various therapies and treatments Yoga, meditation and other oriental techniques Pools, jacuzzi
Communication	**Distribution**
Website Advertising publications Specialized fairs Specialized magazines	Specialized agencies Direct sales Tourist agencies Direct marketing
Tourist infrastructures	
□ Wellness Centers □ Hotels □ Private accommodation	□ Restaurants, bars, discos □ Stores

- **Special interest / occupation**

As the sophistication of tourism grows, in general, the demand for tourist products that satisfy the individual needs of tourists also grows. Some tourists are attracted to offers that are adapted according to their needs, in particular to their need for experiencing a specific experience. Most often, the market for this type of tourism is referred to as Niche market. The share of this market in the total tourism market has been rising within the past several years. In general, this type of vacation usually takes place in an exotic, remote or wild/nature surrounding, whereby the guest takes a high degree of involvement in planning the activities. The guests expect a certain level of (controlled) risk and/or excitement, or perhaps peace, so that they can test their own abilities in certain activities. Activities are divided in easy (camping, walking, bicycle or motor (4x4) riding, exploring nature, bird watching, fishing, hunting) and difficult (boat riding, rafting, kayak riding, hiking, mountain biking, rock climbing, alpinism, classic/Nordic skiing, and the rest). Typically, this type of product is attractive throughout the entire year, as it contains numerous activities. The key strategic elements are as follows:

Opportunities	**Target groups**
Wide range of products Permanent demand throughout the year and easy market entry Great links to other tourism products	Athletes and sports teams Recreational and active people Older people Groups Families with / without children
Markets	**Segments**
Macedonia Balkan Southeast Europe	Sports tourism Adventure tourism Event Educational tourism and education in nature
Communication	**Distribution**
Website Advertising publications Specialized fairs Specialized magazines	Specialized agencies Direct sales Sports teams and associations Catalogs of tour operators Direct marketing
Tourist infrastructures	
□ Training Camps □ Hotels, private accommodation □ Sports Recreation Center □ Complete sports equipment □ Rock climbing	□ Restaurants, bars, discos □ Stores □ Trails for mountain biking, rock climbing □ Locations of observation

- **Rural tourism**

The wish to escape from the industrialized and fast pace of life is one of the reasons why people are more often choosing rural, mountain and biking tourism. Returning to nature, getting in contact with tradition and heredity are all pleasures that the modern tourist is seeking for. Rural tourism is a term used for different forms of tourism outside urban areas and mass tourism destinations. This type of tourism is accustomed and distinguished with tourist attractions that are located in rural areas.

Rural tourism involves a broad specter of activities, services and additional contents organized by the rural population living on farms and in the rural area. One of the basic

goals for development of this tourism is the increase in the revenues of the rural households, as well as increasing the number of tourists. Rural tourism is mainly focused on promoting rural areas, thermal and mineral springs, rivers and lakes and presenting the traditional hospitality and values of village life. It incorporates various forms of tourist activities, such as: agro tourism, rural households and farms, ecotourism, cultural tourism and other forms of activities in rural areas. Key strategic elements for the development of rural tourism are as follows:

Opportunities	**Target groups**
Reconstruction of old rural houses and households Recovery of the traditional lifestyle of the village Recovery of some traditional crafts Preparing food in a traditional way Bio manufacturing	Families with / without children Individuals Older people Groups
Markets	**Segments**
Macedonia Balkans Southeast Europe	Rural experiences Eco tourism in rural and mountainous areas Agro tourism, rural households and farms Ethno tourism
Communication	**Distribution**
Website Advertising publications Advertisers trips for journalists and tour operators Catalogs of products	Tourist agencies Direct sales Rural associations Catalogs of tour operators Direct marketing
Tourist infrastructures	
□ ambient environment □ Private accommodation in rural households and / or farms □ Natural and cultural attractions	□ Ethno houses and exebitions □ Traditional gastronomy □ Trails for walking

2.2 Concept

2.2.1 Basic assumptions

Based on the analysis performed on the current situation, the analysis on the characteristics of the Osogovo Mountain area, primarily from the perspective of the opportunities available for developing a ski resort, furthermore, the visits to the terrains, as well as the discussions and consultations that were held, the basic assumptions have been defined for the development of tourism in the Osogovo Mountains and are given below.

- The Osogovo Mountains, with the exception of the locality of Ponikva, are practically intact from the perspective of tourism development. Tourism development in the Osogovo Mountains primarily depends on the construction of an appropriate infrastructure.
- The entire scope of contents that needs to be constructed, has to be provided through the basic principles of planning and developing mountain tourist destinations/resorts, according to which, regardless of the time frame of the investment realization of the project, protection of the basic values of the future resort must be provided and regulated, more specifically protection of the available natural resources and attractions of the locality.
- The state ownership of almost the entire territory incorporated with this project, will greatly ease and speed up project realization. The development itself will be carried out through a simple development model, in particular, an agreement made with one investor or several investors on the basis of Public-Private Partnership.
- The entire design of the infrastructure that is lacking, i.e., mountain infrastructure, as well as the enduring protection of the whole territory where the project is to be realized, are part of the concept for development of tourism in the Osogovo Mountains.
- The development of tourism in the Osogovo Mountains will be carried out in several separate phases, each phase representing a separate technologically independent unity. The first phase is the most demanding, and is linked with highest investment costs, especially in capital infrastructure. The success of the first development phase will determine the further pace of development.

2.2.2 Integral concept proposal

The development of tourism in the Osogovo Mountains is based on the following determining factors:

- ⇨ The locality of Ponikva is the baseline for the development of tourism in the Osogovo Mountains.
- ⇨ Aside from the existing road that connects Ponikva with Kocani, a new modern road also connects Ponikva with Probistip.
- ⇨ The mountain destination of the Osogovo Mountains will consist of two base areas. They are as follows:
    - o The Sports and Recreational Center of Ponikva, which will house part of the accommodation facilities and remaining tourist capacities and contents
    - o The Ski Center of Carev Vrv, which will house most of the accommodation capacities and mountain infrastructure
- ⇨ The Sports and Recreational Center of Ponikva will primarily incorporate contents directed towards development of Alpine skiing, ski trails intended for children and beginners, furthermore, various winter activities dedicated to non-skiers, such as: sledging, tube sliding, ice skating, winter park, winter park for children, walking, riding snowmobiles, as well as the entire infrastructure that is necessary for the development of Nordic skiing and biathlon. The SRC of Ponikva will offer conditions for sports tourism, it will include appropriate infrastructure for various types of sports (indoor sports hall, various playgrounds) and it will offer alternative forms of tourism as well (adventure, nature and etc.). Ponikva will represent a modern recreational center and entertainment park for children all year round.
- ⇨ The Ski Center of Carev Vrv will consist of ski trails with different levels of difficulty, length and inclination, all connected to a system of 5 cableways and ski lifts of varying capacity. Accommodation capacities have also been envisioned within the framework of the ski center, as well as catering facilities, some of which are to be located right on the ski trails.

Based on the analysis that was conducted in a several-week period on the Osogovo Mountains, primarily on the locality of Ponikva, Carev Vrv and Ruen, by forming and using a spatial model for segments with an abundant structure and complexity, as well as

on the spot visits and discussions made with the local population, a concept proposal has been formulated for the integral development of tourism in the Osogovo Mountains. The results, specifically, the reviews of the analysis are provided within the further text of this Study. The best possible location for the future ski trails and supporting ski installations, in particular, the terrains on which most of the accommodation and accompanying facilities will be located, has been defined based on a detailed evaluation of all the relevant physical characteristics of the potential locations of the Osogovo Mountains. The following physical characteristics have been evaluated: topography, terrain inclination, N, E, S, W directions, sun exposure, height evaluation and average inclination of slopes and trails, trail capacities, road connections and infrastructure and maximum capacity of the area.

3. Planning the development

3.1 Criteria

Criteria for planning are the most important factor in planning the development of one tourist destination. The success of one tourist center largely depends on proper and appropriate planning of its development. Toady, In the world the planners use different criteria for planning mountain resorts. Criteria defined for planning the development of tourism Osogovo mountains are in line with international standards for the planning of successful mountain resorts, as well as the results of the various relations of certain key elements of the analyzed successful mountain centers in Europe. Defined average values and guidelines for development of tourism Osogovo mountains or development of locality of Ponikva and Tsarev Peak. The criteria are defined regarding the standards for planning mountain centers with small size, with 25 km length of slopes and positioning of Osogovo Mountain as a regional destination mountain resort.

Slopes

Length of slopes up to 25 km.

Average width of slopes to range from 50 to 60 meters.

Coverage of slopes with snowing system for a minimum of 70% of all slopes. Total ski area between 80 and 150 hectares, total area of the centre from 300 to 1000 hectares.

Define the weight of runs according to slope, percentage of the ski market and the density of skiers per hectare depending on the type of skier.

Ability level	Slope	Skier market	Density per hectare
Beginner	8 - 12%	5 %	35 – 70
Novice	11 - 25%	15 %	30 – 60
Low Intermediate	- 35%	25 %	20 – 50
Intermediate	- 45%	35 %	15 – 35
Advanced Intermediate	- 55 %	15 %	10 – 25
Expert	over 55%	5 %	5 – 15

Vertical transport

The system of lift and ski lifts should satisfy the needs of vertical transport of all kinds guest. The amount of vertical, skiers/snowboarders by skill class can be expected to ski over the course of a day. The average vertical demand by skier skill class is as follows:

Ability level	Vertical demand
Beginner	500 – 750
Novice	750 – 1500
Low Intermediate	1500 – 2250
Intermediate	2250 – 3000
Advanced Intermediate	3000 – 5500
Expert	5500 - 7500

Average ski day is 6 hours.

Average load of ski lift and lift is 80%.

Overnight Accommodation

Overnight accommodations are measured in bed units (BUs). A bed unit is defined as the

accommodation required for one person to stay overnight, publicly available on a night by night basis. The bed unit calculation model specifies a ratio of Bed Units to Comfortable Carrying Capacity. The total number of bed units up to 56% of the CCC.

The following structure of beds in accommodation facilities are recommended:

- Hotel 4* 18 - 22%
- Hotel 2 and 3* 30 - 45%
- Private accommodation and apartments 8 – 18%
- Hostels 5 – 10%
- Other accommodations 6 - 8%

On average about 75% of visitors in accommodation facilities are skiers.

Expected results:

- Rate of occupancy during the winter 60%
- Rate of occupancy in summer 25%
- 60% of the total number of beds should be on offer during the summer
-

Catering facilities (restores, bar, lounge)

Catering facilities on the slopes should be up to 60% of the comfortable carrying capacity(CCC).

Supporting infrastructure

- ⇨ Parking
  - 80-90% of visitors will come by car and 10-20% will come by bus
  - 2,8 - 3 visitors per car
  - 40 visitors per bus
- ⇨ Touristic infrastructure
  - Winter
    - Ski school and ski equipment rent
    - Skating
    - Snow park and park for children and beginners

        - Snowboard park for beginners
        - Snowboard park
        - Trails for classic ski and biathlon
        - Mountain trails for winter hiking
        - Mountain centre
        - Visitors centre (info points, internet points, banks etc)
        - Snow tubing run
        - Après-ski
    - Summer
        - Mountain and thematic trails
        - Summer toboggan trails
        - Children playground
        - Camping
        - 4x4 motto trail
        - Mount bike trails and mount bike park
        - Infrastructure for rural tourism

Parameters for sustainable development of Osogovo Mountains

In order to ensure sustainable development of Osogovo Mountains, it is necessary to respect some important parameters. Following parameters related to the unit of accommodation, ski trails and capacity of the vertical transport are identified:

- Total number of beds in accommodation facilities in relation to the vertical transport meters per hour (0.08% - 0.10%)
- VTM / h per hectare of ski trails (from 30000 to 35000)
- Total number of beds in accommodation facilities per hectare of ski trails (20-35)

3.2 Ski Center of Carev Vrv

3.2.1 Location and contents

Based on the spatial analyses of the identified potential locations for development of a winter tourism center on the Osogovo Mountains, as well as the several different possibilities that were reviewed, a concept proposal has been formulated for the development of a winter center. According to the proposal, the locality of Carev Vrv is considered to be the most suitable location for the future ski trails and accompanying ski infrastructure, as well as accommodation capacities, catering facilities and other types of offers. The analysis of the terrain inclination of the locality is presented in Picture 7. The ski terrains, i.e., cable car systems will be located on Carev Vrv. The ski trails, i.e., cable car system, will run from the peak of Carev Vrv and over the ridge of Kitka in the direction towards the area known as Meckin Kamen (I phase), further on from Carev Vrv across to the area known as Sredno Brdo (II phase), and from Carev Vrv towards Mal Cebernik through Tashovo (III phase). The locality of Carev Vrv along with the contents that have been anticipated are shown in Picture 8.

The maximum ski capacity that this locality can absorb is about 6.900 skiers, which has been defined through a detailed analysis of the characteristics of each ski run, while applying international standards for planning the maximum number of skiers per hectare of ski run. Table 1 displays the maximum potential of skiers that can be absorbed on Carev Vrv. Table 2 displays the trails that have been foreseen within the Ski Center of Carev Vrv. The Center will dispose with a 20.5 km total length of trails stretching over an area of 122 hectares.

The difficulty level of the ski runs has been classified according to the average level of inclination, in order to obtain a standard capacity of the ski trails. Table 3 displays the classification of trails that has been performed according to the international standard for rating trails, which is performed based on the 100 meters of trail that has the highest inclination. Table 4 shows the total length of trails, divided according to the level of difficulty of the trails.

Table 3

Slopes	Length (m)	Vertical rise (m)	100 м max. grade	Category of slope
1	1386	563	64%	difficult
2	1584	563	68%	difficult
3	1365	557	45%	medium
4	1313	557	44%	medium
5	1499	557	44%	medium
6	1343	457	41%	medium
7	1281	457	50%	difficult
8	1512	457	42%	medium
9	1326	457	45%	medium
10	434	86	22%	easy
11	2477	607	25%	easy
12	2254	607	38%	medium
13	2598	607	39%	medium

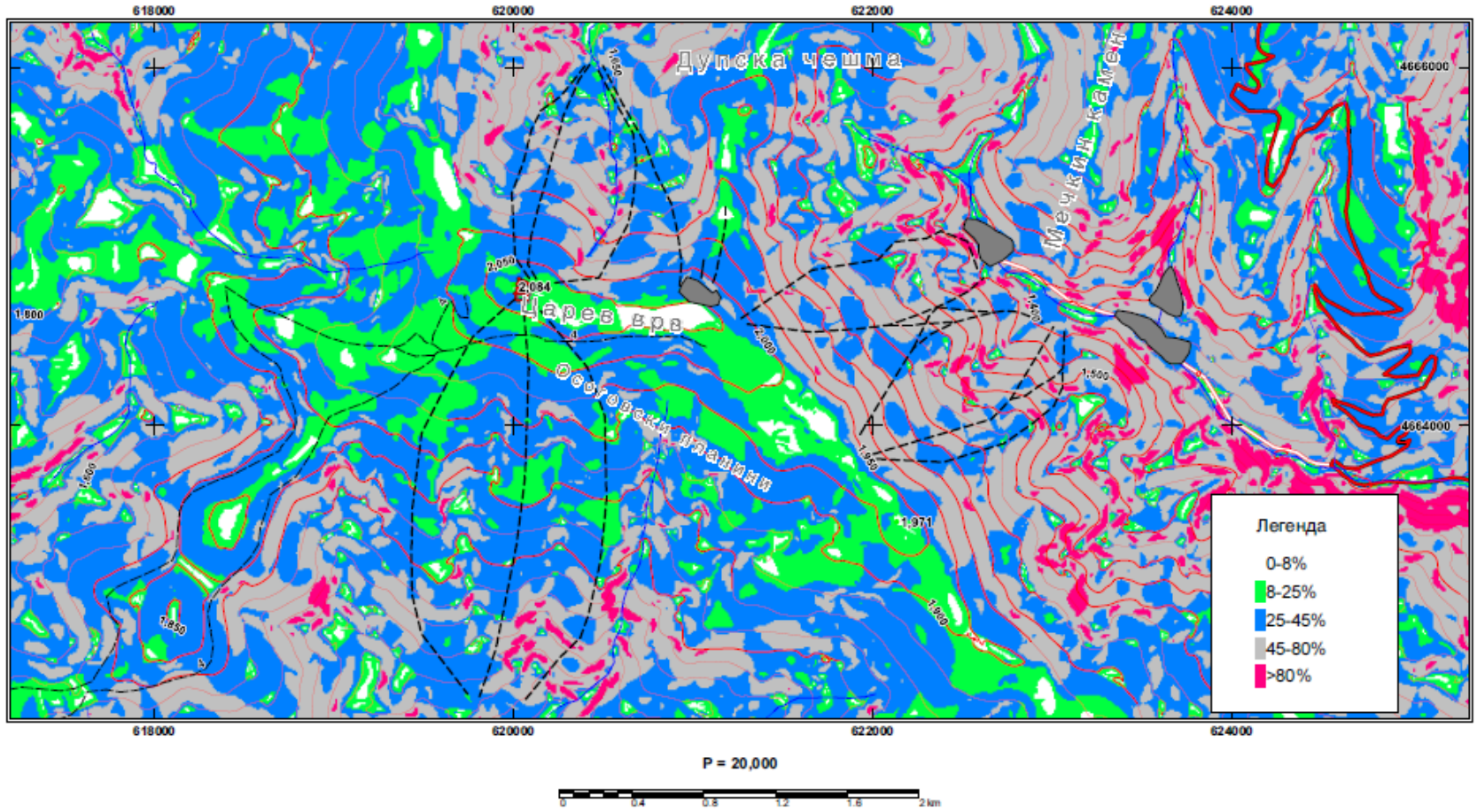
Table 4

Category of slopes	Maximum grade	length	%
easy	up to 25%	2911	14,29%
medium	up to 45%	13210	64,84%
difficult	up to 80%	4251	20,87%

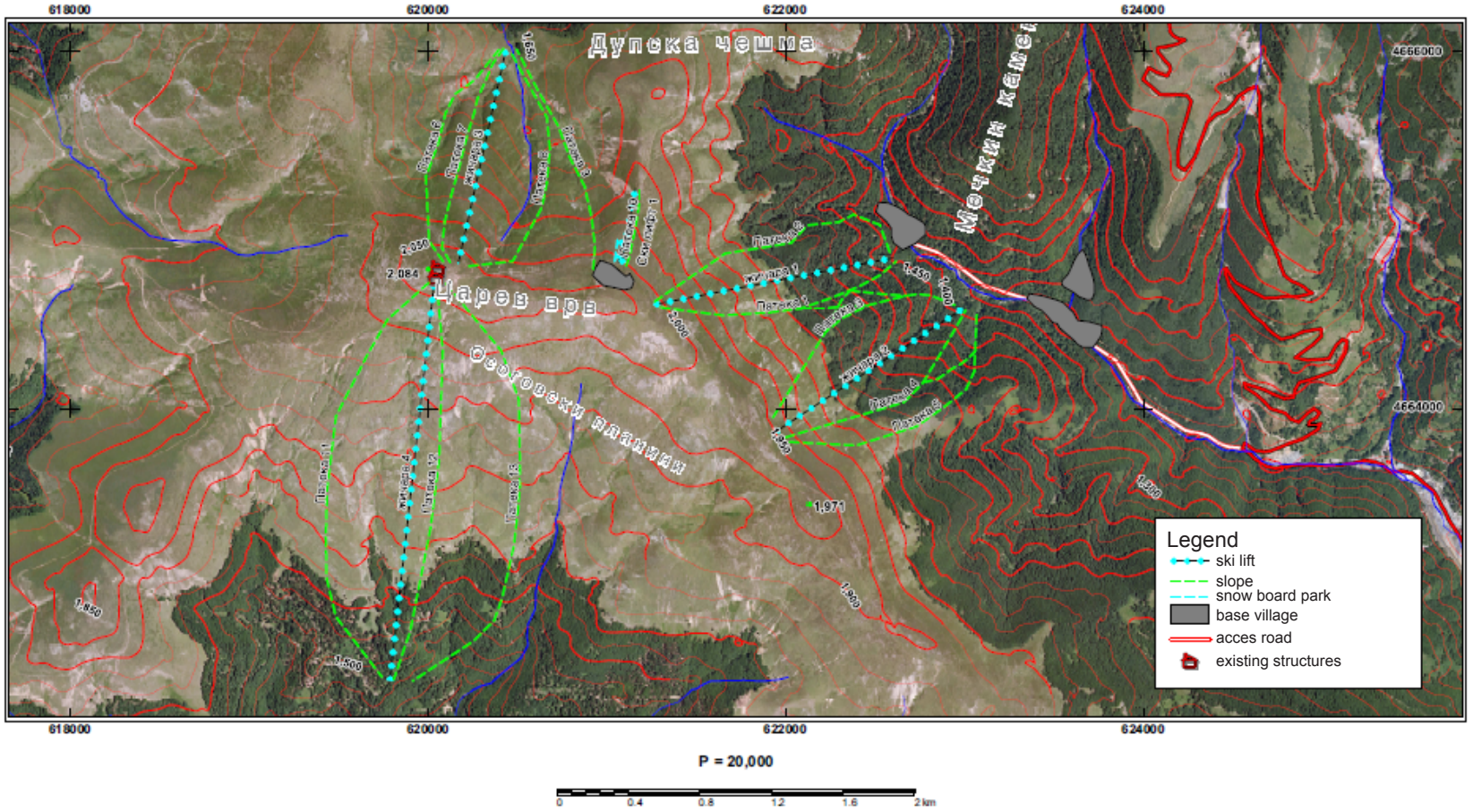
On the images from no. 9 to 22 longitudinal profiles of each of the slopes are present.

Table 1

Lift	Length	Bottom ellev. a.s.l.	Top ellev. a.s.l.	Vertical rise	Type of lift	Capacity on hour	VTM/h	VTM demand	% of load	CCC
1	1358	1453	2016	563	D2C	1200	675600	4280	80%	758
2	1251	1393	1950	557	D4C	2400	1336800	4751	80%	1351
3	1222	1607	2064	457	D3C	1800	822600	3258	80%	1212
4	2232	1463	2070	607	D4C	2400	1456800	2212	80%	3161
Ski lift 1	428	1921	2007	86	P	680	58480	620	70%	396
Snowbord lift	125	1975	2009	35						
Total	**6617**			**2305**			**4350280**			**6878**



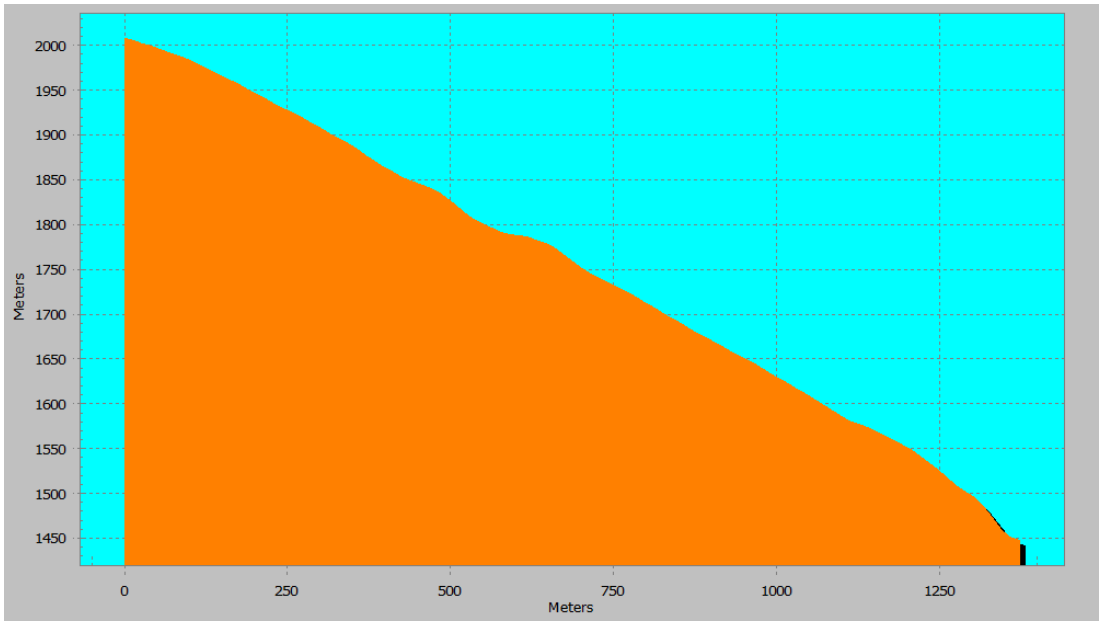
Picture 7 Carev Vrv



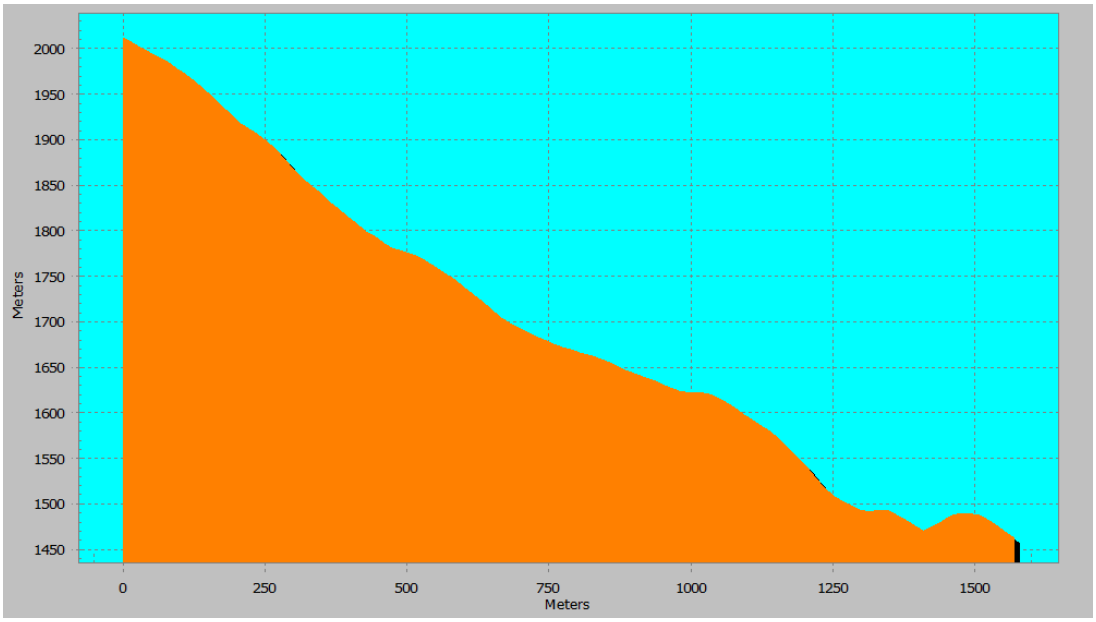
Picture 8 Carev Vrv

Table 2

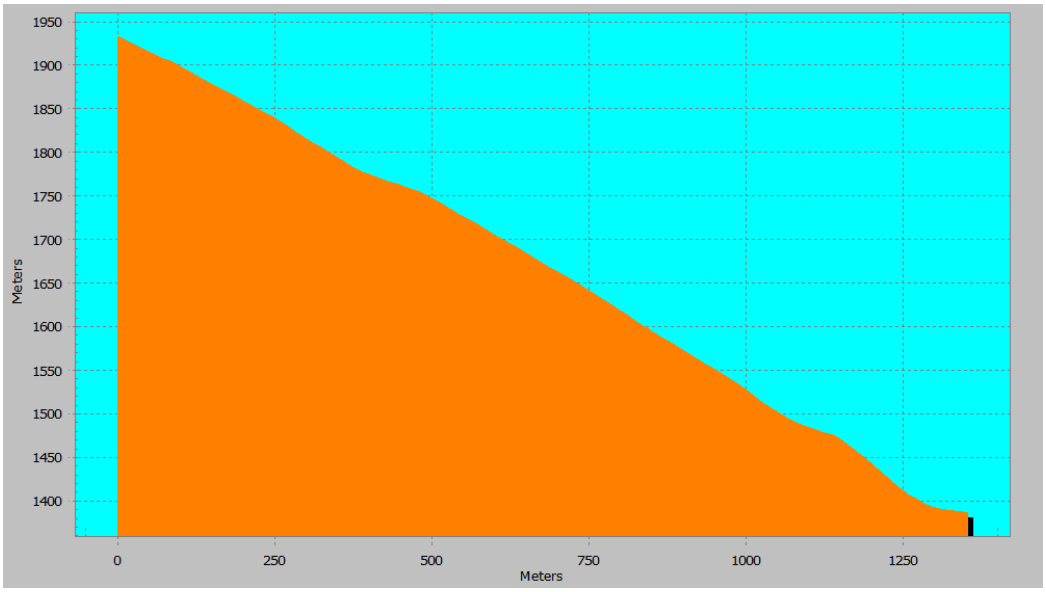
Slope	Length (m)	Vertical rise (m)	Average grade	Category of slope	Slope area (h)	Average skier per hectare	Capacity of slopes
1	1386	563	41%	medium	8,316	30	249
2	1584	563	36%	medium	9,504	35	333
3	1365	557	41%	medium	8,19	30	246
4	1313	557	42%	medium	7,878	28	221
5	1499	557	37%	medium	8,994	34	306
6	1343	457	34%	medium	8,058	35	282
7	1281	457	36%	medium	7,686	35	269
8	1512	457	30%	medium	9,072	40	363
9	1326	457	34%	medium	7,956	35	278
10	434	86	20%	easy	2,604	70	182
11	2477	607	25%	easy	14,862	70	1040
12	2254	607	27%	medium	13,524	50	676
13	2598	607	23%	easy	15,588	70	1091
Snow bord park	120						
Total	**20492**				**122,232**		**5537**



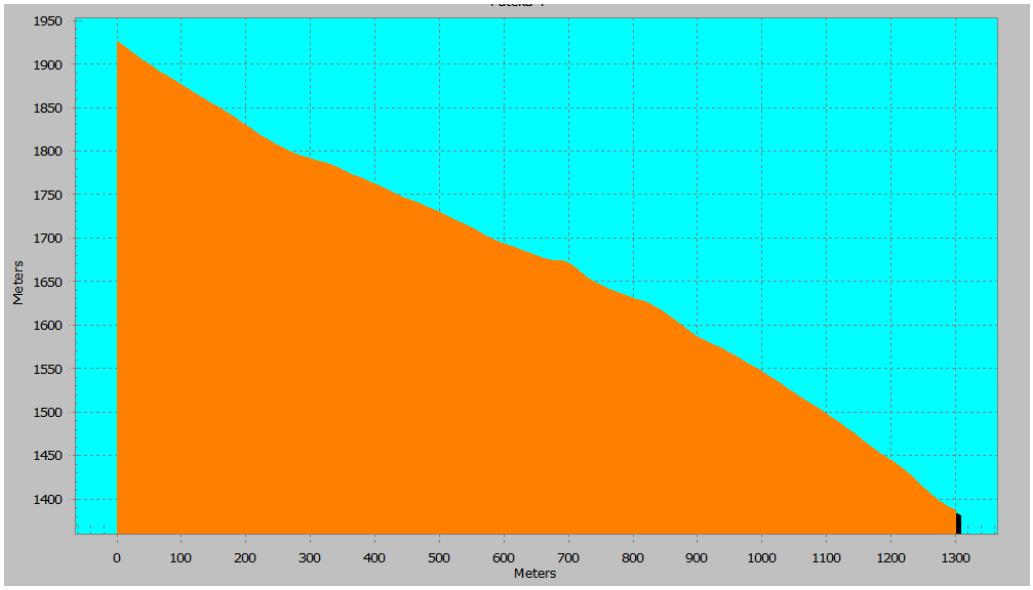
Picture 9 longitudinal profiles of slope 1



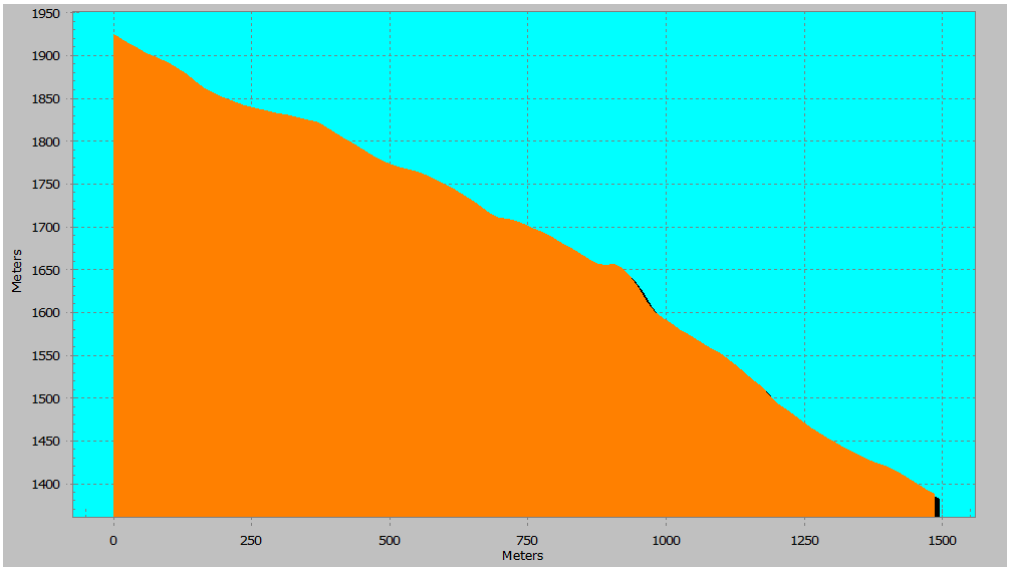
Picture 10 longitudinal profiles of slope 2



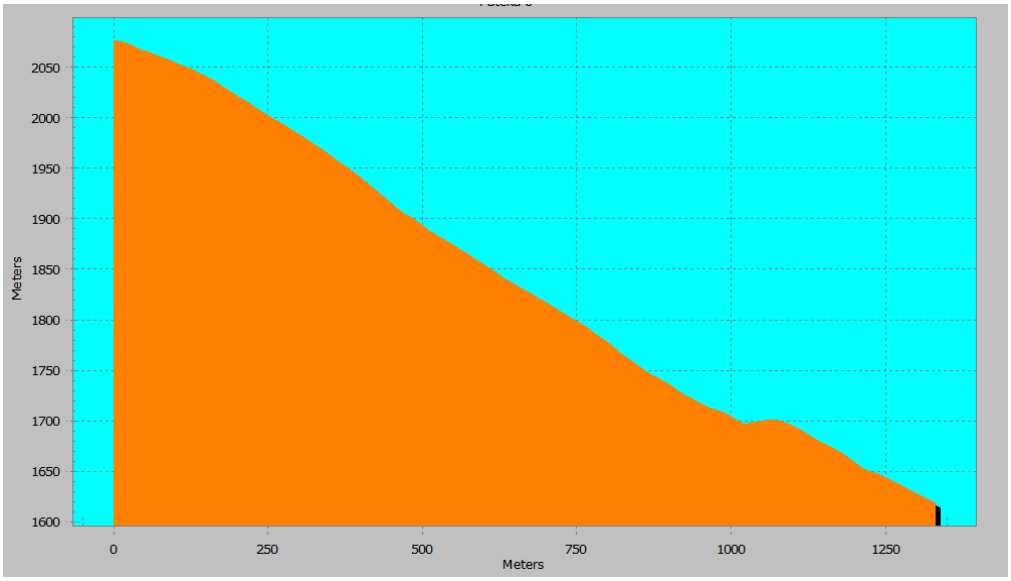
Picture 11 longitudinal profiles of slope 3



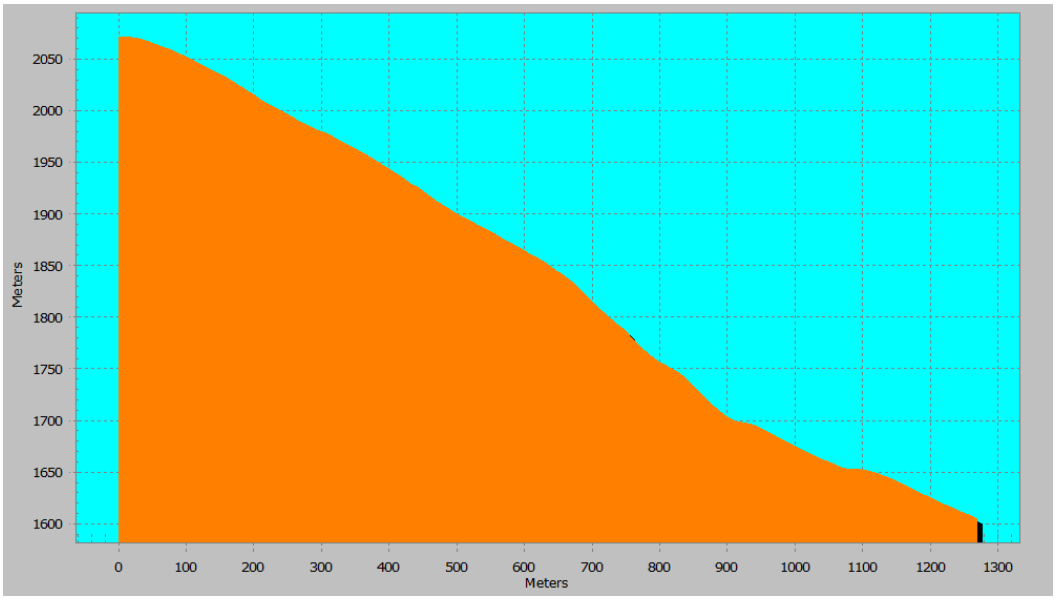
Picture 12 longitudinal profiles of slope 4



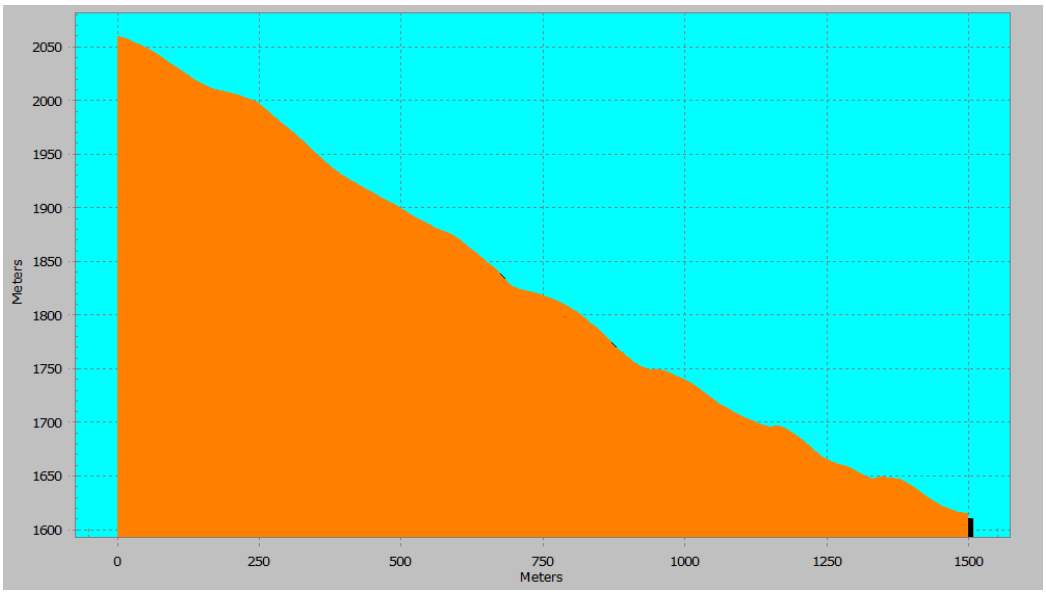
Picture 13 longitudinal profiles of slope 5



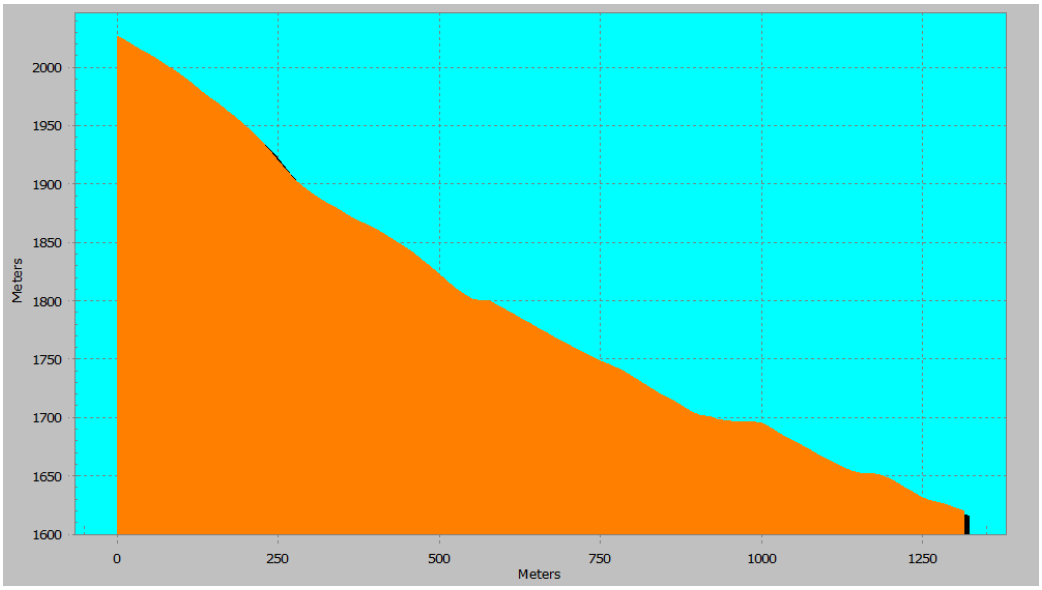
Picture 14 longitudinal profiles of slope 6



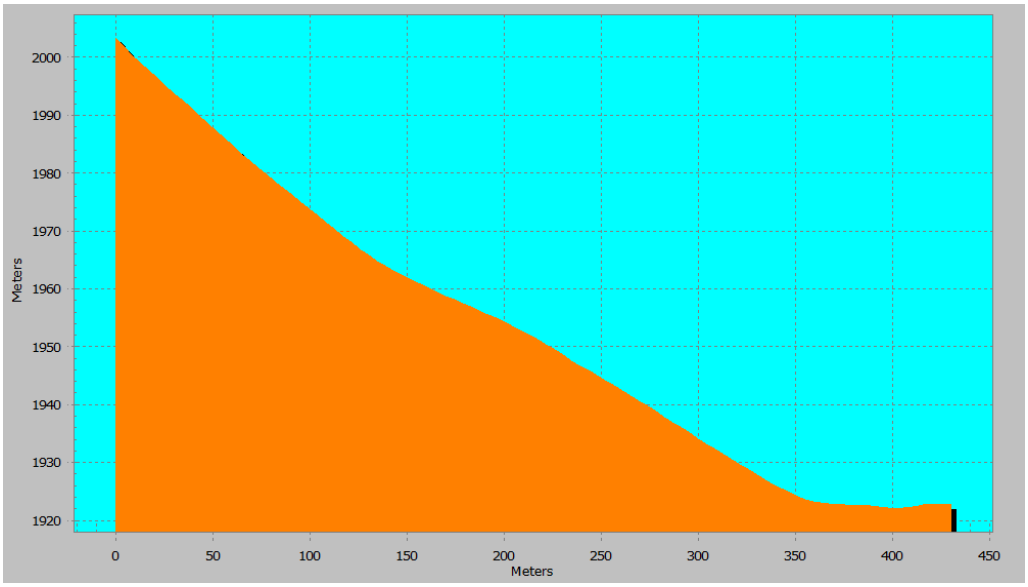
Picture 15 longitudinal profiles of slope 7



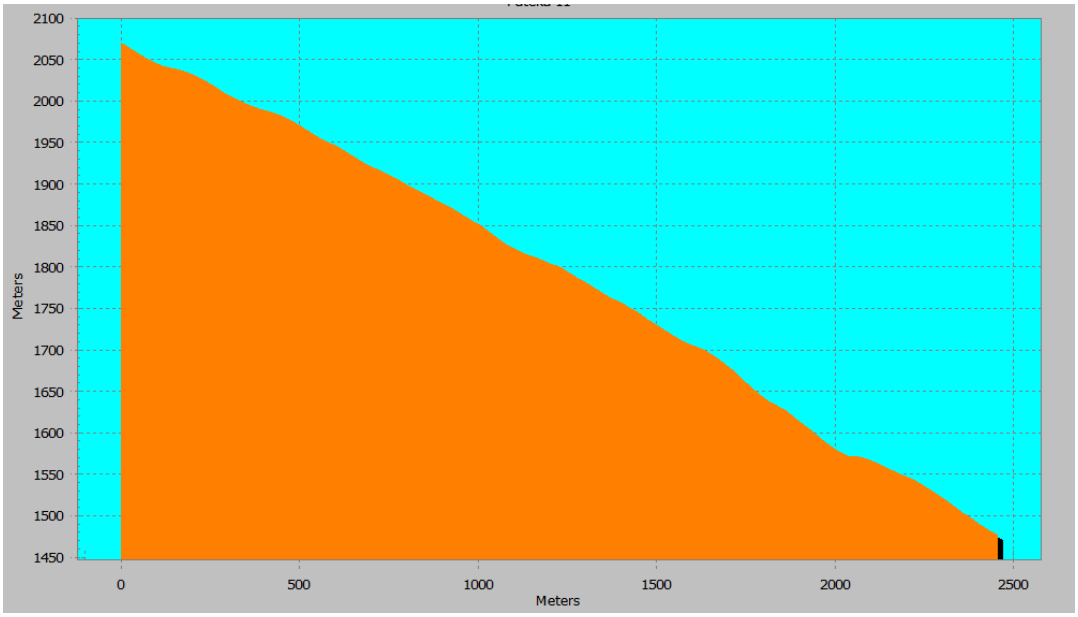
Picture 16 longitudinal profiles of slope 8



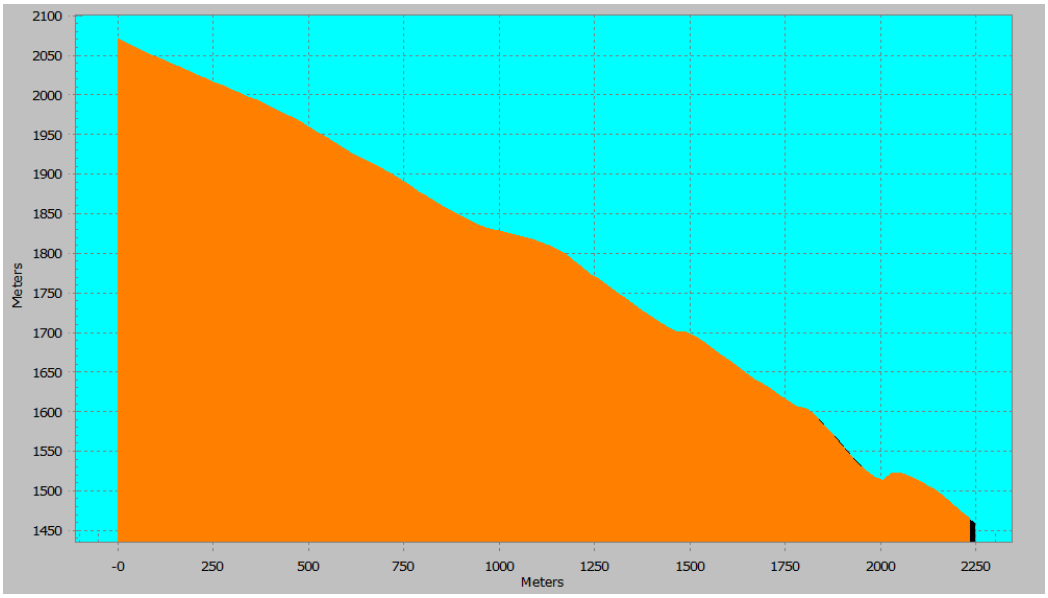
Picture 17 longitudinal profiles of slope 9



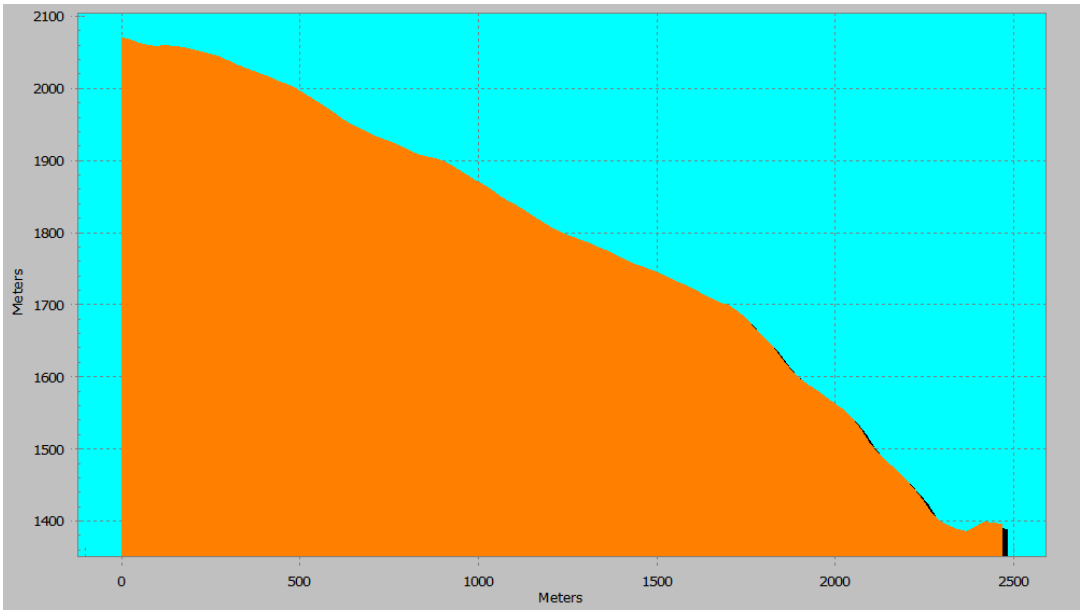
Picture 18 longitudinal profiles of slope 10



Picture 19 longitudinal profiles of slope 11



Picture 20 longitudinal profiles of slope 12



Picture 21 longitudinal profiles of slope 13

The optimum number of accommodation capacities for the locality has been determined based on an assessment of the total number of beds that are needed, according to several different criteria. The following criteria have been assessed:

- Total number of beds in accommodation capacities in relation to the meters of vertical transport per hour (0,08% – 0,10%)
- Total number of beds in accommodation capacities per hectare of ski trails (20 – 35)
- A maximum of 56% of the optimum number of skiers per day that the resort can accommodate, while guaranteeing a comfortable carrying capacity-CCC

The optimum number of beds in the accommodation capacities has been defined in correlation to the previously defined planning criteria, the guidelines for sustainable development of a ski center, the maximum absorption potential of the resort, international assumptions for planning and developing ski centers, the experience of the developed ski centers in the region and broader, as well as the presumed degree of utilization of certain accommodation capacities during top season. The results of the analysis are presented in Table 5.

Table 5

Development	Accommodation Bed unit regarding meters of vertical transport per hour (0,08 – 0,10)	VTM/h by hectare of slopes (30.000 – 35.000)	Accommodation Bed unit regarding of ski area per hectares (20 – 35)	56% CCC	Adopted Bud units
I phase	1657	37584	624	1402	1228
II phase	658	33148	869	679	742
III phase	1165	33129	1539	1770	1492
Total	**3480**	**34620**	**3031**	**3851**	**3462**

Aside from the above-mentioned elements that have been taken into consideration in defining the optimum number of beds, furthermore, overnight guests have also been divided into skiers and non-skiers, in accordance with international planning standards. Table 6 displays the type and capacity of the accommodation facilities, as well as the number of skiers that can be accommodated in these facilities.

Table 6

Type of accommodations	Units-rooms	Bed unit	Average bed unit per room	Number of the skier from the accommodation facilities
Hotels 4*	280	760	2,71	494
Hotel 2* and 3*	385	1382	3,59	898
Private accommodation and apartments	173	865	5,00	562
Hostels	55	275	5,00	179
Other accommodations	30	180	6,00	117
Total	**923**	**3462**	**3,75**	**2250**

The total maximum number of skiers coming from the accommodation facilities would be 2250, whereas the maximum number of daily skiers would reach 4628. Parking area for overnight guests will be provided within the framework of the parcels on which new facilities are to be constructed. The necessary parking space for daily visitors needs to be defined. A parking with a capacity for 7120 guests needs to be ensured, provided that 65% of them are skiers. The number of parking spaces has been determined according to the above-mentioned planning criteria, and is shown in Table 7.

Table 7

Type of vehicle	Parking place	Number of skiers
Cars	2161	1405
Buses	27	18

3.2.2 Development of the locality of Carev Vrv

The development of a ski center is an ongoing process comprised of several phases. Skiing is one of the most expensive sports and huge finances are needed for developing a modern ski center. With the purpose of defining a realistic concept that can be implemented within the next 7-8 years, the development of the ski center that is to be located within the vicinity of Carve Vrv is planned to be carried out in three phases. The phased development of this locality is presented in Picture 22. The phased development has been planned according to the physical characteristics and the commercial potential of all the micro locations that have been identified as suitable for the construction of the ski trails foreseen for this ski center. The phased development has also been planned by taking into account the estimations regarding the number of potential users, specifically, the number of guests visiting this ski resort.

3.2.2.1 First development phase of the Ski Center of Carev Vrv

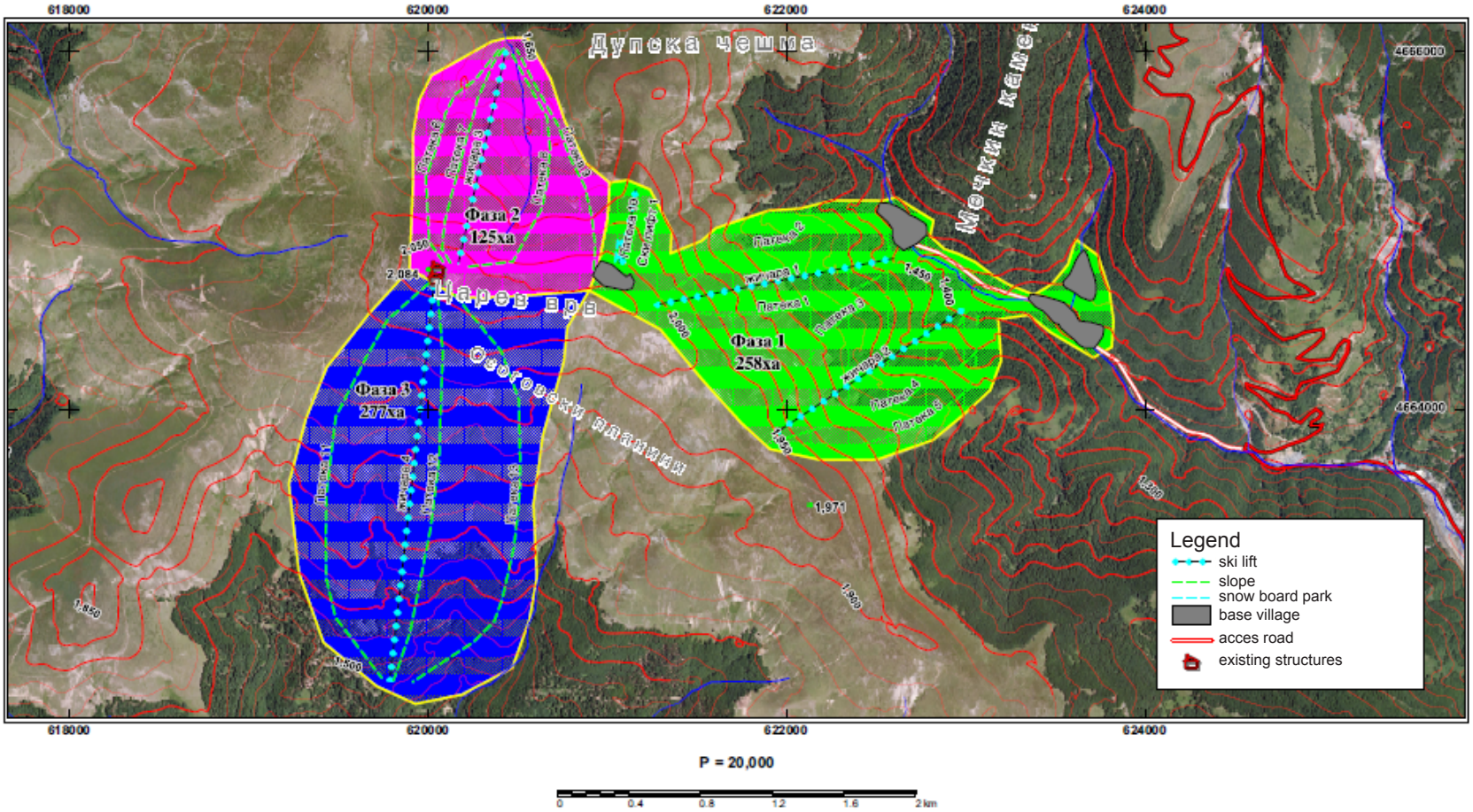
The first development phase of the ski center has been defined according to the assessment on the need for developing ski trails that absorb a maximum of a little over 2500 skiers/snowboarders at once. Table 8 displays the ski lifts that are planned to be built in the first phase and their maximum absorption capacity. Table 9 shows the trails pertaining to the first phase with their characteristics and capacity. Table 10 gives an overview of the ski trails that are to be constructed within the first phase, classified according to the level of difficulty.

Table 10

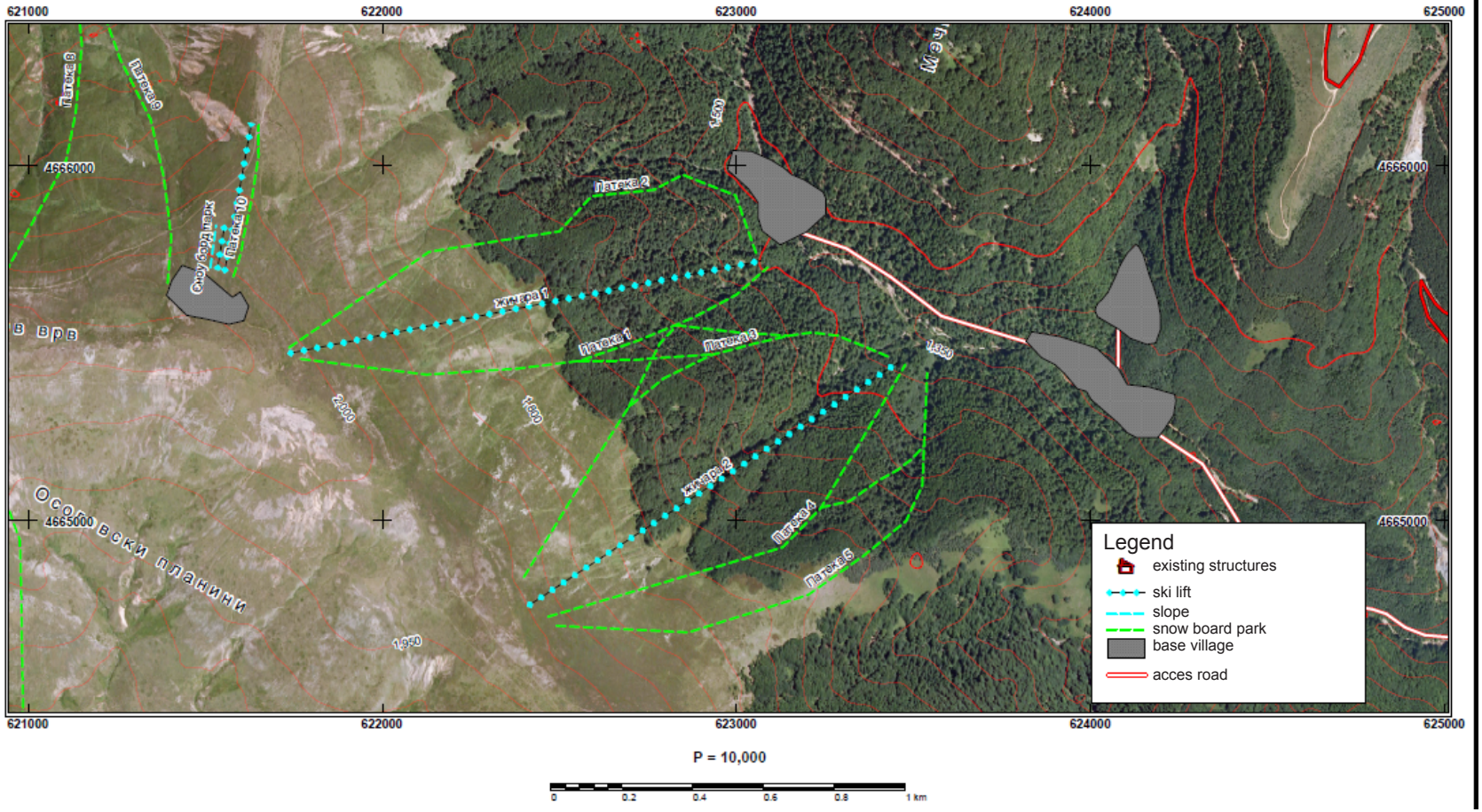
Ability level	Maximum grade	length	%
easy	up to 25%	434	5,72%
medium	up to 45%	4177	55,10%
difficult	up to 80%	2970	39,18%

Picture 23 shows the first development phase of the Ski Center of Carev Vrv, along with the anticipated contents, while Pictures 24 and 25 show the second and third development phase of the Ski Center of Carev Vrv. The location for the Snowboard Park is shown on Picture 26.

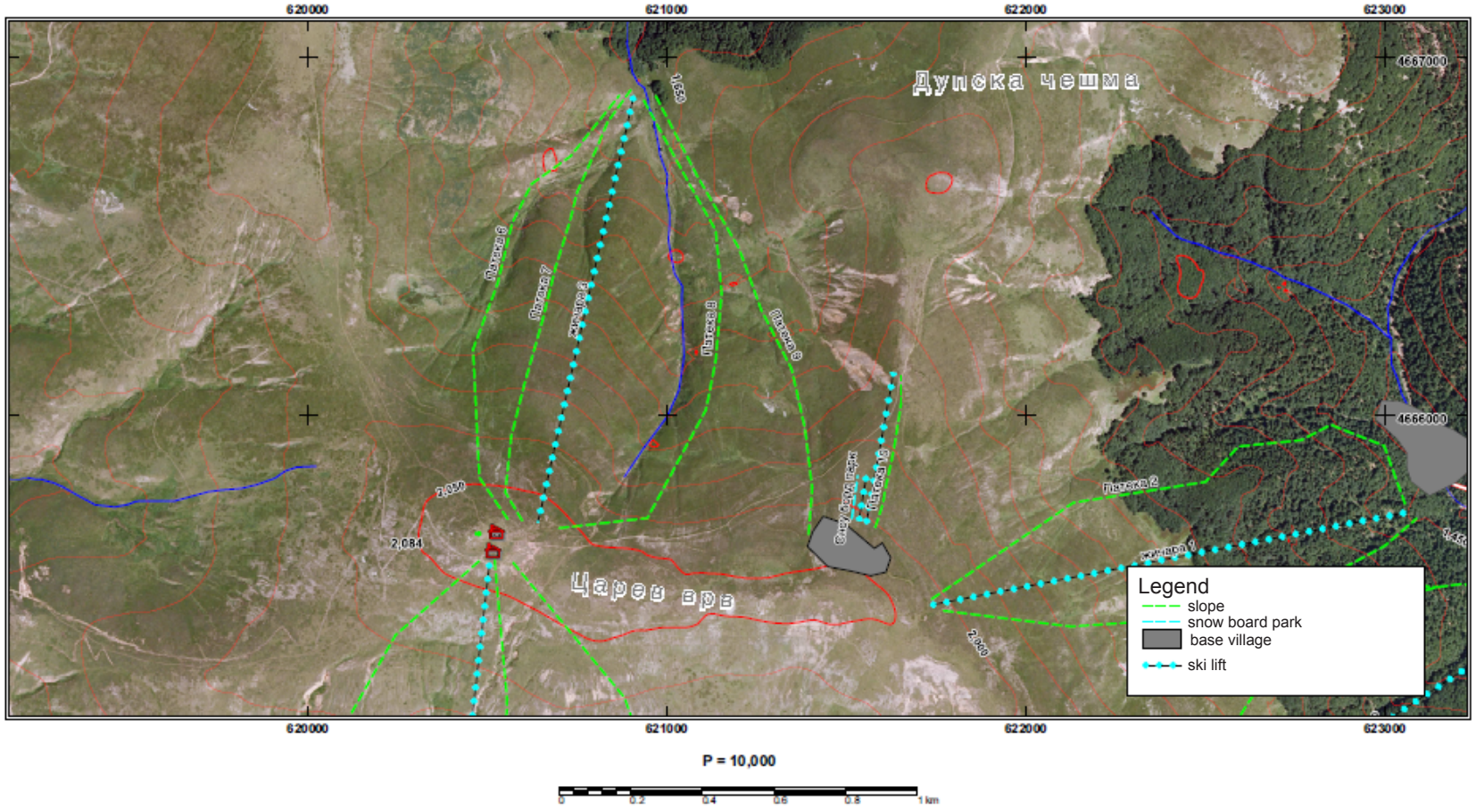
According to the number of skiers that have been defined, the size of all other service providing capacities, supporting infrastructure and contents of the tourist offer have also been determined.



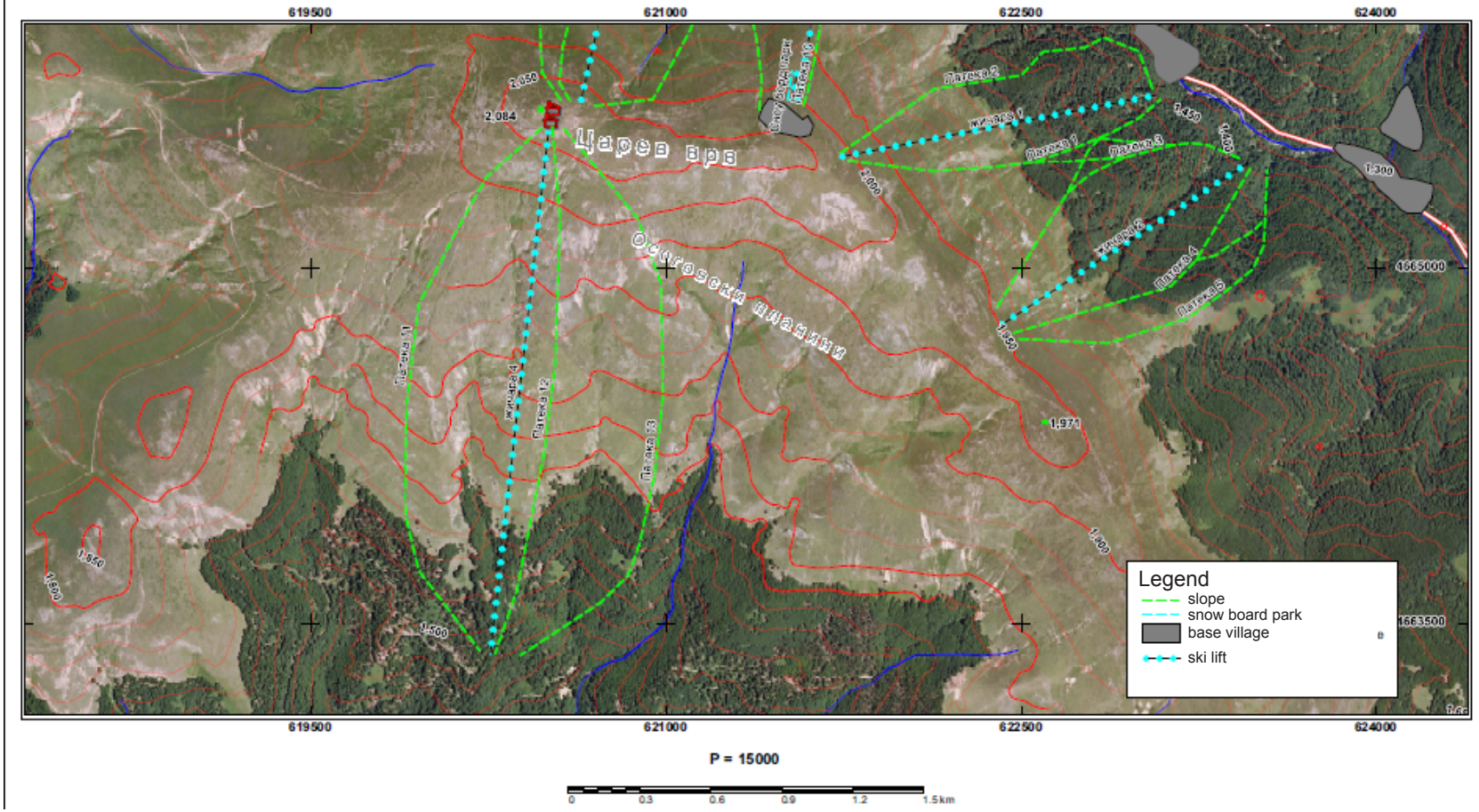
Picture 22. Development of ski centre Carev Vrv by phases



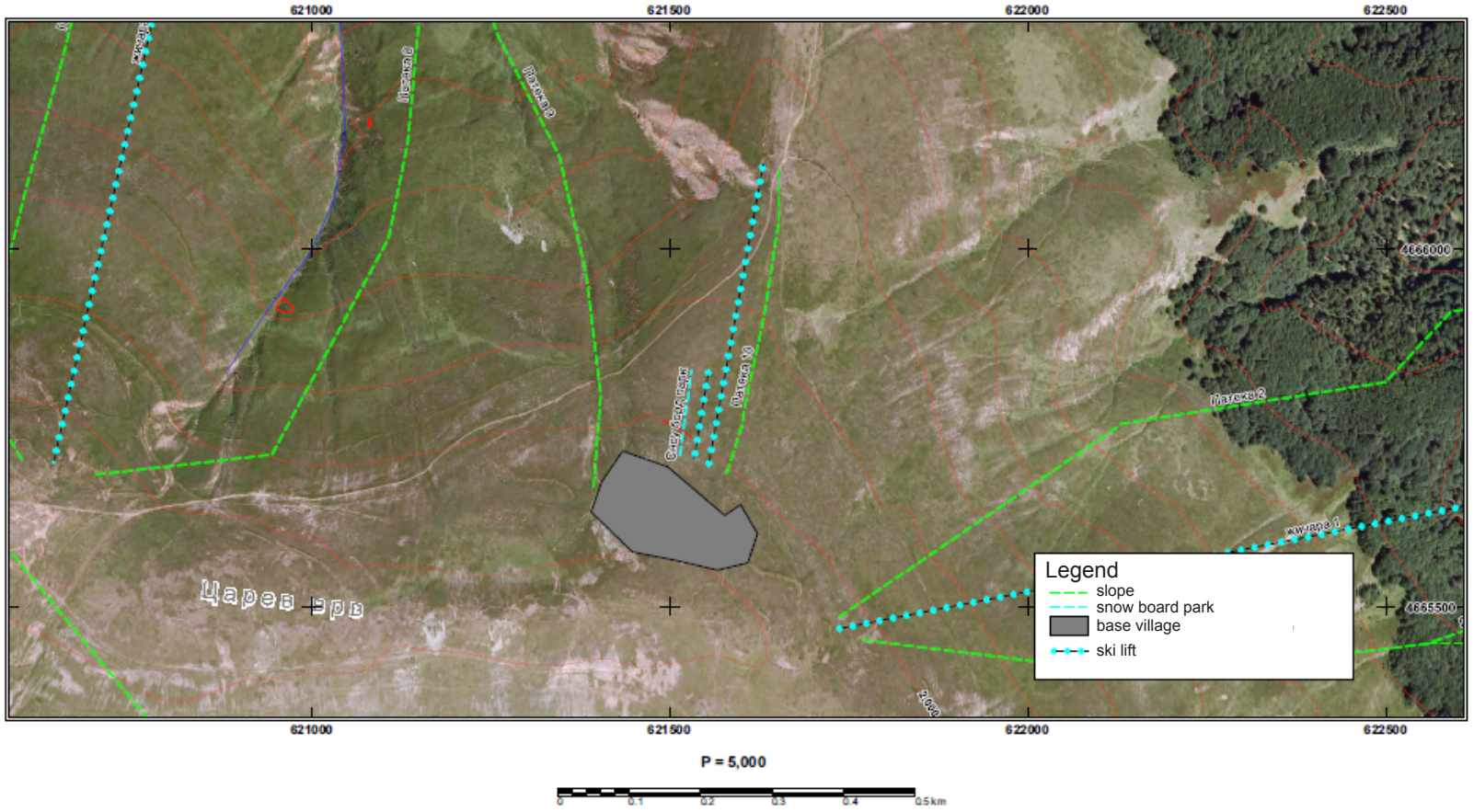
Picture 23. Ski centre Carev Vrv phase I



Picture 24. Ski centre Carev Vrv phase II



Picture 25. Ski centre Carev Vrv phase III



Picture 26. Snow board park

Table 8

Lift	Length	Bottom ellev. a.s.l.	Top ellev. a.s.l.	Vertical rise	Type of lift	Capacity on hour	VTM/h	VTM demand	% of load	CCC
1	1358	1453	2016	563	D2C	1200	675600	4280	80%	758
2	1251	1393	1950	557	D4C	2400	1336800	4751	80%	1351
Ski lift 1	428	1921	2007	86	P	680	58480	620	70%	396
Snowbord lift	125	1975	2009	35						
Total	**3162**			**1241**			**2070880**			**2504**

Table 9

Slope	Length (m)	Vertical rise (m)	Average grade	Category of slope	Slope area (h)	Average skier per hectare	Capacity of slopes
1	1386	563	41%	medium	8,316	30	249
2	1584	563	36%	medium	9,504	35	333
3	1365	557	41%	medium	8,19	30	246
4	1313	557	42%	medium	7,878	28	221
5	1499	557	37%	medium	8,994	34	306
10	434	86	20%	easy	2,604	70	182
Snow bord park	120						
Total	**7701**				**45,49**		**1537**

3.2.2.2 Accommodation capacities and projects

During the first development phase of the Ski Center of Carev Vrv, several facilities are planned to be constructed with a total capacity of 1225 beds. The structure of the facilities is shown in Table. 11.

Table 11

Type of accommodations	Units-rooms	Bed unit	Average bed unit per room	Number of the skier from the accommodation facilities
Hotels 4*	108	270	2,5	176
Hotel 2* and 3*	140	490	3,5	319
Private accommodation and apartments	76	304	4,0	198
Hostels	20	100	5,0	64
Other accommodations	15	60	4,0	40
Total	**344**	**1225**	**3,36**	**796**

The following projects have been proposed for each type of accommodation capacity:

Accommodation facilities – 4 Stars Hotel
❖ **Hotel intended for business and congress tourism with "Wellness in the mountains"** **– MICE Hotel (Meetings, Incentives, Conferences and Events)** With a total number of 270 beds
Attracting business tourists is something many hotels around the world are striving for. A four stars hotel is primarily a hotel that is relatively expensive and one that besides all the standard services it needs to offer, also needs to offer some more luxurious services, something that will incorporate the tourist products from the "Wellness in the mountains" program (spa, massage, health related programs, etc.). The hotel that is proposed to be part of the Ski Center of Carev Vrv is primarily intended for services on the market of congress tourism in Macedonia and broader. The key advantages of a hotel with four stars are: appropriate high quality services, reasonable prices, pleasant atmosphere and quality. The location of the hotel should be near the ski terrains, within the central part of the base settlement. The hotel

should offer quality rooms, a 24 hour reception desk and should have an appropriate level of technical equipment.

Services

The hotel should offer a variety of amenities and provide conditions for the guests to enjoy numerous recreational activities. The total number of rooms will be 108, 65 being standard rooms, 30 superior rooms, 10 junior suites and 3 executive suites. The hotel will also have adjoining rooms and rooms adapted to the needs of the disabled. The total capacity of the hotel should be 270 beds.

The hotel will have 2 restaurants, 2 café restaurants, a fitness club, indoor swimming pool with sauna, spa center and appropriate services, an indoor parking, 2 halls for organizing symposiums, meetings, trainings and one small meeting room for organizing meetings with a capacity of 20 persons. One of the halls will have a capacity of 200 persons, and the other 50 persons.

Accommodation

Accommodation units:

- 40 standard rooms with 30 m2 in area, with two single beds and the possibility for an additional bed
- 25 standard rooms with 30m2 in area, with a double bed and the possibility for an additional bed
- 30 “superior” double rooms with 35m2 in area, with one double bed or two single beds and the possibility for an additional bed
- 10 „junior” suites with 45 m2 in area, with one double bed or two single beds and the possibility for an additional bed (folding lounge chair), some suites should have two rooms
- 3 „executive” suites with 60 m2 in area, with one double bed or two single beds and the possibility for an additional bed (folding lounge chair), some suites should have two rooms

Accommodation facilities – 3 Stars Hotel

❄ **3 Stars Hotel intended for families**

With total accommodation capacity of 340 beds

A middle-class hotel with relatively low prices, intended for families. The hotel will offer standard services for this type of hotel; it will have an indoor swimming pool, Internet access, 24 hour reception desk, room service and other amenities. The location of this hotel should be near the first station of one of the cable cars and should offer an appropriate value for the money being paid for its services. The hotel will be distinguished with pleasant surroundings and pleasing services that will help make the guests feel welcome and enjoy their stay. The target group for this hotel will mainly be tourists – families with a limited budget, seeking a balance between quality and services. The entire complex will be composed of two facilities, each having five floors. There will be a total of 70 rooms, 20 standard, 15 „superior", 30 two-room suites and 5 „junior" suites.

Services

The hotel should offer various types of services that will be directed towards the children, and especially services that will offer both parents and children a pleasant stay at the hotel. A wide variety of games and toys should be made available at the reception desk for guests staying in family rooms, as well as appropriate baby beds. The furniture has to be properly selected, childproof with childproof electrical outlets. Some rooms and suites should be equipped with a proper baby video monitoring system. The restaurant should have a seating capacity for 300 people and should be able to offer baby food.

Necessary hotel amenities:

- Indoor swimming pool and kids pool
- Enclosed area where kids can rest and play safely
- Kids playground within the hotels premises
- Possibility for using All Inclusive packages
- Appropriate kids menu
- Supervised kids′ table at lunch and dinnertime
- Day care for children scheduled according to age, with an area for drawing and playing, Kids Theater, etc.
- Separate areas for babies, with appropriate equipment for diaper changing, baby bathtubs and etc.
- Outdoor playground with rubber castles, attractions for kids, artificial

beach, swings and slides, carousel, tricycles, toy cars, play houses and etc.

In order for the hotel to have its own distinguished image it needs to have a mascot.

Accommodation

Accommodation units:

- Standard rooms will have 30m2 in area, with one double bed or two single beds, with the possibility for an additional bed. The two-room suites will have 45m2 in area with 4 beds, whereas the „junior" suites will have 50 m2 in area, one double bed or two single beds, with the possibility for an additional bed.

❄ **3 Star Hotel with Spa and Wellness**

With total accommodation capacity of 150 beds

A middle-class hotel with relatively low prices, intended for guests that care of their health but also have limited budgets. The hotel will offer standard services for this type of hotel. It will have a swimming pool, Internet access, 24 hour reception desk, room service and other services. The hotel should be located in a quiet and peaceful surrounding, preferably near the woods. The hotel should offer an appropriate value for the money that is being paid for its services. It will be distinguished with a pleasant and relaxed surrounding, with an interior furnishing that will help make the guests enjoy their stay. The entire complex will be composed of three facilities, each having three floors. There will be a total of 70 rooms, 50 standard, 15 „superior", and 5 „junior" suites. The wellness and spa center should have outside access as well, in order to make the services available to other guests too. The Wellness area should have a medical beauty center and beauty salon.

Services

The hotel should provide the compete services that are part of the standard spa and wellness programs. The hotel is oriented towards the middle aged and elderly generations that are becoming more conscious about their well-being. The wellness area will cover an area of 1500 to 2000 m2, and will have a swimming pool and sauna, with a separate area for various treatments and relaxation. This area should provide the following services:

- Programs and treatments available 6 days per week and 5 hours a day
- Professional cosmetic treatments and various relaxation and beauty treatments
- Fitness area with appropriate equipment
- Aromatherapy, reflexology, body treatments, facials, wide range of massages, beauty treatments and etc.

- Separate area with equipment for weight loss programs
- At least two small pools intended for Mountain Wellness (pool with herbal evaporation, hydrotherapy, stone spa, and etc.)

Accommodation

Accommodation units:

Standard rooms will have 25m2 in area, with one double bed or two single beds, with the possibility for an additional bed. The "superior" suites will have 30m2 in area with 1 double bed or two single beds, with the possibility for an additional bed. The „junior" suites will have 40 m2 in area, one double bed or two single beds, with the possibility for an additional bed.

Accommodation facilities - Apartments

❖ **3 and 4 Stars Apartments**

With a total of 210 beds

The apartments will be identical houses built in a row forming part of one complex. The complex will provide various amenities, depending on the category of the complex. These apartments will be rented out per night and therefore should be completely furnished. Each apartment will also have a fully equipped kitchen. These accommodation capacities will be owned by individuals. They may be part of the renting capacity only if the owner is not using them and if they are available for renting. The reception area will be shared by all the capacities and will be located outside the apartment facilities. The apartments will be constructed in 3 to 5 facilities. They will have the following structure: 40% of the apartments will have one living room and one bedroom (50м^2), 50% of the apartments will have one living room and 2 bedrooms (65 м^2) and 10% of the apartments will have one living room and 3 bedrooms (90 м^2).

Part of the apartments will be of higher category furnished with a Jacuzzi, fireplace, more luxurious equipment, cable TV and so forth.

Services

The apartments should provide appropriate accommodating conditions to be rented on a per night basis, for visitors that prefer to prepare their own meals and have more

freedom that is to have the choice of organizing their own time. There will be in total 50 apartments, out of which:

- Three bedroom apartments will have 6 to 8 beds with a bathroom, kitchen, living room and three bedrooms
- Two bedroom apartments will have 4 to 6 beds with a bathroom, kitchen, living room and two bedrooms
- One bedroom apartments will have 2 to 4 beds with a bathroom, kitchen, living room and one bedroom

Accommodation

Accommodation units:

- 20 one bedroom apartments
- 25 two bedroom apartments
- 5 three bedroom apartments

Accommodation facility - Hostel

- **2 Stars Hotel**

  Total number of 100 beds

Hostels provide accommodation for tourists mainly looking for less expensive and fun stay. Hostels are economy-class accommodation facilities that offer a relatively cheap accommodation. They are usually intended for guests of younger ages and hikers, and for providing pleasant short-term stays. Their basic goal is to provide guests and visitors a short stay at low accommodation prices. One of the features of the hostels is that they enable the opportunity for young people to encounter people of different cultures. Guests can rent a bed in a dormitory and share a bathroom, kitchen and lounge area. Part of the accommodating units may also be private rooms with two beds. The positive aspects of hostel accommodation are primarily the low prices compared to other accommodations, as well as the opportunity to meet other guests. Hostels are usually less formal than hotels. The reception desk is located within the hostel premises and works with fixed working hours.

Services

Hostels provide only the basic accommodation services and usage of a common kitchen area. In most hotels, guest share the bathrooms and kitchen, and can choose between a room with two beds and one with more beds. They generally have common

lounges where guests can enjoy their free time. This hostel is planned to have 20 accommodation units.

Accommodation

Accommodation units:

- 11 rooms with 6 - 8 beds
- 5 rooms with 4 – 6 beds
- 4 rooms with 2 beds and a separate bathroom

Other types of accommodation

- **Hotel - Boarding house**
  Total number of 60 beds

Boarding houses are actually family hotels providing bed & breakfast or half board accommodation. Boarding houses are managed by one family and are relatively small, having a relatively small number of beds and accommodating units. The prices of accommodation and services are pretty much acceptable for most clients. Its location should be near the cable cars, but further away from the center of the base settlement. Simple and easy access to the boarding house has to be provided.

Services

Aside from the basic services that boarding houses provide, they also offer additional amenities, such as solarium, sauna, various massages, as well as a menu adapted to the different needs of the guests (bio products, homemade food, and vegetarian food). A tavern could also be housed within the facility that could also serve as a restaurant for the guests. The facility will have 15 accommodation units.

Accommodation

Accommodation units:

- 10 rooms with 2-3 beds
- 5 rooms with 4 beds

3.2.2.3 Infrastructure and supporting facilities

Estimations are that out of the maximum number of skiers and snowboarders that will be absorbed at once on the ski trails that are to be constructed during the first development phase of the Carev Vrv Ski Center; approximately 800 will be overnight guests and 425 daily skiers. A parking area with 230 parking spaces for automobiles, 25 parking spaces for commercial vehicles and 4 parking spaces for busses need to be built for the needs of the daily skiers.

The first development phase of the ski center foresees construction of several facilities for catering services, and structures for commercial purposes, which will mainly be located within the premises of the accommodation facility (ground floor).

Part of the facilities for catering services should be located right on the ski trails, with one or a total of two catering structures built on each trail. One of these structures is to operate on the basis of self-service.

Currently, there are two demolished facilities on the locality (old guard houses), which have been proposed to be reconstructed where one is to be converted into a lodge (one of the structures) and the other into a catering facility with accompanying contents (events, entertainment, thematic contents).

In designing the accommodation facilities, especially the higher category facilities, particular attention should be given on the need of increasing the capacities as the development of the ski center progresses, that is, with the realization of the second and third phase. The parking system for the hotels and hostels will have to be provided by constructing the parking within the premises of the facilities, at level -1. The remaining accommodation facilities will have to go with the option of creating parking spaces on the territory of their own parcels.

In accordance to the defined maximum number of skiers and beds, the remaining aspects that are necessary for the proper functioning of a modern ski center have also been defined. Table 12 gives an overview of the facilities that have been planned for the needs of the ski center in the base settlement.

With the purpose of having an uninterrupted traffic flow in the base settlement, about 3500 m of roads need to be constructed, along with approximately 30 parking spaces for delivery needs.

The projects that are listed below also need to be implemented within the ski center, as they will significantly increase the tourist offer in the winter and summer period.

Aside from the above-mentioned contents that are planned to be realized within the framework of the Ski Center of Carev Vrv, the projects that are stated below should be realized as they will increase the offer which, at the end, will lead to an increased level of attractiveness of the center.

Below are the projects that will overlap with the projects planned for the SRC of Ponikva:

a. ***Snowboard park***
b. ***Attractive mountain cabins for social after skiing activities (Apes Ski)***
c. ***Snowmobiles***
d. ***Mountain biking***
e. ***Mountain tours concept***
f. ***Nature walking and snow hiking***
g. ***Horseback riding and horse-drawn carriage/ sledge rides***

Table 12

Service function	Surface (m2)
Facilities on the ski lifts	
Ticket sales	40
Employee toilets	50
Rentals/Repairs of ski equipment	220
Depot	150
Ski school	120
Service	100
Total	***680***
Commercial	
Restaurant	800
Toilets	100
Service	150
Shops	120
Total	***1170***
Operative facilities	
Administration	200
Employee rooms	80
First aid and snow patrol	120
Total	400
All Total structures	2250

Additional facilities	
Store Garage with repair/mechanical Waste management	250 300 250
Total	***800***
TOTAL	**3050 m^2**

The development of tourism in the Osogovo Mountains should be seen as an integral unity. The projects that are being proposed for Ponikva should be able to be connected with the similar projects proposed for the Ski Center of Carev Vrv. Planning the implementation of these projects should primarily be based on the possibility for the guests of both of the tourist localities to be able to use the same offers.

The concept of mobility that is proposed for Ponikva, should also be implemented in the Ski Center of Carev Vrv, meaning that appropriate transportation from the Ski Center of Carev Vrv should be provided to Ponikva and vice-versa, which will provide integrality on the entire region of the Osogovo Mountains.

3.2.2.4 Estimation of investments for first phase of project development

Needed investments for first phase of ski centre

Cost for project preparation

Description	Unit	Quantity	Unit price €	Total €
Master Plan	Lump sum	1	200.000	200.000
Urban Plan		1	30.000	30.000
Fusibility studies		1	100.000	100.000
Design		1	450.000	450.000
Total				**780.000**

Cost for ski lift

Ski lift	Length	Type of lift	Quantity	Unit price €	Total €
lift 1	1358	D2C	1	1.100.000	1.100.000
lift 2	1251	D4C	1	2.500.000	2.500.000
Ski lift 1	428	P-T bar	1	400.000	400.000
Snowboard park	125		1	150.000	150.000
Total	**3162**				**4.150.000**

Cost for Slope preparation

Description	Unit	Quantity	Unit price €	Total €
Slopes on meadows	hectare	18,1	1.500	27.150
Slopes in woods	hectare	27,8	30.000	834.000
Total				**861.150**

Cost for snow making system (60% of slope coverage)

Description	Unit	Quantity	Unit price €	Total €
Snow making machines	lump sum	1	150.000	200.000
Water reservoirs	m^3	160	400	64.000
Snow making system	he	27,8	100.000	2.780.000
Total				**3. 044.000**

Costs for construction of facilities for the ski centre

Description	Unit	Quantity	Unit price €	Total €
Facilities in the base village	m^2	3050	1.400	3.355.000
Restaurant on top of ski lift 1	m^2	200	1.200	240.000
Restaurant on top of ski lift 2	m^2	500	1.200	600.000
Reconstruction of existing structures on Carev Vrv	lump sum	1	700.000	700.000
Structures on top of the lifts for the employee	m^2	27,8	600	16.680
Total				**4.911.000**

Cost for mountain infrastructure

Description	Unit	Quantity	Unit price €	Total €
Parking for daily visitors	Parking place	300	650	195.000
Streets in base village	m’	3.500	500	1.750.000
Mountain roads	m’	10.000	40	400.000
Distribution of electricity from base to the top of the lift 1	m’	1500	35	52.500
Distribution of electricity from the top of the lift 1 to the top of lift 2	m’	800	35	28.000
Distribution of electricity from the top of the lift 1 to the top of ski lift	m’	210	35	7.350
Distribution of electricity from the top of the ski lift 1 to the existing facilities on Carev Vrv	m’	850	35	29.750
Electro equipment for ski lifts	lump sum	1	400.000	400.000
Other infrastructure facilities and utilities (water, sewage etc)	lump sum	1	300.000	300.000
Total				**3.162.600**

Cost for supply of: cars, special equipment and mechanizations

Description	Unit	Quantity	Unit price €	Total €
Mechanization for preparation of slope	number	2	200.000	400.000
Additional mechanization-Pipe shaper	number	1	30.000	30.000
Moto snow bike	number	3	8.000	24.000
Vehicles pick up 4x4	number	2	25.000	50.000
Radio connection and equipment	lump sum	1	10.000	10.000
Equipment and tools for maintained of vehicles	lump sum	1	50.000	50.000
Equipment and tools for maintained of vertical transport - ski lifts	lump sum	1	20.000	20.000
Equipment for ski patrol	lump sum	1	30.000	30.000
Slope mark and safety measures	lump sum	1	35.000	35.000
Total				**649.000**

Recapitulation of investment costs

Description	sum €
Project preparation	780.000
Vertical transport - ski lift	4.150.000
Slopes	861.150
Snow making system	3.044.000
Facilities for ski centre	4.911.000
Mountain infrastructure	3.162.600
Vehicle and special equipment	649.000
Total	17.557.750
Reserve	1.755.775
TOTAL	19.313.525

Capital infrastructure

The future Ski Center of Carev Vrv and the base settlement need to be connected to the existing infrastructural road network. The base settlement needs to be connected to the existing electricity and telephone network. A water supply system, sewage system and a waste water treatment station also need to be constructed for the needs of the base settlement.

Transportation connections

Connecting the future Ski Center of Carev Vrv and the base settlement to the existing road network is possible only through a connection made to the road that runs from the Sasa mine to the Ruen Peak. Therefore, it is necessary to build a new road that will be 3km long. Modernization is also necessary, in particular, reconstruction of the road that starts from Makedonska Kamenica, runs through the Sasa mine and up to the point where the new road has been foreseen.

Initial estimations regarding the modernization of the existing road and construction of a new road with a length of 3km, range from 2 to 2,5 million Euros.

The Agency for state roads of Republic of Macedonia is competent for managing the regional and national roads in Republic of Macedonia. The images that display the access road to the base settlement are just an informative overview of the road and do not necessarily refer to its exact location.

Supply of electric energy

The base settlement is planned to be connecting to the existing distribution network near the mine of "Sasa". Initial assessments are that approximately 1MW of electricity need to be provided, which should be sufficient for the first development phase of the Carev Vrv Ski Center. A transmission line needs to be constructed that will link the base settlement with the existing network, with a total length of about 8km. Estimated costs range from 0,8 to 1,2 million Euros.

Water supply

The issue of providing water supply to the base settlement should be solved with the construction of a separate water supply system, which will be fed with water through construction of a water supply line on the existing springs located under Carev Vrv. Initial estimates are that about 1 million Euros will be required for the construction of an entire water supply system for the base settlement.

3.3. Sports and Recreational Center of Ponikva

With the purpose of increasing the competitiveness of the SRC of Ponikva, while taking into account the weaknesses that were identified in the area of the tourist offers, and the vision and concept for tourism development of the Osogovo Mountains, the following areas of action have been defined:

1. Development of contemporary and universal winter tourist products
   - Goals
     a. Increasing the attractiveness during the winter period
     b. By increasing the level of attractiveness the level of average prices also rises
     c. Expanding the capacities
2. Development of "Entertainment and action" tourist products for the summer and winter period
   - Goals
     a. Increasing the attractiveness during the entire year
     b. Increasing the utilization of the capacities during the summer period
     c. Enhancing the image of Ponikva
     d. Offering guests the chance to try something new
3. Development of family dedicated tourist products
   - Goals
   a. To make Ponikva attractive for families all year round, especially for families with small children
   b. To make use of the closeness of the nearby settlements
   c. To make use of the trend for outdoor activities, especially for the younger generations
4. Development of tourist products such as "Mountain Wellness"
   - Goals
   a. To make use of the general trend of using Spa and Wellness products
   b. To create health-related products
   c. To have one accommodation facility with a Spa and Wellness Center

5. Development of the sports tourism segment

   - Goals

   a. Using the capacities all year round
   b. Making use of the general trend of increased demand for sports tourism
   c. Attracting sports clubs and athletes

6. Development of the business tourism segment

   - Goals

   a. Using the capacities all year round
   b. Making use of the closeness of the nearby settlements
   c. Obtaining higher accommodation prices
   d. Attracting high-end companies

7. Development of the tourist infrastructure

   - Goals

   a. Quality improvement of the accommodation capacities
   b. Attracting different categories of clients
   c. Specialization of the accommodation capacity
   d. Increasing the total accommodation capacity
   e. Expanding the offer

Concept of mobility

At the present, Ponikva is facing serious problems concerning the issues of transportation and parking. This is especially typical for the winter period, when in weekends and days with exceptional snow conditions there are sometimes over 2000 visitors on Ponikva. Currently, the only available parking space on Ponikva is the area in front of the children's lodge that has a total parking capacity of about 50 vehicles. With over 600-700 vehicles arriving on weekends in the winter period during, the traffic on Ponikva does get sometimes totally blocked, and with the further development of Ponikva it is only reasonable to expect that a much higher number of tourists will be visiting this place.

3.3.1. Development of the locality

The potential ski terrains on which installations for vertical transport and ski trails are to be constructed have been identified based on the spatial analyses of the locality of Ponikva, the analysis of the terrain in relation to its N, E, S, W direction, the terrain inclination and sun exposure. Picture 27 displays the terrain inclination on Ponikva. Two possible sites have been identified with the appropriate terrain characteristics, and both have been foreseen for the construction of a cable car system and ski runs. In accordance to the existing Urban Plan, which has been incorporated within this Study, one more ski lift is planned to be constructed within the vicinity of the existing ski lift near the kids lodge. The locality of Ponikva is shown in Picture 28 with all the proposed contents. The maximum ski potential of this site to absorb skiers is 1590 skiers**,** the latter being defined through a detailed analysis of the features of each trail by applying international standards for planning of the maximum number of skiers per hectare of ski trail. Table 13 provides data on the maximum skier absorption potential of Ponikva. Table 14 provides data on the trails that are planned for the Ponikva site. The Sports and Recreational Center of Ponikva will have trails with a total length of 3 km, spreading over an area of about 25 hectares.

With the purpose of determining the average capacity of the trails, the difficulty level of the ski trails has been classified according to the average inclination. Table 15 displays the classification of trails, conducted in compliance to the international standard for classification of trails, which is performed based on 100 meters of trail with highest inclination.

Table 15

Slope	Leght (m)	Vertical rise (m)	100m maximum grade	Category of slope
1	1098	311	38%	medium
2	954	265	33%	medium
3	292	41	18%	easy
existing slope	248	54	22%	easy
existing slope	444	106	24%	easy

Picture 29 shows the trails for Alpine skiing and the cableway system, and Pictures 30 and 31 show the lengthwise profiles of each trail. Ponikva will dispose with 68% of the trails classified in the group of intermediate level of difficulty and 32% of trails with easy level of difficulty.

The construction of the new accommodation capacities, cableways and ski trails, along with the increased tourist offer of Ponikva, should attract a significantly higher number of tourists. The optimum number of accommodation capacities for the locality has been determined based on an assessment of the total number of beds that are needed, according to several criteria.

The following criteria have been assessed:

- Total number of beds in accommodation capacities in relation to the meters of vertical transport per hour (0,08% – 0,10%)
- Total number of beds in accommodation capacities per hectare of ski trails (20 – 35)
- A maximum of 56% of the optimum number of skiers per day that the resort can accommodate, while guaranteeing comfortable carrying capacity-CCC

The optimum number of beds in the accommodation capacities has been defined in correlation to the previously defined planning criteria, the guidelines for sustainable development of a ski center, the maximum absorption potential of the resort, international assumptions for planning and developing a ski center, the experiences of the developed ski centers in the region and the wider area, as well as the presumed degree of utilization of certain accommodation capacities during the main season. The results of the analysis are presented in Table 16.

Table 16

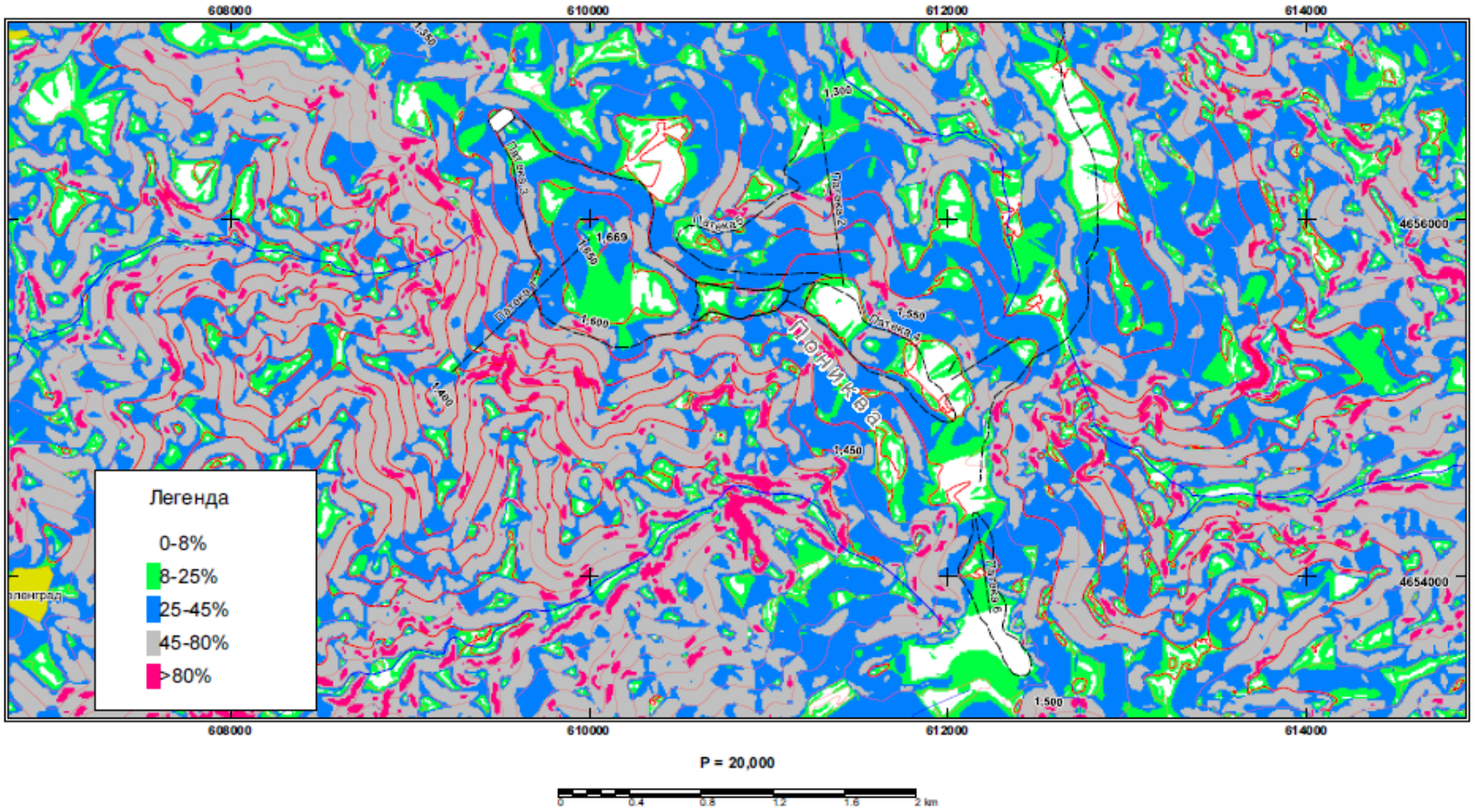
Level of development	Total number od bed units compare with metres of vertical transport by hour (0,08 – 0,10)	VTM/h by hectare of ski slopes (30.000 – 35.000)	Total number of bed unit by hectare of slopes (20 – 35)	56% of CCC	Bed unit (recomendation)
Total	**820**	**29596**	**850**	**890**	**850**

Table 13

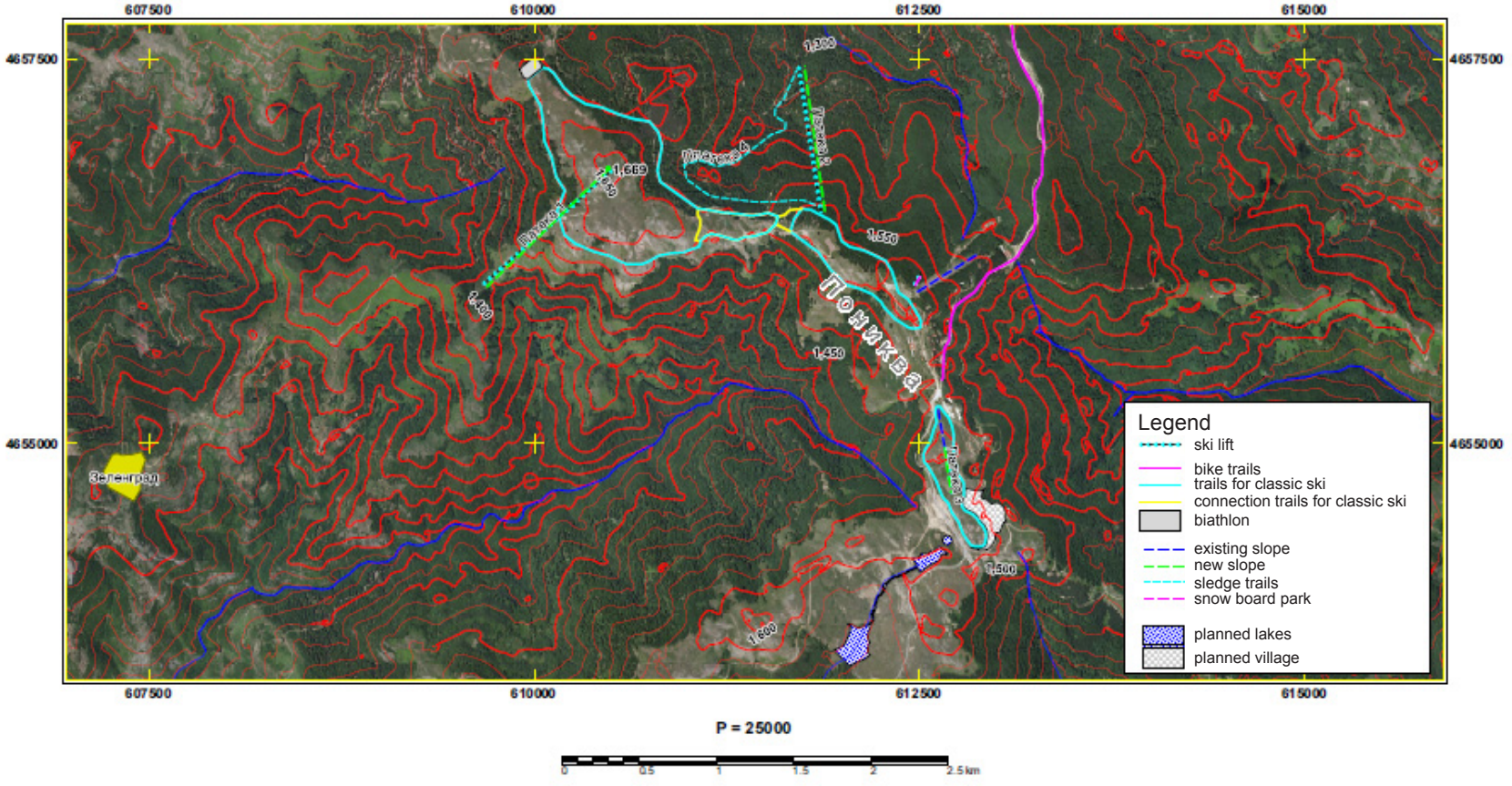
Lift	Length	Bottom ellev. a.s.l.	Top ellev. a.s.l.	Vertical rise	Type of lift	Capacity on hour	VTM/h	VTM demand	% of load	CCC
1	1118	1355	1666	311	D2C	800	248938	1856	90%	724
2	957	1342	1606	265	D2C	800	211678	1783	90%	641
Sci lift 1	297	1571	1612	41	2SL	300	12283	1250	80%	47
Snowbord	89	1602	1606	4			0			
Existing ski lift (1)	248	1556	1610	54	1SL	250	13500	1180	80%	55
Existing ski lift (2)	444	1496	1602	106	2SL	360	38160	1500	80%	122
Total	**3153**			**781**		**2510**	**524559**	**7569**		**1590**

Table 14

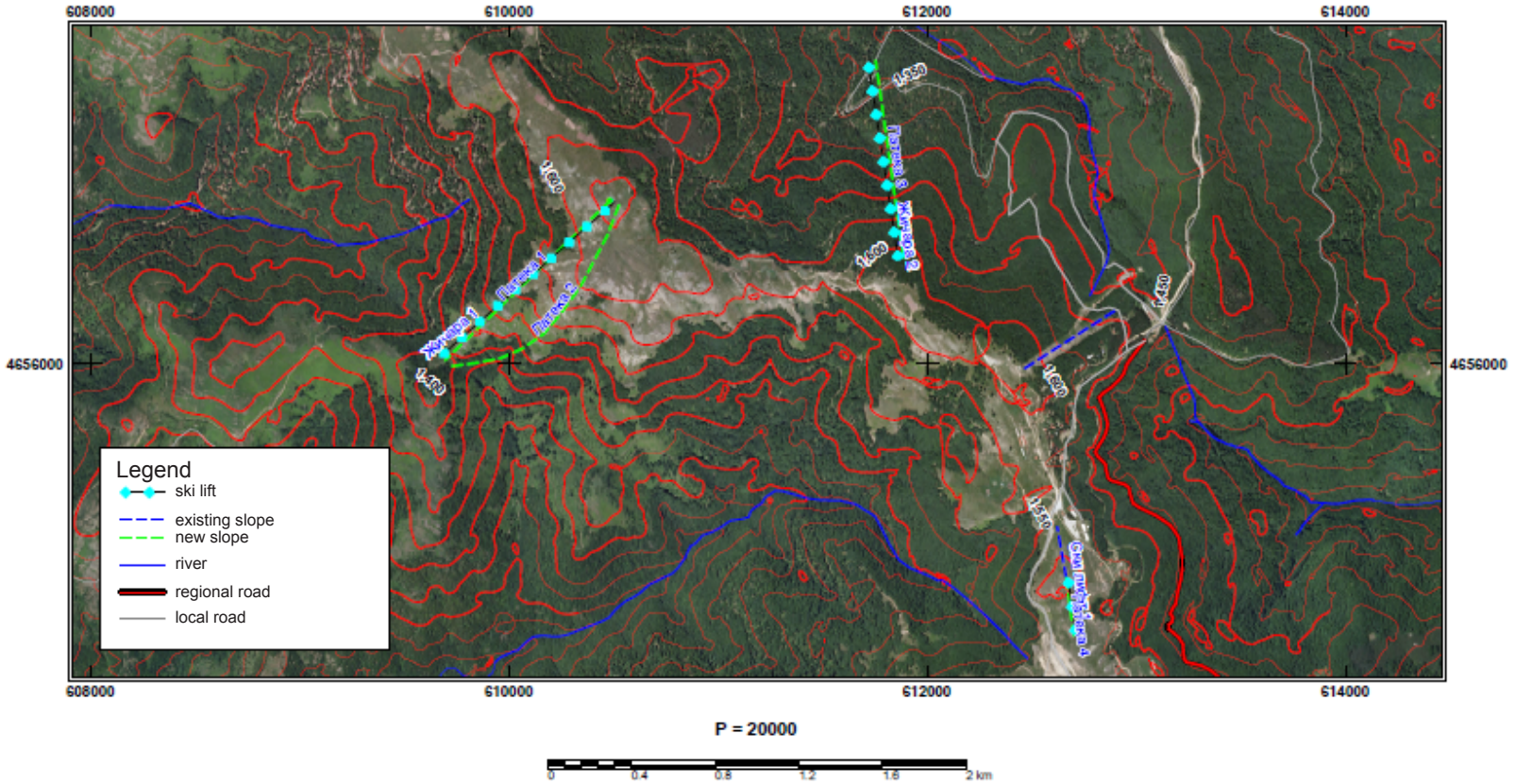
Slope	Length (m)	Vertical rise (m)	Average grade	Category of slope	Slope area (h)	Average skier per hectare	Capacity of slopes
Existing slope	248	54	21,77%	easy	1,98	70	139
Existing slope	444	106	23,87%	easy	3,55	70	249
1	1098	311	28,32%	medium	8,78	50	439
2	954	265	27,78%	medium	7,63	50	382
3	292	41	14,04%	easy	2,34	70	164
Snow bord park	88						
Slope 4 sledge	2201						
Total	**3124**				**24,29**		**1372**



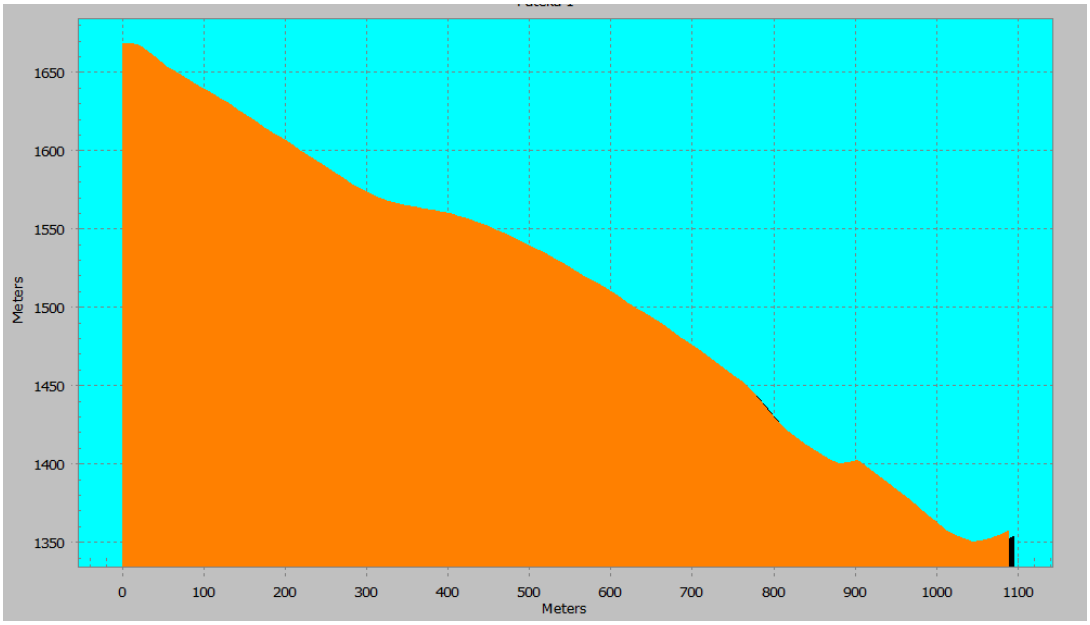
Picture 27 Slope gradient on Ponikva



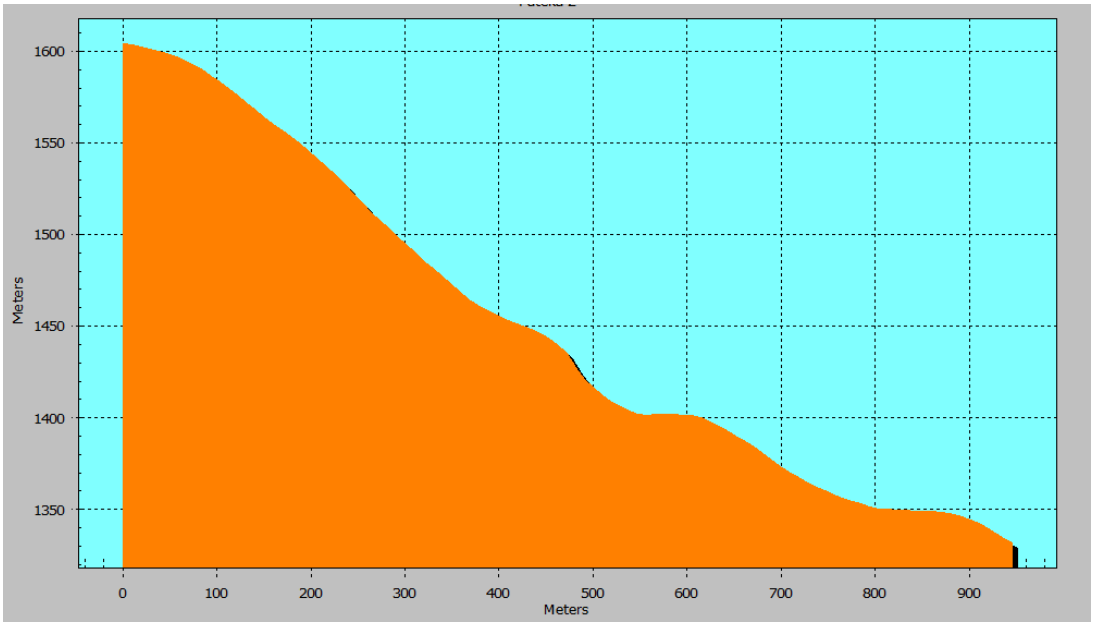
Picture 28 Sport recreation centre Ponikva



Picture 29 Lifts, ski lifts and slope for alpine skiing on Ponikva



Picture 30 longitudinal profiles of slope 1



Picture 31 longitudinal profiles of slope 2

Aside from the above-mentioned elements that have been taken into consideration in defining the optimum number of beds, furthermore, overnight guests have also been divided into skiers and non-skiers, in accordance with international planning standards. Table 17 displays the anticipated accommodation facilities and the number of accommodating units. The existing accommodation facilities have been included within the framework of the anticipated accommodation facilities.

Table 17

Type of accommodations	Units-rooms	Bed unit	Average bed unit per room	Number of the skier from the accommodation facilities
Hotels 4*	85	187	2,20	122
Hotel 2* and 3*	113	340	3,01	221
Private accommodation and apartments	53	213	4,02	138
Hostels	15	68	4,53	44
Other accommodations	10	43	4,30	28
Total	**276**	**851**	**3,08**	**553**

The total maximum number of skiers that would be coming from the accommodation facilities would be 553, whereas the maximum number of daily skiers would reach 1042. Parking area for overnight guests will be provided within the framework of the parcels on which new facilities are to be constructed. The necessary parking space for daily visitors needs to be defined. A parking with a capacity for 1600 guests needs to be ensured, provided that 65% of them are skiers. The number of parking spaces has been determined according to the above-mentioned planning criteria, and is shown in Table 18.

Table 18

Vehicle	Parking places	Number of skiers
Cars	543	1520
Buses	2	80

According to the proposed concept and envisioned accommodation capacities, 280 parking spaces need to be provided, which will be located within the urban parcels of the

accommodation capacities, while 543 parking spaces are planned for the daily visitors on Ponikva. According to the urban plan, the owners of the newly planned weekend houses will have to solve the parking issue within the framework of their own urban parcels. However, even these newly planned parking areas will not completely solve the issue with parking space or traffic jams that occur during the weekends of the winter period.

In order to avoid all these problems and reduce the negative environmental effects of air pollution caused by vehicles, a concept of mobility needs to be prepared. The concept of mobility has to respect the wishes of the respectful guests in regards to their mobility during their stay.

The first necessary activity is to restrict all traffic within the locality of Ponikva during weekends and holidays in the winter period, except for guests staying in the accommodations and weekend houses. Therefore, it is necessary to put up a ramp with a security guard, approximately 2km away from Ponikva. Parking for daily skiers should be built near the ramp with a capacity of 450 vehicles. Transportation of the guests from the parking area to the locality of Ponikva should be organized by mini busses, so-called shuttle transportation. Shuttles have scheduled routes and they run at regular intervals according to the needs. This type of transportation is most often free of charge, or an insignificant fee may be charged. Also, guests may also be given the opportunity of using horse or dog-drawn carriages to move around within the locality of Ponikva.

Aside from solving the issue with the traffic problem that is currently present and will only intensify with the further development of Ponikva, a transportation strategy should also be defined that will be in harmony with the principles of sustainable development, in particular with environmental protection. At the same time, this concept has the goal of reducing the number of vehicles within the locality of Ponikva as much as possible. This concept should be realized in parallel with the development of Ponikva.

Alternative winter transportation

At present, Ponikva is connected to Kocani by a 20km asphalt road. Ponikva also needs to be connected with Probistip, so that a much shorter route can be provided in order to have a greater number of potential guests visiting.

The development of Ponikva, as a sports, recreational and tourist center, should be carried out through an implementation of several projects. The implementation of these projects is linked with the provision of financial resources and with defining the manner in which this center will be managed. Attention should also be given to the dynamics of the project implementation, especially in order to avoid implementation of only a certain type of projects, like construction of accommodation capacities without an appropriate expansion of the tourist offer.

The entire concept proposal for the development of the locality is integral and only through its complete implementation will the necessary conditions for successful operation of the center be fulfilled. The vision that has been anticipated for the year of 2020, may be achieved only through the implementation of the proposed projects and by following the defend guidelines.

Within the framework of the planned development, a certain number of facilities for catering services will be built and furnished, as well as commercial facilities that will mainly be located within the premises of the accommodations (ground floor).

Two facilities for catering services are to be built right on the ski runs, as each ski run located near the cableway needs to have one catering facility, or two in total. One of these facilities should operate on the basis of self-service.

The parking system for the hotels and hostels will have to be provided by constructing the parking lot within the premises of the facilities, at level -1. The remaining accommodation facilities will have to go with the option of creating parking spaces within the premises of their own parcels.

In accordance to the defined maximum number of skiers, as well as beds, the remaining aspects necessary for the proper functioning of a modern ski center have also been defined. Table 19 gives an overview of the facilities planned for the needs of the ski center in the base settlement.

Table 19

Service function	Surface (m2)
Facilities on the ski lifts	
Ticket sales	20
Employee toilets	20
Rentals/Repairs of ski equipment	
Depot	120
Ski school	80
Service	100
Total	***340***
Commercial	
Toilets	60
Service	100
Shops	80
Total	***240***
Operative facilities	
Administration	50
Employee rooms	60
First aid and snow patrol	120
Total	**240**
All Total structures	***820***
Additional facilities	
Store	120
Garage with repair/mechanical	200
Waste management	120
Total	***440***
TOTAL	**2140 м^2**

The projects that are listed in the further text of this Study also need to be implemented, as they will significantly increase the tourist offer during the winter and summer period.

3.3.2. Projects

Project no.1
New cable car system and trails for Alpine skiing

Project description: The possibilities of the terrains on Ponikva are quite limited from the aspect of building new ski trails for Alpine skiing, and by that, also for the construction of new cable car systems. Nevertheless, two ski trails have been identified, which meet the requirements in regards to the necessary terrain characteristics. Within the framework of the current urban plan, construction of one more ski lift is foreseen on a site near the kids lodge. Two 2-chair cableways and one ski lift are proposed for construction. One of the cable cars will be used during the summer period for providing vertical transport of the guests on Ponikva, and for providing transportation of consumers of various offers that are envisioned for the summer period (tube sliding, bobsled riding, mountain biking, etc.), but also for transportation of those using the sledging trails.

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Project idea: Increasing the tourist offer during the winter and summer season.

Goal: Construction of ski trails and provision of infrastructure for vertical transport of guests throughout the year.

Necessary steps:

- Preparation of a feasibility study along with the entire supporting documentation
- Design
- Construction
- Use and maintenance

Investment needed: Presented in the Evaluation of investment costs

Project no.2

Modernization of existing ski lifts

This project is of least significance and has therefore not been included in the evaluation of the necessary investments.

Project description: The current ski lifts on Ponikva are quite outdated and do not enable maximum use of the capacity of the existing ski trails. Due to the relatively small capacity of these ski lifts, many times there are only a small number of skiers actually skiing on the trails while other skiers are waiting in long lines by the ski lifts. This points to the fact that there is no balance between the capacity of the ski trails and the capacity of the current vertical transport. The current ski lifts have a total length of 692 meters, i.e., 248 and 444 meters.

Project idea: Utilizing the capacity of the existing trails.

Goal: Increasing the quality of the tourist services of Ponikva.

Necessary steps:

- Design
- Procurement
- Installation

Investment needed: 450.000 Euros.

Project no.3

4 Stars Hotel intended for families with a Wellness area

Total accommodation capacity of 187 beds

Project Description: The concept for development of tourism in the Osogovo Mountains defines Ponikva as a sports and recreational center, which seen from the aspect of winter tourism is primarily oriented towards families with small children and beginners in skiing and snowboarding. At the present, this type of hotel does not exist in Republic of Macedonia. Its construction will create conditions for families with children to enjoy a relaxed vacation in the mountains.

Project idea: Increasing the tourist offer of Ponikva.

Goal: Increasing the number of guests of the target group.

Level of accommodation units and criteria:

Two-room family suites with 4 beds (45 м^2), as well rooms with two and three beds (30м^2). A variety of games and toys for children of different ages should be made available at the reception desk for guests staying in family suites. The furniture has to be properly selected, childproof with childproof electrical outlets. Some rooms and suites should be equipped with a proper baby video monitoring system.

- Indoor swimming pool and pool for relaxation, solarium and other types of sauna
- Indoor shallow swimming pool for children
- Enclosed area where kids can play safely
- Kids playground within the hotel premises
- Possibility for using All Inclusive packages
- Appropriate kids menu
- Supervised kids′ table at lunch and dinnertime
- Day care facility for children, scheduled according to age, with a separate area for drawing, playing, Kids Theater, etc.
- Separate areas for babies with appropriate equipment for diaper changing, baby bathtubs and etc.
- Outdoor playground with rubber castles, attractions for kids, artificial beach, swings and slides, carousel, tricycles, toy cars, play houses and etc.
- Kids cinema and theater

From the amenities aspect, a child day care center for babies and infants needs to be provided that will operate at least 6 days a week, throughout the entire day, and will be supervised by a qualified and entertaining staff. Entertainment programs for children (adventure programs – circus, magic tricks, pirates, Indian and cowboy days and etc.) should be provided at least 3 days per week. In order for the hotel to have its own distinguished image it needs to have its own mascot.

A separate Wellness are needs to be built within the hotel premises, covering a total are of 800 to 1000 m2, that will include a swimming pool and sauna, as well as an area for performing various treatments and for relaxation. This part of the hotel should provide the following services:

- Programs and treatments available 6 days per week and 5 hours a day
- Professional cosmetic treatments
- Fitness area with appropriate equipment

- Aromatherapy, reflexology, body treatments, facials, wide range of massages, beauty treatments and etc.
- At least two small pools intended for Mountain Wellness (pool with herbal evaporation, hydrotherapy, stone spa, and etc.)

Necessary steps:

- □ Feasibility study
- □ Design
- □ Construction
- □ Creating programs and packages
- □ Marketing

Investment needed: 7.650.000 Euros.

Project no.4
Alpine houses

Total number of 43 beds.

These types of structures are distinguished by their specific architecture, which is characteristic for the Alps Region of Europe. Usually the architecture needs to be adapted to the local specifics, in this case, to the existing local old architecture. Standards must be set for the designing of these types of structures, in order for all of them to have similar architectural elements.

The size of the required parcel ranges between 600 and 1000 m2 per facility, while the size of the facilities ranges between 120 and 200 m2. The number of beds varies between 4 and 10 beds. The proposal is for 7 facilities to be constructed.

The location should be near the newly designed ski trails and the car parking should be located within the parcels. These facilities need to be completely furnished and provide families or larger groups of friends a pleasant stay.

Necessary steps:

- □ Feasibility study
- □ Design
- □ Construction

- Creating tourist packages
- Marketing

Investments needed: 90.000 – 160.000 Euros per facility (total of 800.000 Euros)

Project no.5
Apartments

Total number of 213 beds.

The apartments will be identical houses built in a row. They are intended to be rented out on a per night basis. These accommodation capacities will be owned by individuals. They may be part of the renting capacity only if they are available for renting and if the owner is not using them. The reception area is typically shared by all the capacities and should be located outside the apartment facilities. The apartments will be constructed in 3 to 5 facilities. They will have the following structure: 45% of the apartments will have one living room and one bedroom (50м^2), and 55% the apartments will have one living room and 2 bedrooms (65 м^2).

Part of the apartments will be of higher category and will be furnished with a Jacuzzi, fireplace, more luxurious equipment, cable TV and so forth.

The height of the facilities should not be over 3 floors. The complex should be able to offer appropriate amenities so as to increase the general level of the complex itself.



Necessary steps:

- Feasibility study
- Design & Construction
- Creating tourist packages
- Marketing

Investments needed: 35.000 Euros in average per accommodation unit (total of 1.855.000 Euros)

Project no.6
2 Stars Hostel

Total number of 68 beds.

Hostels are economy-class accommodation facilities that offer a relatively cheap accommodation. They are suitable places for accommodating guests, especially guests of younger ages and hikers. Their basic goal is to provide guests and visitors a short-term stay. Hostels are especially suitable for outdoor activities and exchanging different cultures among the youth. Guests can rent a bed in a dormitory and share a bathroom, kitchen and lounge area. Part of the accommodating units may also be private rooms with two beds. The positive aspects of hostel accommodation are primarily the low prices compared to other accommodations, as well as the opportunity to meet other guests. Hostels are usually less formal than hotels and are visited mostly by young tourists.

The hostel that is envisioned will consist of one facility having 3 floors, with a total of 68 beds.



Necessary steps:

- Feasibility study
- Design
- Construction
- Creating tourist packages
- Marketing

Investment needed: 35.000 Euros in average per accommodation unit (total of 350.000 Euros)

Project no.7

Sledging trail

Project description: Non-skier guests have little opportunities for doing recreational activities during their stay. The construction of a sledging trail will offer possibilities for better recreation of non-skiers. Nevertheless, skiers will also have the possibility for experiencing something new and interesting. The sledging trail is planned to be located near cableway No.2, as the same will be used for vertical transport of those using the sledging trail. Renting of sleds by the hour is also anticipated within the scope of this service. At present, there are no sledging trails in Macedonia or in the wider area. The construction of this trail will attract tourists seeking adventure and active vacations. Snow bicycles also need to be procured within this project, and be used for renting purposes.

Project idea: Increasing the tourist offer during the winter season.

Goal: Construction of an attractive sledging trail.



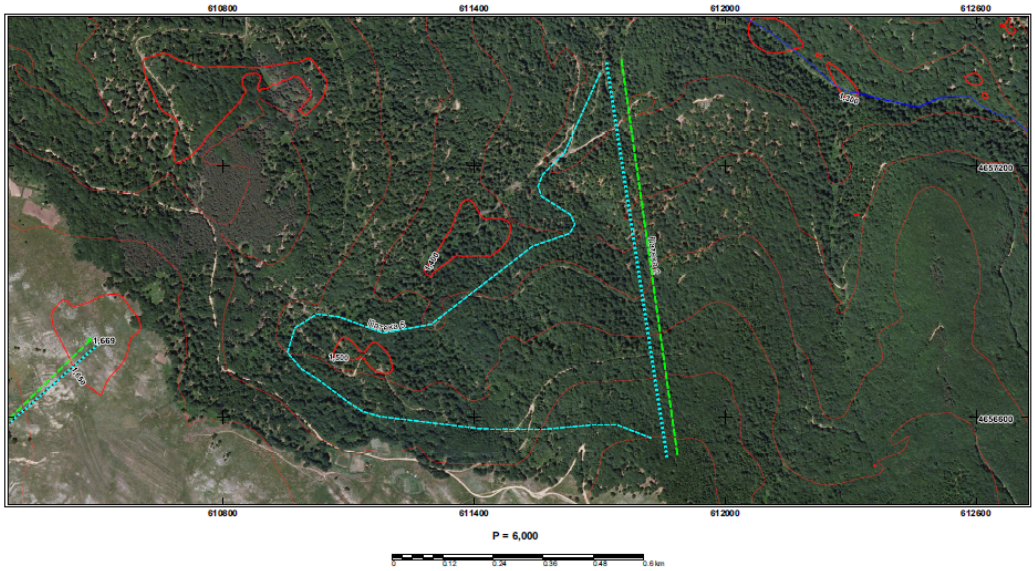
Necessary steps:

- Design
- Construction
- Procurement of rental equipment
- Preparation and sale of package arrangements
- Organization of competitions

Investments needed: 10.000 Euros.

Snow bicycles

Picture 32 displays the proposed location for the sledging trails.



Picture 32 Sledging trail

Project No.8

Nordic-skiing and Biathlon trails

Project Description: The terrain possibilities of the locality of Ponikva offer opportunities for development of trails for Nordic skiing and biathlon, along with some shooting ranges. Currently, there are very few trails in Macedonia for Nordic skiing, and they are located on Mavrovo and Krusevo, and one shooting range for biathlon that is located on Popova Sapka, which is not maintained and therefore is not in use. Creating appropriate trails for Nordic skiing and biathlon will increase the tourist offer during the winter season and will also create conditions for doing recreational and professional sport, which from a financial viewpoint, unlike Alpine skiing, is available for a greater number of potential clients.

Project Idea: creating attractive trails for Nordic skiing and biathlon.

Goal: construction of trails and the entire infrastructure for Nordic skiing and Biathlon.



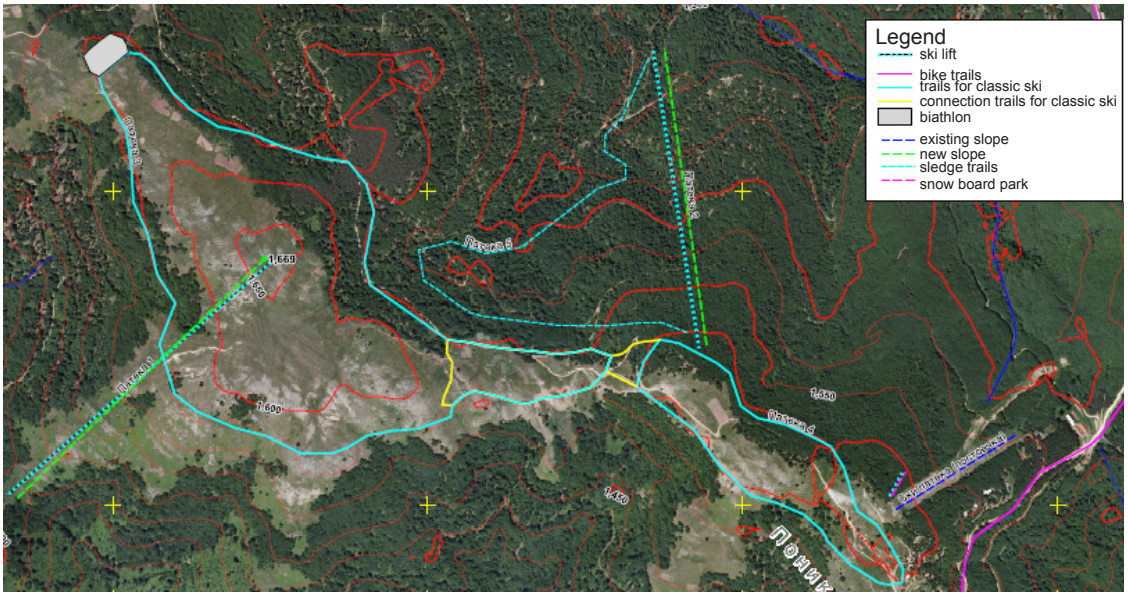
Necessary steps:

- Construction of one trail for Nordic skiing that will be covered with a system for making artificial snow and will have lighting
- Construction of appropriate shooting ranges for biathlon
- Organization of competitions in Nordic skiing and/or biathlon on Ponikva
- Preparation and sale of package arrangements for Nordic skiing

Investment needed: 75.000 Euros.

Biathlon

The location for the Nordic skiing and biathlon trails is presented in Picture 33.



Picture 33. Nordic skiing and biathlon trails

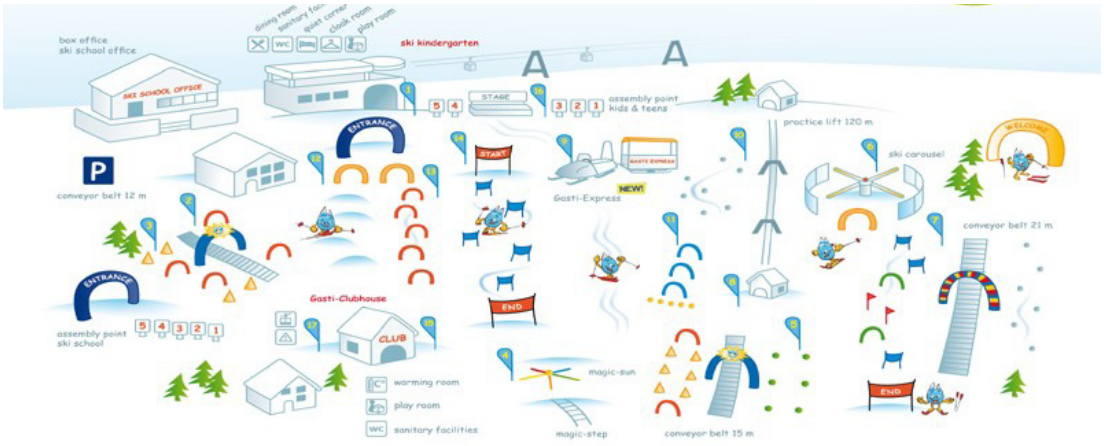
Project No. 9

Ski park for children and beginners

Project Description: Construction of a ski park for children and beginners that will provide conditions for learning to ski in a playful and entertaining manner. The ski park should provide certain services (food, beverages, places for relaxation, rest and (afternoon) sleep, toilettes adapted to the needs of children) as well as kids lift (movable belt), sleds, tent for entertainment with a podium, short trails for snow tubing, various children's figures. This park will create a friendly environment that will be safe for children and beginners. The total surface of the park should be between 10.000 – 15.000 м^2. According to the proposed concept, Ponikva is to grow into a sports and recreational center and entertainment park for children. The project will help create conditions for increasing the offer dedicated to families with small children, as well as for beginner skiers. At the present, this type of product is not offered in any of the tourist centers in Macedonia.

Project Idea: Creating an environment in which children and beginners will find it easier to learn to ski.

Goal: Construction of a snow park and preparation of a winter tourist product dedicated to families with children, and also to organized groups of children visiting Ponikva (winter vacation, excursions, field trips, etc.)



Necessary steps:

- Planning, preparation of a concept
- Design and construction
- Organization of supervision, like a child day care facility

- Organizing a ski school
- Organization of kids and beginners competitions
- Creating flexible offers

Investment needed: 120.000 Euros, that includes the movable belt


Project No. 10
Snowboard park for beginners

Project Description: a snowboard park for beginners is proposed to be constructed on the same location parallel to the ski park for beginners and children, which will allow the same vertical transport to be used. Within the framework of the park, there should be separate areas for rest, exercise, toilettes, various children figures, and an appropriate service for providing food and beverages and etc. The project will help create conditions for increasing the offer dedicated for families with small children and younger children beginners in snowboarding. At the present, this type of product is not offered in any of the tourist centers in Macedonia.

Project Idea: Creating an environment in which snowboarding beginners will find it easier to learn how to snowboard.

Goal: Increasing the attractiveness of Ponikva for the target groups – children and youths.

Increasing competitiveness of Ponikva in winter tourism.

Necessary steps:

- Planning, preparation of a concept
- Design and construction
- Organization of supervision, like a child day care facility
- Organizing a ski school
- Organization of kids and beginners competitions
- Creating flexible offers

Investment needed: 30.000 to 40.000 Euros.

Project No. 11
Snowboard park

Project Description: The implementation of this project requires the use of one of the newly planned trails that are located near the anticipated cableways on Ponikva. A trail is needed with a length of 1 to 1.2 km. Several elements need to be arranged, such as: a five meter and three meter fence, fun box, roller combo, roller, jibbing, a 20 to 25 meter fence, corner fence, hurdles with different sizes and etc. Also, a half pipe and separate hurdles will be needed.

Project Idea Developing a snowboard trail.

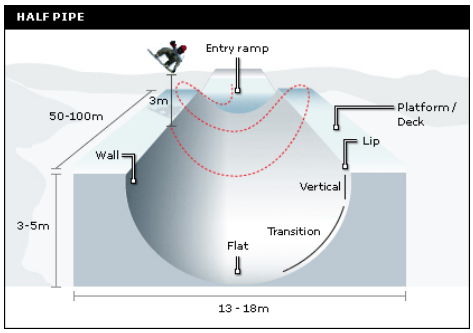
Goal: Increasing the attractiveness of Ponikva for the target group of snowboarders and making use of the high rise of snowboarding tourists worldwide. Increasing the attractiveness of Ponikva in winter tourism and positioning Ponikva as one of the most attractive destinations for snowboarders on the Balkan.

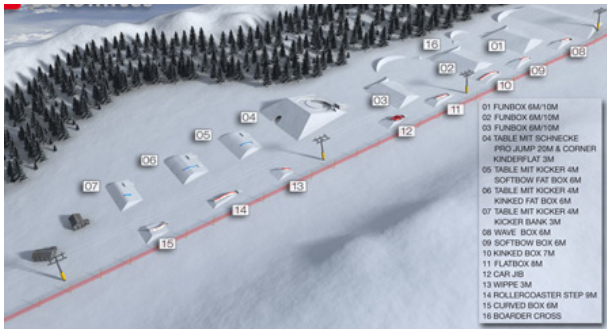


Necessary steps:

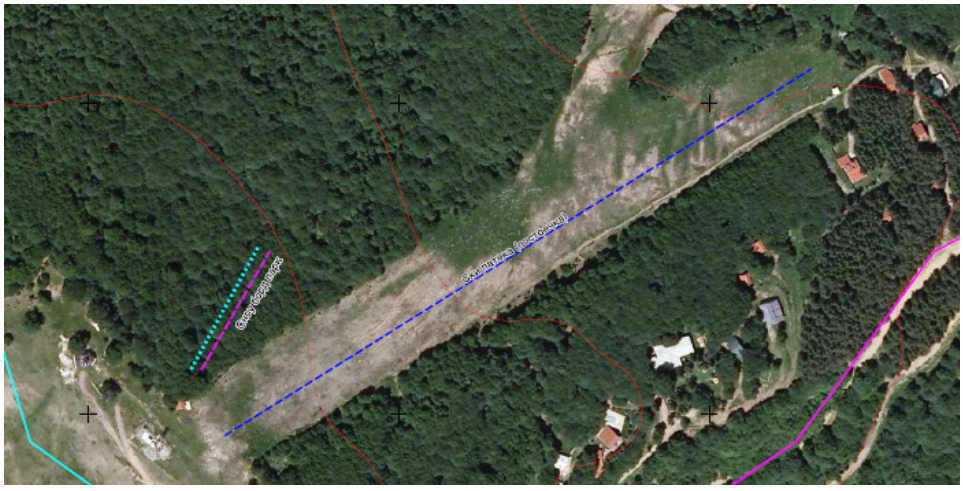
- Planning, preparation of a concept, defining elements
- Design and construction
- Organization of supervision
- Organizing competitions

Investment needed: 20.000 to 25.000 Euros.





The location of this park is shown on Picture 34.



Picture 32 Location of Snowboard park

Project no. 12

Trails for snow tubing

Project Description: Snow tubing trails are planned to be constructed on Ponikva with a length of 100 to 150 meters. A total of 5 to 7 runs are foreseen, which during the summer season will be combined with the rubber boat slides. These trails should be developed on a location that will enable the use of one of the vertical transport cable cars, through the construction of an inter-station on the cableway. New trails need to be developed each year in order to increase the attractiveness of the offers. Offers should include running down the slides, using the cableways and renting the necessary equipment.

Project Idea: Developing trails for snow tubing, and creating a tourist product like "fun and action on snow".

Goal: Increasing the attractiveness of Ponikva for the target groups of families with children, youths and non-skier tourists. Increasing the attractiveness of Ponikva in winter tourism and positioning Ponikva as a winter attraction and entertainment park on the Balkans.



Necessary steps:

- Planning, preparation of a concept
- Design and construction
- Procurement of equipment
- Defining an offer
- Organizing competitions

Investment needed: 5.000 to 7.000 Euros (only if a cable car for vertical transport is used)

Project No. 13

Attractive mountain cottages for social after ski activities (Apes Ski)

Project Description: The project anticipates construction of two mountain cottages with characteristic architectures that will be used for social, after skiing activities (café bars). The capacity of these facilities should provide seating for about 100 – 200 people, of which 50% should be outdoor. One part should be a self-service area (food and non-alcoholic beverages); while in the other area guests will be appropriately served (alcoholic beverages). They should be located near areas that are more frequent and that have nice views. One of these facilities should be located near the hotels, in order to enable their operation during the night hours.

Project Idea: Increasing the offers of the catering services and providing entertainment.

Goal: Increasing the attractiveness of Ponikva for the target group of fun-seekers.



Necessary steps:

- Planning, preparation of concept
- Designing and construction
- Procurement of equipment
- Defining the catering service offer
- Organizing various events (entertainment, guest DJs, musical groups and artists and etc.)

Investment needed: 100.000 Euros

Project No. 14

Nature walking and snow hiking

Project Description: The project foresees procurement of appropriate equipment for walking and hiking in winter conditions. The hiking trails and runs will be used, and they will be properly marked and rated according to the difficulty level of each trail. The hiking trails will have to be adapted accordingly to the winter conditions, and within the scope of the offer there will be organized mountain climbing to some of the surrounding peaks of the Osogovo Mountains. Thematic strolls would also be organized with a certain dose of adventure and excitement. Rental equipment would also have to be procured.

Project Idea: Increasing the tourist offer during winter season for non-skiers.

Goal: Increasing the attractiveness of Ponikva for a broader scope of target groups.

Necessary steps:

- Planning, preparation of a concept
- Designing trails and tours, trail classification
- Procurement of equipment
- Defining an offer
- Organizing an offer

Investment needed: 6.000 to 8.000 Euros

Project No. 15
Snowmobiles

Project Description: Lately, a greater number of ski resorts are expanding their offers by offering the possibility for snowmobile riding. Within this project, 4 snowmobiles are planned to be procured along with a proper protective gear that could be rented out by the hour. The offer should also include the possibility for organizing group rides on certain mountain trails.

Project Idea: Increasing the tourist offer during winter season for non-skiers.

Goal: Increasing the attractiveness of Ponikva for the younger generations and tourists seeking adventure.

Necessary steps:

- Planning, preparation of concept
- Defining trails and riding directions
- Procurement of snowmobiles and gear
- Defining an offer

Investment needed: 40.000 to 45.000 Euros

Project No. 16
Ice skating rink

Project Description: An outdoor skating rink is planned to be built within this Project, with an area of 1200 m2, and procurement of proper skating equipment for renting purposes will be made. An ice skating school will be established that will be offering its services to the guests.

Project idea: Increasing the tourist offer during the winter season, primarily for the young generations.

Цел: Increasing the attractiveness of Ponikva for the younger generations and sport oriented tourists.



Necessary steps:

- Contacting manufacturers
- Design
- Construction
- Procurement of equipment
- Establishing a school

Investment needed: 100.000 to 120.000 Euros

Project No. 17

Park for mountain biking

Project description: With the preparation of several trails for mountain biking, one trail for downhill cycling, and by offering rental services in regards to bicycles and cycling gear, Ponikva will grow into a desired destination for tourists that oriented towards this type of sport and recreation. At least one of the trails should be wide enough to allow two or three bikers to compete at the same time.

Project idea: Construction of necessary infrastructure for the purpose of increasing the tourist offer.

Goal: Creating a tourist product dedicated to sports and adventurous types of tourists.


Necessary steps:

- Preparation of appropriate projects
- Defining interesting places that could be visited during cycling (view points, springs, interesting sites)
- Preparation of the trails and construction of the park and trails
- Trail marking
- Procurement of bicycles and gear
- Organization of events (competitions, downhill races)

Investment needed: 50.000 to 100.000 Euros (depending on the type)

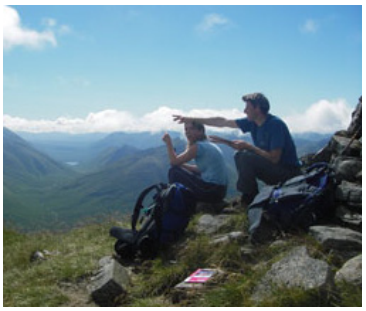
Project No. 18

Mountain tours concept

Project description: Preparation of a concept for recreational hiking and nature walking on the Osogovo Mountains. The existing hiking trails need to be improved and new ones, especially those leading to the localities, need to be built. Some of the accommodation and catering services need to be adapted to the needs of the hikers. Hiking guides need to be trained and maps need to be prepared. Hiking trails should be equipped with resting areas and appropriate infrastructure. The offer for recreational hiking can also incorporate possibilities for organized camping under tents when going on longer hiking tours. (Ponikva - Ruen).

Project idea: Increasing the offer during the summer season.

Goal: Creating a tourist product that will help stimulate the summer mountain tourism and one that will also be part of the wellness program.

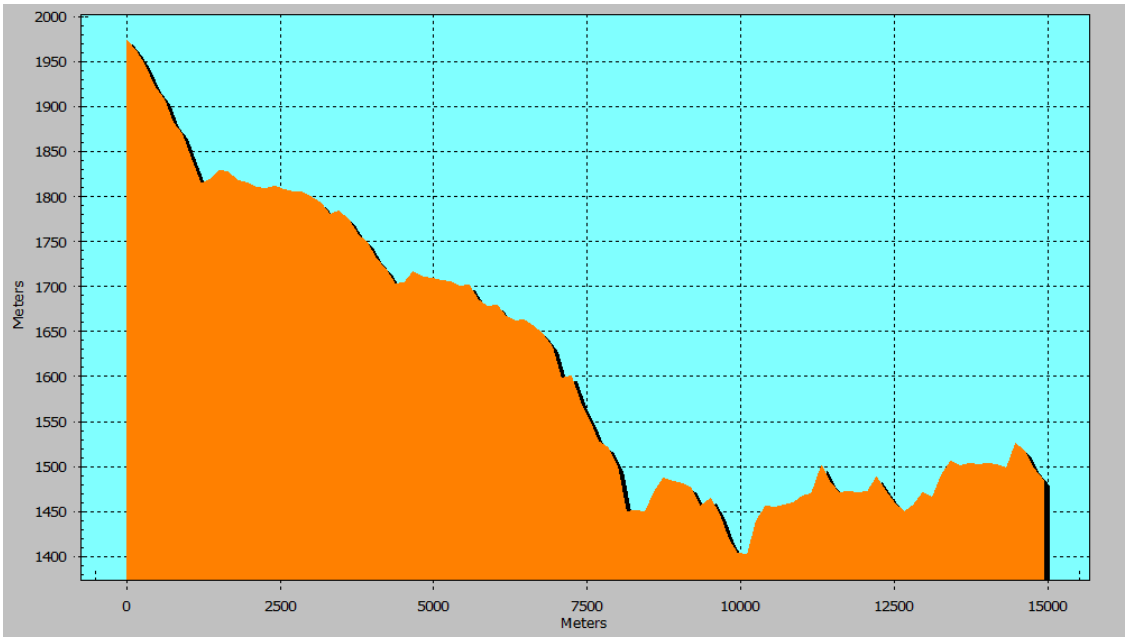

Necessary steps:

- Preparation of appropriate projects
- Defining interesting places that could be visited while hiking and nature walking
- Preparation of the trails, trail marking and posting information signs
- Training of hiking guides
- Organization of events

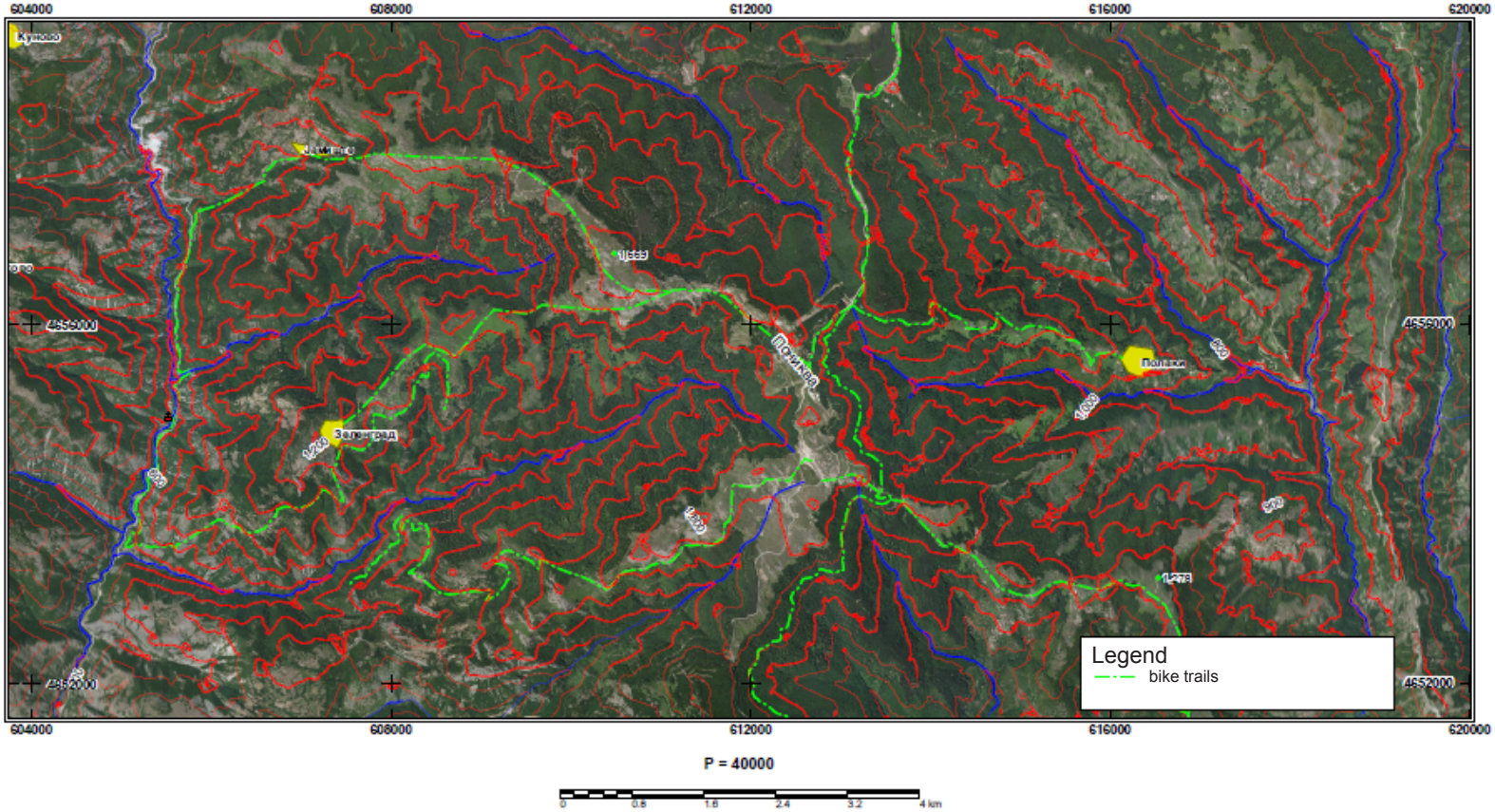
Investment needed: 20.000 to 50.000 Euros

One of the more significant trails, which can also be used as a biking trail, is the one that starts from Ponikva and leads to Carev Vrv. This trail has the length of 15 km in one

direction. Picture 36 shows the lengthwise profile of the trail that leads to Carev Vrv, while picture 37 and 38 show the hiking and biking trails on Ponikva.



Picture 36 longitudinal profiles of hiking and biking trails Ponikva - Carev Vrv



Picture 37 hiking and biking trails on Ponikva

Project No. 19

Adventure land for children

Project description: Preparation of an adventure playground for children that will be made of proper materials and of several different elements, such as: tree house, climbing area for children, artificial rock for climbing, barefoot walking trails, and etc. The playground requires an area of 1000 to 2000 m2.

Project idea: Increasing the offer for the youngest guests during the summer season.

Goal: Increasing the attractiveness of Ponikva for families with small children, during the summer season.



Necessary steps:

- Preparation of a project
- Contacting manufacturers
- Planning the terrain and construction
- Organization of supervision

Investment needed: 10.000 to 15.000 Euros

Project No. 20

Summer tube slides

Project description: Runs for tube sliding. The slide is made of a specific material and is flexible. The location and length of the slide, and its shape can all be easily changed which makes this activity quite attractive. The slide is usually located near a cable car so that it can transport the users, and by this, also increase the usage of the cable cars during the summer months. The length of the slide should range between 150 to 200 meters with a terrain inclination of 10 and 25%. The channels that are required for developing these slides can also be used for snow tubing as well. These slides should be developed near a location that enables one of the cableways to be used for vertical transport, with a construction of an inter- station in between. Different runs need to be developed each year, in order to increase the attractiveness of the offer. The offer should include tubing, using the cable cars and renting of the necessary equipment.

Project idea: Developing snow tubing runs, and forming a tourist product such as – "Fun and action on snow"

Goal: Increasing the attractiveness of Ponikva for the target groups of families with children, youths and non-skier tourists. Increasing the attractiveness of Ponikva during the summer season by offering a new tourist product.



Necessary steps:

- Planning, preparation of a concept
- Contacting manufacturers
- Design and construction
- Procurement of equipment
- Defining of offer
- Organization of competitions

Investment needed: 35.000 to 40.000 Euros (only if cable cars are used for vertical transport).

Project No.21
Toboggan run

Project description: Toboggan run that creates an experience similar to that of bobsledding.

The track should have a length of 1,2 to1,5 kilometers and it should be set on a location that will enable the use of one of the cable cars so that the users can be easily transported. It also needs to be located away from the ski terrains, as it is a fixed structure that can be used all year round. Proper equipment also needs to be procured. The offer should include sliding, using the cable cars and renting of the necessary equipment.

Project idea: Creating an infrastructure for producing a "fun and action" tourist product.

Goal: Increasing attractiveness of Ponikva for the target groups of families with small children, youths and tourists seeking fun and adventure. Increasing the attractiveness of Ponikva during the summer time by offering a new tourist product.



Necessary steps:

- Planning, preparation of a concept
- Contacting potential manufacturers
- Designing and construction
- Procurement of equipment
- Defining of offer
- Organization of competitions

Investment needed: 450 Euros per meter of length (if a cable car is used for vertical transport) or in total between 55.000 and 70.000 Euros.

Project No. 22

Indoor sports hall and sporting terrains

Project description: Having an indoor sports hall for handball, soccer as well tennis courts provide one of the basic conditions for the successful functioning of a sports and recreation center. Athletes are one of the target groups of the Sports and Recreational Center of Ponikva, and therefore it is necessary to provide the required infrastructure. Alongside the indoor sports hall, 2 illuminated tennis courts should also be developed.

Project idea: Creating an infrastructure for producing a tourist product that is dedicated to athletes, sports clubs and tourists oriented towards sports activities.

Goal: Increasing the attractiveness of Ponikva during the summer season by creating all the conditions required in preparing athletes and sports clubs.



Necessary steps:

- Design and documentation
- Construction
- Procurement of equipment
- Organizing competitions

Investment needed: 350.000 Euros

Project No.23

Horseback riding and horse-drawn carriage/ sledge rides

Project description: Horseback riding, as recreational activity, has lately been gaining particular attention. In most of the developed ski resorts, horseback riding and horse-drawn carriage/ sledge riding are part of the standard tourist offer. According to the concept of mobility that is being proposed for implementation on Ponikva, this type of transportation of guests could be one of the alternative manners of transportation.

Project idea: Creating a tourist product that is dedicated to nature lovers, to tourists that have the desire to try something new and is different from their everyday life, as well as tourists that enjoy peace and tranquility.

Goal: Increasing the attractiveness of Ponikva all year round by increasing the tourist offer.

Necessary steps:

- Defining a location
- Construction of appropriate facilities
- Procurement of horses and equipment
- Training
- Defining the services

Investment needed: 50.000 Euros

3.3.3. Estimation of investments

Needed investments for first phase of ski centre

Cost for project preparation

Description	Unit	Quantity	Unit price €	Total €
Master Plan	Lump sum	1	150.000	150.000
Urban Plan		1	10.000	10.000
Fusibility studies		1	25.000	25.000
Design		1	150.000	150.000
Total				**335.000**

Cost for ski lift

Ski lift	Length	Type of lift	Quantity	Unit price €	Total €
Lift 1	1118	D2C	1	800.000	800.000
lift 2	957	D2C	1	750.000	750.000
Ski lift 1	297	2 SL	1	200.000	200.000
Total	**2372**				**1.750.000**

Cost for Slope preparation

Description	Unit	Quantity	Unit price €	Total €
Slopes on meadows	hectare	16,9	500	8.450
Slopes in woods	hectare	8	30.000	240.000
Total				**248.450**

Cost for snow making system (two slope coverage)

Description	Unit	Quantity	Unit price €	Total €
Snow making machines	lump sum	1	30.000	30.000
Water reservoirs	m^3	30	400	12.000
Snow making system	he	16,42	100.000	1.642.000
Total				**1.684.000**

Costs for construction of facilities for the ski centre

Description	Unit	Quantity	Unit price €	Total €
Facilities in the base village	m^2	2140	1.400	2.996.000
Restaurant on top of ski lift 1	m^2	100	1.200	120.000
Restaurant on top of ski lift 2	m^2	300	1.200	360.000
Structures on top of the lifts for the employee	m^2	20	600	12.000
Total				**3.448.000**

Cost for mountain infrastructure

Description	Unit	Quantity	Unit price €	Total €
Parking for daily visitors	Parking place	540	650	351.000
Distribution of electricity from base to the lifts	m’	1000	35	35.000
Electro equipment for ski lifts	lump sum	1	280.000	280.000
Other infrastructure facilities and utilities (water, sewage etc)	lump sum	1	150.000	150.000
Total				**816.000**

Cost for supply of: cars, special equipment and mechanizations

Description	Unit	Quantity	Unit price €	Total €
Mechanization for preparation of slope	number	2	200.000	400.000
Additional mechanization-Pipe shaper	number	1	30.000	30.000
Moto snow bike	number	2	8.000	16.000
Vehicles pick up 4x4	number	1	25.000	25.000
Radio connection and equipment	lump sum	1	10.000	10.000
Equipment and tools for maintained of vehicles	lump sum	1	50.000	50.000
Equipment and tools for maintained of vertical transport - ski lifts	lump sum	1	20.000	20.000
Equipment for ski patrol	lump sum	1	30.000	30.000
Slope mark and safety measures	lump sum	1	35.000	35.000
Total				**616.000**

Recapitulation of investment costs

Description	sum €
Project preparation	335.000
Vertical transport - ski lift	1.750.000
Slopes	248.450
Snow making system	1.684.000
Facilities for ski centre	3.448.000
Mountain infrastructure	816.000
Vehicle and special equipment	616.000
Other structures	1.800.000
Total	10.697.450
Reserve	534.873
TOTAL	**11.232.323**

Accommodation capacities

In developing the locality of Ponikva, various accommodation capacities of different categories have been anticipated with a total capacity of 851 beds. At the present, the total capacity of the accommodation facilities on Ponikva is about 300 beds, which are situated in facilities of 3 stars category. The proposal is for additional accommodation facilities to be provided with a capacity of 551 beds.

An evaluation on the investment funds that will be needed for the construction of the accommodation capacities was performed, based on the average costs per accommodation unit of the already existing facilities in the region and the broader area, that have similar characteristics to the ones that are planned for construction, but adjusted to the conditions for construction in Macedonia.

Table 20 presents the amount of the investment funds that will be needed by types of accommodation capacity.

Table 20

Type of accommodations	Units- rooms	Average price per accomodation unit-room	Total €
Hotels 4*	85	90.000	7.650.000
Hotel 2* and 3*	113	Existing capacity	
Private accommodation and apartments	53	35.000	1.855.000
Hostels	15	35.000	525.000
Other accommodations	10	80.000	800.000
Total	**276**	**47.428**	**10.830.000**

Other structures on Ponikva

Structures	Surface	Average price by m^2	Total €
Multi purpose structure	2400	900	2.160.000
Mountain cottages **(Après ski)**	500	1.200	600.000
Total	**2900**	/	**2.760.000**

3.4 Connecting the Osogovo Mountains with transportation

The Osogovo Mountains are practically isolated from the existing transportation network. One can say that from the aspect of the transportation infrastructure, this is quite a deprived area. The construction of this type of infrastructure requires huge financial resources, which usually are quite difficult to find. Because of this, one of the basic criteria used in the process of selecting the location for the base settlement was the smallest amount of costs for construction of an access infrastructure, specifically, the proximity of the mentioned location to an existing road. Connecting the future Ski Center of Carev Vrv and the base settlement with transportation can be done only by connecting them with the road that runs from the Sasa mine to the Ruen Peak. Therefore, it is necessary to build a new road 3km long. Modernization is also necessary, in particular reconstruction of the road that starts from Makedonska Kamenica, runs through the Sasa mine and up to the point where the new road is foreseen.

Initial estimations regarding the financial resources that will be needed for the modernization of the existing road and construction of a new road with a length of 3km, range from 2 to 2,5 million Euros.

The further construction of the regional road P208, link between M2- Toranica – Sasa – Makedonska Kamenica (link with M5), is especially important for the development efforts of the ski center Carev Vrv. Its total length is 39.837 km, out of which 18km of roadway needs to undergo further construction. With the second phase of the development of the ski center, construction of the road (fork) M2 Kalin Kamen – Drenak – Knazevo will also have to be conducted, as well as of the road (fork) P 519 Ponikva – Drenal – Knazevo. Construction of the roadway linking Probistip with Makedonska Kamenica through Ponikva is also of great importance for the development of tourism in the Osogovo Mountains. The Agency for state roads of Republic of Macedonia is competent for managing the regional and national roads in Republic of Macedonia. The images that display the access road to the base settlement are just an informative overview of the road and do not necessarily refer to its exact location.

4. Preliminary feasibility estimation

Feasibility estimations, in particular economic and financial analyses, are performed for the purpose of determining the profitability of projects, from the aspect of comparable costs and revenues for the expected project life cycle. The procedure for the economic-financial analysis will be conducted through the following:

1. Financial analysis.
2. Economic analysis.
3. Discounted cash flow analysis.

The financial analysis of the project includes analysis of the direct costs and revenues that are linked to the users, specifically the client. The economic analysis of the project incorporates the indirect costs and benefits that are not only linked to the client, but also to the entire economy of Macedonia. Basically, the model is based on the principles of discounted cash flows. Within the model, the project performances are evaluated through the internal rate of return indicators, the net present value and repayment period of the project. For the creditors it is important to evaluate the DSCR (debt service coverage ratio).

Basic approach assumptions

- A discount rate of 8% is used according to the Weighted Average Cost of Capital for Macedonia (see:

  http://www.cea.org.mk/Documents/Public%20Sector%20Discount%20Rate%20short%20version%20final.pdf).
- The evaluation is performed with the financial internal rate of return (FIRR) and financial net present value (FNPV) of the project.
- The evaluation is performed with an economic internal rate of return (EIRR) and economic net present value (ENPV) of the project.
- Repayment period of the project.
- Evaluation through debt service coverage ratio with net operating income (DSCR).
- Project life cycle of 15 years.
- The residual value of the project after a 15 year term is estimated in the financial and economic analysis.

- Depreciation is estimated at an average of 5% (construction facilities 2.5%, roads 3%, equipment for distribution of energy 5%, machines and transport devices 10%)
- Credit conditions are as follows : taking on debt in the amount of investment costs, without a grace period, without own participation, with an interest rate level up to the level of the discount rate-8% and a 15 year repayment period.
- Risk evaluation is performed through the Sensitivity Analysis.

4.1. SRC Ponikva

4.1.1. Assumptions

For the needs of the financial estimations, in particular, the preliminary evaluation of the feasibility for the development of SRC Ponikva, the following assumptions have been agreed:

- The facilities in the ski center will be operational throughout the entire year, while the seasons have been divided in the following manner:
  - Off season ..... October and November
  - Low season ..... April, May
  - Pre-season and late season ..... June, September
  - Peak season ..... December, January, February, March, July and August
- The revenues of the ski centers will consist of the following revenue sources:
  - Revenues from ski pass sales
  - Revenues from cable car tickets sales
  - Revenues from food and beverages sales
  - Servicing ski equipment
  - Rental of ski equipment
  - Ski school
  - Revenues from additional offers (snow tubing, bike rentals, renting of (4x4) motor vehicles, renting of snowmobiles and etc.)
- Steady annual increase in the total number of services sold until the fifth year of operation (period of stabilization)

- The average prices of services will not change during the period under review
- The average price of a daily ski pass is 13 Euros
- The duration of the ski season is estimated at 120 days, with an initial level of a 55 day utilization in the first year, and reaching 75% after the fifth year of operation
- The average price for consumption of food and beverages is estimated at 3 Euros per guest
- The price for repair and maintenance of ski equipment is estimated at 12 Euros per repair
- The average price for renting equipment is estimated at 10 Euros per day
- Unallocated costs are estimated as a standard percentage of total revenue
- Energy related costs are estimated at a level of 40% of total revenue

4.1.2. Cost and ravenue

Investment costs

Description	sum €
Project preparation	335.000
Vertical transport - ski lift	1.750.000
Slopes	248.450
Snow making system	1.684.000
Facilities for ski centre	3.448.000
Mountain infrastructure	816.000
Vehicle and special equipment	616.000
Other structures	1.800.000
Total	10.697.450
Reserve	534.873
TOTAL	**11.232.323**

Average number of employee in ski center and calculation of sum for salary is present in table 21.

Table 21

Operative unit	Number of employee	Gross salary(monthly) €	Total Gross salary(monthly) €	Total for salaries (yearly) €
Lifts	10	720	7.200	86.400
Other activities	12	650	7.800	93.600
Services	15	500	7.500	90.000
Administration	3	900	2.700	32.400
Marketing & sales	2	900	1.800	21.600
Total	42	3670	27.000	324.000

Projected revenues are present in Table 22 and in Table 23 projected costs are present.

Table 22 Revenues

Revenues *year*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
Ski ticket sales															
Maximum daily capacity	**1590**														
Days per season	**120**														
Percentage of occupancy	55%	58%	65%	70%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Total number of visitors on yearly base	104.940	110.664	124.020	133.560	143.100	143.100	143.100	143.100	143.100	143.100	143.100	143.100	143.100	143.100	143.100
Average price of daily ski ticket	13 euros														
Revenues of ski tickets sales	**1.364.220**	**1.438.632**	**1.612.260**	**1.736.280**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**	**1.860.300**
Catering and other services															
Number of sold services - cavers	62.964	66.398	74.412	80.136	85.860	85.860	85.860	85.860	85.860	85.860	85.860	85.860	85.860	85.860	85.860
Average price	3 euros														
Total revenues	**188.892**	**199.195**	**223.236**	**240.408**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**	**257.580**
Revenues from other services															
Revenues from rent of equipment															
Estimated number of users (day of rented equipment	47.223	49.799	55.809	60.102	64.395	64.395	64.395	64.395	64.395	64.395	64.395	64.395	64.395	64.395	64.395
Unit price	12 euros														
Total revenues	**566.676**	**597.586**	**669.708**	**721.224**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**	**772.740**
Revenues from service and maintaning of equipment															
Estimated number of users	26.235	27.666	31.005	33.390	35.775	35.775	35.775	35.775	35.775	35.775	35.775	35.775	35.775	35.775	35.775
Unite price	10 euros														
Total revenues	**262.350**	**276.660**	**310.050**	**333.900**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**	**357.750**
Revenues from other nonmentiod services	**800.000**	**800.000**	**800.000**	**800.000**	**900.000**	**900.000**	**900.000**	**900.000**	**900.000**	**900.000**	**1.000.000**	**1.000.000**	**1.000.000**	**1.000.000**	**1.000.000**
TOTAL Revenue	**3.182.138**	**3.312.073**	**3.615.254**	**3.831.812**	**4.148.370**	**4.148.370**	**4.148.370**	**4.148.370**	**4.148.370**	**4.148.370**	**4.248.370**	**4.248.370**	**4.248.370**	**4.248.370**	**4.248.370**

Table 23 Costs

costs *year*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
Costs of sales															
Ski tickets	40.927	43.159	48.368	52.088	55.809	55.809	55.809	55.809	55.809	55.809	55.809	55.809	55.809	55.809	55.809
Catering	62.334	65.734	73.668	79.335	85.001	85.001	85.001	85.001	85.001	85.001	85.001	85.001	85.001	85.001	85.001
Rent of equipment	11.334	11.952	13.394	14.424	15.455	15.455	15.455	15.455	15.455	15.455	15.455	15.455	15.455	15.455	15.455
Service and maintaining of equipment	10.494	11.066	12.402	13.356	14.310	14.310	14.310	14.310	14.310	14.310	14.310	14.310	14.310	14.310	14.310
Other no mentioned services	42.500	42.500	42.500	42.500	42.500	42.500	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000	54.000
Cost for salaries	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000	324.000
Energy	1.272.855	1.324.829	1.446.102	1.532.725	1.659.348	1.659.348	1.659.348	1.659.348	1.659.348	1.659.348	1.699.348	1.699.348	1.699.348	1.699.348	1.699.348
Marketing	10.000														
Fixed Costs															
Tax	381.857	397.449	433.830	459.817	497.804	497.804	497.804	497.804	497.804	497.804	509.804	509.804	509.804	509.804	509.804
Insurance	31.821	33.121	36.153	38.318	41.484	41.484	41.484	41.484	41.484	41.484	42.484	42.484	42.484	42.484	42.484
Other	95.464	99.362	108.458	114.954	124.451	124.451	124.451	124.451	124.451	124.451	127.451	127.451	127.451	127.451	127.451
Total	**2.273.586**	**2.353.172**	**2.538.874**	**2.671.518**	**2.860.162**	**2.860.162**	**2.871.662**	**2.871.662**	**2.871.662**	**2.871.662**	**2.927.662**	**2.927.662**	**2.927.662**	**2.927.662**	**2.927.662**

4.1.3. Results from analysis

The results of the analysis are presented in Table 24.

Table 24. Project indicators

Indicator	Value
Discount Rate	+8,00%
FIRR	+8,01%
FNPV	+5,344 Euros
Average DSCR	1.51
DSCR after the 5-th year	1.58
Financial repayment period	3 years
EIRR	+15,07%
ENPV	+5,660,961 Euros
Average DSCR	1.51
DSCR after the 5-th year	1.58
Economic repayment period	3 years

The results of the analysis show that the project is financially and economically acceptable (FIRR=8.01% and EIRR=15.07%). The economic and financial repayment period is 3 years. DSCR is 1.58 after the 5-th year with an average of 1.51 for the entire period. This means that during project operation it will generate on an annual basis 58% more revenues than the annuity value of the 5-th year, or 51% in average annually more that the annuity value. During the first few years, it is typical for projects that are highly dependent on infrastructure to have a DSCR near or below 1. From a creditor's perspective, this project is attractive, having in consideration the DSCR value and the nature of the project.

The project risks were analyzed by assessing the sensitivity of EIRR by using three variables: revenues, investments and prices (consumption) of electric energy. The results of the sensitivity analysis are illustrated in the following chart.

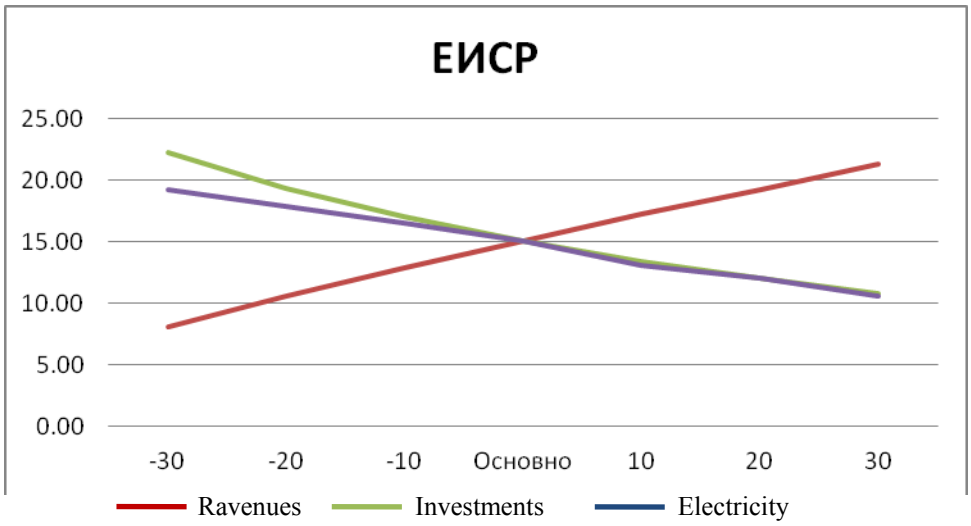


Chart 1 Analysis of the sensitivity of EIRR based on the variables of revenues, investments and prices (consumption of electric energy)

We may conclude that the project is particularly sensitive to all of the three variables, as the elasticity of the EIRR to percentage changes (from -30% to +30% for 10 percental points) in the three variables is relatively high.

With a discount rate of 8%, we can evaluate the critical values of the revenues, investments and price (consumption of electric energy) at which the project is on the verge of profitability. The critical values are illustrated in Table 26.

Table 26. Critical values of revenues, investments and price (consumption of electric energy) at which the project is on the verge of profitability.

Variable	Critical value
Revenues	31%
Investments	60%
Price (consumption of electric energy)	46%

Table 24 shows that in the case of a reduction in revenues of 31%, the project is on the verge of profitability. In the case of an increase in investment costs of 60%, the project is on the verge of profitability and by increasing the consumption or price of

electric energy by 46%, the project again is on the verge of profitability. It must be noted that the sensitivity analysis is performed only in cases where one variable changes, while the other variables remain constant. Based on this analysis, assessments are that with relatively high variations of the values of the variables in relation to projected values, the project is running the risk of proving to be unacceptable, which is less probable, i.e., the project is quite attractive.

Table 27 Income statement in euros - Ponikva

Worksheet 5 - INCOME STATEMENT		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	**Units**																
Вкупни приходи	euros		3,182,138	3,312,073	3,615,254	3,831,812	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,248,370	4,248,370	4,248,370	4,248,370	4,248,370
			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Вкупни приходи	euros		3,182,138	3,312,073	3,615,254	3,831,812	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,248,370	4,248,370	4,248,370	4,248,370	4,248,370
Трошоци од продажба																	
Ски карти	euros		40,927	43,159	48,368	52,088	55,809	55,809	55,809	55,809	55,809	55,809	55,809	55,809	55,809	55,809	55,809
Угостителство	euros		62,334	65,734	73,668	79,335	85,001	85,001	85,001	85,001	85,001	85,001	85,001	85,001	85,001	85,001	85,001
Изнајмување на опрема	euros		11,334	11,952	13,394	14,424	15,455	15,455	15,455	15,455	15,455	15,455	15,455	15,455	15,455	15,455	15,455
Сервис и одржување на опрема	euros		10,494	11,066	12,402	13,356	14,310	14,310	14,310	14,310	14,310	14,310	14,310	14,310	14,310	14,310	14,310
Други услуги	euros		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Плати	euros		324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000	324,000
Енергија	euros		1,272,855	1,324,829	1,446,102	1,532,725	1,659,348	1,659,348	1,659,348	1,659,348	1,659,348	1,659,348	1,699,348	1,699,348	1,699,348	1,699,348	1,699,348
Маркетинг	euros		3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Osiguruvanje	euros		31,821	33,121	36,153	38,318	41,484	41,484	41,484	41,484	41,484	41,484	42,484	42,484	42,484	42,484	42,484
Vkupno operativni troshoci	euros		1,771,765	1,722,968	1,850,051	1,940,823	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,113,597	2,113,597	2,113,597	2,113,597	2,113,597
Inflacija	%/Year		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kamati	euros		898,586	865,491	829,749	791,148	749,458	704,434	655,807	603,290	546,572	485,316	419,160	347,712	270,547	187,210	97,205
Amortizacija	euros		561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616
Vkupni troshoci	euros		3,231,967	3,150,076	3,241,416	3,293,587	3,383,671	3,338,647	3,290,020	3,237,503	3,180,785	3,119,529	3,094,373	3,022,925	2,945,760	2,862,423	2,772,418
Vkupno odanochiv prihod	euros		-49,829	161,997	373,838	538,225	764,699	809,723	858,350	910,867	967,585	1,028,841	1,153,997	1,225,445	1,302,610	1,385,947	1,475,952
Danok na dobivka - stapka	%/Year	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Danok na dobivka	euros		0	16,200	37,384	53,823	76,470	80,972	85,835	91,087	96,759	102,884	115,400	122,545	130,261	138,595	147,595
Neto prihod	euros		-49,829	145,798	336,454	484,403	688,229	728,751	772,515	819,780	870,827	925,957	1,038,597	1,102,901	1,172,349	1,247,353	1,328,357
Dividendi	euros		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neto prihod - dividendi	euros		- 49,829	145,798	336,454	484,403	688,229	728,751	772,515	819,780	870,827	925,957	1,038,597	1,102,901	1,172,349	1,247,353	1,328,357
Zadrzana dobivka	euros		- 49,829	95,969	432,423	916,826	1,605,054	2,333,805	3,106,320	3,926,100	4,796,927	5,722,884	6,761,481	7,864,381	9,036,730	10,284,083	11,612,439

Table 28 Financial cash flow

Worksheet 6 - CASH FLOW FINANCIAL		Nominal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
		Project Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	Units	Source/Comments																
Neto prihod	euros			-49,829	145,798	336,454	484,403	688,229	728,751	772,515	819,780	870,827	925,957	1,038,597	1,102,901	1,172,349	1,247,353	4,136,437
Amortizacija	euros			561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616
Paricni prilivi od rabotenje	euros			511,787	707,414	898,070	1,046,019	1,249,845	1,290,367	1,334,131	1,381,396	1,432,443	1,487,573	1,600,213	1,664,517	1,733,965	1,808,969	4,698,053
Glavnica od zadolzuvanje	euros			-413,681	-446,776	-482,518	-521,119	-562,809	-607,834	-656,460	-708,977	-765,695	-826,951	-893,107	-964,556	-1,041,720	-1,125,058	-1,215,062
Investicii	euros		-11,232,323															
Bilans	euros		-11,232,323	98,106	260,638	415,552	524,900	687,036	682,534	677,671	672,419	666,747	660,622	707,106	699,961	692,245	683,911	3,482,991
Prihodi	euros			3,182,138	3,312,073	3,615,254	3,831,812	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,248,370	4,248,370	4,248,370	4,248,370	4,248,370
Operativni trosoci	euros			1,771,765	1,722,968	1,850,051	1,940,823	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,113,597	2,113,597	2,113,597	2,113,597	2,113,597
Operating income	euros			1,410,373	1,589,105	1,765,203	1,890,989	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,134,773	2,134,773	2,134,773	2,134,773	2,134,773
Anuitet	euros			1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267
Debt Service Coverage Ratio - DSCR																		
				1.07	**1.21**	**1.35**	**1.44**	**1.58**	**1.58**	**1.58**	**1.58**	**1.58**	**1.58**	**1.63**	**1.63**	**1.63**	**1.63**	**1.63**
Average DSCR			**1.51**															
Kratkorocna likvidnost				98,106	358,744	774,296	1,299,196	1,986,232	2,668,765	3,346,436	4,018,855	4,685,603	5,346,224	6,053,331	6,753,292	7,445,537	8,129,448	11,612,439
Neto paricni prilivi	euros		-11,232,323	511,787	707,414	898,070	1,046,019	1,249,845	1,290,367	1,334,131	1,381,396	1,432,443	1,487,573	1,600,213	1,664,517	1,733,965	1,808,969	4,698,053
Financial NPV - FNPV	euros		**5,344 EUR**															
Financial IRR - FIRR			**8.01%**															

Table 29. Economic cash flow

Worksheet 7 - CASH FLOW ECONOMIC		Nominal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
		Project Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	Units	Source/Comments																
Net Income	euros			-49,829	145,798	336,454	484,403	688,229	728,751	772,515	819,780	870,827	925,957	1,038,597	1,102,901	1,172,349	1,247,353	4,136,437
Total Depreciation Expenses	euros			561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616	561,616
Total Interest Payments	euros			898,586	865,491	829,749	791,148	749,458	704,434	655,807	603,290	546,572	485,316	419,160	347,712	270,547	187,210	97,205
Income Tax Expenses	euros			0	16,200	37,384	53,823	76,470	80,972	85,835	91,087	96,759	102,884	115,400	122,545	130,261	138,595	147,595
Total Cash Flow From Operations	euros			1,410,373	1,589,105	1,765,203	1,890,989	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,134,773	2,134,773	2,134,773	2,134,773	4,942,854
Total Principle Payment	euros			-413,681	-446,776	-482,518	-521,119	-562,809	-607,834	-656,460	-708,977	-765,695	-826,951	-893,107	-964,556	-1,041,720	-1,125,058	-1,215,062
Investments	euros		-11,232,323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Balance	euros		-11,232,323	996,691	1,142,329	1,282,686	1,369,870	1,512,964	1,467,939	1,419,313	1,366,796	1,310,078	1,248,822	1,241,666	1,170,217	1,093,053	1,009,715	3,727,791
Total Revenues	euros			3,182,138	3,312,073	3,615,254	3,831,812	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,148,370	4,248,370	4,248,370	4,248,370	4,248,370	4,248,370
Total Operating Costs	euros			1,771,765	1,722,968	1,850,051	1,940,823	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,072,597	2,113,597	2,113,597	2,113,597	2,113,597	2,113,597
Operating income	euros			1,410,373	1,589,105	1,765,203	1,890,989	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,134,773	2,134,773	2,134,773	2,134,773	2,134,773
Total Debt Service Payment	euros			1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267	1,312,267
Debt Service Coverage Ratio - DSCR																		
				1.07	**1.21**	**1.35**	**1.44**	**1.58**	**1.58**	**1.58**	**1.58**	**1.58**	**1.58**	**1.63**	**1.63**	**1.63**	**1.63**	**1.63**
Average DSCR			**1.51**															
	euros																	
	euros																	
Net cash flow	euros		-11,232,323	1,410,373	1,589,105	1,765,203	1,890,989	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,075,773	2,134,773	2,134,773	2,134,773	2,134,773	4,942,854
Economic NPV - ENPV			**5,660,961 EUR**															
Economic IRR - EIRR			**15.07%**															

Table 30 Balance Sheet

Worksheet 8 - BALANCE SHEET		Nominal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
		Project Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	Units	Source/Comments															
Fiksni sredstva																	
Onpema	euros		0	11,232,323	10,670,706	10,109,090	9,547,474	8,985,858	8,424,242	7,862,626	7,301,010	6,739,394	6,177,777	5,616,161	5,054,545	4,492,929	3,931,313
Tekovni sredstva	euros																
Gotovina od zadolzuvanje	euros		11,232,323	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gotovina od rabotenje	euros		0	0	98,106	358,744	774,296	1,299,196	1,986,232	2,668,765	3,346,436	4,018,855	4,685,603	5,346,224	6,053,331	6,753,292	7,445,537
Accounts receivable	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inventory	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drugi tekovni sredstva	euros																
Vkupno sredstva	euros		**11,232,323**	**11,232,323**	**10,768,812**	**10,467,834**	**10,321,770**	**10,285,054**	**10,410,474**	**10,531,391**	**10,647,446**	**10,758,249**	**10,863,380**	**10,962,386**	**11,107,876**	**11,246,221**	**11,376,850**
Obvrski I kapital	euros																
Zadrzana dobivka	euros			0	-49,829	95,969	432,423	916,826	1,605,054	2,333,805	3,106,320	3,926,100	4,796,927	5,722,884	6,761,481	7,864,381	9,036,730
Dolgorocno zadolzuvanje	euros		11,232,323	11,232,323	10,818,641	10,371,865	9,889,347	9,368,228	8,805,419	8,197,586	7,541,125	6,832,148	6,066,453	5,239,502	4,346,395	3,381,840	2,340,120
Sopstven kapital	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vkupno obvrski I kapital	euros		**11,232,323**	**11,232,323**	**10,768,812**	**10,467,834**	**10,321,770**	**10,285,054**	**10,410,474**	**10,531,391**	**10,647,446**	**10,758,249**	**10,863,380**	**10,962,386**	**11,107,876**	**11,246,221**	**11,376,850**

4.2. Carev Vrv

4.2.1 Assumptions

The following assumption have been adopted for the needs of the financial estimations, in particular for the initial feasibility estimation of the first development phase of the Ski Center Carev Vrv:

- Investments in external infrastructure will be financed by public enterprises or agencies competent for the according type of infrastructure, the same have not been taken into consideration in the estimation of the project feasibility.
- Investments in internal infrastructure are part of the overall investments and will be the responsibility of the future investor.

4.2.2. Costs and ravenues

Investment costs (I phase)

Description	Sum €
Project preparation	780.000
Vertical transport - ski lift	4.150.000
Slopes	861.150
Snow making system	3.044.000
Facilities for ski centre	4.911.000
Mountain infrastructure	3.162.600
Vehicle and special equipment	649.000
Infrastructure	6.000.000
Total	17.557.750
Reserve	1.177.888
TOTAL	**24.735.638**

The facilities in the ski center will be operational throughout the entire year, while the seasons have been divided in the following manner:

- Off season ..... October and November
- Low season ..... April, May

- Pre-season and late season ..... June, September
- Peak season ..... December, January, February, March, July and August

- The revenues of the ski centers will consist of the following revenue sources:
  - Revenues from ski pass sales
  - Revenues from cable car tickets sales
  - Revenues from food and beverages sales
  - Servicing ski equipment
  - Rental of ski equipment
  - Ski school
  - Revenues from additional offers (snow tubing, bike rentals, renting of (4x4) motor vehicles, renting of snowmobiles and etc.)
- Steady annual increase in the total number of services sold until the fifth year of operation (period of stabilization)
- The average prices of services will not change during the period under review
- The average price of a daily ski pass is 16 Euros
- The duration of the ski season is estimated at 120 days, with an initial level of a 45 day utilization in the first year, and reaching 70% after the fifth year of operation
- The average price for consumption of food and beverages is estimated at 5 Euros per guest
- The price for repair and maintenance of ski equipment is estimated at 15 Euros per repair
- The average price for renting equipment is estimated at 15 Euros per day
- Unallocated costs are estimated as a standard percentage of total revenue
- Energy related costs are estimated at a level of 40% of total revenue

Average number of employee in ski center and calculation of sum for salary is present in table 31.

Table 31

Operative unit	Number of employee	Gross salary(monthly) €	Total Gross salary(monthly) €	Total for salaries (yearly) €
Lifts	16	720	11.520	138.240
Other activities	25	650	16.250	195.000
Services	20	500	10.000	120.000
Administration	5	900	4.500	54.000
Marketing & sales	2	900	1.800	21.600
Total	**55**	**3.670**	**35.620**	**528.840**

4.2.3. Results of the analysis

The results of the analysis are presented in Table 32.

Table 32. Project indicators

Indicator	Value
Discount rate	+8,00%
FIRR	+3,22%
FNPV	-8,242,003 Euros
Average DSCR	1.11
DSCR after the 5-th year	1.19
Financial repayment period	14 years
EIRR	+10,06%
ENPV	+3,479,067 Euros
Average DSCR	1.11
DSCR after the 5-th year	1.19
Economic repayment period	9 years

The results of the analysis show that the project is not financially acceptable, (FIRR=3.22%), however, it is economically acceptable (EIRR=10.06%). The economic period of repayment is 9 years. DSCR is 1.19 after the 5-th year with an average of 1.11 for the entire period. This means that during project operation it will

generate on an annual basis 19% more revenues than the annuity value of the 5-th year, or 11% in average annually more than the annuity value. During the first few years, it is typical for projects that are highly dependent on infrastructure to have a DSCR near or below 1. From a creditor's perspective, this project is attractive, having in consideration the DSCR value and the nature of the project.

The project risks were analyzed by assessing the sensitivity of EIRR by using three variables: revenues, investments and prices (consumption) of electric energy. The results of the sensitivity analysis are illustrated in the following chart.

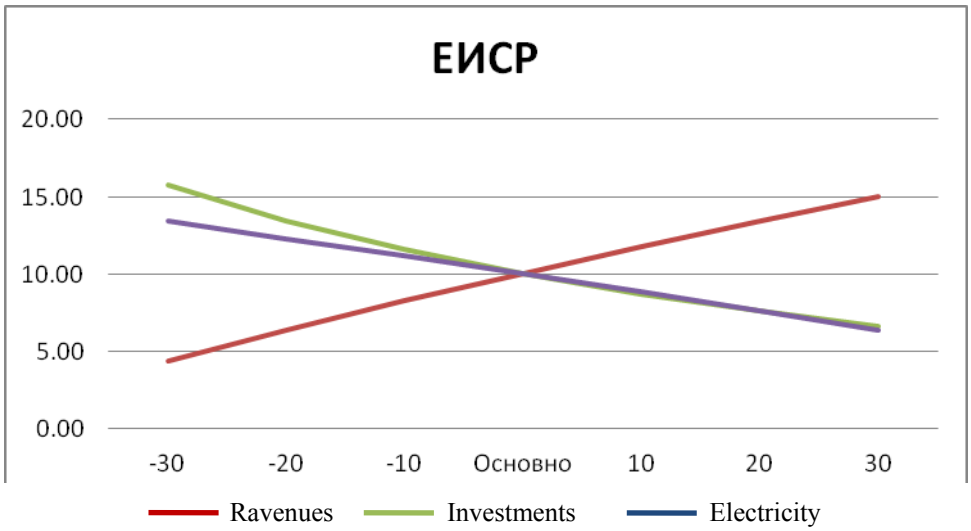


Chart 2 Analysis of the sensitivity of EIRR on the variables of revenues, investments and prices (consumption of electric energy)

We may conclude that the project is very particularly to all three variables, as the elasticity of the EIRR to percentage changes (from -30% to +30% for 10 percental points) in the three variables is relatively high.

With a discount rate of 8%, we can evaluate the critical values of the revenues, investments and price (consumption of electric energy) at which the project is on the verge of profitability. The critical values are illustrated in Table 33.

Table 33. Critical values of revenues, investments and price (consumption of electric energy) at which the project is on the verge of profitability.

Variable	Critical value
Revenues	11%
Investments	16%
Price (consumption of electric energy)	17%

It is clear from the Table above that when revenues drop by 11%, the project is on the verge of profitability. With an increase in investment costs of 16% the project is on the verge of profitability and with by increasing the consumption or the price of electricity by 17% the project is on the verge of profitability. It must be noted that the sensitivity analysis is performed only in cases where one variable changes, while the other variables remain constant.

4.2.4. Other financial resources

The use of EU Pre-Accession Funds (IPA) and Public Private Partnerships (PPP) has been identified as possible sources or manners of financing this project.

If part of the external infrastructure with an estimated value of 6.000.000 Euros, and costs for preparation of projects in the amount of 780.000 Euros were to possibly be financed through EU funds, the financing structure would be as described in Table 34 below:

Table 34. EU Funds Financing Structure

Description of costs	EU Funds €	Investor Financing €
Project preparation	780.000	
Cable cars and ski lifts		4.150.000
Runs - trails		861.150
System for artificial snow		3.044.000
Facilities for the needs of the ski center		4.911.000
Mountain infrastructure		3.162.600
Vehicles and special equipment		649.000
Infrastructure	6.000.000	
Total	6.780.000	16.777.750
Miscellaneous	339.000	838.888
TOTAL	**7.119.000**	**17.616.638**

In cases like this, when part of the costs are covered through EU funds, the project becomes financially acceptable, as shown in the following table.

Table 35 Financial indicators of the project in financing through EU Funds

Indicator	Value
Discount rate	+8,00%
FIRR	+8,27%
FNPV	+349,169 Euros
Average DSCR	1.55
DSCR after the 5-th year	1.67
Financial repayment period	10 years

By using pre-accession funds, the credit attractiveness of the project is also reinforced, as the average DSCR for the time period of 15 years becomes 1.55 meaning that the project provides average annual net revenues that are 55% higher than the annuity value. In this case, the repayment period is 10 years.

Public-Private Partnerships (PPP)

In the case of a Public-Private Partnership, the private partner would be expected to:

- Increase the efficiency (lower costs in the project life cycle), as the private partner would be interested in reducing the costs throughout the entire operation of the project,
- Provide a quicker implementation of the projects: due to the fact that the construction of the ski center is the responsibility of the private partner, the private partner would be motivated to carry out the tasks in the most shortest possible time period in order to reduce the risk of prolonging construction works,
- Create additional revenues: it is expected that the private partner would generate additional commercial revenues as well, thereby will increase the attractiveness of the project,
- Project risks musts be identified and allocated to the respected partner that can manage these risks in the most efficient manner, and possible actions need to be identified for alleviating their impact,

- Improve the management: by transferring the responsibility for provision of public services to the private partner, the public partner is now more in the role of a regulator, focusing on activities in regards to planning, organization and control, rather than on daily provision of public services.

These expectations actually form the framework for determining the criteria for selection of the most favorable private partner for this project.

In PPP financing, the public partner may enter by financing the infrastructure valued at 6.000.000 Euros as well as the costs for preparation of projects valued at 780.000 евра. In this case, the financing structure would be as shown in Table 36 below:

Table 36. Structure of PPP financing

Description of costs	PPP Financing €	Investor Financing €
Project preparation	780.000	
Cable cars and ski lifts		4.150.000
Runs - trails		861.150
System for artificial snow		3.044.000
Facilities for the needs of the ski center		4.911.000
Mountain infrastructure		3.162.600
Vehicles and special equipment		649.000
Infrastructure	6.000.000	
Total	6.780.000	16.777.750
Miscellaneous	339.000	838.888
TOTAL	**7.119.000**	**17.616.638**

Nevertheless, additional estimations also need to be conducted in order to determine the project affordability in the case of a PPP. Within a PPP analysis, the value for money of the private partner also needs to be considered. Having in mind that the price of electric energy is rather high and that the project is sensitive to the price of electric energy, calculations should be made to see if the project can be made more attractive for the private partner if the public partner were to subsidize part of the

costs for electric energy, while maintaining a positive value for the money for the public partner.

From the aspect of which type of PPP model should be applied for this project, considerations should be given to private finance initiatives and concessions.

Private Finance Initiative-PFI

Within this model, the private partner is required to design and finance the construction of the ski center and to further on be responsible for its management, more specifically, maintain it on the account of the public partner.

The private partner, who has designed and constructed the infrastructure project, can easily prepare a maintenance program along with the estimated costs for the contract period, which has an overall effect on reducing the costs necessary for maintenance of the infrastructure project.

The public partner pays the private partner a lump sum for: the design, construction and maintenance of the infrastructure facility, for a predetermined period of time. The advantages to this type of long-term budgeting, which encompasses the entire life cycle of the project, lies in the fact that the majority of public sector entities spend more money on maintaining infrastructural projects than they do on their development.

Upon contract expiration, the infrastructure facility is usually transferred in the ownership of the public partner. From design, through operation and up to the point when the infrastructure facility is transferred in the ownership of the public partner, these contracts may last up to twenty and more years. THIS MODEL OF PPP IS FAVORABLE AS THE PRIVATE PARTNER IS EXPECTED TO DESIGN AND FINANCE THE PROJECT.

Concession

The concession model is one of the best known and most practiced forms of PPP, characterized by a direct link between the private partner (concessionaire) and the end users of services. The private partner, even though under the “control” of the public partner, provides the services and charges the end users for these services.

In some cases the concessionaire may pay the public partner a concession fee for the concession rights, and in some cases, depending on the concession project, the public partner may pay the concessionaire a given amount as a supplement for the unpaid fee that the concessionaire charges the end users (especially since we have mentioned the

value of the electric energy and of the need for additional considerations of the value for money for the public partner in cases when there is subsidizing).

With the concession model, the concessionaire usually bears the risk that is associated with the activity that is being performed, i.e., provision of the public service.

The concession model, especially the concession agreement for building, is most often realized through the so-called "Design-Build-Finance-Operate-Transfer" –DBFOT contract. For the realization of this type of contract, the private partner usually establishes a special purpose entity (special purpose vehicle - SPV), in which one or more entities of the private sector can have shares, as well as the public partner.

THIS FORM OF PPP IS ACCEPTIBLE AS THE LAW ON CONCESSIONS AND PPP ALLOWS FOR THE CENTRAL AND/OR LOCAL AUTHORITIES TO PARTICIPATE IN THE CONCESSION CONTRACTS.

Table 37 Revenues

Revenues *year*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
Ski ticket sales															
Maximum daily capacity	**2504**														
Days per season	**120**														
Percentage of occupancy	45%	53%	60%	65%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Total number of visitors on yearly base	135.216	159.254	180.288	195.312	210.336	210.336	210.336	210.336	210.336	210.336	210.336	210.336	210.336	210.336	210.336
Average price of daily ski ticket	16 евра														
Revenues of ski tickets sales	**2.163.456**	**2.548.070**	**2.884.608**	**3.124.992**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**	**3.365.376**
Catering and other services															
Number of sold services - cavers	87.890	103.515	117.187	126.953	136.718	136.718	136.718	136.718	136.718	136.718	136.718	136.718	136.718	136.718	136.718
Average price	5 евра														
Total revenues	**439.452**	**517.577**	**585.936**	**634.764**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**	**683.592**
Revenues from other services															
Revenues from rent of equipment															
Estimated number of users (day of rented equipment	47.326	55.739	63.101	68.359	73.618	73.618	73.618	73.618	73.618	73.618	73.618	73.618	73.618	73.618	73.618
Unit price	15 евра														
Total revenues	**709.884**	**836.086**	**946.512**	**1.025.388**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**	**1.104.264**
Revenues from service and maintaning of equipment															
Estimated number of users	24.339	28.666	32.452	35.156	37.860	37.860	37.860	37.860	37.860	37.860	37.860	37.860	37.860	37.860	37.860
Unite price	15 евра														
Total revenues	**365.083**	**429.987**	**486.778**	**527.342**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**	**567.907**
Revenues from other nonmentiod services	**1.000.000**	**1.000.000**	**1.000.000**	**1.000.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**	**1.200.000**
TOTAL Revenue	**4.677.875**	**5.331.720**	**5.903.834**	**6.312.486**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**	**6.921.139**

Table 38 Costs

costs *year*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*
Costs of sales															
Ski tickets	64.904	76.442	86.538	93.750	100.961	100.961	100.961	100.961	100.961	100.961	100.961	100.961	100.961	100.961	100.961
Catering	145.019	170.800	193.359	209.472	225.585	225.585	225.585	225.585	225.585	225.585	225.585	225.585	225.585	225.585	225.585
Rent of equipment	14.198	16.722	18.930	20.508	22.085	22.085	22.085	22.085	22.085	22.085	22.085	22.085	22.085	22.085	22.085
Service and maintaining of equipment	14.603	17.199	19.471	21.094	22.716	22.716	22.716	22.716	22.716	22.716	22.716	22.716	22.716	22.716	22.716
Other no mentioned services	50.000	50.000	50.000	50.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
Cost for salaries	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840	528.840
Energy	1.543.699	1.759.468	1.948.265	2.083.120	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976	2.283.976
Marketing	10.000														
Fixed Costs															
Tax	561.345	639.806	708.460	757.498	830.537	830.537	830.537	830.537	830.537	830.537	830.537	830.537	830.537	830.537	830.537
Insurance	46.779	53.317	59.038	63.125	69.211	69.211	69.211	69.211	69.211	69.211	69.211	69.211	69.211	69.211	69.211
Other	14.034	15.995	17.712	18.937	20.763	20.763	20.763	20.763	20.763	20.763	20.763	20.763	20.763	20.763	20.763
Total	**2.993.420**	**3.338.590**	**3.640.614**	**3.856.344**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**	**4.174.676**

Table 39 Income statement in euros

Carev Vrv																
Worksheet 5 - INCOME STATEMENT	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description																
Вкупни приходи		4,677,875	5,331,720	5,903,834	6,312,486	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Вкупни приходи		4,677,875	5,331,720	5,903,834	6,312,486	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139
Трошоци од продажба																
Ски карти		64,904	76,442	86,538	93,750	100,961	100,961	100,961	100,961	100,961	100,961	100,961	100,961	100,961	100,961	100,961
Угостителство		145,019	170,800	193,359	209,472	225,585	225,585	225,585	225,585	225,585	225,585	225,585	225,585	225,585	225,585	225,585
Изнајмување на опрема		14,198	16,722	18,930	20,508	22,085	22,085	22,085	22,085	22,085	22,085	22,085	22,085	22,085	22,085	22,085
Сервис и одржување на опрема		14,603	17,199	19,471	21,094	22,716	22,716	22,716	22,716	22,716	22,716	22,716	22,716	22,716	22,716	22,716
Други услуги		50,000	50,000	50,000	50,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000
Плати		528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840	528,840
Енергија		1,871,150	2,132,688	2,361,534	2,524,994	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456	2,768,456
Маркетинг		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Osiguruvanje		46,779	53,317	59,038	63,125	69,211	69,211	69,211	69,211	69,211	69,211	69,211	69,211	69,211	69,211	69,211
Vkupno operativni troshoci		2,745,493	2,808,766	3,047,813	3,218,561	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308
Inflacija		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kamati		1,978,851	1,905,971	1,827,260	1,742,253	1,650,445	1,551,292	1,444,207	1,328,555	1,203,652	1,068,756	923,068	765,725	595,795	412,270	214,063
Amortizacija		1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782
Vkupni troshoci		5,961,126	5,951,519	6,111,855	6,197,596	6,368,534	6,269,382	6,162,297	6,046,645	5,921,741	5,786,845	5,641,157	5,483,814	5,313,884	5,130,359	4,932,153
Vkupno odanochiv prihod		-1,283,251	-619,798	-208,021	114,890	552,605	651,757	758,842	874,494	999,398	1,134,294	1,279,982	1,437,325	1,607,255	1,790,780	1,988,986
Danok na dobivka - stapka	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Danok na dobivka		0	0	0	11,489	55,260	65,176	75,884	87,449	99,940	113,429	127,998	143,732	160,725	179,078	198,899
Neto prihod		-1,283,251	-619,798	-208,021	103,401	497,344	586,582	682,958	787,045	899,458	1,020,865	1,151,984	1,293,592	1,446,529	1,611,702	1,790,088
Dividendi		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neto prihod - dividendi		- 1,283,251	- 619,798	- 208,021	103,401	497,344	586,582	682,958	787,045	899,458	1,020,865	1,151,984	1,293,592	1,446,529	1,611,702	1,790,088
Zadrzana dobivka		- 1,283,251	- 1,903,049	- 2,111,070	- 2,007,669	- 1,510,325	- 923,743	- 240,785	546,260	1,445,718	2,466,582	3,618,566	4,912,158	6,358,688	7,970,389	9,760,477

Table 40 Financial cash flow

Carev Vrv																	
Worksheet 6 - CASH FLOW FINANCIAL		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	**Units**																
Neto prihod	euros		-1,283,251	-619,798	-208,021	103,401	497,344	586,582	682,958	787,045	899,458	1,020,865	1,151,984	1,293,592	1,446,529	1,611,702	7,973,997
Amortizacija	euros		1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782
Paricni prilivi od rabotenje	euros		-46,469	616,983	1,028,761	1,340,183	1,734,126	1,823,364	1,919,740	2,023,827	2,136,240	2,257,646	2,388,766	2,530,374	2,683,311	2,848,484	9,210,779
Glavnica od zadolzuvanje	euros		-911,002	-983,882	-1,062,593	-1,147,600	-1,239,409	-1,338,561	-1,445,646	-1,561,298	-1,686,202	-1,821,098	-1,966,786	-2,124,128	-2,294,059	-2,477,583	-2,675,790
Investicii	euros	-24,735,638															
Bilans	euros	-24,735,638	-957,471	-366,899	-33,832	192,582	494,718	484,802	474,094	462,529	450,038	436,549	421,980	406,246	389,253	370,900	6,534,989
Prihodi	euros		4,677,875	5,331,720	5,903,834	6,312,486	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139
Operativni trosoci	euros		2,745,493	2,808,766	3,047,813	3,218,561	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308
Operating income	euros		1,932,382	2,522,954	2,856,021	3,093,925	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831
Anuitet	euros		2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853
ДСЦР																	
			0.67	**0.87**	**0.99**	**1.07**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**
Просечен ДСЦР		**1.11**															
Kratkorocna likvidnost			-957,471	-1,324,370	-1,358,202	-1,165,620	-670,902	-186,100	287,994	750,523	1,200,561	1,637,110	2,059,090	2,465,335	2,854,588	3,225,488	9,760,477
Neto paricni prilivi	euros	-24,735,638	-46,469	616,983	1,028,761	1,340,183	1,734,126	1,823,364	1,919,740	2,023,827	2,136,240	2,257,646	2,388,766	2,530,374	2,683,311	2,848,484	9,210,779
Финансиски NPV - FNPV	euros	**-8,242,003 EUR**															
Финансиски IRR - FIRR		**3.22%**															

Table 41 Economic cash flow

Carev Vrv																		
Worksheet 7 - CASH FLOW ECONOMIC		**Nominal Year**	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
		Project Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	**Units**	**Source/Comments**																
Нето приход	euros			-1,283,251	-619,798	-208,021	103,401	497,344	586,582	682,958	787,045	899,458	1,020,865	1,151,984	1,293,592	1,446,529	1,611,702	1,790,088
Total Depreciation Expenses	euros			1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782	1,236,782
Total Interest Payments	euros			1,978,851	1,905,971	1,827,260	1,742,253	1,650,445	1,551,292	1,444,207	1,328,555	1,203,652	1,068,756	923,068	765,725	595,795	412,270	214,063
Income Tax Expenses	euros			0	0	0	11,489	55,260	65,176	75,884	87,449	99,940	113,429	127,998	143,732	160,725	179,078	6,382,808
Total Cash Flow From Operations	euros			1,932,382	2,522,954	2,856,021	3,093,925	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	9,623,741
Total Principle Payment	euros			-911,002	-983,882	-1,062,593	-1,147,600	-1,239,409	-1,338,561	-1,445,646	-1,561,298	-1,686,202	-1,821,098	-1,966,786	-2,124,128	-2,294,059	-2,477,583	-2,675,790
Investments	euros		-24,735,638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Balance	euros		-24,735,638	1,021,380	1,539,072	1,793,428	1,946,324	2,200,423	2,101,270	1,994,185	1,878,534	1,753,630	1,618,734	1,473,046	1,315,703	1,145,773	962,248	6,947,951
Total Revenues	euros			4,677,875	5,331,720	5,903,834	6,312,486	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139	6,921,139
Total Operating Costs	euros			2,745,493	2,808,766	3,047,813	3,218,561	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308	3,481,308
Operating income	euros			1,932,382	2,522,954	2,856,021	3,093,925	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831
Total Debt Service Payment	euros			2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853	2,889,853
Debt Service Coverage Ratio - DSCR																		
				0.67	**0.87**	**0.99**	**1.07**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**	**1.19**
Average DSCR			**1.11**															
	euros																	
	euros																	
Net cash flow	euros		-24,735,638	1,932,382	2,522,954	2,856,021	3,093,925	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	3,439,831	9,623,741
Економски NPV - ENPV			**3,479,067 EUR**															
Економски IRR - EIRR			**10.06%**															

Table 42 Balance Sheet

Carev Vrv																		
Worksheet 8 - BALANCE SHEET		**Nominal Year**	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
		Project Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Row Description	**Units**	**Source/Comments**															
Fiksni sredstva																	
Onpema	euros		0	24,735,638	23,498,856	22,262,074	21,025,292	19,788,510	18,551,728	17,314,946	16,078,164	14,841,383	13,604,601	12,367,819	11,131,037	9,894,255	8,657,473
Tekovni sredstva	euros																
Gotovina od zadolzuvanje	euros		24,735,638	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gotovina od rabotenje	euros		0	0	-957,471	-1,324,370	-1,358,202	-1,165,620	-670,902	-186,100	287,994	750,523	1,200,561	1,637,110	2,059,090	2,465,335	2,854,588
Accounts receivable	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inventory	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drugi tekovni sredstva	euros																
Vkupno sredstva	euros		**24,735,638**	**24,735,638**	**22,541,384**	**20,937,703**	**19,667,090**	**18,622,890**	**17,880,826**	**17,128,846**	**16,366,158**	**15,591,905**	**14,805,162**	**14,004,929**	**13,190,127**	**12,359,590**	**11,512,061**
Obvrski I kapital	euros																
Zadrzana dobivka	euros			0	-1,283,251	-1,903,049	-2,111,070	-2,007,669	-1,510,325	-923,743	-240,785	546,260	1,445,718	2,466,582	3,618,566	4,912,158	6,358,688
Dolgorocno zadolzuvanje	euros		24,735,638	24,735,638	23,824,635	22,840,753	21,778,160	20,630,559	19,391,151	18,052,589	16,606,943	15,045,646	13,359,444	11,538,346	9,571,561	7,447,432	5,153,373
Sopstven kapital	euros		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vkupno obvrski I kapital	euros		**24,735,638**	**24,735,638**	**22,541,384**	**20,937,703**	**19,667,090**	**18,622,890**	**17,880,826**	**17,128,846**	**16,366,158**	**15,591,905**	**14,805,162**	**14,004,929**	**13,190,127**	**12,359,590**	**11,512,061**

5. Socio – Economic Analysis

Aside from the financial viability of a certain project, being the most important for the investor, especially if private investments are the case, the evaluation of the socio-economic benefits arising from the project realization does provide a realistic picture of all the benefits it has on society, specifically on the wider community. In order to make a complete assessment in terms - is tourism development profitable for the Osogovo Mountains, various socio-economic impacts must be taken into consideration. On a global level, tourism is one of the industries that employ a great number of workers. The construction of the ski center along with the entire infrastructure will create new jobs; it will increase the local and regional economic activities and will provide additional incomes. The socio-economic and environmental impacts must be taken into consideration for any given project that is being implemented for the purpose of promoting tourism development, so that realistic appraisal can be provided in regards to its affordability.

Nowadays, tourism as a socio-economic process has a global territorial distribution and in many countries is one of the main driving forces of sustainable development. The socio-economic impacts of tourism are especially high in regions with limited economic development opportunities. The development of tourism is very important in strengthening local entrepreneurship and especially in strengthening small and medium sized enterprises, which has a strong effect on improving the standards of living in regions where its development is more intensive.

From an economic perspective, tourism contributes towards increasing the gross national product in exports as well, as in strengthening regional and rural development. From the social perspective, tourism contributes towards the creation of new jobs, enhancing living conditions, reducing migration, i.e., it impacts the demography of a given region.

Employment

The tourist industry is one of the industries that create the largest number of jobs, i.e., tourism is a labor- intensive industry. The jobs that are created vary from ones requiring high education (managers, marketing, engineers and etc), to administrators, and to ones requiring unskilled workers for maintenance of the hygiene in the accommodation capacities, communal services and many other. From the tourism perspective, the term employment includes three different categories. Direct employments, as a result of the preparation and construction of a particular tourist center along with all the necessary infrastructure and equipment, and in tourism this refers to the total number of employments that are needed for preparation and realization of a given project, which is part of the tourism development process. The next category of jobs are direct employments in the tourist industry that are

necessary for the successful operation of a tourist destination, or as is the case, jobs that are in the function of the ski center operation, accommodation and catering services and remaining functional units. The third category refers to indirect employments, i.e., jobs that are created within the supporting sectors that are connected to the construction sector responsible for the construction of the infrastructure, but also with the supporting sectors that are connected with tourism.

Upon the construction of the first phase of the Ski center Carev Vrv and completion of the vertical transport system on Ponikva, there will be 97 direct employments, whereby, the number of newly created jobs will rise to 127 after the entire realization of the Ski Center of Carev Vrv is completed. The total number of direct employments, taking into account all the envisioned accommodation capacities and implemented projects that increase the offer of these two localities, is estimated at approximately 1100. The direct employments in the construction of the ski center and the entire infrastructure have not been taken into account. The impact on the net increase in the total number of employed in the East Planning Region would be 2%, i.e., the number of employed would increase about 2% and would decrease about 4%. The number of indirect employments is rather difficult to calculate. Typically, the number of indirect employments is determined based on the so-called *multiplication coefficients*, which vary quite significantly depending on the author and range between 1:0,5 (according to UN), and 1:1,4 (according to Canadian research on ski centers). The majority of authors have adopted the coefficient of 1:1,2. According to this, the number of indirect employments would be approximately 1300.

The total impact on the net increase in the total number of employed would be 4,21%, and the decrease of the number of unemployed would be 8,76%.

Demography

The development of tourism, together with its economic impacts, also stimulates demographic development. This is even more important in regions that are economically underdeveloped, and where according to recent world experiences, tourism has shown to be one of the most propulsive industries in overcoming regional underdevopment. In certain cases, the development of tourism was the initiating factor in increasing the number of inhabitants. In developed tourist regions, not only does tourism have a positive influence on migrations, but it is also a reason for seasonal labor migrations from other regions.

The creation of new jobs does greatly reduce the process of emigration, from rural areas as well as from the urban centers within the region.

The number of newly created jobs that has been estimated at 1100, means that existence will be provided for the same number of families. The structure of the employees within the

existing ski centers shows that the majority of the employees come from the nearby settlements, except for those employments that require specific skills and knowledge. Besides the direct employments, indirect employments also have an influence on reducing the negative demographic occurrences. The East Region is mainly an agricultural region, therefore, the construction of the planned projects and the functioning of all the accommodation and catering capacities will provide a secure market for the locally produced agricultural products.

From the aspect of the population structure, tourism affects the structure of the population in many different ways. Tourism is not a factor that radicalizes the social conditions, and it cannot significantly affect the biological structure of the population, however, tourism in general does increase women employment, which does impact the biological structure of the population.

Rural development

Tourism in whole, especially mountain tourism, does contribute greatly to the increase in rural development, by creating new businesses and new jobs. Production of food, i.e., production of agricultural products that are necessary for the functioning of the accommodation and catering capacities, promotes rural development by retaining the existing jobs in agriculture, providing learning possibilities and transfer of knowledge, introducing new skills and providing training and educational opportunities. The production of bio products enables new products to be created that has higher values, and by this enables development of new ways of agriculture production in the rural areas. Aside from the agriculture and food production, artisanship also has its role in increasing the tourist offer by producing souvenirs, handmade products, characteristic local products, and thereby providing the existence for this type of production.

Economic development

Gross Domestic Product

With the complete implementation of the projects in both of the localities (first phase Carev Vrv), the Gross Domestic product will rise for approximately 1,48%, and with the completion of all the phases of development of the locality of Carev Vrv, the increase in GDP would be about 1,95%. The increase in GDP stemming from the supporting industries and the construction of the necessary infrastructure has not been taken into account.

An investment of over 30 million Euros, with the creation of 1100 direct employments, has an enormous impact on the economic development of the East Region. Tourism has great potential for sustainable development of small and medium-sized enterprises.

Social dimension

The social effects from the implementation of the proposed projects can be divided into two categories – effects in relation to increasing the standards of living and effects in relation to increasing the social cohesion and stability. Investments that are made in an economically underdeveloped region that create new jobs, and by that new incomes in the region, have an impact on the different social and cohesive trends in the local or regional community (higher employment rate, rural depopulation and etc). Some rural settlements, even areas, within the East Planning Region are endangered by the high rate of emigration, which brings into question their physical existence as the number of inhabitants is below the biological survival level. Therefore, taking into consideration the importance tourism has in rural areas, the implementation of the project in total has a positive impact on the rural labor market, through the provision of direct employments, but also through support provided to the supporting business activities. As a result, the mountain regions will become a particularly important source of income and a factor of social stability, thereby creating conditions for continued existence of these rural communities.

The implementation of a complex tourism development project usually includes measures and activities which to a great extent involve the inhabitants of the closest rural and urban centers. The opportunities for families to earn additional income has long-term effects on the behavior change of the population, which usually results in better and improved quality of life for the population, and also to greater investments by the local population in the area of entrepreneurship.

6. Environmental impact

6.1. Procedures

Preliminary environmental impact assessment for the proposed construction of facilities

This assessment gives an overview of the legal requirements and the necessary analysis, research and documents pertaining to The Law on Environment ("Official Gazette of Republic of Macedonia" no. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10 and 124/10 и 51/11), and the according secondary acts.

The purpose of this assessment is to determine the potential negative impacts that the construction of the two ski centers on Ponikva and Carev Vrv might have on the overall environment, and to propose preparation of a document that would be used to identify, plan and enable monitoring of the implementation of measures for their reduction or alleviation, i.e., enabling a sustainable usage of the environment in the given locations.

The construction of sports and recreational centers of this size could perhaps reduce the quality of the environment and possibly cause significant changes to the health and safety of the local population and to the natural world.

In planning the construction of the sports and recreational center of Carev Vrv and the expansion of the existing SRC Ponikva, according to The Law on Environment ("Official Gazette of Republic of Macedonia" no. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10 and 124/10 and 51/11), the Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 153/07), and the Decree for Determining Projects for which and criteria on the basis of which the screening for an environmental impact assessment shall be carried out ("Official Gazette of Republic of Macedonia" no. 74/05), a procedure for strategic assessment of the environment as well as a procedure for assessment of the environmental impact must all be carried out. The documents resulting from these two procedures would contain the necessary conditions that need to be fulfilled in the construction and operation of these projects, thereby achieving a high level of environmental protection within the project localities.

Initially, a Report on the strategic environmental assessment needs to be prepared for urban plans incorporating areas outside the settlements (for both of the sports and recreation centers) in the phase of preparing the urban plan according to the Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 153/07),

Parallel to the preparation of the feasibility study for construction and expansion, according to the Decree for Determining Projects for which and criteria on the basis of which the screening for an environmental impact assessment shall be carried out ("Official Gazette of Republic of Macedonia" no. 74/05), Attachment 2, 12 (a) (ski trails, ski lifts and cable cars and accompanying structures) and (b) (weekend settlements and hotel complexes outside urban centers and accompanying structures) a procedure needs to be carried out for determining the need for an environmental and health impact assessment procedure.

The preparation of these documents will fulfill the legal requirements of introducing and involving the public in the process of planning and using the given area, in envisioning and reviewing alternatives to the planned activities within the respectful area, impact assessment, envisioning of measures for their elimination or alleviation and establishing monitoring and plan for environmental management.

The following chapters contain details on the preparation of the Reports on the strategic environmental assessment for urban plans incorporating areas outside the settlements, Environmental impact assessment study for the proposed activities incorporated within the project activities, as well as a separate floristic-faunistic overview of the areas embraced with the project activities.

Strategic environmental assessment

Starting from the phase of planning a sports, recreation and tourist complex of this type, considerations must be given to the fact that, in order for this realization to be in line with the existing laws and regulations, amendments to the current urban plan will have to be made, whereas a new plan will have to be prepared for areas that are not covered by the current urban plan. According to the Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 153/07), item 13, Spatial and urban planning and land use - planning documents concerning spatial and urban planning of the territory of the Republic of Macedonia, municipalities, the City of Skopje and the municipalities of the City of Skopje, a procedure for assessment of their impact on environment and human health will have to be carried out for the plans that are being prepared or amended for the realization of the two ski centers.

Below are the relevant legislative regulations that need to be taken into consideration when carrying out the procedure for Strategic Environmental Assessment:

- Law on Environment (Chapter 10 – Assessment on the effects of certain strategies, plans and programmes on the environment) ("Official Gazette of Republic of Macedonia" no. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10 and 124/10 and 51/11);
- Decree on the public participation in the process of preparation of environmental regulations and other acts as well as environmental plans ("Official Gazette of RM" no. 147/07);
- Decree on Amending the Decree on the public participation in the process of preparation of environmental regulations and other acts as well as environmental plans and programmes ("Official Gazette of RM" no. 45/11);
- Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 153/07 and 45/11);
- Decree on Amending the Decree on the strategies, plans and programs, including amendments to such strategies, plans and programs, subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 45/11);
- Decree on the content of the Strategic Environment Impact Assessment Report ("Official Gazette of Republic of Macedonia" no. 153/07);
- Decree on the criteria on the basis of which the decision as to whether a given planning document is likely to have a significant impact on the environment and human health shall be issued ("Official Gazette of Republic of Macedonia" no. 144/07);
- Ordinance on the composition of the committee and the manner of its operation, the program and the manner of carrying out the expert exam, the amount of the fee for taking the expert examination as well as the amount of the fee for the establishment and maintenance of the list of strategic environmental assessment experts and the manner of acquiring and losing the status of strategic environmental assessment expert, as well as the manner and the procedure for inclusion and exclusion from the list of experts ("Official Gazette of Republic of Macedonia" no. 129/07);
- Ordinance of conducting transboundary consultation ("Official Gazette of Republic of Macedonia" no. 110/10); and
- Ordinance on the form, content and application of the decision for conducting or not-conducting strategic environmental assessment and on the application forms for the

need of conducting and not-conducting strategic environmental assessment ("Official Gazette of Republic of Macedonia" no. 122/11);

The goal of the procedure for strategic environmental assessment is to identify and analyze the impacts that could occur on the environment and human health as a result of the activities performed in relation to the implementation of the planned document. The procedure is conducted during the planning phase in order to be able to identify the impacts, and also the proper measures for reduction or elimination of these impacts in the earliest possible phase of document preparation.

The procedure for strategic environmental assessment should provide a high level of environmental protection, implementation of the guidelines pertaining to the relevant strategic and planning documents and integrating the environmental goals in the preparation and adoption of strategies, plans and programs (planning documents), in the direction of promoting sustainable development.

The strategic assessment encompasses the more significant environmental impacts that could result from the implementation of the envisioned planning document. The process of strategic environmental assessment includes the following

- Preparation of a Strategic Assessment Report in which the significant impacts pertaining to the planning document are identified and assessed;
- Consultation with the concerned public, the organ competent for environmental issues and remaining organs concerned with the implementation of the planning document;
- Integrating the social, economic and environmental aspects
- Taking into consideration the conclusions pertaining to the Report and the consultations in finalizing the draft planning document;
- Announcement of the decision for adoption of the planning document and the manner in which the strategic assessment had an impact on the adoption of the document.

The strategic assessment has the aim of providing a framework for taking actions in the process of decision making, starting from the earliest phase when the planning documents are being prepared (and usually envisions individual projects). This enables inclusion of the cumulative impacts of the individual projects.

This procedure has the aim of incorporating all the cumulative impacts of each project, which together can have significant impacts on the environment, however, due to their small capacity they have not been separately included in other procedures for assessment of the environmental impacts.

The entities that have been included in the procedure for realizing the Strategic environmental assessment are as follows:

The State administrative bodies / units of local self-government that are preparing/adopting the planning documents that have the obligation of implementing the SEA and are responsible for the timely initiation of the procedure. According to the Law on Environment, they also have the following obligations:

- To prepare the report on the strategic environmental assessment;
- To announce the information in regards to the start of the preparation of the planning documents and the public participation in the consultation process;
- To announce information on the draft planning document that is in preparation and on the draft report on the strategic environmental assessment
- To prepare the report on the public consultations, based on comments and opinions received from the public consultations;
- To finalize the report on the strategic environmental assessment and the planning document with views and comments received, and
- To monitor the impacts from the implementation of the planning document and in case of negative impacts, to inform the Ministry of Environment and Spatial Planning.

The Ministry of Environment and Spatial Planning is responsible for the following:

- To prepare a decision in cases when it does not agree with the decision for implementation or no-implementation
- To prepare a decision on the adequacy of the report on the strategic environmental assessment for the planning documents, and
- To establish and update the list of experts for strategic environmental assessment.

The Ministry of Foreign Affairs is responsible for carrying out transboundary consultations for strategic environmental assessment in regards to the official submission of notifications to the neighboring country that is concerned with the preparation of the planning document or in case when Republic of Macedonia is concerned with the preparation of a planning document of a neighboring country.

The experts referred to in the list of experts for strategic environmental assessment are responsible for the preparation of the report for strategic environmental assessment, if they have been engaged by the body that is preparing the PD, while NGOs along with the public and other bodies concerned with the implementation of the PD are included in the process of consultations and may give their opinion in relation to the preparation of the PD and also in

relation to the SEA, and especially for determining the alternatives and impacts on the environment and human health.

The Report on the strategic environmental assessment incorporates the following information:

- Background / brief summary of the contents, main goals of the planning document and its relation to the other relevant plans and programs / planning documents
- Relevant aspects of the current environmental situation and what is most likely to happen if the planning document is not implemented/ the most likely evolution if there is no implementation of the plan or program
- Characteristics of the environment in areas that would be significantly concerned;
- Other problems relevant for the planning document, especially including those that have occurred in some of the areas that are of special importance for the environment, especially from the aspect of wild birds and habitat protection;
- Environmental protection goals, determined on a national or international level, which are relevant for the planning document and the manner in which these goals and all environmental aspects have been taken into consideration during their preparation;
- Significant impacts that are likely to occur on the overall environment, including impacts on the biodiversity, the population, human health, fauna, flora, soil, water, air, climate factors, material benefits, cultural heritage including architectural and archeological heritage, landscape, and the connection between these factors. These impacts include secondary, cumulative, synergetic, short-term, medium-term and long-term, permanent and temporary positive and negative effects;
- Measures anticipated for maximum protection, reduction and neutralization of all the significant negative environmental impacts resulting from the implementation of the planning document;
- Background / brief summary on the reasons for selecting the alternatives, and a description on how the evaluation was made, including all the difficulties (such as technical inconsistencies and lack of know-how) that were encountered in collecting the necessary information;
- Description of the anticipated measures in regards to the monitoring, according to the legal obligations;
- Non-technical summary;

Ski Center "Carev Vrv„

After completing the analysis on the potential locations that are most suitable for the construction of a winter tourist center on the Osogovo Mountains, the locality of Carev Vrv was selected for the given project. This locality is anticipated for realization of the following contents:

- Ski terrains
- Cable cars
- Accommodation capacities
- Catering facilities
- Other supporting infrastructure

The ski terrains, in particular, the location of the cable cars will start from the peak of Carev Vrv and will continue through the crest of Kitka towards the area known as Meckin Kamen (I phase), furthermore, from Carev Vrv across to the so-called place of Sredno Brdo (II phase) and from Carev Vrv towards Mal Cepernik through Tashovo (III phase). The total length of the ski trails in the center will be 20.5km, stretching over an area of 122 hectares. Table 1 and 2 provide information on the length of the anticipated trails and other accompanying contents, while Table 6 gives an overview of the type and capacity of the accommodation facilities, as well as the number of skiers that could be accommodated within these facilities.

The area that has been foreseen for the construction of the tourist complex has not been incorporated into any urban planning document and there are no capacities within the given location. Therefore, a planning document needs to be prepared during the first implementation phase in regards to the scope of work, which requires preparation of a Report on the strategic environmental assessment needs. The report will take into consideration the potential environmental impacts that would result from the implementation of the planning document. The impacts of the individual capacities will be incorporated in the Elaborates on environmental protection or the Studies on environmental impact assessment, depending on the anticipated project and its capacity.

Ski Center of Ponikva

In analyzing the characteristics of the terrain on the locality of Ponikva, two potential locations were identified that have the appropriate terrain features and both are foreseen for the construction of cable cars and trails. According to the current urban plan, construction of one more ski lift is anticipated, which should be located near the existing ski lift near the children's lodge. The Sports and Recreation center of Ponikva is anticipated to have trails in the total length of 3km, spreading over an area of about 25 hectares.

Tables 13 and 14 provide information on the length of the anticipated trails, cable cars and other accompanying contents, while Table 17 displays the type and capacity of accommodation facilities, as well as the number of skiers that could be accommodated within these facilities.

Part of the site foreseen for this ski center is in line with the present urban plan; however, changes will have to be made for the contents that are not incorporated within the existing plan. According to the Decree on the strategies, the plans and the programs, including amendments to such strategies, plans and programs, which are subject to a mandatory procedure for assessment of their impact on environment and human health ("Official Gazette of Republic of Macedonia" no. 153/07), a procedure for Strategic environmental assessment needs to be carried out when amending the plans. The implementation of this procedure will result in identifying the potential environmental impacts that could occur as a result of the changes that will be made to the existing urban plan. The individual impacts of the projects that are to be realized within the framework of this center will be incorporated in the Elaborates on environmental protection or the Studies on environmental impact assessment.

6.2. Study on environmental impact assessment

In implementing the proposed projects, the need of a procedure for environmental impact assessment has to be determined. For this purpose, a Notification of intent to implement a project has to be prepared along with a Request for determining the need of a procedure for an environmental impact assessment according to the Rulebook on the information contained in the notification of the intention to implement a project, and on the procedure for determining the need for environmental impact assessment of a project (Official Gazette of RM" no.33/06).

If the competent body determines the need for preparation of a Study for environmental impact assessment for the Sports and Recreational Center (SRC) of Ponikva and the Ski Center of Craev Vrv, an expert will need to be engaged pertaining to the List of experts for environmental impact assessment of the Ministry of Environment. The latter should be prepared in accordance to the Rulebook on the content of the requirements that need to be fulfilled by the study on environmental impact assessment (Official Gazette of RM" no.33/06).

The study on environmental impact assessment for the Sports and Recreational Centers (SRC) of Ponikva and Carev Vrv should contain the following:

1. Detailed description of the project along with information on the locations, the character and size of the project and the surface area that is required.

- The Sports and Recreational Center of Ponikva will have trails in the total length of 3km spreading over an area of about 25 hectares. Construction of 3 new trails with a length of 1098, 954 and 254 meters will be made along with two cable cars (1118м и 957м) and one ski lift (297m), as well as construction of a 4 stars hotel (187 beds, swimming pools, wellness and sauna), a 3 stars hotel (340 beds), private accommodation and apartments (213 beds) and a youth hostel and other accommodations (total of 111 beds). The anticipated construction of the accommodation facilities will have an overall capacity of 851 beds. Furthermore, options are being reviewed for the construction of 831 parking spaces within the location of the facilities or for the development of an alternative concept of transportation that anticipates construction of a parking lot with 450 parking spaces 2km away from Ponikva.

A certain number of facilities for catering services are also planned to be constructed and furnished, along with premises for commercial purposes, which will mainly be located within the premises of the accommodation facilities, as well as structures for the needs of the ski center (selling of ski passes, toilets for the guests and employees, ski equipment rental and service with depots, ski school, customer service area, shops, administration offices, separate area for the employees, first aid and patrol service, storage space, garages for the mechanization equipment with service, waste management) with a total area of 2140 m2. The location of the ski trails and the supporting structures is shown on Picture 29.

- The Ski Center of Carev Vrv will have trails in the total length of 20.5 km spreading over an area of about 122 hectares. Thirteen new trails are planned to be constructed with a total length of 20. 452 meters, 4 cable cars (1358m, 1251m, 1222m and 2232m), one ski lift (428м) and one snowboard lift (428m), construction of an access road to the location known as Meckin Kamen where the tourist settlement is planned to be located.

A 4 stars hotel is also planned for construction (270 beds, pools, wellness and saunas), two 3 stars hotels (340 beds and 150 beds), private accommodation and apartments (210 beds), hostel (total of 100 beds) and a hotel-lodge (60 beds). The anticipated construction of the accommodation facilities within the three phases will have an overall capacity of 3462 beds.

Within the framework of the first phase, two cableway systems are planned for construction, a ski lift and snowboard park with a length of 3162m, with 6 ski trails and snowboard park with a length of 7701m and accommodation capacities (hotels, apartments, hostels and other accommodation) with 1225 beds. Furthermore, options are being reviewed for construction of parking spaces during the first phase -230 parking spaces for vehicles of the guests, 25 parking spaces for commercial vehicles and 4 parking spaces for busses, along with access roads within the base settlement in the length of 3.5km.

The first development phase of the ski center anticipates construction and furnishing of facilities for catering services and facilities intended for commercial purposes that will mainly be located on the premises of the accommodation capacities (ground floor).

Part of the facilities for catering services would be located right on the ski trails. Currently, there are two demolished facilities on the locality (old guard houses), which have been proposed to be reconstructed where one is to be converted into a lodge (one of the structures) and the other into a catering facility with accompanying contents (events, entertainment, thematic contents).

A certain number of facilities for catering and commercial services are also planned to be constructed and furnished, located within the accommodation facilities, as well as structures for the needs of the ski center (selling of ski passes, toilets for the guests and employees, ski equipment rental and service with depots, ski school, customer service area, shops, administration offices, employee areas, first aid and patrol service, storage space, garages for mechanization equipment with service, waste management) with a total area of 3050 m2. The location of the ski trails and the supporting structures planned in the three phases is shown on Picture 22.

Description of the environment and setting of the location

The description of the environment should provide a detailed description on the geographic position and location, the geologic and seismic characteristics, hydrology, climate and meteorology, waste management, ambient air quality, existing noise, biodiversity, landscapes and visual effects, cultural and historic heritage of the location.

This part of the study also gives an overview of the social aspects of the environment (population, economic situation, local government, tourism and etc.).

Description of the reviewed alternatives

In implementing projects of this size, different options that have been reviewed need to be presented in regards to the realization and to the location setting of the anticipated constructions. Clarification also needs to be provided in relation to the selection that has been made and on the basis of which the decision has been made for approval or rejection of a certain alternative. Rejected alternatives (non-implementation of a project) should be explained in detail.

Assessment of the environmental impacts of the project

Effects on the air

In the construction phase

Negative impacts arising from preparatory and construction activities carried out on the sites (excavation and foundation setting and construction of the anticipated structures – cable cars, ski lifts, access roads, construction of hotels, hostels, apartments and supporting facilities), as a result of the higher emissions of dust particles in the air and increased exhaust gasses from the mechanization used for construction of the anticipated structures.

In the operation phase

Negative impacts arising from increased traffic within the given sites and increased amounts of exhaust gasses.

Effects on the underground and surface waters

In the construction phase

Identification of all permanent and momentary watercourses within the locations and determining the effects of construction (oil leakages, waste water leaks, construction facilities for fencing or crossing rivers and streams).

In the operation phase

Determining the quantity of water that is needed for supplying water to the anticipated facilities according to the projections for the maximum visits to the ski centers. Determining the water sources and system for transportation to a particular location of the ski centers.

Determining the quantities of waste water that will be produced as a result of the construction works that will be undertaken. Designing a system for collection and treatment of waste water. Planning waste water treatment plants for the facilities that are to be constructed on both of the locations (Ponikva and Carev Vrv), with an estimation of their size and preparation of technical documentation based on the maximum number of guests (population equivalent), all with the purpose of eliminating potential negative effects on the underground and surface waters (Kamenicka River as well as other permanent and momentary watercourses).

Determining the effects on water arising from improper waste management, as well as effects from the use of artificial snow blowing machines and other structures that have been anticipated with the proposed activities (construction of a 3km access road, managing the liquid waste from the facilities and from the structure that is planned for the service of the ski centers mechanization).

Effects on the soil

In the construction phase

Negative impacts in the construction phase resulting from removal of layers of soil (humus, clay and etc.). Effects on the lithological contents of the soil and effects resulting from geomechanics research performed within the locations foreseen for construction of cable cars, ski lifts and other envisioned bulky facilities. Effects from accidental leakages and landslides.

In the operation phase

Negative effects resulting from erosion and from clearing out terrains for the purpose of putting up cable cars and ski trails. Effects resulting from removal of the top layer of soil and from the installed infrastructure installations (electric energy network, sewage and water supply).

Effects caused by waste management

In the construction phase

Effects resulting from the excavation of the soil (extra dirt), large quantities of organic waste from vegetation as a result of clearing up the paths and sites that are planned for construction, piling of construction rubble, as well as effects from the waste that has formed by the workers and waste created in repairing and maintaining the mechanization in use.

In the operation phase

Effects in the phase of the operation of the ski center would be: communal waste created by the guests, waste from the commercial (catering and commercial) and accommodation facilities, hazardous waste from maintenance of the mechanization, organic waste from the maintenance of the ski lifts path, cable cars and other paths.

Effects on flora and fauna

In the construction phase

Certain negative effects are expected due to the disruption in the ecosystems, biotopes and migration and movement paths in the locations, as a result of the construction of the ski center on an area over 150 hectares. Negative effects from clearing out the paths for construction of the cable cars, ski lifts and ski trails in the length of over 24 km (for both centers), excavations, destruction of areas intended for storage of construction materials along with an increased number of people and mechanization and increased noise level, will all add to the potential loss of indigenous types of flora.

In the operation phase

There will be less negative effects within the operation phase, but even so, certain effects are still expected due to the drastic increase in the number of visitors, vehicles and mechanization on the locations. Even the presence of several buildings will have an effect on the migration paths of certain species, and may lead to the loss of hunting grounds, feeding and breeding areas, and cause disturbance to some species of animals (birds and mammals).

Effects from noise

In the construction phase

Negative effects on the flora and fauna as well as the local population due to the increased presence of construction mechanization and construction works such as excavation, cutting, clearing out the site and construction of buildings (laying foundations, cementing, use of helicopters for transporting equipment, potential mining, constructing paths and roads and etc.).

In the operation phase

Negative effects of noise are expected due to the increased number of visitors, vehicles, snowmobiles, mechanization in the base settlement, cable cars and ski lifts. Nevertheless, these effects will be lower in intensity compared to those in the construction phase.

Effects on the landscape

In the construction phase there will be effects on the landscape due to the size of the anticipated construction activities and activities in relation to clearing out the site, effects from the use of the mechanization and the presence of temporary structures for the needs of the engaged working force.

Negative effects can be expected in the operation phase as a result of the established cable cars and ski lifts, as well as from the construction and operation of the accommodation capacities, supporting facilities and road infrastructure.

Effects on the archeological and cultural–historic heritage

Some negative effects may occur only in the construction phase by damaging unmarked archeological and historical remains. No negative effects are expected on the archeological and cultural–historic heritage in the operation phase.

Social – economic effects (effects on the population and human health)

Certain negative effects on the population and on human health are possible only in the realization phase as a result of the increased level of traffic, emission of exhaust gasses and higher noise level.

However, the positive effects on the local population will be far greater and will be expressed through the potential engagement of the local population in the construction and operation

phase, in the increased tourist offer that will help contribute to the opening of new jobs, possibilities for new road connections all leading to increased opportunities for a fast economic growth of the overall region.

Measures for reducing the negative effects on the environment

Measures for reducing effects on the air

The use of proper construction practices and construction mechanization during the construction phase can reduce the level of emissions in the air to a minimum level.

In the operation phase, the introduction of measures for alternative forms of transporting (sledges and carriages) guests (skiers) to the base settlement on Ponikva (Green City) would reduce the emissions of automobile exhaust gasses.

The adoption of options for using Renewable Energy Sources (RES) starting from the planning and construction phase will additionally reduce the emission of greenhouse gasses that result from the functioning of the ski center on Ponikva.

Measures for reducing effects on the underground and surface waters

Best construction practices (according to the Ordinance on mobile construction sites) need to be respected during the construction phase. The contractor has to appoint and hire a company that will maintain the mobile toilettes, and should also provide an area for performing maintenance and repair of the mechanization, in a manner that will not affect the underground and surface waters.

All structures on or near water or other water accumulation need to have an approval issued by the competent body (MoESP).

Construction of a network for disposal of waste water is a basic measure in protecting waters from negative impacts. Only through a functional and properly sized network can the accumulated waste waters be properly disposed. Then, they can be transported to a waste water treatment plant, the details of which will be determined in the preparation of the feasibility studies. In any case, according to the envisioned number of guests and planned accommodation capacities, their size should not be smaller than 4000 P.E for the base settlement on Ponikva and 6000 P.E for the base settlement on Carev Vrv. The flows from the buildings that are located on the terrains need to be collected in properly sized impervious septic tanks and then transported accordingly for treatment in the waste water treatment plants.

Measures for reducing effects on the soil

The manner in which the construction of the buildings will be carried out should comply with the results of the reports from the geomechanic analysis on the soil and should be performed according to a detailed plan for excavation and clearing up of the paths and sites intended for construction. The plan should anticipate measures for stabilization of the terrain inclination in areas where construction will be carried out, and measures for reduction of erosion and stabilization of potential landslides.

The proper functioning and maintenance of the mechanization, as well as the preparation of instructions and emergency plans should allow for the best possible elimination of potential negative effects on the soil, such as oil and fuels leakages on the construction site.

Waste management protection measures

In the construction phase, the contractor must comply accordingly with the legal regulations in the area of waste management, and thereby needs to establish a system for waste collection and temporary storage on the location, or for transfer of the waste to a company authorized for waste handling (transport and disposal). In this phase, the contractor is responsible for removal of all organic waste created from construction rubbles and excess dirt.

In the operation phase, most of the waste quantities will be created by the guests and by the commercial facilities. The waste collection, transportation and disposal will be carried out by a company authorized by the municipal council. With a proper waste management and system for recycling and utilization of fractions of the organic waste, no additional measures will be needed in waste management protection.

Measures for reducing effects on flora and fauna

In the construction phase there will be some negative effects on wildlife. Certain quantities of wood and vegetation will be removed in the construction phase, which will disrupt the present ecosystem. This will cause disruption in the natural environment of the flora and fauna described in the next chapter.

A project program is proposed to be prepared for biomonitoring, which would help identify the most endangered species and would ensure the application of the most accessible construction techniques and measures for mitigating the effects caused by clearing out the existing vegetation.

Workers will need to undergo training on work procedures and safe worksite practices. Lighting fires should be strictly restricted.

A security service needs to be provided in the operation phase, which would also have an informative role regarding the protection of the registered plants and animal species in the area. The preparation of a program, according to which guests would be able to feed animals during winter season and under the supervision of experts as well as perform actions like cleaning up of the location and protection of the registered plant species in the summer months, would be a significant measure for protection of the existing flora and fauna.

Noise protection measures

In the construction phase, the contractor needs to use construction mechanization that does not exceed the stipulated levels of noise allowed on sites according to the Rulebook on marginal values of permitted noise levels in the environment ("Official Gazette of RM" no. 147/08), and should undertake measures for monitoring and controlling the construction methods, the mechanization and equipment, for limiting the speed of the vehicles within and outside the construction sites, and also to prepare a program for transportation of the construction materials in order to optimize the number of vehicles that need to be on the site during the construction works.

The noise level is not expected to significantly increase during the operation phase. Guest vehicles and the established equipment, which according to its features should not exceed the legal permit able noise levels, would be the only sources of noise.

Measures for protection of the landscape and visual images

With the purpose of overcoming the negative effects from the proposed construction buildings, measures need to be undertaken starting from the phase of planning the construction. All buildings need to be well integrated into the existing landscape by shape, color and primarily by size. For this purpose, architects need to be engaged to prepare proposals and give guidelines on how these buildings should look like based on the present situation.

Measures for protection of the archeological and cultural-historic heritage

In the construction phase, the contractor needs to respect all legal requirements and stop any construction work and inform the competent body and persons (Institute for protection of archeological and cultural-historic heritage) if any archeological and cultural-historic sites are encountered.

Measures for protection of the population and human health (Socio-economic and health effects)

The projects that are proposed for implementation can propose some threat to the population and to the health of the inhabitants only in the construction phase, which is why the contractor will undertake all responsibilities. Overall, the implementation of the project will have positive effects on the human health, social and economic life of the local population.

Plan for monitoring of the environment

This part of the Study should provide a detailed plan for monitoring the environment in the entire area. It should anticipate the necessary resources, manner of conducting the monitoring, persons and institutions responsible for the monitoring, as well as the period and frequency of the monitoring.

The plan should enable conditions for implementing the measures for reducing the environmental impacts, to ensure that these effects are being reduced and are within the permit able marginal values and levels, as well as to register parameters of the monitoring that has been performed.

By properly determining the mitigating measures and their incorporation into the monitoring plan according to phases of construction and operation, and its full implementation, sustainable development of the community within this region will be enabled along with sustainable usage of the natural resources without any negative effects to the environment and to the population.

For all other supporting facilities that will not be incorporated in the studies for environmental impact assessment before the start of their construction, environmental impact assessment elaborates need to be prepared according to Article 24 of the Law on Environment ("Official Gazette of Republic of Macedonia" no. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10 and 124/10 и 51/11), and according to the secondary acts: Decree on the activities for which preparation of elaborate is mandatory and competent authority is the body of the state administration responsible for the affairs of the environment ("Official Gazette of Republic of Macedonia" no. 80/09) and Decree on the activities for which preparation of elaborate is mandatory and competent authority is the mayor of the municipality, the mayor of City of Skopje and the mayor of the municipalities of City of Skopje ("Official Gazette of Republic of Macedonia" no. 80/09).

6.3 Basic floristic – faunistic review of the areas included in the projects activities

Ponikva:

The locality of Ponikva is located on the territory of the Osogovo Mountains at an altitude of approximately 1500 to 1600 meters.

Aside from the existing trail, the project activities anticipate construction of two new ski lifts and three new ski trails. On the southern side of the locality, at an altitude of 1350 to 1650 meters, the construction of Cableway 1 and ski trails 1 and 2 is foreseen. On the northern side of the locality of Ponikva, construction of Cableway 2 and ski trail 3 is planned, which will spread at an altitude of about 1300 to 1600 meters.

The activities planned on the southern side of the locality of Ponikva will be spread over high mountain pastures, while the activities on the northern side of the locality will spread over a beech tree forest.

The project activities that are planned for the locality of Ponikva will run through two different habitats, one being the habitat of the beech forest on the northern part of the locality and the other being the habitat of the high mountain pastures that spread over the southern part of the locality of Ponikva.

Beech forests:

The beech forest belt is present around and within the locality of Ponikva and runs up to an altitude of 1600 meters. The anticipated project activities will incorporate one part of the beech forest that is located in the northern part of the locality of Ponikva. The beech forest in the concerned area belongs to the zone of mountainous beech forests that extend at altitudes between 1300 and 1700 meters. This belt is presented with the *Calamintho grandiflorae – Fagetum* plant association. This plant community is characterized by several types of plants:

Fagus sylvatica
Rubus hirtus
Rubus idaeus
Salix caprea
Populus tremula
Hypericum perforatum
Mycelis muralis
Galium odoratum
Festuca heterophylla
Calamintha grandiflora
Oxalis acetosella
Stachys sylvatica
Sanicula europaea
Epilobium montanum
Lilium martagon
Knautia drymeia
Asarum europaeum
Digitalis ambigua
Aremonia agrimonoides
Euphorbia amygdaloides
Moehringia trinervia
Doronicum columnae
Geranium robertianum
Lathyrus inermis
Atropa belladona

Regarding animal life the following species are characteristic for the beech forests:

- **Amphibians**: *Salamandra salamandra, Tritorus vulgaris, Bombina variegate, Bufo bufo, Bufo viridis, Rana graeca.*
- **Reptiles**: *Coronela austriaca, Podarcis muralis, Zamenius longisimus*.
- **Birds**: *Pernis apivorus, Accipiter nisus, Buteo buteo, Columba oenas, Columba palumbus, Cuculus canorus, Dryocopus martius, Dendrocopos medius, Dendrocopos leucutos, Anthus trivialis, Troglodytes troglodytes, Erithacus rubecula, Turdus merula, Sylvia atricapilla, Phylloscopus collybita, Ficedula parva, Aegithalos caudatus, Parus palustris, Parus ater, Parus caeruleus, Parus major, Sitta europea, Garrulus glandarius, Fringilla coelebs, Serinus serinus, Carduelis carduelis, Pyrrhula pyrrhula, Emberiza citronella.*
- **Mammals***: Erinaceus concolor Talpa europaea Sorex araneus Lepus europaeus Apodemus sylvaticus Apodemus flavicolis Microtus arvalis, Mus musculus, Myoxus glis, Sciurus vulgaris, Sus scrofa, Capreolus capreolus, Canis lupus, Vulpes vulpes, Felis sylvestris, Mustela nivalis, Martes martes, Martes foina, Meles meles*

Mountain pastures

The mountain pastures are present throughout the entire territory on the locality of Ponikva that is not covered by the forest belt. This habitat includes subalpine plant communities that grow on silicate beds. It incorporates several plant communities:

Beladiochloa violacea
Festuca rubra
Thymus longicaulis
Campanula epigaea
Agrostis byzantina
Luzula nemorosa
Chamaespartium sagittale
Galium vernum
Koeleria macrantha
Anthoxanthum odoratum
Deschampsia flexuosa
Stellaria graminea
Verbascum longifolia
Lotus corniculatus
Campanula spathulata
Asperula cynanchica
Veronica vindobonensis
Leontodon hispidus
Nardus stricta
Ranunculus oreophylus
Viola gracilis
Plantago lanceolata
Rumex acetosella
Scleranthus perennis
Genista depressa
Hieracium pilosella

Armeria rumeliaca	*Trifolium repens*
Hypericum perforatum	*Centaurea orbelica*
Achillea millefolium	*Primula veris*
Festuca thracica	*Scabiosa columbaria*
Nepeta pannonica	*Hypericum barbatum*

Regarding animal life, there almost identical types as in within the beech zone, with minor differences in some types.

- **Amphibians**: *Tritorus vulgaris, Bombina variegate, Bufo bufo, Bufo viridis, Rana graeca.*
- **Reptiles**: *Coronela austriaca, Podarcis muralis, Zamenius longisimus*.
- **Birds**: *Pernis apivorus, Accipiter nisus, Buteo buteo, Columba oenas, Columba palumbus, Cuculus canorus, Anthus trivialis, Erithacus rubecula, Turdus merula, Sylvia atricapilla, Phylloscopus collybita, Ficedula parva, Aegithalos caudatus, Parus palustris, Parus ater, Parus caeruleus, Parus major, Garrulus glandarius, Fringilla coelebs, Serinus serinus, Carduelis carduelis, Pyrrhula pyrrhula, Emberiza citronella.*
- **Mammals***: Erinaceus concolor, Talpa europaea, Sorex araneus, Lepus europaeus, Apodemus sylvaticus, Apodemus flavicolis Mus musculus, Capreolus capreolus, Canis lupus, Vulpes vulpes, Mustela nivalis, Martes martes, Martes foina.*

Carev Vrv:

The locality, in particular Carev Vrv, incorporates the highest areas of the Osogovo Mountain along with the neighboring peaks of Sokol and Ruen, at an altitude of 2000 meters.

Project activities to be performed on Sultan Tepe, anticipate the construction of 1 ski lift, 4 cableways and 13 ski trails. Cableways 1 and 2, along with the ski trails 1,2,3 and 4 are located west of Carev Vrv spreading across two existing habitats –beech forest habitat and high mountain pasture habitat. One cableway, one ski lift and five ski trails will be constructed on the northern side of Sultan Tepe. This part of the project area belongs entirely to the habitat type of high mountain pastures. On the southern side there will be construction of one cableway and three ski trails. This segment of the project area, same as the previously mentioned segment, stretches across two habitats: beech forest and high mountain pastures.

Beech forest

The beech forest belt extends from the foot of the Sultan Tepe peak up to an altitude of 1700-1750 meters. The project activities will be carried out within the beech forest belt south and west from the Sultan Tepe peak. The beech forest, which is present in the concerned area, belongs to the belt of mountainous beech forests that extend at altitudes ranging from 1300 to 1700 meters. This belt is presented with the *Calamintho grandiflorae – Fagetum plant* association. This plant community is characterized by several types of plants:

Fagus sylvatica
Rubus hirtus
Rubus idaeus
Salix caprea
Populus tremula
Hypericum perforatum
Mycelis muralis
Galium odoratum
Festuca heterophylla
Calamintha grandiflora
Oxalis acetosella
Stachys sylvatica
Sanicula europaea
Epilobium montanum
Lilium martagon
Knautia drymeia
Asarum europaeum
Digitalis ambigua
Aremonia agrimonoides
Euphorbia amygdaloides
Moehringia trinervia
Doronicum columnae
Geranium robertianum
Lathyrus inermis
Atropa belladona

Regarding animal life, there almost identical types as in within the beech zone, with minor differences in some types.

- **Amphibians**: *Salamandra salamandra, Tritorus vulgaris, Bombina variegate, Bufo bufo, Bufo viridis, Rana graeca.*
- **Reptiles**: *Coronela austriaca, Podarcis muralis, Zamenius longisimus*.
- **Birds**: *Pernis apivorus, Accipiter nisus, Buteo buteo, Columba oenas, Columba palumbus, Cuculus canorus, Dryocopus martius, Dendrocopos medius, Dendrocopos leucutos, Anthus trivialis, Troglodytes troglodytes, Erithacus rubecula, Turdus merula, Sylvia atricapilla, Phylloscopus collybita, Ficedula parva, Aegithalos caudatus, Parus palustris, Parus ater, Parus caeruleus, Parus major, Sitta europea, Garrulus glandarius, Fringilla coelebs, Serinus serinus, Carduelis carduelis, Pyrrhula pyrrhula, Emberiza citronella.*
- **Mammals:** *Erinaceus concolor Talpa europaea Sorex araneus Lepus europaeus Apodemus sylvaticus Apodemus flavicolis Microtus arvalis, Mus musculus, Myoxus glis, Sciurus vulgaris, Sus scrofa, Capreolus capreolus, Canis lupus, Vulpes vulpes, Felis sylvestris, Mustela nivalis, Martes martes, Martes foina, Meles meles*

Beech forest

	
Calamintha grandiflora	*Knautia drymeia*

	
Salamandra salamandra	*Coronela austriaca*

	
Dendrocopos medius	Myoxus glis

Mointain pasture

	
Achillea millefolium	*Veronica vindobonensis*

	
Lepus europaeus	*Parus major*

Високопланински пасишта

	
Bruckenthalia spiculifolia	*Vaccinium myrtillus*

High mountain pastures

High mountain pastures extend over the beech forest belt at an altitude of 1700 meters and reaching to the highest point on the Carev Vrv Peak. This habitat includes subalpine plant communities that grow on silicate beds. Carev Vrv is also known for the presence of blueberries and Bruckenthalia. Characteristic types include:

Vaccinium myrtillus
Vaccinium uliginosum
Bruckenthalia spiculifolia
Euphorbia amygdaloides
Campanula patula (abietina)
Athyrium filix-femina
Hypericum perforatum
Thymus longicaulis
Luzula luzulina
Hieracium hoppeanum
Geum montanum
Gentianella bulgarica
Pimpinella saxifraga
Trifolium pratense
Deschampsia caespitosa
Daphne mezereum
Gentiana asclepiadea
Deschampsia flexuosa
Potentilla ternata
Antennaria dioica
Thymus balcanus
Nardus stricta
Genista depress

Regarding animal life, the following species are characteristic:

- **Amphibians**: *Rana graeca, Rana temporaria.*
- **Reptiles**: *Coronela austriaca, Lacerta agilis, Vipera berus* и *Zootoca vivipara*
- **Birds**: *Emberiza citronella, Corvus corax, Corvus cornix, Lanius collurio, Monticola saxatilis, Oenanthe oenanthe, Saxicola rubetra, Phoenicurus ochruros, Motacilla alba, Anthus spinoletta, Anthus trivialis, Eremophila alpestris, Alauda arvensis, Lullula arborea, Coturnix coturnix, Falco tinnunculus.*
- **Mammals***: Sorex minutes, Lepus europeus, Microtus subterraneus, Apodemus sylvaticus.*

7. Management model

The development of tourism in one specific area is a particularly complex process, which consists of the implementation of numerous projects with different degrees of complexity. The development of a ski center is a complex project, and when having into consideration its size and complexity, it actually constitutes one mega project. The realization of such a mega project greatly influences the region in which it is being implemented and significantly contributes to the economic and social development of the region, and through the implementation of appropriate environmental protection measures, i.e., measures for reducing the negative impacts on the environment; it contributes to the sustainable development of the region itself. The realization of this project has to be able to meet the requirements and expectations of the different stakeholders, while taking into consideration not only their interests, but also the capacity of each stakeholder to implement the activities that contribute to the fulfillment of their interests.

The results of the stakeholder analysis show that the expectations at the local level are quite high. On the other hand, the capacity of the local stakeholders, not only from the aspect of investment and implementation organization , but also from the aspect of destination organization and management, are rather limited, meaning that one cannot expect that the necessary level of financial investments will be provided. There is smaller investment possibilities, i.e., some of the projects that have been stated could be of interest to the local private and public stakeholders. Nonetheless, the concern and control over the use and manner of using the natural resources is primarily in the interest of the local stakeholders.

From the aspect of international stakeholders, in the beginning it is realistic to expect that there will be interest shown for investing, but as the development of the project progresses the interest will become a reality. Transparency in the procedures for investing is a basic precondition for the successful realization of the project overall.

Creating an internationally competitive project that is comprehensible for domestic and foreign stakeholders, is primarily based on defining the role of the various entities within the framework of the project development. This especially regards the public sector at the national and regional level, which also needs to take the role of an initiator for realization of this project. The role of the various actors from the private sector also needs to be defined, starting from the investors, to managers and ending with the local small and medium sized enterprises.

In general, when taking into consideration the size of the project, the size of the region that is incorporated with the project and the low level of infrastructure that is developed within the region, it is necessary for the public sector to provide the basic

conditions for implementation of the project, through construction of the capital infrastructure, i.e., by planning and urbanistically defining the entire area, infrastructural equipping of the defined locality (Ponikva and Carev Vrv) from the aspect of constructing a road infrastructure and connecting the localities with the nearby urban centers. New roads are necessary; reconstruction needs to be done on part of the existing roads, and electrification and water supply system needs to be provided as well as system for disposal of waste water along with its treatment, which will all support the development of tourism in the Osogovo Mountains.

One of the options for the future development of these localities is also for the public sector to completely undertake the initiative for realization of the project, for the purpose of providing efficient management of the area and maintaining the environmental balance on the Osogovo Mountains. This would mean undertaking the entire responsibility for development and management of the ski localities, i.e., investing in the specific mountainous infrastructure and specific equipment, as well as undertaking the entire management and maintenance of the ski centers. Private – Public Partnership is one of the forms for this type of development of a ski destination.

According to the positive experiences from the development of already established ski centers, and the specifics and rules of market economy and the business sector, in implementing the so-called "Greenfield" investments, the risk that is associated with the construction of the necessary accommodation capacities in the base settlement should be transferred to the private sector.

The development of tourism in the Osogovo Mountains is based on the development of Ponikva and Carev Vrv. The locality of Ponikva already has the basic infrastructure and part of this locality is urbanized, i.e., a detailed urban plan is prepared and adopted. On the other hand, the locality of Carev Vrv is a totally new investment and the basic and supporting infrastructure must be constructed in order for the locality to be developed.

The owners of small sized accommodation and catering facilities on Ponikva are not in the possibility of undertaking greater responsibilities in terms of the development of Ponikva, primarily due to their low financial capacity. Their expectations are mainly focused on a brighter future and development of Ponikva, which will also create conditions for better utilization of their capacities. The operators of the existing ski lifts, which have been given under long-term concessions, also have very little financial capacities and are not in the position of making a more significant participation in the planned development of Ponikva.

The current situation on Ponikva presents a limiting factor to the development of Ponikva. The fact that the ski lifts and the biggest accommodation facility – the children's lodge have been given under concession to various private companies is a factor which has a negative effect on the potential investors. Maintaining the current status of Ponikva is unsustainable on the long run. Investing in individual catering and accommodation capacities without having a prior integrated development concept is doomed from the start.

7.1. Management model proposal

Defining a model proposal, above all, is based on the need of creating a contemporary management model that has the goal of developing tourism on the Osogovo Mountains, in particular, attracting investments. Investing in the development of tourism in the Osogovo Mountains depends greatly on the precisely defined property and legal relations on the existing infrastructure, as well as on the entire land that is proposed for both of the sites to be located on. Administratively, the territory on the Osogovo Massif belongs to 9 municipalities (Kriva Palanka, Rankovce, Kratovo, Probistip, Cesinovo-Oblesevo, Kocani, Vinica, Makedonska Kamenica and Delcevo). The manner in which a certain destination is managed is very important for the development of that destination. Currently, the departments for economic development within the above-mentioned municipalities are responsible for the development of tourism. One cannot expect more significant results in the development of tourism on the Osogovo Mountains as long as that development is managed by four separate entities. The development of tourism on the Osogovo Mountains should be based on an integral approach managed by one entity.

The issue of defining the concept of using property in state ownership (facilities and land), from the aspect of models and types of investments, by rule, is linked with the relationship between the planned and achieved development of a country, but also with the specifics of a given destination and resources that are being used. In the case of the Osogovo Mountains, in particular, the localities of Ponikva and Carev Vrv, defining the concept is primarily linked with determining the answers to the following questions:

- Should the property, especially the land, be sold quickly to the potential investors, and if the answer is yes, in which case should this be done
- Should a public enterprise for development and construction be established
- Should a concession agreement be made, and if yes, than in which case
- Should the project be realized with a strategic partner

Quick and direct property sales are limited by one basic problem, and that being the market of investors, which is usually not inclined towards making investments in projects for which an entire integral vision has not been provided and the development is not completely documented, with property and legal relations being settled.

Establishing a public enterprise for development and construction on the anticipated localities is one model that is frequently applied in developing tourist destinations. By establishing such an enterprise, the entire development of the Osogovo Mountains would be in the responsibility of only one entity, which would undertake all the necessary steps for implementation of this project. There are several modalities in regards to the manner of which the management will be performed by the public enterprise in developing and constructing the tourist destination. One of the basic modalities is for the enterprise to develop the site, i.e., do the construction, and to later sell a certain number or all of the projects to the private sector. The second modality is for the enterprise to implement all the activities that are necessary for documenting the entire development and to solve all the basic issues, primarily from the aspect of the property and legal relations and the manner in which the construction of the locality will be performed, while having construction that is performed under a concession agreement, with a strategic partner or other type of investment.

Based on international experience, if the concession agreement is made for a longer period of time (30to 50 years), than the invest risk is minimized and the safety of the investment is increased. Concessions are especially used for specific and naturally attractive destinations.

Based on the models that have been analyzed, while taking into consideration the specifics of the locality and also of Republic of Macedonia, the following management model is proposed:

Establishing an inter-municipal public enterprise for development of tourism in the Osogovo Mountains, which would be responsible for the development of tourism in the Osogovo Mountains and also for the construction of the planned locality. In the first period, the enterprise would be responsible for documenting the entire implementation process of the anticipated projects, more specifically, preparation of a Master Plan, feasibility study, for resolving property and legal relations, construction of the basic infrastructure and installing the necessary specific type of equipment, defining the manner by which the investment will be made, and provision of timely control on the investments, with the purpose of providing integrality on the entire locality, and on all of the necessary activities for implementation of the projects. Upon the completion of the construction process and undertaking the management of the

constructed facilities and systems, the enterprise should develop into an enterprise that will manage the destination.

7.2.Managing the destination

The enterprise that is in charge with the management of the destination is an organization which is responsible for the management and/or the marketing of a certain destination. These types of organizations, through the functions they carry out, have a key role in increasing the competitiveness of the destination. Enterprises in charge of the management of a destination have the following primary functions: marketing the entire destination, coordinating tourism, presenting the destination, being the economic initiator and creating the image of the destination. The responsibility of these types of organizations is a more functional one; however, the basic goal is to provide sustainable development of the destination and a timely response, i.e., timely reactions to market changes.