

SKI AREAS AND SLOPES IN ROMANIA. REVIEWING CURRENT STATE OF WINTER SPORTS TOURISM UNFOLDING POSSIBILITIES WITHIN CARPATHIAN MOUNTAINS

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ABSTRACT. – **Ski Areas and Slopes in Romania. Reviewing Current State of Winter Sports Tourism Unfolding Possibilities within Carpathian Mountains.** This study is reviewing nowadays Romania's tourism supply (2015) – laying special emphasis on the North-West Development Region's situation – in terms of winter sports potential (resources) and material and technical base (specific infrastructure). It calls into question a highly discussed topic within the domain of interest of Tourism Geography, whose recursiveness could be justified by continuous changes that influence the quantitative and qualitative configuration of ski areas, ski tracks and related equipment².

The existence of favourable natural support in terms of relief and climate is an indispensable prerequisite to the development of winter sports tourism within any area. From this point of view, the presence of the Carpathians is a major advantage for Romania, the more so as the proportion of the mountain sector represents 30 percent of the national area (238,391 square kilometres). By occupying different amounts of the territory belonging to 6 development regions and 19 counties, heterogeneous tourism potential values have emerged, causing unequal exploitation opportunities within the mountain area. The purpose of this paper is to provide a general framework of Romanian ski slopes, areas and corresponding facilities for assessing their current state, from regional perspective, with emphasis on North-West's situation. On this line, the main objectives, starting from identifying and inventorising to classifying regions and ski tracks based on hierarchical categories, also deal with ranking slopes according to surface, length, width, elevation of departure point, difference in elevation, difficulty ratings, capacities of slopes and cable transportation means. In order to achieve these goals, quantitative research methods and techniques mostly referred to observation, analysis, synthesis and comparison of statistical data, well-synthesized within tables, graphical and cartographical representations. Aiming to highlight Romania's specificity concerning mountain tourism and winter sports unfolding possibilities, with an almost century-old tradition, came out that the best numerical and typological tourism supply representation belongs to the Central Region whereas for the North-West Development Region, Maramureș and Cluj counties impose themselves through the potential of their largest ski areas and resorts: Cavnic and Muntele Băișorii.

Keywords: *tourism potential, mountain tourism, ski domain, ski run, hierarchical categories, facilities.*

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² See the references (articles, doctoral theses, books).

1. INTRODUCTION

The Carpathian Mountains extend over 1500 km (Ghinea, 2002) across seven countries situated in Central and Eastern Europe, including Romania. Their total surface area is about 170,000 square kilometres (Ghinea, 2002), of which 66,303 square kilometres cover nearly a third of the territory of Romania (Surd, 2008).

Given the large extension of the mountain range it was just a matter of time before tourist activities started to unfold and develop. Thus, in the second half of the nineteenth century, the first recreation and mountain resorts began to take shape in the Romanian Carpathians; more precisely, in Bucegi Mountains turning Sinaia into the very first modern mountain climatic resort in the country and also the first resort town in Romania, in 1885 (Ciangă and Dezsi, 2007). Ever since, mountain tourism has continued to grow, both during the inter-war period, when the first ski chair lift was introduced in Semenic Mountains, in 1942 and afterwards, starting with the 1970's when new resorts emerged and higher investments were made in the specific infrastructure, especially in accommodation and cable transportation (Ciangă and Axente, 1996). The latter brought into requisition the chair lifts and ski lifts, seconded by eight cable cars that were implemented until the early 80's to ensure the fast access to the ski areas and related slopes (Ciangă and Axente, 1996).

Although the following years after the Romanian Revolution of 1989 were characterised by stagnation, nowadays, people have realised that having access to the mountain area in order to exploit its tourism potential or, even more, hosting ski resorts, is a major advantage for the regional and local economies that often refer to tourism as a source of income. All the more so as a resort represents much more than the ski area; is also about its facilities, accommodation and catering, supplementary services and even environmental protection (Ilieș, 2007). Hence, the more diversified the tourism potential and infrastructure is, the more attractive the tourist supply becomes, reason for which, winter sports tourism packages have always enjoyed certain popularity amongst tourists.

Taking all this into consideration, the need of being aware of the possibilities of practicing winter sports, is generally valid for both entrepreneurs and tourists willing to take advantage of mountain tourism. For this reason, the interest in publications which bring into prominence the status of ski domains is quite high and determines the tourism product's consumption, causing not only the increment of tourists' number, but also the economic growth in the area.

Under these circumstances, this paper aims to present a review of Romania's mountain tourism potential current state in terms of ski areas and runs, from general aspects to specific features, illustrated from a territorial-administrative point of view, focused on development regions and counties with winter sports tourism unfolding possibilities.

2. MATERIALS AND METHODS

One of the most important parts of this research concerned data collection and database constitution whose main source of information coincided with a recommendatory tourist website (www.romaniaturistica.ro), extremely reliable due to its daily updating and inventory maintenance. Data gathering and measuring continued with using other quantitative methods and techniques, such as statistical and cartographical ones, to illustrate through tabular and graphical representations the results obtained by observation and synthetic methods, which were finally submitted to comparison and analysis.

Due to the large amount of data that revealed characteristics usually associated with ski slopes, a series of objectives were clearly settled, at national and regional levels, with emphasis on the North-West Region's counties, aiming to:

- identify ski areas and slopes' total number and distribution;
- classify regions and counties in Romania based on winter sports tourism potential;
- indicate highest rated ski slopes and rank ski tracks according to surface, length, width, elevation of departure point, difference in elevation, difficulty ratings and capacities of ski tracks and cable transportation means;
- determine cable transportation means' number, type, distribution and capacity;
- calculate ski slopes' total surface, length, capacity and cable transport capacity;
- calculate average for surface, width, elevation of departure point, difference in elevation and capacities of ski tracks and cable facilities;
- highlight the number of ski slopes equipped with snow cannons and night lighting installations, along with their certification status;
- rank from highest to lowest top 10 ski areas in Romania.

It is worth mentioning that all classification categories that were used, except the difficulty ratings of ski slopes (whose values are standard ones, established by law), were framed by the authors according to Romania's tourism supply in terms of morphological features of the Carpathians (elevation, slope, fragmentation etc.) and tourist facilities' (cable transport system and transportation means) quantitative and typological dimension.

3. RESULTS AND DISCUSSIONS

3. 1. Number and distribution of ski areas and ski slopes

From a territorial-administrative perspective, Romania is divided into 41 counties (and the municipality of Bucharest), all grouped into 8 development regions (fig. 1). As it was stated before, approximately 30 percent of Romania's total surface is occupied by the Carpathians, which partially cover 7 regions and 27 counties.

However, one can notice in the above map (fig. 1), that although all three major groups of the Carpathians pride themselves with famous mountain tourist resorts such as Sinaia, Buşteni, Predeal, Azuga, Poiana Braşov, Păltiniş, Băişoara, Cavnic, Borşa etc (Coclean, 2010), not all counties which incorporate mountain sectors benefit from the possibilities for practicing winter sports. This leaves Romania with 6 development regions and 19 counties where this tourism form is supported by at least one ski area, composed of a variable number of ski slopes (Fig. 2), from 1 (i.e. Argeş and Bacău), to more than 25 (i.e. Harghita and Prahova).

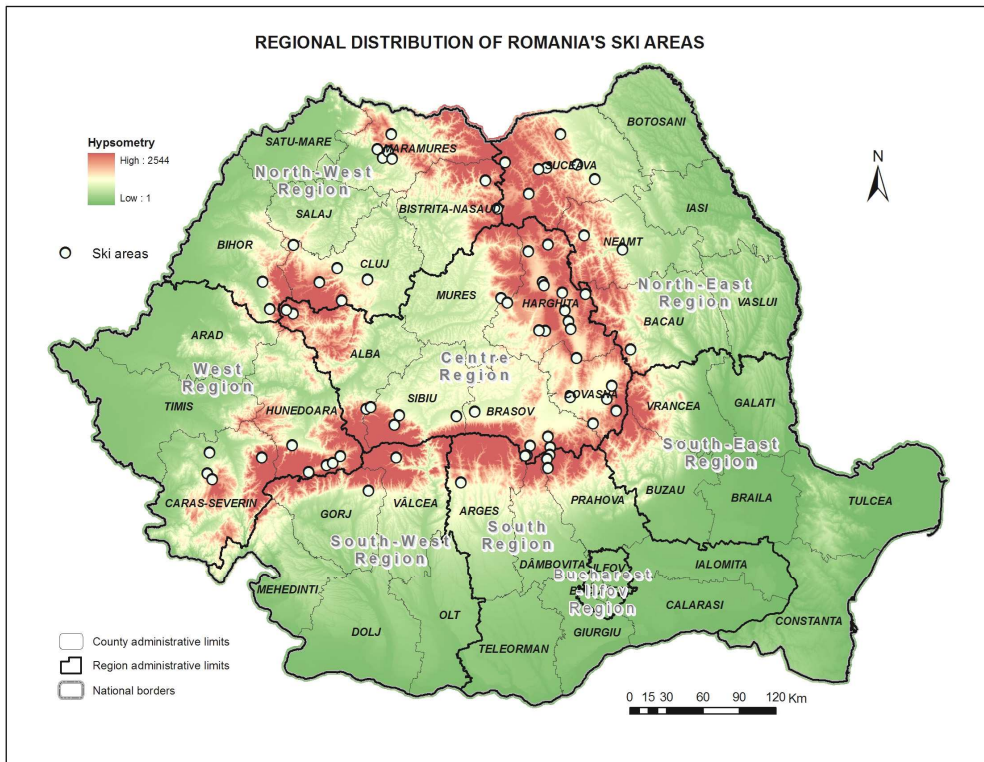


Fig. 1. Distribution of ski areas within Romania's development regions and counties.

In 2001, Romania had 73 ski slopes, all located within the territory of 16 counties (Dinu and Pețan, 2003). Since then, not only the counties' number has increased by three – putting Argeș, Bacău and Vâlcea on the map of winter tourism – but the number of ski tracks, as well, which has doubled until 2010, reaching 163 ski tracks (Gingulescu, 2010) and tripled by 2015.

According to the latest statistical values, at present time (2015) Romania has 227 ski slopes grouped into 71 ski areas, located within the territory of 19 counties (fig. 2). The Central Region has the best-developed potential in terms of winter sports unfolding possibilities due to its 88 ski slopes, concentrated into 32 ski areas (fig. 3). Not to mention the fact that this region is the only one which embeds mountain areas belonging to all three Romanian Carpathian divisions (Eastern, Southern and Western) and all its component counties (Alba, Brașov, Covasna, Harghita, Mureș, Sibiu) host at least one ski area. By contrast, the South-West Region integrates the smallest number of ski slopes and areas, situated in 2 of its 5 counties: Voineasa Ski Area in Vâlcea County and Râncea Ski Area in Gorj County.

Based on the ski slopes' number, the tourist potential of Romania's regions and counties could be summarised in five hierarchical categories, ranked from null to extremely high. As shown below (Tabel 1), nearly all development regions have a representative county within the latter category, except for South-West. On the other hand, the Central one prides itself on being the only region with 2 counties inside the best rated category, namely Harghita and Braşov, although the former does not have such well-developed ski areas. Whereas in Harghita the largest number of ski slopes integrated within a ski area is lower than 7, in Prahova County (South Region), this number reaches 16 ski slopes, making Sinaia the greatest ski area in the Romanian Carpathians; closely followed by Straja Ski Area (12 ski tracks), located in Hunedoara County (West Region), and Şureanu Ski Area (10 ski slopes), situated in Alba County (Centre Region). The fourth place is being shared by two ski areas: Poiana Braşov (Braşov County, Centre Region) and Cavnic (Maramureş County, North-West Region) with 9 ski slopes apiece.

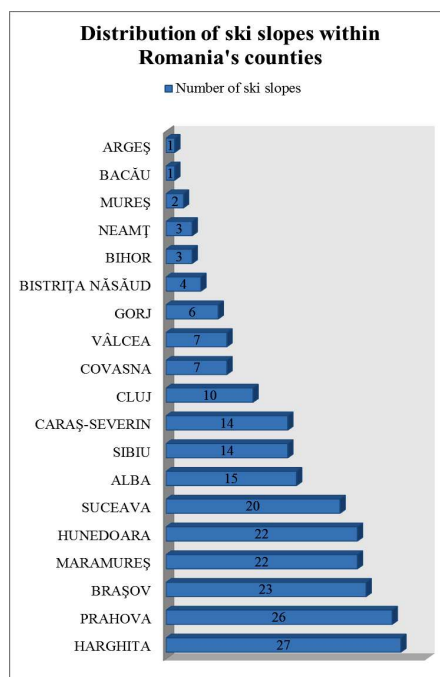


Fig. 2. Ski slopes' distribution within Romanian counties.

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

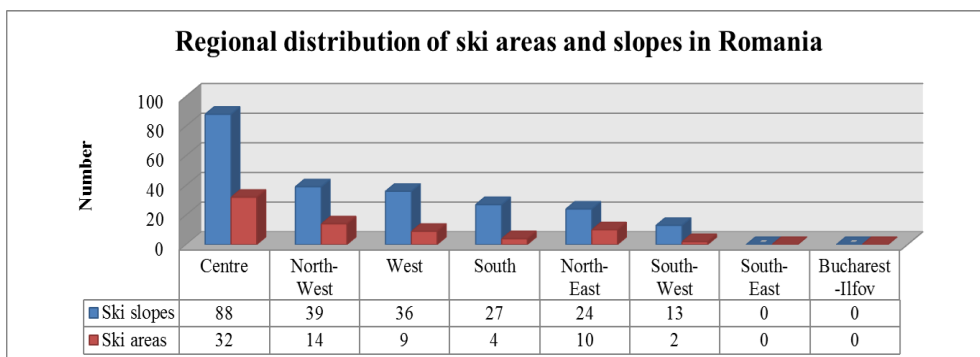


Fig. 3. Ski slopes' distribution within Romania's regions.
Source of statistical data: <http://www.romaniaturistica.ro>. Last accessed 18 January 2015.

Table 1.

Categories of tourism potential based on ski slopes' number and distribution

Tourism potential categories	Regional number of ski slopes	Romania's development regions	Counties' number of ski slopes	Romania's counties	North-West Region's counties
Extremely high	<i>more than 50</i>	Centre	<i>more than 20</i>	HR, PH, BV, MM, HD, SV	Maramureș (MM)
High	<i>36 to 50</i>	North-West, West	<i>10 to 19</i>	AB, SB, CS, CJ	Cluj (CJ)
Medium	<i>21 to 35</i>	South, North-East	<i>4 to 9</i>	CV, VL, GJ, BN	Bistrița Năsăud (BN)
Low	<i>1 to 20</i>	South-West	<i>1 to 3</i>	BH, NT, MS, BC, AG	Bihor (BH)
Null	<i>0</i>	South-East, Bucharest-Ilfov	<i>0</i>	SJ, SM, BT, IS, VS, AR, TM, DJ, MH, OT, CL, DB, GR, IL, TR, BR, BZ, CT, GL, TL, VN, IF	Sălaj (SJ), Satu Mare (SM)

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 2. Surface of ski slopes

As the number of ski slopes tripled over the past 15 years, the total surface of Romanian ski area has increased and the 374 ha that Romania held in 2001 (Glăvan, 2000; Dinu and Pețan, 2003), turned into 893.18 ha of ski areas up to the present time (2015).

As shown below (table 2), more than 330 ha belong to the Central Region, which hosts the largest ski slope in the country, Curba de Nivel-Pilon 2, located within Bâlea Lac Ski Area, in Sibiu County. Although the highest rated ski slopes of each Romanian region have more than 10 ha (except for North-West), the best representation pertains to the small-sized ski slopes category, both at national and regional level, except for South, where the predominant category coincides with medium-sized ski slopes. Thus, while 60 percent of the 227 Romanian ski tracks have less than 4 ha (3.93 ha national surface average), the 16 ski slopes which form Sinaia (South Region), the greatest ski area in Romania, gather 76.3 ha.

What also emerges from the table is that Centre and North-East regions are the only ones having extremely large-sized ski slopes, in Bâlea Lac Ski Area (Sibiu County) and in Câmpulung Moldovenesc Ski Area (Suceava County), even if the latter region lacks both large and extremely-small sized runs, as in the case of West Region, which does not have slopes whose surface is less than 1 ha.

Regarding North-West region's situation, it is worth mentioning that all four counties which provide favourable conditions for winter sports have small-sized ski slopes. However, Maramureș distinguishes itself as the highest rated county in terms of total surface of ski areas (88.76 ha), largest ski area (Cavnic: 36.6 ha), greatest ski slope (Șuior: 9 ha) and best representation of the hierarchical categories (4 types). Although the total surface of the ski areas in Cluj County is less than Cavnic's overall surface, gathering 30.59 ha, the difference between the biggest ski slope in Cluj, Băișoara (Pârtia Mare) and Șuior is lower than 2 ha.

Table 2.

Highest rated ski slopes and regional hierarchies based on surface

Surface categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Highest rated ski slope (ski area, county)	21 ha: Curba de Nivel-Pilon 2 (Bălea Lac, SB)	9 ha: Şuior 1 (Şuior, MM)	12,8 ha: Telegondola (Straja, HD)	10,7 ha: Nouă (Sinaia, PH)	15 ha: Rarău 1 (Câmpulung Moldovenesc, SV)	11 ha: Transalpina 1 (Voineasa, VL)	21 ha: Curba de Nivel-Pilon 2 (Bălea Lac, SB)
Extremely large-sized (15-22 ha)	2	-	-	-	1	-	3
Large-sized (8-14.99 ha)	6	4	9	3	-	1	23
Medium-sized (4-7.99 ha)	20	7	6	13	5	2	53
Small-sized (1-3.99 ha)	55	24	21	9	18	8	135
Extremely small-sized (less than 1 ha)	5	4	-	2	-	2	13
Total surface (ha)	334.6 ha	140.5 ha	170.9 ha	125.4 ha	81.58 ha	40.2 ha	893. 18 ha

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 3. Length of ski slopes

Other important morphometric parametre which has also changed a lot over the last years, is the length of ski slopes and what in 2001 started as 91 km of ski tracks (Glăvan, 2000; Dinu and Peţan 2003), nowadays has multiplied nearly three times, making Romania the possessor of 246.9 km of ski slopes in terms of length.

Irrespective of the displayed values, it can be noticed that the previous table and the one below are quite resembling in some aspects, starting from the highest rated region (Centre) and ski slope (Curba de Nivel-Pilon 2) to the hierarchical order in which the second place goes to West Region, followed by North-West and so on (table 3). Concerning the most widely spread category of ski tracks, both national and regional put themselves on the map with short ski slopes whose length range from 500 to 1,000 m. In spite of this, Centre and West regions host 6 of the longest ski tracks in the country: Curba de Nivel-Pilon 2 (14,000 m), Pilonul 2-Bălea Cascadă (13,000 m), Măloasa (12,000 m), Drumul Roşu (5,530 m), Straja (8,100 m), Semenic (5,800 m). While these two regions are the only ones sharing the extremely and the very long ski slopes ranking categories, South and North-East just lack ski tracks which have less than 150 m.

As regards the North-West current state, Maramureş remains the favourite county, with the highest total length (19.01 km), longest ski track (Albastră: 2,250 m, Cavnic Ski Area) and best typological representation according to length classification; whereas Cluj County totalizes 8.17 km from its 10 ski tracks, of what the longest, Buscat 1, from Muntele Băişorii Ski Area, has 1.300 m in length.

Table 3.

Highest rated ski slopes and regional hierarchies based on length

Length categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Highest rated ski slope (ski area, county)	14.000 m: Curba de Nivel-Pilon 2 (Bălea Lac, SB)	2.250 m: Albastră (Cavnic, MM)	12.000 m: Măloasa (Muntele Mic, CS)	2.153 m: Nouă (Sinaia, PH)	3.000 m: Rarău 1 (Câmpulung Moldovenesc, SV)	2.257 m: Transalpina 1 (Voineasa, VL)	14.000 m: Curba de Nivel-Pilon 2 (Bălea Lac, SB)
Extremely long (10,000-15,000 m)	2	-	1	-	-	-	3
Very long (5,000-9,999 m)	1	-	2	-	-	-	3
Long (2,000-4,999 m)	6	3	2	2	3	1	17
Medium length (1,000-1,999 m)	17	10	8	7	4	1	47
Short (500-999 m)	37	16	12	11	11	7	94
Very short (150-499 m)	24	9	10	7	6	3	59
Extremely short (less than 150 m)	1	1	1	-	-	1	4
Total length (km)	102.2 km	33.1 km	53.7 km	25.1 km	23.1 km	9.5 km	246.9 km

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 4. Width of ski slopes

With a national average width of 47.1 m, 58 percent of ski slopes in Romania are low ranked. This predominant category also stands for the development regions, except for South, where most ski tracks have a medium width, ranging from 50 to 100 m (Table 4). Moreover along with South-West, the South region lacks ski tracks whose width exceeds 100 m, in contradistinction to Centre Region where the highest width reaches 150 m, in more than one ski slope: Cocoș-Pârâul Rece (Brașov), Ciumani (Harghita), Curba de Nivel-Pilon 2 and Pilonul 2-Bălea Cascadă (Sibiu).

On the subject of North-West situation, Cluj County excels at both best typological representation of ski slopes and widest run in the region, Băișoara Specială (100 m) in Muntele Băișorii Ski Area; whereas in Maramureș, although there are no high-width representatives, the widest ski slope is only 10 metres less than the one in Cluj and is located within Cavnic Ski Area (Roata 1 Ski Slope: 90 m).

Table 4.

Highest rated ski slopes and regional hierarchies based on width

Width categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Highest rated ski slope (ski area, county)	150 m: Cocoş-Pârâul Rece (Predeal, BV), Ciumani (Ciurmani, HR), Curba de Nivel-Pilon 2 și Pilonul 2-Bâlea Cascadă (Bâlea Lac, SB)	100 m: Băișoara Specială (Muntele Băișorii, CJ)	100 m: Slalom Uriș (Mutu) (Straja, HD)	80 m: Valea Dorului Subtelescaun 1 și (Sinaia, PH)	100 m: Runc 1 (Câmpulung Moldovenesc, SV)	60 m: Păpușarâncă 1 (Râncă, GJ)	150 m: Cocoş-Pârâul Rece (Predeal, BV), Ciumani (Ciurmani, HR), Curba de Nivel-Pilon 2 și Pilonul 2-Bâlea Cascadă (Bâlea Lac, SB)
High width (more than 99 m)	7	1	1	-	1	-	10
Medium width (50-99 m)	38	8	13	17	7	3	86
Low width (less than 50 m)	43	30	22	10	16	10	131

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 5. Elevation of departure point of ski slopes

The Carpathians are considered medium-elevation mountains whose highest peak, Moldoveanu (2,544 m), is part of the 13 Romanian peaks, reaching more than 2,500 m, all located in the Southern Carpathians. Therefore, not surprisingly, the highest departure points for the 25 ski slopes of the high-elevation category belong to the Centre, South and South-West development regions (table 5) whose territories are occupied by the Southern Carpathian Mountains.

Although the highest departure point for a ski run in Romania is situated at 2,200 metres above sea level, within Bâlea Lac Ski Area (Sibiu County, Central Region), the average departure point corresponds to 1,344 m. Consequently, at national level, most runs are medium-low elevation representatives (34%) and medium ones (33%). While in North-West and North-East, the former category prevails, in Central Region, characterised by the best typological representation regarding the hierarchical categories of elevation, both categories share a dominant positions.

The North-West counties exhibit the same ruling category, medium-low elevation, followed by medium one (except for Bihor County where the latter prevails) and same triple configuration of the typological classes: medium-low, medium, medium-high for Cluj and Maramureș counties. Although the highest value for ski run' departure point is held by Vârful Știol (1,700 m), within Borșa Ski Area, this slope is the only medium-high elevation one in Maramureș, whereas in Cluj County, this category has three representatives ski tracks, at a 1,677 m departure elevation, all located within Muntele Băișorii Ski Area.

Table 5.
Highest rated ski slopes and regional hierarchies based on departure elevation

Departure elevation categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Highest rated ski slope (ski area, county)	2,200 m: Curba de Nivel-Pilon 2 (Bălea Lac, SB)	1,700 m: Vârful Știol (Borșa, MM)	1,868 m: Straja (Straja, HD)	2,100 m: Carp (Sinaia, PH)	1,400 m: Rarău 1 (Câmpulung Moldovenesc, SV)	1,974 m: Transalpina 2 (Voineasa, VL)	2,200 m: Curba de Nivel-Pilon 2 (Bălea Lac, SB)
High (1900-2200 m)	7	-	-	11	-	7	25
Medium-high (1600-1899 m)	15	4	17	2	-	5	43
Medium (1200-1599 m)	31	11	16	8	8	1	75
Medium-low (700-1199 m)	31	24	3	6	13	-	77
Low (less than 700 m)	4	-	-	-	3	-	7

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 6. Difference in elevation of ski slopes

In association with length, this parametre derived from the elevation difference between the departure and the arrival point, indicates the most appropriate difficulty rating of a slope. Without insisting too much upon it, what is really worth mentioning is that although most Romanian ski tracks belong to the medium-low difference category, with an average of 194 m, the highest elevation between the departure and arrival point can be encountered within Măloasa Ski Slope (Muntele Mic Ski Area, Caraș Severin County). It registers nearly 1,000 m, and along with other 7 ski tracks, pertains to the high difference category which can only be found in the Centre and West regions (table 6).

Table 6.
Highest rated ski slopes and regional hierarchies based on difference in elevation

Difference in elevation categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of tracks)
Highest rated ski slope (ski area, county)	728 m: Lupului (Poiana Brașov, BV)	526 m: Mogoșa (Mogoșa, MM)	980 m: Măloasa (Muntele Mic, CS)	561 m: Sorica (Azuga, PH)	515 m: Rarău 1 (Câmpulung Moldovenesc, SV)	530 m: Transalpina 1 (Voineasa, VL)	980 m: Măloasa (Muntele Mic, CS)
High difference (600-1000 m)	4	-	4	-	-	-	8

Difference in elevation categories	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of tracks)
Medium-high difference (400-599 m)	3	2	1	4	1	1	12
Medium difference (200-399 m)	17	15	9	10	8	1	60
Medium-low difference (50-199 m)	51	18	19	10	14	8	120
Low difference (less than 50 m)	13	4	3	3	1	3	27

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

About North-West, what can be pointed out is that all counties possess medium-low and medium difference in elevation slopes whereas only Maramureş integrates low and medium-high rated runs, with greatest value reaching 526 m in Mogoşa Ski Slope.

3. 7. Difficulty ratings of ski slopes

According to the difficulty ratings (induced by the slope's gradient and established by law³), 40 percent of Romanian ski tracks are for intermediate skiers and most of them belong to North-West, West, South and North-East development regions. The other two regions excel in the easy-slopes' category, which gathers 34 percent out of total national number (227). As it can be observed (table 7), the majority of ski slopes for expert skiers belong to the West, North-West and Centre, where the highest rated ski slope is hosted, in Covasna County, recording a 41% gradient in Covasna Ski Area.

Towards North-West current state, Maramureş and Cluj come into prominence due to the exhaustive representation of all four difficulty ratings classes and the predominance of intermediate runs in Maramureş and easy ski slopes in Cluj, whereas the other two counties continue to lack extremely easy ranked runs for beginners.

Table 7.
Regional distribution of ski slopes based on difficulty ratings

Difficulty ratings	Indicator colour	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Difficult (more than 30%)	black	14	10	10	4	3	1	42

³ Ministry of Tourism Decree no. 491/ 2001 approving the norms on homologation, planning, maintenance and operation of ski slopes and trails for leisure.

Difficulty ratings	Indicator colour	Centre	North-West	West	South	North-East	South-West	ROMANIA (number of ski tracks)
Intermediate (20-29%)	red	31	14	16	14	12	4	91
Easy (11-19%)	blue	36	13	9	7	8	5	78
Extremely easy (less than 10%)	green	7	2	1	2	1	3	16

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 8. Cable transport system and means of transportation

Since 1942, when the very first ski chair lift went into service in the Romanian Carpathians, until 1998, when the cable transportation system reached 64 units (Glăvan, 2000), things have evolved a lot, although by 2002 the situation remained unchanged (Dinu and Pețan, 2003). But the first 60 years did not even remotely compare to the boom of cable equipments that had characterised the following 13 years, making Romania the owner of 287 transportation units (60 more than the existing tracks).

Although 41 ski slopes possess more than one lift vehicle, 10 tracks lack cable transportation facilities, leaving the other 176 ski slopes endowed with one ski lift device. As illustrated in figure 4, the cable transport system in Romania is characterised by a wide typological dimension, gathering 8 different types of means of transportation, which could be grouped in 4 main categories: ski lifts, chair lifts, cable cars and gondolas. It can also be observed that while the most widespread equipment belongs to the first category, more precisely to the mono-post ski lift with towing devices (50.8%), followed, by far, by chair lifts with 2 seats and baby ski lifts, the less common one corresponds to disengageable chair lifts with 4 seats (2.7%).

Regarding the regional distribution of the cable transportation means, the Central Region holds the supremacy in terms of typological dimension, due to the 7 representative types of lifts. On this line, two ski slopes from Poiana Brașov Ski Area (Brașov County) come to the front, both at national and regional level, on the basis of highest diversity, ensured by the 4 types of cable facilities – mono-post ski lift with towing devices (1), permanent/fixed ski chair lift with 4 seats vehicles (1), gondola lift (1), cable car (2) – that winter sports enthusiasts have access to Ruia Ski Slope and Lupului Ski Slope. These two ski tracks along with Drumul Roșu Ski Slope, also located in Poiana Brașov, make this ski area the best equipped one from a quantitative point of view, as well. However, 5 units of transportation within one ski slope can also be found within Straja Ski Area (Hunedoara County), at Platoul Constantinescu and Platoul Soarelui ski tracks, thus determining both West and Centre development regions to be in the lead. Though the latter holds dominion over most types of installations, numerically speaking, three of them are better represented in South, where gondola lifts (7) and chair lifts with 4 seats (7) enjoy the highest concentration.

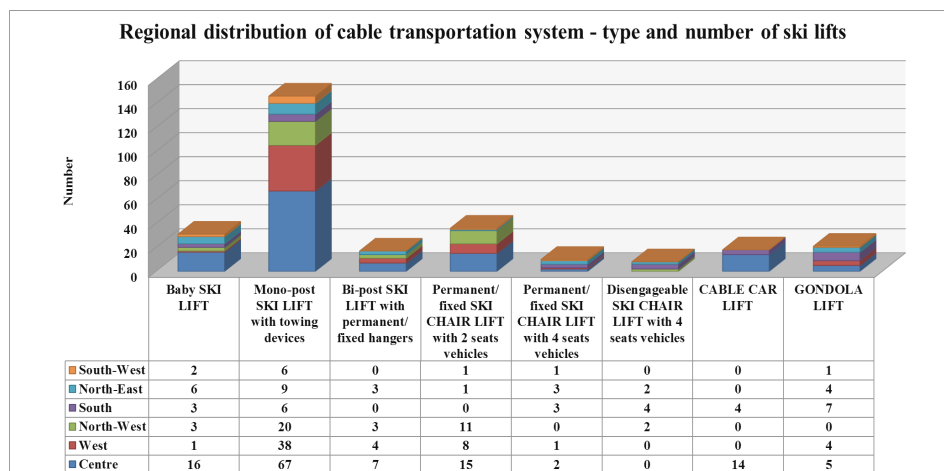


Fig. 4. Cable transportation units distribution within Romania's development regions.

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

With respect to the North-West counties, it is worth mentioning that although all ski areas are endowed with cable transportation equipments and the total number of units is 39 (as the total number of ski slopes), two runs from Cavnic Ski Area lack this kind of facility. Still, Cavnic and Mogoşa ski areas (Maramureş County) are the only ones that provide winter sports fans with two different types of installations within one ski slope (within Icoana 2 and Mogoşa runs). It may be pointless to say that Maramureş possesses the most numerous cable transportation facilities, followed by Cluj, but it may be interesting to know that whereas within these two counties the mono-post ski lifts with towing devices prevail, Bistriţa Năsăud stands out with the best typological representation (4 ski tracks, each of them equipped with different types of ski lifts and even a chair lift with 2 seats).

3. 9. Capacity of cable transportation means and related ski slopes' capacities

As important as the installation itself is the related capacity of transporting skiers and non-skiers within the precincts of ski tracks, whose overall capacity (mostly induced by surface) leaves its mark on the cable transport system's dimension. Given the interrelationship between these two parameters we decided to show them in parallel, to facilitate further comparisons. Thus, what emerges from the graphical representation is that both national and regional values of the cable transportation means' capacity are higher than those belonging to the capacity of the ski tracks. According to the displayed statistical information (fig. 5), Romania's total capacity in terms of cable facilities reaches 214,038 persons, being best represented within the Central Region (41.8%), whereas the national values for the ski slopes' overall capacity sum up 175,073 persons, owing the 42.2 percents to Centre, as well. Regardless of the capacity type, the hierarchical order remains mostly the same, except that the third position belongs to the North-West Region only when it comes to ski tracks' capacity. As for the cable transportation capacity, this region is ranked fourth, after South.

Reviewing the highest rated ski slopes in terms of analysed capacities, on the one hand Poiana Brașov Ski Area with its ski run, Ruia (Brașov County, Centre Region) comes into prominence due to the highest capacity of cable transportation facilities corresponding to 5770 persons; on the other hand, Straja Ski Area with Platoul Soarelui Ski Slope (Hunedoara County, West Region) imposes itself through an overall capacity of 3500 persons. As for the average capacity, the cable transportation equipments support up to 1000 persons, whereas for the ski tracks, an average of 795 persons describes best up to what they can support.

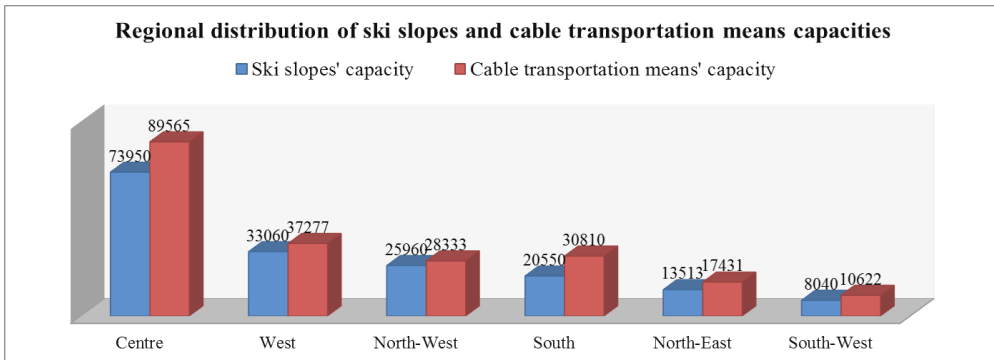


Fig. 5. Ski slopes and cable transportation means capacities within Romania's development regions.
 Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

Finally, within North-West, Maramureș rules once again due to the highest capacity of both cable transportation (total capacity: 15185 persons; highest capacity: 1560 persons in Mogoșa Ski Slope) and ski slopes (total capacity: 12410 persons) although the highest one belongs to Bihor County – Piatra Grăitoare Ski Slope (1500 persons). In contradiction to the national and regional values, in Cluj County the cable transportation capacity (7662 persons) is lower than the one of the ski tracks (8150 persons), indicating an undersized cable transport system in relation to the ski slopes support capacity, though the highest rated values for both of them are identical: 1400 persons, in all three ski slopes (Buscat 1, 2, 3) in Muntele Băișorii Ski Area.

3. 10. Other facilities related to ski slopes: snow cannons and night lighting installations

In order to increase the ski slopes' usability, availability and attractiveness, most investments have targeted snow cannons and night lighting installations' implementation. Although more than half of the total number of ski tracks in Romania still lack these kinds of facilities, 106 ski slopes are equipped with snow cannons – most of them belonging to Central Region (36.7%), followed by North-West and West which share the same values (16%) – and there are 78 ski tracks that have night lighting installations, mainly pertaining to Centre (48.7%), North-West (15.3%) and North-East (14.1%). As shown below (table 8), broadly speaking, the regional number

of ski slopes with snow cannons is higher than the number of those which possess night lighting, except for the North-East Region, where the numerical values are identical. Another region which breaks the record is South-West, where the ski tracks that provide snow cannons are more common than those which are deprived of this facility.

North-West situation reveals the same habitual hierarchical order with Maramureş on top position due to the greatest number of snow cannons (in 11 ski tracks) and night lighting installations (in 8 ski slopes), followed by Cluj (5 ski slopes with snow guns and 2 with night lighting) and Bihor. Thus, while the first two counties have higher percentage values than the national average, due to the 50 percent of ski tracks equipped with snow cannons, Bistriţa Năsăud lacks any such sort of facility.

Table 8.**Regional distribution of ski slopes based on facilities and status**

Facilities	Snow cannons		Night lighting installations		Status		
	YES	NO	YES	NO	Certified	Uncertified	Not specified
Development region							
Centre	39	49	38	50	66	8	14
North-West	17	22	12	27	21	8	10
West	17	19	10	26	27	3	6
South	12	15	4	23	23	1	3
North-East	11	13	11	13	14	-	10
South-West	10	3	3	10	12	-	1
ROMANIA	106 (47%)	121 (53%)	78 (34%)	149 (66%)	163 (72%)	20 (9%)	44 (19%)

Source: <http://www.romaniaturistica.ro>. Last accessed: 18 January 2015.

3. 11. Status of ski slopes and overall tourism potential

According to the Ministry of Tourism assessment, 72 percent of the 227 existing ski tracks in Romania meet favourable conditions which ensure appropriate unfolding of winter sports tourism. Given the fact that the consulted information source did not specify the status of 44 ski tracks, the up-above percentage could be higher than the one displayed in the table for both national and regional certified slopes (table 8). And this could go for the unapproved ski tracks too; but, either way, the certified slopes would be more numerous for each region, even under the circumstances of adding the 44 unknown status cases to the uncertified tracks.

The status criterion also highlights the most frequently encountered hierarchical order, bringing to prominence, on the one hand, Centre, West, South and North-West regions, and, on the other hand, Maramureş (12 certified tracks) and Cluj (6 certified tracks), as best providers for winter sports and mountain tourism developing possibilities.

In the same train of thought, by combining the previously criteria ranks also emerges the possibility of estimating the tourism potential of Romania's ski areas, mainly based on the ski tracks' number, area, length, number of cable transportation means and other facilities meant to ensure the optimal conditions for winter sports enthusiasts (fig. 6).

It turned out that although most of the ski areas have a low potential (71.8%), the other third compensates for what it is left to be better exploited. Moreover, due to the closely positioned high rated potential ski slopes, the top 10 Romanian tracks follow, in patches, a random order: Sinaia (Prahova), Poiana Brașov (Brașov), Straja (Hunedoara), Azuga (Prahova), Voineasa (Vâlcea), Râncea (Gorj), Predeal (Brașov), Păltiniș (Sibiu), Șureanu (Alba), Cavnic (Maramureș).

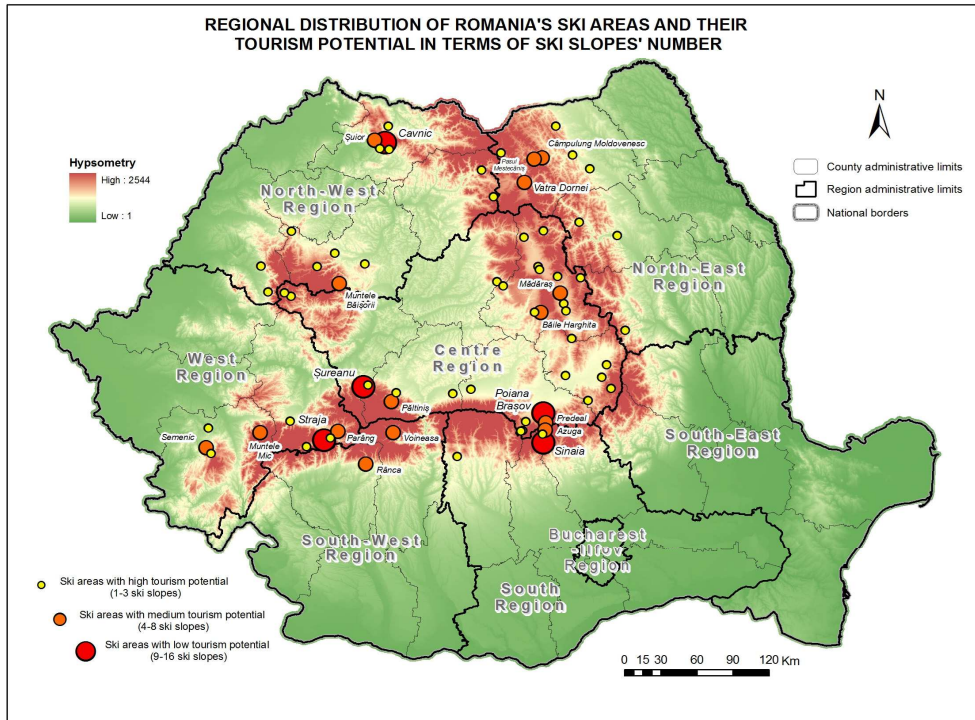


Fig. 6. Ski areas tourism potential in Romania according to the number of ski slopes.

3. CONCLUSIONS

Despite the fact that 27 counties from 7 development regions in Romania are covered by Carpathian Mountains, providing favourable conditions for mountain tourism, winter sports potential remains underexploited even if the evolution has tripled its value for most ski areas and slopes parameters. However, if the trend of the past 15 years continues to maintain its progress, by 2030, Romania could pride itself with more than 450 ski tracks, a total surface of 1720 ha of the entire ski domain, a total length of 490 km of ski slopes and more than 560 cable transportation units. This way, Romania would ensure the optimal valorization of its winter tourism potential and would definitely attract more tourists, whose spendings would be finally reflected on the overall economic growth of the visited mountain areas, counties and development regions.

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