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THE EVALUATION OF RÂUŞOR SKI AREA (RETEZAT MOUNTAINS) IN THE CONTEXT OF BECOMING TOURISTIC RESORT FOR LOCAL INTEREST

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The evaluation of Râuşor ski area in the context of becoming touristic resort for local interest

Oana – Alina Lupulesc

L'évaluation du domaine skiable de Râuşor pour le déclarer ressort touristique d'intérêt local. Cette étude est destiné pour attirer l'attention sur le domaine skiable du notre pays. Aussi que notre bien-connu ressort touristique d'hiver, en Roumanie il y a autre montagne compartiments où on peut skier. Un tel lieu est cela de Râuşor en Mont du Retezat (Montagnes Coupées) où, grâce à son position favorable (exclusivement sur le versant du nord), la saison d'hiver dure jusqu'à la fin d'Avril. Dans ce papier on tient à souligner les aspects favorables pour déclarer le complexe touristique de Râuşor ressort touristique d'intérêt local, faisant une évaluation de son domaine skiable et analyser les indicateurs touristiques spécifiques. Tandis, on veut utiliser les résultats obtenus pour proposer quelques directions de développement ainsi que le Complexe Touristique Râuşor améliore ses conditions et services offerts aux touristes et, pour quoi non, pour deviendra connu au plan national, non seulement local, comme jusque' à présent.

Mots clés: Râuşor, évaluation, indicateurs touristiques, conditions favorables, développement touristique.

Evaluarea echipării domeniului schiabil al Complexului Turistic Râuşor în contextul declarării staţiune turistică de interes local. Prin acest stdiu doresc să atrag atenţia asupra potenţialului schiabil în România. Pe lângă staţiunile noastre consacrate, în România există şi alte unităţi montane în care schiatul este posibil. Un astfel de loc este şi Complexul Turistic Râuşor din Munţii Retezat care, datorită poziţionării sale propice (exclusiv pe versantul nordic) face ca sezonul de iarnă să ţină uneori chiar pâna la sfârşitul lunii aprilie. Prin această lucrare mi-am propus să scot în evidenţă favorabilitatea declarării sale staţiune de interes local prin realizarea unei evaluări a domeniului schiabil din cadrul său, analizând indicatorii turistici specifici. În acelaşi timp, pe baza rezultatelor obţinute, îmi doresc să propun câteva direcţii de dezvoltare, astfel încât Complexul Turistic Râuşor să îşi îmbunătăţească condiţiile şi serviciile oferite turiştilor, şi de ce nu, să devină cunoscut şi pe plan naţional, nu doar local, cum este în prezent.

Cuvinte cheie: Râuşor, evaluare, indicatori turistici, condiţii favorabile, dezvoltare turistică.

1. INTRODUCTION

This paper, "The Evaluation of Râuşor Ski Area in the Context of Becoming Touristic Resort for Local Interest" through its approach, aims to realize an analysis and evaluation of the equipped ski area of Retezat Mountains, concentrating upon the evaluation of the skiable area of Râuşor Touristic Complex, in order to find the favorable conditions for declaring it touristic resort for local interest.

Nowadays, Râuşor is a mountain locality equipped with accommodation units, ski slope and cable transportation (ski lift). A mountain touristic resort is a resort situated in a high altitude area centered on practicing winter sports, which can be equipped with cable transportation (ski cable, cableway and chairlift) and a diversity of improvements suitable for winter sports [1]. The ski industry, or snow tourism nowadays, is a significant generator of revenue and is different from alpine tourism because of its seasonal, spatial and temporal concentration [2]. Also it encompasses activities such as downhill skiing, tobogganing, cross country skiing and snowboarding together with accommodation provided in ski resorts and/or chalets [3].

Therefore, in order to gain the status of a mountain touristic resort, there are needed several studies which should show the favorability for practicing winter sports. In this context, this paper aim is to highlight the natural conditions for establishing at Râuşor a local winter resort, using a touristic evaluation.

2. METHODOLOGY

This study approaches several methods due to its interdisciplinary characteristics as a touristic analysis. Therefore, it combines traditional methods such as analysis, synthesis, comparison, directly and indirectly observations, descriptions and cartographic methods with modern ones, such as map interpretation and mathematic terrain modeling. On the same time this study centers on using diverse software for calculating indicators formulas took into consideration, as well as graphic interpretation of the results. Also, there were used software for processing and map making necessarily for localizing the study area.

Another method used was the terrain one, consisting in measures and data purchasing needed for analyzing and evaluation of the skiable domain. This method was applied starting with the 2011 winter holiday and continued until the second week of April 2012. During this time terrain observation were made periodically in order to register the number of tourists and also for measures regarding the descend speed of a skier, the periodicity for using cable transportation, slope's optimal capacity etc. Also during this period it was applied a quality questionnaire for tourist (435 tourists) in order to see their

opinion regarding skiing at Râuşor. The most important questions for this study refer to the following issues (Table 1).

Table 1. Quality questionnaire for tourists' satisfaction

Question	Answer
What is your skiing level?	a) beginner; b) medium; c) advanced; d) not skiing
How often do you ski at Râuşor?	a) Once a month; b) twice a month; c) each week-end; d) sometimes
Why did you choose to ski here?	a) Discovering a new area; b) accessibility; c) less tourists; d) other (name it)
Which is the reason for coming here?	a) For skiing; b) for the children; c) as a companion; d) other (name it)
Where did you find about CTR?	a) Relatives, friends; b) internet; c) promotion materials; d) other (name it)
Are you using the accommodation provided here?	a) Yes; b) no
How do you find the conditions of the ski slope?	a) Poorly maintained; b) well maintained; c) very well maintained
When you come at Râuşor, do you visit other touristic objectives in the area too?	a) Yes; b) no
Are you unsatisfied about the ski conditions provided?	a) Yes (name it); b) no
Would you recommend to your friends this location?	a) Yes; b) no
Will you come here again?	a) Yes; b) no; c) maybe
Age, sex	……

Realized by the author, according to the issue's interest

3. STUDY AREA

For territorial-administrative point of view localization, Râuşor Touristic Complex is situated in the Romania's West Development Region, in Hunedoara District, at Râul de Mori. From the cultural space point of view, it is situated in Haţeg Country, a well defined cultural zone in Hunedoara (together with Zarandului Country, Deva –Mureş Valley area, Orăştie

area, Hunedoara and Valea Jiului) (Figure 1) which gives it a special status in the district, due to its localization in an important touristic area and also for its surroundings, such as Retezat National Park and Haţeg Country Geopark.

Considering the geographical position, Râuşor Touristic Complex (CTR) is situated on the northern and north-western slopes of Retezat massive, at 1250 – 1300 m altitude between Valereasca and Custura Prelucii ridges, at the confluence of Valereasca with Ştevia creek (Figure 2).

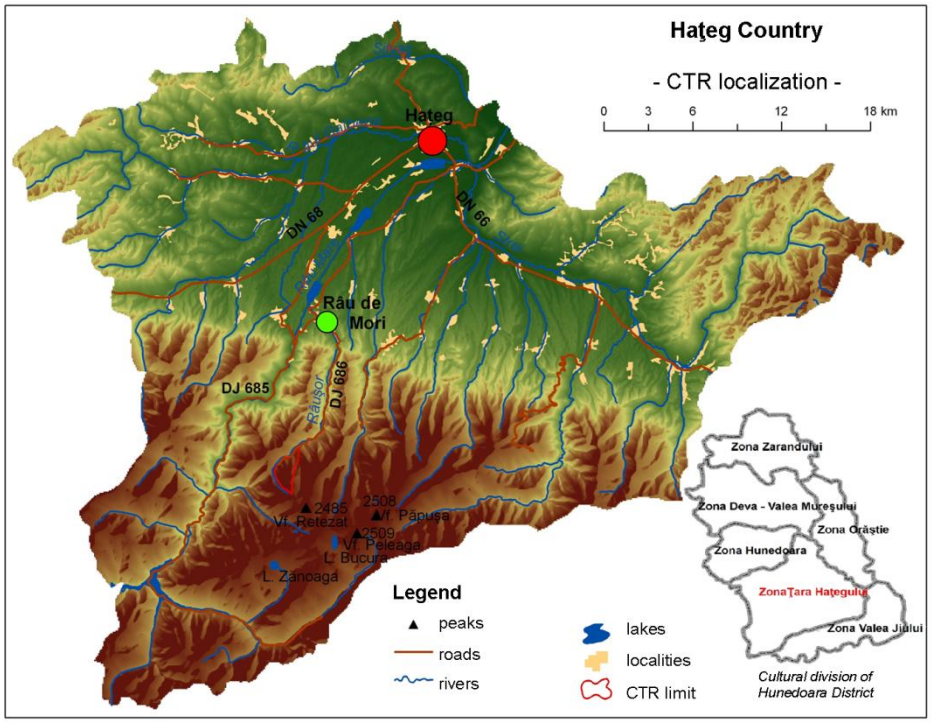

Figure 1. Position of Râuşor Touristic Complex in Haţeg Country
(author, 1:50,000 topographic map processing and Hunedoara cultural regions)

This altitude determines the existence of a rich fir and spruce forest which provides a well oxygenated climate with real benefits on human body. On the same time, its northern position confers a snow cover, which sometimes maintains from December until April (when there is a very snowy year).

Râuşor Touristic Complex is the only set up area in Haţeg and Retezat regions where winter sports can be practiced that confers a privileged status in the context of a future touristic development plan and conversion into a local touristic resort. Also, for a future development we must take into consideration the fact that this resort is situated in the buffer limit of Retezat National Park, therefore all improvements and development strategies must be taken with a minimal environmental impact.

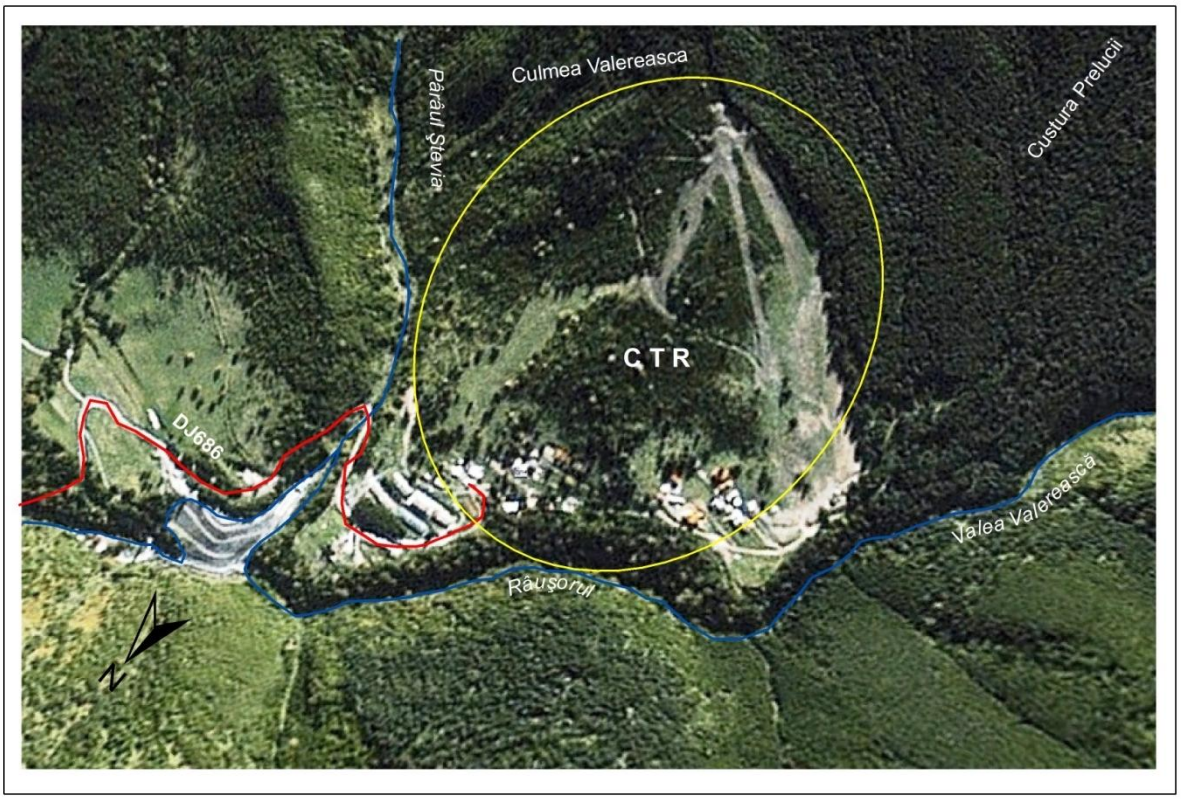

Figure 2. Detail on geographic position of Râuşor Touristic Complexe
(author, Google Earth image processing)

Also, due to its high-value natural capital given by its position in the Carpathians [4], the ecotourism or tourism should embrace rural or cultural values instead only practicing sports as it is in the present.

The touristic accessibility is quite easy so that tourists can get here either on road or railway. Therefore, the main route through Râuşor is from Haţeg, where is a crossroad between national roads DN68 to Caransebeş and DN66 to Petroşani; also we can get here by railway through Subcetate with minibus to Haţeg and then to Râul de Mori. Through Haţeg we follow DJ686 road which goes up to the botton of the ski slope; another way is to follow the roads mentioned above and touristic marks to Râuşor.

Considering the touristic infrastructure [5] (accommodation, food and beverage, transportation and other complementary services), CTR provides the following facilities and services: accommodation resorts, a food and beverage unit, ski slope, cable transportation (ski lift) and a center for renting ski equipment and snow transportation mobiles for tourists entertainment (snowmobile, sleight etc).

Therefore, CTR provides accommodation for a total of 316 tourists in 17 chalets and guest houses and 96 table seats in the slope's restaurant. The area's surface of the skiing

domain of Râuşor is 5, 4 ha, with a ski slope of 1 200 m length on 350 m high elevation. The cable transportation has a length which covers the entire length of the ski slope and supports 25 skiers the same time with an optimal transportation capacity of a 700 skiers/hour. The additional facilities offered for tourist consists in a renting center for ski equipment at the bottom of the ski slope and other centers in accommodation units, facilities for artificial snow, snow compaction equipment, night light. There is also a rescue service which functions 24 hours/day.

4. RESULTS AND DISCUSSIONS

Regarding the studies addressed to the ski industry, so far there are few studies using the GIS. One of the studies assess the environmental impact of proposed ski resorts in the northeastern Italian Alps [6], and another one is using the GIS model in order to propose sites for future resorts [7]. Taking into consideration all of these, in order to establish a future ski resort is needed an evaluation to determine on the one hand the impact of the improvements upon the environment and on the other hand to see which are the positive conditions in establishing a new ski resort.

For evaluating the conditions of Râuşor's Touristic Complex ski domain, it was taken into consideration the natural conditions such as orientation and slope, and indicators regarding the correction coefficient, average hourly touristic flow, optimal slope capacity and simultaneously slope indicator.

Side aspect is one of the most important natural conditions for localizing a winter resort. It was taken into consideration the slope orientation as a prime factor for the localization of a winter resort due to the fact that it directly influences the snow cover. Therefore, favorable for winter sport is a northern – north-western position, which determines minimal sunlight degree and a huge amount of solid precipitations (snow).

This position (Figure 3) offers favorable ski conditions starting with the end of November, but mostly with children's winter holiday on December, until the end of Mars – mid-April, and even the beginning of May, during heavy precipitation years (as the year, 2012).

As explained before, in the above figure we observe the northern position of the Râuşor's ski slope and the additional mountain hill (to Haţeg), on the right side of Râuşor's Valley, compared to the opposite side, on the left of the valley, with a mostly eastern orientation; for this part of the mountain hill there are already projects for expanding the skiable domain of the complex.

Regarding the favorable snow cover, due to precipitations in January and February this year (2012), it maintained in very good conditions at a 30 – 40 cm thickness over the ski slope and 60 – 70 cm on the other parts, where there weren't any actions for maintaining the ski slope, until mid-Mars. Nevertheless, the number of tourists was law in mars, as it can be seen in the following picture (Photo1, 2).

Photo 1. CTR – Favorable snow cover and low number of tourist (author, January 2012)

Photo 2. The 2 levels of CTR ski slope (author, 26 Mars 2012)

Ski slope inclination. It represents the difficulty degree of the ski slope for practicing winter sports and it is taken into consideration when establishing a new winter resort. Together with the orientation, the slope inclination is an important factor in determining the favorability so, as far as there are more slopes of an easy and medium difficulty level, there is a higher favorability for practicing winter sports.

Therefore, according the minimal criteria for approving the ski slopes in Romania [8], there is a direct relation between the ski slope difficulty and slope inclination, so that the lower inclination is, the lower difficulty ski slope level is (Table 2).

Table 2. Relation between ski slope inclination and difficulty level

Average slope inclination (°)	Ski slope difficulty
10	Very easy
20	Easy
30	Medium
40	Difficult

According to Ţigu, G. (2001) [9]

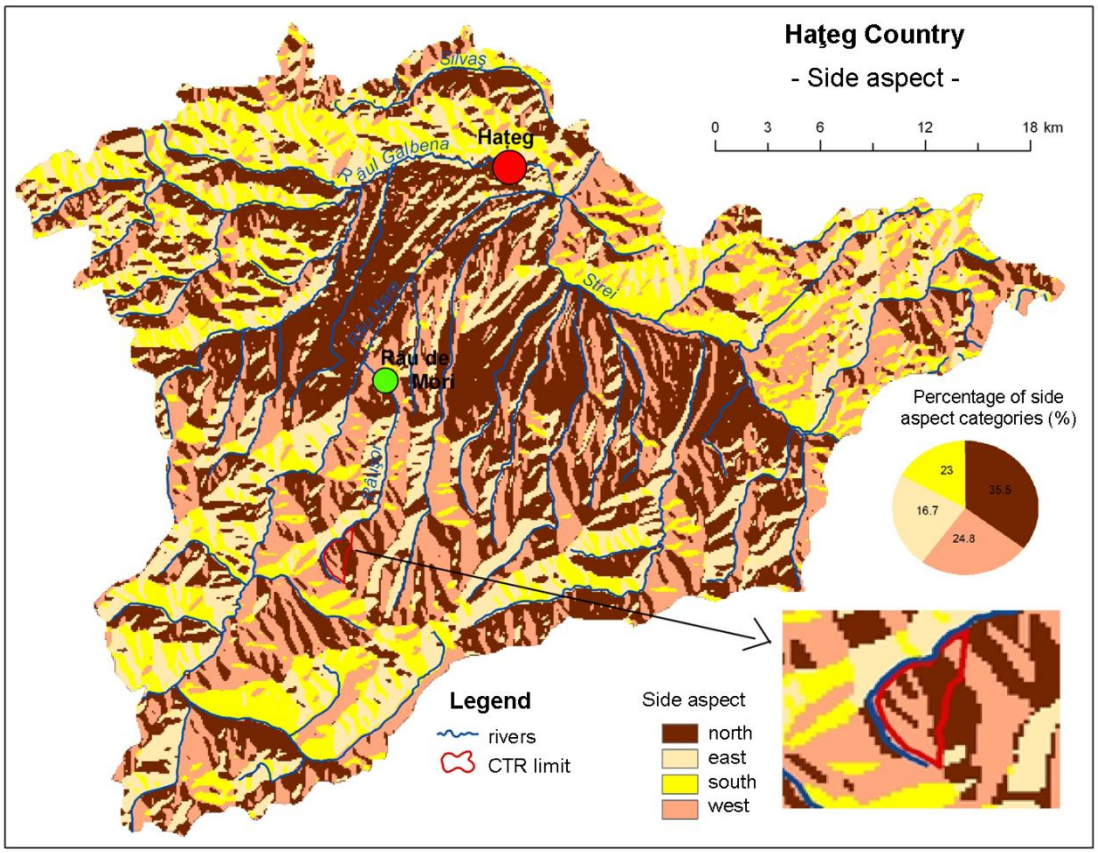

Figure 3. Side aspect map
(author, 1:50,000 topographic map processing)

Regarding the CTR ski slope inclination, as it can be seen in the Figure 4, the slope inclination is between 10, 1 - 20° and 20, 1 - 30°, giving an easy-medium difficulty level.

On the same time, in the map detail we can see that the ski slope has a medium level, fact which increases the touristic attractiveness, due to the fact that number of at least medium skiers in winter resorts is higher than the beginner's. Also, we observe that lower inclination is at the bottom and outside the ski slope so that beginner skiers are not crowding the ski slope area.

Nevertheless, the Photo 2 shows two level of ski slope difficulty: one with an easy - medium level of 10 – 15°, preferred by all skiers, and one medium-difficult level with 25 - 30°, which unfortunately, due to the lack of cable transportation cannot be used by the advance skiers. But this is not quite an impediment as during our research it was observed that there were many advanced skiers who preferred to ascend the slope without cable transportation precisely due to the fact that that area of the ski slope is not used by other tourists.

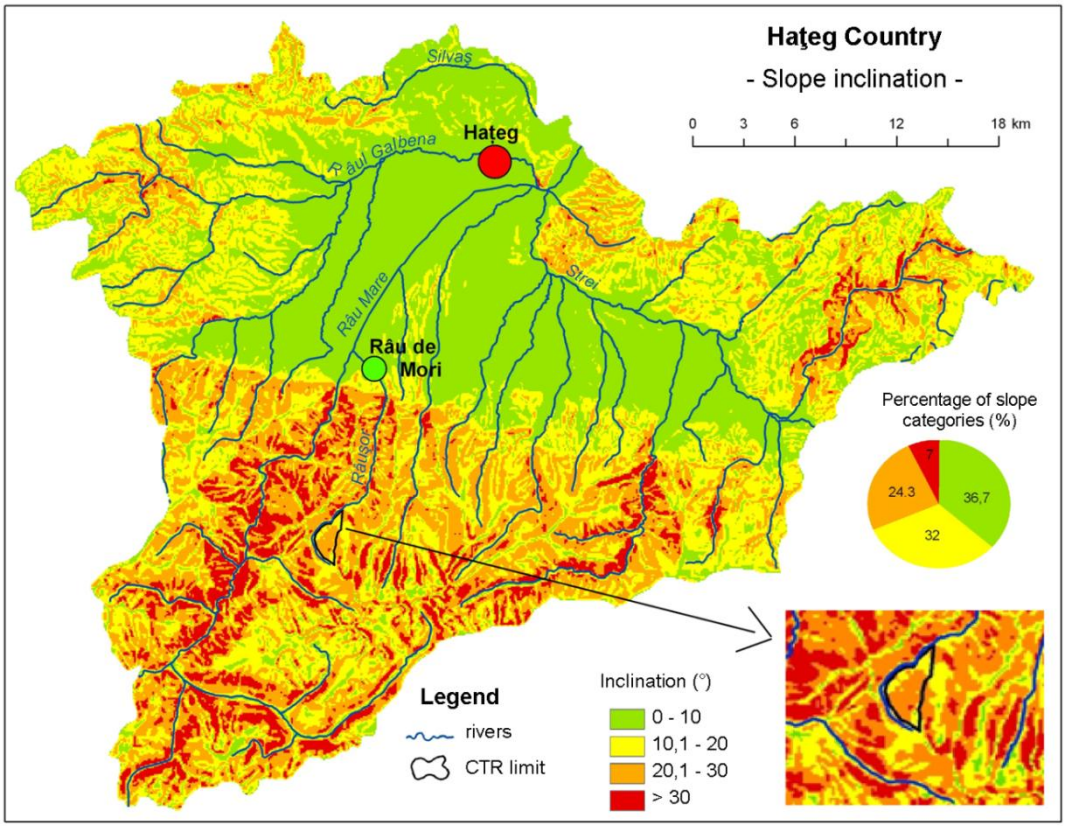

Figure 4. Ski slope inclination
(author, 1:50,000 topographic map processing)

Correction coefficient is another important indicator due to the fact that it correlates the length with the width of the ski slope so that formulas for different indicators could be applied.

Râuşor has a skiable potential of about 4 500 m, but due to the poor facilities for cable transportation, there are used only 1 300 m. Therefore, in order to calculate the indicator for the evaluation of Râuşor Touristic Complex it was taken into consideration only the length that is fitted with cable transportation because the other areas would be irrelevant for our study, because they are not used by tourists.

International studies show that conventional width for a ski corridor is between 30 and 350 m with an index of about 6, 0 m/accommodaion seat [10]. Between these values is needed a correction coefficient which varies into following values (Table 3).

According to this correlation, for further indicators, it will be applied a coefficient of 5, 00 due to its width at about 150 m.

Table 3. Correction coefficient connected to the ski slope width

Ski slope width (m)	15	20	35	40	50	60	100	150	200	250	350
Kc	0,50	0,67	1,00	1,33	1,67	2,00	3,53	5,00	6,67	8,33	10,00

According to Erdeli G., Gheorghilaş A. (2006)

Connected to the above indicator we can calculate the average hourly touristic flow [5] (D) of the ski slope, calculated for a conventional length of 30 m for different slopes categories, using the following formula:

$$D = \frac{V}{d} \quad ,$$

V – average speed of a skier: 5 km / h for easy slopes; 11 km / h for medium slopes; 25 km / h for difficult slopes

d – minimum distance between 2 skiers who descend the ski slope on the same time, without disturbing each other: 6 m for easy slopes; 15 m for medium and 20 for difficult slopes,

which can have the following values: 850 skiers/h for very easy slopes, 1 100 skiers/h for easy slopes, 1 750 skiers/h for medium and 2 250 skiers/h for difficult slopes. Due to the fact that Râuşor has a medium ski slope it follows that the average hourly flow is about 1 425 skiers/h.

An indicator correlated to the above one is the elevation difference [11] (Z), which represents the straight distance that a skier could perform during a day and which can take the following values: 500 m for easy slopes (beginning skiers), 1 400 m for easy slopes (advanced skiers), 2 700 m for medium slopes (perfected skiers), 4 000 m for difficult slopes (consecrated skiers).

According to these, during the research period, we found that the elevation difference that a skier performs during a skiing day at Râuşor is about 2 050 m. On the same time, the elevation difference [10] (DH/m) represents the ski slope length that a skier perform from the top to the bottom of the slope. Therefore, the 154 m elevation difference on 980 m slope length is very favorable for practicing skiing at Râuşor.

Slope's optimal capacity (Q) correlates all the above indicators and it offers a real imagine of the skiable area at a given time. We find it after the following formula [11]:

$$Q = \frac{D \; X \; K_c}{\frac{Z}{DH}} \quad ,$$

D – average hourly flow

Kc – correction coefficient

Z – elevation difference performed by a skier during a day

DH – slope's elevation difference

Appling this formula, we found that the optimal capacity of the ski slope at Râuşor is about 535 skiers. Same time, according to data collected from the local authorities [12], the ski slope can support a maximum capacity of 1 200 skiers/day. Comparing the results, we see discordance between the calculated capacity and the one given by local authorities, discordance based on the lack of statistical data regarding the touristic flow for Râuşor and the hopefulness of the ski slope's owner regarding tourists at Râuşor.

Simultaneously indicator [13] (IS) shows the number of skiers who are on the same time on the skiable area and it represents the sum between the number of skiers on the slope (Np), skiers on the cable transportation (Nt), the ones waiting at the ski lift (Na) and ones resting (Nr):

$$IS = Np + Nt + Na + Nr \quad ,$$

For calculating this indicator we used data obtained during our terrain research, taking into consideration only the week-ends (Saturday and Sunday) due to the fact that, for this study, the other days of the week are irrelevant because of the low number of tourists: 768 tourists for all period with an average of 43 tourists/day compared with week-end, 2 496 tourists with an average of 227 tourists/day. Thereby, we obtained the following values: Np = 75; Nt = 25; Na = 19; Nr = 111, obtaining a value for the simultaneously indicator of about 209 skiers, which if we compare with the average week-end tourists number, we find that tourist are coming at Râuşor not only for skiing, but also for sledding, hiking and only as simple companions.

The same time, if we compare the simultaneously indicator with the optimal capacity, we see that the last one is two times the first one considering our results, showing that the Râuşor's Touristic Complex ski slope is not used to its real potential, fact that is a really good thing due to its situation into the buffer limit of Retezat National Park.

Except calculating these indicators, we applied a questionnaire for making a complete image about the services offered here and for finding out what tourists' opinion regarding Râuşor Touristic Complex are. Thereby, we found that tourist have complaints

regarding cable transportation and the fact the it doesn't offer any complementary activities for tourists who are not skiing and that there is only one ski slope and quite short; also they said that it was difficult to find out about this area due to the fact that is not enough promoted on the internet. Nevertheless, they were satisfied about the fact that it is not as crowded as other ski area such as Buşteni or Predeal and were delighted about the snow cover thickness.

Strictly regarding the questions asked in order to apply a quality questionnaire for the ski conditions provided by the Râuşor Touristic Complex, we found that 72 % of the tourist practice skiing at a medium level and only 10 % of Râuşor skiers have a high level of perfection as advanced skiers; also, from all tourists interviewed there are 12 % of them who don't practice any winter sports at all (Figure 7).

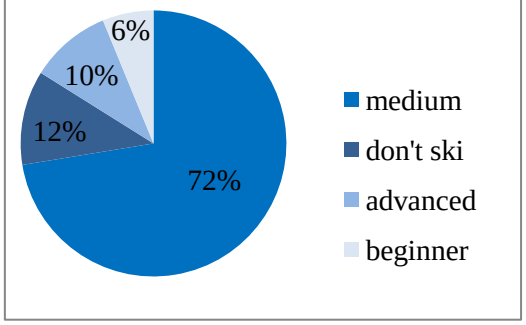

Figure 7. Level of ski performance

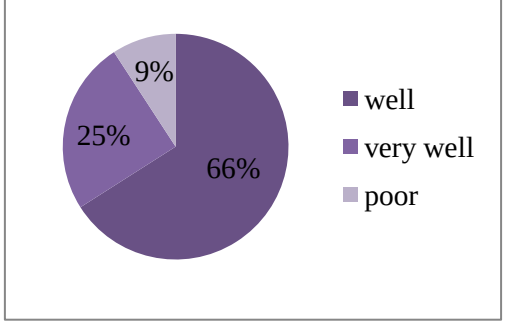

Figure 8. Ski slope maintenance

Another issue of the questionnaire was about the ski slope maintenance (Figure 8). During our period of research, we found that most of the skiers find that the ski slope at Râuşor is well maintained, 66 % from the interviewed and 25 % of them consider the slope is very well maintained and were very satisfied about the conditions for skiing in here, while only 9 % of the skiers considers that the slope is poorly maintained in order to sustain winter sports.

We also consider important to see and analyze the frequency which tourist choose Râuşor as winter destination for skiing and their motivation.

Therby, 34 % of the tourist chooses to come at Râuşor each week-end all along the winter season, while most of the tourists (57 %) come only sometimes according to their time availability (Figure 9). On the same time, most of the tourist chooses Râuşor strictly for its destination for practicing winter sports, 69 %, while 28 % are coming here for their children entertainment or as simply companions (Figure 10). Regarding tourists' complaints they refer mostly to the fact that the slope's length is quite short and cable

transportation does not covers it entirely. Nevertheless, 47 % of them would recommend Râuşor as winter sports destination, while 67, 3 % would come here again.

Another important aspect for the Râuşor Touristic Complex evaluation regards the age of tourists choosing to come here for skiing. During the research period we noticed that most of the tourists are teenagers and adults passionate by ski and snowboard-ing, 15 % children between 5 and 14 years old, while only 7 % of the tourist here are over 50 years old and retired.

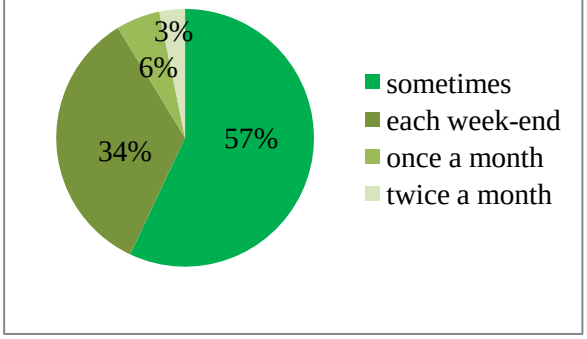

Figure 9. Frequency of practicing ski at CTR

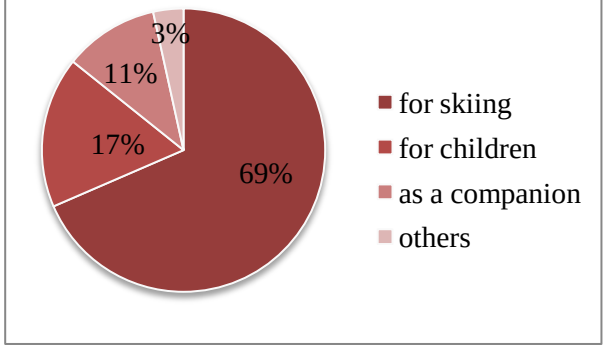

Figure 10. Motivation for choosing CTR as ski destination

Analyzing the touristic indicators and questionnaires, we could find some development directions and strategies in order to improve Râuşor's Touristic Complex services and touristic activities that can be practiced here. Therefore, we consider as a priority the following: developing the whole area for skiing, fitting all slopes with cable transportation, finishing the parking at the bottom of the slope and the acces road from Râul de Mori to Râuşor, introducing road transportation to Râuşor, providing complementary activities for non-skiing tourists, organizing sportive competitions and winter camps for students, building a touristic center and realizing a partnership between local authorities and community to ensure a better management of the Râuşor Touristic Complexe and touristic activities.

5. CONCLUSIONS

Through this paper we tried to realize an evaluation of Râuşor Touristic Complex in order to find out if it is suitable for becoming a local winter resorts by analyzing its natural conditions and calculated specific touristic indicators.

During our research we found that the defining note for the touristic activities at Râuşor is given by the natural conditions, especially by the slope orientation and slope inclination which provide excellent skiing conditions. On one hand, the northern position sustains a favorable snow cover during the whole winter period, and on the other hand, the slope inclination determines a medium difficulty for the ski slope, preferred by almost all skiers encountered during this study.

On the same time, for further development of Râuşor Touristic Complex is needed a touristic strategy which should cover all touristic fields, starting with finishing the improvement actions for the ski slope, cable transportation and complementary facilities and finishing with the promotion and management of the touristic complex.

Therefore, we can say that, thanks to the favorable natural conditions and the favorability of its territorial position, Râuşor Touristic Complex is competitive with other winter resorts and locations and it could become a winter resort for local interest, but in order to achieve this status it needs a significant improvement for tourist facilities and services and also for tourism promotion.

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