Lucrările Seminarului Geografic Dimitrie Cantemir
Vol. 41, October 2016, pp. 123-132
http://dx.doi.org/10.15551/lsgdc.v41i0.13

Categories of Risks and Ways of Adapting within the Tourism Resorts in the Harghita Mountains

Peteley Attila[1], Crişan Hunor-Flaviu[1], Horvath Alpar[1], Boloni Laszlo[1]

[1] Faculty of Geography, Babeş-Bolyai University of Cluj-Napoca, Romania

To cite this article: Peteley, A., Crișan, H.-F., Horvath, A., Boloni, L. (2016). Categories of Risks and Ways of Adapting within the Tourism Resorts in the Harghita Mountains. *Lucrările Seminarului Geografic Dimitrie Cantemir*, Vol. 41, pp. 123-132. DOI: 10.15551/lsgdc.v41i0.13

To link to this article: http://dx.doi.org/10.15551/lsgdc.v41i0.13

ISSN: 1222-989X www.seminarcantemir.uaic.ro

CATEGORIES OF RISKS AND WAYS OF ADAPTING WITHIN THE TOURISM RESORTS IN THE HARGHITA MOUNTAINS

Peteley Attila [1] Crişan Hunor-Flaviu [2] Horvath Alpar[3] Boloni Laszlo[4]

Abstract. The Harghita Mountains are located in the south-western part of Harghita County. The tourism resorts in this volcanic mountain range are Harghita-Bai Resort and Baile Homorod Resort. The two resorts are very different not just by location but in their purpose as well. In the following paper we would like to investigate some of the geographic risks and their impacts on the resorts and the ways of adapting of these resorts to these risks. To evaluate the geographic risks we tend to take into consideration the possible natural risk factors, the social risks, the technogene risks and the ecological risks. The resorts present ways of adapting to these risk factors, and we try to evaluate them by their efficiency. We used direct observation, field investigation and interviews in the research process. The obtained results are very interesting and could help the local authorities to become more self-aware and improve their local management.

Keywords: geographic risks, adaptability, vulnerability, impact, resilience

Introduction

This article aims to study the types of geographic risks that have an impact on the activity of the resorts in the Harghita Mountains and ways of adapting to these factors. The Harghita Mountain is a densely visited mountain range, attracting thousands of tourists for recreational activities. With this study we would like to point out a couple of risk factors to be considered by the local authorities to eventually improve the local management and contribute to the development of a more sustainable tourism in the area.

Analyzing the categories of risk factors representative to the resorts in Harghita Mountains

The term has a French origin: *risqué*, according to Octavia Bogdan (1999), who explains that the risk is the possibility to end up in a dangerous situation, to experience a trauma or life threatening event, with losses or victims. There is no risk without a phenomenon, that causes losses or has casualties and a society or system which to suffer all these. Thus the risks is unpredictable concerning the time or the intensity, when it is going to happen, towards which humanity has a passive attitude. According to genesis the risk has four

[1] Babeş-Bolyai University Cluj-Napoca, Faculty of Geography Univ.Ext. Gheorgheni, peteley_attila(@yahoo.com
[2] Babeş-Bolyai University Cluj-Napoca, Faculty of Geography, hunorcrisan@yahoo.com
[3] Babeş-Bolyai University Cluj-Napoca, Faculty of Geography Univ.Ext. Gheorgheni, horvath_alpar@yahoo.com
[4] Babeş-Bolyai University Cluj-Napoca, Faculty of Geography Univ.Ext. Gheorgheni, bolonilaci@gmail.com

categories: of natural origin, anthropic, technogene and ecologic (Goţiu Dana, Surdeanu V, 2007).

a) *natural risks* can be:

- **geological:** for example earthquakes, volcanic activity, tsunamis;;
- **climatic:** typhoons, hurricanes, heat or cold waves, droughts, extreme temperatures, sudden temperature changes, torrential downpours, blizzards, hailstorms etc.
- **hydrological,** according to origin there are differentiated into *(Sorocovschi, 2003):*
  - *extreme hydrological phenomenon* (floods, hydrological droughts etc.);
  - *thermodynamic processes and phenomena* (waves, tides, ocean level oscillations etc.)
  - *stationary hydrological processes or phenomena* (excess of humidity, landslides due to torrential downpours etc.);
  - *processes and phenomena connected to hydrologic interferences* (mixing of seawaters and sweet waters in densely populated areas).
- **geomorphological:** gravitational land processes.

b) Anthropic risks are included into categories defines as (Benedek, Schultz, 2003):

- **Social risks:** poverty, unemployment, urbanizing, way of life;
- **Medical risks:** contagious diseases, viruses, chronical illnesses (malaria, yellow fever);
- **Demographical risks:** immigration, aging population, population growth, urbanizing;
- **Political risks:** disputes for positions, territorial and functional disputes

c) For the ***technogene risks*** there were given different causes. These are included into three categories: Cultural deficiencies

- Organizational deficiencies
- Management deficiencies

The lack of a well-coordinated crisis management – can lead to a small degree of resilience.

d) Ecological risks are influences by natural and anthropic factors. The diversity of species or even their extinction within an area is the issue to take into consideration. Examples can be: desertification, deforestation, forest wildfires, mining activities, etc (Goţiu Dana, Surdeanu V, 2007, pp.100).

Evaluation of the impact of different risk factors representative for each resort in Harghita County. We differentiate between exposure to low risk factors, moderate unilateral risks, moderate multifunctional risks, multilevel excessive risks, unique differentiated risk and associative differentiated risks. In the following we will investigate each type of risk groups that affect the resorts in the studies areas.

Harghita Băi

It is located at the highest altitude at 1250m above sea level, on the southern slope of Harghita Ciceului Peak (1761), in the middle of the Harghita volcanic mountain range, at the end of DJ138A 7 km from DN13A. Being so remote and well sheltered, and since the caoline extractions were stopped in 2003 is the quietest and cleanest resort of the county. It is well known due to the many ski slopes and amenities for winter sports.

Considering the **natural risks** which produce discomfort and to which the settlement presents a certain degree of vulnerability are the extreme meteorological phenomena. Here we can talk about torrential downpours, massive snowstorms, strong winds, blizzards, fog, early frost, black ice. Landslides are scarce due to the geological structure of the volcanic mountain, and are the results of caving ins, because under the resort are the several shafts and galleries of the caoline mine. Some processes can occur on the tailings deposited in the mining period. All these will not alter the air quality or the quietness of the resort.

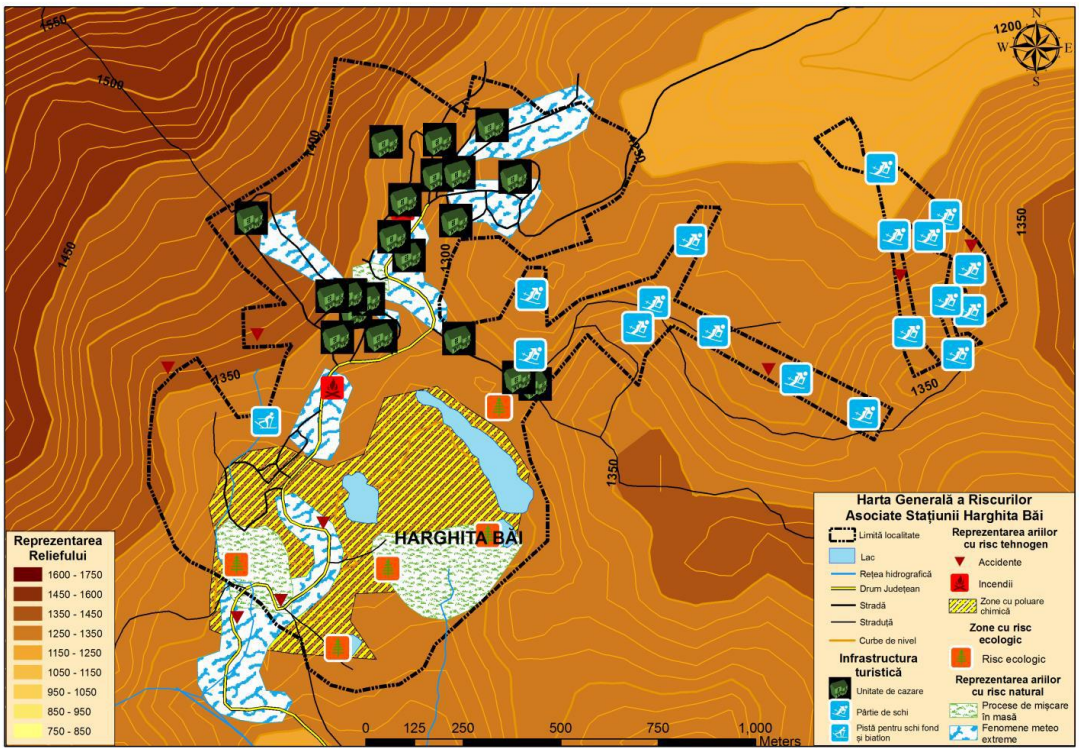

Figure 1. Representation of all risk factors that affect Harghita Băi resort (source: author)

The **social risks** are low, most of the population employed by the mining company has left, the total population now is 123 permanent residents who live in the first 3 block of flats near the mining site. All the rest are temporary accommodation types. Most of the tourists visit the resort in the winter or in the summer.

The **technogene risks** are the only ones that represent a certain degree of vulnerability, and are mostly linked to accidents and injuries during leisure or sporting events, in about 85% occurring in the winter season. Road accidents are rare and are due to meteorological conditions, there were very few fires and acts of vandalism and thefts, due to being so remote. The mining site represent a high risk of accidents, because the security of the place is not that strict.

The **ecological risks** are reduced. The Balu Adventure Park, located next to the Csipike ski run on the tree trunks is the inly one that could have a certain degree of risk to the environment.
All the risks tht are representative for the resort can be seen in figure 1.

Băile Homorod

One of the most well known resorts of the county for its mineral water springs is located along the DN13A between Odorheiu Secuiesc and Miercurea Ciuc on the southwestern slopes of the volcanic plateau of the Harghita Mountains. This resort has a medium degree of vulnerability to risk factors.

There are just a few **natural risk factors** that present a certain degree of risk, and among these the most significant risk factor is the torrential downpours which can cause flashfloods, 2-3 times a year with considerable damage to the tourism infrastructure mainly around the Lobogo Pension. The other risk factors with less damage are the hale storms which affect the potatoes, corn and wheat fields, the forming of black ice combined with early frost, wild animal attacks or strong winds that can knock down trees. Here the wild animals mainly bears, deer, wild boars visit the croplands, are the bears the beehives. Their impact on the local economy is tolerable.

Considering the **social risks**, these are very low, with no significant fluctuation considering the demography of the resort. There was a risk for poverty, and aging of the population after 1990, due to the degradation of the tourism infrastructure, but since 2010 there is an improvement. Several housing units have been built, and one of the mineral water pools has been modernized, along with the springs near the DN13A. Higher number of visitors mean more job-opportunities and improved living standards.

The **technogene risks** are the ones that confer a medium level of risk to the resort. With an excessive multilateral level of combined risk factors the occurrence of serious road accidents is high. The configuration of the DN13A between Băile Homorod and Vlăhița, one portion just in the eastern part of the resort, near the ski run and the other less then one km away caused over 13 deaths since 2006. Excessive speeds due to straight lines and sudden turns which high angles lead to several road accidents in all seasons, many casualties and several lost lives. The roar and the meteorological conditions, not adapting to these represents a high risk factor here. In the resort, due to the high flow of the traffic, and the parking spaces can become overcrowded near the mineral water springs and Lobogo Restaurant, accidents can occur here as well. This portion is exposed to pollution as well (phonic and chemical). Fires haven't been reported recently.

The **ecological risks** are low, the biotic elements in the region are not affected by the anthropic activities, and territorial planning is well documented and takes into consideration the natural attraction factors of the region. All significant risks that affect the resort can be seen on figure 2.

Types and forms of adapting to the geographic risks

Adaptability represents the readiness, reaction and the power of resilience to come to a stable balanced state and to reduce to a bearable level the sustained damages in case of a risk. Adaptability depends on many factors: the memory of past events, the acquired experience, the power to regenerate (which depends on the resources at hand, revenues, the level of knowledge, the promptness of the local population, the level of insurances, the legislation and the cooperation level between government offices and local branches).

Adaptability we can discuss on three levels: individual – when all measures are taken individually, according to the budget of the household; collective – when two ore more neighbors join in to create a common joint effort to reduce the effects of possible risks; managed – when organizations like the S.V.S.U. (The Volunteer Service for Emergency Situations) or other organizations manage, educate, take measures and guide people in case of risks.

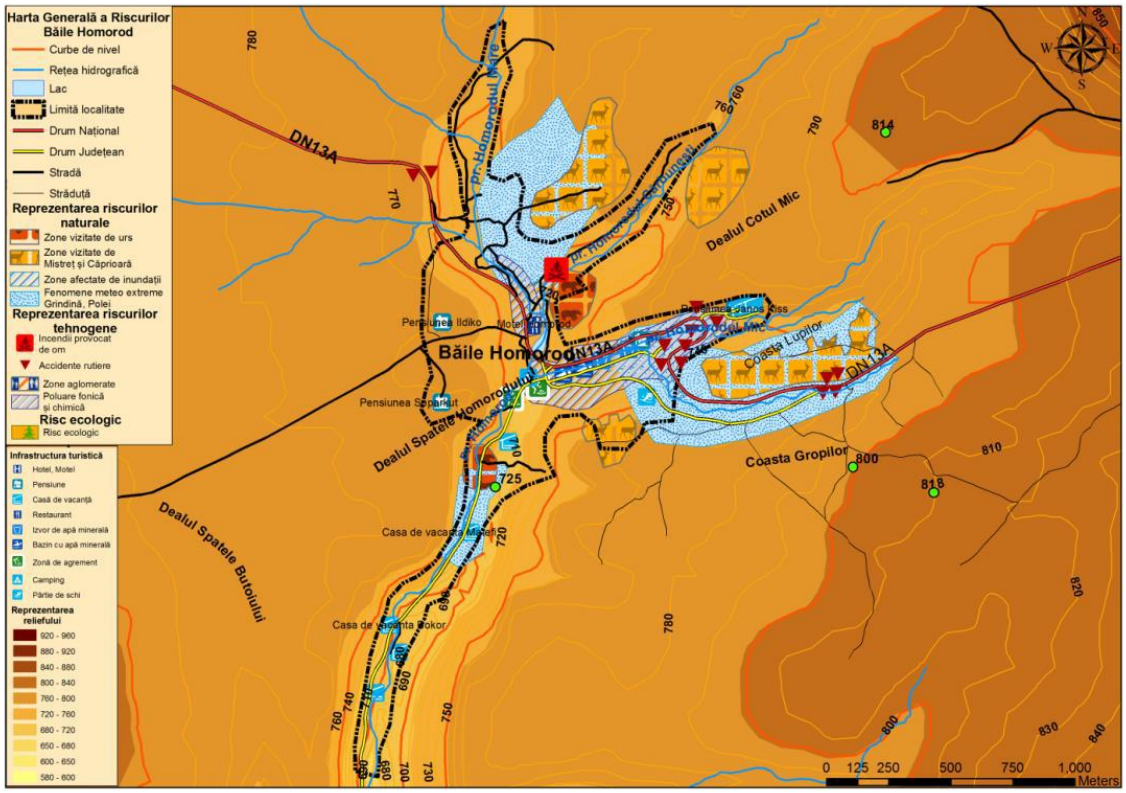

Figure 2. Representation of all risk factors that affect Băile Homorod resort (source: author).

The first form of adapting is the household and the way all its components are arranged around the house and yard. We can identify two types of households: the mono-block household, and the detached household. The mono-block is the one where all components are closely built together for better protection and easy reach, all being under one big roof. The detached one has all its components separate, well placed around the yard, behind which there is the garden.

Harghita Băi

This is the remotest and one of the quietest resorts in the county, spectacular in all seasons. One of the most evident forms of adapting was the finishing of the drinking water supply network and the waist water network in 2013. The major roads are being modernized; this resulting is easier accessibility and higher tourism flow. The accommodation units are modernized and thermally insulated because here the winters and long and cold. Another form of adaptability was applied on the mine dump slopes, to prevent landslides, wash offs and

erosion. As a form of adaptation, the lakes that got formed on these mine dumps are now used for touristic purposes (figure 3 d and e).

The only major risk factor in case of this resort is the risk accidents, and these happen rarely on the roads. These happen in about 85% in the winter, on the ski runs or trails. To reduce the number of injuries or better treatment in case someone gets hurt, the permanent presence of a mountain rescue team was stationed here.

These individuals are highly trained and are very efficient in their field of expertise. As an intuitive form of adaptability we can mention again the water supply system, with several hydrants to reduce the damage of fires. As a technogene form of adaptability to injuries on ski slopes, nets are installed yearly along the ski runs, and in the arriving areas of the transportation stations. To the risk of depopulation, the resort tried to answer by operating the resorts and its facilities in all seasons, although the winter seasons prove to be the most crowded ones here. The newly built pensions and guesthouses are well equipped and modernized and are well adapted to tourist's demands (see figure 3 f).

Fig 3 a. Modernizing the infrastructure . b. consolidating slopes with concrete walls c. Simple fence and yard management.

d. Managing mine dump slopes against erosion e. Lake formed on a mine dump used as attraction. f. Modernized and well isolated new pension.
(source: author). (f. http://www.bellavita.marien.ro/hargita/main.php?lang=hu)

Băile Homorod

This resort is exposed to certain risks that include it in the category medium considering its vulnerability. Among the most impressive natural risk factors we need to mention the torrential rainfalls, which produce flashfloods. To adapt to this type of threat the Homorodul Mic brook bed was consolidated with rock walls, and was raised and the small brook that runs along the ski slope was managed as well, but not enough. This is the one that affects the areas at the base of the ski run, by bringing deposits or washing the pavement away (see figures 4 a, b and c). Against hailstorms the resort present a passive form of adapting even indifferent form of adapting, by neglecting the damages resulted on the crop fields. There are several species of animals that invade the crop fields and do certain amount of damage, the wild boars, dears and bears. The last one comes to feast on honey as well. Several beekeepers put up electric fences or provide enhanced security around the hives to protect

them (see figure 4 f). Others use complex fences and improved yard management. The most significant risk factor although is the risk of road accidents. Due to the high traffic on DN13A, the configuration of the road represents a major risk. Between the resort and Vlăhița there were several road accidents with over 13 victims since 2006. This includes this section of the road into the extremely dangerous category. The nature of the road with long stretches of straight lines and sharp turns can be confusing, and this is the reason why most of the drivers fail to adapt their speed of traveling. There are warning signs, but they are not enough. On the other hand in high season, when there are several vehicles stopped on both sides of the road around the two mineral water springs and the Lobogo Restaurant and Pension can endanger those who want to cross the road. Passive ways of adapting to winter conditions are carried out by wooden made accommodation units with thermal isolation, presented at international standards. All efforts for forms of adapting can be seen in fires 4 a,b,c,d,e,f.

Fig 4.Adaptation to torrential downpours. b.Water course management on Homorodul Mic c. Brook management along the ski run Lobogo

d. Simple fence and yard management (Surse: autorul) e. Modernised pension f. Electric fence just outside the resort. (picture e. http://www.szekelyfoldiinfo.ro/Menu/Szallashelyek/homorodfurdo-szallas-soparkut_panzio-homorodfurdo-hotelek-villak-panziok.html ; picture f: http://www.panoramio.com/photo/89883451)

Conclusions

In the medium category of risks we included Băile Homorod and present a certain level of vulnerability to specific risks, which individually are not that high but their overlapping over certain areas raise the vulnerability of the overlapped area. In case of Băile Homorod, the most representative natural risks are the torrential downpours which produce flashfloods, halestroms, tree knockdowns, early frost and animal attacks (bear, deer, wild boar). To these we can add the road accidents and the pollution due to the intense traffic on DN13A. All these overlapping the main route make us include the resort into the medium category.

The forms of adaptability are progressive and deductive, the Homorodul Mic brook's banks have been reinforced with stonewalls, but the problem area of the floods hasn't been solved. But the crowded areas and the speed regulations are not solved jet, and the two portions with high accident 30 risks are not speed regulated.

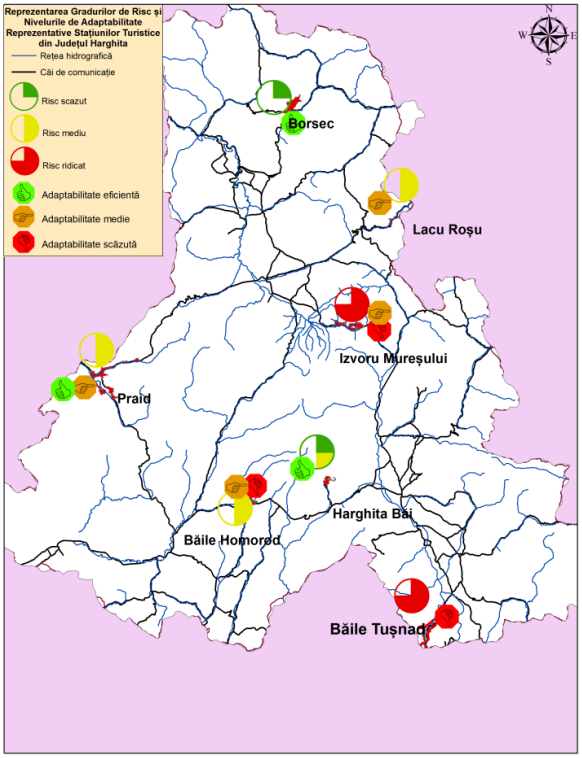

Fig 15. Representation of the levels of risks and the levels of adapting of the resorts in Harghita County

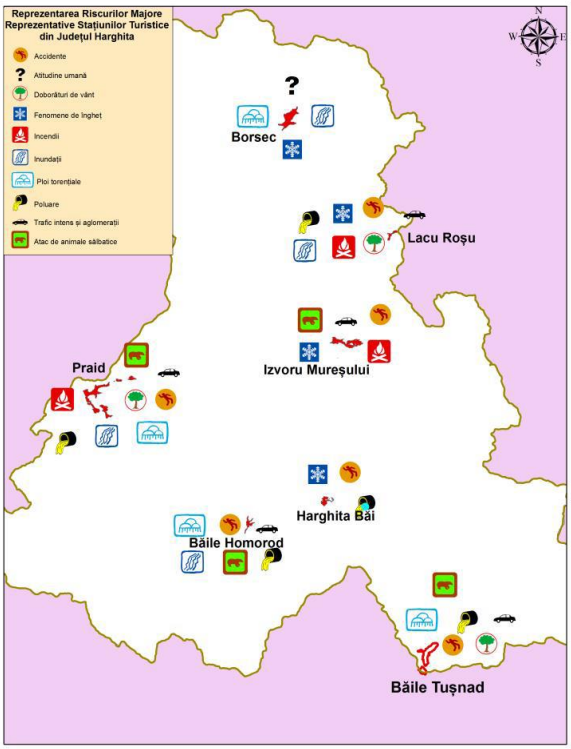

Fig 16. Representation of the major risc factors within the resorts of Harghita county

The problem of the accidents is not solved and obliges the authorities to take measures, even passive methods to reduce the risks of accidents to occur.

Haghita Băi resort being so remote shows only small to medium exposure to risks. Here the most significant natural risks are the torrential rainfalls and blizzards, early frost and fog, and sudden changes in the weather. Among the technogene risks the most significant one is represented by the accidents, mainly in the winter season. The means of adapting to these risks by the local administration are flexible, the Administration of the National Roads and the full time presence of the Salvamont Harghita reduce somewhat the degree of vulnerability of the visitors through prevention, informing and intervention.

The level of risks and the most representative risk factors can be seen on figures 5 and 6.

In conclusion the adaptability to risk factors of the resorts in Harghita County is average, and is majorly influenced by the local budget, by the incomes of the population and tourism infrastructure owners, by the living standards of the resident population and the level of the infrastructure. In case of individual ways or collective ways of adapting, everything comes down to the incomes and level of collaboration of the families exposed to the same risks within an area. On the managed level, all depends by the financial capacity of the local administration, the number of people employed in the S.V.S.U. and the mountain rescue teams. In many areas, speed regulations, road works and more warning signs would reduce significantly the possibility of accidents, the level of pollution and stress over an area. In all, a better informing, education, readiness, professionalism, and well-coordinated management prove to be effective on many levels of adapting, and the vulnerability of the population is reduced greatly by their level of absorbing the changes that can occur within the system at any given time.

References

1. Benedek J. (2002), *Riscurile umane,* în ”Riscuri şi catastrofe” (volumul I.), Edit. Casa Cărţii de Ştiinţă, Cluj-Napoca, pp. 43-54
2. Goţiu Dana, Surdeanu V., (2007), *Noţiuni fundamentale în studiul hazardelor naturale*, Edit Presa Universitară Clujeană, Cluj-Napoca.
3. Peteley A. (2014), *Adaptabilitatea la riscul geografic a statiunilor turistice din Judeţul Harghita,* Teza de doctorat, manuscris, Cluj-Napoca.
4. Sorocovschi, V., (2003), *Complexitatea teritorială a riscurilor și catastrofelor*, în Sorocovschi, V., ed. Riscuri și catastrofe, Volum II, Editura Casa Cărții de Știință, Cluj-Napoca, (pp. 39-48).
5. Surd, V., Bold, I., Zotic, V., Chira, Carmen (2005), *Amenajarea teritoriului și infrastructuri tehnice*, Editura Presa Universitară Clujană, Cluj-Napoca