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Journal of Tourism Challenges and Trends (JTCT) aims at providing both professionals and academics with an overview of theories and practices in the tourism industry, while focusing on challenges and trends currently manifest throughout the world. Equal interest and attention will be given to both established tourism destinations and to areas only now making a name for themselves on the market.

JTCT is a bi-annual publication of the Romanian-American Association of Project Managers for Education and Research. The Journal accepts for peer revision both papers presented at international events which have not been yet submitted for publishing, and original article proposals submitted directly to the editorial board.

Subject coverage
Topics suitable for JTCT cover a wide range of issues, among which but not exhaustively, the following:

- In the field of tourism studies: ecotourism; rural tourism and agro-tourism, cultural tourism, event and sports tourism, mountain tourism, etc.
- In related or cross-disciplinary areas: sustainable development and globalization; human resource management and training; PR, advertising and branding in tourism; innovation and technological advances in the hospitality industry, etc.
- Case studies and best practices, specific national policies and legislation, analysis of regional and resort development.

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Mountain tourism is a blessing, but increasingly also a challenge which could turn into a threat for the fragile mountaneous global system. People flock to the mountains either for sports, health and esthetic reasons or are simply driven by the desire to experience solitude or the simple lifestyle. Mountain tourism is constantly on the rise and presumably among the fastest growing economic sectors. Some conservative estimates put the number of mountain tourists well in excess of 50 million yearly. Moreover, the number of people engaged in winter sports is approximately 65-70 million yearly. On a global scale, they generate between 15-20% of tourism revenues, which is amounts toroughly 70-90 billion USD.

Given that mountains comprise nearly a quarter of all the land area on Earth and are home to at least 12% of the world’s human population, the pressure upon the mountain ecosystem is tremendous. Additionally, another 14% are living in the close proximity of mountains and are dependent on them for making their living. From the eco-end, mountains host a wide variety of habitats, many of which have extremely high levels of unique and rich biodiversity. Furthermore, the mountains-spread on all continents, are the source of 80% of the global fresh water.

Infrastructure construction, pollution – phonic, of the atmosphere and soil seriously endanger an already fragile eco-system. Moreover, un-checked tourism development could pose a threat to the delicate ethnic, linguistic fabric of the relatively little mountain communities.

In the Everest region of Nepal around 40-45 thousand trekkers arrive each year. After loosing the hand carpet industry as a staple source of export income, the mountain tourist export service sector is becoming the main source of income for a good part of the local Nepalese population. On the other hand, more trekkers means higher pressure on the tourist trails: along every km there are more than 17 tons of garbage. The recovery rate of the trails – if any, is much slower.

The danger is compounded by the fact that mountain tourism is generally the least regulated form of tourism and probably, the least planned, which in turn will lead to a constant and, in a the foreseeable future irreversible degradation of mountains and their associated resources. The statistical coverage of mountain tourism is far from being at least reasonable adequate. The information is still random, fragmented and late, inducing at least a reactive approach. That is why the signals of the academic world, the attempts of local
communities to structure and organize mountain tourism in their regions, the concerns of international organizations are on the rise. One could only hope that the required resources – financial, educational, human-will be identified and put into practice.

Mihaela Dinu
Editor-in-chief
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Abstract. Alpine regions offer tourists unique experiences and opportunities to enjoy the fresh air, water, and diverse landscapes of the mountain terrains. With an increasing competitive tourism environment, even the most remote destinations are faced with the challenge of market differentiation. Mountain regions that relied on snow sports and event will have to consider alternatives due to shorter winter recreational seasons. Many mountain communities must examine alternative forms of economic activities in order to extend their tourism season. Transitioning a region beyond the traditional mainstay of tourism activities also requires a unique and concentrated approach that involves the support of the local residents.

One location that can differentiate itself from a winter Alpine tourism location is Sappada, Italy. Opportunities exist for Sappada, a remote mountain community located in the Dolomites of Italy, to promote a sustainable tourism management system along with practical strategies that can help to highlight the unique natural, cultural, and historical attributes of this mountain region. This paper examines a number of case studies that demonstrate the success of the Bottom-up Approach for sustainable tourism development and how it can be applied in practice to Sappada and other remote areas.

Key words: Sustainable tourism, remote regions, mountain tourism, niche marketing, Dolomites, Brazil, Italian Riviera, Montserrat

Introduction
With the tourism industry becoming increasingly complex with new and competing destinations, travelers have more choices than ever before. Coupled with rapidly changing technologies and access to readily available information, the tourists of today have also become more demanding in meeting their increasing expectations. These new and sophisticated tourists are more inclined to seek new experiences beyond what the mass tourism market offers such as the gated, all-inclusive resort that is removed from community interests (Kim, Borges and Chon, 2006). As tourists gain experience traveling, their confidence grows and they seek out more unusual activities that move them beyond what they have experienced through prior travels. This results in a tourist that seeks experiences in new cultural experiences as well as unspoiled destinations (Butler and Hinch, 1996; Kirschenblatt-Gimblett, 1998).
While the experienced tourist of today seeks new places to visit, many also want to enrich their travels by participating in various cultural activities first hand. Visiting a new and exciting destination in a remote area of the globe provides a learning experience for the tourist who can then share with their friends back home the uniqueness of the experience they have seen and lived. Learning exotic rituals and ways of life through cultural immersion, or participation in traditional activities from the creative minds of an indigenous population are a few ways in which the tourist can benefit (Inskeep, 1991; Craik, 1997). While learning various ways of life and becoming more understanding of cultural differences, the tourist can also develop an enriched vision of one’s self and the world (Pearce, Moscardo and Ross, 1996; Fredline and Faulkner, 2000a).

The need for niche tourism marketing is a result of higher tourist expectations and increasing competition. With tourists seeking to experiment in unique cultural experiences through contact with the indigenous population, benefits for both parties can exist (McDonnell, Allen and O’Toole, 1999; Fredline and Faulkner, 2000b). Opportunities such as the diversification of the economic base, income generation, an increased standard of living, investment in conservation of the environment, and projects that help to preserve the local culture and traditions can exist (Getz, 1987; Dwyer, Mellor, Mistilis and Mules, 2000). However, if not properly managed, undesirable consequences may also develop that can lead to a diminution and dilution of the local culture (Davis, Allen and Consenza, 1988; Derrett, 2000).

The community of Sappada is one of the most authentic alpine mountain communities located in the Dolomites of Italy. With history dating back nearly 800 years the village is rich with traditions. This unique ethnic group, has an old local language (the Plodar, a medieval German dialect), carnival rituals (Vosenöcht), typical wood house architecture, wooden mask artcrafts, and a strong connection with nature (Allen, O’Toole, McDonnell and Harris, 2002). Since 1920 Sappada has been known as one of the first Alpine tourist destinations, and distinguished by a rich history of Olympic athletes that are residents of the region (Sappada.info, 2008).

However, increasingly warmer temperatures in the mountain region have produced a shortening of the lucrative winter ski season, and the community of Sappada has realized the need to diversify and broaden the reasons for tourists to visit their lovely community. Involvement of the local community in direct and responsible tourism development with respect to nature, history, and local traditions was the goal (Sherman and Dixon, 1991; Tisdell, 2006). The Bottom-up Approach was introduced and attracted strong participation
The Municipality of Sappada, along with Italian government authorities, and the residents of Sappada, founded the Associazione Turistica della Comunità di Sappada, as their first marketing organization. The Sappada “GO Project” was another community initiated organization that was broadly supported by the local community and directly involved the younger generation with practical activities for sustainable tourism development. Participation of the younger generation promoted a change in the local community tourism behavior, as well as success in implementing changing tourism activities to address alternative tourism activity for the area. The Sappada “GO Project” was created to incorporate best practices and to stimulate positive initiatives for a number of historical and cultural tourism activities (Crompton & McKay 1994). The results identified and developed a number of unique events that were offered throughout the low, shoulder tourist season (Long and Perdue, 1990; Bowdin, McDonnell, Allen, and O'Toole, 2001; Arcodia and Whitford, 2002).

Over and above the potential economic benefits from additional visitation, there are many reasons why communities organize events. These reasons include: enhancing or preserving local culture and history and providing local recreation and leisure opportunities. Festivals also offer the potential to ‘showcase’ a region and to foster local organizational development, leadership and networking, all of which are critical underpinnings of community based tourism development. Festivals provide a substantial vehicle to share with visitors what is distinctive about communities. Getz (1997) and McDonnell, Allen and O’Toole (1999) suggest that events serve to assist in the development or maintenance of community or regional identity. Derrett (2000) argues events and festivals play a significant role in reflecting lifestyle choices made by residents. Indeed, Festivals are at the interface of three dynamic features of regional communities: the ‘community’ representing the ‘sense of place’ of residents; the ‘exchange sector of ‘tourism’ representing the visitors; and the elements of image and identity which reflect the message received in the marketplace (Derrett, 2000).

The Sappada “GO Project” also introduced new technology and an innovative website to promote the Alpine area. With the help of the younger generation, who had experience with the latest technology, implemented several initiatives that helped to market and expose the attributes of the region. The use of new technology not only provided an educational activity for the youth of the community but also provided the younger generation an opportunity to directly
participate in the success of their economic prosperity (Malhotra, 2001) Having youth participation was of particular importance since they helped to advocate the alternative tourism possibilities for the region and also to develop entrepreneurial activities that would provide them with incentives to maintain their interest in advancing the future of their community.

As a result of those projects or initiatives, a number of notable events now take place in Sappada to extend the tourist season. One example is the Mask Carnival which is an event where carved wooden masks that are common artcraft among local families are worn at the traditional Mask Carnival. The carnival is also a “cathartic practice” that allows people to once a year express the “other side” of human psyche. Another successful event is the Sappamukki which is a culinary themed festival that focuses on foods made from local dairy products. As a result the autumn tourism season is now 10 days longer thanks to the Sappamukki Culinary Week Festival which attracts a new type of tourist for the area known as gastronomy tourists. Gastronomy tourism is a type of tourism that integrates eating unique foods from a specific destination (Kivela and Crotts, 2006). Finally, the Full Mountain Hospitality Conference is another event initiated by the “GO Project” that is an international gathering of tourism experts who are interested in Alpine sustainability tourism. This nature based educational experiment offers the community a prolonged tourist season.

**Cultural Tourism Management**

When the local population of a tourist destination is actively involved in the decision making process and planning for the development of tourism activities a greater sense of ownership exists over their future (Agrusa, 2006). This Bottom-up Approach to tourism development empowers local citizens to become engaged in tourism activities and encourages decision making opportunities in deciding what, where, when, how, and to whom their culture will be exposed. When the needs of the community portraying its own cultural heritage come first, cultural tourism management is more sustainable than when it is imposed from above or by outsiders (Kanahele, 1991). More than simply providing opportunities to be heard but allowing the community to be active participants rather than mere spectators of tourism development is central to the Bottom-up Approach. Placing the needs of the host population first is an example of responsible tourism and is essential for marketing a cultural and sustainable tourist destination (Seaton and Bennett, 1996).

By establishing the individual and community needs first, the individuals in the community who are closest to interacting with the tourist are in control, or
at the very least, have a voice or say in how tourism is developed, spotlighting the lifestyle of everyday people (Agrusa, 2002). This cultural and sustainable tourism approach promotes the authentic traditions of a culture and encourages tourists to "get off the road". In the process, cultural and sustainable tourism also encourages and empowers local residents to be more engaged with tourists because they were involved from the beginning in deciding how their culture will be represented to others and can own the successes because they have met the challenges along the way as well (Davis, Allen and Cosenza, 1988; Fredline and Faulkner, 2000b).

With the increasing demand for cultural and sustainable tourism, politicians and other decision makers are becoming more aware and acknowledge that cultural tourism as an economic resource deserves management and particularly in light of issues such as environmental quality and cultural opportunities (Madrigal, 1995). In addition, proponents point out that using the Bottom-up Approach to manage and develop cultural and sustainable tourism diversifies the economic base of a region and provides practical incentives to preserve a region and its people's special characteristics and artifacts (Agrusa, 2002).

Tourism development in the absence of the Bottom-up Approach, can reduce a local culture to crass stereotypes, two-dimensional cutouts poorly understood by visitors and producing self-loathing among the local population (Agrusa, Coats and Donlon, 2003). When done correctly tourism can create interest in the past, inform the tourist and lead to the development of the mindful traveler that often leads to an increased appreciation of the many cultural and historic resources of the area (Moscardo, 1999). Unbridled or poorly managed tourism development, in other words, may contribute to turning a unique characteristic into something humdrum and trivial. There can be little doubt, Moscardo (1999) argues, that a sincere, good faith desire to learn about and move among the world's inventory of historic areas, sites, and related settings motivates many tourist visits. Nurturing a Bottom-up Approach to tourism development can allow a tourist to experience and leave the region with a deeper appreciation of the community that has been represented and with many enjoyable memories.

The Bottom-up Approach in Practice
Case of Prainha do Canto Verde
Prainha do Canto Verde is a fishing village in the northeast of Brazil. With seemingly endless sandy beaches, dune-covered landscape, and pristine lagoons, Prainha do Canto Verde is one of those places one could call
“paradise.” This village is the home for 200 families, totalling 1,200 inhabitants. Prainha is located 125 kilometres southeast of Fortaleza, capital city of the Brazilian federal State of Ceara (Studienkreis, 2003).

The residents of this paradise-like village make their living and subsistence from a craft-type fishing carried out in their traditional rafts named “Jangadas”. Fishing is the main source of income, and a large portion of the food that the villagers consume comes from the ocean. The inland population lives out of commercializing cashew products such as nuts and juices, palm wax, and subsistence farming.

Prainha’s inhabitants, after their lengthy struggle to preserve their lands, knew that tourist development would eventually arrive and expose the village’s environment and culture to tourists. Eventually, a real estate development company would propose the construction of hotels or summer houses. Furthermore, low-end tourists were coming in large numbers to picnic on the beach, leaving garbage behind and putting stress on the local people (SOS Zona Costeira, 2003). Rather than trying to prevent all change, the people of Prainha do Canto Verde took a proactive approach and openly discussed the possibility of development through tourism with a Bottom-up Approach. They posed simple but deep questions: what kind of tourism do we want in our village? What do we not want in our village? If tourists are going to come, what kind of outcome do we want from this tourism?

These questions were discussed in village assemblies and small working groups. Through this inquiry method an in-depth understanding of how local residents in Prainha felt about tourism and how residents in other villages, where tourism was already developed, perceived the effects that tourism had on their community. The residents of Prainha found that in the surrounding villages there was an increase in income for some villagers and the creation of a few jobs. However, it was also identified that most of the tourism businesses, such as restaurants and hotels, were run and operated by outsiders causing economic leakage and only a small percentage of the profits stayed within the villages. The rapid emergence of hotels and summer houses built by outsiders brought a considerable change in the architecture and the general look of the village with very few fisherman retaining titles to their lands (SOS Zona Costeira, 2003; Studienkreis, 2003).

Through dialogue sessions, the villagers’ concluded that tourism should be implemented but controlled and limited development. While creating opportunities for additional income and new jobs, tourism development should
follow a self-administered model managed by the local villagers. Thus the
villager’s could guarantee that the income and profit would stay in the village
to benefit the local economy, preserving their land and premises as well as
their social, cultural, and environmental assets.

Prainha’s dwellers had mixed feelings as they became acquainted with the
risks and opportunities involved in their everyday economic, social, and cultural
lives. In order to draw a blueprint for tourism development, the Tourism council
of Prainha do Canto Verde organized a three day Conference for Sustainable
Tourism with the participation of various interest groups within the village such
as fisherman, women, men, youth, teachers, and craft-workers. This is unusual
for Prainha because within most villages in the area of northern Brazil, only
the male elders make the decisions for the village whereas women and children
are not involved.

Since the Bottom-up Approach to tourism has been implemented, a positive
impact on the social, economic, cultural, and environmental aspects of the
village has resulted. With the creation of income generation opportunities,
entrepreneurial endeavors (restaurants, sleeping facilities, tourist attractions)
are owned and operated by locals along with the village cooperative, ensuring
that the profits remain in the village. Tour guides are local youth that have the
opportunity to add to their families’ income.

In order to serve seminars and conventions held at the village, service provider
teams were created. The teams are responsible for everything from the design
of the menu, to the purchase of raw materials, cooking, serving the food as
well as washing the dishes. There are also various teams, such as the “cake”
and “coffee” team, responsible for the coffee and cake served at coffee breaks
during meetings and seminars. Trail guides, producers of handicraft, and
restaurant and guest house owners, all consisted of different people, ensuring
that new income sources are created and opportunities are spread throughout
the community.

The decision to implement tourism, the type of tourists to be welcomed, and
the types of activities to be carried out were all decisions made by the
community as a whole through a democratic and inclusive decision-making
process based on equitable dialogue among members of the community.
With the creation of the various councils (i.e., Tourism Council, Education
Council), all stakeholders have a voice in the decision-making process, which
is the essence of the Bottom-up Approach to tourism development.
The Bottom-up Approach to cultural tourism was instrumental in solidifying the local culture of Prainha do Canto Verde through the preservation and strengthening of communitarian values. The villagers are proud of who they are and where they live. With the creation of new jobs and opportunities for locals and reinforcement of the local culture, the younger generations are less likely to leave the village to seek better living conditions in large metropolitan cities. The community values that were threatened in the past were restored. Youth at school learn and discuss the real meaning of their culture and the consequences of breaking the cultural values that bond them together (Butler and Hinch, 1996; Kirschenblatt-Gimblett, 1998). In a vast repertory of songs at the schools choir, the children's voices sing about their history, the animals, the ocean, cultural values, and preservation.

Prainha implemented an environmental awareness and conservation effort. The community as a whole is engaged in recycling garbage and implementing other measures to create an environmentally sustainable village. Prainha's fishermen are the leaders in the fight against predatory fishing and in favor of sustainability among the fishing villages in the east of the State of Ceara. By limiting the number of visitors to 45 at a time, the carrying capacity of the village is being preserved and minimizing any potential negative impacts from tourism. Available activities take place in a natural setting and considering the nature of the activities, cause very low impact to the ecosystem. The children's choir created the GPT – Grupo de Protetores das Tartarugas (Turtle Protection Group), an initiative to educate their families about the importance of preserving marine turtles and turtle eggs. The GPT also has dolphins and manatees in their care. The annual eco-regatta is a show of creativity where local children paint the sails of the Jangadas (small local fishing boats) with eco-friendly messages. The themes are part of environmental education campaigns including themes such as: “The bottom of the sea”, “The ocean, the child and the marine manatee” other themes that are in the eco-regatta are about medicinal plants, the history of the village, the history of the fisheries movement (Studienkreis, 2003).

Villagers recognize that tourism development is an on-going process requiring diligence and hard work in monitoring results and taking appropriate measures to fill in the gaps in the process. The results have been positive with a capital reserves fund that distributes a portion of the profit to the social and education fund. This fund is used to finance small projects or events such as the yearly party for the elderly people of the community, as well as establish donations to the legal defense fund or educational projects. In order to help preserve the culture of the village Prainha ensures that the main form of income is fishing with tourism as a secondary source.
Case of La Repubblica Del Pesto
Located in an area of Spotorno, Italy on the western coast of the Italian Riviera, La Repubblica Del Pesto, adopted the Bottom-up Approach to tourism development. Their tourism activities became oriented towards the development of sustainability and the promotion of cultural, historical and culinary values typical for the Ligurian tourist area. The tourist image of the Spotorno area has been as a sea and sand location, with tourists interested in the summer seasonal marine tourism.

The area of Spotorno, however, went to its roots to develop its culinary tourism or gastronomy tourism and specifically focusing on pesto sauce. Culinary tourism has become a key factor in differentiating the vacation experience, and thus one of the high growth areas of tourism. Pesto from this area is a pure, simple Italian basil sauce that has been exported all over the world. With one of the most important elements of the tourism experience being food, culinary tourism in Italy has gained increasing attention (Hall and Sharples, 2003). Recently, there has been a growing interest in culinary tourism or food tourism from researchers as well as from the tourism industry itself (Oh, Kim and Shin, 2004). A number of research studies have demonstrated that adapting culinary tourism to an area’s marketing strategy has diversified and added value to the area’s tourism products (Hall, Johnson and Mitchell, 2000; Hall, Mitchell and Sharples, 2003).

An official inauguration event: “pestata rituale collettiva (common pesto ritual)”, as a preparation ceremony for the typical pesto sauce was celebrated by the Spotorno community population and was considered the start up event for this new tourism initiative for the area. The cultivated objective of the event was the “sacrification” of a traditional value (the preparation of Pesto salsa). The result was an event that was adopted as a new reference element of the tourist destination and was chosen as the most important in the annual arc for the strong involvement of the local community. The start up of this event also provided the opportunity to create the Repubblica del Pesto Association with various other project activities that emerged, for example, a culinary festival by the local operators.

The outcomes of this project helped develop a new marketing image for the Spotorno region with the addition of culinary tourism. As a result, the British Broadcasting Channel (BBC) in the U.K. travelled to Spotorno and filmed the “common pesto ritual” that was broadcast on British television and later world-wide to validate the concept and brand of the Repubblica Del Pesto. The tourism benefits to the Spotorno area by emphasizing their local cuisine.
as well as having the town and culture filmed and shown to a world-wide audience on BBC television program has increased their destination's image and competitiveness.

**Mountainous area of Montserrat**
The mountainous and volcanic island of Montserrat, a British Overseas territory, is located in the Eastern Caribbean. Since 1995 the tiny island of less than 40 square miles has faced devastating volcanic activity that remains active today (British Geological Survey, 2008). Nearly destroying two-thirds of the island from pyroclastic volcanic flows, the remaining one-third of the island boasts tropical beaches, lush forests, and clean water to name a few. With inhabitants living on the remaining one-third of the island, this small population base has dwindled from 12,000 to a low of 3,500 in 1997 when many citizens relocated to neighboring islands in the Caribbean, United Kingdom, and United States (Cassell, 2006). Today, Montserrat has a population base of nearly 5,079 residents (Central Intelligence Agency, 2008). Challenged with high transportation costs, dependence on exports, and a limited resource base typical of many island economies, the island of Montserrat is developing their tourism industry. With a number of natural, cultural, and historical attractions opportunities exist to develop Montserrat as an alternative tourism destination.

In Montserrat, opportunities are being pursued to develop a niche market in the area of cultural and nature based alternative tourism. The island of Montserrat, in the West Indies, is a British overseas territory. With a dynamic cultural and historical background, the island is a tropical retreat that is popularly known as the “Emerald Island of the Caribbean” (Montserrat Tourist Board, 2008). The multitude of natural resources from black sand beaches, mountainous landscapes, lush forests, and an active volcano offer a tranquil yet exciting appeal for tourists (Pulsipher, 2001). Some examples include the use of such natural phenomena as the active Soufriére Hills Volcano with the development of an observatory to view an active volcano which is taking a negative attribute and using it as a positive tourism attraction.

The Soufriere Hills Volcano has been erupting with lava flowing since 1995 which is similar to the volcano on the Big Island of Hawaii which is the most visited attraction on that Pacific Island destination. According to the Hawaii state Department of Business Economic Development and Tourism (DBEDT), Hawaii’s Volcanoes National Park on the Big Island of Hawaii was the second most visited site on all of the Hawaiian Islands with 1,467,779 visitors in 2007, second only to the USS Arizona Memorial with 1.6 million visitors (Dingeman, 2009). Other tourism entities include the development of traditional festivals
such as the Montserrat Masquerades at Christmas or the recently developed Calabash Festival that features the best of Montserrat culture and other events that convey the tradition of Montserrat which can also attract former residents to return to the island for heritage tourism. A newly constructed multipurpose cultural and community center built on Montserrat with multi-media capability is a valuable asset that may provide a focal point for bringing together events with input from the local community. Furthermore, festivals and events identified by the local residents of Montserrat can help the community to realize their own potential and uniqueness of a culture that can then be communicated to other tourists.

While Montserrat faces numerous challenges, many opportunities also exist in regard to sustainable tourism development. Infrastructure elements such as a new airport, world-class Montserrat Cultural Center, and the Montserrat Volcano Observatory are assets that are already available. In other respects, the island is left unspoiled by a legacy of mass tourism facilities.

With only one-third of the tiny mountainous island of Montserrat being habitable for residents, opportunities still exist for tourism development as a sustainable solution for the island’s economic challenges. With a number of natural, historical, and cultural attractions still on the island, tourism activities may help to stimulate the economy and if managed effectively, help to retain the rich traditions of this eastern Caribbean island.

The Bottom-up Approach to tourism development in Montserrat has been a practical and community based solution for the island and supports the goal of the W.K. Kellogg Foundation to “help communities help themselves” (Barclay, Bishop and Hawes, 2005:3). Montserratians have already embraced aspects of the Bottom-up Approach as exemplified by the successful Calabash Festival, just completing its third year. With advances in technology and the internet providing new marketing opportunities the remoteness of a community can be connected and marketed on a global platform and can result in an asset for the island, mountainous regions, and other remote areas of the world.

**Discussion**

One of their first steps of the Bottom-up Approach is for the residents to define how they want their culture is to be portrayed while addressing how accommodations and other services will be provided. Agrusa, Coats and Donlon (2003), argue that the Bottom-up Approach to tourism development includes “spotlighting the everyday lives of everyday people.” While local
residents have the opportunity to realize that this harmony could be easily jeopardized depending on the type and number of incoming tourists, many once isolated villages and cultures will eventually be in contact with modern tourists who are more than willing to experiment with what unique cultures have to offer. With the implementation of the Bottom-up Approach to tourism development in which the priorities of the local community are first taken into consideration and villagers are in control of the development process, a sustainable economic alternative in tourism can emerge with less liability for the local community. Benefits can range from the creation of additional income, local economic development, reinforcement of the local culture, and empowerment of minorities to participate in environmental conservation.

Facilitating sustainable tourism involves community input and decision making. As examined in the previous cases of Prainha do Canto Verde, La Repubblica Del Pesto, and Montserrat a successful approach to tourism development lies in the hands of the local community itself. Promoting community participation in the decision making and designing processes to evaluate opportunities and challenges in tourism development will enable sustainable tourism in an area such as Sappada.

With community collaboration and problem-solving processes in place, tourism activities may include strategies that build upon the unique natural, historical, and cultural attributes of Sappada. Developing a unique cultural tourism destination is more sustainable when the community is actively involved in the decision making process using the Bottom-up Approach. When planning tourism facilities and activities using the Bottom-up Approach, the local community has a greater sense of ownership over their future and they can become more positively engaged with tourists and tourism activities. With the demand for cultural and sustainable tourism increasing, decision makers need to become attentive to issues such as the natural environmental quality and cultural opportunities, and seeing these issues as economic resources rather than impediments to development.

Future research should focus on identifying specific strategies and niche markets that can be successfully targeted and introduced to the area of Sappada. With a Bottom-up Approach as a blueprint for tourism development, sustainable tourism can be supported and more easily achieved. Involving all generations of the community in this approach also provides reciprocal learning opportunities to connect the experience of senior residents with the younger generations of the community to promote change in the tourism management system. Residents of Sappada can begin to ask themselves simple but deep
questions: what kind of tourism do we want in our region? What do we not want in our region? If tourists are going to come, what kind of outcome do we want from this tourism and what should the tourists take away from visiting our region? What resources and infrastructure elements are in place, what gaps exist, and how do we fill these gaps? The Bottom-up Approach is simple in many ways but also extremely powerful and provides long term solutions to tourism development.

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RELIGIOUS AND PILGRIMAGE TOURISM AS A SPECIAL SEGMENT OF MOUNTAIN TOURISM

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Abstract Mountain and hill sites have played a key role as pilgrimage and religious tourism destinations for thousands of years. Mountain areas with traditional sacred cultural and natural values can particularly benefit from the stimulation of religious tourism, in the forms of improved service supply, employment creation and revenue generation. First, the paper provides an overview of the relationship between religion and tourism, and the role of religious tourism and pilgrimages in the great world religions. In the second part, the authors assess the environmental factors as well as the various scenes and places of religious tourism developed in mountain areas, with special emphasis on meta-spaces and spatial metaphors.

Key words: mountain, sacred site, pilgrimage, religious tourism

Introduction

The characteristic feature of tourism – that we want to do something different, somehow different and somewhere different while getting out of our permanent life and work conditions – is especially true for religious and pilgrimage tourism in mountain destinations. This tourist product can meet various needs, its participants travel to different parts of the world, to the mountains and hills, because of very different motives. Religious tourism can create strong human relationships and significant human mobility around the world. Special scenes, geographical and cultural landscapes appear around religious tourists (Michalkó 2005). In order to successfully understand the complexity of mountain religious tourism and pilgrimage tourism, we have to become familiar with many elements of tourism as a science and its fields.

Tourists taking part in religious tourism can hardly be classified into a single type of tourism, as too many types of people with a variety of interests set off to participate in religious events, ceremonies, pilgrimages and processions. The geographical features of mountain religious tourism are analysed in our paper.

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The connections between religion and tourism on a global level

Religion plays an important and determining role in every society. The different religious beliefs and faiths came into being before written records and were parts of the earliest societies (Bowker 2004). The cave paintings, shamanism (some of it still living) and the ancient faiths and beliefs of the native population living on different continents refer to these ancient religions.

Religious tourism can be connected to almost all the lesser and greater religions. Journeys motivated by religious faith play a significant role in the great world religions, too. A significant majority of the world’s religious pilgrim scenes are connected to mountain ranges or hills. Pilgrims often regard the journey they take as a physical manifestation of an inner spiritual journey, with the path travelled being a framework for the travel within (Hall 2006).

The Bible does not make it obligatory for Christians to take part in pilgrimages, since, according to this religion, God is present everywhere. In spite of this, throughout history, millions of Christian believers have wandered on pilgrimage routes to visit places with religious significance, particularly those connected to the lives of Jesus Christ and the Virgin Mary, while sites connected to saints and miracles are also widely visited. Among the most important pilgrimage destinations of the Christian world are Jerusalem and Bethlehem in the Holy Land, Lourdes and Mont-Saint-Michel in France, Fatima in Portugal, Santiago de Compostela in Spain, and Rome – with the Vatican City – in Italy. Millions of people go to Fatima, where the Virgin Mary appeared; to Assisi in Italy, where Saint Francis worked and to Turin in Italy, where one can see the shrine showing the winding-sheet of Jesus. Among the sacred European sites attracting both pilgrims and religious tourists should be mentioned the Mary-shrine with the famous Black Madonna icon in Częstochowa, Poland, together with Saint Paul’s route and the Maltese Knights’ – the Defenders of the Faith – heritage in Malta, as well as an other Marian apparition site, Medjugorje in Bosnia-Herzegovina. It shall also be noted though that many of the significant Christian pilgrimage sites are also major tourist destinations that are visited by large numbers of secular tourists, too. In addition, Jerusalem is a special religious centre, which attracts Christian, Muslim, as well as Jewish pilgrims (Cohen-Hattab 2004).

In Islam, it is one of the five pillars of the faith to visit Mecca, the holy city, once in a lifetime, if their financial and health conditions permit. Following this religious obligation, millions of pilgrims travel each year to the sacred site to perform the rituals of the Hajj and to earn the designation “hajji”, a title of great respect and admiration among believers of Islam (Peters 1995). The climax of the Muslim Hajj is the “standing” on Mount Arafat, where, according
to the legend, Adam and Eve were reunited 200 years after their expulsion from paradise, and it was from this site that the Prophet Muhammad gave his farewell sermon.

Similarly to many other religious organisations and destinations that host religious pilgrimages, representatives in Islam in general and Saudi Arabian officials in particular deny the idea that the Hajj would be some kind of tourism, due to the association of tourist behaviour with hedonism (Timothy and Iverson 2006). However, from a global perspective, the Hajj represents many traditional components of tourism, including the consumption of tourist facilities as well as providing employment for local residents who serve the needs of Muslim pilgrims (Aziz 2001).

Religious Jews believe that God is present everywhere, so the religious regulations do not demand followers to undertake pilgrimages (although religious dictates in Judaism define when and where one should or should not travel). Thus, beyond Jerusalem, Judaism does not attach specific significance to religious sites in the same manner as Christians view Rome or Muslims view Mecca (Cohen-Ioannides and Ioannides 2006), but still there are important historical-religious places that attract large numbers of religious Jewish visitors, mainly found in the Holy Land (Israeli, Palestinian, Jordanian areas). Jerusalem and its surroundings, has been a pilgrimage site for thousands of years, with major religious attractions such as the ancient wall of the Temple, the Wailing Wall, King David’s grave, the graves of the patriarchs in Hebron and Rachel’s tombstone near Jerusalem.

Buddhism is generally seen as one of the world’s great religions (although in a traditional Western sense, it is not a religion at all: there is no personal god, no unchanging and immortal soul, and no necessity for the salvation of the latter by the former, and it has no dogmas that must be believed by all followers – Hall 2006). However, religious journeys leading to sacred and respected places are present in Buddhism, too: the destinations of the journeys are scenes connected to the life of Buddha, many of which can be found in the mountainous areas of India and Nepal. These pilgrimage sites – several of which became established shortly after the Lord Buddha’s death – can be categorised into a certain hierarchy: major sites are those places that were suggested by the Lord Buddha himself, followed by other places visited by him, then core locations associated with the different traditions of Buddhism, and finally secondary Buddhist temples, sites of devotion and education, as well as religious paths and festivals (Hall 2006). Well-known examples include Lumbini, the birthplace of Buddha, and the Kathmandu Valley in the Himalayas.
in Nepal, the ancient Japanese imperial capital of Nara, Bagan, the capital of the first Myanmar empire, or Borobudur in Indonesia, a “manmade mountain metaphor in the shape of a mandala, where the circumambulation and the visual richness of the striated friezes leads the pilgrim through a symbolic 10 cycle walk mirroring the 10 steps of enlightenment towards Buddhism”.

Hinduism also has a strong and ancient tradition of pilgrimage. Most of the Indian religious scenes are situated on the four sacred rivers (Ganges, Jamuna, Godavari and Shipra) and on sacred lakes and water tanks, and pilgrimages generally involve holy baths in these revered water bodies as a symbolic – as well as physical – purification ritual (Singh 2006). The number of Hindu sanctuaries in India is so high and the practice of pilgrimage is so ubiquitous that the country may be seen as a vast sacred space organised into a network of pilgrimage sites and their hinterlands (Bhardwaj 1973). Although water is the central component of this system, people visit the the mountainous spring areas of the sacred rivers.

Chinese universism has a special place between the world religions. According to this belief system, the Sky, the Earth and Man are the three components of the unified world, which are in interrelation with each other and which are controlled by a universal rule. Chinese universists are followers of a unique complex of beliefs and practices that includes yin/yang cosmology with dualities such as earth/heaven, evil/good, darkness/light, ancestor cult, Confucian ethics, divination, folk religion, goddess worship, belief in household gods and local deities, neo-Confucianism, shamanism, and Taoist and Buddhist elements. As religious practices are completely fused with the everyday activities and the way of thinking in China, and religious manifestations have been forced to be hidden because of the ruling political trend, it is impossible to say how many followers this religion has. However, the destinations built on religious heritage as attraction belong to the most important destinations for the millions of Chinese domestic tourists (Guangrui 2002). In addition, the Five Great Mountains of Taoism – Tai Shan, Hua Shan, (Nan) Heng Shan, (Bei) Heng Shan and Song Shan -, and the Four Sacred Mountains of Buddhism – Wutai Shan, Emei Shan, Jiuhua Shan and Putuo Shan – and their temples and shrines have been important destinations for pilgrimage for centuries.

Religions, religiousness and tourism
There is no generally accepted definition for religious tourism: we can find several approaches in different works. Religious tourism is generally seen as

leisure tourism related to heritage and cultural tourism, where travellers visit a place, building or shrine that they perceive as sacred (Mester 2006). The concept also includes visits to churches, monasteries and other places with the motivation to take part in religious events, pilgrimages and processions (Berki et al. 2006). Religious tourism is thus a special type of travel in search of a religious, spiritual experience. As we could see above, the followers of the world’s different religions travel to different shrines (Bodnár 2000), several of which can be found in mountains and hills.

In our globalised and unified world, the local cultural characteristics, such as religious traditions, events, treasures or architecture, become more and more valuable. Religious heritage may thus become the central element of the tourist product and the main motivation of the tourists in heritage tourism development (Dávid, Jancsik and Rátz 2007).

There are several similarities, but also many differences between tourism and religion. Both concepts are similar because their participants are somehow separated from their permanent, everyday lives, so neither belongs into the category of ordinary behaviour. Tourists leave their permanent living and workplace in order to get away from daily routine and cross a distance to an “other place”: in mountain tourism, this distance may be substantial. The same can be said about religion: as we connect ourselves to the supernatural by participating in special rituals and leave behind the difficulties of everyday life, we arrive to thoughts and ideas different from our usual way of thinking. So both tourism and religion include leisure activities, an attempt to get away from everyday life, a shift from material focus, and unusual space and time connections. They also use similar, basic infrastructure and are temporary activities, where the participants use their discretionary income to take part.

On the other hand, there are also several differences between religion and tourism, especially in the motivations and activities. Tourists search for visitor attractions and tend to follow the same behavioural patterns, irrespective of the location. They prefer comfort and want their physical needs to be met perfectly. Those who take part in religious activities are not only willing to tolerate uncomfortable conditions and difficulties, but may even look for discomfort or even physical suffering. Pilgrims are also attracted by sacred places which have no general appeal in tourism. The traveller taking part in tourism is generally seen as a mundane figure who is interested in the physical, visible world. The pilgrim participating in a religious journey is perceived as a spiritual figure who is interested in pious phenomena and the physical reality connected to them: thus, a religious pilgrim can be defined as a spiritual, supernatural being. Of course, between the two extremes, the 'purely tourist'
and the 'purely pilgrim', there are several types: in the words of Pusztai (2004,17), those taking part in religious tourism are often “too profane to be pilgrims, but too pious to be tourists”. This mixture is well expressed with the Spanish word-innovation where the word “turigrino”, a combination of tourist and “peregrino” (pilgrim in Spanish), is mainly used for the travellers going along the Camino, the road to Santiago de Compostela.

**The geographical environment of mountain religious tourism**

The mountain as a spiritual pilgrim destination is not specific to any one region: it is an ancient, archetypal metaphor that transcends location and time. Mount Olympus, Ararat, Zion, Sinai, the Tower of Babylon, the Ziggurats, the Pyramids or Machu Picchu are all upward-looking locations where we are inspired to stop, to think, or even to engage in intense communication, with ourselves or with a supreme being even above. On all continents, there are real mountains where legendary gods reside, and man-made mountains that are the achievements of human civilizations. Sacred mountains often play a key role in native people’s religious tradition and ceremonial practice, shaping their culture and identity, as spiritual power is often linked to sacred geographies (Ball 2000).

The geographical environment of tourism is the complexity of conditions which by themselves can affect the tourist traffic as a result of exogenous and tectonic forces (Michalkó 2007). The surface of the Earth is also transformed significantly by human activities, so the natural conditions and the attractions made by mankind appear together in mountain religious tourism. The landscape of hills, mountains and forests reflecting a special mood is strongly connected to the experience provided by the churches, monasteries, statues and town views.

The examined Hungarian mountain religious scenes are situated in relatively low terrain, since the country’s highest peak – the Kékestető – is only 1014 m high. Most of the foreign religious places and pilgrim routes are located not higher than 1,400 metres, either. However, there are mountain religious areas – visited mainly by the local residents – at the height of 3,000-4,000 metres in South America and Asia.

In our study areas, the characteristic features of the landscape are mountain-ranges of medium height, valleys, basins and plains, together with villages and towns built. Religious buildings can be both found in the mountains and in the settlements situated at lower altitudes. However, there are several reasons for the monasteries and churches to be built at or near the top of the mountains and hills:

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• The buildings which were built on higher sites and were difficult to approach could defend the clergymen living there and the crowd of believers who escaped there from attacks and epidemics.
• Being more isolated from the world made it easier for monks and nuns to concentrate on spiritual development without external disturbance.
• The elevated position of the place expressed that they were closer to God.
• Those who lived in the valleys and on the plains looked up to the people living and working “up there”.
• The physical position also expresses well the elevated nature of teaching that radiates from above to the surroundings below.
• Approaching the higher religious places implies physical effort, sometimes suffering, which means that one has to endure to achieve a spiritual experience.

Water has a favoured role in tourist attractions. In different areas water is not only the primary condition of human life, but it also has a determining role in the tourist product. This is often the case in mountain religious tourism, too. Almost all the rivers, creeks, springs and lakes in the mountain ranges can be connected to religious tourism. The religious routes often lead to water-based resources. Many holy places are built on miraculous springs. Springs provide water supply for the remote monasteries, where the water also has religious and faith-related importance. Drinking from and bathing in these springs can bring physical and spiritual purification.

Climate is a fundamentally important factor of tourism. Climate is determined by the geographical location, the distance from the oceans, and the configurations of the terrain. Mountain religious places which we examined can be found in the temperate zone where the four seasons change regularly; though, unfortunately, we can meet extreme climatic situations more and more often, which make it more difficult for travellers with religious motivation to actually take part in tourism. The combined effects of the periods of sunshine, the temperature of the air, the wind and precipitation conditions create bearable, often favourable circumstances for those who participate in mountain religious tourism. The temperature inversion on the mountainous areas can be also advantageous for tourists. The climatic conditions of spring, summer and autumn are pleasant for the participants of mountain religious tourism. The severe climatic conditions on the places at 3,000–4,000 metres mean extra challenge and difficulty to those taking part in religious tourism. It is also difficult to build the infrastructure for tourists at this height, so the participants literally suffer for the spiritual experience.
The natural flora and fauna is a special segment of the tourist environment and gives a living background to the visitors’ route. The green forests and meadows, the twittering of the birds can start positive emotional processes in the sensitive tourists, which makes the perception of space a positive experience (Michalkó 2007).

The socio-geographical environment of mountain religious tourism
The socio-geographical environment of mountain religious tourism includes the complexity of the supply characteristics as well as the religious and ethnic composition of the local population which is highly important. However, it shall be emphasised that the destinations preferred by religious tourists do not have special features or characteristics in terms of population and demographic distribution. The classical mountain areas are sparsely populated, while in the hilly areas there are more densely populated places with small villages. (These statements are not necessarily true for the religious places situated outside of Europe and in higher territories.)

Concerning the ethnic and religious features of the assessed sites, although the Roman Catholic religion is overwhelmingly characteristic in the European mountain religious places, religious and ethnic diversity has generally proved to be beneficial for religious tourism. Obviously, acceptance of religious tourists by the local religious and ethnic communities is a precondition of such tourism development. In several destinations however, locals move beyond acceptance towards support, respect or sympathy, for a variety of reasons. One major social factor is the perception of a spiritual-religious relationship with the visitors; however, economic rationalism also plays a key role in changing the local populations’ attitudes, as tourists may represent a significant spending power which is often the only source of living in areas which have no other economic function.

Accessibility and transport are very important in approaching an area. The great religious centres can easily be approached by land, air and/or water. Walking is particularly a favourite way of transport as well as physical activity in mountain religious tourism. We can also meet its more extreme manifestations coming from religious fanaticism or deep faith: moving on knees or prostrating, alternately kneeling and standing up. People deeply motivated by religious beliefs are able to cover extreme distances in these ways.

The scenes and places of religious tourism
The scenes of religious tourism that are rich in symbols, code systems and sacred objects may have several functions. Obviously, the first is the function
for the given religion and its characteristic ceremonies. These ceremonies meet the spiritual needs of the believer communities and are controlled by traditions, customs and liturgical regulations (Nyíri 2004). During these functions, the tourist needs are secondary, negligible besides the religious needs, and the spiritual experience of the devoted pilgrims should not be disturbed by ordinary visitor activities, such as taking photos, moving around or talking loudly. Because of their religious attraction, the revered shrines are often visited by large numbers of pilgrims and religious tourists whose consumer needs are met by religious organizations: they are provided with instructions and guidance, as well as a wide range of services and souvenirs (Puczkó and Rátz 2000). Religious sites are often the locations of musical and cultural events, due to their unique architectural and natural features that may provide a special background and scenery for the participants.

The scenes of religious tourism, however, often appeal to a wide variety of tourist segments, in addition to religious demand. The attraction of different religious scenes is varied and complex: the picturesque landscape – particularly in the mountains or in waterside destinations –, the heritage buildings and the tourist infra- and superstructure can satisfy the demands of several target groups (Michalkó 2004). The important and difficult task of the destination management on religious places is to harmonise the crowds of tourists and visitors with everyday religious functions without disturbing those who practise their religion (Berki et al. 2006).

The physical scenes of religious tourism
Memorials, ancient monuments and historic buildings are often the scenes of the religious tourist events, such as festivals, processions, pilgrimages or other spiritual gatherings. Legends, beliefs and stories such as apparitions or miraculous healings are generally connected to these sites, and may even form the core of a destination’s attraction: like in the case of Lourdes, in the heart of the Pyrenees in France, that has become a Marian city after an apparition of the Virgin Mary in 1858. Today Lourdes has the second greatest number of hotels in France with 230 establishments, and its geographical position makes it an ideal starting-point of excursions to the mountains.

The other group of scenes consists of peculiar natural formations (lakes, rivers, springs, caves, and cliffs), mountain-ranges and mountain routes. The mountains help us to get near God, to move beyond the ordinary and reach something superior. The springs, rivers and lakes help physical and spiritual clarity by bathing or dipping into them.
The meta-scenes of religious tourism

The “meta” part of this compound word means the cognition of the referred reality but beyond its material existence; it refers to metaphoric phenomena beyond the physical reality. Different myths, religious beliefs, rituals, old traditional customs appear in these meta-scenes, so they have special intellectual contents. Their significance is very important to the believers of certain religions because it strengthens the community awareness by suggesting a kind of secrecy and supernatural feeling (Michalkó 2007). Many of these meta-scenes can be found in mountain areas.

The sacred scene

Naturally, sacred scenes or scenes connected to sanctity have a special place in religious tourism. Sanctity always expresses some kind of untouchability and unquestionability, as well as a divine inspiration sent by the supernatural world. The believers of different religions have been looking for these places for thousands of years. They take part in pilgrimages, thanksgiving, penitence, spiritual exercises and testify their faith at these scenes. These ceremonies often represent ancient traditional customs. For example, the twin waterfalls of Kiyotaki and Shintaki on Mount Ontake in Japan (Ontake-san, as respectfully called by the locals) are respected as places of power and have been used by pilgrims for meditation by centuries.

The ethnocultural scene

The ethnocultural scene can also be connected to religious tourism: it is the lifestyle features of the social groups whose ethnic identity differs from their surroundings that appear in this meta-scene. Minority ethnic groups often represent religious characteristics and beliefs different from the majority population’s religion, so their ethnocultural scenes may attract both culturally motivated visitors and those with religious interest. Due to the geographical and social barriers created by mountains and hills, the same mountain range may host a variety of ethnic groups that each has their own cultural heritage and religious beliefs. For example, the hill tribes living in Northern Thailand and the mountains of Laos, Myanmar and China, all have complex ancestor worship and animist belief systems, distinguished wooden architecture presided over by guardian spirits, distinctive costumes, jewellery and handicrafts, and in the recent decades their villages have become popular destinations among Western travellers.

The symbolic scene

Different symbols and code systems help us find our way in everyday life. Religions also use such symbols in order to convey supernatural ideas to the
religious community as well to the visitors and pilgrims. The great variety of symbols also has a role in designing a space, and giving a special religious atmosphere, spectacular outlook to the scene. Kalwaria Zebrzydowska in Poland is one of the greatest examples of religious symbolic scenes and an exceptional cultural monument: in 1600 governor Mikolaj Zebrzydowski built the chapel of the crucifixion on Zar Mountain at the heart of Kalwaria. During subsequent years, Zar Mountain came to symbolise Golgotha, and a total of forty four chapels were constructed on the surrounding hillsides and in the intervening valleys, and the entire landscape was sculpted to recreate the holy sites of Jerusalem and its environs.

The informal scene
Informal scenes are those that differ from the official, “regular” scenes of tourism, i.e. those that are not formalised or regulated. These informal scenes can also be found in religious tourism. For example, there are the circumstances of selling various local souvenirs and devotional articles: these objects are often made by local residents who sell them by the roads, in front of their houses or on other spots to the tourists and pilgrims passing by. Another example of informal scenes in tourism is when local residents provide food and accommodation for those taking part in religious tourism. The tradition of helping, looking after and attending pilgrims dates back to the Middle Ages, and can still be found at several places; sometimes even in an altruistic way of offering hospitality free of charge.

The virtual scene
A virtual scene means visualizing reality by various modern technical means, such as computers and the Internet. The great pilgrimage scenes of the world also appear on the virtual scene, and those who want to participate in non-virtual religious tourism may obtain information on these places, their traditions, values, rituals, as well as their accessibility and supply facilities.

The spatial metaphors of religious tourism
The metaphors of “bridge” and “gate” often occur in printed and digital publications introducing various mountain pilgrim routes and religious scenes (Michalkó 2007).

Bridges
Pilgrim routes often go across lesser or greater rivers. Naturally, the function of these bridges is to serve the operation of these routes, so religious tourists can overcome the obstacles of rivers and ravines. Consequently, bridges can ensure the freedom of movement, provide security and connect different points.
on the pilgrims’ itinerary. Religious tourism as a concept may be perceived as a metaphorical bridge that connects everyday life with spirituality and provides a link to higher ideals. Religion and pilgrimage – like bridges – can also build links between people who are on the way to sanctity, to abstract and transcendent values.

Gates
A gate means entering, traversing or arriving at a safe place. Pilgrim routes often lead through town gates, castle gates or church gates. When entering a church or a temple through a gate, people arrive to a place where they meet God or gods. Beyond the gates, pilgrims can rest, recharge and receive physical and spiritual safety. Participation in religious tourism may also be perceived as going through a gate and arriving into an area which gives us new knowledge and relief: we can enter a scene which meets our inner spiritual needs by the help of tourism. Gates play a particularly important role in Shintoism where one has to pass beneath one or more large gates (torii) on the way to a shrine complex. Torii mark the boundary between the secular world and the sanctified grounds of the shrine. Shinto shrines may include multiple gates, and paths within the shrine may be lined with dozens of closely set torii which together create the effect of a long, enclosed corridor. Believers may use their walk through such passages as an aid in helping to clear their mind of worldly distractions and in preparation for making an appearance before the enshrined deity. Shinto gates are often produced using local timber, therefore shrines which are located in high mountain forests may feature torii constructed simply from a few rough cut conifers – they blend in nicely with the surrounding forest and are emblematic of the Japanese love of nature.

Two examples of pilgrimages: Csíksomlyó in Romania and Santiago de Compostela in Spain
Csíksomlyó (Șumuleu Ciuc) is situated in the Csiki-basin in Transylvania, Romania. Although it is not located inside the borders of Hungary, it has become the greatest Hungarian pilgrim scene. The pilgrimage was originally established in the 16th century following miracles performed by the statue of the Virgin Mary. The Hungarian pilgrims of Transylvania have visited the church, the chapels and the open-air mass place on the ridge between Little-Somlyó and Big-Somlyó for centuries; recently, they have been joined by pilgrims from Hungary, too. As part of the ritual, the pilgrims set off from the church and follow one of several routes up to the ridge. This pilgrimage, however, does not start at the church, but the preparations begin weeks or months before. The believers learn and practise hymns and prayers with their pastors’ guidance. The people living in the neighbouring or farther settlements start
walking to Csíksomlyó. Their journey sometimes takes several days. They receive accommodation and modest supplies in churches and presbyteries or with families along their way, so they arrive at the site rather exhaustedly. Many pilgrims spend the night in the church or around it. On the day of the Pentecostal festival, hundreds of thousands of believers from Transylvania and Hungary join together and go up to the scenes of the masses. At the church and in the open-air, masses last all day long. Meanwhile, the believers can make confessions.

A special patch of colour of the pilgrimage is the presence of the “csángó” coming from areas of Romania behind the Carpathian Mountains, who wear their national costumes and – according to a custom dated probably back to the pagan times – pray over a sleepless night to admire Babba Mary's face in the rising sun.

The Csíksomlyó pilgrimage has a number of meanings: it is one of the last, living mediaeval popular religious festivities; it is a spiritual event of Catholic Hungarians, an ethnic and religious minority within Romania; and it is held in a beautiful natural scene at late spring. It is an event where pilgrims can identify with popular religion, the Hungarian community and Catholicism. The masses drown to Csíksomlyó each year demonstrate that religious tradition still remains a very powerful force in Europe.

The town of Santiago de Compostela is the end destination of one of the longest and probably the most established pilgrimage routes in Europe. Pilgrim routes from different parts of Europe join in at the northern part of Spain, the pilgrims traverse the Pyrenees and several smaller mountain ranges, and after getting through the 1,000-1,400 m high mountains in Galicia, they arrive in Santiago. About 200 thousand pilgrims set off every year to walk along the 800-kilometre-long route during 33-35 days (Brierley 2006). The contemporary pilgrims cover this distance carrying modern rucksacks and sticks, and are outfitted in highly advanced adventure gear. The route leads across beautiful bridges and gates, travellers can enjoy the sights of marvellous Romance and Gothic buildings and spectacular landscapes while they experience a sense of mutual helpfulness and the spiritual elevation of the pilgrimage.

The Camino was formed in the Middle Ages, and at that time, more people went along the route than nowadays. The destination of the journey is the grave of Saint James in the cathedral of Santiago de Compostela. During and at the end of the journey there are several pilgrim rituals which give the participants a very special feeling. The pilgrims often wear a shell symbolizing
their relatedness and carry walking sticks, and real or imitated calabashes which used to belong to the traditional wear of the medieval pilgrims. There are masses during and at the end of the pilgrimage and the pilgrims can take part in evening prayers. The route is well-built, signed with yellow arrows up to the end, and a network of ecclesiastic, territorial, regional and private pilgrim accommodation helps to put the travellers up. In effect, a new industry has come into being in order to supply the hundreds of thousands of pilgrims, and several settlements in Northern Spain make a living from providing for the pilgrims.

Conclusions

Religious tourism and pilgrimages as concentrated, spectacular mass phenomena have a significant place in the world’s mountain tourism. The demand for this kind of tourism is increasing year by year, for several reasons:

• Global tourism is expanding and developing dynamically, and the tourist products have become more differentiated.
• The availability of leisure time increases in the developed world.
• To support religious tourism as a form of sustainable tourism development has become a generally accepted aim in many mountain regions.
• The demand for cultural and heritage tourism (which can be related to religious tourism) is increasing.
• The constant evolution of transport makes it easier for people to visit remote places.
• Religious destinations in mountain areas provide a safe environment for tourists who are afraid of uncertainty.
• The availability of information about pilgrimages and religious events on the Internet has significantly increased.
• Many travellers experience religious tourism as an expression of their religious and national identity.
• It gives an authentic experience, which is searched by more and more tourists.
• The development of services for pilgrims can stimulate the economic growth of otherwise relatively underdeveloped mountain regions.
• Pilgrimage scenes, routes and events receive increasing media coverage that contributes to their popularity.

Consequently, religious and pilgrimage tourism has been developing rapidly and dynamically on a global level, and may be considered among the tourist products with the highest potential. People set off for these journeys for a variety of religious and secular, cultural reasons. The scenes of religious tourism and the pilgrim routes require the development of tourist supply, so
they induce the economic growth of regions. Mountain areas with traditional sacred cultural and natural values, where other economic activities may be inherently limited, can particularly benefit from the stimulation of religious tourism, in the forms of improved service supply, employment creation and revenue generation.

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Mountain tourism is considered to be one of the most popular forms of tourism, especially among young and dynamic people. In the last years many shifts registered in terms of diversification of activities that could be developed while into the mountains. In the same time, mountains are increasingly more associated with eco-tourism. There are no different typologies of tourists preferring the mountains, but people preferring mountain tourism tend to be allocentrics and interactional. Various ways of segmenting mountain tourists are discussed in the paper. The investigation is mainly dedicated in observing the tourism behavior of the Romanian students, both college and master degrees. The main dimensions investigated are: sources of information used when planning the vacation, destination selection, forms of mountain tourism preferred by students, length of travel, motives for mountain tourism, activities developed during the travel, preferences and companionship.

Key words: tourist typology, mountain tourism, motives, segmentation, student travel, Romania

Tourism is increasingly more popular in all its forms. One of the current trends is the growing diversity of types of tourism developed in the last 20 years. Old forms of tourism are transforming themselves; they are rediscovered by tourists in innovative approaches. Tourism agents are offering to tourists more activities and challenges while on travel. These phenomena are especially true in the case of mountain tourism.

Mountain tourism is one of the oldest forms of tourism, particularly in Romania. Some of the oldest associations were formed by people loving the mountains and mountaineering in all its forms. The oldest organization, founded in 1880, is the Siebenbürgischer Karpatenverein (SKU). In the following years other associations interested in promoting mountain tourism started, especially in Transylvania. These associations are among the first to establish accommodation facilities in Romania (i.e. chalets), of course, into mountain
areas. The aims of these associations where primarily to promote the idea of mountains, to make others love the mountains and to make people to be more “alive”. (Wedekind, 2005) Part of these associations seem to have had also educational aims, since many of their members were teachers. Nowadays persons interested in mountain tourism are extremely diverse, as well as the opportunities to travel into the mountains.

Mountain tourists’ typology

Trying to define tourists was never easy. Such attempts have also been called segmentation, classification, clustering. In order to plan, manage and develop tourism, distinct tourist types have to be identified (Smith & Smale, 1980; Taylor, 1986). Tourist typology information makes it easier to state different motivations, to launch more experiences, and evaluate impacts of tourism. It is also a piece of basic information in understanding which tourists types are more likely to be found at different stages in the evolution of tourism areas (Duffus & Dearden, 1990). A connection between tourism types and resources is important when talking about tourism typology. For example, Cohen (1972) proposes a four-part tourist typology, based on the tourist’s desire for familiarity and the level of institutionalization preferred.

Organized mass tourism and individual mass tourism are a part of the institutionalized tourism, which faces the routine of tourist industry. The exploratory tourist and the non-conventional type are a part of the non-institutionalized tourism or solitary tourism, where getting in touch with tourism industry is not necessary an option. All the four types are to be met into the mountains, but the first one – tourists preferring organized mass tourism – in a lesser extent. The dimensions of Smith’s tourist typology (1977) are similar, but more detailed; as the classification was made according to the impact that tourism has on the environment and to the tourist relations to the destination.

According to Murphy (1985), there are two general categories of tourist typologies; interactional and cognitive-normative. First, interactional tourist typologies are primarily based on the interactions between the tourists and the destination. Using the same topic, and based on travel behavior, interests and opinions, as trip indices, Uysal & McDonald (1989) came up with other similar interactional tourist typologies. The main point is that interactional tourist typologies are used in tourism research studies which identify tourists, based on activities. Mountains offer a suitable frame for various activities, both nature- and person-related. When considering mountain tourism, in many cases, the interaction with nature or host communities is the main purpose of travel (e.g. climbing, rafting, riding, rural tourism etc.)
Second, cognitive-normative tourist typologies focus on the travel motivations of tourists. For example, in Plog's vision (1972), a tourist typology recognizes allocentrics (adventuresome, individual travel), mid-centrics (individual travel to destinations with facilities), and psychocentrics (packaged holidays to popular destinations), depending on how tourists conform to societal or individual desires. Especially the first category is met within mountain tourism, but mountains support all the mentioned forms. Cohen (1979) refers to a tourist's motivations, based on a spiritual center, where tourists seek travel for existential, experimental, or recreational reasons. Cognitive-normative typologies have also been applied to more specific outdoor user groups. Information needed to develop cognitive-normative typologies usually comes from interviews, but occasionally by self-designation. Cognitive-normative typologies have been used to identify tourists on the basis of their motivations, attitudes, and values.

There are several criticisms of tourist typologies. First, many tourist typologies are tautological. Lowyck et al (1992) and Sharpley (1994) explain how generalizations from a typology are restricted to the data that created the typology, then without methodological consistency, the names chosen for tourist categories vary widely and strongly reflect the researcher's point of view. Also, without extensive case studies, the use of questionnaires, the most common method of gathering typology data, is problematic. When taking into consideration tourists' motivations and activities, Lowyck stated that they may be too complex to collapse into rigid categories. For example, the line between motivations and activities is very thin, as features that attract tourists to a site can be considered motivations, but when acted upon, considered activities. Most typologies are static and cannot model the evolution of tourist types over time, and therefore typologies have limited predictability. Nevertheless, it has been shown that markets among mature tourists remained relatively stable over a 10-year period. Most typologies are theoretical, and only a few have been empirically tested. Pearce (1985) argues that it is necessary to interrelate tourist roles to assess their similarities and differences. Although tourist typologies are limited in many ways, they are widely used to segment tourist populations. Given their conceptual basis, there is much potential overlap between the interactional and cognitive-normative approaches, but this overlap has not been tested in ecotourism or mountain setting.

Murphy (1985) argued that both cognitive-normative and interactional typologies are relevant, since tourist choices of activities and destinations (interactional) relate to, and result from, tourist motivations (cognitive-normative). The choice of holiday destination will give the identity of the traveler
and, in an increasingly homogeneous world, set him apart from the hordes of other tourists. (Morgan et al. 2003)

Motives and preferences for mountain tourism

“Mountains” have always been difficult to define. We all know a mountain when we see it; mountain people all know that they are mountain people and are proud of it (Hamilton and McMillan, 2004). Tourism helps to diversify mountain economies and provides alternative livelihood opportunities for mountain people. Because traditions and life-styles of rural mountain populations are of rising interest, old habits (e.g. special handicrafts, ways of cooking, patterns of constructing houses or traditional folk dances / music) are revitalized. Tourism is not omnipresent in the mountains. At any space scale, the degree of its development is highly variable and over time its importance may increase and then wane (Price, 1995).

Historically, all over the world, mountain areas have been attracting people – pilgrims, ascetics, naturalists, explorers, and, in recent years, mountaineers, trekkers and cultural tourists from near and far-off. Features that attract tourists are the pure, original nature, natural monuments and the healthy climate. More recently mountains attract people interested in ecology. Ecotourists, no matter the destination, often demand higher environmental care-taking (regarding waste management, water purification, etc.), than the local population does. Interest in wild fauna and flora and in ecosystems rise awareness and respect towards the regions nature assets. Because mountain ecotourism offers alternative income for mountain communities, unsustainable use of nature resources like overuse of mountain pastures, poaching wild fauna might be reduced and better controlled, paradoxally, through tourism which is in the same time accused of destroying nature.

As Beedie and Hudson (2003) show, in the last decades a commodification of mountains is going on. Mountaineers are becoming tourists; the mountain holidays are increasingly more “packaged”. In the same time mountaineering diversified and reinvented itself (Beedie & Hudson, 2003: 626). Mountain tourism is a form of recreation, but tourists are risk-aware, are looking not just for leisure, but also for excitement, unique experience, are eager to reach their own limits. Mountain tourism involves in many cases adventure in various degrees. Even in the case of tourists accommodated in tourist resorts, the mountains’ vicinity determines them to seek adventure, at least to explore the area.

Exploration is one of the main reasons people prefer mountain tourism. It is an exciting journey, in the middle of nature. The exploration of nature’s beauty
is so different from everyday activities and busy life in a town. Challenges and engaging difficulties is a plus to some persons, making mountain tourism even more appealing. To certain degree mountain tourism is an exotic form of tourism. Mountain and nature are not a familiar environment for the modern man, the communities surrounding the mountains could be preservers of traditions. Part of mountain tourism is undergone into or close to rural areas. Additional characteristics of certain locations, such as extremely high peaks or remote places, increase the desire to visit those locations, to practice different forms of mountain tourism in those areas.

Analyzing the relations between landscape and rural tourism, Daugstad (2008, 413) shows that nowadays people are not satisfied just with seeing a beautiful landscape. They want to experience it, to be part of it, to emerge into it. This desire is one of the factors that has led not only to the development of rural tourism (no matter if in mountain regions or not), but also to the development of mountain tourism in general. The interest in nature is more profound than experiencing the landscape; it is routed in a deeper respect and care for nature. The study of Modela and Albaladejo (2007) shows that, at least in the case of rural tourism in Spain, nature is the most important reason of travel. The growing interest and valorization of nature is one of the reasons for the increase of interest in mountain tourism (Moss, 2006: 9). This development influences not only the magnitude of mountain tourism, but also determines amenity migration and second-homes setting into the mountains. Some look for soft adventure, while others for hard adventure. A study undergone in the United States in 1998 shows that compared to soft adventure seekers, the hard adventure tourists are younger, with higher incomes and better educated. More single men enter this category. Other characteristic is that they tend to be activity focused, while soft-adventure tourists prefer to undergo several activities (Beedie & Hudson, 2003: 632). It is impossible to set a hierarchy of motivations for tourists, because they change in time. To represent their array and evolution different studies should be developed. Motivations are close related with desires and needs.

The way these are fulfilled, determine the satisfaction degree of tourist. The theory of self-congruity applied to tourism also reveals that the satisfaction of tourists is directly linked to the correlation between the self-concept of the tourist and the destination image (Beerli et al., 2007: 572, 582). Thus tourists would prefer destinations that match the image they have about themselves, as well as the image they want to project in the social environment they are part of. Mountain destinations could be associated with dynamism, sports,
adventure, risk-taking, ecology, body strength, performance, endeavor, friendship, team work and others. Tourists attached to these values, considering themselves as such or projecting such an image would seriously take into consideration mountain tourism. Beerli et al. (2007, 574-575) point out that the model of self-congruity does not fully explain the tourist pattern of destination choosing, other criteria being taken into consideration, such as previous experience, innovative spirit, degree of involvement in the selection process and others.

Preferences for tourism are not influenced just by inner-desires, but also by the context the travel is taking place. For instance, in the case of mountain-based sports tourism, researchers point out a decrease of downhill skiing for the benefit of hiking, backpacking, cross-country skiing and snowboarding (Fredman & Heberlein, 2003: 485). Reasons for these developments vary from person to person, country to country, and could range from the higher investments in some forms of tourism and the disposable income, to the increased sport practice of senior tourists.

We stress that preference and interests are not the only criteria of the decision making in tourism. As Wong and Yeh discuss (2009), other important factors are risk perceived, expectations or tourist knowledge. The study developed by Decrop and Snelders (2004) on Belgian households show that the decisions regarding vacations are taken in time. Multiple criteria are used. Some use a compensatory decision model, in which strong points could “cover” some weak aspects. The research shows that the decision making is an ongoing process, that goes on even after the vacation has been booked (if the case). Alternatives are considered all the time.

Segmenting the mountain tourism market
Understanding tourists is extremely important to better project the offer and to develop the most appropriate and appealing accommodation, facilities and services. In this context segmentation of the market is important. Even if the concept of segmentation is well-known and its importance is largely recognized, implementing it – i.e. identifying the market segments – is quite difficult.

The simplest way to segment the tourist market is to take into consideration socio-demographic characteristics of tourists. More effective would be to base the segmentation on their attitudes and behavior (e.g. how often do they go into the mountains, what do they do during their travel and such). A behavioral segmentation implies a more profound knowledge and understanding of tourists. It is more reliable; the segments obtained would be more relevant,
thus decisions based on them would be more effective. More difficult segmentation methods generate clusters of tourist. Blooms (2005) develops an even more complex model of segmentation using artificial neuronal networks. This model takes into consideration more relationships between inputs and outputs, being more detailed and providing more information on tourists. It also highlights connection between tourists’ characteristics and their attitudes. It also highlights the strongest inputs, with the most consistent impact on tourists’ behavior. Three segments of tourists (in Cape Town) are identified: vibrant and energetic, pleasure seekers and established and settled. The model could not be extended without thorough analyze on mountain tourism. Nevertheless it is noteworthy to observe that the vibrant and energetic segment encloses tourists who take shorter trips, but are more satisfied with the location (cleanliness, friendliness, cosmopolitism, variety of arts and crafts etc.) compared with the other segments, especially with the pleasure seekers. This might suggest that active tourists discover more interesting things, tend to be less critical and enjoy more the vacation.

Chen (2003) proposes other segmentation model, highlighting sentiments and opinion developed after the travel. He identifies four tourist segments, two of them defined as actionable segments – tending to make recommendations to others –, with specific characteristics in terms of demographic and travel characteristics. The segments considered to be non-actionable are those with negative opinions on pricing and assistance. More males tend to be in these segments. The decision-time-frame is also different; the non-actionable segments making the travel decision with just one-two months in advance. The study shows that more satisfied women, who planned their travel with more than three months in advance, tend to share opinion and recommend the destination. The results would help especially accommodation providers in mountain region to better design and promote their offer.

Alvarez and Asugman (2006, 320-321) point out the need to use different criteria to segment tourists, among which is specially mentioned the information needs and habits in relation with tourist’s travel pattern: explorer or planner. The study identified two predominant types of Turkish tourists. The “spontaneous explorers” are mainly male, are less concerned with risk and do not plan thoroughly their travel. They do not tend to go on packaged tours, but return frequently to the destinations they like. The second type of tourists are “risk-averse planners”. They are cautious, avoid all risks, plan holidays using a wide variety of information sources. They prefer packaged tours and four-five stars accommodation. These tourists are constantly looking for new
destinations and are less involved and active while traveling (Anvarez & Asugman, 2006: 331). In mountain tourism, these patterns might not be present due to the risk associated to an active vacation, to the diversity of activities that might be undergone and to the specific relationships between accommodation location and the natural resources/attractions which generate tourist flows.

We do not know a segmentation specific for mountain tourism, but researchers were interested in rural tourism. Because of the similarities between mountain tourism and rural tourism, as well as because part of rural tourism develops close to or even into the mountain, the tourist segmentation for rural tourism has to be considered. Molera and Albaladejo (2007) identified five segments of tourists in the rural region of Southeastern Spain. We stress that this region happens to be mainly a seaside region, thus the results have to be carefully considered in the context of mountain tourism. Four of the segments consider that environment and nature extremely importance, but just two of the segments are attracted by outdoor activities. The fifth segment is just interested in spending time with friends.

A more recent study of Park and Yoon (2009), undergone in Korea, segmented the rural tourism market according to tourists’ motivations to travel. Four segments are defined: family togetherness seeker, passive tourist, want-it-all seeker, and learning and excitement seeker. The first segment appreciates relaxing in nature and hiking, still they prefer cultural activities and socialization with the family. The second segment prefers sports and leisure activities. The third segment wants also to travel and do housework. The forth segment, the smallest one (19%), is interested in socialization, learning, and social excitement. Ecological activities are considered attractive by all segments, but the passive tourists are a bit less interested (Park and Yoon, 2009: 105). All four segments could be satisfied by the opportunities offered by a vacation in a mountain region.

A useful criterion for segmenting mountain tourists is the purpose of the travel. Each form of mountain tourism would generate a specific type of tourists, with specific interests, attitudes, and lifestyle.

**Mountain tourism in Romania**

Developing mountain resorts is an always changing area, especially at international level. The scientific research together with tourist new experiences and the changes in the structure and the motivation of tourists are the main reasons of this process. Recent trends show an increasing interest in the “middle” mountain area as well as in middle and small mountain resorts that
bring more advantages to the local community. Other tourist resorts that came in the light are the rural mountain resorts, which show a great interest in protecting the environment.

At international level, most of the mountain resorts go through a changing process that implies: ecological project planning and taking measures of protecting the mountain environment; creating resorts as a result of cooperation between local communities and tourism associations, developing specific infrastructure for youth; getting the local community involved in the process of development of mountain resorts; a general overview of the low mountain resources, expanding the area for downhill ski, according special attention to all season resorts close to decentralization of responsibilities and initiatives.

In Romania, mountain resorts come to a common ground with the international statements, not only because they were shown to be fruitful, but also because they are what the Romanian mountain resorts need. A full integration of tourist activities in economy and also in the life of local communities is of great benefit for all the parties involved. This is the main reason why local communities are increasingly more involved in the development of low mountains resorts. Romania takes into account the good practices of other European countries with experience in developing tourism in mountain resorts but at the same time analyses its strong, weak points, on its opportunities and threats and takes action upon them.

Nowadays there is a big difference between tourist offer and tourist request in most mountain resorts in Romania. This difference points out the quality and the attractivity of every resort. When the request is greater then the offer, the service quality is appreciated (Sinaia, Poiana Brașov, Predeal, Bușteni, Semenic, Cheia), when demand for that resort is not high enough, economic loss may occur (Borșa, Izvoarele, Durău). Certain bad judgments regarding privatization, state property, and fiscal legislation have led to difficulties in managing resorts and small companies in mountain tourism. Although it is certain that the main tourist activity is focused in three main mountain resorts - Sinaia, Predeal and Poiana Brașov (>50% of incoming tourists since 1998 until present) – while other mountains destinations are generally criticized in media for the quality of their tourist offer.

Mountain resorts may be easily defined if we take into considerations the tourist activities: winter sports, summer activities and spa. The Romanian Carpathians attract tourists by providing an opportunity of skiing in winter while, in summer, many tourists come in the same locations for outdoor
activities such as hiking, or just for relaxing closer to nature. The infrastructure necessary for various forms of tourism has been developing especially in the last 10 years, but the main attractions are the older mountain resorts. Besides their more established image, they still offer the best infrastructure. For instance for skiing, the longest and better managed ski runs are in Poliana Brașov, Azuga, Sinai and Predeal, all of them situated in Prahova Valley. Besides them, other ski resorts which are popular are Păltiniș and Stâna de Vale in Transylvania, Secu, Trei Ape and Crivaiia in Banat, Durău and Vatra Dornei in Moldova and Borșa in Maramureș. These are smaller resorts and they generally attract locals. Not all the Romanian sky runs are homologated. The total number credited for Romania is 80 downhill slopes, most of them having just one lift-facility, which are less than 100 km. long according to an investigation developed by Săptămână Financiară (2007). Other sources (www.viromania.eu) index more than 120 sky-runs of more than 150 km. in length. All of the information agree on the undevelopment of the Romanian winter resorts.

Into the Romanian mountains several spas are also located. We mention that their actual location is in general in depression or valleys into the mountains. Some of them are old and famous – such as Băile Herculane which is documented since Roman times, some others are young. Even if some of them benefit from investments in the last years, generally the Romanian spas are small and not very well managed. The most well known spas are Băile Tușnad, Călimănești-Căciulata, Băile Olănești etc. The Romanian spas and resorts are classified in resorts of national relevance or local importance. From the 35 resorts of national importance listed in 2004 (HG 1307 / 2004), almost half of them are in mountain areas. From the 41 resorts of local relevance (HG 2264 / 2004) more than 60% are mountain resorts. Therefore, mountains are preferred locations for resort development in Romania, but it is not the only scene.

Even if analysis tend to consider a decrease in the quality of tourism management in Romania, data gathered by the National Institute for Statistics show a continuous increase of accommodation in the mountain resorts, from 553 units (hotels, chalets, camping facilities, villas etc.) in 1993 to 1010 in 2008 (www.insse.ro). The comfort rate of the accommodation units is medium and low, since the statistics register for 2008 just 3 hotels of 5 stars, 41 – 4 stars hotels, 4 – 5 flowers boarding houses and 22 – 4 flowers boarding houses. The capacity for 2008 registered by the same source is of almost 9.5 millions bed-days (excluding the beds in the rooms or units temporarily closed for lack of tourists, for repairs or for other reasons). Compared to other destinations,
11.5% of the accommodation capacity is in mountain resorts, around 42.7% is in the seaside resorts, 16.3% is in Bucharest, 15.7% is in spa resorts, and 12.9% in other accommodation areas or tourist destinations. Considering the evolution of arrivals of tourists officially accommodated, one observes a decrease until 2002 – to less than 700 thousands persons, both Romanian and foreigners (www.insse.ro). Since 2002 a continuous increase is registered up to 1 million tourists. Data is small compared with other European countries but the trend is positive. Cca. 10% of these tourists are foreigners. The tourism in mountain resorts counts in January 2008 for 18.8% of the arrivals in Romanian tourist structures, with 0.7% more than the previous year. Data has to be further analyzed in order to observe if there is a trend consisting in the increased preference for mountain tourism, comparatively to other destinations.

The length of the tourists registered in mountain resorts is rather low. The average rate is of 2.4 days. Longer travels are declared by travel agencies as organized tourism in mountain villages and Alpine tourism routes – of 4.6 days in 2006 (www.insse.ro). The number of tourists registered in this context in the same year was of 90 thousands.

We highlight that the statistics do not account all forms of independents tourism which can be observed into the Romanian mountains. Especially young people travel to isolated chalets or they are camping into the mountains. In the same time, the statistics present just the tourist flow officially declared by tourist agents, which are just a part of the total number of tourists. The interest in the Romanian mountains is also proved by the number of alpine clubs. Just on www.carpati.org 100 such organizations are registered. In general, this type of associations is established by young people or most of the members are young.

**Research on the Romanian university students’ behavior as mountain tourists**

The main purpose of our research is to identify the profiles of the Romanian students who prefer mountain tourism. The investigation of mountain tourism among students is extremely relevant, since this form of tourism is one of the most appreciated forms of tourism among young people. The studies also show that persons with higher levels of education prefer active forms of tourism, including mountain tourism. Another aspect which suggests that students would prefer mountain tourism, at least in Romania, is that the specific infrastructure is less developed compared with that for other forms of tourism, thus mountain tourists would tend to be less pretentious, with lower incomes, therefore younger and active, could be students.
Methodology
The main questions of the study are who prefers mountain tourism; which are the reasons why Romanian students go into the mountains; what types of accommodation do they use; which are the preferred activities; how often students go into the mountains; what are the patterns of the visit. The investigation is based on an online survey, undergone in January 2009, addressing all the students in Romania.

The items explored are: source of information, destination selection, forms of tourism, length of travel, motives for mountain tourism, activities undergone during travel, preferences, and companionship during travel. The first item identifies how useful are various sources of information: friends recommendation, family recommendation, travel guides, promotion campaigns of travel agents (leaflets, flyers, ads etc.), radio and TV programs, travel websites, websites of nonprofit organizations, websites of travel agents, internet forums, blogs.

The second item – destination selection – investigates which are the main factors influencing the selection of the destination. The following aspects are specifically explored: previous experience, information from travel guides, friends’ advice, family’s opinion, online information, internet forums, blogs, desire to visit a certain region, desire to undertake a certain tourism activity, desire of companions to visit a certain region, desire of companions to undertake certain tourism activities, distance to destination, time of travel to destination, costs, accommodation, facilities at destination, number of tourists to destination, companions. There are also investigated the next elements: how determined are the students when choosing the destination and type of tourism, how deep is the investigation undergone previous to the travel regarding the destination, how often do the students return to destinations they like.

The third item – forms of tourism – shows the frequency with which Romanian students practice various kinds of tourism, such as: rural tourism, seaside tourism, shopping tourism, tourism in the Danube Delta, biking etc. Various types of mountain tourism are separately investigated, such as mountain biking, extreme tourism, mountaineering and others. It also looks into the frequency of various forms of foreign mountain tourism. Another aspect investigated is the way the frequency of travels modified with the change of status – since the respondent became student.

The following item – length of travel – investigates two aspects. The first of them is how long is the travel undergone during the vacation. The second
refers to the length of the mountain travel, no matter the time of year when it is undergone.

The next item - motives for mountain tourism – shows the main motives of mountain tourism among students. The motives of travel proposed for evaluation are “recharge of batteries”, admire of nature, exploration of nature, environment protection, knowledge development, to be with friends, sports, to exercise, new kind of travel, socializing, low costs, adventure, to be alone, entertainment. The respondents were also asked to associate mountain tourism with the following concepts: sports, performance, relaxation, escape, ecology, love, passion, friendship, team, entertainment, boredom, solitude, greatness, novelty, knowledge development and spiritual development.

The survey also identifies the first three activities undergone during the travel into the mountain. The choices offered are: walking, mountaineering, mountain biking, riding, extreme sports, skiing, snowboarding, landscape photographing, animal photographing, speleology, and fishing. It also reveals the activities never undergone by respondents during mountain travel and the desire to experience them in the future.

The next item – preferences – refers to inclinations of respondents regarding mountain tourism compared to other forms of tourism and during the travel. The last item - companionship during travel – shows with who is the respondent traveling into the mountains: alone, with friends, with family members etc.

More than 800 students started the survey, but just 528 completed it. The rate of completion rate is good for an online enquiry. The rate of response is good not only because there is no control on the process, but also taking into account that the time required to fill in is a bit long: almost 20 minutes. The length of the survey is a limit in having accurate answers, since the respondents might get impatient and consequently they might choose the answers aleatory. Another limit is the unrepresentativity of the respondents.

The questionnaire was filled in just by those who wanted to. The invitation to answer was sent on many student forums and discussion groups, from all universities in Romania. Still, not all the students found out about the investigation, and just some of them answered. It is likely that the students who answered are more interested than others in tourism, therefore it is probable that the respondents are traveling more than the students who did not participate. Therefore the results might over-evaluate the actual phenomenon.
Respondents
A little more of half of the students are undergraduates, while the others are master-degree students. More than 90% of the respondents are registered to public universities. Almost 19% of the respondents are registered to forms of distance learning. The field of specialization of the respondents is difficult to identify in some cases. The respondents were asked to specify it in detail, but some failed to do it, writing just their university. Almost 28.5% of the respondents are completing economic studies. 22.5% of students taking part in the survey are graduating communication or public relations. Cca. 19.5% of the respondents study psychology or sociology. Almost 11% are students at humanistic studies, while just 5% follow technical careers. The number of respondents studying tourism or geography is small: 7 students (1.33%) for the former, 14 (2.67%) for the latter. 10% of the respondents are completing other studies, such as medicine, law, political science etc. We mention that the actual number of students in tourism and geography could be higher, since some responses indicate just the universities. For instance part of the students who pointed out an economic university might study tourism not other economic fields. Therefore, the actual structure of the specialization of respondents might differ in some aspects from the above presented situation.

More than 85% of the respondents are under 25 years old. Almost 85% of the respondents are women. 64.5% of the respondents are currently living in large cities (Bucharest – 229 persons, Cluj Napoca – 51 persons, Brașov – 22 persons, Iași – 11 persons, Timișoara – 8 persons). The geographic distribution of the respondents, taking into account the historical regions, is as follows: Bucharest – 46%, Transylvania – 28.6%, Muntenia – 9.9%, Moldova – 9.1%, Oltenia – 2.6%, Dobroudja – 2.2, Banat – 1.6%.

35.1% of the respondents are not currently employed. 38% are full-time employees. Cca. 16.5% are working for less than one year. Around 10% are volunteers in nonprofits. The incomes of the respondents are generally less than the average income in Romania – almost 50% have less than 200 euros, and 25% have between 200 and 500 euros per month (including parents' allowances).

To better define the profile of the respondents, they were asked to characterize themselves. Using a scale from 1 (not at all) to 5 (extremely), they had to evaluate if they consider themselves liberal, modern, non-conformist, if they love to take risks, if they love strong emotions, if they love adventure and if they love new things. All the average answers are above the middle point. The ranking from the strongest agreement to the weakest is as follows: they love new things (4.39), they consider themselves liberals (3.93), they are modern (3.86), they love adventure (3.71). The smallest value is 3.31 – they like to take risks.
Results

a. Sources of information

The most useful sources of information, in the respondents’ view, are their friends (4 points out of 5). The following sources are the family (3.9), travel guides (3.29), websites dedicated to tourism (3.27) and internet forums (3.16). All the other sources mentioned are considered rather not useful by the respondents. The least useful of them are websites of nonprofit organizations (2.6) and blogs (2.7). It is also interesting to mention that the travel agents are more useful than information coming from private persons or from nonprofits (2.89 point both for information on their websites and through advertising). Male students are more distrustful than female students at all types of sources, except for websites dedicated to tourism.

b. Destination selection

The most important factors influencing the choice of the destination are: the desire to visit a certain region (4.66 out of 5), the previous experience (4.39), the desire to perform a certain activity (4.3), the costs (4.27) and the companions (4.23). The least important factors are blogs (2.66) and the small number of tourists at the destination (2.84). On the other hand the popularity of a destination is not an important factor of influence when choosing a destination (2.94). The results sustain the idea that students do not really take into account the opinions of people they do not know. For men all the factors mentioned are less important than for women. The biggest difference in opinion is when referring to costs, accommodation, facilities at destination and the possibilities of multiple activities at the destination.

The students tend to do research regarding the destination (3.85 out of 5 – extensive research) and want to undergo new activities while on vacation (3.75). Many of them would also prefer new destinations (3.71). On the other hand, half of them would return to a destination they liked (the average mark is 3.5 points). Also around half of the students are determined in advance on the type of activities they want to undergo during the travel (the average is 3.42 points, where 5 is extremely decided) and on the form of tourism (the average is 3.41 points). Men are more decided on the type of tourism they are interested in (3.74 points) and they do research less on destination (3.75). It does not really matter how comfortable a destination is (2.23) or how difficult to reach (2.43). Even if company is important, in general students would not go to a certain destination they dislike just because friends prefer it (more than 65% of the respondents would not go, but men are less influenced by their friends’ preferences).
c. Forms of mountain tourism preferred by students
The most popular forms of mountain tourism among students are resort tourism and camping / chalet tourism. 2.3% of the respondents are going into the mountains several times per month for different forms of tourism. The aims of travel, starting with the most frequent form of tourism mentioned, are camping (or are chalet-accommodated), rural tourism in a mountain region, mountain resort tourism, mountaineering, mountain biking, and spa tourism into a mountain region. 6% of the respondents have never been into the mountains as tourists. A bit more than twice as many students have never been camping into the mountains or they have never been accommodated into a chalet. The most unpopular forms of mountain tourism among students are: extreme tourism (86.1% have never been practicing it, but the percentage for men is lower, of 78.5%), mountain biking (82.5% have never tried it – 62.5% among men), mountaineering (74.3% have never practiced it – 62.5% for male students), and scientific tourism such as speleotourism (59.6% the average – 53% for men).

Generally, the frequency of different forms tourism among the respondents did not significantly changed since the respondents became students. They tend to travel a bit more abroad and into the mountains. Just women declared they are going more often to the seaside since they are students. The decrease of religious tourism, shopping tourism in Romania and spa tourism is a bit more evident. Almost 25% of the respondents travel abroad for mountain tourism. The same number of students went skiing outside Romania at least once in their life. Most of them – around 10% of the total - are going skiing abroad once a year.

d. Length of travel
As expected, the length of travels during the vacations is bigger than travels taken in general by the respondents. 5.7% of the travels during the holidays are of more than 15 days long. 18.9% of the students travel between 10 and 14 days during vacations. The length of travel for 37.9% of the respondents is of 7-10 days. 24.1% are traveling for a week, while 13.4% do not afford a longer travel than three-four days. In general a journey into the mountains lasts for just two-three days (almost 64% of the respondents.) Men declare shorter journeys, all the usual travels being of less than 14 days.

Just 7.8% of the students go into the mountains for an average of one week. Male students declare longer trips into the mountains (8.6% declare that they are usually going into the mountains for at least one week) Since the journeys at the seaside are generally longer, data suggests that students tend to go at the seaside during their vacations, and into the mountains all year round.
e. Motives for mountain tourism
The students were asked to associate different forms of tourism with various concepts. Mountain tourism is primarily associated by the respondents with sports (174 students), escape (90 students), performance (37), greatness and entertainment (30 students each), friendship and team (28 associations each). At three of the concepts (sports, greatness and escape) mountain tourism acquired the largest number of associations (respectively 52%, 45.5% and 26.2% of the total number of associations to that category). Less than three associations are mentioned for novelty, knowledge development, spiritual development, and boredom.

The top reasons why students go into the mountains are: to admire nature (4.24 out of 5 – extremely important reason), to recharge the batteries (4.15), to be with friends (3.99), for fun (3.94), to explore the nature (3.91), and to do physical exercises (3.89). To be alone is the most unimportant reason of choosing to go into the mountains (2.7 points on the importance scale). Even if friends and entertainment are important reasons for going into the mountains, they are even more important to choose a seaside journey. The top reasons for male students differ a bit from the average data obtained: to admire nature (4.18%), to do physical exercise (3.92%). to recharge the batteries (3.84%), to explore nature (3.84%) and for fun (3.84%)

f. Activities undergone during travel
The most frequent 5 activities undergone while into the mountains are hiking (91.6%), landscape photography (88.8%), animal photography (33.8%), ski (27%) and mountaineering (12.2%). Male students prefer more skiing than animal photography. More than 75% of the students have never been to the mountains for activities such as: bungee jumping (489 answers), glider (484), ice climbing (482), rafting (472), hunting (451), or mountain biking (440). Generally those who never experienced a certain activity are willing to try, for the exception of hunting (77.6% of those who never did it, do not want to), bird-watching (61.9%), ice climbing (60%), fishing (53.4%), rafting (51.9%) and ski-fond (50.4%). The biggest interest in activities never experienced before is in riding (87.4% of those who have never ridden before intend to), ski (78.8%) and skating (75.5%). Nevertheless for every activity mentioned, at least 22% of those who have never tried it before want to do it.

g. Preferences
The percentage of students who would like to go into the mountains more often is larger than of those who would prefer to go at the seaside more frequent (4.27 points compared to 3.99 points out of 5). Still the percentage of
students who want to travel abroad more often is even larger (4.55). The preference for mountain tourism is a bit bigger than for seaside tourism (3.26). In general male students are more favorable to mountain tourism than female students. Male respondents would like to go into the mountain on a larger percentage than male students who want to go abroad. They also prefer mountain tourism to seaside tourism in a wider percentage (3.67 points out of 5).

Nevertheless, the respondents declare they go a bit more often at the seaside than to the mountains during summers, even if the journeys into the mountains are more fun (3.02) and the family prefers them (3.07). The data shows that friends prefer seaside tours, so this could explain why students tend to travel more at the seaside. Even if friends seem to be very important when choosing the destination, students declare they do not involve themselves in sports or different activities just because their friends insist on them. In the same time, students have a tendency of going more often into the mountains during winters than during summers.

The results presented above should be more closely examined. Male students declare they go more often into the mountain during summers and they go more into the mountains during summers than during winters. The final average data is strongly influenced by the larger number of women filling in the questionnaire. Another significant difference between men and women is that the former consider mountain tourism to be more fun (3.23).

Students consider that Romanian mountains are a bit more spectacular than other mountains but they are not as well taken care of, they have fewer facilities. Nevertheless they do not prefer to go abroad for mountain tourism, neither during summers or winters. The situation is different when talking about seaside holidays – students prefer to go abroad.

Taking into account the length of the journeys, students would prefer to go into several shorter trips during their vacations (3.62 points out of 5). They also want active travels not just for relaxing (3.62). Students declare they prefer itinerary forms for travel, rather than staying in one location (3.53). There are differences between the opinions of male students compared to female students. Men prefer in a lesser degree itinerary trips or to take several shorter trips. They also prefer active forms of tourism in a larger degree.

h. Companionship during travel
41.3% of the respondents go into the mountains with at least four friends. The percentage is higher among men – 43.2%. 31.2% go into the mountains just
with his/her partner (the average for male students is lower – 22.2%). 14.7% of the respondents go into the mountain with at most three friends (male respondents report a higher value – 22.2%).

Conclusions and discussions
Students tend to consider that the most useful sources of information are either persons they personally know (friends and family) or the internet websites were a wider range of opinion is presented. It is interesting to point out that usefulness of information generated by a certain source is most of the times related with the trustworthiness of that source. It is to be investigated if the respondents consider that nonprofits and different persons are more biased than travel agents. This would suggest that students do not necessary distrust travel agents, but consider that the information that they generally produce is not necessary useful.

Even if costs are important when choosing a destination, tourism is considered a personal endeavor, and personal desires are the most important factors: what they want to see, what are the expectations based on previous experience, what they want to do, with whom they travel. Nevertheless, students do not have a very consistent image on where they want to spend their vacations or what they want to do there. Most of students would prefer new destinations or the possibility of new activities while traveling. For students it seems to be more important what the destination offers, but they would return to places they like.

Students practice different forms of mountain tourism, but the most frequent are the traditional ones – resort tourism or camping. At least 15% of the students have tried some sort of adventure tourism. Mountain tourism in more popular than other forms of tourism, closely followed by seaside tourism.

Data suggests that students are interested in short tours into the mountains, not only during vacations. The survey also reveals that students tend to go at the seaside during the vacation, while this particular period of time does not influence mountain tourism.

Mountain tourism is seen as an active form of escapism. Even if mountain tourism is associated with being with friends, seaside tourism is more related with this aspect. Students prefer mountain for the opportunity to admire nature and to admire the nature. It is considered a more active form of tourism compared with seaside tourism. Even if students did not took part before in activities such as riding, skiing, skating, snowboarding, gliding or
mountaineering they are interested in them, while they do not want to take part in activities such as hunting, bird/watching, ice climbing, fishing, rafting or ski-fond.

Students tend to prefer mountain tourism both for winter and summer. Still, because friends tend to like more seaside tourism, they go a little bit more often at the seaside. There is also large interest in trips abroad, but not for mountain tourism. Generally, students would like to travel more either abroad or into the mountains. They would also prefer itinerary and active vacations, as well as shorter trips but more of them during the holidays.

The survey confirms several times that, for students, friends are extremely important in the context of mountain tourism, more important than in the case of seaside tourism. Women tend to go more with their partner, while men travel more often with friends. Even if respondents did not firstly associated mountain tourism with friends and companionship, they are influenced by their friends when choosing the form of tourism, and they often go into the mountain with more friends.

For women comfort at destination is more important than for man, but there are not large differences. Women also tend to be more careful when choosing a destination or form of tourism, while more are not so influences by others, friends or family, and are more decided on what they want to do. Male students are more active during travel and more experienced in different forms of mountain tourism. They generally prefer mountain tourism, and consider it to be more fun. Also men travel more often with friends, while women travel with their partner on a larger scale. Data also reveals that men stay more into the mountains, but their breaks during vacation is shorter than that of women. Male students prefer mountains more, and tend to do research less.

Implications
Since friends are often companions during mountain journeys and they influence the decisions related to tourism, travel agents have to address groups of students, and have to use word-of-mouth marketing in order to stimulate the transmission of messages among friends. Because students tend to go with several friends into the mountains, travel agents should propose and promote offers for groups.

Students prefer active trips and itinerary journeys. On the other hand, they prefer familiar activities and they take limited risks. Therefore, they are interested in new activities and in unusual forms of tourism but they have to
have references from friends and family. They are also strongly stimulated by the desire to visit some places or to do different things. The accommodation conditions are less important than the activities which could be done at the destination. In this context, travel agents should stimulate these desires, they have to concentrate on the possibilities to spend the time at the destination.

Students prefer active vacations, and are willing to try different activities they have not experienced in the past. Therefore, travel agents should make more affordable sports and other activities students are familiar with, but did not have the occasion to do. Travel agents could benefit from the students’ preference for mountain tourism in Romania and active journeys.

Travel agents should take into account that male students and female students have different preferences regarding tourism, but both groups are interested to travel with friends. Thus, they should design their offer in such a way to satisfy both men and women.

REFERENCES

Abstract. Almost all tourist trails in Romania were marked in the first decades of the last century. Nowadays these routes are remarked, and represent an important segment of touristic offer. Our research is concentrated on verifying some of the routes characteristics such as length, time. For this we developed a GIS system, which calculates these values, based on region DEM and tourist routes positions. The developed system has a friendly interface developed in Borland Delphi and a powerful GIS background using IDRISI modules. The results obtained from the system are quite surprising, values of the walk time differ very much in some cases from those specified in route descriptions. After verifying the base data and calculation methods in Hășmas Mountains we concluded, that historical route description holds some errors and our analysis system can be a valuable tool in tourist route analysis.

Key words: GIS, Lacul Roșu, programming environment, tourist trail

Introduction
Almost all tourist trails are a result of the 1920’s and 1930’s. These trails are reconditioned by NGO’s and by ecologic associations to promote tourism.

Although today’s tourism and services within tourism are much different from those in the last century, the material aspect of tourism got reevaluated and recalculated, tourist trails are a new way of discovering the beauties of the wilderness thus acquiring new knowledge. It’s needless at this day to mention that covering some tourist trails is not just healthy but also relaxing and helps maintaining a healthy lifestyle.

The today's tourist demands much more information that is precise and plentiful than its predecessor in the last century, even though he or she can't use to a good extent all the received information. Starting from this necessity of the travel agencies, of the agents and holiday makers this precise and vast database can be a considerable help.
The description of tourist trails can be classified into two categories. The first part of the description is short and precise, that offers data like: the type of the marking in use, the estimated time one needs to cover it, total length, the biggest elevation level, etc. The description continues with the presentation of the important sights and elements of the trail just as we would cover the trail led by a virtual guide. In this description we will have info regarding the landscape and sights, flora, fauna, existence of springs, shelters, etc. Outlining the differences between the two descriptions is very important because they are stored and processed differently on PC and furthermore search for data in these information databases is done differently.

The Lacu Roșu (Red Lake) Region
The tourist resort is situated 35 km from the town of Bicaz and 25 km distance from the town of Gheorgheni, over the Pângârați pass (1,254 m), that is part of the national road 12C, that connects Transylvania to Moldavia.

Jurisdictionally it belongs to the town of Gheorgheni. The appearing and development of the resort is closely linked to this town. Gheorgheni was first mentioned in 1332 in a papal census. Its development through time is closely related to the development of the sekler society’s development. Its harsh and cruel history (social ranking – horsemen, footman, serfhood – the Mongol invasions, plague, Austrian dominance, the 1848 revolution, the First and Second World Wars, the slow evolution of capitalism, centralization of power, socialist economy, the disappointments that followed the 1989 changes and the not so favourable climate) led to the closing in of the population, that became weary, suspicious and held back.

There are 25,000 people who live in Gheorgheni, and the town is the biggest one in the Gheorgheni basin, and an important starting point to numerous touristic attractions (Borsec, Praid, Sovata, Lacul Roșu Lake, Miercurea Ciuc).

On the eastern side of the city, near the road that leads to the Lacul Roșu Lake, lies the 77m long, 33m wide, elliptical shaped Both Castle, which was built at the end of the 15th century and the beginning of the 16th century, and its tale has to do with Rakoczi Ferenc the 2nd’s revolution. Further up the Belchia creeks valley, near the 4th km, another creek enters the main stream, where a fine tourist resort was established, where wooden cabins and huts, a motel, ski slopes for beginners, a lake measuring half a hectare awaits the adventurers. At the 5 km mark there was established the finest and best
established ski slope of the region, with ski lift in the lower part of the course. Further upstream at km 6 and 7 two more creeks join the Belchia, the Cerbul spring (5 + 800 m), and the Cianod brook (6 + 600 m) and the water collector of the town is located. After this the main brook heads north.

The next important stop is located at Km 9, where a fine restaurant is located at the juncture of the Moghioros brook with the Belchia brook, from here the road ascends 300m, in just 15 km, to the Pângărățăi pass (1,257m), located under the Pângărățăi peak, from where one can have an outstanding panorama over the whole valley and mountain range.

The Pângărățăi Peak is an important point, from here marked trail (red stripe) leads to the Căliman mountains, following the main crest of the Giurgeu Mountains. The trail marked with a blue stripe leads the adventurers to the Ceahlău Reserve. The red stripe that heads south west follows the main crest of the Hâșmas Mountains and leads to the Ciuc Mountains (Dombay 2007).

Descending from the Pângărățăi pass, we travel near pine forests, and beautiful brooks, on some of these were constructed alluvium stopping dams, and finally as we reach Km 21 we have the first glimpse of the Lacul Roșu Lake, and in the background we see the Suhardul Mic.

One of the Hungarian travelers, Orban Balazs, in its book: A Szekelyfold leirasa (The description of Sekler country) relates that the view that greats any tourist is as catching as any unforgettable view of the Swiss Alps, or north Italy’s landscapes, not as big, but remarkably beautiful and breathtaking.

The road passing the Oii brook arrives on the right side of the lake, follows the shoreline of the lake till we reach Km 25, where we will find the boat renting small harbor.

The trail that follows the Oii brooks valley leads to the Fehermez Peak, from where the tourists can reach the main crest of the Hâșmas Mountains that leads to the mountain cabin at the Piatra Singurătăție (Lonely) Peak, on the trail marked with a red stripe.

**Using GIS in tourist trails analysis**

The purpose of our research wasn’t the creation of a GIS database just for one target region. The purpose is to create an analysis system with which we can determine some of the characteristics of the tourist trail. Some of these
characteristics one can find in the description of the trail, as a conclusion they are meant to be compared and verified others are new information.

As a principle the following calculations can be performed with GIS analysis that can offer new information:
- the visibility from some points on the trail
- the visibility of some points
- determining the sunny areas on the trail
- determining the angle of the slopes to different parts of the trail
- determining the quantity of energy necessary to cover the trail’s length
- longitudinal profile of the whole trail,

At the same time some figures can be determined just as in the description, like:
- maximum elevation
- time needed to cover it
- distances,

To be able to assess such a database we used as a starting point the digital elevation model and the exact position of the trail. If we want to assess the visibility from the trail, we need to know the height of the neighbouring vegetation.

The big majority of GIS programs are made for specialists and not for any user with limited knowledge of the software. A disadvantage could be that the average user can use this software only after some specialized training (Haidu 1998; Imbroane 1999).

GIS software offer a wide variety of calculus that refer to the angle of the slopes, exposition, visibility, profiles, but could present problems if a travel agency’s agent needs to analyze it on the spot and answer to questions like: what is the average elevation along a single slope? What is the quantity off energy that one requires to cover that part of the trail? etc.

The element missing from GIS software is that of offering the possibility of controlled supervision that could be accomplished according to some predefined algorithms. This could lead to the results accomplished by the user, without the user knowing the calculating methods and the steps of the analysis, but through the existence of some predetermined variables it could
be personalized. So there is a need to some predefines software for GIS, specialized in some specific areas of research.

To develop such products we need two things: the first step is the creation of the base of the system, or to integrate some of the existing GIS algorithms into our own. The first method is not popular because it's not cost-effective; the second one would be accepted if we can combine multiple elements from different parent software's.

Almost all GIS systems offer the possibility of automatic calculus, based of script languages, macros or graphic models, but these lack the parametrized interaction or they lack control structures. There is a possibility of integrating these systems into programming environments. By this the interface receives a friendly appearance, uses GIS operations without letting the user notice this.

**GIS and the programming environments**

Spatial modeling is a key concept in GIS systems. (Magyari-Sáska 2006) The effort for the development of a modeling algorithm is proportional with the complexity of the problem. For a research field and a studied problem the spatial analysis means the definition of the model variables which has to be considered and the proper specification of the calculation methods for their determination. After this the model can be formularized.

In many cases a developed model can be reused in other situations considering the local characteristic of the geographical space. The necessary commands, their type, number of execution, used parameters are dependent of the given situation. There also exist operations which requests rising flexibility and user intervention (Chang 2008).

The analysis model could contain repeating of some steps, eventually with changed parameter values. In these cases the manual reexecution of the commands would require a reentrance of a whole set of parameters, the majority of them without being changed. That's why we consider that a calculation model is advisable, through which:

- the complex analysis can be reexecuted just with the changed parameters, without the reentrance of the unchanged ones
- decisions can be made, some of then hard coded in the analysis algorithm while the other ones to be made by the human operator (flux control).
Table 1. – The modeling possibilities of several GIS systems

<table>
<thead>
<tr>
<th></th>
<th>Possibilities of internal modeling</th>
<th>Possibilities of cooperative modeling</th>
<th>Possibilities of external modeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDRISI Andes Edition</td>
<td>graphical programming macros</td>
<td>IDRISI API</td>
<td>inovaGIS</td>
</tr>
<tr>
<td>ERDAS Imagine 8.4</td>
<td>graphical programming macros script language</td>
<td>C-Toolkit + Visual C++</td>
<td></td>
</tr>
<tr>
<td>ArcView 3.2</td>
<td>script language</td>
<td>AVPython + Python</td>
<td>inovaGIS</td>
</tr>
<tr>
<td>ArcGIS 9.2</td>
<td>Batch Model VBA</td>
<td>MapObjects ArcGIS SDK</td>
<td>inovaGIS</td>
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</table>

Almost every GIS system has same automatization procedures. These can be grouped in the following categories:

- **internal**, which are incorporated in the given GIS system, operating just in the GIS environment, usually not offering the possibilities of a programming environment such as object handling, control structures (decisions, loops, etc.), recursivity, interoperability. In this category the following possibilities can be found: macros, script languages, graphical programming.

- **cooperative**, meaning that the GIS system can collaborate with a programming language by containing it or having the possibility to be called from that programming environment. In this category we can found the embedded programming languages (ex. Avenue, Python) or high level programming languages which can integrate the functionality of GIS systems (ex. IDRISI API) (Imbroane 2003, Magyari-Sáska 2007).

- **externals**, complete systems which contains the data access part of existing GIS databases but usually without a properly developed analysing command set (ex. inovaGIS)

Each of the above mentioned categories can be considered as a programming environment for GIS analysis, as the commands are executed one after other without a necessary human intervention.

Through our research the following four GIS environments were studied form this point of view: IDRISI Andes Edition, ERDAS IMAGINE 8.4, ArcView 3.2 și ArcGIS 9.2 (Table 1).

**The developed system and its results**

For this research there were 6 trails chosen from the 12 existing one in the vicinity of the Lacu Roșu (Dombay 2002, 2004). Table 2 shows the major
characteristics of these trails. In the even rows of the table there are marked the followings: type of marking, time to cover it, length, maximum elevation, trail’s difficulty.

Tab. 2. - The characteristics of the trails around Lacul Rosu Lake Source: after the http://mars3696.hu/rokaly/index-turaajanlatok.php?a=gyilkosto map

<table>
<thead>
<tr>
<th>The center of the resort (967) – the Stone Balcony (1007) – Marton Ferenc’s trail – Păstrăvie (993) – Debarcader = harbor (983) - The center of the resort (967)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Cupaș brook’s juncture (944) - Piciurul Cupașului (1080) – Bicaz Straights 29km (850)</td>
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<tr>
<td>Red cross, red circle 1 hour 3 km 136 m easy trail</td>
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<tr>
<td>Resort center (967) – Veresghieu saddle (1011) – Calea Vărarilor – Cifra Saddle (1002) – Bicaz Straights (850)</td>
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<tr>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Yellow triangle 1 hour 3,5 km 44 m easy trail</td>
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<tr>
<td>Resort center (967) – Under the Veresghieu Saddle – Dosu Ghilcoșului meadows – Ghilcoș Cliff (1378)</td>
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<tr>
<td>Red triangle 2 hour 4 km 411 m accessible in any season</td>
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<tr>
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<tr>
<td>Harbor (983) – Ghikos meadows (1210) – Ghilcoș Cliff (1378)</td>
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<tr>
<td>Blue circle 2 hour 3,5 km 395 m accessible in any season</td>
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<tr>
<td>Resort center (967) – Bucur Vila (990) – Suhard Chalet (1091) – Sudarului Saddle (1202) – Sudardul Mic Peak (1345)</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Blue triangle 1 1/4 hour 3 km 378 m accessible in any season</td>
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</table>

To assemble the system of analysis there were used (figure 1):
- programming environment Borland Delphi 7, to create the user’s interface and as a frame of development for applications
- IDRISI Andes Edition, it can be easily adapted and integrated into Delphi
- InovaGIS, a visualization library for many types of file.

Fig. 1. - The function scheme of the elaborated system
This newly developed system requires from any host PC the prior installation of IDIRISI and of inovaGIS software.

The modifiable parameters of the application are: the tourist trail, the meal of the person, conditions of visibility.

By the selection of one of the trails this data is generated:
- the length of the trail, taking into consideration the elevation corrections as well
- the maximum and minimum points of the trail and the biggest elevation
- the total length of ascends and descends on different categories of slopes
- the necessary time to cover it taking the inequalities of the trail into consideration
- the calories burnt by one individual if one meal is taken into consideration

If the user requires the system can provide information regarding:
- visibility from a selected point

The visibility of a selected point

![Fig. 2. - Interface of the developed system](image-url)
The results that can be obtained from this database can be seen in Table 3. The italic values represent the give data form touristic maps.

**Tab 3.** The calculated characteristics of the tourist trails near the Lacul Rosu

<table>
<thead>
<tr>
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<th>6</th>
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</thead>
<tbody>
<tr>
<td>L</td>
<td>3.946/3.500</td>
<td>2.429/3.000</td>
<td>4.436/3.500</td>
<td>2.872/4.000</td>
<td>2.193/3.500</td>
<td>2.203/3.000</td>
</tr>
<tr>
<td>minH</td>
<td>977.6</td>
<td>842.0</td>
<td>878.8</td>
<td>970.1</td>
<td>990.1</td>
<td>962.0</td>
</tr>
<tr>
<td>maxH</td>
<td>999.6</td>
<td>1085.0</td>
<td>1020.1</td>
<td>1373.4</td>
<td>1376.5</td>
<td>1330.7</td>
</tr>
<tr>
<td>dH</td>
<td>22.0/40.0</td>
<td>242.9/136.0</td>
<td>141.2/44.0</td>
<td>403.3/414.0</td>
<td>386.4/295.0</td>
<td>368.7/378.0</td>
</tr>
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<td>T</td>
<td>1:03/1:00</td>
<td>0:47/1:00</td>
<td>1:19/1:00</td>
<td>1:00/2:00</td>
<td>0:52/2:00</td>
<td>0:49/1:15</td>
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<td>E</td>
<td>314</td>
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<td>514</td>
<td>432</td>
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<td>Ld</td>
<td>72</td>
<td>310</td>
<td>373</td>
<td>17</td>
<td>37</td>
<td>0</td>
</tr>
</tbody>
</table>

The abbreviations used in the table are:
- L - length in km
- minH – the lowest point (meters)
- maxH – the highest point (meters)
- dH – maximum elevation (meters)
- T – estimated time to cover the trail (hour, minute)
- E – the amount of calories burnt (kcal) for a person averaging 70 kg
- Lu – the length of the ascends (above 20 degrees) (meters)
- Ld – the length of descends (above 20 degrees) (meters)

**Conclusions**

The results can be surprising when we compare the calculated characteristics with the different presented elements from the descriptions. As a first step we verified the vectoring of the topographic maps, setting the maximum possible error to be 10 meters, due to the distortions of the map and the precision of the vectorisation. We tried to verify the correctness of the position of the trails as well, but because the GPS got disoriented in the thick pine forests this couldn’t be done accurately. We concluded that the most precise data were registered on the trail leading around the lake. On this trail there isn’t a big elevation. We studied the descriptions given in the literature and we discovered some significant differences, like:

- the difference in altitude of the reference points, of those of maximum and of minimum altitudes, the elevation showing higher numbers than the difference between the two;
- trails with portions presenting higher difficulties and registering very close times of coverage from the other segments, but the profile showing these some trails and descriptions had one place specified as a starting point but marked somewhere else on the map;

Our final conclusion is that the majority of the trails – at least those in the study region – present estimated numbers and values, and were not registered as a result of a rigorous field study. Although with the perfecting of the existing analytic program, we consider that these inexactitudes can be corrected obtaining accurate and useful data and information for the tourists and for the organizations and agencies as well.

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TOURISM IN HIMACHAL HIMALAYAS: GLOBAL PERSPECTIVE

Vinay CHAUHAN*

Abstract. Sport Tourism as an emerging segment of the world’s largest and fastest growing industry has broadened its scope due to the growing interest for unusual holiday different from the conventional, which has been accompanied with wide variety and availability of travel products. With regard to adventure sport tourism, the basic spatial reference is a site, mainly influenced by destination technical factors. Himalayas being an ideal adventure sport destination, Billing in the Kangra Valley of Himachal Himalayas, due to its technical supportive strength, is recognised by Fédération International de l’Aviation (FAI), who have also granted it a category - II status in international ranking for aero spots. The International hang-gilding Competition was held in the year 1984, since then a number of events have been organised, some of the international level competitions were held in the year 1992, 1995 and 1998. Since 2002, the pre-world cup have been successfully organised in a row. In light of growing demand and popularity of the site, an attempt through this study has been made to evaluate Billing as an aero sport tourism destination from the pilot's perspective. The conclusions suggest that presence of various aero sport technical factors is a prerequisite for an ideal aero sport tourist destination. The study offers strategies, ways and options to improve the existing support structure for developing aero sport tourism.

Key Words: Aero Sport, Tourism, Himalayas and Billing.

Introduction

As emerging segment of the world’s largest and fastest growing industry, sport tourism is now among the world’s most sought-after leisure experiences. Significantly it has become very important economic activity. Recent researches have indicated that sport's contribution to the GDP of industrialised nations is between one to two percent, while the contribution of tourism is between 4 to 6 percent (WTO, 2001). Sport tourism together is valued globally at $118 billion (Fyal O., et al, 2008). While the global tourism and travel market is expected to grow by five per cent per annum up to 2020, the World Tourism Organisation forecast a ten per cent growth for sport tourism (www.unwto.org). However, till last two decades scholars, policy makers and governing bodies involved in both sports and tourism have largely ignored the travel dynamics generated by the synthesis of these two activities, with sport and tourism

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each being seen as incidental to each other, or as Glyptis (1991) suggested ‘as a separate sphere of activity’.

This is partly because sport tourism traditionally comprising two separate fields of study—sport and tourism—with limited integration and discussion between the two academic sub-disciplines and industry sectors. Therefore, there is a need to bring practitioners in both fields together, as there is a mutual advantage in such collaboration (Ritchie & Adair, 2002).

The economies of cities, regions and even countries around the world are increasingly reliant on sport tourism. In some countries, sport can account for as much as 25 percent of tourism receipts, while the indirect benefits are visible in the years to follow-on tourists. Sport tourism is now a tool to achieve many things—to make money, create thousands of new jobs, and even help in changing cultural perceptions as in case of Middle East and South Africa (Standeven, Joy & Knop H, www.humankinectics.com). As a result, all the key stakeholders at international, national and local levels have begun to take the significant interest in the subject of sport tourism so as to manage it in a way to maximise its full potential.

The WTO and International Olympic Committee, in a jointly organised international conference on sports and tourism in 2001 in Barcelona, Spain, have underlined significant synergetic relationship between sports and tourism, which was further recognised by leading international organisation for sport and tourism (Hinch & Higham, 2004). These attempts to articulate the relationship between the unique characteristics of tourism and sports are scholarly advances, which were further strengthen by a study “Analysing the relationship between sports and tourism: A case study of Island of Madera” (M Barros, 2007), which has pointed out “positive and statistically significant relationship between sports and tourism, where sports promote regional development and in doing so potential synergies of sports and tourism needs to be captured”.

In the past two decades the number of participating tourists and their interest in sport tourism has burgeoned with realisation that it is a growing segment of tourism industry. In fact, sport tourism involves combination of travel and sport activity. As per Standeven and Deknop, Sport tourism is all forms of active and passive involvement in sporting activity, participated in casually or in an organised way of non-commercial or business/commercial reasons that necessitate travel away from home and work locality (Standeven and Deknop, 1999). Gibson meanwhile defines sport tourism as “leisure-based travel that
takes individual temporary outside from their home communities to participate, to watch or to venerate attraction associated physical activities (Gibson, 1998). Weed and Bull have referred sport tourism as synergetic phenomenon of simple combination of sport and tourism, which has five main categories: sport participation, tourism with sports content, luxury sport tourism, sports event and sports training (Weed & Bull, 2004).

Notwithstanding, and irrespective of how one defines sport tourism, but a common and important characteristics from all of the above most acceptable definitions is that it is travel to take part, or watch sport, as also pointed out by Hinch & Higham, that in context of activity a spatial and temporal dimensions is a sport-based travel being influenced by travel motives and desires to pursue sport activities.

In sport tourism, the desire to pursue sport activities at a tourist destination is the main motive to travel. In such cases destination choice of tourist can be expected to be influenced by a complex set of motivations, both general tourist motivation as well as specific sport-related motivations. Gammon & Robinsone, and Fluker & Turner, have suggested that sport tourist motivations are not homogeneous and differs depending upon situational factors, type and nature of activity, destination suitability and features etc (Gammon & Robinsone, 1997; Fluker & Turner, 2000; and Gammon & Robinsone, 2004).

With regard to adventure sport tourism, the basic spatial reference is a site or often called as a destination, defined essentially on the basis of physical, hydrographic and climatic characteristics which determine its ability to provide its support for a sport activity with particular requirements regarding access, style, level of competence, safety and so on (Bourdeau; Corneloup & Mao, 2002). Thus the purpose of the study is to evaluate one of the most popular site for aero sport tourism.

**Aero Sport Tourism in Himachal Himalayas**

Adventure tourism is rapidly growing in popularity as tourist seek unusual holidays different from the conventional vacation. Adventure travel has now become one of the fastest-growing travel market segments and has broadened its scope in international travel and tourism. The variety of adventure travel products for a wide range of interest and abilities appear to be limitless (Sung, Morrison & O’Leary, 1997). In fact, the growth of adventure tourism has been accompanied by an enormous variety and availability of adventure activities. Mountaineering expeditions, trekking, bungee jumping, rafting and rock climbing are frequently cited examples of adventure tourism. Among the various
types, aero sport occupies a prominent position in adventure sports. Paragliding, Parasailing, Hanggliding, Balooning are different types of aero sport. Of these, Paragliding and Hanggliding are the latest aero sport that takes the world by storm.

Be it Paragliding, Parasailing, Hanggliding or any other, Himalayas is undoubtedly, one of the most spectacular and impressive mountain range, that makes it an ultimate adventure sport destination. The Himalayas, World's highest mountain massif, for its sheer geographical diversity is richly endowed as an ideal destination that is stimulating demand for international tourism. Expanded over 2400 km from the north-southward from Tibetan Plateau to the Indus-Gangetic Plain, it covers countries of India, Nepal, China, Pakistan and Bhutan. The width of this mountain system varies from 180 to 350 Km with total area of 650,000 sq km and average height is about 6000 m, while the system include 11 peaks towering above 8000 m. These several thousand mts peaks, rivers in deep gorges, thick forests and acres of spree, green alpine meadows all form a part of immense spectrum and possibility for a wide range of adventure activities.

Among the various destinations in Himalayas, the climatic conditions and topography of Himachal Pradesh make it the best suitable destination for aero sport. Billing at an altitude 8500 fts in the Kangra valley, of Dholadhar ranges of Himachal Himalayas, became the legend in the international paragliding circuit for hosting International and pre world-cup hang-gliding and paragliding competition. Since 1984, with first international hang-gliding competition, this site has been referred as one of the finest site by most of the international pilots like Bruce from New Zealand, Andy from England, Masleuiker M from Russia (www.templepilots.com).

Large number of foreign pilots, including some big names in the sport, have enjoyed flying off from Billing. In the year 2002, Norman Luach, an American Pilot ranked number 5 in the world ranking, who participated in the competition, have also mentioned Billing as one of the most favourable site for aero sport. Nikolai Shorokov, event manager Paragliding Himalayan Cup- 2006 and two times champion of the Paragliding Pre world cup has described it as legend in the international paragliding circuit and have ranked the site among the world's top 10 paragliding site (Hindustan Times, 19 Oct, 2006, Chandigarh). Following maps are showing Himalayas and Billing near Bir, in the Kangra valley in Himachal Pradesh.
Encouraged by the opinion of the experts, Himachal Pradesh have organised various national and international level hang-gliding and paragliding competitions every year with the support of Aero Club of India. The International hang-gliding Competition was held in the year 1984, since then a number of events have been organised. Some of the mega international level competitions were organised in the year 1992, 1995 and 1998. Since 2002, the pre-world cup have successfully been organised in a row.

Billing (2600 mH) is the takeoff site and Bir (2080 mH) is the landing site. The distance between the two cities is 14 km and it offer opportunities for high altitude and cross country flying for more than 200 km (www.vacations.com/Himachal Pradesh). The cross country distance flying from Billing to Manali or Billing to Dharamshala is 90 km. The flying is generally “ridge-hopping” i.e. getting lift from the ridges or cliff edges running down from the main spine of the range. “Ridge lifts” caused by wind hitting a hillside and “Thermals” are used by the glider to rise higher. Thermalling is an essential skill for flying and in Billing, thermals are found on regular basis running down to Bir. In Billing-Dharamshala route, there are 15 or so ridges (www.mcllo.com). This technical edge makes Billing as one of the best site for hang and paragliding in the world (IANS, 2008, www.thaindian.com/newsportal/worldnews). Billing due to its technical supportive strength, is recognised by Federation International de l’Aviation (FAI), who have also granted it a category – II status in international ranking (Saransh Sehgal/mcllo.com). It also has the distinction of organising first ever paragliding competition according to the rule of Fédération Aeronautique Internationale. In light of hosting various national and international hang-gliding and paragliding competitions, it becomes important to analyse and evaluate the site as per the global benchmarking from the perspectives of the pilots participating in these events.

On the basis of above, it can be assumed that Billing in Himachal Himalayas, is an ideal destination for aero sport, so on the basis of this hypothesis, an attempt through this paper has been made to conduct an in depth study regarding the evaluation of the site, as per the global standards. Moreover in aero sport tourism, pilots occupy a dual identity of sport tourists and competitors who attract other sport tourists as spectators. Therefore pilots being very important as tourists as well as for attracting spectators, study have taken pilots’ perspective for site evaluation. The study aims at following objectives:

1. To study the aero sport pilots’ perception of Billing as an aero sport tourist destination.
2. To evaluate gap in terms of importance of various aero sport tourism factors for an ideal site vis-à-vis their performance i.e. the extent to which selected site supports these factors.
3. To suggest ways and options to (reduce/bridge-up the gap, if found) improve the existing support structure for aero sport tourism.

The above objectives and literature generates the following hypothesis.

**H1** Billing being an ideal aero sport tourist destination, there exists no gap in terms of importance and performance of aero sport tourism factors.

**H2** Significant difference exists in the perceptions of aero sport pilots on the basis of their of demographic profile i.e. Experience, Nationality and Gender.

**Research Methodology**

**Sampling Design:**
The target population for this study was aero sport Pilots, who participated in the various aero sport events hosted at Billing during the last three years. In the year 2006, International Paragliding Cup was organised from Oct 18 to Oct 25, 2006, in which a total of 57 pilots participated in this event. In the year 2007, due to climate and weather conditions as temperature not being sufficient high for thermal lifting, Paragliding Himalayan Cup as scheduled from Nov 14, 2007 was cancelled for the year 2007. In 2008, Himalayan Paragliding Pre world Cup was organised from Oct 16 to Oct 19, 2008, in which 82 pilots in all participated in the event.

A personal survey was conducted during these two events i.e. during the period Oct 18 to Oct 25, 2006, and Oct 16 to Oct 19, 2008. The survey was conducted at take off site, landing site and various accommodation units at Bir being used by the participants. The selected target sample comprised 139 pilots, who participated in the Himalayan Paragliding Pre-World Cup organised in the year 2006 (57 pilots) and 2008 (82 pilots). The survey was first pre-tested with an initial 20 pilots (2006) in order to find out scope for improvement needed in the research instrument. However, as no major improvement was required, rest of the data collection was done. Out of 139 respondents, 14 could not be contacted, 41 refused to participate, the remaining 84 (60.43%) agreed to participate.

**Research Instrument:**
The survey instrument was a self-administered, two part questionnaire. The questions in the first part of the survey asked about respondents’ demographics i.e. age, gender, nationality and experience in aero sport. In second part survey measured respondents’ perception of importance and performance of 10 items,
which were developed keeping in view various considerations and factors for aero sport tourism in the study area. The 5 item aero sport index included **Physical Factors** - landscape, altitude, climate and direction of wind etc.; **Technical Support** - Equipments, communication devices, instructions etc.; **Safety aspects** – Medical support, helicopters, quality of equipments etc.; **Communication support** – Efficiency, effectiveness, accuracy, clarity etc.; and **Take off and landing possibility**. The 5 **Tourism Factors** as undertaken in the study were **Touristic Appeal**; **Accessibility to the site**; **Transportation to the base camp**; **Accommodation and F&B facilities**; and **Other Public Utilities**. Respondent rated importance level of each attribute on five-point scale, where 1=Not important, 2=Least important, 3=Average, 4=Important, and 5= Very important. To evaluate the performance i.e. to what extent the destination supports aero sport tourism factors, respondents used 5 point scale (1=Very poor, 2=Poor, 3=Average, 4=Good, and 5=Very good). Moreover in aero sport tourism, pilots occupy a dual identity of sport tourists and competitors who attract other sport tourists as spectators. Therefore pilots being very important as tourist as well as for attracting spectators, study have taken pilots’ perspective for site evaluation.

Apart from structured questionnaire, open-ended questions were also asked to gain qualitative understanding and factors associated with aero sport tourism. These comprises depth techniques through detailed free exchange with the focus group of pilots having more than 10 years of experience for developing and improvising aero sport tourism in the study area.

**Methods:**

The study adopted importance – performance analysis (IPA) to assess the aero sport pilots’ perception for evaluating Billing as a aero sport tourist destination and finding the gap between the importance and performance therein. The study made use of IPA, since the pioneering work of IPA being done by Martilla & James (1977), its application has extended to a diverse context of tourism such service quality (Hudson & Shepard, 1998;Weber,2000), ski resort ( Uysal et al, 1991), escorted tours ( Duke & Persia, 1996), hotels (Martin, 1995), satisfaction of Campsites (Wallace, O’Leary, Dottavio & Perine, 1985), tourism destination (GO & Zhang, 1997 and Huan,Beaman; & Shalley, 2002). While deemed to be considered as a useful tool, all the researchers, who have applied IPA have underlined its significance in terms of its capability to provide decision making with useful information. Therefore, IPA has been applied in the present study to assess aero sport pilots’ perception for evaluating Billing as a aero sport tourist destination and also finding the gap between importance vis-à-vis performance in terms of various aero sport tourism factors being supported by Billing as a tourist destination. The ‘t’ is used as a test of significance for the significant scores of aero sport pilotrs’ perception on the basis of demographic groups.
Discussions And Findings
The study is limited to the aero sport pilots who participated in two mega events organised during the last three years i.e. International Paragliding Cup 2006 and Himalayan Paragliding Pre world Cup in the year 2008. Table 1 shows the distribution pattern of the respondents.

<table>
<thead>
<tr>
<th>Description</th>
<th>No. of Respondents</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Male</td>
<td>65</td>
<td>77.38</td>
</tr>
<tr>
<td>ii) Female</td>
<td>19</td>
<td>22.62</td>
</tr>
<tr>
<td>b) Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Less than 20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ii) 20-30</td>
<td>22</td>
<td>26.19</td>
</tr>
<tr>
<td>iii) 30-40</td>
<td>31</td>
<td>36.90</td>
</tr>
<tr>
<td>iv) 40-50</td>
<td>27</td>
<td>32.14</td>
</tr>
<tr>
<td>v) 50-60</td>
<td>3</td>
<td>03.57</td>
</tr>
<tr>
<td>vi) 60+</td>
<td>1</td>
<td>01.19</td>
</tr>
<tr>
<td>d) Nationality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Indian</td>
<td>16</td>
<td>19.05</td>
</tr>
<tr>
<td>ii) Foreigner</td>
<td>68</td>
<td>80.95</td>
</tr>
<tr>
<td>f) Experience (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) 1-3</td>
<td>21</td>
<td>25.00</td>
</tr>
<tr>
<td>ii) 4-6</td>
<td>35</td>
<td>44.67</td>
</tr>
<tr>
<td>iii) 7-9</td>
<td>11</td>
<td>13.09</td>
</tr>
<tr>
<td>iv) 10-12</td>
<td>12</td>
<td>14.29</td>
</tr>
<tr>
<td>v) 13-15</td>
<td>3</td>
<td>03.57</td>
</tr>
<tr>
<td>v) More than 15</td>
<td>2</td>
<td>02.38</td>
</tr>
</tbody>
</table>
Out of 84 respondents, majority of the respondents i.e. 65 accounting for 77.38% are males in comparison to females, who are 19 (22.62%). It may be due to the fact, that these adventure activities attract more males than their counterpart, in both the two events as undertaken in the study, there are approximate 30 female pilots, who have participated. Respondents’ age ranged from 24 years (Dutch) to 65 years (Indian Instructor) with mean of the participants as 37.03 years. Majority of the participants were from 31 to 50 years, out of six interval categories of age, 31(36.90%) were from 30-40 years, 27(32.14%) from 40-50 years, 22(26.19%) from 20-30. Comparatively, there was less participation from the age group of more than 50 years having 3(3.57%) from 50-60 years and 1 from 60+ years, there was no representation from less than 20 years of age category. Table 1 indicates that more foreigners i.e. 68(80.95%) are covered in the survey than Indians i.e. 16 (19.05%), but it may be due to the fact that these events attract more international pilots. In the year 2006, out of 57, 44 were foreigners and in 2008, approximately 50 out of 82 represented foreign countries. Taking experience into account, majority of the respondents have the experience of 1 to 12 years, with 35 (44.67%) having an experience of 4-6 years, 21 (25%) with 1-3 years, 12 (14.29%) with 10-12 years and 11 (13.09%) with 7-9 years. Comparatively less number of participants were highly experienced with more than 12 years with 3 (3.57%) having experience of 13-15 years and 2 (2.38%) for more than 15 years. An average experience of the respondents is calculated to be 6.08 years, which is sufficient enough for evaluating any aero sport tourist destination.

H1: Billing being an ideal aero sport tourist destination, there exists no gap in terms of importance and performance of aero sport tourism factors.

Assessment of Billing as an aero sport tourist destination: A gap analysis

Ten aero sport tourism factors comprising, 5 aero sport factors and 5 tourism factors were developed and respondents were asked for their opinion regarding the importance of these factors for any ideal site as per international standards for aero sport and performance in terms of presence of these factors at the selected site. The various aero sport used in the study are Physical Factors (ASF1), Technical Support (ASF2), Safety aspects (ASF3), Communication Support (ASF4), Take off and landing possibility (ASF5). And Tourism factors included Touristic Appeal (TF1), Accessibility to the site (TF2), Transportation to the base camp (TF3), Accommodation F&B facilities (TF4) and Other Public Utilities (TF5).

Table 1 depicts the opinion of the respondents towards the importance vis-à-vis performance of Billing on selected 10 aero sport tourism factors. In terms of
the importance, the table shows that the mean values of all the aero sport factors as undertaken in the study is found to be above 4, which indicates that all the aero sport factors as identified in the study are almost very important and are expected to be present in an ideal aero sport site. The level of importance was found highest for Physical factors (ASF1) with mean value of 4.79 and lowest about communication support-ASF-4 (4.24).

For the 5 tourism factors, as undertaken in the study, the mean value of the importance was found above mid value (d=3), which is still on the positive side and it indicates that these factors are also important and are expected from an ideal tourism site. Three tourism factors have higher level of importance with mean value above 4 i.e. Accessibility to the site (TF2, mean=4.58), Transportation to the base camp (TF3,4.45) and accommodation and F&B facilities (TF4,4.5), whereas the other tourism factors with mean value between 3 to 4 are touristic appeal (TF1,3.75) and Other public utilities (TF5,3.69). It can be interpreted from the data that pilots are more inclined towards aero sport factors as the average of mean value of aero sport factors is found to be more than tourism factors. May be it is due to the fact that aero sport is the main motive of travel, however the three of the tourism factors (Transport, accessibility and accommodation and F&B) being highly supplementing aero sport tourism have also found to be more important.

The extent to which, Billing as a site supports these aero sport factors (ASF) is evaluated in terms of performance as well. For aero sport factors, performance was found highest about physical factors (ASF1, mean = 4.4) and lowest about safety aspects (ASF3,3.69). Only two aero sport factors have mean value above four i.e. physical factors and take off and landing possibilities (ASF5, 4.15), while other three variables performance between 3 to 4 were technical support (ASF2, 3.8), Communication support (ASF4, 3.74) and safety aspects(ASF3,3.69).

In terms of tourism factors, performance of accessibility to the site was found highest (4.24) while other public utility was lowest (3.58) The performance of two tourism factors was found above 4 i.e. accessibility to the site (4.24) and transportation to the base camp (4.14); while other three factors between 3 to 4 are touristic appeal (3.96), accommodation and F&B facilities (3.87) and other public utilities (3.58). Interestingly, all the performance value of aero sport and tourism factors have come out to be above the mid value (d=3) indicating that all the factors are present in the site.
Table 2. - Assessment of Billing as a Aero sport tourist destination: A gap analysis

<table>
<thead>
<tr>
<th>A</th>
<th>Aero Sport factors</th>
<th>Performance Mean X1</th>
<th>Importance Mean X2</th>
<th>Aero sport Tourism Gap X1-X2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASF1</td>
<td>Physical Factors - landscape, altitude, climate and direction of wind etc.</td>
<td>4.4</td>
<td>4.79</td>
<td>-0.39 **</td>
</tr>
<tr>
<td>ASF2</td>
<td>Technical Support - Equipments, communication devices, instructions etc.</td>
<td>3.8</td>
<td>4.26</td>
<td>-0.46 **</td>
</tr>
<tr>
<td>ASF3</td>
<td>Safety aspects – Medical support, helicopters, quality of equipments etc.</td>
<td>3.69</td>
<td>4.54</td>
<td>-0.85**</td>
</tr>
<tr>
<td>ASF4</td>
<td>Communication support – Efficiency, effectiveness, accuracy, clarity etc</td>
<td>3.74</td>
<td>4.24</td>
<td>-0.50**</td>
</tr>
<tr>
<td>ASF5</td>
<td>Take off and landing possibility</td>
<td>4.15</td>
<td>4.71</td>
<td>-0.56**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>Tourism factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF1</td>
<td>Tourist Appeal</td>
</tr>
<tr>
<td>TF2</td>
<td>Accessibility to the site</td>
</tr>
<tr>
<td>TF3</td>
<td>Transportation to the base camp</td>
</tr>
<tr>
<td>TF4</td>
<td>Accommodation F&amp;B facilities</td>
</tr>
<tr>
<td>TF5</td>
<td>Other Public Utilities</td>
</tr>
</tbody>
</table>

Note: For importance; 1=Not important, 2=Least important, 3=Average, 4=important and 5= very important
For Performance; 1=Very poor, 2=Poor, 3=Average, 4=Good, and 5=very good.
* Moderate gap = below 0.35
** Serious gap = above 0.35

The study has identified gap on the basis of difference between means of performance and importance as also by Wade and Eagles, 2003; Kitcharoen, 2004; Ainin and Hisham, 2008.
Further all the mean scores of both performance and importance were plotted as coordinates on importance –Performance matrix as depicted in figure II. All the means were above 3 this shows that both importance and performance of the site are satisfactory. Therefore, site qualifies for further maintained ( cf. Bacon, 2003; Martilla and James, 1977).

All the gap value has been found to be negative except for touristic appeal (+0.21), which indicates that Billing as a site possesses the touristic appeal more than desired or as expected from an ideal site. Ironically, the gap value of all other aero sport tourism factors is found negative that shows that in relation to the importance or expectations, Billing as a site, possesses less features, giving enough scope for improvement. Highest gap was found in safety aspects (-0.85) and the lowest gap (-0.11) was in other public utilities. Further, the researcher has divided the identified gap values into two categories, with an average gap value of 0.35(Total Gap Value divided by total number of factors), moderate gap(below 0.35) and serious gap(above 0.35). Moderate gap has been found in all the five tourism factors with the gap value between 0.21 to –0.34. Whereas all the five aero sport factors were found to have serious gap. In fact, the research outcome on the basis of categorisation of the identified gap values resembles with the various research findings that the major influencing factor for destination success in sport tourism is the destination's ability to provide support for technical features associated with the sport such as level of competence, safety and other technical and communication support etc. The identified gap suggests serious efforts on part of all stakeholders with special emphasis on public-private strategic partnership. It is therefore recommended that all the organisations associated directly or ancillary both in government and private sector such as government health department, Himachal Road Transport Corporations, Public Works Department, Himachal Pradesh Tourism Development Corporations, Tourism Department, Private Transport agencies, Travel Agencies and tour operators, Hotel Industry, Army and Para-Military Organisations for helicopter and rescue, medical evacuations and emergency services etc, need to collaborate and develop strong partnership and liaison, so as to ensure better aero sport tourism support structures and service delivery.

**Importance Performance Analysis**

As the gap between importance and performance has been identified, therefore to gain better understanding, IPA has been applied in the present study to plot aero sport tourism factors (ASTF) into two-dimensional matrix, where all point ASTF fall in one of the four quadrants (figure I), where each of the quadrant has following interpretations:
Quadrant I “Keep up the good work” – The upper right-hand quadrant includes factors which are viewed as important and gave high marks on performance i.e. both meet or exceed the standards.

Quadrant II “Concentrate here” – The upper left-hand side quadrant, contain factors, which are important, however received low priority with reference to performance, therefore requires great attention.

Quadrant III “Low priority” – The lower left-hand side quadrant received low on both importance and performance, therefore require little or no attention.

Quadrant IV “Possible overkill” – Final, lower right-hand quadrant has factors with low importance and high performance, hence possible overkill on the performance as are not important.

IPA on Billing as Aero Sport Tourist Destination

Importance of considering views of various constituencies have been well documented, Absher 1986; Allen and Gibson 1986; Wicks and Crompton, 1987. Each of these studies have plotted various research attributes in the relative quadrants identified by importance performance grid due to the difference between importance and performance between the perception of various constituencies group (employees, participants, elected officers, volunteers, customers, students and visitors etc.

Since the Biling as a aero sport tourist destination has been ranked one of the best site in the world, therefore, gridlines were placed at values of 4.0 to evaluate on the standards of ‘extremely important’ and ‘excellent’ performance.
Some debate exists in the literature as to whether mean or median values are better for the importance and performance ratings (Burns, 1988). Mean values were chosen for this study, since they are easily derived. In addition, the study followed the example of Hudson and Shepherd (1998) that did not ‘force’ variables into all quadrants. Figure II illustrates importance performance grid results for non-segmented sample of aero sport tourists \( n=84 \). Based on this homogeneous group, four aero sport tourism factors Physical Factors (ASF1), Take off and landing possibility (ASF5), Accessibility to the site (TF2), and Transportation to the base camp (TF3), fall in the first quadrant(Keep up the good work). Areas where Himachal Tourism, Government and other stakeholders need to concentrate on improving respondents experience include - Technical Support (ASF2), Safety aspects(ASF3), Communication support (ASF4).

Infact, plotting of the variables in the quadrants helps to identify the areas for improvement and actions for minimizing the gap between importance and performance.

\[\text{IP A GRID}\]

\[\text{Fig. 2}\]

Note: ASF1=Physical Factors, ASF2=Technical Support, ASF3=Safety aspects, ASF4=Communication support, ASF5=Take off & landing possibility, TF1=Touristic Appeal, TF2=Accessibility to the site, TF3=Transportation to the base camp, TF4=Accommodation F&B facilities, TF5=Other Public Utilities.
Figure 2 also suggests that destination has more issues well handled than address to. Other factors i.e. TF1, TF4 and TF5 are on low priority hence require less/no attention. Therefore, on the basis of the above, it can be interpreted that H1 can be rejected.

**H2: Significant difference exists for the perceptions of aero sport tourists in terms of demographic profile i.e. Experience, Nationality and Gender.**

In order to test second hypothesis, t-test has been used as a test of significance. Table III depicts Significant Different Scores of the presence (Performance) of Aero sport at Billing on the basis of demographic variables taken in the study namely gender, nationality and experience. On the basis of gender, the difference came on 4 factors i.e. physical factors, Touristic appeal, accessibility to the site and transportation to the base camp. Interestingly males in all these four factors found to have better performance than their female counterparts. For physical factors, males scored 4.41 whereas females scored 3.95 (t-test, p<0.05); for Touristic appeal males (4.10) and females (3.52) with p<0.01; for accessibility males mean=4.38 and females mean=3.74 with p<0.01; and for fourth variable i.e. transportation, males(4.28) while females(3.68) with p<0.01.

Taking into consideration, the nationality and dividing it into two groups i.e. Indians and foreigners; six factors comprising all five aero sport factors and one tourism factor are found significantly different. Among these six factors, Indian pilots opined two factors performing better i.e. for Physical factors, (Indians mean=4.94, while foreigners mean=4.28 with p<0.01); and for Touristic appeal (Indians = 4.38,Foreigners=3.87 having p< 0.05). The remaining four aero sport factors for which foreign pilots opinion was found more present at Billing includes Technical Factors (Foreign=3.93 & Indians=3.25; p<0.01), Safety Aspects (Foreign=3.93 & Indians=2.69; p<0.01), Communication Support (Foreign=3.88 & Indians=3.15; p<0.01); and Take off and Landing Possibilities (Foreign=4.24 & Indians=3.81; p<0.01).

For testing hypothesis in terms of experience, two groups were made i.e. above the average experience and below the average experience (6.08 years). For experience, four factors were found significantly different i.e. Physical factors for which mean value of below average was 4.95 and above average was 4.22 with p<0.01; for safety aspects (below average 3.10, above average 3.89 & p<0.01); Touristic appeal (Below average-4.38, above average-3.82; p<0.01); and accommodation and F&B facilities where mean value of below average was 3.86 in comparison to 3.49 for above average experience with p<0.05.
Table 3.- Significant Different Scores of the presence (Performance) of Aero sport at Billing on the basis of demographics.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M mean</th>
<th>F Mean</th>
<th>‘t’ test</th>
<th>Indian Mean</th>
<th>Foreign mean</th>
<th>‘t’ test</th>
<th>Below Ave-6yrs Mean</th>
<th>Above Ave-6yrs Mean</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Factors</td>
<td>4.41</td>
<td>3.95</td>
<td>2.37**</td>
<td>4.93</td>
<td>4.28</td>
<td>3.75**</td>
<td>4.95</td>
<td>4.22</td>
<td>4.80**</td>
</tr>
<tr>
<td>Technical</td>
<td>3.8</td>
<td>3.79</td>
<td>0.05</td>
<td>3.25</td>
<td>3.93</td>
<td>-2.81**</td>
<td>3.52</td>
<td>3.89</td>
<td>-1.62</td>
</tr>
<tr>
<td>Safety Aspect</td>
<td>3.63</td>
<td>3.90</td>
<td>-1.29</td>
<td>2.69</td>
<td>3.93</td>
<td>-4.89**</td>
<td>3.10</td>
<td>3.89</td>
<td>-3.23**</td>
</tr>
<tr>
<td>Communication</td>
<td>3.77</td>
<td>3.63</td>
<td>0.71</td>
<td>3.13</td>
<td>3.88</td>
<td>-3.28**</td>
<td>3.43</td>
<td>3.84</td>
<td>-1.89</td>
</tr>
<tr>
<td>Take off &amp; landing</td>
<td>4.17</td>
<td>4.11</td>
<td>0.41</td>
<td>3.81</td>
<td>4.24</td>
<td>-2.28*</td>
<td>4.0</td>
<td>4.20</td>
<td>-1.20</td>
</tr>
<tr>
<td>Touristic appeal</td>
<td>4.10</td>
<td>3.52</td>
<td>2.94**</td>
<td>4.38</td>
<td>3.87</td>
<td>2.18*</td>
<td>4.38</td>
<td>3.82</td>
<td>2.67**</td>
</tr>
<tr>
<td>Accessibility.</td>
<td>4.38</td>
<td>3.74</td>
<td>3.44**</td>
<td>4.31</td>
<td>4.22</td>
<td>0.45</td>
<td>4.48</td>
<td>4.16</td>
<td>1.73</td>
</tr>
<tr>
<td>Transportation</td>
<td>4.28</td>
<td>3.68</td>
<td>3.26**</td>
<td>4.19</td>
<td>4.13</td>
<td>0.25</td>
<td>4.38</td>
<td>4.06</td>
<td>1.60</td>
</tr>
<tr>
<td>Accommodation</td>
<td>3.91</td>
<td>3.74</td>
<td>1.01</td>
<td>4.06</td>
<td>3.82</td>
<td>1.05</td>
<td>4.19</td>
<td>3.76</td>
<td>2.12*</td>
</tr>
<tr>
<td>Other pub utilities</td>
<td>3.63</td>
<td>3.42</td>
<td>1.33</td>
<td>3.63</td>
<td>3.57</td>
<td>0.23</td>
<td>3.86</td>
<td>3.49</td>
<td>1.85</td>
</tr>
</tbody>
</table>

Note: 1=Very poor, 2=Poor, 3=Average, 4=Good, and 5=very good
* p ≤ 0.05 ** p ≤ 0.01
So, on the basis of the above it can be concluded that out of total ten factors, nine factors were found significantly different either at one percent or at five percent on the basis of gender, nationality or experience, hence H2 is accepted which is “Significant difference exists for the perceptions of aero sport tourists in terms of demographic profile i.e. Experience, Nationality and Gender”.

**Conclusions and Suggestions**

The conceptual relationship between sports and tourism has validity in terms of illustrating the importance of aero sport and tourism factors in context of Billing as an aero sport tourist destination. In terms of the importance mean values of all the aero sport factors as undertaken in the study is found to be above 4, which indicates that all the aero sport factors as identified in the study are almost very important and are expected to be present in an ideal aero sport site. For the 5 tourism factors, as undertaken in the study, the mean value of the importance was found above mid value (d=3), which is still on the positive side and it indicates that these factors are also important and are expected from an ideal tourism site. Interestingly, all the performance value of aero sport and tourism factors have come out to be above the mid value (d=3) indicating that all the factors are present in the site.

The importance and performance analysis has helped the researcher to get insight into the importance/expectation as well as performance/experience level of the pilots for the site. Aero sport tourism gap has also been calculated on the basis of the difference between mean of the performance and importance. All the gap value has been found to be negative except for touristic appeal (+0.21), which indicates that Billing as a site possesses the touristic appeal is more than desired or as expected from an ideal site. Ironically, the gap value of all other aero sport tourism factors is found negative that shows that in comparison to the importance or expectations, Billing as a site, possesses less features giving enough scope for improvement.

All the factors have proved to be very important for planning and development of Billing as well as other aero sport tourist sites. Further analysis of supply side in terms of performance and gap analysis can help the planners, policy makers to develop strategic options for bridging up the gaps. The construction of gap values into four quadrants of IP grid, further gives clarity to understand the areas that needs concentration.

Importance performance grid results shows that four aero sport tourism factors Physical Factors (ASF1), Take off and landing possibility (ASF5), Accessibility to the site (TF2), and Transportation to the base camp (TF3), fall in the first quadrant (Keep up the good work). Areas that needs mote serious attention
on improving respondents experience include - Technical Support (ASF2), Safety aspects (ASF3), Communication support (ASF4). Other factors, TF1, TF4 and TF5 are on low priority hence requiring less/no attention. The study has also found nine out of total ten aero sport tourism factors significantly different on the basis of demographics.

To bridge-up the aero sport tourism gap as identified in the study, there are some of the pertinent suggestions which emerged in the open ended questions having a detailed free exchange with the focus group of pilots having more than 10 years of experience, these are:

1. **Public-Private Partnership**: Effective strategic partnership among all public and private organisations, which are associated with aero sport tourism, so as to understand each individual's and joint responsibility, thereby ensuring each contribution with emphasis on continual improvisation on the various controllable factors such as better communication support, quality accommodation and F&B facilities, transportation and other public utilities ensuring better aero sport tourism support structures and service delivery.

2. **Information Networks**: An effective and strong technological enabled information network is required for the continuous transformation of accurate, timely and updated information among all the stakeholders.

3. **Active Industry Involvement**: Active industry involvement is required that should focus on better liaisoning among the various tourism organisations for the marketing and development of site, product development and for further ensuring qualitative services.

4. **Safety Aspects**: Government should adopt a policy based framework primarily on two approaches, the first approach should focus on crisis management in terms of pro-active medical support, technical expertise for medical evacuation and rescue team involving army personnel, helicopters, quality equipments, communication devices, experienced instructors etc. The second approach should emphasize on getting participating pilots and aero sport tourists, acquainted with technical features of the site such as directions of the wind, nature and characteristics of thermal current, landscape and altitude etc. This can be attained through publication of the literature in different languages and through its distribution at right place and time.

5. **Technical Expertise**: In the year 2006, Government took help of technical expertise of Nikolai Shorokov, World renowned Russian Pilot and two times champion of the Paragliding Pre world cup, who was appointed as an event manager for Paragliding Himalayan Cup- 2006, which proved as a mega success. It is recommended that government should take more of such initiatives and explore other such expertise
both at international as well as local levels, as locals better understand
destinations topography, which is most important aspect in crisis
management.

6. **Continuous Evaluation**: There must be a provision of continuous
system for evaluation of tourist’s and aero sport pilot’s expectations
vis-à-vis their satisfaction so as to develop necessary strategic
interventions to meet and exceed aero sport tourist’s expectations.

7. **Community Participation**: Since the destination is passing through
growth and development stage of a product life cycle, where most of the
researches suggest emphasis on societal aspect especially with
reference to developing economies, it is therefore suggested that
community participation be encouraged in terms of organising events,
employability, income distribution with special thrust on professional and
entrepreneurship development.

8. **Sustainable Tourism Development**: Keeping in view the fragile
ecological characteristic of the destination, it is suggested that sustainable
tourism development strategies be planned and implemented. However,
apart from environmental aspect, it should also address cultural and
social sustainability.

**Suggestions for future Research:**
Following suggestions are recommended for future studies:

1. The present study identifies ten aero sport tourism attributes and has
   used IPA to compare their perceived importance and performance. The
   instrument developed can contribute to the existing literature for
   assessment of aero sport tourism sites.

2. A separate study may be made to develop the strategic options to
   bridge-up the aero sport tourism gap as identified in the study.

3. Perceptions of the locals can also be included in the study as their
   behaviour and attitude also affects building tourists’ perception.

4. A separate study can be conducted to assess the level of coordination
   among the various organisations and their impact on building tourists’
   perception.

5. Controlling all the variables and taking all the precautions to maximise
   the destination’s performance to determine the level of change of
   perception.

6. An attempt can also be made to study the relationship between
   destination features and destination image on travel decisions.

7. Relationship between sports and tourism can also be separately studied
   in context of aero sport & tourism.

8. Comparative study can be made to various destinations having similar
   situations in the Himalayas or between the Himalayas and Alps.
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Abstract: Mountain regions are valuable in respect of tourism, and have always enjoyed great interest. The creation of an artificial reservoir usually raises the attractiveness of a region. Above all, it makes new forms of tourism possible – such as water tourism. In this paper, opportunities for the development of tourism in the vicinity of mountain reservoirs are presented. The issue is discussed on a selected example from Poland.

Key words: active tourism, mountains, reservoirs, Pieniny

Practice of active and nature-based tourism in mountain regions

Active tourism as a product is defined as a set of services that are based on several tourism advantages aimed to fulfil all the needs of guests. The category of active tourism consists of water tourism (including rafting, canoeing, kayaking, flat-boating, paddling, motor boats, surfing, jet-ski, water-bob), bicycle-tourism, golf-tourism, fishing tourism, hunting tourism, hiking (incl. walking tours, highland hiking, cave-touring), horse tourism (incl. cross-country riding, mounted tours, coaching), ski tourism etc (e.g. extreme sports). Some doubt that fishing should be counted an active sport, but considering the whole process, it is clear that it demands a great deal of physical performance (Dávid –Michalkó ed. 2008). There are also different opinions on sport tourism and beach tourism as well (Table 1.).

Tab 1. - Tourism products of active tourism (Source: Michalkó 2004)

<table>
<thead>
<tr>
<th>water tourism</th>
<th>fishing tourism</th>
<th>Horse riding tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>bicycle tourism</td>
<td>hunting tourism</td>
<td>ski tourism</td>
</tr>
<tr>
<td>golf tourism</td>
<td>Hiking</td>
<td>extreme sports</td>
</tr>
</tbody>
</table>

Active tourism and nature-based tourism have several definitions among forms

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of alternative tourism (Puczkó-Rátz 2002). Nature-based tourism includes all the tourists who are interested in the surrounding nature. Hiking, mountaineering, zoological and botanical observations, nature photo, fishing, sailing, skiing, visiting national parks and eco-tourism are all parts of nature-based tourism in general. Most of them are active tourist activities, too. It is very important that these activities often take place in highland areas.

The openness of highland areas to tourism goes back a long time. The development of highland tourism is based on the utilization of the area’s different resources. It is not only the mountains that have special landscape or ecological values. However, mountain areas are far the less-damaged landscapes, due to their special physical features (specific climate, steep relief, rich vegetation, etc.). The fact that upland areas are considered as „the most natural landscape” and that they are „identified as nature itself” led to the idealization and sometimes mythical adoration of the mountains. A mountain itself as a specific geographical object, can be defined by given criteria and parameters. However, its boundaries are hard to allocate because latitudes can affect these criteria and parameters. The functionality of the area can also distort the relations between lower and mid-high zones, according to their social and economical organisation. Higher mountain zones usually have different natural and cultural heritage.

The diversity and richness of tourism resources are based on these differences. Nevertheless, there are only a few highland areas that are rich in tourism products based on the resources mentioned above. These areas are mainly in developed countries; or mean „relatively close” highland areas. They are also on an uneven level of tourism development.

Nowadays, it is commonly acknowledged that tourism products can be divided into the following groups (Martínez 2003):

- snow tourism (alpine and cross-country skiing and newly fashionable snowboarding)
- „green tourism” (including visits to natural parks and national parks)
- tourism based on historical, cultural and art resources and traditions
- adventure tourism
- tourism based on upland water resources (pools, gills, reservoirs and thermal springs) like river rafting, fishing, balneology, etc.

The figures below show the importance of upland areas in the last two types of tourism (Fig. 1., Fig. 2.).
**Fig. 1. - Diversity in adventure tourism (Source: derived from Hudson 2003)**

**Fig. 2. - Diversity of water-based tourism in mountains (Source: original, Dávid 2009)**
Reservoirs are very important for tourism in mountain and lowland regions, too. By the completion of new reservoirs in the mountains the prospects of water-based tourism and other activities will develop in any regions. In wider dimension these reservoirs could be suitable for multiple purposes as well. In this paper we present an extremely interesting sample from Poland.

**Reservoirs for tourism**
Artificial water reservoirs located in mountain areas are of particular importance both for the development of tourism and for the socio-economic development of the municipalities in which they are located. In principle, every artificial reservoir in the Polish Carpathians is used for tourism and recreation, since it creates very good conditions for them. Sites that can be used for tourist and recreation activities directly related to water, such as bathing, sailing, or kayaking are the focus of the greatest attention (Sroczyński 2006). One should point out that tourists visit the reservoir areas not only for water-related activities, but also for other forms of tourism, e. g. for sightseeing in the surrounding areas. For this reason, the proximity of mountains is an extraordinary attraction. This is confirmed by research conducted near Lake Solówka and Lake Żywieckie in Poland. The representatives of the local authorities of the municipalities within which these reservoirs are located believe that the greatest attraction of their area is exactly the combination of water and mountains (Duda-Gromada, Dudek-Mańkowska 2008).

In this study, a selected water reservoir in the Polish mountains will be presented. From among water reservoirs located in the Polish Carpathians it was decided to present Lake Czorsztynskie, and for two reasons. First, in close proximity of the reservoir the mountain range of Pieniny is located, distinctive not only among Poland’s landscapes, but also in the world. The rank and the natural value of the Pieniny mountains is confirmed by the Pieniny National Park established on their area*. Second, Lake Czorsztynskie was created relatively recently, which allows to trace the changes of the tourist traffic, which are the basis for conclusions about the importance of the lake for the tourism attractiveness of the region.

The history of the construction of the Czorsztyn Dam goes back to the beginnings of the 20th century. At that time, energy cross-sections for each river in the Galicia province were determined, that is, places where the construction of a dam would result in the best energy efficiency. For the Dunajec River, one of such cross-sections was precisely Czorsztyn (Dąbrowski 1989). Starting in 1905, numerous plans of management of the upper Dunajec river

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* The Pieniny National Park was established officially on the strength of the directive issued on 12 May 1932 by the Minister of Agriculture of the Republic of Poland.

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using reservoirs have been created. The first plan for a reservoir in Czorsztyn was created shortly before the Second World War; the reason for it was a 1934 flood which had catastrophic effects. But the next serious decisions were taken only in 1965, when the plan was approved. Finally, the construction started in 1970 (Łaski 1997). One of the reasons why the construction of a dam in this place was delayed were numerous protests. The opponents feared that unique values of the Dunajec valley will be destroyed – values that were the product of many specific features of the natural environment.

The Complex of Water Reservoirs Czorsztyn-Niedzica together with the compensation reservoir Sromowce Wyżne was completed and put into operation in July 1997. It is a complex project with multi-fold purpose. The main goals of the construction of the dam were, first of all:

- the increase of the minimal flow of the Dunajec and Vistula rivers;
- the increase of the available resources of the Dunajec river to the extent that would allow to control the water management for the needs of the regions with water shortage (mainly the Cracow agglomeration);
- the lowering of the flood-wave peak to protect the Dunajec valley below the reservoir and to protect the Vistula valley below the Dunajec river;
- the production of electric power using pro-ecological methods (Łaniewski 1997).

The reservoir complex consists of the main reservoir Czorsztyn-Niedzica and the compensation reservoir Sromowce Wyżne. The retention reservoir has been created by damming the waters of the Dunajec river by the main dam, dividing the valley at the height of Czorsztyn-Niedzica. A hydropower electric plant (pumped-storage), of 75 MW power, is located near the dam. The front wall of the dam dams the water to 534.5 m at most, creating a reservoir of capacity 234 million m$^3$ and length over 10 km. With the normal damming to 529 mH, the capacity of the reservoir is 170 million m$^3$ (Tab. 1). The volume of water between these two levels of damming is the flood-protection reserve of the reservoir Pawlikowska-Piechotka 1997 (Tab. 2.).

<table>
<thead>
<tr>
<th>Features of the reservoirs</th>
<th>Czorsztyn-Niedzica</th>
<th>Sromowce Wyżne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir capacity incl.:</td>
<td>234,5 mln m$^3$</td>
<td>6,7 mln m$^3$</td>
</tr>
<tr>
<td>compensation storage</td>
<td>133,5 mln m$^3$</td>
<td>5,4 mln m$^3$</td>
</tr>
<tr>
<td>dead storage</td>
<td>36,5 mln m$^3$</td>
<td>1,3 mln m$^3$</td>
</tr>
<tr>
<td>Surface of the flooding:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximal</td>
<td>1335 ha</td>
<td>95 ha</td>
</tr>
<tr>
<td>minimal</td>
<td>415 ha</td>
<td>69 ha</td>
</tr>
</tbody>
</table>
As we have mentioned, Lake Czorsztyńskie is located in close proximity to the distinctive range of the Pieniny mountains (Kostrowicki 1972). Its highest peak, Trzy Korony [Three Crowns], rises to 981 mH. The range is surrounded by higher mountain ranges: from the south, by the Tatra mountains (Rysy 2499 m), from the north by the Beskid mountain ranges of Lubańi (1225 m) i Radziejowa (1265 m). Numerous curiosities of animate and inanimate nature, accumulated in the Pieniny mountains, historical and cultural sites, distinctive beauty of the landscape and in particular the unusual charm of the Dunajec River gorges, but also therapeutic properties of the mineral waters and a mild climate attracted the society’s attention to this unique in its kind mountain region. For that reason, the region has been, for many years, one of the most popular tourist regions in Poland. The great richness of the natural phenomena attracts to the Pieniny mountains not only tourists, but also scientists. The geological phenomenon of the Pieniny mountains, containing many complicated issues, has attracted the geologists’ attention for over 150 years (Smólski 1955). The mountains have been a veritable testing ground for scientists from many disciplines. Apart from that, the nature and landscape, historical and cultural sites, interesting events, and innumerable legends and sagas have inspired writers, musicians, and painters.

The specific geological structure of the Pieniny mountains, where hard limestone rocks break through the cover of soft shales, marls, sandstones, and conglomerates, is the reason for their unusually varied and contrasting relief (Smólski 1955). Bold rocky forms with steep slopes occur here next to gentle, rounded forms (Zarzycki 1982). Characteristic for the landscape of the Pieniny mountains are bare cliffs emerging from the forest, isolated rocks and, contrasting with them, rounded surfaces of hummocks, or gentle slopes covered with meadows. The slopes of the Pieniny mountains are asymmetric, which played an important role in the formation of flora and fauna. From the north, the slope is gently inclined and divided by a dense network of valleys, while the south slopes are very steep. In many places they are almost vertical rocky walls, furrowed with numerous ravines whose course reminds of tectonic fissures and cracks. Valleys cutting through the south slopes of the Pieniny mountains have a completely different form as compared with the stream valleys on the south slopes.

Specific morphology, distinctive microclimate, varied substratum and various petrographic composition of the rocks have created a variety of biotopic conditions not to be encountered anywhere else in such a small area. In the conditions created, life of many plant species and associations, with various life requirements, had been made possible. Among the most interesting and most characteristic elements of the Pieniny mountains flora are endemic plants,
among them: Korean chrysanthemum (*Dendranthema* a. *Chrysanthemum zawadskii*), and the species *Taraxacum pieninicum* and *Erysimum pieninicum*.

The fauna in this region is also rich and varied. The boar, the deer, and the roe deer occur in the region of the Pieniny Spiskie mountains. After World War II wolves returned, and every few years short stays of bears are observed. The region is inhabited by foxes, hares, badgers, martens, and lynxes. In the natural reserve Zielone Skalki one can occasionally see wild cats. The Czorsztyn and Niedzica castles are home to around 14 species of bats. The varied terrain creates advantageous conditions for birdlife. According to the Polish Academy of Sciences, the avifauna consists of 161 species.

The most characteristic features of the Pieniny mountains relief is the Dunajec valley which can be divided into three tracts. The first and shortest is the gorge tract between Czorsztyn and Niedzica, now within the reach of the lake. The second tract runs from Niedzica to Czerwony Klasztor, where the valley forms two large bends. The third tract is the picturesque gorge between Czerwony Klasztor and Szczawnica. Here the valley is narrow and winding: at the distance of 2.5 km (measured in straight line) the river forms seven large bends and has 9 km length (Zarzycki 1982). The unique tourism values of this tract have been exploited to organize raft trips. First mentions of rafting go back to the first half of the 19th century. Since then, the rafts have somewhat changed. Nowadays, they are built of five boats joined together, and the bow part is lined with spruce twigs. In 1934, the Polish Association of the Pieniny Mountains Raftsmen was created; it organizes the raft trips. Although the distance to Szczawnica, as measured in the straight line, is 6.7 km, the route of the raft trip is 15 km, due to the numerous bends of the river. During this unusual tourist trip the tourists can admire many characteristic rises of the Pieniny mountains (e. g. Sokolica, Trzy Korony). Moreover, the raftsmen, being excellent raconteurs, tell many legends and stories related to the individual places. The Dunajec raft trip is the greatest tourist attraction of the Pieniny mountains of world renown. When rafting, we have an opportunity to tour the Pieniny National Park in a very original and atypical manner. The trip lasts around 2-3 hours and can be made from April until October.

Although Pieniny are built of limestone, typical karst processes and phenomena do not occur here. Except for shallow niches, there are no runnels, sinkholes or caves here. The reason for that is the complicated structure of the geological unit of Carpathians known as the Pieniny Klippen Belt*, within which the Pieniny

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* The Pieniny Klippen Belt forms an arc open toward the south. It divides two large structural units of the Carpathians: Inner Carpathians, south of the belt, and Outer Carpathians (flysch), north of the belt.
mountains are located. Due to this structure, the Pieniny mountains are in
general well watered. Moreover, each flat is covered with rock-waste and
vegetation facilitating the weathering processes and consolidating the
waste-mantle. This contributes to the filling of the cracks, and thus the action
of water cannot cause the development of karst forms (Smólski 1955). As a
result such forms of tourism as caving are impossible here.

The large variety of relief makes the area attractive for tourists. One can
encounter such forms of relief as high hills, isolated rocks and picturesque
passes or ravines. These elements made up an exceptional landscape value.
Hence, the relief predisposes the area researched for such forms of tourism
as hiking, cycling, sightseeing or educational, while the presence of a protected
area (the Pieniny National Park), for – at least – ecotourism.

Mountain tourism is based on two main elements of tourist management, that
is, on tourist trails (already mentioned) and accommodation facilities. These
elements have to create a cohesive network, which allows for choosing freely
the area for a hiking trip, its course and duration. Hiking can be done during
most of the year, from mid-April until mid-November or until the first snowfall
(Mikołajczak 1976).

The Lake Czorszyńskie region has rich natural and landscape values. Of
particular attraction is the protected area, that is, the Pieniny National Park.
From the point of view of nature protection the most disadvantageous feature
of tourism is its mass character. For that reason, measures aiming at its
restriction are taken in national parks. Also, certain forms of tourism are not
allowed in such areas. Hiking and (hill)walking are activities recommended in
national parks. Within the Pieniny National Park, there are hiking trails, which
form a cohesive, well-developed network. They are linked together and lead
both to hostels and to localities with accommodation facilities. The rich network
of trails makes it possible to create a large number of varied hiking trips;
every tourist can choose freely the trip course depending on his/her individual
preferences. Of particular landscape value are: the highest peak of Pieniny,
Trzy Korony, and the Sokolica mountain. Both are important scenic points,
offering beautiful vistas. From Trzy Korony we can admire the Dunajec valley,
the characteristic spatial layout of localities near Lake Czorszyńskie, and the
reservoir itself. Moreover, we can also admire the panorama of the Tatra
Mountains, and – in case of foggy weather – a very picturesque “sea of fog”.
Watching the Dunajec Gorge from the Sokolica peak, on the other hand,
admired by tourists from the whole world, provides many positive aesthetic
experiences. Here one can see pines with their characteristically wind-bent
trunks. Additionally, the tourists’ attention in this region is attracted by ravines
and by numerous plant species, unique in the country and even in the world.
The region discussed is also exceptionally attractive for tourist cycling. The most interesting in this respect is the area around Lake Czorsztyńskie, where a bike trail of length ca. 40 km, called the Gothic Bike Trail, has been marked out. When cycling there, one can admire picturesque landscapes and the reservoir, called the “Carpathian Sea”. The localities encountered along the trail are rich with numerous historical monuments representing architecture specific for the region of Podhale. On this trail, on the reservoir shore, the “Tourist Settlement Czorsztyn” is located, where many architectural monuments from the flooded localities have been moved. Also, the tourist can visit the castles at Czorsztyn and Niedzica. The Czorsztyn castle is a defensive structure of the mountain type, with its layout adapted to the shape of the mountain on which it had been erected. The courtyard of the lower castle is surrounded by fragments of the fortified walls and of the north-eastern corner tower. The remnants of the upper castle take up the summit of the steep Castle Mountain (588 m a. s. l.) and rise to ca. 53 m above the surface of Lake Czorsztyńskie. The lower parts of the castle go back to the 13th century, while the upper ones, to about 1620-1635. From the terraces, made accessible for the tourists, there is a magnificent view on the lake and the Pieniny mountains. The Niedzica castle, on the other hand, stands at an altitude of 556 m a. s. l. and about 35 m above the surface of Lake Czorsztyńskie. It is one of the most valuable historical monuments of defensive architecture in Poland. The first documented mention of the castle comes from 1325. Nowadays, the castle is taken care of by the Association of Historians of Art. From 1993, hotel rooms have been for rent in the castle and a restaurant is in operation.

An important characteristic feature of Pieniny, from the point of view of cultural tourism, was the interpenetration of cultures. Since the region is close to the border, migrations of population were possible. The region had been inhabited by Poles, Slovaks, Hungarians, Germans, Jews, and Ruthenians, which had determined the characteristic traditions, customs, and culture — nowadays an additional tourism asset of the region. The characteristic and the most numerous group of local people were the Highlanders (Górale).

The development of agrotourism is also worth mentioning. The region is not industrialized or urbanized; on the contrary, the settlements are mostly small localities, villages. Soil conditions are also not very advantageous. As a result of all this, the local population seeks other opportunities to earn a living. That’s why agrotourism is a great opportunity to improve the standard of life. In many households there are already rooms for rent for tourists and therefore there are many possibilities to find accommodation.
Since the natural and cultural resources, as well as tourism traditions in the Pieniny mountains constitute their greatest value, while the conditions for the development based on agriculture or industry are non-existent, the basis for the development should be tourism and recreation. Since the region analysed is very attractive for tourists and tourists are very interested in it, as a result the tourist infrastructure is well developed here. The multitude of tourist trails with varied course, well developed accommodation facilities (consisting, among other things, of hotels, hostels, tent sites) and catering facilities, as well as a transport network, make it possible for tourism to develop. On the other hand, unique natural values resulted in the creation of protected areas, first of all, of the Pieniny National Park. Because of that, some forms of tourism are significantly restricted.

As we have mentioned previously, an important (and new) object in the landscape of the area investigated is Lake Czorszyńskie. Apart from its role in water management, its impact on tourism is also very important. It is undoubtedly conducive to such forms of tourism as kayaking and sailing, but it also results in an increasing number of tourists visiting this area. This is confirmed by the analysis of the change of the number of people using accommodation facilities in one of the municipalities (Łąpsze Niżne), within which a large part of the reservoir is located (Figure 3.). The indicator analysed grows from around 3 000 people using the accommodation facilities in 1995 to almost 12 000 people in 2007.

Fig. 3. - Number of people using accommodation facilities in the Łąpsze Niżne municipality in 1995-2007 (Source: Author’s own study based on the Bank of Regional Data GUS [Central Statistical Office] (www.stat.gov.pl)
Summary
To sum up, one should state that the presence of an artificial water reservoir, the characteristic features of the natural environment, as well as the presence of protected areas, are conducive – above all – to the development of specialized forms of tourism. The best area for hiking is the Pieniny National Park; for cycling – the loop around Lake Czorsztyński, and for water tourism – the lake itself. Considerable development opportunities exist also for agrotourism, which was noticed both by the local population and by the local authorities. In almost all localities there are agrotourism farms, or lodging for tourists is offered.

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Forms and Mechanisms of Environmental Degradation in Recreational Systems of the Shores of Water Reservoirs in South-Eastern Poland, Wydawnictwo IGSiE PAN, Kraków.
TOURISM-RELATED IMPACTS ON MOUNT KILIMANJARO, TANZANIA: IMPLICATIONS FOR TOURISM MANAGEMENT ON MOUNTAIN ECOSYSTEMS

James WAKIBARA*, Kimaro NDESARI**, Nyamakumbati MAFURU***

Abstract: Waste disposal, trail erosion, water contamination and porter head loads were investigated on Mount Kilimanjaro, Tanzania, from 2003-2005. Generated waste was identified and quantified, trail erosion measured, water sources examined for coliform contamination and head loads for Porters re-weighed against official limits. Waste on trails comprised mainly of fluffy items. Trail erosion was directly related to hiking pressure whereas water was contaminated mainly at lower elevation. Porters removed up to 98% of waste from the mountain but carried excessive luggage of up to 15.1Kg. These results are discussed in view of tourism impact management on this and other mountainous destinations.

Key words: Kilimanjaro Mount, trail erosion, water contamination, waste management, porters

Introduction
An increasing quest for natural recreation opportunities in the recent years has led to a surge in visitor loads in protected areas worldwide (Hadwen et al., 2007) including in mountainous regions (Draper 2000; Walder 2000; Holden & Sparrowhawk 2002; Price 2004). Mountains present spectacular scenery and are rated second after coastal regions as popular tourist destinations worldwide (Walder 2000). However, they are also extremely sensitive to anthropogenic disturbances (UNEP 2007). Even the seemingly low-impact mountain-based activities such as nature walks, hiking and camping may adversely impact mountain ecosystems if not properly managed (e.g. Drapper 2000; Pickering et al., 2003; Pickering & Buckley 2003; Price 2004; Byers 2005; Pelletier 2006; Wohl 2006). Tourism related impacts in mountainous areas may be social, ecological, or economic (Mathieson & Wall 1982; Getz, 1983; Pearce 1995; UNEP 2007) but vary widely in severity due to a variety of factors (e.g. Cater 1987). In mountain ecosystems, ecological impacts such as soil erosion and compaction, introduction of exotic species, contamination of water, and indiscriminate solid waste and waste water disposal are frequently reported (Pickering et al. 2003; Pickering & Buckley 2003). Regardless of the

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nature, these impacts tend to increase with repeated use of the same destinations.

Given the above scenario, the relationship between tourism and the environment in mountain destinations is rarely compatible but often antagonistic. Many mountains suffer a variety of adverse tourism related impacts (Pickering et al., 2003; Pickering & Buckley 2003) while tourists prefer environmentally attractive destinations (Holden & Sparrowhawk 2002). This antagonism is often taken as the main argument against encouraging higher number of visitors on mountains. However, empirical data on tourism impacts remain scarce even for the most popular mountain destinations in the world. Availability of such information will greatly enhance tourism planning and management of these ecologically fragile mountain ecosystems.

This paper is a step towards providing such data. Tourism-related impacts on Mount Kilimanjaro, Tanzania, are explored, with a specific focus on biological contamination of natural water sources, waste disposal and trail erosion. Porter head loads are also surveyed to explore the possible social impact of Mountain Tourism.

Methods

Description of the study site
Mount Kilimanjaro (2°45'-32°5S', 37°00'-37°43'E) is the highest in Africa and the world’s largest free-standing. It is located about 330 km south of the Equator on the boundary of Kenya and Tanzania, comprising of one extinct (3,962m) and two (5,149 m & 5,895 m) dormant volcanic peaks. It is one of Africa’s most scenic mountains and the view of its majestic, year-round snow-capped peak is recognized globally. It was established in 1972, accorded the status of a National Park and opened for visitation in 1977 and nominated a World Heritage Site in 1989. Since its opening, the Park has attracted an increasing number of tourists, for example from 6,100 in 1977 to 37,029 in 2004.

Biological contamination of water
From 2003-2005, 142 water samples were systematically collected from 25 permanently referenced water sources (springs, rivers, streams and ponds) across different altitudes and habitats on the mountain. These were analyzed for 19 chemical parameters and for biological (fecal and total coliforms) contamination using standard procedures (Clesceri et al., 1998). Samples were membrane filtered, subjected to 14-18 hours incubation and thoroughly examined for coliform infestation (Clesceri et al., 1998) but only fecal coliform contamination is reported here. Analysis of specific pathogenic microbes was not attempted but samples positive for fecal coliforms were considered not acceptable for human consumption.
Trail erosion was investigated on 7 km segments of two designated walking trails (Machame and Lemosho). Both trails are roughly similar in terrain, run through the montane forest and receive reasonably abundant rain but differ markedly by the volume of hikers. A series of width (m) and depth (cm) measurements were taken on the trails as indices of erosion (Newmark & Nguye 1991). A measuring tape was held perpendicular to the outer edges of a trail and the width read every 50 m starting at about 1,000 m above sea level. The depth of the trail was simultaneously measured at midpoints of the same cross sections used to determine width. Paired data for a total of (140 sections) were gathered for each trail.

Solid waste disposal
Waste from Campsites & Overnight Huts
On Mount Kilimanjaro, the bulk of waste is by far generated at resting points, campsites and overnight huts. The Park’s waste management strategy is ‘Trash in Trash Out’ that requires hikers themselves to remove waste they generate away from the mountain. Thus apart from other duties, porters collect and remove waste generated by tourists from the mountain assisted by the Park’s cleaning crew. Both these groups surrender the collected waste at two exit gates where the contents are sorted and quantified. Data analyzed here involves a total of 98 monthly trips of removal of food remains and tins and bottles through two exit gates by porters and cleaning crew between the years 2003-2005.

Waste on walking trails
Solid waste was systematically collected on or alongside designated walking trails. A walking trail was defined as the width of exposed soil or of the outermost edges of branched sections of a trail segment Newmark & Nguye (1991). Waste sighted within 2 m on the right and left of the trail centre (total 4 m) was picked. Sampling involved the lower (1,000-2,000 m), middle (2000-3,000 m) and higher (3,000–4,000 m) altitudes of the mountain on four walking trails. The length (km) of each sampled walking trail segment was calculated from official maps. Collected waste was put in polythene bags and labeled by date and altitudinal range of collection. Later on, specific waste items were counted and sorted into polythene, plastic, paper, metal, glass, and food remains categories. It was thus possible to calculate the density of specific items collected along the sample trails in the different altitudes of the mountain. Sampling involved 125 days between the years 2004-2005.
Porter head loads
The official limit for porter head loads on Mount Kilimanjaro is 25 kg per person for a single hike. Compliance with this regulation was tested through surprise checks at random points, day-times and walking trails to porters carrying head loads and ascending the mountain. A porter was personally identified and asked to offer the head load for re-weighing on a mobile weighing scale by the survey staff. After taking luggage measurements, subjects were allowed to proceed with hiking. A total of 98 Porter head-loads were verified between August-December 2005.

Data analysis
Data were recorded on Microsoft Excel for Windows® 2003 spreadsheets and exported to Stat View ® 1998 statistical package (StatView, 1998) for detailed analyses.

Results

Biological contamination of water
About one third (29.6%) of the 142 analyzed samples were confirmed contaminated by fecal colifoms hence considered unfit for human consumption. Differences between dry and wet season contamination frequency were insignificant. However, more samples were contaminated in the mid (forest; n=91) than in the higher (moorland; n=51) zones of the mountain, respectively ($X^2=25.149$; DF=1; $p<0.0001$). Figure 1 compares the frequency of contamination per individual site and reveals a striking pattern ($X^2=57.198$; DF=24; $p=0.0002$).

Ratio of samples contaminated

![Graph showing the frequency of contamination per individual site.](image)

Fig. 1. - Contamination by fecal coliform for each of the 25 sites on Mount Kilimanjaro. Each site was re-examined at least 5 times (total 142 samples) between the years 2003-2005.
Two thirds of the sites were almost always coliform free. For the rest, the contamination rate was between 10-80% of the samples analyzed per site. Surprisingly, 76% of these were between 1,200-2,100 m, which is just about or below the lower forest (2,000 –2,800 m) boundary line. According to Figure 2, higher altitudes also had generally fewer fecal coliform colonies detected per sample than lower altitudes (F=9.684; p=0.0034). It can therefore be said that the lower boundary of the forest belt is the most contaminated section of the mountain.

\[ Y = 131.319 - 0.023 \times X; \quad R^2 = 0.201 \]

\[ 0 \quad 20 \quad 40 \quad 60 \quad 80 \quad 100 \quad 120 \]
\[ 1000 \quad 1500 \quad 2000 \quad 2500 \quad 3000 \quad 3500 \quad 4000 \quad 4500 \]

Altitude (m)

![Regression plot](image)

**Fig. 2.** - Regression plot relating intensity of fecal coliform infestation in natural water sources to altitudinal change on Mount Kilimanjaro for the years 2003-2005. Only positive samples (n=42) are presented. Data points are mean number of coliform colonies per sample.

**Trail erosion**

The levels of erosion for the two walking trails are given in Table I below. There were differences between them in terms of both trail depth (t=-1.1976; DF=278; p=0.049, n.s.) and width (t=-1.969; DF=278; p=0.0500, n.s.) confirming that Machame is much more impacted than Lemosho. The later trail, however, had slightly higher standard deviation values than the former for both parameters indicating relatively unstable but localized trail stratum disturbances. Data on tourist traffic levels indicates that Machame consistently exceeded Lemosho by a magnitude of as much as eight within five consecutive
years (Fig. 3). Thus the two walking trails are subjected to different hiking pressure and compromise different trail erosion levels.

Table I. - Comparison of erosion indices on Machame and Lemosho walking trails, Mount Kilimanjaro, Sep. 2005. Sample sizes are cross-sections sampled on each route.

<table>
<thead>
<tr>
<th>Trail</th>
<th>Width (cm)</th>
<th>Depth (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n) Mean (±SD)</td>
<td>Range</td>
</tr>
<tr>
<td>Machame</td>
<td>140 80.3 ± 35.5</td>
<td>17.0-270.0</td>
</tr>
<tr>
<td>Lemosho</td>
<td>140 69.3 ± 55.8</td>
<td>11.0-600.0</td>
</tr>
</tbody>
</table>

Waste disposal

Waste from campsites and Huts

Paired data on 98 monthly trips of removal of waste from the mountain by Porters (n=49) and cleaning crew (n=49), respectively, were analyzed for the years 2003-2005 combined. Several months had fragmented data and these are excluded from analysis. Overall, 2.75 metric ton (range: 0.03-15.8 metric ton) of food remains and 1,785.5 plastic bottles and tins (range: 10-9,636 items) were removed from the mountain per month through the two exit gates.

Fig.3. - Number of tourists hiking on Machame and Lemosho walking trails, Mount Kilimanjaro 1999-2004.
However, splitting waste removal between Porters and Park staff reveals a striking difference. Porters removed by far more tins and bottles ($U=92; p<0.0001$) and food remains ($U=138; p<0.0001$) than their official counterparts ($U=138, p<0.0001$). Overall, they removed over 86.7% of all waste from the mountain during any month of the year (Figure 4). The volume of waste removed by gate was comparable, indicating that both gates were equally important as waste exit points. Taken together, these results confirm the large volume of trash generated on the mountain by tourists and clearly underscores the importance of porters as the main cleaners of Mount Kilimanjaro.

![Graph showing waste removal by Porters and Park staff](image)

**Fig. 4.** Mean monthly removal at exit gates of (a) plastic bottles & tins (b) food remains from Mount Kilimanjaro compared between porters and Park Staff for the years 2003-2005 combined.
Waste on walking trails
Analysis of waste picked from the walking trails was undertaken to identify the categories and specific types of non-food items being thrown on the mountain. A total of 27 specific items were identified; nine of these comprising 84% of the total 33,483 items counted. These included sweet and chocolate wrappers (23.6%), match sticks (20.1%), cigarette buts (16.1%), polythene bags (7.2%), and plastic bottles (6.3%). The rest comprised of tissue papers, juice straws, and glass bottles (10.3%). Thus, waste on walking trails was dominated by a few items ($F=36.015; DF=26; p<0.001$). Types and amount of waste thrown by season and walking trail is given in Figure 5.

![Graphs showing waste by season and trail]

*Fig. 5.* Quantity (mean ± SD) of non-decomposable waste collected from walking trails on Mount Kilimanjaro between 2004-2005 by (a) Waste categories (b) tourism season and (c) trail.
Overall, the bulk (91.1%) of waste comprised of polythenes, papers and plastics \((F=13.363; \text{DF}=4; \text{p}<0.001)\) and more of these were thrown during the high than the low tourism season \((t=-5.684; \text{DF}=2431; \text{p}<0.0001)\). In addition, more waste were collected on Machame than on the other four walking trails \((F=29.926; \text{DF}=3; \text{p}<0.0001)\). There were no significant differences in terms of waste thrown at the different altitudes of the mountain, indicating indiscriminate waste disposal regardless of the position of hikers on the Mountain. In other words, hikers tended to litter the trails in proportion to their numbers at all levels of hiking.

**Porter head-loads**

The observed head load per porter differed significantly from a hypothesized mean value of 25 kg (observed mean value = 26.7 kg; \(t=3.301; \text{DF}=97; \text{p}<0.0013\)). This means that, on average, porters on the mountain are generally overweighed. Excessive head loads were particularly common in the months of August, November and December and to a small extent in September, whereas less luggage was observed in October \((F=4.829; \text{DF}_{4,93}; \text{p}<0.0014); \text{Figure 6}\). Coincidentally, the four months with excessive head loads are also months of tourism peak on the Mountain. Furthermore, (Fig. 7) tour companies \((n=16)\) that employed the encountered porters varied greatly in the way they loaded them with luggage \((F=5.050; \text{DF}_{15,73}; \text{p}<0.0001)\). The majority (69%) of them almost always overloaded their porters (mean overweight 1 kg; range 1-15 kg) whereas the minority (25%) underloaded them.
Discussion & Conclusions
This study has illuminated important findings relevant for the management of tourism impacts on Mount Kilimanjaro.

**Biological contamination of water**
The fact that a third of analysed water samples contained faecal colifoms is worrisome. That contamination was almost confined to lower altitudes (below the forest belt) is particularly interesting, and suggests human mediation. Although the exact source(s) of or the specific microbes in the contaminated samples was not confirmed, presence of fecal colifoms signals human waste contamination (Clesceri et al. 1998). This contaminated zone is heavily populated with largely small scale irrigation field agriculturalists that also engage in legal human activities such as tree felling and poaching (Newmark & Nguye, 1991). Under these field circumstances, sanitation can not be controlled and the possibility for occasional pollution of water courses is high. Without sanitation measures water contamination is likely in protected mountains, especially where human activities are heavily concentrated (Hammit & Cole, 1998; Newsome et al., 2002; Pickering & Buckley 2003; Pickering et al., 2003; Wohl, 2006). Elsewhere on the mountain, the many hikers walk at liberty but are provided with latrines every 2-3 walking hours on any walking trail hence the relatively clean water on higher altitudes. Provision
of adequate Mountain toilet facilities should excel water cleanliness further. This should be coupled with education for their appropriate use and a rational use of natural water sources at large (see also Ling-I, 2002; Turton 2005). Responsible mountain regulations, guidelines and rules should orient both hikers and the local community on lower altitudes to behaviours more sensitive to community health Ling-I (2002).

**Trail erosion**
This study reveals a profound impact of tourism trampling on walking trail erosion such as reported before for the same Mountain (Newmark & Nguye, 1991) and elsewhere (e.g. Pickering & Buckley 2003). Turton (2005) compared multiple impacts between the high and low use tourism walking trails and obtained mixed results. Whereas mineral exposure was higher on the heavy than on the light use tracks, the converse was true for the organic matter layer. For all other impacts, their severity was similar between trails of different travelling loads. This study, however, supports the popular position that environmental impacts of tourism strongly depend on the level, type, frequency and duration of use of various human activities (Liddle 1997; Newsome *et al.*, 2002). The less frequently utilised trail compromised less soil erosion and *vice versa*. These observations should elicit regular monitoring of trail stability for informed decisions on limits of tourist numbers on trails. Trail stabilization methods such as suggested by Newmark & Nguye (1991) should also be applied based on empirical data on trail stratum conditions.

**Waste disposal**
In this study, porters removed the bulk (86.7%) of waste from the mountain. At the time of this study, it was estimated that there were two porters for every tourist hiking Mount Kilimanjaro, which provides for a reasonably adequate all-time labour for cleaning the mountain. In contrast, the role of (the few) park staff appears ephemeral. As other similarly popular mountain destinations such as The Everest, Himalaya ranges, and Australian Alps (Jegdish 2002; Pickering *et al.*, 2003; Byers 2005) continue to suffer waste management hurdles, effective solutions must be sought. Removal of waste by the hikers themselves through the ‘Trash in Trash Out’ strategy has proven efficient on Mount Kilimanjaro and should be explored elsewhere (see also Jegdish 2002; UNEP 2007). That litter on the walking trails comprised mainly of very light items is particularly disturbing. It stands in sharp contrast with the popular thinking that hikers tend to throw waste especially at higher altitudes due to fatigue of carrying the ‘heavy-smelling’ waste. There is need to strengthen environmentally benign visitor management ways including the use of appropriate signage and code of conduct for hikers (Ling-I, 2002). That such
littering escalated during the high tourist season especially at the more popular route is expected (see e.g. Liddle 1997; Newsome et al., 2002) and signals a need for more effort for managing waste as the volume of hikers increase.

**Porter head-loads**
Accounts of how mountain tourism inflicts the health of tourist supporting staff such as porters are extremely rare in literature. In this study, most Porters were confirmed to carry excessive head loads of up to 15 kg. This may potentially render them various health disabilities including bodily injury. Unfortunately, this trend is propagated by most companies that employ the respective porters, especially so during peak tourism months. Although the Park has regulations against this misconduct (pers. observ.), this study confirms that compliance on the part of tour companies has remained weak. Fennel & David (1999) evaluated different groups of ecotourism operators on ethical, economic and ecological sensitivity scales and found widespread differences. They rightly suggested that protected areas should use codes of ethics in day-to-day business. Apart from enforcing appropriate regulations, the Park authorities should also engage in an ethical awareness program against this malpractice involving tourists, supporting staff and tour operators. Engagement of tourists will be particularly useful, since they are often interested in the social conditions of tourism that they are engaged in (White et al., 2008).

**REFERENCES**


Abstract: Recently, tourism demand turned its face towards rural areas. Tourism is an important opportunity for rural areas, which are extremely affected by the low income of the inhabitants. The aim of rural tourism is to take advantage of the resources, at the same time enhancing the living standards of the local people. The success of tourism in the rural areas depends very much on the resources, such as natural beauties, cultural elements and traditional handmade products. At the same time it depends on the attitude of local people towards tourist developments in their region. That is why investors in the field of tourism should be aware of the opinions of local people. The aim of this study is to analyze the opinions of the villagers in the Sleeping Valley (Mugla-Milas) regarding tourist developments. We have come up with a questionnaire consisting of 54 questions, which we used for the field research in the Gökçeler village. The findings of this study will be presented in the form of tables, bearing titles such as: infrastructure features or cultural infrastructure, as well as people’s opinion regarding the developments in the field of tourism. Sleeping Valley is not a well known location, in terms of tourism, and that is why local people living there have positive opinions about tourism development. For this reason, the place should be advertised and investors should consider it as a new opportunity.

Key Words: Sleeping Valley, questionnaire, local people, opinions and assessment, Turkey

Introduction
Tourism is supported by the natural resources as well as by people’s activity. That is why tourist activity gives rise to intervention with the environment and affects the life of local people. Generally speaking, tourism enjoyment and satisfaction is directly connected to consumption. Along the years this could lead to destruction and could affect, on a long term, the welfare of the society. In this respect, it is very important to hear local people’s opinion regarding tourism developments, and understand if the intervention with the environment in the respective area will be positive, having as a result the attraction of a larger number of visitors and an increase in the income level. It is very important that tourist activities should be planned according to the Brundtland report, dated 1987, and following the principles of sustainability.

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Ecotourism is a type of responsible tourism which protects natural resources and respects the values of the local people. In the recent years, in Turkey, this type of tourism rapidly developed, following a world trend. New projects are continuously developed to open the gates towards natural beauties of small areas.

Sleeping (Uyku) Valley has a big potential, in terms of ecotourism (Vide: Oban, 2007). In order to assess this potential effectively and successfully, a coherent strategy is necessary, taking into consideration elements such as: natural beauties, cultural features, traditional products, and the opinion of local people. In this study we are examining tourism developments, according to the opinions of local people.

**Physical Infrastructure**

The area which we have studied is on the boundary of Milas- Muğla, Turkey, in the village of Gökcəler. Due to its natural environmental features, the region has a notable potential for tourism. This area has universal values in terms of natural and scientific beauties. It can be easily reached, being only 8 km away from the national road. Besides this, the village of Gökcəler is 15 km away from the Güllük Gulf, in the South-Western part of Turkey, and only 7 km from the international airport of Muğla Milas. From Gökcəl, tourists can travel to other villages in the region, which can be reached by minibus, daily, on a pre-established schedule.

Infrastructure features are very important for the developments in the field of tourism. This is an important phenomenon in terms of supply and demand. For example, good transportation opportunities in an area can determine the progress in attracting tourists in the respective region. If a settlement has very good transportation conditions it will become the first choice for tourists.

Sleeping Valley can be reached by different means of transport. These opportunities indicate the fact that the region offers good opportunities in terms of transportation. This is supported by the results obtained from the questionnaire applied to the local people (Table 1).

People should take into consideration the possibility of opening accommodation facilities, restaurants, bars, stores and the traditional bazaar, so that they could attract tourists in the region. There is only one establishment in the whole Sleeping Valley, a restaurant, which is quite enough for the moment, as the region is not yet opened to the public. You cannot find any type of
accommodation in the region. Some of the inhabitants offer accommodation at home, but there are not so many of them.

Most of the persons interviewed affirmed that they might be interested in opening guesthouses, as they consider this form of tourism attractive for the tourists.
Table 1. Infrastructure features of Sleeping Valley

<table>
<thead>
<tr>
<th>Infrastructure features</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficient means of transportation</td>
<td>27.0</td>
<td>30.8</td>
<td>57.7</td>
</tr>
<tr>
<td>Sufficient parking lots</td>
<td>11.5</td>
<td>27.0</td>
<td>38.4</td>
</tr>
<tr>
<td>Enough food and drink</td>
<td>3.8</td>
<td>3.8</td>
<td>7.6</td>
</tr>
<tr>
<td>Sufficient shopping opportunities</td>
<td>0</td>
<td>7.6</td>
<td>7.6</td>
</tr>
</tbody>
</table>

It is understood from the field study and questionnaire display that this region needs some more establishments. Hence, according to the answers in the questionnaire, only 7.6 percentages of villagers thought that meal and drinking service and shopping centers are enough (Tab. 1). In order to turn the settlement into a tourist resort, apart from the investments made by local and central government, local people should set up some other accommodation units and restaurants, and involve in the other infrastructure investment. They realized that good services and more tourists mean more money.

Cultural Infrastructure

As far as the educational level of the region inhabitants is concerned, the field study revealed the fact that most people are only primary school graduates (53.8%), 7.7% of them have attended Junior High School, 11.5% of them have a High School diploma, and 11.5% have a University degree. In the category of others we included all the persons that have never graduated Primary School, 15.4%, but who are literate (Tab. 2).

There is only a small percentage of people that graduated University, although Gökçeler village people are extremely friendly, tolerant, open minded and really hospitable. Tourists come to the Sleeping Valley mainly for its natural beauties, but also for the quietness of the place and for the people. It has been revealed the fact that local people consider tourism as an extremely important development for their region.

Table 2. Education level of local people in Gökçeler village

<table>
<thead>
<tr>
<th>Education level</th>
<th>(F) (%)</th>
<th>(M) (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School</td>
<td>7 26.9</td>
<td>7 26.9</td>
<td>14 53.8</td>
</tr>
<tr>
<td>Secondary School</td>
<td>1 3.8</td>
<td>1 3.8</td>
<td>2 7.7</td>
</tr>
<tr>
<td>High School</td>
<td>0 0</td>
<td>3 11.5</td>
<td>3 11.5</td>
</tr>
<tr>
<td>University</td>
<td>0 0</td>
<td>3 11.5</td>
<td>3 11.5</td>
</tr>
<tr>
<td>Others</td>
<td>2 7</td>
<td>2 7</td>
<td>4 15.4</td>
</tr>
<tr>
<td>Total</td>
<td>10 59.4</td>
<td>16 59.4</td>
<td>26 100</td>
</tr>
</tbody>
</table>

**F:** Female **M:** Male.
Points of View of the Local People in Gokceler Village regarding the Developments in Tourism

To understand the points of view of the villagers about the tourism developments, a questionnaire is applied to 26 persons (10 women, 16 men) who live in the village. It is interesting to observe the fact that most of them (61.5 %) are under the age of 55 (Tab. 3).

**Table 3. The distribution of age groups of local people in Gökçeler village.**

<table>
<thead>
<tr>
<th>Age interval</th>
<th>Female Number</th>
<th>Male Number</th>
<th>Total Number</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 den &lt;</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>15-24</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>25-34</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>19.2</td>
</tr>
<tr>
<td>35-44</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>30.8</td>
</tr>
<tr>
<td>55+</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>38.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>16</strong></td>
<td><strong>26</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

As for the distribution of villagers according to their employment status, it is seen that only 3.8% of the persons are working in tourism (Table 4), and as a consequence, tourism is not very well represented. From the interviews and the answers to the questionnaire we have observed that local people are ready to support tourism with their help, besides the agricultural products obtained from their work. It has also been observed that women are a better labor force for the field of tourism than men, in the *Sleeping Valley*. With their craft in the kitchen, preparing traditional food, women can play an important role in rural tourism (Table 4). On the other hand, the educational level and employment rate of local people indicate an inverse ratio. In other words, in spite of the fact that the educational level is very low, (53.8% have attended only primary school) they have a high employment rate (46.1%), mostly due to farming. But they are open minded people and willing to accept changes and improvements in tourism (Table 4). All attendants to the questionnaire consider that money and alternative job opportunities represent a motivation they really take into consideration, but the question is: what kind of service units do they need in the *Sleeping Valley*, so that tourism can become viable?

We have organized interviews in order to understand the way local people's opinion about tourism developments. The result was obvious: tourism is necessary in the region. Therefore, it became relevant from the answers of the local people that they are aware of the changes occurring in the field of tourism, and that they want to be a part of it. Findings of the interview are
supported by the questionnaire results. Interesting is the fact that male population is more optimistic about the new developments than the female population.

Table 4. Proportion of employed population by economic activities in Gökçeler village

<table>
<thead>
<tr>
<th>Employment</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>5 19.2</td>
<td>7 27</td>
<td>12 46.1</td>
</tr>
<tr>
<td>Handicraftsman</td>
<td>0 0</td>
<td>1 3.8</td>
<td>1 3.8</td>
</tr>
<tr>
<td>Employee</td>
<td>0 0</td>
<td>2 7.7</td>
<td>2 7.7</td>
</tr>
<tr>
<td>Officer</td>
<td>0 0</td>
<td>1 3.8</td>
<td>1 3.8</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Other</td>
<td>5 19.2</td>
<td>5 19.2</td>
<td>10 38.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10 38.4</strong></td>
<td><strong>16 61.4</strong></td>
<td><strong>26 100</strong></td>
</tr>
</tbody>
</table>

From table 5 we can figure out that a large amount of the village population considers tourism activities as having a positive effect on the community. According to the questionnaire, most of the local people, (88.3 %) consider that “tourism developments have a positive effect”; 73.0 % of local people stated that “these developments will solve the unemployment problems” and 76.8 % of the local people believed that “tourism decreases internal migration, while 50 % of local people believe that life standards will increase in the village”.

To the question: “What do you think about the role of tourism in the modernization of Gökçeler village?” most of the local people (73.0 %) stated that it has positive effects on the region. Thus, one way for the cultural development is dialogue and interaction between communities and societies. These results indicate that the local people living in Gökçeler village are extremely aware of the role of tourism.

Table 5. The proportion of attitude of local people towards tourism in Gökçeler village

<table>
<thead>
<tr>
<th>Positive attitude towards tourism</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The development of tourism is satisfying</td>
<td>34.6</td>
<td>53.8</td>
<td>88.3</td>
</tr>
<tr>
<td>It increases life standards</td>
<td>11.5</td>
<td>46.2</td>
<td>57.7</td>
</tr>
<tr>
<td>It decreases unemployment</td>
<td>27.0</td>
<td>46.2</td>
<td>73.0</td>
</tr>
<tr>
<td>It effects the other sectors positively</td>
<td>19.2</td>
<td>34.6</td>
<td>53.8</td>
</tr>
<tr>
<td>It decreases internal migration</td>
<td>30.8</td>
<td>46.2</td>
<td>76.8</td>
</tr>
<tr>
<td>It effects the modernization of the region positively</td>
<td>27.0</td>
<td>46.2</td>
<td>73.0</td>
</tr>
<tr>
<td>It develops agriculture</td>
<td>15.4</td>
<td>34.6</td>
<td>50</td>
</tr>
</tbody>
</table>
At the same time tourist activities have a negative impact on the touristic areas. But we can reduce these negative outcomes to a minimum level, by making people in the region aware of the problems of tourism, problems which can be solved with the help of government and business organizations.

That is why local natives of the **Sleeping Valley** have been asked questions which could reveal their level of understanding of the negative effects of the tourist industry. According to the questionnaire, people in the **Sleeping Valley** are aware of these problems. A large number of the people stated that “tourism lowers moral values of the young generation, causes degradation of the land and also affects negatively the environment”. However, the negative effects of tourism are not as damaging as the effects of the industrialization.

**Table 6. The proportion of attitude of local people towards tourism in Gökçeler village**

<table>
<thead>
<tr>
<th>Negative attitude towards tourism</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism creates environmental problems</td>
<td>11.5</td>
<td>27.0</td>
<td>38.4</td>
</tr>
<tr>
<td>Tourism deteriorates the environment</td>
<td>15.4</td>
<td>15.4</td>
<td>30.8</td>
</tr>
<tr>
<td>Tourism affects flora and fauna</td>
<td>30.8</td>
<td>46.2</td>
<td>76.8</td>
</tr>
<tr>
<td>Tourism influences negatively moral values of youths</td>
<td>11.5</td>
<td>19.2</td>
<td>30.8</td>
</tr>
<tr>
<td>Tourism destroys traditions and customs</td>
<td>0</td>
<td>23.0</td>
<td>23.0</td>
</tr>
</tbody>
</table>

According to the results of the questionnaire, most of the inhabitants, (76.8%) said that "industry has a negative effect on tourism". Gökçeler village inhabitants consider that investment is really necessary, and that government representatives should take into consideration natural environment when making investments. This is an indictment of the fact that people are aware of these problems and that they have a positive attitude towards the possibility of solving those problems. However people are reluctant to industrial developments in the village, and this can be seen in Table 6.

To the question “In your opinion what kind of environmental problems occur in tourism?” most of the inhabitants (61.5 %) consider that some problems may occur due to the poultry farms in the region, which pollute the air, by spreading odor in the region (Table 6). What is more, people consider that the construction of new tourist locations will affect the overall image of the rural areas, creating traffic jams and litter problems in the region (Table 7). Furthermore, they agree that by avoiding industrialization, pollution and extensive construction, the environment will be protected, developing at the same time tourism in the **Sleeping Valley**.
Of course, extensive developments in the field of tourism can also cause problems. However, these problems can be solved. We have to be cautious and do the right thing in order to protect ourselves from unexpected hazards. The main issue is “which is the right way and how can we solve the problems?” That is why we have to study carefully the tourist potential of the region where investment is planned.

Table 7. The opinions of the local people related to the possible problems deriving from the tourism developments in Gökçeler village

<table>
<thead>
<tr>
<th>Environmental problems</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation will be destroyed</td>
<td>15.4</td>
<td>15.4</td>
<td>30.8</td>
</tr>
<tr>
<td>Garbage problems due to restaurant construction</td>
<td>27.0</td>
<td>34.6</td>
<td>61.5</td>
</tr>
<tr>
<td>Poultry farms create odor</td>
<td>38.4</td>
<td>61.5</td>
<td>100</td>
</tr>
<tr>
<td>Litter problem occurs</td>
<td>15.4</td>
<td>19.2</td>
<td>34.6</td>
</tr>
<tr>
<td>Traffic jams will occur</td>
<td>34.6</td>
<td>15.4</td>
<td>50</td>
</tr>
<tr>
<td>Rural area environment will be affected</td>
<td>34.6</td>
<td>15.4</td>
<td>50</td>
</tr>
</tbody>
</table>

On the other hand we should know exactly “Whether people in the village are really interested to see developments in tourism” and so we can identify the persons that would be able to solve some of the problems that might appear. If people know their responsibilities and share them with government institutions, they will be able to attract investors, solve problems and overall, improve tourism in the region.

Table 8. The opinions of local people living in Gökçeler village about regulation and conservation of environment

<table>
<thead>
<tr>
<th>Responsibility in regulation</th>
<th>Female (%)</th>
<th>Male (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imposed by law</td>
<td>30.8</td>
<td>53.8</td>
<td>84.5</td>
</tr>
<tr>
<td>Government</td>
<td>11.5</td>
<td>34.6</td>
<td>46.2</td>
</tr>
<tr>
<td>Public</td>
<td>27.0</td>
<td>46.2</td>
<td>73.0</td>
</tr>
</tbody>
</table>

People in Gökçeler village have been asked questions, so that researchers could see their level of awareness, involvement in the project and level of understanding of the responsibilities involved by such an extensive project. To the question “Who should be responsible for the preservation and conservation of the environment?” most of the inhabitants (73%) stated that society should be responsible for the environment, but at the same time 46.2% of them reaffirmed the fact that the government should be responsible for
environmental regulation and conservation (Table 8). On the other hand 84.5% said that a legal framework, regulating the tourist developments should be developed. These figures reveal the fact that people in Gökçeler village know their responsibility and wouldn’t like everything to be regulated by the central government, but they would like some local involvement, too.

Conclusions and Proposals
In recent years big cities are faced with a set of new problems: traffic, noise, pollution, increase of the number of population and a hard working program of the employees. All of these problems give rise to stress, causing health problems. As a result people feel the need to turn their face towards rural areas, where natural beauty is unspoiled and can benefit from a peaceful rest in a secluded place. That is why tourism investments have been directed towards rural areas. However, before starting a tourist activity in a rural area one should be aware of the tourist potential of the region. For example, Sleeping Valley has an important potential in terms of rural tourism attractions. It benefits from soft climatic conditions, abundant vegetation, water source, and beautiful scenery. Sleeping Valley can offer tourist activities such as: picnic, seasonal tourism, animal observation, photo safari, wildlife observation, fishing, biking, horse riding, balloon tourism, camping and caravan tourism, cave exploration, hiking, trekking, agrotourism, etc.

Communication is easy to achieve. There is no other place in the region that can offer facilities similar to the ones in the Sleeping Valley. These features make the region extremely interesting and attractive for tourism investment. It benefits from natural beauties unequaled in the region, far from the artificiality of the modern world. People in the region protect and preserve their traditional values, but at the same time they are open minded towards the idea of receiving tourists. Because the valley is extremely silent, it was called Sleeping Valley.

Sleeping Valley can satisfy the needs of all tourists. It is a virgin land, but protected at the same time. For this reason, its potential should be assessed in order to serve tourism. And to assess the potential of the place, an extensive advertising campaign is necessary. However, before starting any tourist activity, it is very important to know if local people are aware of the region’s potential and hear their opinion regarding tourism developments.

We have to find if people are ready to get involved in the program or not, if they really want or not to have tourist activity in the region, so that a solid investment plan could be developed. Thus, according to the result of the questionnaire, local people living in the Sleeping Valley, have a positive attitude
towards tourism developments. In addition, they are aware of the possible positive and negative outcomes of tourism in the region.

Tourism is a trade business and every member of the society should be educated in this respect. It is very important to improve the attitude of local people regarding tourism, and develop the cultural background of those involved. Local people should be open minded towards tourism. Besides, in tourism, men and women should work on equal grounds and even volunteer for certain services. Thus, tourists will come to rural areas for fresh air, clean water, unspoiled environment, organic food, and for certain activities done in the open air.

When we think of any type of tourist activity in a certain area, we should ask people first if they want these developments. For this reason, there will be necessary some educational activities, in the form of seminars, regarding the importance of people’s attitude that can support sustainable developments in tourism. On these seminars people should discuss topics such as: tourism, urban and rural tourism problems, ecosystem, ecotourism, accommodation facilities, the importance of foreign languages, and communication issues.

Understanding between people, good services and good communication generate the bases of the success in tourism. But we should bear in mind the fact that we should take some precautions because tourism can spoil traditions and natural environment, if done extensively. Quality and originality should be positioned on a top level. For this reason we have to consider both natural environment and human activities, and put them on equal grounds. For example, tourist facilities, such as restaurants, hotels, stores should be harmoniously combined with the natural environment. Handmade products and organic food should be marketed at appropriate locations. Thus, villagers can improve their income and at the same time preserve traditions, by educating tourists in this respect.

We can conclude that Sleeping Valley offers an important tourist potential, in point of natural environment and cultural aspects. Almost all the people support the idea that tourism can enhance social, cultural and economic developments for Gökceler village.

To conclude, according to the opinion of local people, in Sleeping Valley, the positive aspects outcome negative effects, as follows:
• Many tourists will benefit from the secluded beauties of the Sleeping Valley;
• Gökceler village and Sleeping Valley have the possibility to become famous;
There will be an increase in the number of visitors in the region;
The income level of the local people will improve;
Cultural level as well as the socio-economical one will be developed;
As a result of the economic growth, new investors will be attracted in the region;
Job opportunities will increase. Village people will improve their social status and bring additional revenue in the region.
Unemployment will decrease.
Social life will be more active.
Migration from the region will downsize.
Local people will understand the value of the natural environment and natural heritage and they will try to protect it more carefully.

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Abstract: Mountain biking is one of the most prominent and widely used adventure tourism. It is a way for challenging one's own self and testing in times of great danger. When we talk in terms of India, this mountain biking tourism becomes all the more important. As India is a land of diverse geographical area. It provides a lot of different experiences in the terrain of Himalayas. This tourism is a feast for eyes and at the same time a test for the physical fitness. It is very dangerous as the hilly region is very slippery and there are no proper roads. The drive is also on elevated slopes where a lot of energy is needed to drag the machine of steel to higher altitudes. But the result of this is very memorable and the overtaxing of energy and tiredness is gone away the moment when one find himself in the lap of nature which is so divine.

In this paper, we are trying to deal with mountain biking tourism in India and what all uniqueness are associated with it in India.

Key words: Adventure, natural beauty, physical fitness, high altitude, cultural diversity, India

Introduction

India is a land of diversity. This diversity is on grounds of both culture as well as geography. We can have many forms of tourism or it will be more appropriate to say we have a package that will suit to the aspirations of everyone. Among them there is one category of adventure tourism. This comprises of so many extreme sports like mountain rafting, tracking, climbing and biking to name a few. Nowadays, a great stress is given on mountain biking expeditions in India. People from far off are coming to satisfy their hunger for challenging one's own self in extreme conditions.

In this paper, we are trying to deal with mountain biking tourism in India and at the same time how it is different from other countries. But first of all, we look in the details adventure tourism.

Adventure tourism

Adventure as Oxford dictionary says is “unusual, exciting or dangerous experience or undertaking”. It is the feeling of excitement associated with danger, risk taking. To sum up, it is testing one’s own self in extreme adversity.
And when it is associated with tourism, which as per oxford dictionary is a stay in journey for pleasure. So when these two are combined, we come to know about a new race of people who seeks pleasure in testing them in adversity that is having a passion to face danger. Adventure sport is meant for those who have confidence in themselves and at the same time are willing to take any risk in order to have the ultimate happiness and a feeling of satisfaction.

**Origin and development of bicycle**

Human beings have made use of wheel since ancient times. The invention of wheel not only brought about a revolution in the realm of transportation but also gave rise to a number of sporting activities. Through the centuries, the wheel remained a faithful companion of man.

Three and four-wheeled horse drawn carriages became popular mode of transport during the medieval period. Though horse-drawn carriages could transport a number of people from one place to another, there was a need to create a vehicle, which could be powered by human muscle and was easy to handle. The first "bicycle" was invented in the early years of the 19th century; but it was not so sophisticated. This strange-looking two wheeler was also referred to as celeriferes and velociferes. The rider has to push his feet backward along the ground to push the vehicle forward. Along with this, the rider has to maintain his balance. In 1817, Baron Karl von Drais built a model with a handlebar attached to the front wheel. The handlebar helped the rider to maintain the balance.

Between 1817 and 1900 a number of development like steel tubes, ball bearings, stable handlebars, pedals, chain, wire spokes, pneumatic tires, etc., improved the bike. At the beginning of the 20th century, bicycles became lighter, faster, comfortable and easier to handle. The low cost of maintenance made bicycle the most popular means of transport in the world. In the mean time, bicycles are also started using for sport activity. Better and lighter models of bicycles were made for traversing hilly countryside and steep mountain roads. The sport of mountain biking has gained a lot of popularity among adventure seekers in countries having hilly tracts and mountain ranges.

**Mountain Biking**

Mountain biking is a land based adventure sport. It is one of the most challenging and physically demanding adventure sport. Even the fittest have trouble in bigging their bikes up the hill. They have to ride amid hilly regions which are very rough and uneven. Sometimes it results in many ailments like muscular pain, cramps etc but the most common is aching backs. But despite
of this fact, one truth which motivates everyone is seeing the natural beauty in its full glory. They are on the way which is very less toddled and can enjoy the calm serenity away from hustle and bustle. This serve two purpose, one fulfilling their desire to do something very wild and extreme. Second, having some memorable time in the lap of nature which is a great distressing and a rejuvenating force.

Mountain Biking in India
India has some of the highest mountain ranges in the world. It also has some of the world’s highest roads. In India Mountain biking is done in Himalayan region. Himalayan region is stretched to many states like Jammu & Kashmir, Himachal Pradesh, Uttranchal, Arunachal Pradesh, Assam, and Sikkim. And all these places provide a lot of diversity which provides the adventure tourist with ample opportunity to appreciate the natural beauty and the heterogeneous cultural vibrance. It is really a feast for both soul and mind. It transfers the tourist to a mystic land of calmness which is free from all sorts of worries. Himalayas offer a picturesque sight seeing. The Terrain forest, on the foothills of Nainital, a place in Uttranchal are very appropriate for mountain biking. The Himachal Pradesh has many beautiful stretches where biking can be a real joy and unforgettable experience.

Prominent destinations
Ladhak
The Leh-Manali Highway is the second highest motor able road in the world. the entire stretch of 458 km between Leh and Manali offers a challenge to mountain bikers who have the opportunity to cut across the majestic Himalayan ranges through four mountain passes. This highway reaches a height of 5,328 m at Taglang La pass. The other three passes along the highway are Lachlung La, The Baralacha La and the Rohtang pass. All these are very high – altitude trail and at the same time it s very dangerous as the path is very steep and uneven. This requires a lot of balance and a great efficiency in driving.

Himachal Pradesh
Sarchu is one of the prominent destinations which fall in Himachal Pradesh. It is connected to greater heights in Ladhak.Kullu and Manali also act as a great place for thrilling experience.

Uttar Pradesh
Thrilling experience of mountain biking can also be enjoyed in the foothills of Himalayan ranges in the towns of Haridwar, Rishikesh, Dehradun and Mussoorie.
Physical Requirements
As this is a sport which demands a lot of energy and at a great stamina so it is very obvious conclusion that all those who are physically fit can go for it. It is a game of endurance. It is a mechanism where one has to lift himself to higher altitudes and after so much of physical exertion it is heavily taxing on the human body. So, the individual suffering from heart diseases, high blood pressure, joints pains are not advised undertake such tour of adventure.

Necessary Equipments
A mountain bike is a very sophisticated vehicle. It is much more advanced form of the bicycle used in daily life. A lot of preparation needs to be undertaken before going on for this journey so that it will be remain an adventure full of good memory. One should have good helmet, eye gear, gloves, proper clothes and comfortable shoes. Along with this first aid kit, water bottles, bag. For the maintenance of bicycle one repair kit is a must.
But a proper care is needed in selecting all these as all the things should be of light weight so that they can be easily carried.

Unique features of mountain biking in India
Himalayan India is a vivid kaleidoscope of several tiny foothill villages, customs, traditions and folklore of the people. It is a great experience to visit and explore these places. The nature provides so many vivid beauties that one can not even think of having at one place. So much diversity is found not only in culture but also in nature. The fast changing colours of the landscapes and rising altitude provide a complete novel experience.

There is no better way to experience the local culture of a place than by actually cycling through it. One has the opportunity to stop at the towns and villages to get a deep insight into their way of life. There can be no two thoughts about the fact that biking through a place is a unique way of experiencing the local tradition and culture of a place. Added to this, the astonishing scenic grandeur of the breathtaking Himalayan milieu will make adventure holiday worth remembering all through the life.
Along with this the beautiful Buddhist culture which can be seen at Ladakh stands a testimony that here the time is also in a still mode. These places introduce to a different world which is running parallel to our world where there is no place for calmness. Here we get a feast for eyes and it satisfies the hunger for peace and calmness which are nowadays extinct from our busy and hectic schedules.
Conclusion
Mountain biking is a tourism which is a combination of both sports and at the same time tourism, a trip for pleasure. Nowadays, there is great craze for this. More and more people in order to increase their stamina are going for this. This is a way where one can have a first hand experience of nature and culture which is far away from the entire hustle bustle. It gives an opportunity to go in the lap of nature and spend some time all alone in the company of one’s own self and do some self analysis. This is a great way to examine one’s energy level and at the same time it keeps the person agile and full of zeal. It makes an individual risk taking and at the same time sharpens the reflexes which can save the person from dangerous diseases like Parkinson. So we can conclude, this type of tourism, no doubt is very risky, as it is challenging the might of nature. A lot of precaution needs to be taken before undertaking it. A company of experienced guide is mandatory for this type of adventure. Over indulgence in adventure should be avoided as it sometimes results in fatal accidents. But overall, it is a great experience. And at the same time a new revenue generation model for the countries like India which are having such a beautiful and majestic mountain range, Himalayas.

REFERENCES
Abstract: The article analyses the mountain tourism infrastructure according to the legislation, both for winter and summer season, in correlation with the natural potential of Romania, a country with 33% mountain areas of the total surface. It also refers to the role of the local and central public authorities in developing the tourist potential of mountain areas, in cooperation with NGOs such as the National Association of Mountain Rescuers from Romania (Salvamont). Further on, statistical data are used to highlight the relationship between the number of ski slopes, number of Salvamont units, the mountain massifs operated for, and between these data and the mountain tourist routes existing in the counties with mountain areas. The most important tourism indicators are presented for 2008, in order to compare their value for the total tourism sector in Romania with the values for mountain tourism. At the end of the article, conclusions are drawn, related to the way the mountain tourist potential is valorised in Romania taking into consideration the legislative framework.

Key words: mountain tourist routes, ski slopes, mountain rescue units, tourist destination

Introduction

This paper is not an academic article in the strict sense of the word, meaning an article based on scientific research and literature review. It is an article based on the analysis of practice compared to a legislative system whose main problem is the way in which it is applied. It is also an article which tries to highlight the significant distance between words (the tourist potential of Carpathian Mountains) and deeds (classified ski slopes, classified mountain routes, Salvamont rescue units in counties with mountain areas). It is an article based strictly on the legislation existing in Romania at this moment (May 2009) and on the relationship between this legislation and the practical aspects encountered daily.

The article is structured into four parts, of which three are based on mountain tourism legislation (of winter, of summer, and the tourist destinations in mountain areas). The investigation is also based on the latest statistical data from the National Statistics Institute of Romania.

* Ministry of Tourism, Bucharest, Romania

Winter Mountain Tourism – Winter Sports

Government Decision (GD) no. 263 / 2001 and the Order of the Ministry of Tourism no. 491 / 2001 state very clearly for Romania the way in which the ski slopes and leisure ski routes are authorised, developed, maintained and used, and also the responsibilities of the ski slopes administrators for tourists’ protection. We mention that the administrator of a ski slope is the person who requests the authorisation of the slope, which is done by a commission which comprises members ranging from the representatives of the administrator, to the representatives of the central tourism public authority, and also the specialised NGOs (Salvamont).

Even if the legislation is seven years old, in Romania there are only 88 authorised ski slopes in the Carpathians. It is to be noted that this happens in a country with about 33% mountain areas of the total territory. Based on the facts previously mentioned, some notable aspects have to be stated.

Thus, out of the 41 counties of Romania, 27 include in their territory mountain areas which belong to minimum one mountain massif of the Carpathian Mountains chain (Tulcea County is also included here with Măcinului Mountains). Out of these only 16 have at least one authorised ski slope. It has to be noted that in Iași County, which does not include mountain areas in the geographic and geomorphologic sense of the word and neither Salvamont units, there is an authorised ski slope, while in counties with significant mountain areas, there is not even one (e.g. Argeș, Bistrița Năsăud, Dâmbovița, Vâlcea etc.). Most of the authorised ski slopes are situated in the following counties: Brașov (19 ski slopes), Prahova and Harghita (15 ski slopes in each county) and Maramureș (12 ski slopes). These figures deserve to be commented as follows:

- In Brașov County there are 4 very important mountain massifs: Făgăraș, Piatra Craiului (its relief and the legislation for national park do not allow for a facile winter sports slope), Bucegi and Ciucăș;
- In Prahova County there are 3 mountain massifs: Bucegi, Baiului and Ciucăș;
- Maramureș County includes 2 mountain massifs: Maramureș and Rodna (a national park and biosphera reservation);
- In Harghita County, however, there is a single more important mountain massif – Harghitei Mountains.

With all these quantitative differences in mountain massifs number and implicitly in mountain areas, it can be noted that Harghita County has the same number of authorised ski slopes as Prahova County and a greater
number than Maramureș County. Between these four counties and the other counties, there is a big discrepancy in the number of authorised ski slopes. In Hunedoara County, even if there are 4 very important mountain massifs (Retezat – includes a national park, Parâng, Vâlcan, Sebeș) there are only 6 ski slopes. Besides this county, there are Alba, Caraș Severin and Gorj Counties, with 2 ski slopes each, and Cluj County with 3 ski slopes. The counties Arad, Bihor, Covasna, Neamț and Sibiu (despite the fact that there is a tradition for winter sports, there are Salvamont units very well trained, and 2 very important mountain massifs - Făgăraș and Cindrel) have only 1 authorised ski slope. Another important aspect refers to the location of the authorised ski slopes in resorts of national or local interest.

Thus, in Romania there are 37 resorts of national interest and 46 resorts of local interest, according to the legislation. In the first group, out of the 37 resorts, only 17 are located within or in the vicinity of mountain areas. Out of these, only 10 resorts have authorised ski slopes. In the second group, out of the 46 resorts, only 19 are located in mountain areas. It is to be noted the fact that less than half of the resorts located in mountain areas have authorised ski slopes.

Out of the 88 authorised ski slopes, 35 are located in resorts of national interest, 25 in resorts of local interest, and the difference of 28 in other tourist destinations. It is to be outlined the fact that out of the 35 ski slopes located in resorts of national interest, 30 are located in Prahova Valley and Poiana Brașov. When analysing the number of Salvamont units and the areas where they operate, a range of interesting aspects can be outlined (the data for Salvamont units are offered by the National Association of Mountain Rescuers from Romania). In Romania there are 19 counties where Salvamont units operate, out of the 27 located in mountain areas, despite the legislation which stipulates the obligation of organising such a public service in every county with mountain areas. If in some counties there is one Salvamont unit (Alba, Covasna, Dâmbovița, Gorj, Mureș, Neamț, Vâlcea) in other counties there are more units (Argeș - 4, Bihor, Cluj, Maramureș, Sibiu, Suceava – 2, Bistrița Năsăud, Caraș Severin - 3, Harghita, Hunedoara, Prahova - 5), with the most numerous units in Brașov County – 6.

A synthetic table (Table 1) clearly presents the relationship between the number of Salvamont units, the number of authorised ski slopes in the county, and the number of mountain massifs they operate for:
Table 1. - Salvamont Units, Authorised Ski Slopes and Mountain Massifs Operated For

<table>
<thead>
<tr>
<th>No.</th>
<th>County</th>
<th>No. of authorised ski slopes</th>
<th>No. of Salvamont units</th>
<th>No. of mountain massifs operated for</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Alba</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Arad</td>
<td>1</td>
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<td>missing</td>
</tr>
<tr>
<td>3.</td>
<td>Argeș</td>
<td>missing</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Bihor</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Bistrița Năsăud</td>
<td>missing</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Brașov</td>
<td>19</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7.</td>
<td>Caraș Severin</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Cluj</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Covasna</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>10.</td>
<td>Dâmbovița</td>
<td>missing</td>
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<tr>
<td>11.</td>
<td>Gorj</td>
<td>2</td>
<td>1</td>
<td>4</td>
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<tr>
<td>12.</td>
<td>Hargita</td>
<td>15</td>
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<td>6</td>
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<tr>
<td>13.</td>
<td>Hunedoara</td>
<td>6</td>
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<td>7</td>
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<tr>
<td>14.</td>
<td>Iași</td>
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<tr>
<td>15.</td>
<td>Maramureș</td>
<td>12</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>16.</td>
<td>Mureș</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17.</td>
<td>Neamț</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>18.</td>
<td>Prahova</td>
<td>15</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>19.</td>
<td>Sibiu</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20.</td>
<td>Suceava</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>21.</td>
<td>Vâlcea</td>
<td>missing</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Analysing the columns 3 and 4, one observes that the main criteria for establishing the Salvamont units, is not the number of authorised ski slopes (e.g. Arad, Argeș, Bistrița Năsăud, Dâmbovița, Iași, Maramureș, Vâlcea).

**Summer Mountain Tourism**

The GD no. 77/2003, regarding the measures for preventing mountain accidents and organising rescue units in the mountains, clearly describes 2 phases for developing, authorising and maintaining of mountain routes:
a) the local public authorities (county or local) and the National Association of Mountain Rescuers from Romania elaborates the documents for developing mountain tourist routes (article 32); the same article stipulates the content of the documentation;
b) authorising of the routes is undertaken at the initiative of local public authorities, by a commission, which also includes the Ministry of Tourism as a member, besides those mentioned at (a)

Based on this legislation, in Romania there were authorised 378 mountain tourist routes. The main observations related to these routes are the following:

a) out of the 27 counties which include mountain areas in their territory, only 8 are listed with authorised mountain tourist routes: Arad, Argeș, Bihor, Brașov, Covasna, Prahova, Sibiu and Suceava;
b) in conclusion, only in 30 % of the counties including mountain massifs the local public authorities and Salvamont made the necessary procedures for authorising the mountain tourist routes;
c) among the missing counties there have to be mentioned, according the mountain tourist potential, the following: Bistrița Năsăud, Gorj, Harghita, Neamț, Vâlcea;
d) regarding the mountain massifs, there are authorised mountain tourist routes in about 20 of them; it is to be noted that only in Meridionali Carpathians there are about 21 mountain massifs (it is difficult to have a precise number for all Carpathians in Romania and especially for Meridionali Carpathinas, given the geographic, geomorphologic, and geologic contradictions);
e) out of these, the most renown massifs with authorised mountain tourist routes are: Bihor – Vlădeasa, Bucegi, Ciucăș, Făgăraș, Piatra Craiului, Piatra Mare, Postăvarul, Râșu Giumalău;
f) surprisingly, a significant number of mountain massifs renown for the natural and man-made tourist potential are missing from the list: Anina, Ceânlău, Hășmaș, Retezat, Rodna, Semenic; it is also to be noted that all the mentioned mountain massifs are natural or national parks and two of them include areas declared as biosphere reservations.

Based on the number of mountain tourist routes in each county, there can be established the following order: Brașov (with over 120 marked tourist routes), followed by Sibiu, Arad, Bihor, Argeș, Suceava, Prahova and Covasna (with less than 20 marked tourist routes).

The first observation to be made is that in Arad County there are more authorised tourist routes than in Suceava and Prahova Counties. Both counties
include mountain areas within a significant number of massifs: Bistriței, Câlimani, Rarău Giumalău and Suhard (Suceva County), Bucegi, Bâilelui and Ciucăș (Prahova County). The second observation refers to Covasna County, the smallest county in Romania according to the surface, where there are marked routes despite a not very spectacular mountain area, while in counties such as Hunedoara (Retezat, Vâlcan, Parâng, Sebeș) there is not even a single route authorised.

A grouping of tourist routes on mountain massifs shows the following aspects (see Table 2):

a) out of the total number of mountain massifs in Romania, only in 11 there are more than 10 authorised mountain routes;

b) the 11 massifs can be grouped into two distinct regions: Apuseni Mountains (position 1, 5, 11) and Meridionali Carpathians (position 2, 3, 6, 7, 9); the Curvature area with 2 massifs (Ciucăș and Piatra Mare) and Bucovina with Rââu and Giumalău;

c) most of the marked mountain tourist routes are, as expected, in Făgăraș Mountains and in Bucegi Mountains (natural park)

<table>
<thead>
<tr>
<th>No.</th>
<th>Mountain massif</th>
<th>No. of authorised routes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bihor Vlădeasa</td>
<td>29</td>
</tr>
<tr>
<td>2</td>
<td>Bucegi</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>Cindrel</td>
<td>21</td>
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<tr>
<td>4</td>
<td>Ciucăș</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>Codru Moma</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Făgăraș</td>
<td>61</td>
</tr>
<tr>
<td>7</td>
<td>Piatra Craiului</td>
<td>36</td>
</tr>
<tr>
<td>8</td>
<td>Piatra Mare</td>
<td>18</td>
</tr>
<tr>
<td>9</td>
<td>Postăvarul</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>Rââu Giumalău</td>
<td>18</td>
</tr>
<tr>
<td>11</td>
<td>Zârand</td>
<td>28</td>
</tr>
</tbody>
</table>

Correlating the data regarding the authorised ski slopes with those regarding the authorised mountain tourist routes, the following aspects are to be highlighted:

a) in Bihor, Brașov, Covasna, Prahova, Sibiu and Suceava Counties there are ski slopes, tourist routes and Salvamont units
Another interesting aspect refers to the number of resorts of national or local interest, where mountain tourist routes start from. Out of the more than 80 resorts of national and local interest, only 11 resorts are a starting point for

Table 3. - Salvamont Units, Authorised Ski Slopes and Marked Tourist Routes

<table>
<thead>
<tr>
<th>No.</th>
<th>County</th>
<th>No of authorised ski slopes</th>
<th>No. of Salvamont units</th>
<th>Authorised marked tourist routes</th>
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<tbody>
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<td>Alba</td>
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<td>Bistrița Năsăud</td>
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<td>6</td>
<td>Brașov</td>
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<td>7</td>
<td>Caraș Severin</td>
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<td>9</td>
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<td>10</td>
<td>Dâmbovița</td>
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<td>21</td>
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<td>No</td>
</tr>
</tbody>
</table>

b) in Arad and Argeș Counties, there are not either Salvamont units (Arad) or authorised ski slopes (Argeș);

c) In many situations, there are Salvamont units, there is a relatively significant tourist flow, but there are not authorised mountain routes (Alba, Bistrița Năsăud, Caraș Severin, Dâmbovița, Gorj, Hargita, Hunedoara, Maramureș, Neamț, Vâlcea etc.)
tourist routes. The most reknown are the resorts on Prahova Valley and Brașov area (Sinaia, Bușteni including Poiana Țapului, Azuga, Predeal including Pârâul Rece, and Poiana Brașov). The most numerous authorised mountain tourist routes are in Poiana Brașov. Besides these resorts, there are also Bran (the western side of Bucegi Mountains), Păltiniș (Cindrel Mountains), Cheia (Ciucăș Mountains), Timișul de Sus (Postăvarul Mountains), Vatra Dornei (Suhard Mountains) and Stâna de Vale (Apuseni Mountains).

The Plan for National Territory Development - section 8 “Tourism”
According to the Government Ordinance of Emergency (GOE) no. 142/2008, the Plan for National Territory Development - Section 8 “Tourism” was approved. Based on four criteria (natural potential, man-made potential, tourism specific infrastructure, general infrastructure), each destination in Romania down to commune level was scored. Thus, 3 main categories of tourist destinations were created: with a great tourist potential, with a big tourist potential and other tourist destinations.

In the first category there are about 200 tourist destinations, out of which about 100 are located in the rural area and the same number in urban area. In the mountain area (including localities in its vicinity – maximum 15 km.), there are about 55 tourist destinations, representing around 25% of the total number. Compared to other forms of tourism, mountain tourism is very well represented, being surpassed by what it could be called urban tourism (business, cultural) which includes 65 tourist destinations (about 30%).

Statistics
The number of accommodation facilities existing in Romania in 2008, according to the National Statistics Institute, was 5.329 units. Out of these, 1,064 representing about 20%, were located in mountain areas. The number of rooms in accommodation facilities, in Romania, in 2008, was about 123.000, of which only about 14.000, representing 11%, were located in mountain areas. It is evident that mountain tourism, compared to other forms of tourism, determines the construction of B&B or small size hotels.

Total number of overnights in 2008 was of 20.725 thousand. Out of these 2,245 thousand, representing 10%, were registered in mountain area units. The total number of tourists related to these figures was 7.125 thousand at national level and 998 thousand in mountain area. The structure Romanian / foreign tourists was 5.659 thousand / 1.466 thousand at national level, and 893 thousand / 105 thousand for the mountain area.
The average length of stay in 2008 was 2.9 days for the total number of tourists, 3.1 days for Romanian tourists and 2.3 days for foreign tourists. For the mountain area, the average length of stay was 2.2 days for Romanian tourists and 2.4 days for foreign tourists.

**Table 4. Tourism Statistical Data - 2008**

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>Total</th>
<th>Mountain area</th>
<th>% mountain area/total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation facilities</td>
<td>5.329</td>
<td>1.064</td>
<td>20%</td>
</tr>
<tr>
<td>Rooms</td>
<td>123.300</td>
<td>14.000</td>
<td>11%</td>
</tr>
<tr>
<td>No of tourists</td>
<td>7.125.000</td>
<td>998.000</td>
<td>14%</td>
</tr>
<tr>
<td>Overnights</td>
<td>20.725.000</td>
<td>2.245.000</td>
<td>10%</td>
</tr>
<tr>
<td>Structure Romanian/foreign tourists</td>
<td>5.659.000/1.466.000 (3.86</td>
<td>893.000/105.000 (8.5)</td>
<td></td>
</tr>
<tr>
<td>Average length of stay - days</td>
<td>3.1 for Ro. tourists and 2.3 for foreign tourists</td>
<td>2.2 for Ro. tourists and 2.4 for foreign tourists</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions**

There is a big discrepancy between the natural and man-made potential of Carpathian Mountains and the way in which this potential is transformed into added value. Both for the winter and summer season, the active tourism offer is very low from a concrete point of view. Even if over than 30% of Romania’s territory is represented by the Carpathian Mountains, even if most of the national and natural parks are located in mountain areas, the valorisation of these competitive advantages is very low on the national level and also on the level of the tourist regions, Despite the legislation elaborated some years ago, the level of its application is very reduced, even if all the necessary conditions for its implementation in a coherent manner exist.

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Order of the Ministry of Tourism No. 491/2001 for approval of the norms for development, authorisation, maintaining and usage of leisure ski routes and slopes
Government Decision No 77/2003, regarding the measures for preventing mountain accidents and organising rescue units in the mountains
Government Decision No. 867/2006 regarding the approval of the norms and authorising criteria for resorts
Abstract. Mountainous areas may tend to occupy a marginal position on present day economic priority lists, but they are runner-up favorites as touristic destinations. Due to climate change these areas used up earlier by ski resorts will diversify and open towards other, land- and waterbased, snowless services. The central challenge is maintaining a triangle of sustainability: ecological, economic and socio-cultural elements must be balanced in order to keep tourism sustainable.

Key words: mountain tourism, climate change, sustainable tourism

1. Mountains and ecosystem

„The primary source of flowing waters, energy, and biodiversity are the mountains. Forestry, agricultural and mineral products with pivotal importance also come from the mountains, which furthermore serve as recreation areas. Mountainous environments are part of the complex and intertwining network of ecological systems on our planet, and are vital for maintaining its integrity.” (Mountain Institute)

The mountains of the world occupy around 24 percent of the Earth’s total surface, present on all continents except for the Antarctica, and represented in all major ecological systems from deserts to tropical forests and icy polar ranges. Whichever the location, they share an important property: the climate, the vegetation and the soil change in a rapid pace within limited distances, corresponding to the scale of elevation and contributing to the dramatic variation of biodiversity. It is exactly this versatility that makes defining mountainous environments difficult. As a general rule, mountainous environments lie more than 300 meters above sea level, but it is more expedient to divide them into zone systems with custom features based on height, inclination and natural landscape (eg. subalpine, rainforest).

About 12 percent of the planet’s human population live in the mountains, and an additional 14 percent live in their close proximity and in dependence on resources originating from there. About half of all mountaineers are concentrated in the Andes, the Hengduan-Himalaya-Hindu Kush system, respectively in
the African mountains. While mountain ranges in the Northern hemisphere are sparsely populated, the population density can grow over 400 souls/km² in some mountainous tropical areas. The population and economic impact of mountain regions in the EU bear great importance, especially in agriculture, tourism and forestry. 20% of all agricultural areas in Europe lie on high ground, as well as 27% of all operating farms. The territory of five EU member states – Austria, Greece, Italy, Portugal and Spain - is covered with mountains in more than 50% (Dax, 2004).

Most of the people living on the mountains make a rather miserable living doing agricultural field work. These groups of people have no or minimal political influence, and the local economies are bound to agricultural production and relies on barter exchange. The social, cultural, environmental and economic influence of mountain ecosystems determines the living standard and health of the population. Due to their heavy reliance on their immediate environment, they have developed a pronounced cultural identity, as well as specialized skills and knowledge.

In recognizing the significance of the mountains, the first step was the Agenda 21 13. chapter entitled "Management of Vulnerable Ecosystems: Sustainable Development of Mountains." In the 1992 United Nation conference on Environment and Development in Rio de Janeiro, it was stated that mountainous areas have an impact on the lives of more than half of Earth’s total population, hence the issue of local resources like waters and biodiversity should be treated with due seriousness.

Considering the growing international interest towards mountain tourism, The Mountain Forum organized an electronic conference in 1998, entitled Community-based Mountain Tourism: The Connection between Sustainability and Enterprise in Practice. By the end of the conference, the parties had agreed to the following practical points, aiming at a more balanced distribution of touristic resources and proceeds, and emphasizing local governance, partnership, sustainable development and conservation:

1. Holistic management strategies,
2. Local governance and management of resources,
3. Supportive national and regional policies,
4. An evenly balanced resource utilization and decision making regarding the low-lying and high-lying territories,
5. Utilization of the local traditional and knowledge base in social and cultural management,
6. Utilization of external knowledge and technology,
7. Infrastructure development in underdeveloped areas,
8. Reinvestment of touristic proceeds in conservation,
9. A balanced distribution of touristic profits and possibilities,
10. Full scale integration of women,
11. An organized capacity expansion,
12. Practical education based on talents,
13. Attracting the attention of potential investors,
14. Partnership, and
15. Continuous research and information flow.

At the basis of the European co-operation stands the Alpine Convention signed by eight alpine states in 1999. The main issues discussed were as follows: population and culture, area development, air quality, soil protection, water quality, nature protection, landscape rehabilitation, agriculture, forest conservation, infrastructure development, energy and waste management and tourism.

There was an increased international and political interest towards the development of mountain ecosystems and the dependent low-lying territories in 2002, in the International Year of the Mountains (IYM). In the same year, the co-operation platform entitled Partnership for the Sustainable Development of Mountains was initiated on the Johannesburg World Summit on Sustainable Development (www.johannesburgsummit.org, United Nations 2002, para 42), inspiring the transnational co-operation of several international networks on behalf of the mountainous areas.

Still, mountainous areas tend to occupy a marginal position on present day economic priority lists, with few investments reaching fruition, locals being economically disadvantaged and resources becoming increasingly degraded due to exhaustion. In such conditions, tourism seems to represent the only feasible solution for development in the eyes of many.

2. Tourism

Tourism is the determining factor of the mountain services industry. The mountains are runner-up favorites as touristic destinations, second only to beaches and islands. In 1999, 15 to 20% of all international tourist traffic took place in the mountains, which equals to an annual commerce of about 80 billion US dollars (Lama-Sattar 2002).

According to Godde (1995), in the broader understanding of mountain tourism one will find the mass tourism of popular areas, ski tourism, adventure tourism (trekking, mountaineering and rafting), cultural tourism, ecotourism and
pilgrimage. Motivation for travel can be the climate, the fresh air, the unique wildlife of the areas, the panoramas, the local cultural and historical heritage, the attraction of the snow, as well as winter sports and nature-based activities.

Grouped by the utilized natural factors, touristic activities in the mountains are as follows:

**Land-based adventure activities:** cycling (Mountain bike, quadbike), riding, trekking, rock- and ice climbing, potholing and nordic walking. Although the weather conditions (snowfall or dry weather and the size of the areas covered by snow or ice) and the accessibility of activity areas (eg. frozen rivers or blocked rail traffic) greatly affect all these activities, they can be pursued in both snowy and snowless seasons.

**Freshwater-based recreational activities:** water touring (kayak, canoe), sailing, surfing, kite surfing, rafting and angling.

**Snow-dependent recreational activities:** crosslanding, coasting and glacier skiing, snowboarding, sledding, motor sleigh riding, tobogganing.

As shown on picture 1, mountain tourism is greatly affected and determined by the elevation scale and relative isolation of the area in question.

![Mountain Features and Tourism](image)

*Picture 1: Features of mountainous areas and tourism (Godde, 1995)*

The priority issues of sustainable development of mountainous areas are directly or indirectly related to the touristic value of the areas in question.
Although modern means of transportation have made even the most remote mountainous areas reachable for visitors, mountain tourism is still unequally balanced: mountain destinations with significantly developed touristic infrastructure represent only a fraction. In the Alps, for example, with more than 100 million visitors a year, 40% of the local communities have no connection at all with tourism, and only 10% of the communities are expressly specialized in it.

The depth of involvement of alpine communities in tourism is well demonstrated by their categorization into being intensive/less intensive and mountainous/not mountainous (chart 1). Moreover, it can be stated that the regional processes of touristic development further entrench the concentration.

*Chart 1: The intensity variation of tourism in the Alps between 1975 – 1995*

<table>
<thead>
<tr>
<th>Touristic reception zones</th>
<th>Nights a year/population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1975</td>
</tr>
<tr>
<td>Not mountainous 1)</td>
<td>2.86</td>
</tr>
<tr>
<td>Mountainous, less intensive 2)</td>
<td>20.12</td>
</tr>
<tr>
<td>Mountainous, intensive 3)</td>
<td>155.38</td>
</tr>
</tbody>
</table>

1) reception zones outside/bordering the Alps
2) alpine reception zones where the touristic activity of the local population is less than 25%
3) alpine reception zones where the touristic activity of the local population is more than 25%

(Source: ÖSTAT, Schindegger et al. 1997)

3. Climate change

**Climate change** is a considerable source of danger to mountain tourism. It may result in final closure of ski resorts, further impacting the network of services and employment. In the same time, this will not bring about the end of all kinds of high mountain tourism. The areas used up earlier by ski resorts will diversify and open towards other, land-based and snowless services. The disappearance of the snow will make place for more trekking. In turn, this will lead to greater exposure of the wildlife and vegetation to human interference, especially so in the case of fragile alpine vegetation, previously protected by snow. Security issues will also arise as tourists going trekking in a snowless zone might still easily find themselves enveloped in snowstorms, common under the milder weather conditions of higher-lying areas.
In fact at elevations above 1000 metres the decline in snowfall rates is expected to be much slower, because the general warming is being accompanied by an increase in precipitation, which could lead to more prolonged snow on the highest ground.

Scotland and Australia are hardest hit because of their relatively low elevations. Visitors to the European Alps, on the other hand, enjoy skiing and snowboarding up to as high as 4,000 metres. the climate is changing. Winter temperatures in the Alpine region are now 2°C higher than at the beginning of the century — a rate of warming about three times faster than the global average. And despite a rash of stories predicting the imminent death of the Alpine skiing industry, experts point out that the real situation is actually far more complex. Climatic variability is very high, and there’s no direct link between average warming and snowfall in a particular winter. (Beniston, 2006)

Another major concern comes not from snowfall but from the melting of the very mountains themselves. Much of the highest ground in the Alps is permanently frozen — known as permafrost — with sediment, earth and rock held together by a glue-like layer of ice. For as long as it stays frozen, permafrost can be as hard as concrete. But once it begins to thaw, the whole mass can begin to slide downhill under its own weight. It’s a danger that is taken seriously in Switzerland: the small town of Pontresina is currently spending large sums building a giant wall to catch any landslide triggered by permafrost degradation on the slopes above.

Although permafrost occurs all over Europe, with patches even as far south as the Spanish Sierra Nevada, it is the Alps which are most at risk. Rising temperatures have a dual effect on permafrost, acting directly to warm the ground in summer, and bringing heavier snow in winter which insulates the ground from the coldest nights and retains warmth. A gigantic rockfall on the eastern face of the Matterhorn in July 2003 — after which 70 climbers had to be rescued — could show the shape of things to come, arriving as it did during record-breaking summer temperatures.

“But the greatest implication of the melting is for hydrology, because the glaciers feed the rivers flowing off the Alps during the driest part of the summer.” It’s a familiar problem, and one which isn’t unique to Europe: major cities in both South America and the Indian subcontinent depend largely on mountain-generated water, which will become a diminishing resource as global warming accelerates glacial wastage during the century ahead (Lynas 2004). The process is already well underway in the Peruvian Andes, where several
Glaciated mountain ranges have lost up to a half their snow and ice in the last thirty years alone. Peru’s Cordillera Blanca (‘White Range’), a climber’s Mecca which boasts some of the best ice mountaineering opportunities in the world, has lost 111 square kilometres of glacier area since 1970.

These changes are replicated in every glaciated mountain range in the world – with the single exception of some of the maritime glaciers in Norway where melting caused by rising temperatures has been offset by heavier snowfall. In total mountain glaciers are now losing a hundred cubic kilometres of water every single year, more than the entire volume of Switzerland’s Lake Geneva. This includes glaciers in the highest latitudes like Alaska and Canada, which contain some of the largest ice masses outside the Greenland and Antarctic ice caps. Recent studies using airborne laser altimetry found 95% of these glaciers to be thinning, adding water to the oceans at a rate equivalent to an annual sea level rise of 0.2mm per year. Tourist cruise ships now visiting Alaska’s Glacier Bay are able to travel tens of miles into a previously ice-bound fjord.

4. The impact of tourism on mountain ecosystems

Tourism has great impact on mountain ecosystems, communities and economies. Hereafter, we provide a summary of the 2007 UNEP reports:

Environmental impacts:

Mountain landscapes are particularly fragile and susceptible to change and degradation. Landslides, avalanches, lava flows, earthquakes, torrents and rock falls can alter the landscape unexpectedly. Mountain ecosystems include a wide range of small and unique habitats, with flora and fauna that may have very short growing and reproductive seasons, and may be particularly sensitive to disturbance by human activity. Tourism activities often involve the development and intense use of tracks, paths and sports slopes by vehicles, non-motorized transport and pedestrian traffic. Visitor presence is also usually concentrated in small areas, contributing to increased noise and waste. The negative environmental effects of poorly managed tourism activities can include vegetation clearing and soil erosion, removal of scarce habitat, altering of critical landscapes and water flows, water and air pollution, and wildlife relocation or behavioral changes. The introduction of exotic and invasive species and diseases can also have a significant negative impact on local plant and animal species.
• Removal of vegetation both on the large scale (i.e., for roads, land clearance for ski areas or hotel construction, etc.) or the small scale (i.e., collection of plants, trampling and disturbance to sensitive vegetation by uncontrolled tourism), even by benevolent “ecotourists” watching for wildlife or studying plant-life.

• Disturbance to wildlife and reduction of wildlife habitat area: Mountain tourism is fast growing: tourists (and tourism infrastructure) are going further into remote and isolated high altitude areas. Tourism managers “sell” opportunities to view wildlife, which, unless properly managed, can interfere with their critical needs and life cycles. Some wild creatures may respond by retreating; others become accustomed to humans and human food.

• Wildlife poaching and trade in wildlife parts is sometimes masked by the increased presence of tourists in wilderness areas where local people work as tour guides or porters and smuggle illegal wildlife parts out for sale.

• Increased incident of forest and grassland fires from tourist activities: a tossed cigarette is all it takes. With increased numbers of visitors, unaccustomed to high fire dangers, forest fires are a real and serious impact of tourism in mountain areas.

• Degradation of forests from cutting of timber to firewood for tourism: The increasing number of local trekking lodges in the high Himalaya promotes firewood cutting by the local people, resulting in forest degradation (Bhatrai 1985, Puntinney 1990). Firewood is used to cook food and provide hot showers to tourists. Trekking porters uproot high altitude shrub to burn for cooking and keeping warm, causing serious damage to the exposed slopes (Byers 1999). The number of tourists, with porters and staff, visiting the Everest region each year is four to five times the local population; hence more pressure is exerted on the forest, particularly outside of park boundaries where forests are unprotected. Impacts are evident down slope as well, i.e., soil erosion and reduction in land productivity. Moreover, the villagers are compelled to spend more time in meeting their own needs of firewood from a rapidly receding forest.

• Improper and inadequate garbage and human waste management: Tourism generates a high volume of garbage and waste which mountain communities are unprepared to process. High altitude temperatures inhibit the natural decomposition of human wastes at base camps. Improperly sited toilets pollute mountain streams, affecting water sources downstream as well as the sanctity of sacred lakes and streams. Garbage piles up outside trekking villages and ski villages alike, and is dispersed by wind.
• Simplification of agro-diversity: Sustainable practices that promote agro-biodiversity become geared to tourism market demands, creating a chain effect on cropping patterns, loss of soil productivity and soil erosion, and ultimately destruction of habitats and ecosystems.

**Socio-cultural impacts:**

The cultural variety and uniqueness of local communities, representing thousands of different ethnic groups, is especially attractive for tourists. Adequately managed ecotourism may help protect the values of these cultures, contributing in the same time to the improvement of their social and economic situation. On the other hand, inadequate management may result in identity loss and assimilation of the “invaded” population. In this eventuality, the accumulated economic capital is moved somewhere else, leaving exhausted resources and inflated local prices behind. (Mountain Forum, 1995). Mountain communities can also be very susceptible to impacts and change from tourism activities. The negative social impacts of poorly managed tourism can include disturbances from high levels and concentrations of visitor noise and activity, and reduced availability of scarce shared resources such as firewood, fish and fresh water. In addition, exposure to and adoption of foreign traditions, lifestyles and products can pose a threat to the unique culture, traditions, knowledge and livelihoods of mountain populations, particularly in remote and indigenous communities.

Impacts as it can serve as a supportive force for peace, foster pride in cultural traditions, help avoid urban relocation by creating local jobs, increase visitor awareness and appreciation of natural, cultural and historical values and assets.

**Economic impacts:**

While tourism can provide significant local employment, if not properly managed, it can be short-term and seasonal, providing little skill-building or training to local people. Working conditions can be poor, and revenue can easily pass from the local economies to externally owned companies. However, well-managed tourism can play an important role in attracting revenue and supporting poverty alleviation. It can also improve infrastructure, provide community services and help diversify local economies. Employment and income can, in turn, improve the self-sufficiency and sustainability of mountain communities.
The central challenge is maintaining a triangle of sustainability (Picture 2), as discussed by Andri Bisaz and Uli Lutz (1998). Ecological, economic and socio-cultural elements must carefully integrated into community-based mountain tourism, but they must also be balanced in order to keep tourism sustainable.

![Picture 2: Triangle of sustainability (Bisaz-Lutz, 1998)]

The World Tourism Organization has identified core indicators of sustainable tourism. These indicators can be applied to all destinations and include: site protection, stress, use intensity, social impact, development control, waste management, planning process, critical ecosystems, consumer satisfaction, local satisfaction and tourism contribution to local economy. Supplementary indicators specific to mountain environments are listed as (WTO 1995):

- reproductive success of indicator species (loss of flora and fauna)
- extent of erosion caused by tourists (erosion)
- length of vehicle line-ups (lack of access to key sites)
- consumer satisfaction (lack of solitude)
- site attraction (loss of aesthetic qualities)
- pollution counts (diminished water quality)

Summary

Community leadership and a favorable national or regional policy environment are two central components of successful community-based mountain tourism initiatives. Policies and actions that link conservation, enterprise development and community control in mountain tourism have the potential to address one of the most important challenges facing the 21st century—sustainable management of mountain resources and a sustainable future for mountain populations.

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