

Mine Bankov and mining tourism

LADISLAV HVIZDÁK¹, JANA HVIZDÁKOVÁ¹, MÁRIO MOLOKÁČ¹
and LUCIA MOLOKÁČOVÁ²

¹ *Institute of Geotourism, Technical University of Košice,
Letná 9, 042 00 Košice, Slovakia*

(e-mail: ladislav.hvizdak@tuke.sk, mario.molokac@tuke.sk)

² *Zdravo-M, Wuppertálska 3, 040 23 Košice, Slovakia*

ABSTRACT

This paper is devoted to the possibilities of using mine Bankov for the mining tourism. The aim of the work is to show the possibility of effective use of Bankov potential for the tourism and recreation.

Keywords: mining tourism, Bankov

INTRODUCTION

Suburban tourism is a subsystem of recreational tourism. It means recreation that is organized in an appropriate recreation space near urban, industrial and residential sites. Central European region, in recent decades, is characterized by the decline of mining industry. After the mines extracting was the mine area intact for a long time, which caused their gradual devastation. The question is what to do with such mine? It was found out that those mines are dangerous for the people - movement in that area may cause a danger of injury. Also they are dangerous for the environment because of polluting. Many mines (mainly ore) containing hazardous substances that directly affect the quality of water, soil and air. The solution is to reclaim them, to remove all the parts that do not belong to nature, to create prevent pitfalls, to remove piles and to plant new vegetation. This solution has two drawbacks. The first is the financial cost. The lack of finance causes delay of regeneration and thus increases the possibility of the environment contamination, and also chances for accidents for the people who visit this area. The second problem is that the disposal of

mining complex is permanently lost part of the history, which has been linked to our society. It means the loss of the technological processes and mining equipment, which has currently a considerable historical value, and in a few decades we will miss these devices really much. The solution is not necessarily reclamation, but mining tourism. Advantages of mining tourism:

- Proposes financial modesty,
- Maintains the mining areas and facilities for the future generations,
- Presents not only technical equipment, but also a way of life, social customs and lifestyles associated with mining activity,
- Creates long-term economic activity,
- Creates the possibility of improving education in engineering sciences on the ground,
- Attracts visitors who will benefit from a financial point of view,
- Promotes the region over a wider area.

MINING TOURISM

Mining tourism can be defined as a component of industrial tourism or geotourism which presents legacy of

mining, mining activities and the society which is closely linked to mining. Mining tourism is interested in mining and processing procedures. This includes segments, which may be ground or surface, surface landfills, dumps, railway systems and surface equipment. Devices can be connected with mine directly or by mining activities, such as pumping, and disposal of mineral processing, or management and employee housing. Remaining relics range from small items such as tips, etc. in large boilers and engines. "Mining sites contain the physical evidence of mining and processing activity. This includes mine works which may be underground or open cut, surface dumps, slag heaps, railway systems and surface structures. Structures may be associated with obvious dry mining activities and pumping, winding and mineral processing, or for administration and housing of employees. Remaining relics range from small items dry and picks etc. the large boilers and engines [7].

It is a form of cognitive tourism which means that the main objective is to understand - to have an interesting experience - that I will bring something new to the tourist's interest.

Another important fact is that the target population of this type of tourism is mainly between 18 -25 years, frequently travelling only with a partner. It is indeed important to put main emphasis on learning about new cultures, cultural sites, escape from the stereotype and leave the daily routine - local customs and cuisine and offer possibilities of quality accommodation and services [9].

The cognitive tourism success thus becomes inextricably linked with the site uniqueness and unrepeatable distorting stereotype in the past so prioritized uniformity. Finally, our interest is also to focus on environmental protection and nature, including unique geological attractions.

In addition, there is also the opportunity for a wide variety of educational experiences for schools, institutions, private

sector and professional community.

The subjects of mining tourism are:

- the old mines with significant historical value presenting old mining practices. Such mines are mainly from the Middle Ages and early modern times. Present mainly historical interest, many of those are registered for their importance to the World List of Cultural and Natural Heritage,
- the new mines that are interesting to the public for their technical equipment and modern mining practices.

Disclosure of the mines for the public has to fulfill several criteria:

1. Mines have to be sufficiently attractive to the tourists - should contain interesting technical equipment, mining methods, etc.
2. Interesting geological structures - only mining work can be interesting in terms of geology, if present geological phenomena that can not be seen in the wild, such as the storage layer, vein minerals, tectonic lines, breaks, etc.
3. Mines must have a status of "tourist mine", which was approved by the district mining offices of the Slovak Republic. These offices allow disclosure of mining projects for museum purposes and work on keeping them in a safe condition [3]. It means of mining law have to do documentation of all activities (operating plan), which has to be authorized by mining authority [13]. The concept of a tourist mine can be defined as: Any mining operation that does not intend to produce and sell a product that affects shop. The main aim is to make mine inspections.
4. Security - is the most important criterion for mining tourism, especially in the case of underground mines. Safety criteria should be developed in several ways:
 - it is necessary to define competent person to conduct daily inspection of mines and transport equipment that may adversely affect the safety and health of people
 - exhibitions have to be carried out by

- trained staff (guide)
- before the entering visitors have to be sufficiently informed how to properly behave in the mine and also about safety risks,
 - mine must be provided with adequate ventilation,
 - mine must be secure against collapse,
 - mine must be provided with sufficient pumping groundwater,
 - mine must be secure against fire,
 - mine should offer for the tourists personal protective equipment (Personal protective equipment (hard hat, steel-toed shoes, safety glasses, earplugs, gloves if necessary, or other Necessary equipment for your job) shall be warn as required [8],
 - develop the emergency procedures for events that may occur at the mine. The emergency procedures should include people trained in emergency response procedures (includes fires, first aid, roof falls, water inundations, explosions, communications systems), an adequate supply of first aid materials, accurate mine maps and escape procedures in Which all employees are trained, etc. [8].

LOCATION - SELECTION OF A SUITABLE LOCATION

It is necessary for the mining tourism to have as an addition to the primary offer – it means interesting mine and also secondary offer and market proximity. Since the mining work is immovable, it is necessary to build adequate facilities near the mine. Another solution is to find an existing mining work which is close to the existing tourist destination. If this strategy is applied to the area of Slovakia we can find the suitable location in the second largest city of Slovakia in Košice. Košice have sufficient secondary offer regarding the quality and quantity.

In the territory of Košice there are surface-mined granodiorite and ceramic clays. In the Košice - Part Ťahanovce we

can find the ceramic clay mining area. The city is also mined bearing granodiorite with the designated mining area Košice - Hradová. In the northwest part of town, near the recreation area Jahodná, is registered bearing uranium ores. In the northern part of the built-up area of Kosice in Bankov, is dedicated significant bearing mineral magnesite national importance, where the proposed activity will take place. Bearing was mined in the past and subsurface sections are nearly tight, but in the depths of the 6th horizon was estimated more than 450 million tons of geological reserves. Mine Bankov is not currently used [10].

MINE BANKOV - PAST AND CURRENT STATE

In Košice there has been magnesite deposit in local banks from ninety years of the 19th century. Bankov mine, currently unused magnesite mine, is in direct contact with urban areas, in the city's northwest edge. It consists of an underground mining area, the crater after completed surface mining, heap, ponds, abandoned mining equipment and large area defined as the mining area. Magnesite deposit in this area consists of three parts: Bankov, Baniská and Medvedza [10]. Opening, preparation and extraction of the Bankov mine exclusive deposit was completely stopped in 1999. Since 2000 in the exclusive deposit magnesite mining area "Košice" there is no exploration and also no concentrate production [11].

Project of the Bankov mine has figured in the top three investment projects EHMK. The use of abandoned area of magnesite mine has been one of the priorities of Košice candidacy for the European Capital city of Culture 2013 [4]. The mine area should serve the cultural events and also there exist the anticipation of the renewal of deep mining (preparation plan, opening and extraction of the mine Bankov in the years 2011-2021). The town lacks space for



Fig. 1 Area of Bankov mines, **Source:** <https://maps.google.sk>



Fig. 2 Interior of Bankov mines and equipments, **Source:** Jaroslav Ružinský

organizing large several-day open-air (open air) festivals with attendance of more than 10 - thousand people. Suitable space, in an attractive location, but out of residential part of the city is located in the area Mines Bankov. It is currently in the security hedging mode. Recently it revived in a big way in August 2008, when there was held musical laser show Zone 13 [5]. In March 2010 the team EHMK confirmed that from the project was excluded project of Mine Bankov, which was even last year in three major projects [6].

In February 2010, the ARQE Ltd. was

accessed to working activities on rehabilitating the area of future construction FVE Mine Bankov - Košice 18MW at the request of the investor. Within this work has been done cleaning the space-grown trees and shrubs seeding and subsequent construction of the fence one part of the future installation. The next step was the construction of electronic security systems, CCTV and lighting the park, which was carried out by fully ARQE Ltd. In April 2011, a part of the ARQE Ltd. again started work on the construction of a photovoltaic complex Bankov Mine - Košice. The first



Fig. 3 Exterior of Bankov mines - mining towers, **Source:** Jaroslav Ružinský

phase of construction of the photovoltaic Bankov mine complex with the power of the 7 MW by ARQE Company Ltd. fully completed and fully operational transferred to investors use in June 2011. Continuation of the construction and expansion of photovoltaic installations in Mine Bankov - Košice is currently under negotiation [1].

In 2011, the underground and on the surface of the mine only performed security work (especially inspection and control of mining works, buildings and equipment in underground and surface surveillance and control of caving zone, water pumping, testing and revision of the functional devices, control measurements mining pollution, maintenance, repair and restoration facilities, functional operation of the landfill and other security work plan certified by a particular measure stress - strain states in the rock mass and measuring water tributaries [11].

Within the revitalization of the area could be a large part of the area Bankov mine use for recreational, educational and other purposes. The transformation of the former mine Bankov Kosice panoramic place with a long unused industrial building can create a lack of facilities for organizing major cultural events in the open air [10].

THE BANKOV HISTORY - BACKGROUND FOR MINING TOURISM

Bankov is a very important holiday resort located about 3 km from the city of Košice almost for three centuries. It is a part of Košice and belongs to the city district called Sever. Bankov area got its name according to the Bankov spring. An Old Spiš road led through Bankov. Nowadays it is leading through the Čermel' valley. Thanks to iron sulfuric water fountain there was founded the spa in 1703. The effects of spring slowly weakened which resulted in the disappearance of these spas. In 1765 a chapel of the Holy Cross was built there. Ancient Chapel of the Holy Cross is now a part of the hotel Bankov, which forms the basis for the original construction of the building. Popularity of this place among the residents of Košice was so great that Bankov developed in a tourist and sports center in the 19th century. Before World War I there was also a toboggan run. Many of the older buildings unfortunately no longer exist (Čermel' mills, paper mill, koliba-wooden style restaurant). Nowadays there is available a luxurious hotel Bankov with a restaurant, pension Zlatý Jeleň,

buffets (bistro Bankov Živánska koliba-buffet Horný Bankov), mini-golf course with a buffet and there are also a number of outbreaks of grills. Bankov has its importance also because of its location. It is the starting point for trips into the surrounding countryside for tourists as well as for cyclists and fans of cross-country skiing. Through the Bankov leads a significant red mark - Road of SNP Heroes and there begins also Košice ski highway which leads to Vyšný Medzev (in the terrain is not yet fully marked for financial reasons). Bankov is also a good starting point to the Jahdná Center (route runs along the red mark above the Road of SNP Heroes). It is the starting point for the onset of cycling routes towards Jahodná, Lajoška hut and Kojšovská Hola (1246 m). There is a new cycle of Košice Urban Forests through Bankov to the village Nižný Klatov. From Bankov to keep Alpinka leads also an excellent asphalt road and promenade suitable for hiking, biking and roller skating. On this road was built Forest educational Trail (Old Bankov way) with seven stations. Within Bankov surrounding we can find Bankov Hut area. Bankov is also well known by the magnesite mine. In the part called Horný Bankov is built the small chapel of the Blessed Virgin Mary, which is used for Sunday God celebration in the summer month. At the entrance to the forest (in the direction of Alpinka from the Lower Bankov) is situated a small chapel. It is the chapel of John of Nepomuk but it is not used for religious services. Under the chapel is a spring of drinking water which refreshes hikers, runners and cyclists. Bankov is available by the network of hiking trails from the resort Čermel', but also from KVP and Terasa city districts [12].

ASSUMPTIONS FOR MINING TOURISM IN BANKOV MINE

- The opportunity to get practical experience for students of the Technical

University of Kosice,

- Convenient location regarding the proximity to the city,
- Lack of similar attraction within a few km,
- A unique opportunity to promote the city in terms of historical mining,
- Absence of the gas explosion risk in the underground works of Bankov mines - the whole Bankov mine is categorized as non-hazardous gases mines,
- Not existing risk of dust explosion in its modification at surface and underground work because there is no magnesite dust is combustible,
- Not existing auto-ignition and fire risk because of exploitation of no combustible material in the Bankov mine,
- The protection of flora and fauna does not limit area for future development
- There are no surface water flows in the location of the proposed activity,
- The proposed action will not cause contaminants of soil and mineral environment,
- The final goal of the proposed mining tourist attraction is to use an unusual way to revive the tradition of mining in eastern Slovakia, keep mining areas for future generations in the form in which they remained immediately after the exploitation and also allow tourists an insight into the bowels of the earth and show them the extreme conditions in which the miners daily carry out their work [2],
- The tour can be considered as a form of education, way of extending the horizon, view of mining and last but not least one of the leisure opportunities in the region.

CONCLUSION

Tourist Bankov mine would attract new tourists and improve the tourism offer in the Košice city. This would increase the number of tourists and also the number of overnight stays, which is important for the

economic point of view. A new attraction in the Košice city would do more appealing to visitors who come here because of the European Capital city of Culture 2013. The reopening of the Bankov mines for the purpose of mining tourism contributes to the development of the whole region of Košice.

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