

## Geoparks in Slovakia

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### ABSTRACT

Geopark is a territory with sites of scientific significance not only from geological, but also from archaeological, economical or cultural point of view. Despite the relatively small extent, Slovakia is suitable for geoparks development for its high variability of geological structures with large number of geo-sites, in many cases linked to objects of mining history, as well as archaeological, technical or cultural sites of European interest. The Conception of geopark development in Slovakia, as a basis for institutional processes, coordination of geopark movement, networking, presentation the geoparks at home and abroad, thoroughly analyses conditions in Slovakia for creating and running geoparks, summarises the progress, activities and results up till now. According to territory preparedness, achieved activities and results, three categories of geopark projects can be identified: running (2 areas), preparing (1 area) and potential (7 territories) geoparks. One of them is a part of the cross-border Novohrad – Nógrád Geopark, who succeeded to become a member of European Geoparks Network and Global Geoparks Network in April 2010.

**Keywords:** geopark, geology presentation, sustainable development, world heritage, geotourism, geopark network, geoparks in Slovakia

## INTRODUCTION

Geopark is a territory with sites of scientific significance not only from geological, but also from archaeological, economical or cultural point of view. As a strategy, the Geopark correspondences with the overall strategy of sustainable development on the certain territory. Besides the protection, scientific research and education, the Geopark is important for local economic development, because it contributes to employment enhancement and new economic activities. So defined strategy becomes an immediate tool for creation of a wide range of actions, that are nowadays known under the term „geotourism“ and that represent a new form of cultural – environmental tourism. For its development, the Geopark has to establish a sufficiently strong management structure that is able to guarantee a sustainable development.

## EUROPEAN GEOPARK NETWORK

Since 2000, under the UNESCO patronage, the territories – geoparks cooperate in so called European Geoparks Network (EGN) in Europe and in so called Global Geoparks Network (GGN) all over the world. All members of EGN are also members of GGN.

The European Geoparks Network:

- was established in June 2000 by four territories (France, Germany, Greece, Spain);
- the overall aim is to ensure a sustainable development on geopark territories by utilizing of geological heritage through the geo-tourism development;
- insists on education of visitors, local inhabitants, including programmes for schools and guiding services;
- except geological heritage protect-

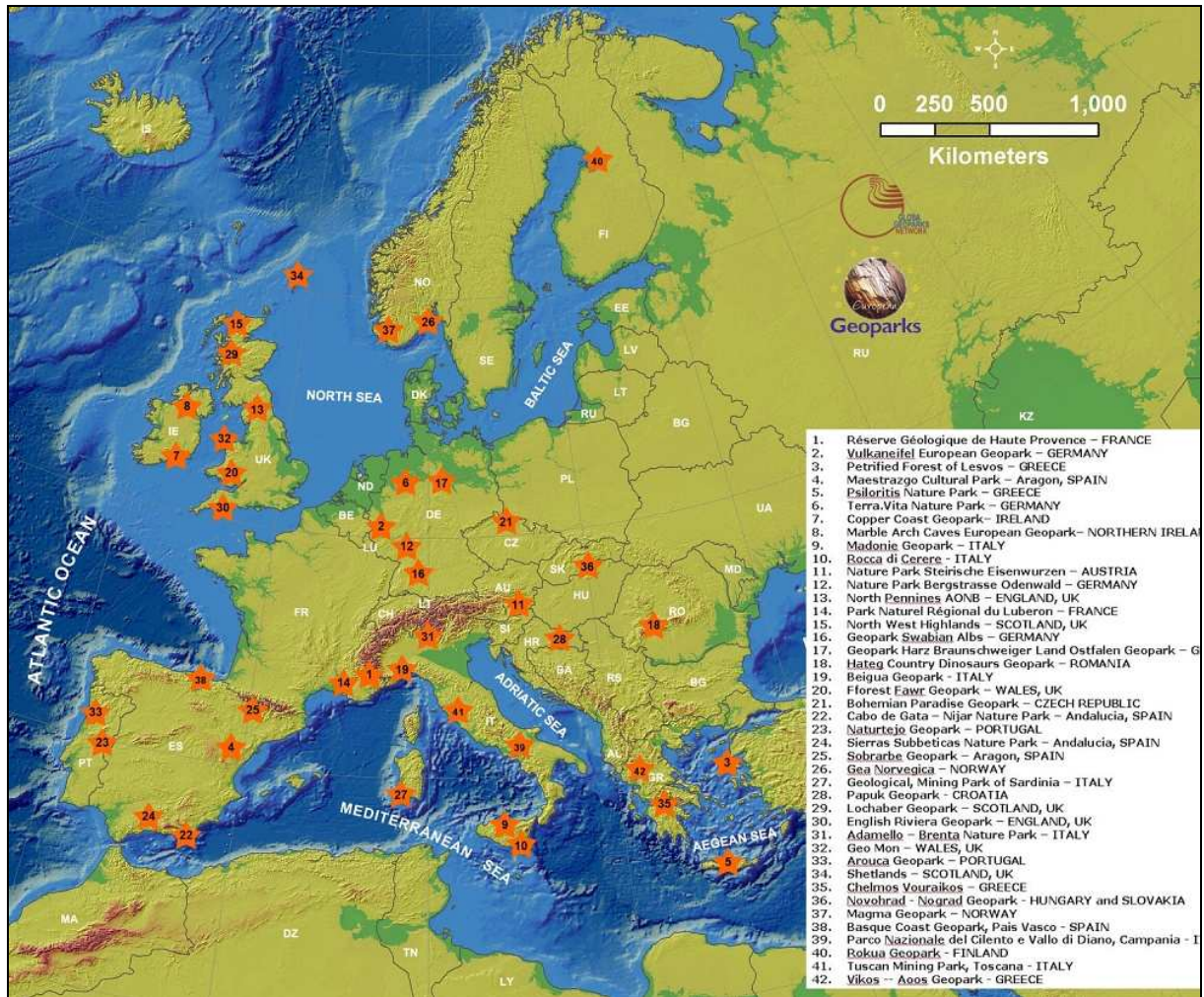


Fig. 1 Map of the EGN with the list of European Geoparks

tion and environmental education, supports promotional and marketing activities, as well as social – economic activities related to the geological potential;

- the EGN members are entitled to use a registered „European Geopark“ brand as quality brand;
- members benefit from use of common promotional tools (i.e.

website, magazine etc...);

- is a platform for creation of active partnerships for international co-operation, exchange of experience and for seeking funding from E.U. programmes.

In October 2010 the EGN had 42 members and the GGN 77 members from 47 countries (Fig. 1).

## CONCEPTION OF GEOPARK DEVELOPMENT IN SLOVAKIA

Slovakia is a very diverse country that pays a reasonable attention to its territories with outstanding values of biotic and a-biotic nature: almost 23% of Slovakia's

area is involved into five-level territorial protection according to the Act on Nature and Landscape Protection. Within the NATURA 2000 Network, 11.7% of the Slovak territory belongs to the Areas of European interest and 25.5% belong to the Protected Bird Areas. Slovakia is aware of

the fact, that besides the active protection of the Earth heritage is necessary to create conditions for sustainable utilisation of natural resources by using various forms - e.g. by development and support of geotourism and geoparks.

Despite the relatively small extent, Slovakia is suitable for geoparks development for its high variability of geological structures with large number of geo-sites, in many cases linked to objects of mining history, as well as archaeological, technical or cultural sites of European interest.

In 2006, the Slovak Government in its Manifesto declared a wide support to development of environmental education, geoparks, information, education facilities, regulated tourism by building of educational paths and sites of nature and landscape protection. Two years later, the Slovak Government adopted so called **Conception of Geopark Development in Slovakia** (Conception) as a basis for institutional processes, coordination of geopark movement, networking, presentation the geoparks at home and abroad.

The Conception summarises historical context and facts on geoparks movement in Europe and all over the world. It defines basic conditions for geopark creation, which divides into three phases [1]:

1. the preparation phase: For creation a geopark, it is necessary to project and prepare the territory. As a first step, following activities have to be made: an audit of territory resources with potential evaluation, identification and description of important geological sites (geo – tops), that represent the uniqueness and exceptionality of geological values of the area. A component part of such audit, are also the analyses and potential evaluation in other fields, such mining history, ecology, archaeology, culture, history, human and social – economic potential, setting up the vision, strategy of sustainable development and action plan.

Within preparation phase an institutional building up begins, an intensive communication and co-operation with locals, experts (on geology, nature protection, history, regional development), stakeholders and potential partners are requested and networked, sources for financing are fundraised.

2. the realization phase: Within this phase the building a functional management structure is established and elements of touristic infrastructure are build up - as posters, panels, informative and educational tables, educational – touristic paths, educational exhibits, museums, cycling trails etc. A very necessary task is a presentation of a geopark project inwards and outwards – in form of lectures for various age- and interest-groups, participation on conferences at home and abroad, marketing activities (promotional and presentation materials, exhibitions, souvenirs, communication with entrepreneurs), setting up the links and co-operation with European and Global geopark structures (EGN, GGN).

The co-ordination of all activities should be insured by the co-operation with expert institutions of nature protection, geology, regional development, Ministries. It is necessary to create conditions for financing the activities from own incomes or from external sources (EU programmes).

3. the running phase: For full functioning it is necessary to systematically and continuously execute all steps and activities defined in basic strategic documents concerning environmental and educational activities, marketing (publishing various documents, guide-books, leaflets, promotion materials, souvenirs, etc.), cultural activities, media presentation. It is necessary to define the caretakers of particular geopark sites (geopark management, villages or towns, private owners), to

continuously network all partners, to co-operate on international level.

The Conception thoroughly analyses conditions in Slovakia for creating and running geoparks, summarises the progress, activities and results up till now. According to territory preparedness, achieved activities and results, three categories of geopark projects can be identified: running (2 areas), preparing (1 area) and potential (7 territories) geoparks (Fig. 2).

## A CATEGORY - RUNNING GEOPARKS

**Novohrad – Nógrád Geopark (NNG, Novohradský geopark)** is an international project, that markedly supports the cross – border co-operation Banská Bystrica Self-government Region with the North - Hungarian Nógrád Region. NNG consists of 28 Slovak and 63 Hungarian villages and towns.

### *Basic data:*

Area: 1.578 km<sup>2</sup> (Slovakia 336 km<sup>2</sup>, Hungary 1.251 km<sup>2</sup>)

Protection: Protected Landscape Area Cerová vrchovina (Slovakia), National Park Bükk (Hungary)

Characteristics: The area's stratigraphy represents deposition over the last 30 million years commencing with the initial opening of the Pannonian basin. The geology of the region is the product of a series dynamic of Earth processes. These processes include the collision of accreted terrains resulted in highly complex volcanism spanning 20 million years, the destruction and reactivation of marine basins, burial and the conservation of palaeohabitats.

Number of geo-sites: 76 (Slovakia 32, Hungary 44)

Project started with an ideological intent in 2003. During 2006 – 2007 this intent was elaborated into Complex Spatial and Development Study of NNG concerning the both sides of the border. In 2008, two

associations (one in Slovakia, one in Hungary) were established, that signed together a Memorandum of understanding and began to build a common management and to prepare the application for EGN membership. Their effort was crowned in 2010, when the NNG became a 37<sup>th</sup> member of EGN and 66<sup>th</sup> member of GGN [5].

Within the NNG (the overall territory counts 1.578 km<sup>2</sup>), 167 sites are identified, from that 44 are in Slovakia, 123 in Hungary. According to the site character, 45% is of geological, 10% of natural, 45% of social – historical character. From 167 sites, 5% is of an international, 54% of national and 41% of regional importance. Approx. 10% of sites are involved, but with respect to their geological value, they won't be accessible for general public.

Originally in the Conception, the Novohrad - Nógrád Geopark was classified as a preparing geopark (B category). In light of results that had been achieved since the Conception acceptance, nowadays the NNG belongs to the A Category. Web site: [www.nogradgeopark.eu](http://www.nogradgeopark.eu), [www.filakovo.sk](http://www.filakovo.sk)

## **Banská Štiavnica Geopark (Bansko-štiavnický geopark)**

### *Basic data:*

Area: 206,32 km<sup>2</sup>

Protection: Protected Landscape Area Štiavnické vrchy

Characteristics: The stratovolcano of Štiavnica was the most massive volcano originated during Lower Tertiary volcanism in whole Carpathians (diameter of 50 km and height of 4.000 m). Geological history, the outstanding landscape changed by the extensive mining activity during Middle Age (main producer of silver and gold in the Kingdom of Hungary), many historical cultural and technical monuments create a universal value which is unique all over the world. The town of Banská Štiavnica and technical monuments in its neighbourhood are enlisted in UNESCO World Heritage List.

Number of geo-sites: 63

This geopark represents a pilot project of geopark development in Slovakia, which was executed in 2000 – 2006. Within this project, more than 1300 objects of geology, mining history or ecology were identified, 102 educational - touristic paths were proposed, a design manual, architectonic studies of partial sites, exposition schemes were worked up. Altogether, two exhibits in Slovak Mining Museum, two exhibits and three educational trails in safekeeping of the State Nature Protection of Slovakia, two information centres and a Centre of environmental education were established [2].

This geopark had the most suppositions for its presentation abroad and for membership and active participation in European and Global Geopark Network. Despite the perfect preparation it wasn't successful. This was caused by its administration and execution from the Ministry of Environment of the Slovak Republic without co-operation with the local self-governments and local stakeholders. Because of many changes in government department the geopark activities were damped for some few years. Last year the locals have begun to mobilize and decided to revive the geopark idea – they established an association, renewed the cooperation between stakeholders, experts, entrepreneurs, they have begun to prepare an application dossier to EGN. Web site: <http://banskastiavnica.geopark.sk/>

## **B CATEGORY – PREPARING GEOPARKS**

### **Banská Bystrica Geopark (Bansko-bystrický geopark)**

#### ***Basic data:***

Area: 543,19 km<sup>2</sup>

Protection: National Park Nízke Tatry

Characteristics: Miscellaneous geological composition with richness of mineral resources, especially metallic minerals (there was the largest copper deposit in the world before discovery of America) – gold,

silver, cooper, malachite, azurite, chalcantite, realgar, orpiment, minerals as herregrundite, libethenite and euchroite was first described here. The region is rich of many ecological phenomena and historical montanistic monuments

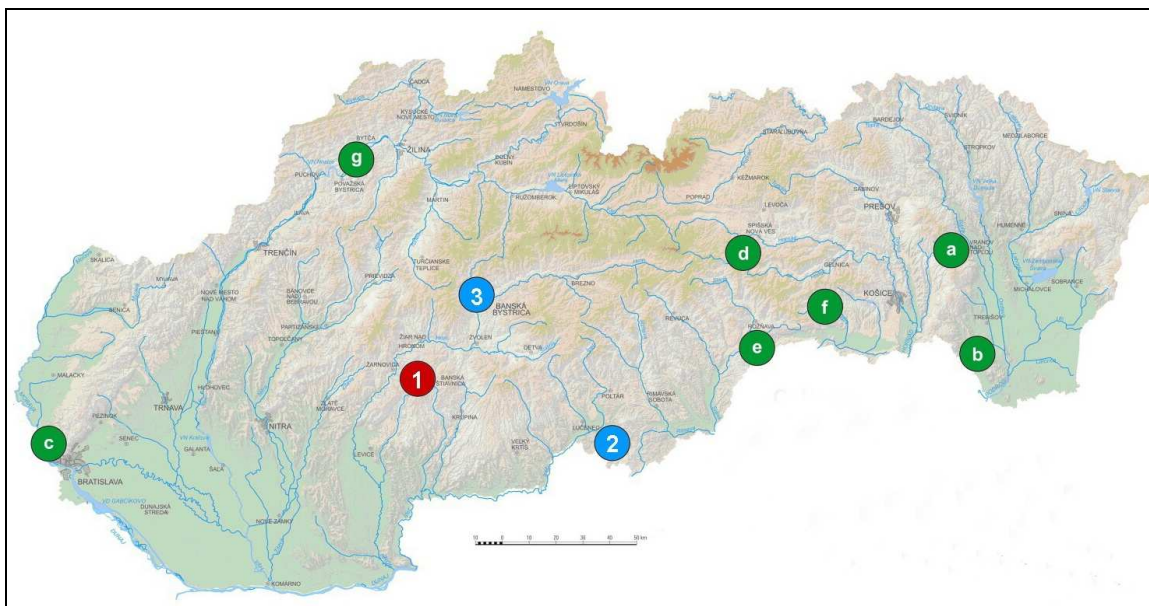
The project started in 2005. Geopark is situated in the Middle Slovakia and the main reason for establishing this geopark was the existence and potential utilization of many geological, mining and ecological phenomena, as well as historical sights in Banská Bystrica and its surroundings. The geopark is prepared by the very active communication and co-operation of local and regional self-governments, expert organisations and entrepreneurs, a strategy and realisation by using LEADER method is now executing.

Up to now, following activities have been executed: working-out of strategic intent, territory audit, several architecture studies (Ludovika shaft, Dolná Stupa, Mining museum), study of renewal of historical mining water line and its presentation for tourism (approx. 12 visitor places, length of 27 km), mining objects fixation by GPS, establishing two educational trails with elements of touristic infrastructure, publishing of several promotional materials [3]. Web site: [www.geoparkbb.sk](http://www.geoparkbb.sk)

## **C CATEGORY – POTENTIAL GEOPARKS**

In regard of their geological potential, another 7 territories could become geoparks in future. There are areas [1]:

- where a world-wide known opal had been mined and remnants of historical mining works can be found there (Dubnícky geopark);
- that are characterised by Paleozoic to Quaternary rock complexes with monuments of old mining activity (copper and anthracite winning); a unique thermophilic plants and animals live and the famous Tokaj wine is cultivated there; (Zemplínsky



**Fig. 2** Categories of Slovak geoparks; A Category - running geoparks: 1 – Banská Štiavnica Geopark (Banskoštiavnický geopark), 2 – Novohrad – Nógrád Geopark (NNG, Novohradský geopark); B Category – preparing geoparks: 3 – Banská Bystrica Geopark (Banskobystrický geopark); C Category – potential geoparks: a – Dubnícky geopark, b – Zemplínský geopark, c – Sandbergsko – pajštúnsky geopark, d – Spišský geopark, e – Silický geopark, f – Jasovský geopark, g – Súľovsko - manínský geopark

- geopark);
- with historical and cultural objects built on Mesozoic limestone or mining activity in Upper Badenian conglomerates with important paleontological findings (Sandbergsko – pajštúnsky geopark);
- with Karst phenomena and Mesozoic complexes of gorges and caves, which are the part of UNESCO Natural World Heritage, with considerable historical Gothic monuments and unmatched landscape structure (Spišský geopark);
- with the largest Karst plateau in Central Europe with cave system (faces of Carbonate Upper and Late Triassic platform with largest outcrop of Wetterstein limestone) as part of UNESCO Natural World Heritage (Silický geopark);
- with Karst canyons with various cliff shapes, caves and remnants of ancient cultures (Jasovský geopark);
- with occurrence of several Sub-Tatra nappes with limestones and dolomites, with a high concentration of geomorphological shapes (rock towers, steep cliffs, cones, needles, gates, and

some rocks resemble figures or animals) with caves, archaeological finds from the New Stone Age) (Súľovsko - manínský geopark).

Besides these potential territories supposed by the Conception, a new cross-border co-operation with Poland has started on the preparation the Pieniny Geopark. By that time an identification of geological potential is being prepared by the active co-operation of Slovak and Polish geologists, the future involvement of self-governments will be planned.

## CONCLUSION

Geoparks, as an efficient combination of protection of geological Earth heritage and its utilization in education, tourism (geotourism) or economy, belong to up-and-coming kinds of sustainable development in especially rural, economically less developed, areas. 77 existing and running geoparks in the world are a clear evidence of it.

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