

Geodiversity and geoheritage within urban areas: perception, function, potential

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INTRODUCTION

Geodiversity and geoheritage in urban areas have numerous functions: they contribute to the urban and industrial development, landforms are crucial for the situation of main buildings and communications, geomorphological processes limit or support the urban sprawl. Geodiversity and geoheritage within cities are **closely linked to cultural heritage**, particular **sites represent a resource for recreation, tourism and education**. In the Czech Republic, the geodiversity is appreciated especially within rural areas, however, in the urban areas, its functions, services and benefits remain rather unexplored and underestimated. An interdisciplinary project **“Geodiversity within urban areas: perception, function, potential”** (in fact, a pilot study covering two Czech cities – Brno and Liberec) focuses on these issues and involves a large spectrum of participants in order to understand, evaluate and use of geodiversity both for geotourist and geoeducational purposes with overreach to conservation aspects.

PROJECT PARTICIPANTS: CREATING A „GEODIVERSITY PARTNERSHIP“


The project involves a large spectrum of participants:

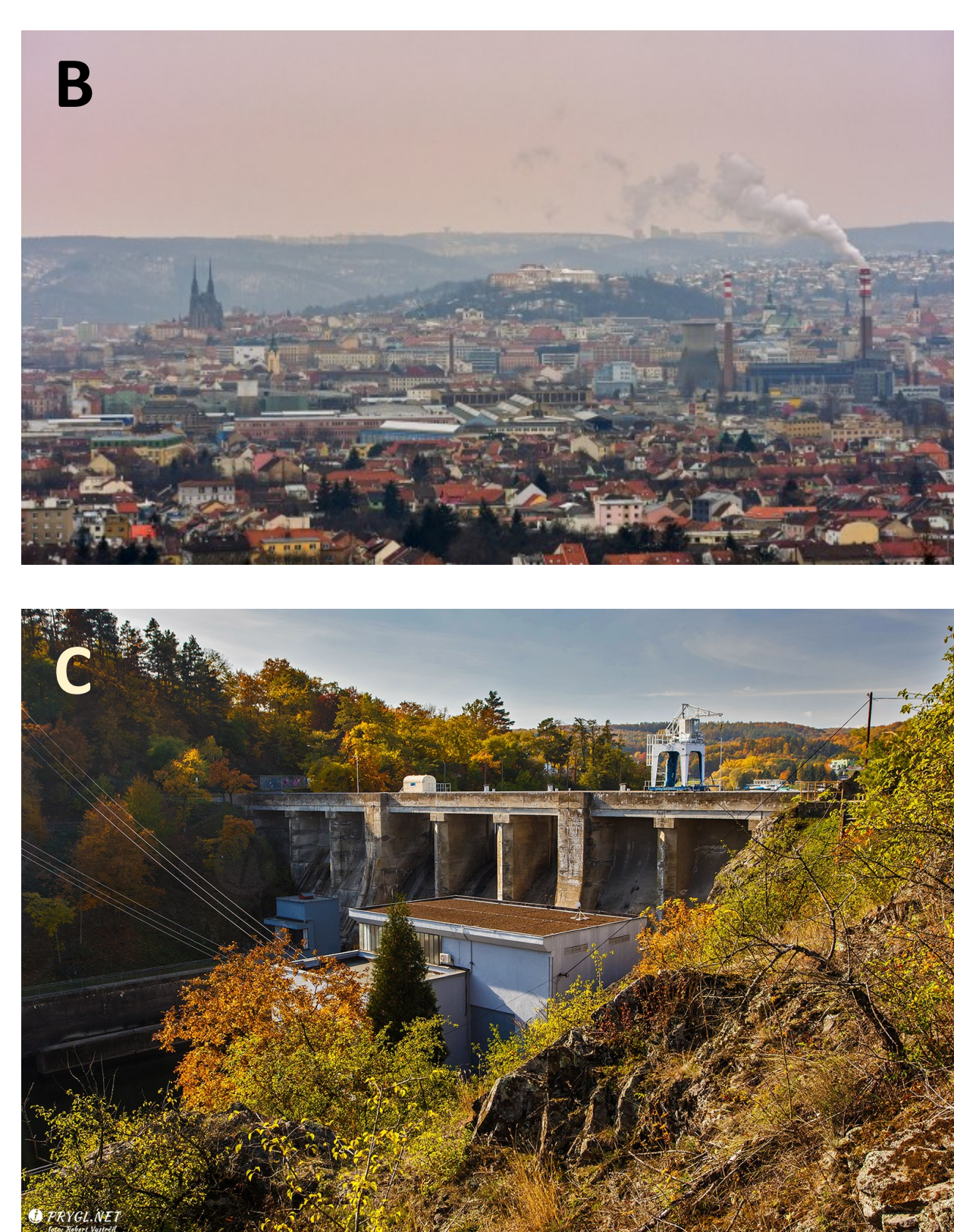
- universities (Mendel University in Brno, Technical University in Liberec)
- research institutions (Institute of Geonics of the Czech Academy of Sciences, Archaia)
- municipalities and tourist offices of Brno and Liberec
- Nature Conservation Agency of the Czech Republic



PROJECT OBJECTIVES

GEODIVERSITY'S INFLUENCE ON URBAN DEVELOPMENT

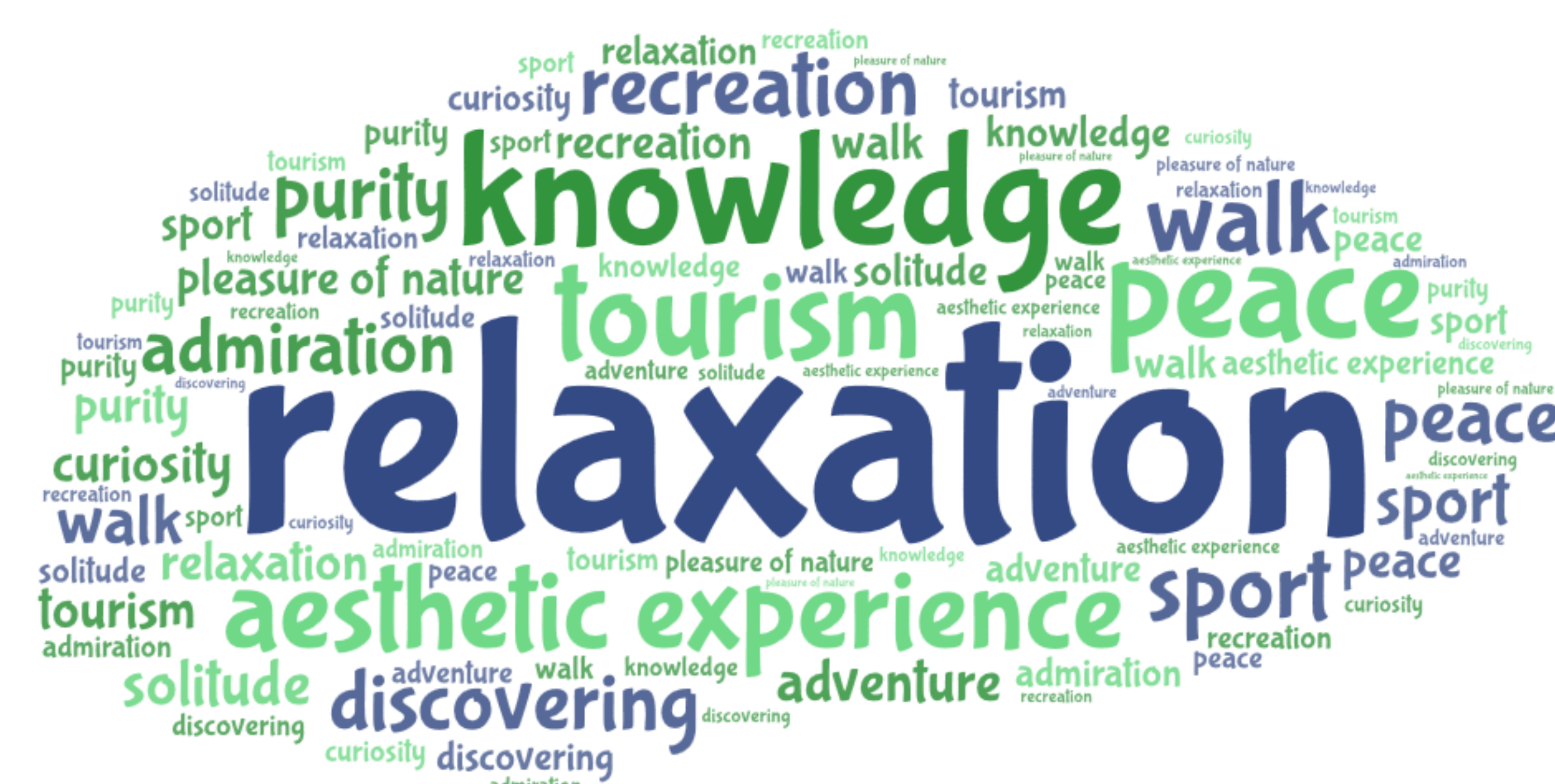
- influence of landforms on localisation of important buildings, water dams, communications etc.
 - material resources
 - geohazards
 - water resources
- 



A: Špilberk castle was located on the significant elevation built of metabasalts
B: Špilberk and Petrov Hills: inseparable parts of today's city's panorama
C: Location of Brno dam is conditioned by the existence of narrow gorge

PERCEPTION OF GEODIVERSITY AND GEOHERITAGE BY URBAN POPULATION (PRELIMINARY RESULTS)

- The term “geodiversity” is unknown to approx. 25 % of respondents; over 40 % of respondents know the term and are able to explain it.
- The knowledge, regulating and supporting services of geodiversity are considered the most important (all above 78 %); culture services/ functions of geodiversity are considered less important (37 %).
- Approximately 87 % agree that geodiversity is an important part of natural heritage and 95 % respondents agree that geodiversity should be protected



Motivation of visitors and potential geotourist fort visiting geological and geomorphological sites within Brno city

RELATIONSHIPS OF GEODIVERSITY AND ARCHITECTONIC ASPECTS

- use of local building stones



Examples of local building stone: Devonian red conglomerate and Jurassic limestone

GEOCONSERVATION IN URBAN AREAS

- cooperation with Nature Conservation Agency of the Czech Republic and departments of the environment of the municipal offices
- updating care plans and management proposals for particular geosites
- monitoring of the sites and upgrading or reconsidering the level of conservation
- identifying new geosites



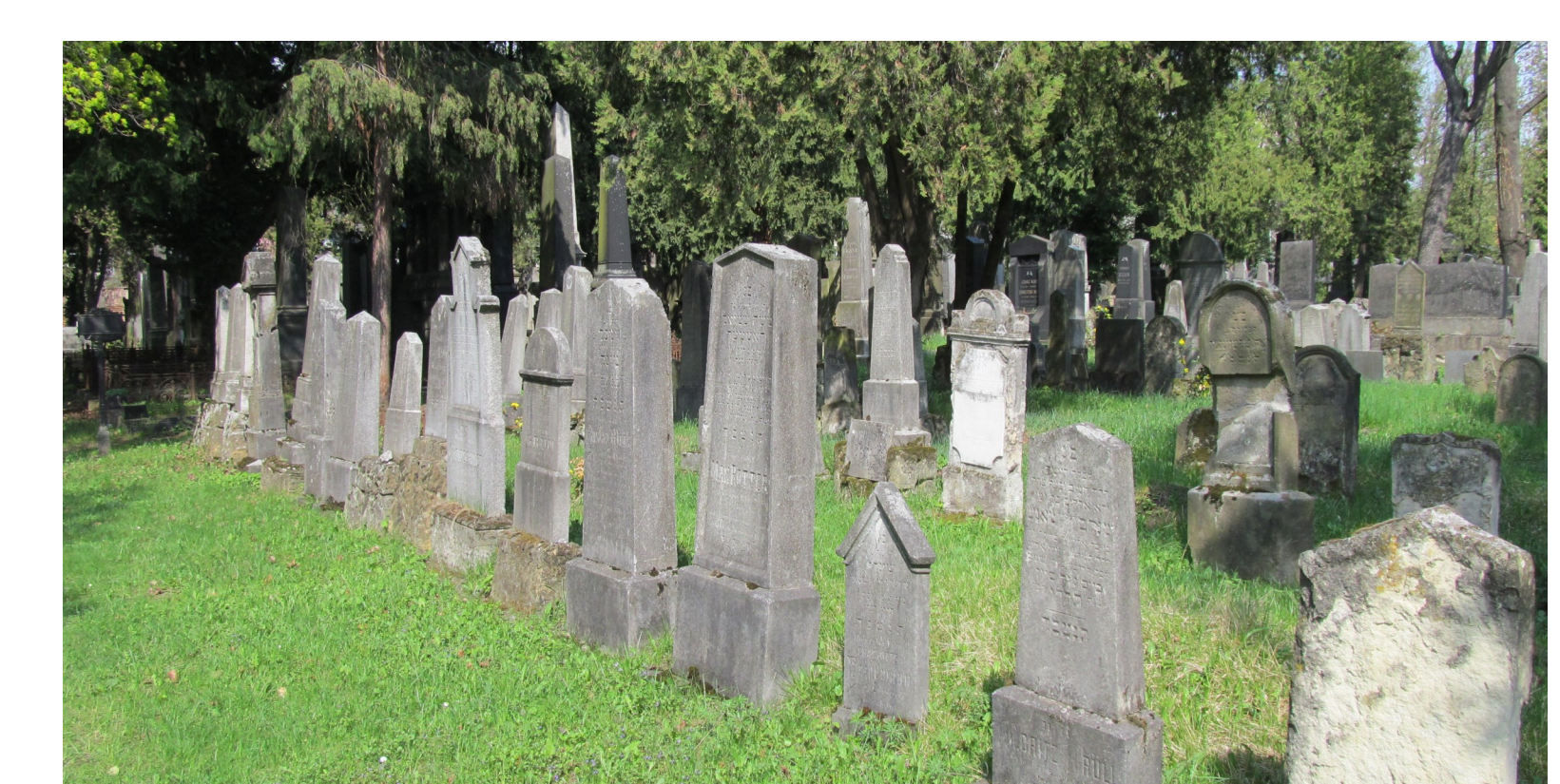
Písečník sand pit: potential geosite with high historical and cultural value (currently not protected)

IDENTIFYING GEOTOURISM RESOURCES

- 1) **natural features** (geological, geomorphological, hydrological or palaeontological, geo-ecological aspects)
- 2) **cultural aspects** related to geodiversity and geoheritage, e.g. churches and cemeteries, building stone, toponyms linked to the geodiversity, anthropogenic landforms, geodiversity features reflected in the arts (geo-poetry, myths), emblematic and symbolic aspects

3) Particular sites of geotourist interest

- **geosites in sensu stricto** (examples of geoheritage, already protected)
- **sites included in the national database of geological localities** kept by Czech Geological Survey
- **other natural sites** (e.g. outcrops or hydrological features with geotourist relevance)
- **geocultural sites** (anthropogenic landforms or landforms which influenced the urban development).



RESULTS AND POTENTIAL IMPACTS OF THE PROJECT

- Functional **partnership** supporting geoconservation and geotourism development, **influencing on municipal planning**, inclusion of geoconservation and geotourism into municipal strategic documents, **conceptual development of urban geotourism** with regard to conservation aspects
- **Urban geotourism products (geopaths, guided walks) as a fresh alternative** to the traditional tourist destinations, **promoting geodiversity to public** (both locals and visitors)
- **Sustainable management of particular sites**, use of sites for education, improving conservation measures, **win-win strategies in urban planning** with a respect to geodiversity