

## Danube Geo Tour

Valorisation of geo-heritage for sustainable and innovative tourism development of  
Danube Geoparks

### **Pilot innovative geoInterpretation methods tested: Hegyestű Geological Visitor Site, nature trails and guide book Output Code: 5.2**

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[www.interreg-danube.eu/danube-geotour](http://www.interreg-danube.eu/danube-geotour)

## List of Abbreviations

DTP	Danube Transnational Programme
JS	Joint Secretariat
LP	Lead Partner
PP	Project Partner
WP	Work Package
EGN	European Geoparks Network
GGN	Global Geoparks Network
UGG	UNESCO Global Geopark
TIC	Tourism Information Centre
ICOMOS	International council on monuments and sites
IUCN	International Union for Conservation of Nature
MLA	The Museums, Libraries and Archives Council
GLO	Generic learning Outcomes



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## 1. Introduction

### 1.1. Background information

Danube GeoTour project aims to “improve management capacities and strategies and to develop practical solutions for the activation of geodiversity/geoheritage as well as to seize positive market trends for sustainable tourism development in 8 Geoparks of the Danube region”<sup>1</sup>. One of the specific objectives is to develop, demonstrate and evaluate joint Danube GeoTour comprising innovative interpretation of the geosites of 8 participating Geoparks. Acting in close collaboration with partners, visitors and local inhabitants the project shall create, test and implement a set of modern interpretation methods and techniques.<sup>2</sup>

Objective of the WP5 “Geointerpretation” is to improve the skills and quality of heritage interpretation in participating Geoparks so as to complement the uniqueness and character of the overall Danube GeoTour product. The history of Earth, geology over time, its processes, etc. are difficult to understand and interpret. For Geoparks and Danube GeoTour, it is critical that visitor centres and guides are able to present a true geological story and the value of its geoheritage. Although there is ample of scientific information available, the quality of interpretation among participating Danube Geoparks still lags behind more advanced Geoparks. A screening of the most recent developments, technologies and best practices of interpretative methods applicable to Danube Geoparks was already carried out and shared as part of the geointerpretation training for Geopark staff. This screening and geointerpretation training enabled an exchange of interpretative practices among parks (learning from each other) and allowed them to apply and test different pilot interpretative actions in individual Geoparks. Each Geopark has addressed a different interpretation challenge (problem) so that each pilot interpretation site serves as a reference point for other parks. The process of piloting was documented, continuously discussed and exchanged among partners and evaluated and presented as lessons for others.

Output document represents the evaluation of one of eight implemented pilot actions in the field of interpretation points or centres implemented in our Geopark. This document illustrates how the pilot action was tested and what results were reached from aspect of different geointerpretation methods used, both qualitative and quantitative. In this way, the newly introduced interpretation will contribute to a smarter presentation and preservation of geoheritage and geodiversity in our Geopark as well as to the quality, visibility and uniqueness of the Danube GeoTour product as a whole. Pilot interpretation actions also add value to or are a part of the innovative geoproduct developed in WP4. Furthermore, they are also in line with the Strategy on Management of Tourism Pressures in Geoparks developed in WP3.

Implemented pilot interpretation sites as a part of Danube GeoTour visitor infrastructure network will serve as a reference and learning points for demonstrations of different interpretation methods for 8 most common geological phenomena and processes in the Danube geological area (tectonics, metamorphic processes and rocks, geology over time, water in time, geomorphology, volcanology, dialogue between earth & humans, geological hazards). This ensures transnational learning and transfer of practices from participating to other geoparks and organisation dealing with heritage interpretation.

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<sup>1</sup> Danube GeoTour Application Form

<sup>2</sup> Danube GeoTour Application Form



## 1.2. Methodology

Different methodologies (qualitative and quantitative assessment) concerning Output 5.2 „Pilot innovative geoInterpretation methods tested” were used in order to find out a smarter presentation and preservation of geoheritage as well as to the quality, visibility and uniqueness of the Danube GeoTour product.

For the qualitative assessment of pilot actions a formative evaluation of interpretation methods during the implementation phase was conducted by project partners with geoparks. Within this evaluation each project partner tested reactions within a focus group of potential visitors to the interpretation methods, such as their attention, attitude etc. and collected their opinions.

In the frame of quantitative assessment a self-evaluation questionnaire was developed which helps project partners to assess their pilot actions and interpretation methods. In quantitative assessment also summative evaluation is included, which will be implemented in a form of visitor satisfaction questionnaire. The results are a part of Deliverable 5.3. “Evaluation report on pilot actions with lessons learnt” while findings are integrated in this document as well.

## 1.3. Summary

In the frame of WP 5 “Geointerpretation” each Geopark introduced and tested different geointerpretation methods within their pilot action that can be applied in other parks. The geointerpretation methods can be transferred not only to other Geoparks in the region or in the EU but also to other similar territories such as national parks, cultural heritage sites, rural areas or tourism destinations.

Newly developed and demonstrated geointerpretations sites are open to the public and serve as a reference and learning points for demonstrations of different interpretation methods for 8 most common geological phenomena and processes in the Danube geological area. This ensures transnational learning and transfer of practices from participating to other geoparks and organisation dealing with the heritage interpretation. Interpretation methods were carefully and strategically planned, while planning is very important starting phase in developing new interpretation site.

Following pilot interpretation action testing one of the 8 most common geological challenges for interpretation was established by project partners (Table 1):

**Table 1: Pilot interpretation action established in the frame of the Danube GeoTour project**

	Project partner	Interpretation action	Geological challenge tested	
1	LP IHC	Visitor Centre	tectonics	
2	ERDF PP1 Balaton Geopark	Visitor Centre with outdoor sites and interpretation trails	volcanology	✓
3	ERDF PP11 Eisenwurzen Geopark	Village interpretation points	water	
4	ERDF PP3 GeoPapuk	In-situ interpretation of geological site Zvecevo	metamorphic rocks	
5	ERDF PP4 GeoKaravanks	Digital interpretation tool	geotime	
6	ERDF PP10 Železné Hory Geopark	Digital interpretation tool	geo hazards	

7	ERDF PP8 UNIB	Digital interpretation tool	dialogue Earth & Man	
8	IPA PP1 DNP	Geological interpretation point Tekija	geomorphology	

ERDF PP1 Balaton Geopark piloted 1 interpretation action “Visitor Centre with outdoor sites and interpretive trails”, including different types of the equipment. In the pilot action, the geological challenge “volcanism” was tested. It was presented using innovative technologies. A Visitor Centre and its exhibition were fully re-established to highlight the volcanic heritage formed for the last 8 million years in the area of the Bakony–Balaton UNESCO Global Geopark as well as in other areas of the Danube region. The new exhibition offers various interactive and digital visualization tools, videos to understand how volcanoes work as well as why earthquakes occur. Newly developed interpretive trails in the area of the Bakony–Balaton UNESCO Global Geopark contains 31 stops with interpretive panels along almost 40 km length. They introduce background information about the development of monogenetic basalt volcanic fields and the life in such basalt area (rock, soil, flora, fauna and cultural aspects). QR codes at each panel provide additional information for the visitors. Further details are included in a guide booklet published in Hungarian and English.



## 2. Interpretative planning process

Heritage interpretation is about connecting people to places, objects and events. It's about explaining the significance of tangible and intangible heritage and helping visitors – tourists and local people – to engage with and to value heritage site – and to find what it means to them. Interpretation is non-formal education that contributes to lifelong learning. It uses creativity and inspiration while maintaining the integrity and authenticity of the story you have to tell.

Good interpretation widens people's horizons and increases their satisfaction and enjoyment. It can also help to change visitors' behaviour and attitudes. For this reason, it's an important tool in managing sites and encouraging both greater awareness of their significance and support for their protection from local people and tourists. However, it must aim for high levels of planning, implementation, operation and maintenance.<sup>3</sup>

For a successful interpretation it is necessary to be carefully and strategically planned. Only if the themes and objectives of the interpretation are clearly defined, if we know exactly what we want to interpret and to whom, and why, if we carefully choose methods and means of interpretation, we will be able to monitor how successful and effective the interpretation is and, and if necessary, improve the imperfections. In the frame of activity 5.3 “pilot actions: demonstration of innovative methods and technologies of Geointerpretation” “Preliminary concepts and plans of pilot action” was developed following a joint template by project partners with pilot actions.

Planning of the interpretation site is very important starting phase in developing new interpretation site. In the first place an interpretation project should identify and present the most significant themes and stories and set the objectives (what you hope to achieve through interpretation: learning objectives, behavioural, influencing visitor actions; emotional objectives e.g. enjoyment, empathy etc.). Furthermore it is also important to decide how we will interpret heritage by choosing appropriate interpretation methods and outlining the most suitable way of presenting themes and stories so that visitors have stimulating experiences. Each interpretative planning process also define to who will we interpret by identifying future target groups (potential visitors, families, groups, organizations, residents, stakeholders, etc.). In the frame of Interreg Danube GeoTour project the Strategy on Management of Tourism Pressures in Geoparks was developed within WP3 and was considered in planning of pilot actions in order to better understand different impacts on nature and to avoid or reduce negative impacts on nature. It also helped clarified the aspect of nature protection to contribute to the holistic concept of protection, education, public awareness and socio-economic benefits for sustainable local development.

To sum up the following section was included in the interpretative planning process of “Hegyestű Geological Visitor Site, nature trails and guide book” pilot action in the frame of Danube GeoTour project:

- ✓ Why interpret this topic or site to visitors?

The Bakony–Balaton UNESCO Global Geopark is rich of volcanic heritage due to a ca. 6 million-year-long volcanic activity that created a monogenetic basalt volcanic field. This offers a particularly interesting opportunity to highlight the visitors how the Earth works, why volcanoes are formed and what is the lesson what we can learn

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<sup>3</sup> Interpret Europe (2016): Engaging your visitors: Guidelines for achieving excellence in heritage interpretation, Witzenhhausen.





about it to understand the present and future volcanic events. The volcanism in the area of the Bakony–Balaton UNESCO Global Geopark is characterized by a wide range of processes showing almost all the features of the eruption of basaltic magmas. Having an insight into the development of a monogenetic volcanic field the visitors can understand the timescale as well as the potential dangers of volcanic eruptions. Furthermore, the basaltic magmas carried a large number of rock fragments from the upper mantle to the surface that enables to get knowledge on the nature of the upper mantle.

✓ What are you interpreting?

In the visitor centre, the nature of volcanic activity in a monogenetic basalt volcanic field is presented. It shows how such volcanic fields work, what are the main elements of the volcanic activities, what kind of volcanic rocks are formed and it also offers a visual experience how such volcanic eruptions take place as well as what occurs before eruptions in the magma chambers. Lava lakes are one of the most unique landforms of basalt volcanic areas. Columnar jointed lava lake rocks are among the most attractive elements of the Bakony–Balaton Uplands volcanic field. Their formation is explained both in the in-door exhibition as well as in the interpretive panels of the volcanological nature trails. In addition to the volcanism, earthquakes get also an interest and seismic activity cannot be underestimated in the area of the Bakony–Balaton UNESCO Global Geopark. Therefore, a comprehensive insight is given about the reason and the main elements of earthquakes. The exhibition uses innovative elements such as interactive tools (e.g. getting experience from an earthquake, starting a volcanic eruption, involvement in the processes of a magma chamber, etc.). Our pilot action involves also establishing volcanological nature trails with interpretive panels along almost 40 km length. These panels offer an insight into the nature of the monogenetic volcanic fields as well as the subsequent erosional processes and the present life and culture in such an area. The pilot action elements are connected by topic and space. Invitations for visitors to discover the other elements are provided at each element. The content of the three nature trails and the exhibition is harmonized and offers further discoveries in the Geopark partners of the project.

✓ Who are your visitors?

Hungary saw record-breaking numbers of travellers in 2018, the National Tourism Agency has revealed, based on figures released by the Central Statistics Office. In 2018, commercial lodgings around Hungary registered 12.5 million guests, an increase of more than 5% when compared to 2017.

Official figures show a record of nearly 31 million guest nights over the course of 2018, an increase by more than one million in comparison with the previous year. Of these, almost 50% were foreign. After Budapest (has named European Best Destination 2019), the second most popular destination is Lake Balaton, the most visited area of Bakony–Balaton UNESCO Global Geopark.

Based on the official statistics, there were 5,015,030 overnight stays in 2017 within the Geopark territory (actually more than 5 million because of missing data of many municipalities).

In the frame of a massive domestic integrated communication campaign (“You must be here to believe it” / “Hungary is waiting for you”) of the Hungarian Tourism Agency in 2017, hundreds of billboard posters were set up along national motorways, in Budapest, etc. Partly thanks to this campaign, the number of visitors at Hegyestű





Geological Interpretive Site was really impressive in the last years: 42,015 visitors (2015), 49,338 visitors (2016), 65,754 visitors (2017), 60,562 visitors (2018), 59,663 visitors (2019).

About one-third of the visitors arrive from abroad (Germany, Austria, the Netherlands, Czech and Slovak Republics, Poland, Russia, China, etc.).

Tapolca and Káli Basins are the most popular regions of the Geopark. Not only tourists in the classic sense of the word but families, youngsters, hikers and locals also benefit from the results of our pilot action.

✓ Who is involved in the planning process?

Our contracted expert is Szabolcs Harangi, DSc, Professor, Director of the Institute of Geography and Earth Sciences, Head of Department of Petrology & Geochemistry at Eötvös University, Budapest (ELTE). He was the contributor of some other geology and volcanology related exhibition and publication for the general public.

Barnabás Korbély, Head of Bakony–Balaton Geopark Group, as an organisation and Earth Science advisor, also took part actively in creating the nature trails and the exhibition. He worked out the traces of the trails, got the necessary permissions from the forestry companies, municipalities, private landowners, etc.

Technical-architectural plans were carried out by Pápai Architect Stúdió, Veszprém county.

Geanat Ltd., Budapest was trusted to deliver the exhibition implementation plan (and later the installation as well).

Dr Annamária Kopek, head of Ecotourism and Environmental Education Department of BFNPI supervised the investments.

✓ What are the objectives (management, learning, behavioural, emotional objectives)?

The main objective to replace the old-school exhibition of Hegyestű Geological Interpretive Site to a new, up-to-date and interactive one, where the diverse volcanic heritage of the Geopark would be presented to the visitors. With the new or renewed nature trails and the printed information booklet we also wanted to create new communication tools for presenting the diverse heritage of the Geopark in a holistic approach.

The specific objectives are:

Management:

- support for new providers to integrate the results of the project to the geotourism offer of the Geopark
- networking on the international level (especially within the European and Global Geoparks Networks)
- promoting the site to attract more visitors and increase the number of visitors who stay in our area longer

Learning:

- teach the visitors and inhabitants of the Geopark about the uniqueness of this heritage
- communicate geology in an easy to understand language
- enjoy while learning



### Behavioural:

- to make people understand the uniqueness of the area and to develop respect of the Geopark's heritage
- inform and teach people on how to behave in the Geopark

### Emotional

- strengthen local identity among the inhabitants of Bakony–Balaton UNESCO Global Geopark
- enjoy while discovering the heritage in the exhibition as well as on the field

### ✓ How are you interpreting?

The in-door Visitor Centre uses several innovative tools with interactive entertainment elements, visual experiences, multimedia tools, a 3D volcano model where the visitors can start various volcanic eruptions, interactive earthquake simulator combined with traditional and modern didactic exhibition elements. The nature trails have interpretive panels with limited text (both Hungarian and English), but impressive photos and figures to attract the visitors. Questions on each panel as well as QR codes help to continue gathering information about volcanism, geoparks and the life around volcanic heritage. The booklet in Hungarian and in English and with colourful pictures and figures provide additional in-depth information about the volcanism occurred in the area of the Bakony–Balaton UNESCO Global Geopark as well as about Geoparks and the geoheritage of the Danube region. All of these elements can enhance geotourism.

- ✓ How are you including aspects of nature conservation and sustainable tourism?
- ✓ The new volcanological exhibition definitely is a must-see stop for our certified geotour guides.
- ✓ During the implementation of the volcanic trails, we always saved the natural environment (we used only existing forest roads and traces, did not cut any tree, we removed just the necessary bushy vegetation from the outcrops and only in wintertime, etc.).
- ✓ In some interpretive panels, protected biotic assets are also presented.
- ✓ Through the Visitor centre and the exhibition, we are educating our visitors about Bakony–Balaton UGGP's heritage and we tell them about the uniqueness of our nature and culture. In this way, we nurture respect for our natural and cultural heritage.
- ✓ When developing the pilot action, we took into consideration the Strategy on the management of tourism pressure, developed within the WP3.
- ✓ In the Visitors centre, information materials, developed in the frame of the Danube GeoTour project, are available.

## 2.1. Description of pilot action and interpretation methods

In the frame of Interreg Danube GeoTour project 8 pilot interpretation sites as part of Danube GeoTour visitor infrastructure network were tested and implemented. They serve as reference and learning points for demonstrations of different interpretation methods for 8 most common geological phenomena and processes in the Danube geological area.

ERDF PP1 Bakony–Balaton UNESCO Global Geopark carried out a pilot action establishing an in-door Visitor Centre exhibition and three volcanological nature trails with explanation



booklet. These actions provide an insight into the nature of the volcanic activity, particularly the eruptions of basaltic magmas and formation of monogenetic volcanic fields. This is built on the rich volcanic heritage of the Bakony–Balaton UNESCO Global Geopark. Both the exhibition and the nature trail were designed in an innovative manner.

The exhibition of the Visitor Centre uses interactive and visualization tools to attract visitors and give a comprehensive picture of volcanism and earthquake activities in a modern way. One of the principal aims was to give personal experiences to the visitors how nature works and how much natural wonders are in the area around them. In addition, the exhibition tools guide the visitors to recognize also the natural attractions of other geoparks in the Danube region.

Outdoor activities are important and the new nature trails help to discover the hidden treasures of the Bakony–Balaton Uplands volcanic field. Two former natural trails were renewed completely and a new one was established. The interpretive panels were designed in a new way with limited, easy-to-understand text and attractive pictures as well as questions to think about basic issues what the visitor can see in the outcrop and QR-codes can be used to get more background information, videos and pictures about the volcanological phenomena.

The guidebook gives a broader description of the volcanic features and the development of the monogenetic basalt volcanic field in a plain language text and many colour figures and pictures. It introduces also the concept of UNESCO Global Geoparks and the further geoheritage in the partner Geoparks of the Danube region completed with an explanation of basic volcanological terms. Two guidebooks were prepared, in Hungarian and in English text, respectively.



Figure 1: New exhibition, geological map of Bakony–Balaton UNESCO Global Geopark





Figure 2: New exhibition, Geoparks of the Danube GeoTour



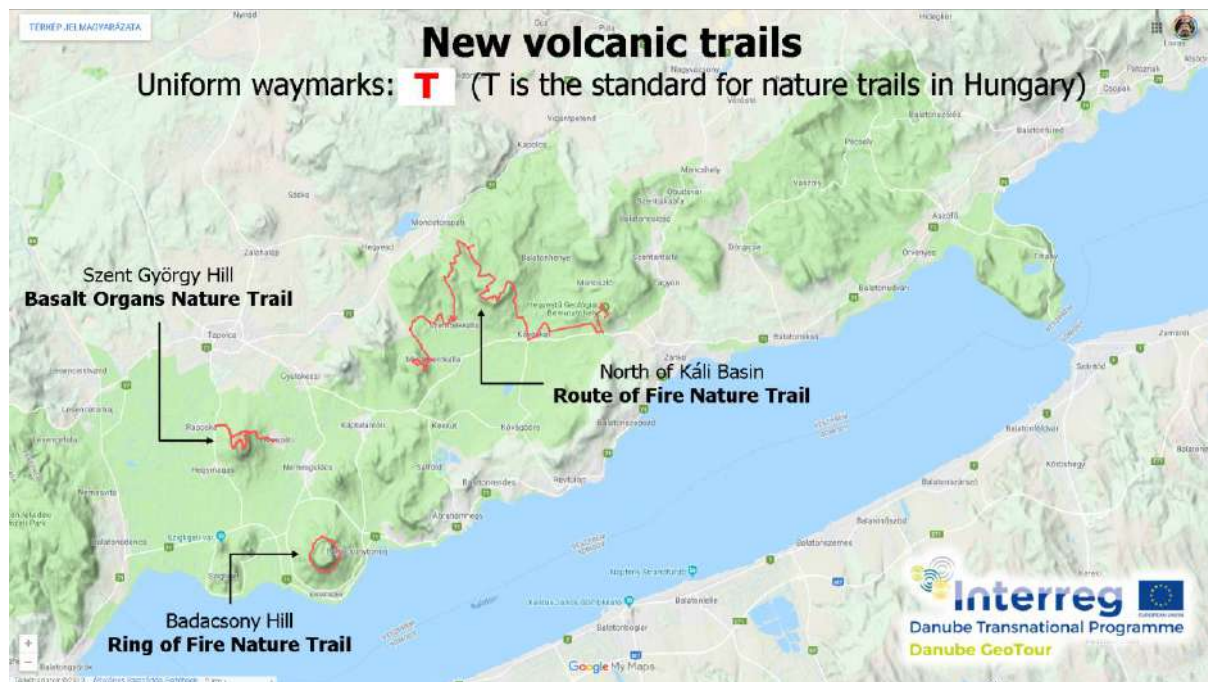


Figure 3: New volcanic trails of BfNPI



Figure 4: Route of Fire Nature Trail





Figure 5: Route of Fire Nature Trail

Starting point:  
the car park of the interpretive site

Panels with recent analogies, eye-catching  
figures

Hungarian + English, easy to understand

Introduction to the volcanism of Central  
Europe (also mentioning our Project Partner  
Geoparks)

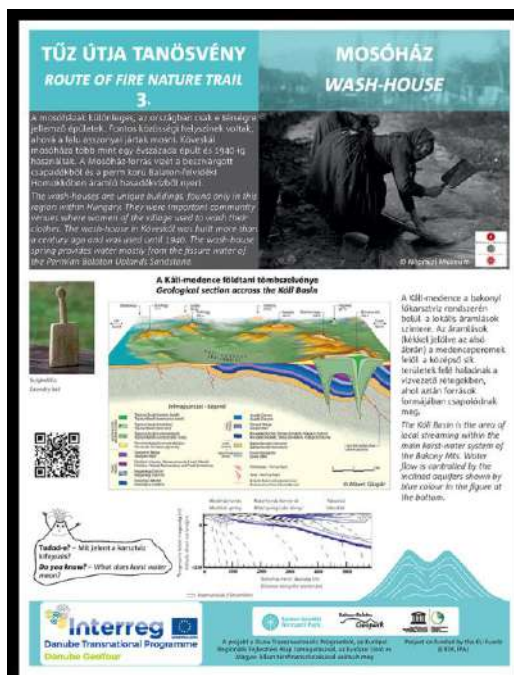


Figure 6: Route of Fire Nature Trail

The cultural heritage is also covered







Figure 7: Route of Fire Nature Trail



Figure 8: Route of Fire Nature Trail



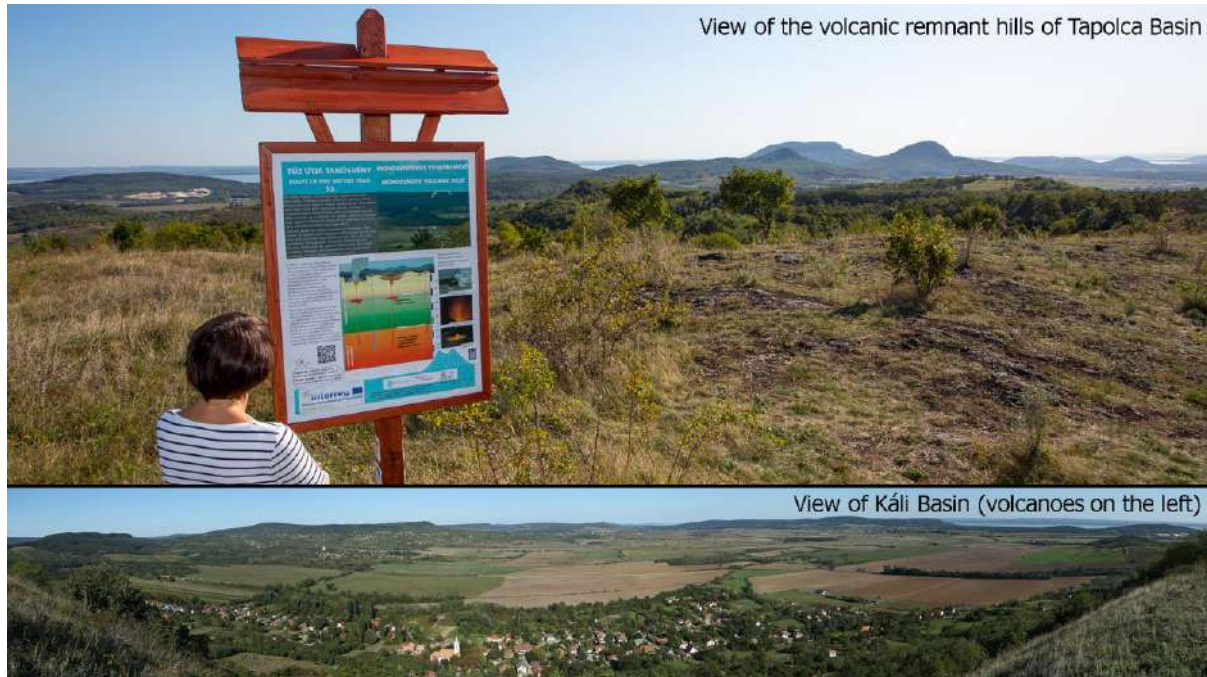


Figure 9: Route of Fire Nature Trail



Figure 10: Developed geoproduts to taste along the Route of Fire Nature Trail





Figure 11: Developed geoproducts tell about geology and its processes along the Route of Fire Nature Trail

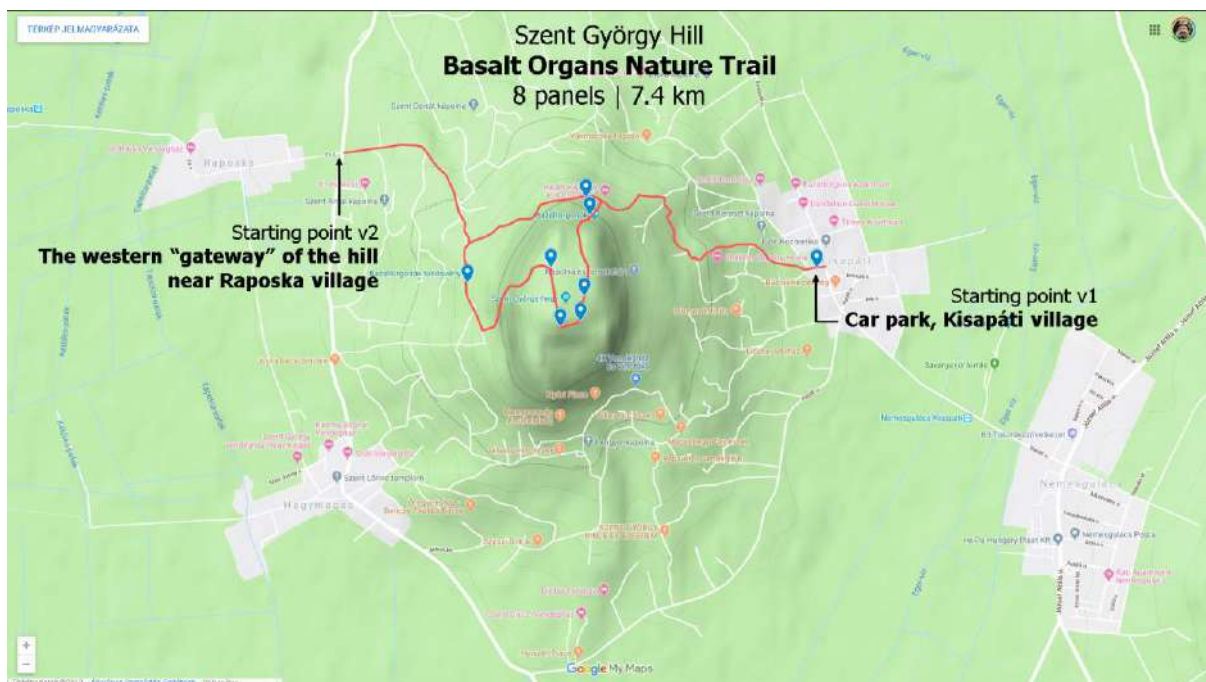


Figure 12: Basalt Organs Nature Trail





Figure 13: Basalt Organs Nature Trail



Figure 14-15: Basalt Organs Nature Trail







Figure 16-17: Basalt Organs Nature Trail



Figure 18: Basalt Organs Nature Trail

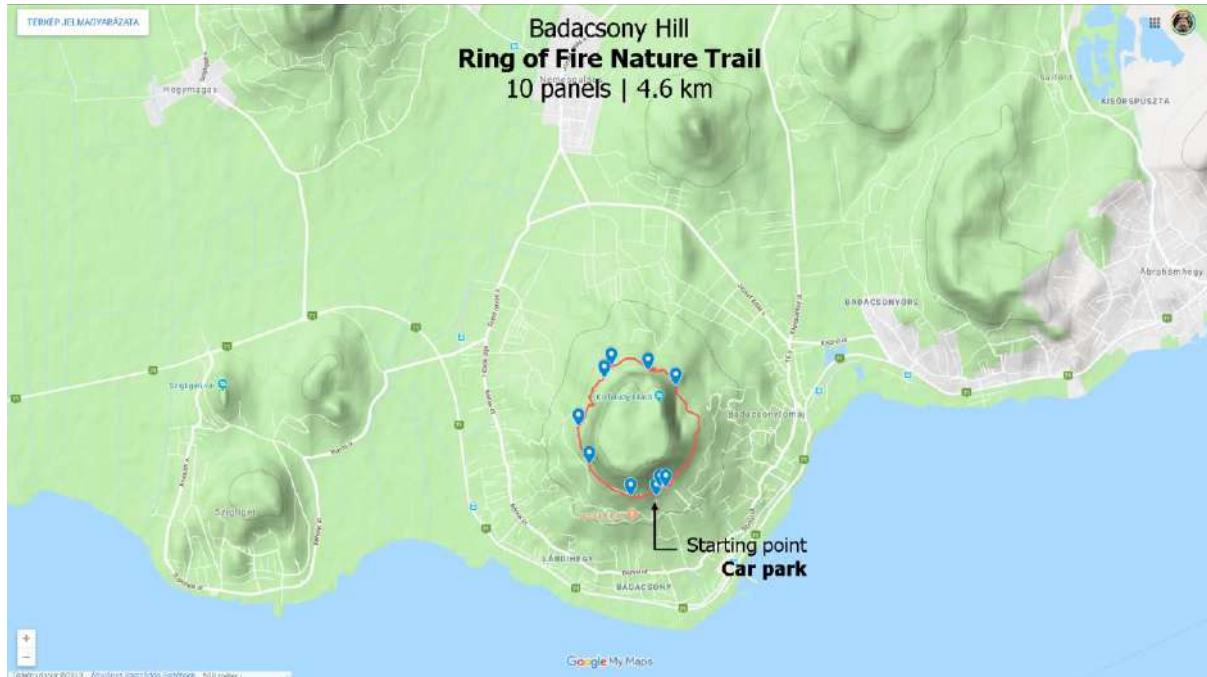


Figure 19: Ring of Fire Nature Trail



Figure 20: Ring of Fire Nature Trail at Badacsony Hill





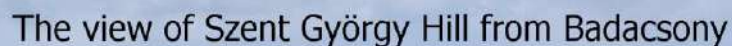
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Figure 22: Ring of Fire Nature Trail



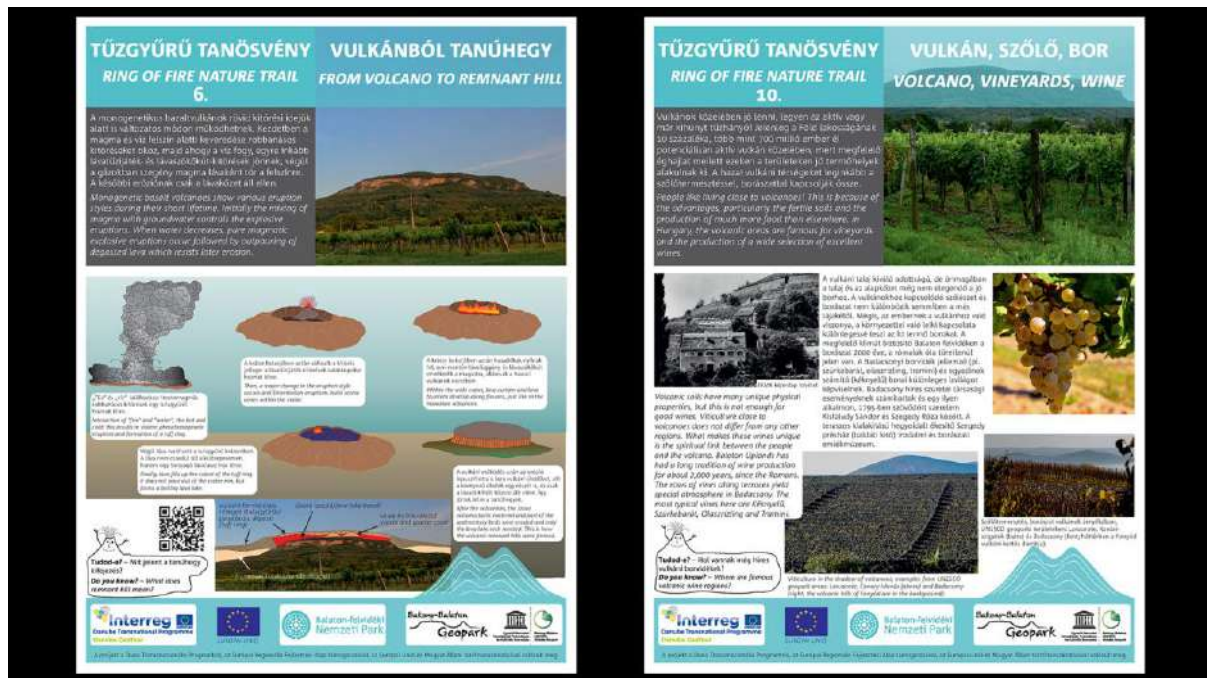


Figure 23: Ring of Fire Nature Trail

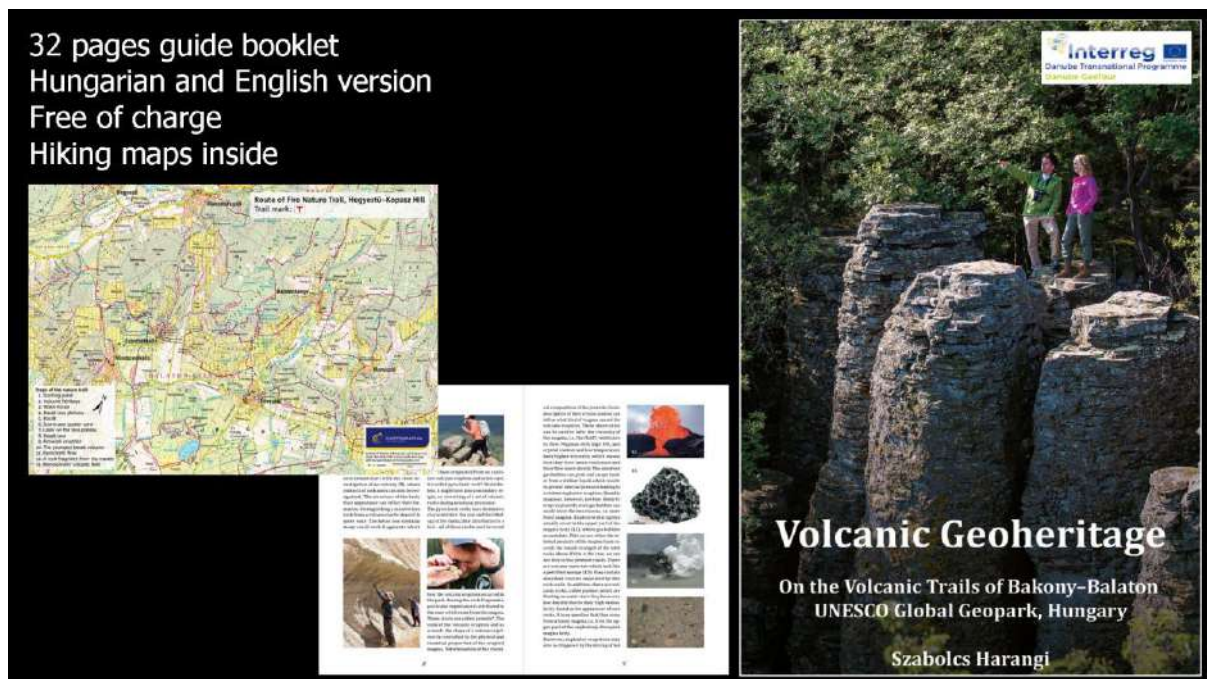


Figure 24: Guide booklet of the nature trails

### 3. Evaluation process of pilot action

Evaluation is a critical quality assurance measure in interpretation management and should be undertaken throughout the project, not just at the end. Evaluation is also a systematic process of determining 'somethings' value, worth or merit. When you evaluate your



interpretation programme or project, it will help you develop your interpretation and to understand whether it is meeting its objectives or not.<sup>4</sup>

Evaluation should be an on-going process and thus it should be an integral part of the regular review of your on-site interpretation. There are a number of ways to divide the stages in the evaluation process, typically however there are five forms of evaluation which can be used to support your interpretation and these are; front-end, formative, remedial (process), summative (outcome) and impact evaluation.<sup>5</sup>

For evaluating pilot actions / interpretative methods in the frame of the Danube GeoTour project ERDF PP4 Geopark Karavanks proposed a qualitative assessment (formative evaluation) as well as quantitative assessment (self-evaluation questionnaire and summative evaluation) of developed pilot actions which was applied as a common approach in all pilot sites.

### 3.1. Criteria for effective heritage interpretation

For evaluation purpose, especially for quantitative assessment in form of self-evaluation questionnaire we defined different criteria which we find important in evaluating of the effectiveness of the interpretation methods used in pilot actions of the Danube GeoTour project.

Firstly, we researched already existed criteria/indicators for assessing the quality and efficiency of different interpretative methods. The ICOMOS, International Council On Monuments and Sites established seven recommendations for effective cultural heritage interpretation: access & understanding, information sources, context & setting, authenticity, sustainability, inclusiveness, research training & evaluation. For example, the IUCN - International Union for Conservation of Nature also developed Criteria for quality assessment of natural heritage interpretation. Furthermore The Museums, Libraries and Archives Council (MLA) came up with a framework called "Generic learning Outcomes" or GLOs to help museums think about the objectives and effectiveness of interpretation projects.<sup>6</sup>

With the respect to all researched criteria, indicators and aspects, and according to the Danube GeoTour project application, we defined our own criteria which we find important in evaluating of the effectiveness of the interpretation methods used in pilot actions of the Danube GeoTour project (Figure 3). When selected the criteria we also took into account objectives of the European and Global Geopark Network (sustainable socio-economic development, education and teaching, preservation of the Earth heritage for present and future generations, ...). Defined criteria for effective heritage interpretation by ERDF PP4 Geopark Karavanks are following:

#### A. INTERPRETATION METHODS

For effective heritage interpretation it is important which interpretation method is used (personal, non-personal interpretation), and if some innovative audio-visual solutions are available. In the case of personal interpretation story telling is an important component of effective interpretation and it is a powerful technique used to conjure up

<sup>4</sup> Colquhoun, F. (2005): Interpretation Handbook and Standard - Distilling the essence.

<sup>5</sup> Dr. Ryland P, Dr. Welch S. (2016): Demystifying evaluation: a brief guide to the evaluation of interpretive media, activities and programmes, AHI Best Practice Guidelines 12.

<sup>6</sup> Rowe H J., Vigurs K. (2011): 10 Top Tips for Museum Interpretation, MLA.

the spirit of place for visitors. Stories should be directly related to the site and linked to what people are likely to know already.

## **B. ACCESSIBILITY / DISABILITY**

According to application form of the Danube GeoTour project interpretation should be adapt to the needs of people with disabilities (toilets, wheelchair access, etc.) whenever it is possible. Text, height of the displays, good connection to the public transport network, available parking facilities etc., should be accessible to everyone.

## **C. KNOWLEDGE & UNDERSTANDING**

Interpretation should be planned and delivered as a comprehensive programme to explain the site and its heritage to visitors with a range of interests, experiences and educational levels. People of all ages should be treated as equals – do not assume lack of knowledge, but also do not assume a high level of knowledge. Interpretation should give visitors an option to find out more detail, both on-site and through publications and websites, while some visitors like to explore topics in detail and appreciate being provided with appropriate informations. Furthermore multi-lingual interpretation will attract a wider range of visitors. It is recommended to research key languages used in the area and provide some translated material.

## **D. ENJOYMENT, INSPIRATION, CREATIVITY, SKILLS**

By defining indicators for effective heritage interpretation we also consider that interpretation methods within pilot actions should encourage enjoyment, inspiration, creativity by trying to do new things with involvement of visitors to stimulate their interest (asking your visitors questions, using their experiences and encourage them to think with, design of panels, audio visual solutions in way which encourage thinking, discovering etc.). For successful interpretation is also important that visitors can gain new skills, change attitudes and future behaviour in way of developing more responsibility towards geological, cultural and natural sites, adoption of positive attitudes to the geology and other heritage through interpretation. Furthermore techniques which use different senses should be included in the interpretation which encourage visitors to look at, touch, listen to, smell or taste things around them. The senses trigger different parts of the brain and elicit different responses, smell for example is strongly connected with memory.

## **E. IMPACT ON NATURE**

When planning an interpretative project aspects of nature conservation/preservation should be also consider. In case of Danube GeoTour project the developed Strategy on Management of Tourism Pressures in Geoparks in the frame of WP3 was included in the process of interpretative pilot actions development. The interpretative site has to comply with the principles and standards of conservation of the geological and other heritage and its promotion in order to increase the visibility of the importance of protecting the heritage. The infrastructure and the activities connected to the interpretative places should not have any negative impact on the environment and interpretation should point out the environmental problems related to different activities in nature and suggest to visitors how to behave in nature to avoid or at least to reduce pressures. On the interpretative site there is also important that informations about the nature conservation (statuses, protection regimes) are presented. As the result such way of interpretation can contribute to the promotion of the nature conservation among the visitors.



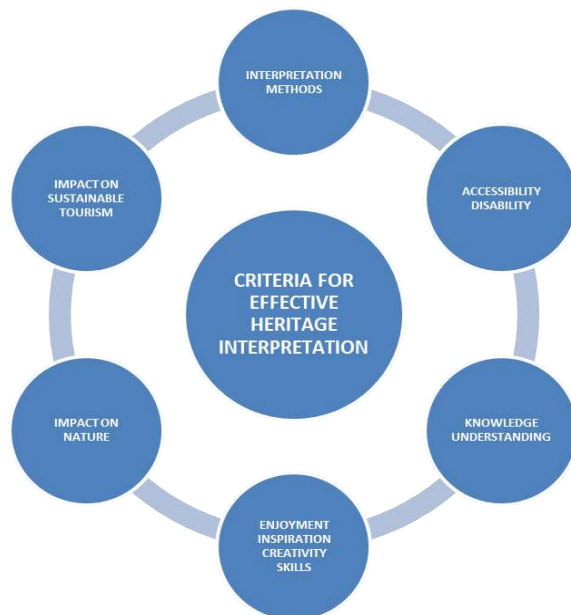


## F. IMPACT ON SUSTAINABLE TOURISM

The interpretation should have potentially positive effects on sustainable tourism. Gradually, the linkages between interpretation and sustainable tourism have grown and they have begun to be turned from being theoretical ideals into practical reality. Interpretative sites shall support the cooperation and networking of various groups, as well as maintaining traditions of various cultures of the region. They shall help to develop especially local economy and strengthen competitiveness of SME operating in the region and country as the whole. Skilled interpretation can be used to direct visitors and their spending to those local businesses and services which are economically marginal but which are important elements of the local economy and community. These may be local post offices, restaurants, accommodation facilities, local transport services.<sup>7</sup>

Interpretation for visitors can be much more beneficial and sustainable if the local community is actively involved. Wherever possible local people should be involved in helping to decide whether or not to interpret, what to interpret, who to interpret to, as well as how to interpret. Local residents can take an active part in all the processes of interpretation, including the research and the presentation and celebration of place and people. Such participation can encourage communities to understand, to value and then to sustain their own environment, cultural resources and heritage.

Sustainable tourism should provide a quality experience for visitors, while improving the quality of life of the host community and protecting the quality of the environment. Respect the socio-cultural authenticity of the region, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.



**Figure 25:** Criteria for effective heritage interpretation, Source: Karawanken-Karavanke UNESCO Global Geopark

<sup>7</sup> Bramwell B., Lane B. (1993): Interpretation and sustainable tourism: The Potential and the Pitfalls, Journal of Sustainable Tourism, Volume 1, No. 2.

## 3.2. Qualitative assessment

### 3.2.1 Formative evaluation of interpretation methods

This type of evaluation typically occurs during the implementation phase to test interpretation project being developed. In the frame of this evaluation each project partner tested visitor reaction to the interpretation methods, for example - their attention or understanding of messages it is trying to communicate, feedbacks, ... Project partners invited small focus group of visitors (approx. 10 potential future visitors). Participants were asked several questions, for example what works and what might need to be changed and gave opinions.

In the case of ERDF PP1, the realization of our biggest investment; the new volcanological exhibition at Hegyestű Geological Interpretive Site suffered significant delay because of the construction part had been involved into a lasting public procurement process. Therefore, the implementation started only in October 2019 while the exhibition installation in December, the very last month of the project duration. Unfortunately, we did not have the chance to invite a group of people to assess the new exhibition in its process but employees of Balaton-felvidéki National Park Directorate had been previously involved in the planning phases. Our goal was quite clear from the beginning; to serve up easy to digest geology for all age-groups in the guise of interesting story-telling, carefully selected photos and interactive tools.

Texts were worded with great care and revised several times before permanent printing both in Hungarian and English language. The 3-D projected volcano model, the self-accessible earthquake generator, the interactive touchscreens and the 3 walls projected 'magma chamber' video room ensure to keep up interest level while delivering key information to our future visitors.

The nature trails and the guide booklet has been widely assessed both by outsider hikers and also by the employees of the National Park since a staff meeting was led up with the collective visit of the Szent György-hill trail in October 2019. BfNPI started to distribute the guide booklet to the nature trails during the season of 2019 and received many positive responses from visitors – even without specifically asking for a review.

## 3.3. Quantitative assessment

For quantitative assessment of pilot actions we developed self-evaluation questionnaire through which each project partner assessed the newly developed interpretation methods. The self-evaluation questionnaire consists of defined indicators and parameters which we find important in the evaluating the effectiveness of the interpretation methods used in pilot actions of the Danube GeoTour project.

In quantitative assessment also summative evaluation is included, which was implemented in the form of visitor satisfaction questionnaire. The results are part of Deliverable 5.3. "Evaluation report on pilot actions with lessons learnt."

### 3.3.1 Self-evaluation questionnaire





Self-evaluation questionnaire (Table 2) consists of defined indicators and parameters which we find important in evaluating the effectiveness of the interpretation methods used in pilot actions of the Danube GeoTour project.

The questionnaire has six (6) sections from A to F, each section with a set of statement has to be self-evaluated on a scale from 1 to 5. Please select / underline the relevant value for your pilot action. The values are: 1 – low degree; 2 – quite low; 3 – medium; 4 – quite high; 5 – very high degree. Under the questionnaire more specific description of each set of statements from section A to F are given and in two sentences the result of the quantitative assessment for each statement (A1, A2,... to F4) should be discussed.

**Table 2:** Self-evaluation questionnaire

<b>A. INTERPRETATION METHODS</b>					
<b>A1.</b> Using the combination of personal and non-personal interpretation	1	2	3	<u>4</u>	5
<b>A2.</b> Using of innovative audio-visual solutions (very simple, digital)	1	2	3	4	<u>5</u>
<b>A3.</b> Using of story telling	1	2	<u>3</u>	4	5
<b>B. ACCESSIBILITY / DISABILITY</b>					
<b>B1.</b> Interpretation (text, graphic stylelighting, height of the displays, etc.) is accessible to everyone, so all visitors can experience the whole point of view	1	2	3	4	<u>5</u>
<b>B2.</b> Some aspects of the interpretation are designed for people with disabilities	1	2	<u>3</u>	4	5
<b>B3.</b> Places to have a rest, toilets and wheelchair access for people with disabilities are available	1	2	<u>3</u>	4	5
<b>C. KNOWLEDGE &amp; UNDERSTANDING</b>					
<b>C1.</b> Informations are given in easy to understandable language	1	2	3	4	<u>5</u>
<b>C2.</b> Informations are prepared and given in different languages	1	2	3	4	<u>5</u>
<b>C3.</b> More detailed interpretation for those who want to find out more is available and offer or suggest ways to explore the subject further (hyperlinks in websites, QR codes, etc.)	1	2	3	4	<u>5</u>
<b>D. ENJOYMENT, INSPIRATION, CREATIVITY, SKILLS</b>					
<b>D1.</b> Interpretation encourage visitors to try and do new things and it is stimulating	1	2	3	<u>4</u>	5
<b>D2.</b> Gaining new skills and changing attitudes and future behaviour of visitors	1	2	<u>3</u>	4	5
<b>D3.</b> Different senses are included in interpretation – encourage visitors to look at, touch, listen to, smell or taste the things around them	1	2	3	<u>4</u>	5
<b>E. IMPACT ON NATURE (NATURE CONSERVATION)</b>					
<b>E1.</b> Incurage the individual and to decrease the massive tourism.	1	2	3	<u>4</u>	5
<b>E2.</b> Interpretative places (pilot actions) do not have negative impact on the nature.	1	2	3	4	<u>5</u>
<b>E3.</b> Interpretation explain the impacts of various actions – encouraging visitors to take care about the geosites and to behave responsibly (raising awarness).	1	2	<u>3</u>	4	5
<b>E4.</b> Interpretation include various nature conservation aspects, which are displayed in different ways.	1	2	3	<u>4</u>	5
<b>F. IMPACT ON SUSTAINABLE TOURISM</b>					

<b>F1.</b> Positive impact on the environment, society and economy	1	2	3	4	<b><u>5</u></b>
<b>F2.</b> Support local economy, especially use of local transport and accommodation infrastructure	1	2	3	4	<b><u>5</u></b>
<b>F3.</b> Reflecting the needs and requirements of tourists and local inhabitants	1	2	3	<b><u>4</u></b>	5
<b>F4.</b> Respect and enhance the historic heritage, authentic culture, traditions and distinctiveness of host communities	1	2	3	4	<b><u>5</u></b>

**TOTAL SCORE (max. 100 points): 84**

**A1.** Personal interpretation means something presented to people by other people. It includes the following: guided tours, storytelling, workshops, etc. Non-personal interpretation means visitors do not have to rely on someone else to present it. It includes some of the most common forms of interpretation such as: leaflets; self-guided trails; taped audio trails; interpretive boards; and information centre exhibits etc.

In the Visitor centre exhibition, non-personal interpretation was used. All the tools were designed to force the visitor to get her/his discovery and experience on your own. The nature trails with interpretive panels were also designed to have a non-personal interpretation, although guided geopark tours are often organized there. The Hungarian and English guidebook helps to understand the natural and cultural heritage in more details.

**A2.** QR codes are link to further information that people can access using their mobile phone, using of interactive touchscreen technology, tablets, augmented reality, etc.

QR codes are presented on each nature trail interpretive panel and link to more detailed information as well as videos and additional pictures.

**A3.** Storytelling is a powerful technique used to conjure up the spirit of the place for visitors. Stories should be directly related to the site and linked to what people are likely to know already. With storytelling you can also encourage people to take part as characters in the story.

Along the volcanic trail on Szent György Hill, a panel presents the local legend of a dragon. Another one on Badacsony Hill mentions the story of the famous Hungarian poet, Sándor Kisfaludy whose wife loved this emblematic place.

**B1.** The text is clearly printed and legible; is complemented by headings and / or subheadings; is divided into paragraphs and uses correct spelling, grammar and syntax. The text is in a height and angle in which it can be read easily, and do not block views or features of interest.

The texts are clearly printed and are complemented by headings and subheadings. They are written both in Hungarian and in English with correct spelling, grammar and syntax. The letters are in an appropriate size for reading even from distance. This is appropriate both for the exhibition and the nature trail explanation panels.

**B2.** Offering special programmes and guided tours for people with different disabilities (individuals with mobility limitations; individuals who are blind or partially sighted; individuals who are deaf or hard of hearing; individuals with developmental and/or learning disabilities); large print labels, Braille labels and maps, audio guides, audio descriptions, sign language interpretation, etc.

At the moment, upon request special guided tours are available for people with moderate mobility limitations, partially sighted, hard of hearing and with slight developmental and/or



learning disabilities. Audio guides were previously planned but later rejected due to the qualities of the exhibition area.

**B3.** Places to sit down, special toilets for people with disabilities and wheelchair access are available. It helps people with walking difficulties and other mobility problems as well as anyone with tired legs and feet.

The toilet and reception of Hegyestű Geological Interpretive Site will be accessible for people with different disabilities in the near future.

**C1.** Very simple descriptions. Visitors require well structured and easy-to-digest language. An average visitor might spend as little as 3 seconds looking at a graphic panel before browsing to the next area.

Both in the Visitor centre exhibition and in the nature trail interpretive panels, texts are well structured and have a plain language text. The length of the text is designed for an easy-to-digest way.

**C2.** Providing personal (guided tours, etc.) and non-personal heritage interpretation in native and other foreign languages.

Guided geotours are often organized along the nature trails by the Geopark staff and its certified local partners. Texts are written both in native (in Hungarian) and in English.

**C3.** Interpretation should be planned and delivered as a comprehensive programme to explain the site and different heritage to visitors with a range of interests, experiences and educational levels. There is an option to find out more detail, for example on the homepage and through other publications.

Both in the exhibition and in the nature trail, there is information to other sites and heritage both in the Bakony–Balaton UNESCO Global Geopark area and in the partner geoparks of the Danube region. The geopark homepage gives additional information about other potential destinations.

**D1.** Involvement of visitors and encouragement of interaction to stimulate their interest (asking your visitors questions, using their experiences and encourage them to think for themselves, design of panels, audio visual solutions in way which encourage thinking, discovering etc.).

The Visitor centre exhibition involves various elements to enhance the visitors to get their own discoveries. Each interpretation panels in the nature trails contain simple questions about the features of the stop.

**D2.** Interpretation which can encourage visitors to develop more responsibility towards geological, cultural and natural sites, adoption of positive attitudes to the geology and other heritage through interpretation.

Some interpretive panels highlight and reflect on the local/regional geological and biotic assets, protected species, etc.

**D3.** Techniques which use several senses (sight, sound, touch, smell and taste). We experience everything through our senses. We use our intellect, memories and assumptions to process the information, but it all starts from the raw materials we receive from looking, touching, smelling, listening, tasting and a whole range of lesser headlined senses. They trigger different parts of the brain and elicit different responses, smell for example is strongly connected with memory.

The exhibition in the Visitor centre provides a wide range of tools to help the visitors to get the visitors using their senses. Interactive tools (e.g., earthquake simulator, multimedia tools, rock samples with magnifiers are among of these tools).

**E1.** The infrastructure of pilot action is built for smaller groups and individual visitors.

The Visitor centre and the nature trails do not support massive tourism, but rather invite small groups, families and individual visitors.

**E2.** The infrastructure and the activities connected to the interpretative places does not have any negative impact on the environment.

The Visitor Centre exhibition was designed in an old exhibition house, which was fully renovated without any environmental intervention. The nature trails used former paths and the explanation panels are partially replaced former ones. The activities do not have any negative impact on nature.

**E3.** The interpretation (in visitor centre or info point) point out the environmental problems related to different activities in nature and suggest visitors how to behave in nature to avoid or at least to reduce pressures.

In the frame of the promotion of the new Visitor centre exhibition and the interpretive panels, Bakony–Balaton UGGp informed people how they should behave in nature and why and how they have to protect natural and cultural heritage. During the promotion of our guided geotours in this area, we always encourage our visitors to use public transport services.

**E4.** The information about the nature conservation (statuses, protection regimes) are presented. Interpretation contribute to the promotion of the nature conservation among the visitors.

The new Visitor centre exhibition and the interpretive panels inform visitors about the protected status of the area.

**F1.** Is your pilot action based on the rules of sustainable development and has no negative effect on our environment, as well as on society and economy? All pilot activities should not lead to pollution of the environment, whether directly or indirectly, and their implementation should be energy-saving, based primarily on renewable energy sources. Pilot action shall support the cooperation and networking of various groups, as well as maintaining traditions of various cultures of the region. And last but not least, it shall help to develop especially local economy and strengthen competitiveness of SME operating in the region and country as the whole.

The pilot action has no negative effect on the environment, neither on society and economy. It does not lead to any pollution directly or indirectly. The pilot action enhances cooperation and networking as it gives outlines about additional natural and cultural heritage in the geopark area as well as of other geoparks in the Danube region. ERDF PP1 contracted local entrepreneurs for the implementation.

**F2.** Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Thanks to the added value of the pilot action, the formerly hidden treasures of the volcanic heritage became visible and easily understandable for the general public and for the local communities as well. It provides a tool for strengthening local identity.



**F3.** Provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in the way not negatively affects the day-to-day routine of local inhabitants, respecting their needs, habits and culture.

There is no discrimination by gender, race, disability, age, etc. The exhibition and the nature trails were designed to offer an enjoyable and interesting experience to visitors of all ages and to encourage them to stay in our area longer seeing things on the field as well. The trace of the new nature trail was carefully chosen and widely agreed by the forestry companies, municipalities, private landowners, etc.

**F4:** Respect the socio-cultural authenticity of the region, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.

Special attention was given to presenting the authenticity of the region when putting together the topics and contents of the exhibition and the interpretive panels. We aimed to educate not only the visitors but also the geopark's inhabitants to contribute to an intercultural understanding and tolerance and to conserve the cultural heritage and traditional values by presenting domestic topics through the exhibition. Within the exhibition, we dedicated an independent 'life on basalt' module with an illustrated panel and a glass cabinet presenting the special tools and instruments of former basalt mining and traditional viticulture.

### 3.3.2 Visitor satisfaction summative evaluation

In the frame of quantitative assessment we decided to do as well summative (outcome) evaluation of interpretation methods in developed pilot actions to make sure that visitors are enjoying and learning from interpretation, and to check whether interpretive objectives have been met. This summative evaluation will be implemented in a form of visitor satisfaction questionnaire.

The summative (outcome) evaluation is generally the most widely and regularly used form, it is carried out after the interpretive project has been completed and is most often used to assess its success in relation to its objectives. In this type of evaluation, visitors are typically encouraged to tell staff what they think about their experience often through a questionnaire, interview or focus group.<sup>8</sup>

In the frame of the Danube GeoTour pilot action developed, visitor satisfaction questionnaire was prepared (Annexes 7.2) and each project partner gave this questionnaire to visitors of their interpretative site. The results of visitor satisfaction questionnaire of each project partner will be a part of Deliverable 5.3.1 "Evaluation report on pilot actions with lessons learnt".

## 4. Recommendations

It has been quite a complex and complicated process from the initial plans until the final realization of the pilot action and not easy to compose general recommendations upon such a unique pack of investments.

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<sup>8</sup> Dr. Ryland P, Dr. Welch S. (2016): Demystifying evaluation: a brief guide to the evaluation of interpretive media, activities and programmes, AHI Best Practice Guidelines 12.





As it was expected the nature trails together with the guide booklet meant less trouble from the coordination point of view. It was a massive burden to acquire all necessary permissions from the forestry companies, municipalities, private landowners, etc. – but it was expected. More stressed communication of the geological and nature conservational recommendations on promotional surfaces and channels would be definitely considered as an advance in the future. Raising public awareness towards leaving no – or at least – less trace, and dispose of your waste properly. We must encourage outdoor enthusiasts more effectively to consider the impacts that they leave behind, which will undoubtedly affect other people, water and wildlife. (Un)fortunately, public transport is not well developed and rarely used in the near area where our pilot action took place but we shall hearten our visitors to take into consideration. To sum it up; adequate trip planning and preparation helps backcountry travellers accomplish trip goals safely and enjoyably, while simultaneously minimizing damage to nature and land.

This is already time to think forward over the 5 years compulsory maintenance period and ensure the safety and accessibility of the nature trails (steps, trail marks, etc.).

## 5. Conclusion

The realization of the new exhibition meant the biggest challenge during the project duration. It is clear now that we must carefully consider other projects as well in the future when planning another one. An unfortunate geographical relation involved our relatively small scale construction investment into an open public procurement process that lasted for 15 months and that loss of time seriously jeopardized the viability of our biggest investment.

Also, it is a remarkable lesson of the project that initial idea changes a lot when the conception takes shape in technical plans and even more during the implementation phase. We must adapt to the changing circumstances but we should not forget about the main cornerstones.

After all, ERDF PP1 consider its pilot action as a successful one that improvements serve already and will serve well for the common good while also respecting the nature and the cultural landscape. Namely, the BfNPI is the beneficiary party of the funds but actually, they are the visitors of the national and geopark.

## 6. Literature

- Bramwell B., Lane B. (1993): Interpretation and sustainable tourism: The Potential and the Pitfalls, Journal of Sustainable Tourism, Volume 1, No. 2.
- Colquhoun, F. (2005): Interpretation Handbook and Standard - Distilling the essence.
- Danube GeoTour project application form
- Dr. Ryland P, Dr. Welch S. (2016): Demystifying evaluation: a brief guide to the evaluation of interpretive media, activities and programmes, AHI Best Practice Guidelines 12.
- Interpret Europe (2016): Engaging your visitors: Guidelines for achieving excellence in heritage interpretation, Witzhausen.
- Rowehl J., Vigurs K. (2011): 10 Top Tips for Museum Interpretation, MLA.





## 7. Annexes

### 7.1. Output Factsheet

