

Danube Geo Tour

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

Pilot geoCulture and geoOutdoor products tested

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List of Abbreviations

<Add abbreviations used in the document>

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



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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 and to seize positive market trends for sustainable tourism development in 8 Geoparks of the Danube region”¹. In order to achieve this, one of the challenges is to “seize the potential of Geopark values and brand for socio-economic development while inspiring local residents and small businesses to develop new, sustainable and innovative geoproducts along the defined Danube GeoTour”²

The objective of WP4 is “to increase the capacities of participating Geoparks in creating unique sustainable tourism products and services based on a Geopark’s specific heritage, the involvement of local SMEs, new gamification tools and visitor engagement with a focus that is in line with the strategy on management tourism pressures and the carrying capacity of each individual territory.”³ Thus, the new geoproducts developed are key elements for the success of the entire project.

This document shows how the pilot geoproducts were tested and what results were reached both qualitative and quantitative. The pilot geoproducts were developed and tested in the WP4 in connexion to all other WPs. The basic criteria, the first step in testing the geoproducts were developed in WP3. It also uses the work from WP5, especially in defining “innovative” as mainly a question of interpretation and also in describing the methods of emphasizing the products connexion to Earth. The promotion component of a geoproduct will be developed in correlation with WP6 recommendations. In its turn, these guidelines will be used in implementing the project further by almost all the WPs.

Testing the geoproducts shows a snapshot of a particular new geoproduct in this moment of its development. However, all the tools described and used here are available on the on-line platform in a gamification form. Thus, any time from now, the geopark staff, the partners, SMEs or any other producer may use the assessment tools available on-line to test a geoproduct. This is also helpful for education and training purposes, for any discussion involving the concept of geoproduct.

Each of the Geoparks created and tested a unique product by designing a concept, by engaging, training local providers and/or by developing missing highlights in the geoproduct. Different GeoCulture and GeoOutdoor products were introduced in participating geoparks. Lessons learned are documented, evaluated and made available as models for others in this document and on the on-line platform.

The University of Bucharest – Hateg Country UNESCO Global Geopark developed since 2013 a network of small interpretation centres called “houses”. A house (“casa” in Romanian) is an interpretation and potentially commercial point, aiming to interpret a specific geologic and/or cultural item connected to local heritage. Several houses are already developed and further ones are planned (House of the Geopark, House of Volcanoes, House of Dwarf Dinosaurs, House of Traditions, House of Science and Art).

¹ Danube GeoTour Application Form

² Danube GeoTour Application Form

³ Danube GeoTour Application Form



During the Danube GeoTour project these interpretation points were transformed into geoproducts according to the developed philosophy and definition. The houses were already well connected to the geopark, also each of them had a GEO theme to interpret, but the economic viability was not fully developed. Specifically the interpretation points undergone the following transformations:

- the interpretation point as a whole was shaped as a product, with clear offers, schedule, reservation methods, target groups, prices and so on;
- additional products were developed around the general product: guided tours, souvenirs, workshops, printed materials;
- the geopark partners in charge with the interpretation points were trained to understand what geoproducts are and how they can be successfully developed;
- the promotion of the houses is made under the geoproduct idea;
- for two of the houses DinoStops were created and added to the offer.

The DinoStop network is an innovative concept of geoproduct developed along with the Danube GeoTour project. A DinoStop is an artistic reconstruction of a unique dinosaur species from Hateg connected to a commercial and / or touristic facility. Both are developed and exploited by the geopark in partnership with local associations, SMEs and possibly local administration. Three DinoStops from a total of seven (the number of Hateg discovered dinosaurs species) have already started (*Balaur bondoc*, in Hateg; *Struthiosaurus transsylvanicus*, in Salasu de Sus; *Elopteryx nopcsai*, in Sinpetru).

The Houses and DinoStops will be integrated and promoted as geoproducts network. In this document the House of Volcanoes will be analysed as a case study.

1.2. Methodology

This material was developed using data provided by the partners in the project and by other geoparks in the European Geoparks Network. Most of the data for defining the geoproducts was developed for Output 4.1. *Guideline for development of innovative GeoProducts*.

Other data derives from experiences and lessons learned from ASP and other members of EGN and GGN, the skills and expertise of the geopark managers present in the project as well as all the partners direct contact with local entrepreneurs in tourism, food art and crafts.

For the specific geoproduct tested here – The House of Volcanoes – the data used was collected directly by the geopark staff and was completed by discussions with the producers.

1.3. Summary

This document focuses on testing the innovative geoproduct House of Volcanoes as an example of the geoproduct networks of Houses and DinoStops proposed by the Hateg UNESCO Global Geopark – University of Bucharest. In the first parts of each chapter the



assessments are presented and discussed. In the second part of the chapters the geoproduct is analysed from the specific points of view.

There are three sets of assessment through which the geoproduct is analysed: The first one is the basic criteria – a set of requirements without which a geoproduct would either be outside the rules and regulations or it would have a negative impact on nature and culture. The second assessment is the qualitative one – a descriptive approach of the three components of a geoproduct's definition. The third part of the testing is the quantitative assessment made using the logic matrix. At the end of this quantitative analysis the geoproduct receives a final score as well as points for each of the 20 categories.

The final part of this document comprises the conclusions and recommendations as well as some additional information as annexes.

2. Basic criteria

2.1. Description

Geoproduct is a product that presents the characteristics of a geopark on the market. At the same time a geoproduct can have additional values from nature conservation. In this case, a geoproduct must comply with the principles and standards of conservation of the geological heritage and its promotion in order to improve awareness about the importance of conservation of our GEO heritage. The geological heritage should be recognized through the geoproduct as the geopark's essential element.

The Strategy on Management of Tourism Pressures in Geoparks (shortly Strategy) provides a tool which enables all target groups (visitors, residents, geopark managers and investors) to better plan their activities, understand different impacts of these activities and alternatives which can be used to avoid or reduce negative impacts. The Strategy has to be included to clarify the aspect of nature protection as well as the aspect to contribute to the holistic concept of protection, education, public awareness and socio-economic benefits for sustainable local development. In order to carry out integrated evaluation of geoproducts we had to firstly create the relevant framework and then a methodology for the assessment of impacts of recreational activities on natural heritage.

The framework developed in WP3 can be used as a first and basic qualifier in the first steps of the decision process, which tells us if the product can be defined as a geoproduct. The Strategy also provides a common framework which enables all geopark managers as well as visitors, residents and investors to better plan their activities, understand different impacts of each activity and to be aware of available alternatives which can be used to avoid or reduce negative impacts. The information from the Strategy can be also used to increase awareness of investors and it can help to change their behaviour towards more sustainable patterns in geoproducts. As such it leads to better conservation of natural and cultural heritage and it supports the achievement of the programme specific objective "Foster sustainable use of natural and cultural heritage and resources".

In this way, the Strategy also serve as a framework for the development of joint geoproducts (as a part of WP4).

Nature conservation definitively has to be incorporated to the geoproduct as its intangible value. The evaluation of the geoproduct from the point of nature conservation is essential. The geoproduct has to comply with the principles and standards of conservation of



the geological heritage and its promotion in order to increase the visibility of the importance of protecting the geoheritage.

Geoproducts may include various geoheritage and nature conservation aspects, which can be displayed in several ways. Finally a geoproduct may be included/integrated directly as a tangible (mineral raw materials, agricultural product) or intangible (cultural, historical, ethnological) content. Geoproducts can be recognized as an activity or a final market object, available indoor or outdoor.

Four different groups of geoproducts can be distinguished:

- Market objects (souvenirs, food)
- Outdoor activities (guiding for groups/individuals in nature; rafting, biking, hiking, riding, water activities, mines and caves visiting, camp schools)
- Indoor activities (indoor programs in museums, info centres, restaurants, tourist farms)
- Small interpretation infrastructure dedicated to specific local heritage items (houses, dinostops, geotrails) developed and managed in partnership with local partners.

2.2. Application

Question 1: Is a geoproduct developed according to the actual legislative framework and it does not cause any damage to nature?

If the answer is YES:

→ follow the assessment. The product:

1. *has strong tangible connection to local geodiversity or **geological heritage** (geosites, fossils, minerals, rocks, mines, quarries, caves, geologic processes or phenomena...) YES/NO*
2. *has strong intangible connection (historical, ethnological, cultural) connection to local geodiversity or **geological heritage** YES/NO*
3. *increases awareness of users about the importance of protecting geological heritage. YES/NO*
4. *encourages and helps the user to engage/involve in nature conservation. YES/NO*
5. *is produced in a sustainable way, it is made from recycled or/and local materials. YES/NO*

If the answer is NO:

→ contact to your geopark or follow the *Recommendations for residents, visitors and investors on behaviour and sustainable use of geodiversity in Geopark*

In the case of the geoproduct House of Volcanoes the answer is yes, it follows the legislative framework and it does not cause any damage to nature:

1. **YES it has strong tangible connection to local geodiversity and **geological heritage** as it focuses on the volcanic remains from Cretaceous.**



2. YES it has strong intangible connection (historical, ethnological, cultural) connection to local **geodiversity** by showing how the landscape changed in millions of years as well as tackling both the disastrous and beneficial roles of volcanoes for mankind.
3. YES it increases awareness of users about the importance of protecting geological heritage and the importance of geodiversity. By showing the changes in landscape and learning from the Earth's history, it draws the attention to the present risks and climate changes.
4. YES it encourages and helps the user to engage/involve in nature conservation. The geoproduct contains also trails and an Orchard of Senses through which the visitor can engage nature directly.
5. YES it is produced in a sustainable way, it is made from recycled or/and local materials. The construction itself is a cob house, built with only clay, sand, water and straws.

3. Qualitative assessment

3.1. Description

Geoproduct is a new term appeared along with the geopark philosophy. It is usually used in the context of a geopark's socioeconomic involvement along with geotourism and geodiversity. Its understanding varies from a broad perspective to one of the most concrete result of the geopark concept implementation.

In the most extensive definition, the geoproduct is considered a potential geotourism focus point⁴, usually a geological attraction. The more focused definitions mention a geopark connexion and include local, manmade products as well as the dialogue between tourists and local heritage. For example, Farsani et al. (2012) define geoproduct as:

Local products related to geopark activities and symbols of geological and geomorphological heritage of the geopark. Geoproducts which are made based on geological elements of geoparks not only introduce the local products and the local handcrafts as cultural components to tourists, but also increase the public knowledge of tourists about geology.⁵

If we discuss the main attributes of a product⁶, then we have to consider three aspects which the geoproduct must comprise in order to be a product:

- It has to respond to a need,
- It has to be created, constructed through a production process,
- It has to be marketable and sold.

⁴ **Complova, M.**, 2010, *The identification of geoproducts in the village of Jakubany as a basis for geotourism development*, Acta Geoturistica, volume 1, number 1, 51 – 56

⁵ **Farsani, T., Coelho, C., Costa, C., Carvalho, C.**, 2012, *Geoparks and Geotourism. New approaches to sustainability for the 21st century*, BrownWalker Press, Boca Raton

⁶ <https://www.merriam-webster.com/dictionary/product>



These characteristics bring the term geoproduct closely to a practical and economical approach, it defines it more clearly and focuses on its necessity as a tool for socioeconomic development through geoparks. This perspective underlines the role of geoparks in achieving social, economic and cultural sustainability and in coping with pressure from the sociocultural impact of tourism.

On the other hand, a geoproduct is not simply another product sold in a geopark. A geoproduct comes with a deep connexion to Earth on a local level and with a strong sense of identity. Each geoproduct is unique in its construction with a story about people and the place they inhabit.

As a result, we find that the philosophy of a geoproduct takes into account three axes: identity, management and production. If we see it as a graphic model, then the geoproduct finds itself at the intersection of these three axes (Fig. 1).

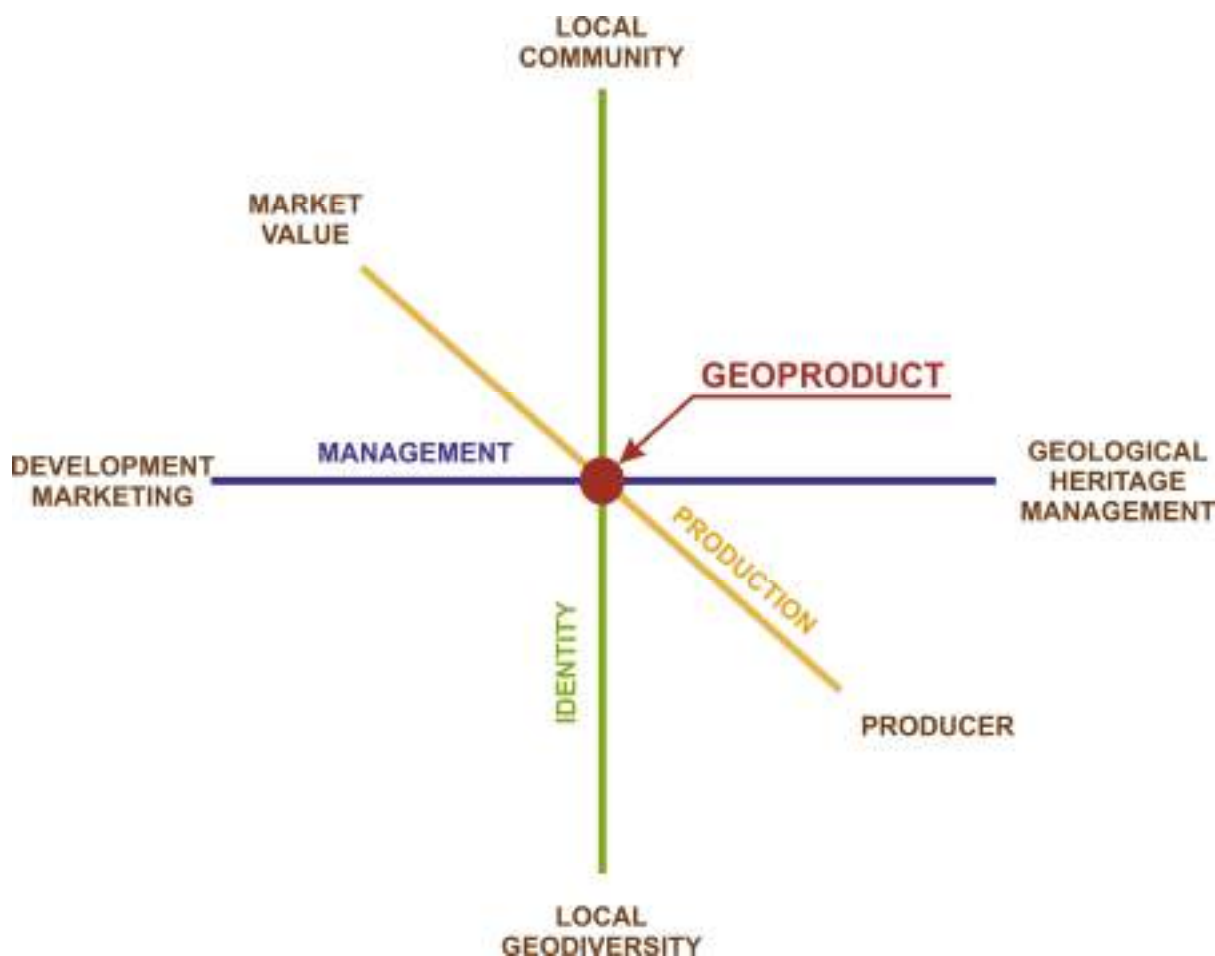


Figure 1. The philosophy of the geoproduct

Identity Axis

A geopark territory is a complex structure made of ecological, socio-economic and cultural realities, shaped by its geodiversity, biodiversity and historic evolution. The sum of them is generating the local identity made of tangible and intangible heritage. The tangible heritage is mainly related to local geodiversity like raw materials, relief, mineral resources and soils. Intangible Cultural Heritage, as defined by UNESCO, 2003⁷ means:

⁷ UNESCO, 2003. *Intangible Cultural Heritage*



...the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

One of the key requirement² for a UNESCO Global Geoparks is to have sites and landscapes of international geological significance managed with a holistic concept of protection, education and sustainable development. A UNESCO Global Geopark uses its geological heritage, in connection with all other aspects of the area's natural and cultural heritage, to enhance awareness and understanding of key issues facing society, such as using our Earth's resources sustainably, mitigating the effects of climate change and reducing the impact of natural disasters. By raising awareness of the importance of the area's geological heritage in history and society today, UNESCO Global Geoparks give local people a sense of pride in their region and strengthen their identification with the area. The creation of innovative local enterprises, new jobs and high quality training courses is stimulated as new sources of revenue are generated through geotourism, while the geological resources of the area are protected.

The Identity axis expresses local cultural and historical identity generated during centuries or millennia by the continuous interaction between local community and natural environment. On the other hand, this axis is revealing one of the main goal of a geopark to cooperate with communities and to identify innovative approaches in order to re-appropriate tangible and intangible heritage values and to revive and strengthen the local cultural identity, in respect to sustainable development principles.

The identity axis is the axis of product development. Is the way a producer is using directly or indirectly local geodiversity components, local knowledge and market needs in the geopark context. This process is part of the cooperation between geopark team and local entities which could be associations, companies, private persons, artists, freelancers, museums, schools, etc.

Management Axis

The management axis is the way to transform a geoproduct in a market good, a product to be sold directly or indirectly and to generate benefits. The benefits are both direct incomes and indirect and induced ones that contribute to geopark promotion, strengthen of local identity and socio-economic development.

Each Global Geopark is using the UNESCO Global Geoparks logo which is one of the most powerful brand in the world in order to develop a local brand of quality for its territory. The management axis is reflecting the way a geoproduct is using the geopark brand to increase its value and also the role each new geoproduct is playing in strengthening the geopark brand. The management axis is expressing the cooperation between the geopark team and the producer of a new geoproduct. In some cases the producer is the geopark team. The management axis is reflecting the main philosophy of Global Geoparks: *Celebrating Earth Heritage, Sustaining local Communities*. Each geoproduct is embedding a part of local geodiversity or geoheritage and in the same time is contributing to local socio-economic development.

Production Axis

This vector represents the organisational aspect of a geoproduct. The Geopark has to encourage entrepreneurship of local partners and to provide to them the context presented by the other two axis. The production axes starts with a producer, an entity able to provide a

service or create a product in a legal way and in close cooperation with the Geopark. The direction of the axis is the actual profit from the products and services. In the case of the Geopark being also the producer of a geoproduct, the benefits can be other than financial: awareness, promotion, community involvement etc.

The philosophy of the geoproducts uses axes to show the whole concept as a process. The Geopark team has to manage the process and evaluate its position on each of the axis. The partners (SMEs, NGOs and others) base their business in geoproducts on the identity and management axis and contribute to the development of the production axis.

In conclusion, figure 1 shows a geoproduct at the intersection of the three axis. The identity axis is expressing the innovative way in sustainable use of local resources, the management axis reflecting the capacity of a geopark team to support geoproducts development and sale in the benefit of producer and local communities and the production axis shows the process of constructing the offer by a geopark partner or by the geopark itself.

In the creation and development of geoproducts, geopark managers and local entrepreneurs must start from the philosophy described in the previous chapter. Then they must follow the most important three requirements of a geoproduct (Fig. 2):

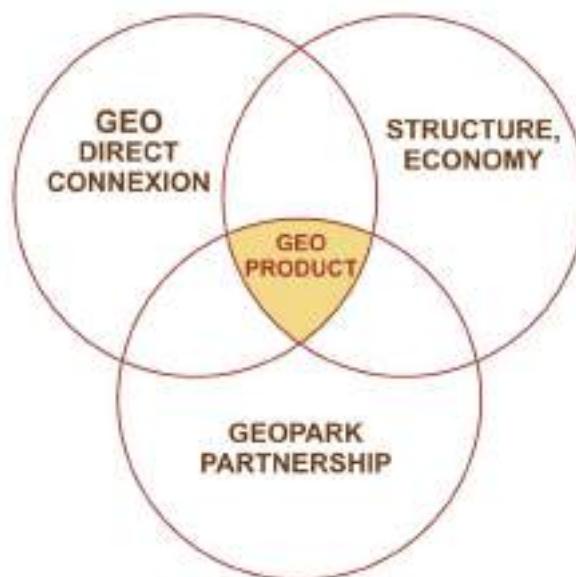


Figure 2. The requirements of the geoproduct

In addition to the main three requirements, the newly developed geoproducts have to respect sustainable standards and communicate these values to their users, visitors and thus help raise awareness on the importance of protecting and valorising the area's geodiversity, natural and cultural heritage in a sustainable way.

Geoproducts creation and development will also consider and respect specific needs of people with disabilities or elderly people and thus increase potential for these groups to have access to geoheritage. The design of these products and their management have to reflect equal chances and inclusion of all categories.

3.2. Application

Geo direct connexion

“Geo” (Gaia / Gaea in Greek) is the personification of Earth. Represents natural characteristics of a territory, whether is the local geodiversity, or biodiversity. Cultural values or tangible and intangible heritage being the human appreciation and use of these characteristics. Geo direct connexion requirement assures that the product is not only a geographical designation – “produced in the geopark” – but it has a deep meaning and an interpretation. The geoproduct must be a sentence in the dialogue between Man and Earth. Sometimes this connexion is only a matter of interpretation. Many products developed today in geoparks can be transformed into geoproducts with ease, if the proper interpretation of their connexion with geology or local identity is added.

A good example for this requirement is the GeoFood label⁸. This designation, managed by Magma UGG, is more than just another ecolabel.

GEOfood products must have strong connection with the local Geological Heritage, specific brief information concerning this connection must be provided in the food products and in the GEOfood restaurant menus through written information (ex: potatoes or vegetables that grown in fertile sandstones which were formed by glacier movement during the last Ice Age; olive oil produced from olives grown in Jurassic marls that were deposited in the ancient Sea of Tethys, salt from the ancient Sea, bread from grain growing in the Geopark soil due to special geological phenomena, etc.).

The House of Volcanoes fulfils this requirement by interpreting one geologic process that led to the formation of the volcanic bodies of the geopark and the subsequent geodiversity: rocks, soils, landscape and geomorphology. Hateg volcanism is a characteristic of the Upper Cretaceous paleoenvironments and a key indicator for the tectonic evolution of the area.

Structure and economic viability

Structure and economic viability means that the geoproduct has to live up to its “product” part of the term. It has to be constructed (“produced”) as a marketable product meant to be sold. Of course that in some cases the geoproducts are not sold per say, instead they belong to the geopark administration’s educational offer, or they are provided along with other services. In order to be a geoproduct, the object or service doesn’t have to be actually sold, but to have the construction and economic viability which allow it the possibility to be sold. For example, an educational program from the educational offer of a geopark can be considered as fulfilling this requirement by asking the question: would this program be viable if it were to be sold by someone to tourists?

The viability is the health assurance of the geoproduct – it can only exist if it is bought. This means it has to be adapted to market demands, it has to continuously address the needs of the buyers and it has to have the adaptability to focus on new trends and requirements.

The House of Volcanoes undergone some changes during the implementation of the Danube GeoTour project. Now it fulfils this requirement by being an actual selling product, with

⁸ <https://www.geofood.no/>



a marketing plan. The dedicated site www.casavulcanilor.ro, available also in English, provides information about the available programs, prices and reservations. The Facebook page <https://www.facebook.com/casavulcan/> shows stories and builds the image of the House of Volcanoes as one of the interpretation Houses in the Geopark's network. As part of the marketing strategy flyers are distributed to local information centres and accommodations (Annex 8.2). We also organise an event called Volcano Day, each year on the 24th of August. The House of Volcanoes is also present on Google Maps.

The revenues obtained by the House of Volcanoes are reinvested into the educational and volunteer projects.

Geopark partnership

The geological connexion and the economic viability would describe only a good business idea without the active role of the geopark. This is the reason why the third important requirement for geoproducts is to have the geopark partnership. Of course, this applies when the geopark is not itself the provider of the geoproduct.

The geopark's role as a partner of the geoproduct provider is to assure the quality of the geoproduct and the conditions in which the selling process takes place. This will eliminate opportunistic initiatives of low quality products made to look like geoproducts. It will also make sure that the production process is made with care for the heritage and environment and that it respects the culture and needs of all people, especially vulnerable groups.

The House of Volcanoes fulfils this requirement by being a project of the Geopark administered by an NGO. This NGO – Drag de Hateg – is a core partner of the Geopark Administration and it was established in 2013 with the clear purpose of helping the Geopark development written in the statutes. The NGO is working with former volunteers of the Geopark who, in the meantime, finished their studies and returned to the territory. Every aspect of the geoproduct's development and cycle is discussed and agreed between the NGO and the Geopark.

4. Quantitative evaluation

4.1. Description

The evaluation process starts from the basic idea that a geoproduct is representing the tool a geopark has to develop in order to contribute to the holistic concept of protection, education, public awareness and socio-economic benefits for sustainable local development.

Testing and evaluation are connecting four key elements defining a geoproduct: Earth resources, Geopark management, Local community, Geoproduct development.

The questionnaire has five sections from A to E, each section with a set of elements to be self-evaluated on a scale from 1 to 5. The values are: 1 – low degree; 2 – quite low; 3 – medium; 4 – quite high; 5 – high degree. According to the Logic Matrix:

LOCAL COMMUNITY	Contribute to social entrepreneurship approach of the geopark	Documented relation geo-bio-cultural	Tells a story about local community	Enhances local cultural heritage	GEOPRODUCT DEVELOPMENT AND MARKETING
New local products strongly related to geopark territory				Integration in geopark's marketing strategy	Connects to the marketing strategy
Connects to geodiversity and geoheritage interpretation			Quality assurance by geopark labeling		Involves the geopark in the product process
Integrates into geopark's promotional strategy		Common advantages based on a partnership agreement			Contribution to the promotion of the geopark values
Results from geopark's involvement in the community (trainings, seminars, programs)	Assures novelty and innovation				Impact evaluation
GEOLOGICAL HERITAGE MANAGEMENT	Contribute to Geodiversity Action Plan Development	Identify all potential values of geoheritage	Tangible and intangible themes	Assessment of local geodiversity	LOCAL GEODIVERSITY

Table 1. Logical matrix in development and assessment of a geoproduct

4.2. Application

Section A - Any geoproduct has to be connected to local geodiversity / geological heritage and to have a geological story (in a broad sense). Local geological assets are identified and defined based on scientific research and a coherent management plan guides the conservation and interpretation of geological features. It sets the geological scene, looks in detail at the geological heritage in the geopark territory, details opportunities to explore and celebrate the local Earth history.

A1. How well are the geological assets / subjects related to the geoproduct documented from the scientific point of view?

1 – not documented; 5 – Very well documented

A2. In what degree the geoproduct contains both tangible and intangible components of the geological asset/s?

1 – not having both elements; 5 – Very well integrating the two elements

A3. Does the geoproduct tell all the possible stories on the specific geological asset?

1 – very few stories; 5 – the whole story



A4. In what degree are those geologic assets part of a geodiversity action plan / geoconservation plan developed by a Geopark?

1 – they are not in a plan; 5 – all of the assets are part of a clear plan

Section B - A geoproduct has to incorporate a story of local people and could contribute to connect geological heritage with local community.

B1. In what degree is the geoproduct created and developed by a local company / person / producer?

1 – not a local company; 2 – most parts of the geoproduct are not created/developed by a local company/producer; 4 – most parts of the geoproduct are created/developed by a local company/producer 5 – totally created and develop by a local company or by the geopark itself

B2. In what degree the connections between the identified geologic asset/s and natural and cultural heritage are documented?

1 – not documented; 5 – Very well documented

B3. Does the geoproduct tell more than a geological story?

1 – only the geological story; 5 – many other stories connected to geology

B4. In what degree is the geoproduct directly connected to a specific community / person/s?

1 – not directly connected; 5 – Very well connected

Section C - A geoproduct has to have a practical and economical approach, as a tool for socioeconomic development inspired and supported by the geopark development.

C1. In what degree is the geoproduct new and innovative?

1 – not new; 5 – totally new and innovative

C2. How detailed and clear has the geopark identified different types of partnerships in geoproduct development (e.g. produced by the geopark, supported by, produced in the territory of the..., etc ?

1 – not a single partnership; 5 – clear and detailed partnerships

C3. Did you use the geopark's geoproduct development criteria defined by the Geopark in the geoproduct development, including the requirements of the Strategy (WP3)?

1 – not defined/used; 5 – Very well defined/used and main Strategy ideas included

C4. Is the geoproduct sold in regular events (geo-fairs) organized by the geopark dedicated/integrating local geoproducts?

1 – no; 5 – frequent events clearly targeted

Section D - A geoproduct is not simply another product sold in a geopark. A geoproduct comes with a deep connexion to Earth on a local level and has to generate interest and respect for the Earth pro-cesses that generated local geodiversity

D1. In what degree local producer/s are inspired by the local geodiversity / geoheritage in developing new products?

1 – very low; 5 – very high

D2. In what degree the geoproduct/s are connected or supported by the interpretation infrastructure of the geopark (taking into consideration geological and cultural components of the geopark territory)?

1 – not connected or supported; 5 – Very well connected and supported

D3. In what degree the new geoproduct/s are promoted by the geopark?

1 – very low; 5 – very high

D4. In what degree were the producers involved in training courses and/or regular meetings as part of the geopark activity plans?

1 – not at all; 5 – they are very much involved

Section E – A geoproduct is a combination of market opportunities generated by the geopark activities in tourism development and the ability to generate emotions of visitors to be interested to buy new products related to local Earth and people stories.

E1. Is the developed geoproduct connected to the geopark marketing strategy?

1 – very low connection; 5 – very high connection

E3. In what degree is the geopark involved in development, marketing and selling of the geoproduct?

1 – very low; 5 – very high

E3. Does the geoproduct contribute to the promotion of the geopark values?

1 – very low contribution; 5 – very high contribution

E4. Is there any established mechanism to evaluate the geoproduct impact (financial, appreciation, satisfaction, recognition, etc.)?

1 – no; 5 – a very well developed mechanism

LOCAL COMMUNITY	B1 - 5/5	B2 - 4/5	B3 - 5/5	B4 - 5/5	GEOPRODUCT DEVELOPMENT AND MARKETING
E1 - 1/5				C4 - 5/5	D1 - 4/5
E2 - 4/5			C3 - 5/5		D2 - 5/5
E3 - 5/5		C2 - 4/5			D3 - 5/5
E4 - 2/5	C1 - 5/5				D4 - 5/5
GEOLOGICAL HERITAGE MANAGEMENT	A4 - 1/5	A3 - 3/5	A2 - 5/5	A1 - 4/5	LOCAL GEODIVERSITY

TOTAL = 82 / 100

Table 2. Logical matrix used for the House of Volcanoes



The total score of 82 points shows that the House of Volcanoes is a viable geoproduct.

- Section A has a score of 13/20 which shows that the geoproduct is connected to local geodiversity / geological heritage and has a geological story. However, local geological assets are not sufficiently identified and defined based on scientific research.
- Section B has a score of 19/20 meaning that the geoproduct successfully integrates a story of local people and could contribute to connect geological heritage with local community.
- Section C has 19 out of 20 points meaning that the geoproduct has a practical and economical approach, as shown also in the qualitative evaluation.
- Section D gathered 19/20 points, so the degree in which the geoproduct is connected or supported by the interpretation infrastructure of the geopark is quite high.
- Section E got the lowest score – 12/20, meaning that the most urgent needs of this geoproduct are the marketing strategy of the Geopark and a viable feedback mechanism.

5. Customer satisfaction

The level of customer satisfaction for the House of Volcanoes was captured in two ways:

- By the animator guides during the discussions with the visitors. In this case most of the visitors point out two major positive remarks and one negative:

Positive remarks:

- The participants are thrilled that they can TOUCH and DO things at the House of Volcanoes. They are very happy to interact directly with the installations. This is also due to the fact that interactive interpretation is very scarce in Romania.
- The animator guide's discourse is adapted to the characteristics of the visitors. Many visitors appreciated how the House of Volcanoes can be useful for any age or level of learning.

Negative remark:

- Some of the visitors complain about the infrastructure: no running water toilet, no parking lot and no asphalt road from the main road to the House of Volcanoes.
- By the reviews on Facebook and Google Maps. The total score on Google Maps is 4,6/5 out of 38 reviews, while on Facebook the score is a maximum 5/5 from 73 reviews.

6. Conclusions and recommendations

6.1. Conclusions

The guideline introduces basic requirements as a proof for each geoproduct's direct link to local geodiversity and local tangible and intangible cultural heritage. A geoproduct is

not only a market good of high quality, but also a pretext for promotion of local culture and a tool for local producers to better understand the potential of Earth values.

Geoproducts include various geoheritage and nature conservation aspects, which can be displayed in several ways. Finally the geoproduct developed by partners, tested and presented as case studies integrate directly tangible (mineral raw materials, agricultural product) or intangible (cultural, historical, ethnological) content. Geoproducts recognized as an activity or a final market object, available indoor or outdoor and four different groups of geoproducts can be distinguished: (i) Market objects (souvenirs, food); (ii) Outdoor activities (guiding for groups/individuals in nature; rafting, biking, hiking, riding, water activities, mines and caves visiting, camp schools); (iii) Indoor activities (indoor programs in museums, info centres); (iv) Small interpretation infrastructure dedicated to specific local heritage items (houses, dinostops, geotrails) developed and managed in partnership with local partners.

Related to this diversity different target groups are involved. The main ones are: the geopark teams, local producers (SMEs or NGOs), tourists and local communities. Other target groups are tour operators, local restaurants, schools (teachers and students), cultural operators.

All geoproducts developed fulfilled the requirements and the testing process was positive. In this way the geoproduct definition developed in Output 4.1. was verified and tested for corrections and improvements by participating partners. Each of the project partners has demonstrated the creation of at least one innovative geoproduct/geoservice from the set two overall areas: geoCulture and/or geoOutdoor as part of Danube GeoTour.

Based on the project experience of Hateg and other partners, the development of a geoproduct is a long process of (a) interdisciplinary research, (b) local cooperation, (c) integration of different strategies, (d) marketing and (e) monitoring. The process has clear steps, basic rule, thresholds to be passed and assessment criteria. It can be standardised and adapted to each geopark's economic and cultural context, being a strong tool to assess the maturity and evolution of the geopark itself.

Integrating the WP3 Strategy recommendations a geoproduct is contributing to improve the tourist behavior toward respect and appreciation of local cultural and natural values and to community values. On the other hand, geoproducts economic viability strongly relies on tourism marketing possibilities (geo-tourism) as part of cultural and responsible tourism. The guideline emphasizes the need for Geodiversity Action Plans and strategies, including the compulsory rule for a geopark that it is strictly forbidden to sell minerals and fossils of/in geoparks.

The quantitative criteria developed to assess geoproducts could be used to assess the geopark management too. The tool could be applied in partner geoparks but also in other global geoparks.

The piloting process was developed in partnership and was continuously adapted to fulfil different requirements, but also to respond to local specific conditions. In this way the pilot test has a universal value, but is enough flexible to be used in specific conditions.

The guideline enables wide range of possible applications and replications not only within geoparks community, but also in protected areas (natural parks), heritage sites, specific regions or tourism destinations when designing territorial based products or services.

The output document will be publically accessible and available for other territorial management organisations. The concepts of geo-identity, territorial partnership and economic viability introduced in the guideline can be simply transferred to the other territories with distinctive products and character.

6.2. Recommendations

1. Adjust and improve the assessment mechanism of the geoproduct;
2. Integrate in the geopark's strategies the geoproduct concept and the requirements for geoproduct development;
3. Integrating the developed geoproducts in all promotion tools and materials of the geoparks and their projects;
4. Develop the existing network of geoproducts;
5. Promote to other territories the concepts and the results both in the cultural and business areas.

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8. Annexes

- 8.1. Output Factsheet
- 8.2. Promotional flyer
- 8.3. Explorers manual



GEOPARCUL DINOZAUROILOR ȚARA HAȚEGULUI



CASA VULCANILOR



EXPLOREAZĂ

DESCOPERĂ

EXPERIMENTEAZĂ

PROGRAMĂRI: 0743 688 108

ASOCIAȚIA DRAG DE HAȚEG
2018



www.casavulcanilor.ro

EXPLORATOR PRINTRE VULGANI ȘI DINOZAURI

Program educațional

Vino la Casa Vulcanilor, primește o trusă de explorator, descoperă fosile în Lada Micului Paleontolog, experimentează o erupție vulcanică, mergi pe traseul lui Strâmbă-Lemne, urcă pe un vulcan și colectează lavă, pe care o vei păstra într-un borcan special!

Durață
100min

Preț
30 lei/pers



VULGANII ȘI LIVADA SENZORIALĂ

Experimente
senzoriale



După ce treci Puntea peste Timp și vezi situl cu vulcani și fund de mare preistorică, ajungi la Casa Vulcanilor, unde te așteaptă orice activitate dorești: Poți merge desculț pe Poteca Timpului, mirosi și atinge plante aromatice sau asculta și înțelege natura.

Durață
180min

Preț
50 lei/pers

DRUMUL VULGANILOR

Tur ghidat

Haideți să pornim într-o aventură! Veți putea învăța despre formarea Pământului, erupția vulcanică, urmele unei mări dispărute, fosile de dinozaur, plante de ieri și de azi și multe altele!

Durață
40min

Preț
10 lei/pers



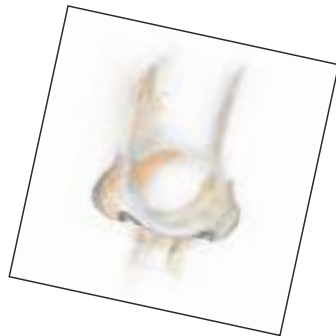
GEOPARCUL DINOZAUROILOR ȚARA HAȚEGULUI

GHIDUL EXPLORATORULUI



Casa Vulcanilor

ASOCIAȚIA DRAG DE HAȚEG
2018



Bine ai venit BINE SI VENI!

Sunteți într-un loc special, unde veți afla, veți crea și veți descoperi lucruri interesante despre Pământ, Natură și Om. Pregătiți-vă să călătoriți în timp, în vremea dinozaurilor și a vulcanilor din Insula Hațeg!

Folosiți-vă simțurile pentru a comunica direct cu natura de ieri și de azi!

Ce este Casa Vulcanilor? CE ESTE CASA VULCANILOR?

Este un spațiu de vizitare și educație creat și coordonat de Asociația Drag de Hațeg cu ajutorul Voluntarilor pentru Geoparc și a comunității din satul Densuș. Casa Vulcanilor vă oferă posibilitatea de a învăța activ, de a experimenta și explora, de a pătrunde în Povestea Pământului.

Ce este Geoparcul? CE ESTE GEOPARCUL?

Casa Vulcanilor este parte a rețelei de vizitare și educație a Geoparcului Dinozaurilor Țara Hațegului - Geoparc Internațional UNESCO coordonat de Universitatea din București. Geoparcul este un teritoriu unde valorile geologice, naturale și culturale sunt protejate și folosite în beneficiul comunităților locale.



Unde suntem?

Unde suntem?



Activitate

Pe capacul Lăzii Micului Paleontolog se află harta de mai sus. Cu ajutorul busolei din Trusa de Explorator găsiți Nordul. Comparați nordul găsit de voi cu nordul din harta de pe ladă. Sunt în aceeași direcție? Dacă nu, de ce credeți că sunt direcții diferite?

Vulcanii din Țara Hațegului

Povestea vulcanilor din Insula Hațeg este la fel de frumoasă și plină de mister precum povestea dinozaurilor.

Ne putem imagina călătorind în timp, în urmă cu peste 70 de milioane de ani. Suntem pe o insulă cu o vegetație tropicală, cu râuri, lacuri și dealuri, înconjurată de apele Mării Tethys.

Adânc, în crusta terestră, mișcările tectonice au început deja să construiască un nou lanț muntos: Carpații. Este un fenomen grandios însoțit de vulcani care erup din când în când trimițând la suprafață lavă ce se răcește în apele mării, bombe vulcanice și mari coloane de gaze, praf și cenușă vulcanică.

Timp de milioane de ani erupțiile au continuat și milioane de metri cubi de material vulcanic au fost aruncate în aer, în apele mării și în râurile și lacurile Insulei Hațeg. Le găsim azi sub formă de andezit, cenușă vulcanică, conglomerate și tufuri ce păstrează urmele plantelor tropicale.

Dinozaurii și celelalte animale din insulă au fost martori tăcuți ai acestui spectacol al naturii. Nu avem încă dovezi dacă erupția vulcanilor a provocat moartea unora dintre ele, dar putem să presupunem că zgomotele vulcanilor, cutremurele, norii de cenușă, bombele și lava topită le-au afectat puternic.

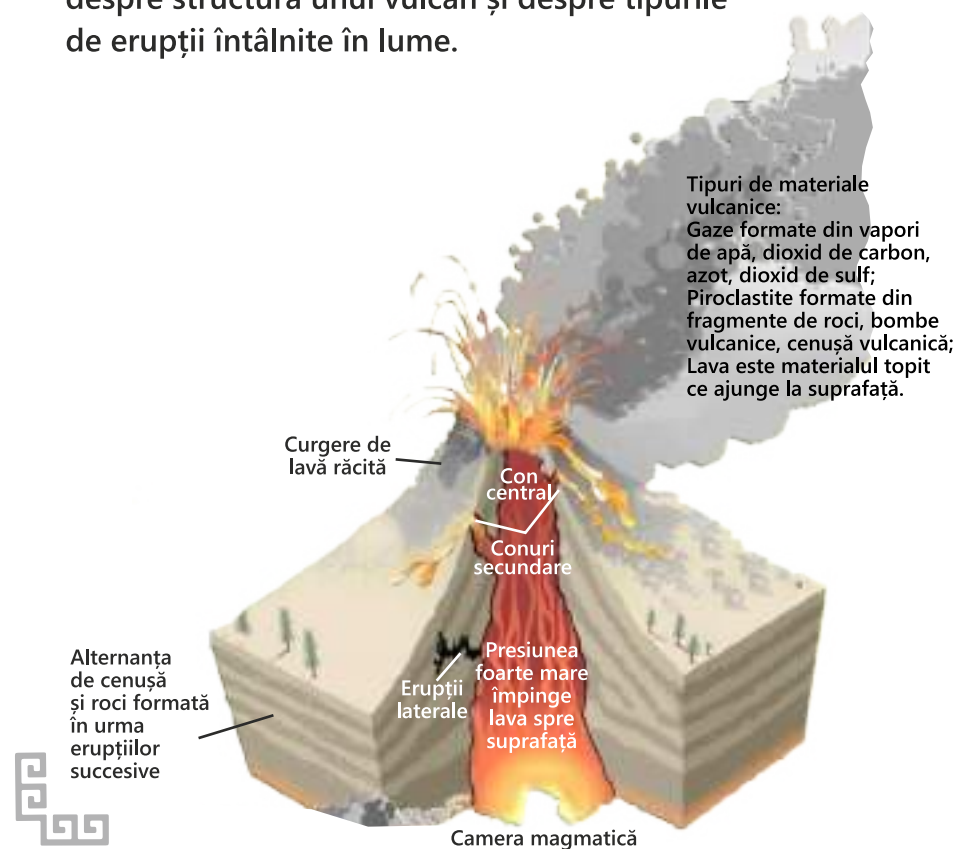


Vulcanul

Este locul unde puteți experimenta o adevărată erupție vulcanică, fie că este vorba despre o explozie sau de o simplă curgere de lavă.

Activitate

Asistați la erupția vulcanică și notați în carnetul din Trusa de Explorator observațiile voastre. Discutați cu ghidul animator despre structura unui vulcan și despre tipurile de erupții întâlnite în lume.



TIMPUL GEOLOGIC

- 4,6 miliarde ani

- 2,5 miliarde ani

- 540 milioane ani

- 540 milioane ani

- 65 milioane ani

Prezent

Precambrian

- Se formează **Sistemul Solar și Pământul**
- Se formează primele continente, oceanele și atmosfera primitivă (diferită de cea actuală)
- Apare viața sub formă de **organisme unicelulare**
- Apar primele **organisme pluricelulare (metazoare)**

Paleozoic

- Apar **primele animale cu cochilie**
- Animalele caracteristice sunt **trilobiții**
- Apar primele organisme care trăiesc pe uscat, în zonele de mlaștină sau lacuri: **primele plante, insecte, amfibieni**
- Apar **primele reptile**
- Are loc cea mai mare dispariție de animale și plante din istoria Pământului

Mezozoic

- Viața de mijloc dominată de **dinozauri, amoniți, corali**
- Apar primii **dinozauri**, primele **mamifere**, primele **păsări** și primele **plante cu flori**
- Începe formarea munților **Carpați, Alpi, Anzi** etc.
- Impactul unei meteorite duce la **dispariția** multor grupe de organisme printre care **dinozaurii și amoniții**

Neozoic

- Viața modernă dominată de mamifere, păsări și plantele cu flori
- Apare iarba și **primele savane și prairii**
- Apariția strămoșilor omului
- Răcirea climatului și **mai multe glaciațiuni**
- Apariția omului** și dezvoltarea civilizației umane cu dezvoltarea industriei și impactul negativ asupra naturii

Istoria Omenirii



- Apar puține urme, mai ales sub formă de roci metamorfice în munții din jurul **Tării Hațegului**

- Rocii formate anterior sunt transformate în roci metamorfice (**Ciapoia, Balomir**)
- Se formează corpurile de roci magmatice - **granitele din Munții Retezat**
- Se formează cele mai vechi roci sedimentare - gresile și conglomeratele formate într-o zonă continentală (**Pui**)

- Într-o mare tropicală, ce exista în această perioadă, se formează calcare (**Pui, Fizești, Strei, Zeleani**)
- Se formează bauxita de la **Ohaba Ponor**
- Ce mai mare parte a **Tării Hațegului** făcea parte dintr-o insulă cu un climat tropical unde trăiau dinozaurii "pitici", (**Sănpetru, Tuștea, Nălați, Pui**)
- Vulcani activi cu erupții și curgeri de lave (**Răchitova, Densus**)

- Se formează gresii, conglomerate (**Sarmizegetusa, Pui**) în unele locuri cu intercalații de cărbuni (**Merișor**)
- Au loc acumulări de sedimente marine (**Silvașu**)
- Se formează ghețari ale căror urme se pot vedea sub forma **căldărilor glaciare din Munții Retezat**
- Formarea peșterilor și a reliefului carstic (**Șura Mare, Cioclovina, Cheile Streiului**)
- Urme ale activităților umane în paleolitic și neolitic, resturi ale unui craniu uman (**Cioclovina, 28 000 ani**)

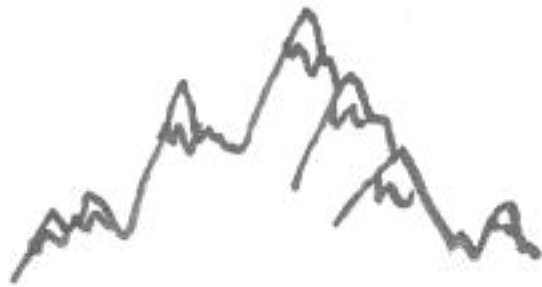


Poteca Timpului

și Aleea Formelor Împietrite

Poteca Timpului este o alee formată din segmente care conțin tot felul de materiale, naturale și făcute de om. Ea pornește de la roci metamorfice de sute de milioane de ani și ajunge pe iarba de astăzi.

Aleea Formelor Împietrite este de o parte și de alta a Potecii Timpului. Aici găsiți câteva dintre cele mai interesante roci din regiune.



Activitate

Descălțați-vă și parcurgeți poteca. Țineți minte senzațiile pe care le aveți în fiecare segment. Discutați împreună cu ghidul animator despre textura și temperatura diferitelor materiale.



Lada micului paleontolog

Este locul unde puteți deveni oameni de știință. În ladă puteți descoperi urmele lumii dispărute a Insulei Hațeg: fosile de dinozaur, urme ale viețuitoarelor marine sau ale plantelor.



Activitate

Folosind instrumentele din Trusa de Explorator, căutați și excavați fosilele. Desenați ceea ce ați descoperit pe caroiajul de mai jos, exact în poziția corectă.

	1	2	3	4	5	6	7
A							
B							
C							
D							
E							



Grădina din Nori și Copacii cu Sunete

Grădina din Nori și Copacii cu Sunete

Grădina din Nori vă prezintă câteva plante aromatice, ridicate la nivelul nasului pentru a fi mirosite mai ușor. Sunt atât plante sălbatice cât și cultivate de către om.

Copacii cu Sunete „cântă” atunci când bate vântul. Dacă urmați activitățile de mai jos veți avea o surpriză...



Activitate

Activitate

1. În Grădina din Nori încercați să ghiciți cum se numesc plantele.

a. În echipe de cel puțin două persoane, una este legată la ochi și miroase plantele, în timp ce ceilalți trebuie să-i descrie planta până reușește să o ghicească.

b. Cu ajutorul ghidului animator, discutați despre fiecare plantă în parte și aflați pentru ce este folosită de către oameni.

2. La Copacii cu Sunete

a. Suflați în furtun și vedeți ce se întâmplă...

b. Discutați împreună cu ghidul animator ce înseamnă sunetul și cât de importantă este vibrația în Univers.



Sala de Concerte și Foișorul

Sala de Concerte și Foișorul

Sala de Concerte și Foișorul Comunicării sunt locurile unde asistați la spectacole și unde comunicați cu alți vizitatori.



Activitate

Activitate

1. În foișor urmați instrucțiunile ghidului. El vă va îndruma cum anume să descifrați mesajele lăsate de vizitatorii care au trecut pe aici înaintea voastră. Apoi și voi la rândul vostru veți lăsa propriile mesaje.

2. În Sala de Concerte faceți liniște timp de 30 de secunde. Ce ați auzit? Discutați despre sunetele auzite și ce vă spun ele despre natură și despre sat.



Imagine și Imaginație

Imagine și Imaginație

Este expoziția de artă a celui mai bun artist din toate timpurile - Natura. Lucrările sale sunt puse în valoare de ramele colorate pe care le întâlniți prin livadă.



Activitate

Activitate

Folosind materialele pe care vi le dă ghidul animator, poziționați ramele unde vi se pare că formează un tablou interesant

Traseul lui Strâmbă-Lemne

Vă invităm să intrați într-o lume magică, creată de plante, roci și om, de-a lungul a zeci de ani.

Ieșiți din livadă pe poarta din spate, de lângă copacii cu sunete. Străbateți poienița și intrați în pădurea de fag și carpen de la poalele dealului vulcanic.

Copacii de aici au o înfățișare curioasă, rezultat al adaptării la mediu și al tăierilor succesive.



Casa Vulcanilor este parte a infrastructurii de interpretare a Geoparcului Dinozaurilor Țara Hațegului - Geoparc Internațional UNESCO coordonat de Universitatea din București



Acest material a fost realizat în cadrul proiectului „Educație în Geoparc cu Andi Andezit”



Finanțat de Fundația pentru Parteneriat și MOL România



Asociația
Drag de Hațeg

Implementat de
Asociația Drag de Hațeg

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Concept și coordonare: Cristian Ciobanu
Grafică: Petra Lînaru, Roberta Gașpar, Dan Palcu
Consultanță de specialitate: Alexandru Andrașanu, Ioan Seghedi, Răzvan Gabriel Popa

Activitate

1. În echipe sau individual alegeți-vă câte un copac interesant.
a. Desenați copacul transformând formele ciudate în animale reale sau imaginare.

b. Creați o poveste pornind de la formele copacului ales de voi

2. Străbateți pădurea și ieșiți pe dealul vulcanic. Imediat în stânga aveți un punct de belvedere de unde puteți observa munții Poiana Ruscă și satele Densuș și Ștei.

Dealul este format din roci vulcanice apărute în urma erupțiilor de acul 70 de milioane de ani.

Folosind ciocănelul și spatula din Trusa de Explorator, puneți bucățele de rocă vulcanică în borcănel. Acestea se numesc eșantioane. Puteți lua acasă borcănelul cu lavă preistorică.

Sala de Concerte
The Concert Hall

Capacii cu sunete
The Sound Trees

Foisorul Comunicării
The Communication Shed

Volcanul
The Volcano

Grădina din Nori
The Garden In The Clouds

Expoziția
Imagine și Imaginație
Image and Imagination
Exhibition

Lada micului paleontolog
Young Paleontologist's Box

CASA VULCANILOR
HOUSE OF VOLCANOES

Poteca Timpului
The Time Trail

Aleea Formelor Împietrite
The Trail Of The Shaped Forms

