



**GUIDELINES FOR THE ASSESSMENT OF THE  
INTERNATIONAL SIGNIFICANCE OF  
GEOLOGICAL HERITAGE  
IN UNESCO GLOBAL GEOPARK APPLICATIONS**



## Preamble and premise

According to the statutes of the International Geoscience and Geoparks Programme (IGGP) and operational guidelines for UNESCO Global Geoparks (UGGp), a **UNESCO Global Geopark must contain geological heritage of international significance, which has to be independently verified by scientific professionals**. The guidelines also indicate that UNESCO secretariat will liaise with the **International Union of Geological Sciences (IUGS)** and other organizations to obtain independent desktop assessment (see framework and annex 1).

Since 2016, the IUGS International Commission on Geoheritage has been conducting the desktop assessment annually and providing to UNESCO a report that contains an average of four individual assessments per aspiring geopark and a final summary with a final IUGS statement. During the last six years this evaluation process has been adapted and improved. Our experience shows that the quality of the dossiers provided is very uneven and the geological descriptions and the justification for the international significance is insufficient in many dossiers. In this sense, the criteria for the assessment of the international significance should be better defined in order to help IUGS evaluators and applicants.

In October 2020 the UNESCO Global Geoparks council (UGGp council) and UNESCO secretariat invited IUGS to create a group of experts with wide experience on geological heritage and Geoparks to develop clear, user friendly and well adapted guidelines.

This working group has been coordinated by the IUGS International Commission on Geoheritage and includes a set of international experts from the IUGS and the Global Geoparks Network (GGN). See list of authors in the guidelines.

These guidelines are the result of broad and in-depth discussions that took place between January 2021 and July 2023 and were adopted by the UGGp council in September 5.

## Purpose and objectives

The new guidelines aim to help applicants to produce a good and well-organized dossier, which will allow IUGS evaluators to make a better desktop assessment based on clear evaluation criteria.

This procedure has been agreed among the members of the working group and it is strictly aligned with the statutes of the International Geoscience and Geoparks Programme and Operational guidelines for UNESCO Global Geoparks.

September 2023

**Dr. Asier Hilario**

Chair. IUGS – International Commission on Geoheritage

Coordinator. IUGS-GGN working group for geological heritage assessment



# GUIDELINES FOR THE ASSESSMENT OF THE INTERNATIONAL SIGNIFICANCE OF GEOLOGICAL HERITAGE IN UNESCO GLOBAL GEOPARK APPLICATIONS

## FRAMEWORK

According to the statutes of the International Geoscience and Geoparks Programme and operational guidelines for UNESCO Global Geoparks, a **UNESCO Global Geopark must contain geological heritage of international significance which has to be independently verified by scientific professionals.** These guidelines also indicate that the UNESCO secretariat will liaise with **IUGS** and other organizations to obtain independent desktop scientific assessment.

According to UNESCO guidelines the international significance of the geological heritage is directly linked to the **scientific value of sites and landscapes** of the aspiring UNESCO Global Geoparks (aUGGp).

Questions included in the application self-evaluation document A and checklist indicate that an aspiring UNESCO Global Geopark (aUGGp), should contain:

- 1) A well-documented inventory - data base of geological sites.
- 2) A geological map (as precise as possible) with appropriate symbols, colouring and an appropriate legend including the geochronological periods recognized by the IUGS.
- 3) An appropriate and exhaustive list of scientific publications about the geology of the territory, highlighting international publications.

Please see Annex 1 for quotes related to geological heritage included in the self-evaluations Document A and checklist.

### **UGGp statutes and operational guidelines**

*“A UNESCO Global Geopark must have a clearly defined border, be of adequate size to fulfil its functions and contain geological heritage of international significance as independently verified by scientific professionals.”*

*“The UNESCO Secretariat shall liaise with IUGS and other organizations, as appropriate, to obtain independent, desk-top scientific assessments.”*

*“IUGS will be asked to coordinate this role and to ensure that all statements on the scientific value and international significance of the geological heritage of an aspiring UNESCO Global Geopark are available annually in time so that evaluators can access them ahead of the field evaluation mission.”*

*“The international significance of the geological heritage of each new UNESCO Global Geopark application will be assessed by desk-top advisors following specific and publicly available scientific criteria.”*

*“A UNESCO Global Geopark must contain geology of international significance.”*

*“UNESCO Global Geoparks must be single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education, research and sustainable development.”*

*“Based on the international peer-reviewed, published research conducted on the geological sites within the area, the scientific professionals make a globally comparative assessment to determine whether the geological sites constitute international value.”*

# DEFINITION AND GUIDELINES

## Geological heritage of international significance



### 1. Definition and key ideas

Geological heritage of international significance in a UNESCO Global Geopark (UGGp) is based on a significant representation of one or more geological processes or elements that bring a meaningful contribution to the understanding of the Earth, its climate or life history and evolution or to the advancement of the geological sciences in a specific context.

The definition of the geographic / geological context of the aUGGp and its main type of geological interest is fundamental to gauge the scale in which the international significance will be evaluated.

The international significance must be clearly justified by the applicant based on the scientific knowledge available for the territory and following the template provided in these guidelines. This justification must be based on a well-described list of geological sites, with scientific citation, which as a whole will provide a general view of the geological value of the territory.

### 2. Geographic and geological context

For the purpose of this evaluation, the term “international” should not be considered in a strictly administrative way, but rather in a regional context.

*A UNESCO Global Geopark with geological heritage of international significance must contain geological features that can be considered among the best examples of their kind at the country level, at the GGN’s regional network (EGN, APGN, GeoLAC...) and within the frame of their main geological context.*

### 3. Type of geological interest

Any reference to geological features in this document signifies all related disciplines such as: stratigraphy, sedimentology, paleontology, tectonics, petrology, volcanology, mineralogy, geomorphology, hydrogeology, pedology, impact structures or history of geosciences among others.

An UGGp can typically have geological features included in more than one type of geological interest or discipline (table 3.1).

For the purpose of this evaluation, the applicant should indicate at least one main geological type of interest in which the geological features can be considered to be of international scientific significance. (*point 3.3 of the template*)

#### For instance:

*An UGGp located in the Alps should have geological features that can be considered to be the best of their kind (stratigraphy, tectonics, geomorphology...) in the geological context of the Alps, which includes countries like France, Italy, Switzerland, Austria or Germany and within the European Geoparks Network (EGN).*

*An aUGGp with outstanding paleontological features located in Thailand should have paleontological features that can be considered the best of their kind (paleontology) at the level of the Asia Pacific Geopark Network (APGN).*

#### 3.1 Distinctive geological features

An aspiring UNESCO Global Geopark (aUGGp) should ideally have distinctive and complementary geological features, in comparison with those existing geoparks located in the same geological context.

Applicants should indicate if there are geoparks with similar geology in the GGN regional network (EGN, APGN, GEOLAC...) highlighting their main distinctive geological features (*point 3.5 of the template*).

Table 3.1. Type of geological interest (modified from the IUGS 2018 guidelines proposal and IUGS Geological Heritage Sites initiative)

Type of geological interest	Definition / Examples
<b>1. History of Geosciences</b>	Sites fundamental to understand the foundations, the development and the history of Geosciences. These sites include the theories and historical proposals of a global timescale or sites where significant geological processes or rocks or deposit types were first described. In addition, it includes sites associated with key personalities in the history of the Geosciences and major historical events related to geological and geomorphological processes.
<b>2. Stratigraphy, sedimentology and past climate</b>	Geological time scale represented in sedimentary rocks, their structures and sequences, stratotypes of major boundaries (GSSPs), chronostratigraphy, biozones, type sites of broad significance, palaeomagnetic reference sequences... Global sedimentary geology, sedimentary environments, events, processes and record of past climate evolution.
<b>3. Palaeontology</b>	All types of evidence of past life, including macro- and microfossils, trace fossils and plants remains, also biogenic structures, chemofossils and biomarkers – including as evidence of past ecosystems, evolution, biozones, exceptional preservation sites (i.e. Lagerstätten), etc.
<b>4. Igneous and metamorphic petrology</b>	Igneous and metamorphic rocks and complexes with key information to understand the origin and evolution of the Earth's interior and its geodynamic evolution.
<b>5. Volcanology</b>	Important volcanic features, forms (dome, cone, crater, caldera, maar...) and their products (lava flows, dyke complexes, volcanoclastic deposits....) and current eruptions and geothermal manifestations with key information about the Earth's interior and its tectonic setting.
<b>6. Tectonic and Structural geology</b>	Deformation structures at different types and scales (folds, faults, thrusts...) that represent geodynamic contexts and processes (orogenic belts, island arcs, subduction zones, rifts, ophiolites...) that help understand the evolution of the lithosphere and the forces that cause its deformation including neotectonics and current and historical earthquakes.
<b>7. Mineralogy and metallogeny</b>	Processes and economic (ores) and non-economic minerals of all types, metallogenic processes through time, metallic and non-metallic sources, mineral type localities, assemblages, etc.
<b>8. Geomorphology</b>	Landforms and exogenous related processes (fluvial, karst, coastal, desert, glacial and periglacial, mass movement features...) that allow understanding the current landscape and its evolution through time. Pedological features (soils, regoliths...) are also included in this chapter.
<b>9. Hydrogeology</b>	Hydrological processes and elements related to groundwater and surface water: aquifers, springs, groundwater, mineral waters, lakes, rivers... Human treatment of water is also included in this chapter.
<b>10. Geological hazards</b>	Natural hazards related to geological processes like earthquakes, volcanic eruptions, mass wasting, floods, tsunamis, sea level rise...
<b>11. Impact structures and extraterrestrial rocks</b>	Rock and landscape evidence of extraterrestrial processes (e.g. geochemical anomalies and impact products), meteorite craters and meteorites.

#### **4.- Geological heritage of international significance / scientific value / other values**

The value estimation of the geological sites and elements (geological heritage) can be based on different approaches. In the context of UNESCO Global Geoparks, geological sites can be valuable for their educational, geotouristic or scenic value or for their links with natural, cultural and traditional manifestations.

However, according to the statutes of the International Geoscience and Geoparks Programme and operational guidelines for UNESCO Global Geoparks (see quotes in Annex 1) the geological heritage with international significance should be related to the scientific value of sites and landscapes. Thus, for the purpose of this IUGS evaluation only arguments and justifications related to the scientific value can be considered. This does not exclude that other kinds of values (aesthetic, spiritual, cultural, educational, geotouristic...) can be indicated as complementary information.

The scientific international significance must be justified based on the geoscientific knowledge and publications available for the territory.

##### 4.1 Scientific publications / bibliography

The scientific value can be demonstrated explaining the scientific tradition and research activity in the territory and providing a complete list of international and national scientific references based on the geological features of the territory. These should be properly cited in the general description and in each geosite's description and justification.

All the publications available must be listed and classified in two groups: a) international publications and b) national publications. (*template point 5.2*)

In the cases where no (or very few) international scientific papers are available, the information contained in any national geological map or any kind of national scientific publications can be used to support the importance of the geological heritage. The titles and abstracts of the main papers and all the relevant information must be translated into English.

Additionally, expert opinion about the area of interest can also be used.

##### 4.2 Justification of the international significance

Regardless of the amount and quality of the scientific publications provided, all the applicants must justify their international significance. In the case where no scientific publications are available (or very few), this justification is even more important. The applicant must demonstrate that the geological features of the territory are among the best of their kind for their specific geological and geographical context. (*template point 5.1*)

#### **5. General description, geological map and inventory of geological sites**

##### 5.1 General description

A general description of the geology of the applicant territory must be provided including a geological context, tectonic setting, geological history, main geological units, paleontological evidences, orogenic events and landscape evolution. The applicant should point out the main type of geological interest in which international significance can be considered. (*template point 3.1 – 3.6*)

##### 5.2 Geological map

The dossier should contain a geological map of the territory as precise and informative as possible. Other maps, such as geomorphological and tectonic maps should be included if these aspects are relevant in the territory. A comprehensive legend must be also provided.

A detailed geological map is desirable (*template point 3.4*). In those cases where a detailed map does not exist and cannot be produced this situation needs to be properly justified and a regional map can be used. Check geological maps available from the national geological institutions.

##### 5.3 Inventory of geological sites

***A geological site in an UGGp is a significant representation of one or more geological processes or elements that brings a meaningful***

***contribution to the understanding of the geology of the territory. A geological site has a specific location and its boundaries are well defined.***

Note that the term geosite is not used in these guidelines. This term has usually a wider meaning in the context of UGGp. For the purpose of this evaluation please use only sites with geological interest, named *geological sites*.

The geological features of any UGGp must be well reflected in a complete descriptive list of geological sites, which in a group will provide a general view of the geological value and geological diversity of the territory. Geological sites are the main elements to be evaluated.

The distribution of the sites must be geographically coherent and should represent well the geological diversity of the aUGGp territory. The number of sites must be manageable and depends on the size of the territory, its geological richness and the scale of definition (*template point 4.1*).

The location of the geological sites must be clearly plotted on both a geological map (when possible) and a geographical map (*template point 3.4*).

All the geological sites must be listed in a table in which the main geological interest and the relevance of each site (global reference, international, national or local relevance) must be indicated (*template point 4.2*). Those sites considered by the applicant to be of international value must be listed first.

A selection of the most relevant sites that represent well the geological features of the geopark must be described correctly using good images, maps and diagrams and following the template provided in these guidelines (*template point 4.3*). All the sites with international value and global references should be described. Also to be included are the most relevant sites of national or local significance that might be needed to provide a complete view of the aspiring geopark's geological values (*template point 4.3*).

## **6. Geological collections and ex situ or movable geoheritage**

Fossils, rock, minerals and meteorite collections in museums or visitors' centers located in the territory can also be considered as *geological heritage of international significance* only if the samples have been collected inside the geopark.

## **7. Writing and using of proper scientific language**

The application must be correctly written in English and must use a correct scientific terminology and writing standards, including correct and clear citation of references provided in the bibliography.

It is strongly recommended that a geoscientist with a broad knowledge on the geological heritage of the territory coordinates and writes the application.

Note that there are no word or page limitations. Applicants can provide as much information as they consider necessary, but the dossier must contain only relevant information avoiding duplications and long descriptions.

## **8. Template for UGGp candidates**

The description of the geological heritage and the justification for its international scientific value must follow the template provided at the end of these guidelines, which should be added as annex 2 in the general application.

The assessment made by the IUGS desktop evaluators is directly dependent on the quality of the information given by the applicants.

## **9. References**

<https://www.unesco.org/en/iggp/geoparks/about>



## 10. List of authors

Asier Hilario (Spain) <sup>1, 2, 3</sup>  
Benjamin Van Wyk de Vries (France) <sup>1, 4</sup>  
Jianping Zhang (China) <sup>1, 2, 3</sup>  
Juana Vegas (Spain) <sup>1, 4</sup>  
Stanley Finney (USA) <sup>1</sup>  
Nickolas Zouros (Greece) <sup>2, 3</sup>  
Guy Martini (France) <sup>2, 3</sup>  
Marie-Luise Frey (Germany) <sup>2, 3</sup>  
Artur Sa (Portugal) <sup>3</sup>  
Manuel Schilling (Chile) <sup>3</sup>  
Babis Fassoulas (Greece) <sup>2, 3</sup>  
Asfawossen Asrat (Ethiopia/Bostwana) <sup>2, 4</sup>  
Setsuia Nakada <sup>2, 3</sup>  
Carles Canet <sup>2, 3</sup>  
Helga Chulepin <sup>2, 3</sup>  
Alirezza Amrikazemi <sup>2, 3</sup>  
Marie Noelle Guilbaud (M xico) <sup>4</sup>  
Naomi Irapta (Phillipines) <sup>4</sup>  
Marton Pal (Hungary) <sup>4</sup>  
Karoly Nemeth (Hungary / New Zealand) <sup>4</sup>  
Dan Tormey (USA) <sup>4</sup>  
Dan Kelley (USA) <sup>4</sup>

1. IUGS–International Commission on Geoheritage.
2. UNESCO Global Geoparks Council ( 2019 – 2023)
3. Global Geoparks Network
4. IUGS desktop assessment handlers

## 11. Acknowledgements

Stanley Finney, IUGS secretary general, for his support and encouragement.

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To all international experts who joined IUGS to conduct this fundamental contribution for the development of UGGp.





# EVALUATION PROCEDURE

The IUGS International Commission on Geoheritage will coordinate a desktop assessment process for all UNESCO Global Geopark applications based on the principles defined in this document. The IUGS will provide to UNESCO an annual dossier with the final statement about the geological heritage of international significance for each application.

The application should follow the template proposed in these guidelines, which in turn can be presented as Annex 2 in the general application. This Annex 2 will complement information provided in section “E.1.1 Geological heritage and conservation” of the general application dossier and the reduced information of the “Annex 5 One page geological and geographical summary”.

## Evaluation procedure and deadlines

**Before 15 January** UNESCO Secretariat will send to the IUGS – International Commission on Geoheritage all the geological dossiers (Annex 6) of the applications. UNESCO Secretariat will initially check all the documents to see if any important information is missing.

**15 January – 30 January.** The team of the IUGS International Commission on Geoheritage will make a quick analysis of all the geological dossiers and will distribute them among the handlers (2 – 4 full dossiers per handler), who will double check if the application is well adapted to the template and if there is any important information missing.

In the later case, the IUGS – International Commission on Geoheritage will inform UNESCO Secretariat, who will request it from the applicant. This additional information should be sent before 10 February.

**1 February – 15 February.** The IUGS team and the handlers will search for the most appropriate evaluators according to their expertise and each territory’s main geological characteristics. A table with all

the evaluators and applications will be created.

Each dossier will be assessed by four evaluators (if possible) with the following profiles: a) national thematic experts, b) international thematic experts and c) the handler who will make the final compilation and assessment.

**15 February – 15 April.** IUGS evaluators will make their desktop assessment and will send it to the handler before 15 April.

**15 April – 30 April.** Each handler will make a summary report of each application in which the most important quotes from the evaluators will be compiled and a final statement about the geological heritage of International significance will be proposed. All the assessment reports from the evaluators and the summary report from the handler will be sent to the IUGS-International Commission on Geoheritage (Sub-Commission on Sites). Late reviews will also be collated in this time.

**30 April – 15 May.** The IUGS – International Commission on Geoheritage will make a final dossier with all the summary reports and a final and balanced IUGS statement about the international significance for each application. The final dossier will also include recommendations related to the geological heritage that should be considered by UNESCO field evaluators.

**15 May – 30 May.** The IUGS – International Commission on Geoheritage will send the final dossier and all the evaluation reports to UNESCO Secretariat, to be added to the UNESCO field evaluators’ documents before their evaluation missions.

## IUGS final statement

According to the statutes of the International Geoscience and Geoparks Programme and operational guidelines for UNESCO Global Geoparks, the main purpose of the IUGS desktop assessment is to determinate whether the aspiring geopark contains geological heritage of international scientific significance. This final statement should be made based on the information provided by the applicant, to which IUGS evaluators will contribute with their own knowledge and experience.

The evaluation template provides an average score (1 to 4) for the quality of the dossier and for the geological heritage international significance justification. This scoring is illustrative and does not give a final statement. However, it is strongly recommended that:

- **Quality of the dossier final average scoring should not be below 2.**

- **International justification final average scoring should not be below 2,5.**

According to all the review results , the final IUGS statement will be classified into four categories with additional comments for each application.

The international scientific significance is demonstrated only in green and yellow applications. Orange applications can have potential for international value and could be encouraged to improve their dossiers in the future. Red applications are those considered to have no international significance with the scientific information available to date.

Table. 1. Levels of international significance of the geological heritage of UGGp applicants.

INTERNATIONAL SIGNIFICANCE	DEMONSTRATED	<b>Green.</b> There is geological heritage of international significance and it has been clearly described and well justified in the dossier, both with a general view and with a good selection, description and justification of sites.
		<b>Yellow.</b> There are geological elements with international significance, but they have been only partially described and partly justified in the dossier.
	NOT DEMONSTRATED	<b>Orange.</b> There might be geological elements with potential for international value, but they have not been correctly described and justified in the dossier. An improved version of the dossier could give an opportunity to describe and justify the international significance in the future.
		<b>Red.</b> There is not enough valuable description and/or justification to prove that the geological elements of the territory might have international significance with the information available up to date.



## TEMPLATE FOR APPLICANTS

# Geological heritage description and justification of international significance for UNESCO Global Geopark applications

Annex 6 of the general application dossier

IMPORTANT NOTE: There are not word or page limitations. You can provide as much information as you consider necessary, but please make sure that this is only relevant and well structured information and avoid duplication and too long descriptions. Use of well-described maps, diagrams and suitable annotated photos helps reduce text and increases the relevance.

## Index

### 1. Name of the aspiring Geopark application

### 2. Geographic location of the aspiring Geopark

Please provide a short geographic location with two maps (Please, include accurate legends)

Map 2.1. Geographic location of the aspiring geopark

Map 2.2. Map of the territory with the main topographic features and the location of the main municipalities, main road network, main hydrographic features, names and the geological sites.

### 3. General geological description (*Guidelines point 5*).

#### 3.1. Geological setting

Please provide a short description of the geological setting of the aspiring geopark and provide a regional geological map with the location (boundaries or square) of the territory.

#### 3.2. Main geological arguments and headline

Please summarize the main geological arguments for an international significance of the territory to become a UNESCO Global Geopark.

#### 3.3. Type of geological interest / level of significance table (*guidelines point 3*).

Please fill in the attached table with an X indicating the level of significance for each framework represented in the aspiring geopark. Read table 3.1 in the guidelines for further information.

Table 3.3 Geological framework	Level of significance			
	Global reference	International	National	Local
1. History of Geosciences				
2. Stratigraphy and Sedimentology				
3. Palaeontology				
4. Igneous and Metamorphic Petrology				
5. Volcanology				
6. Tectonics and Structural Geology				
7. Mineralogy and metallogeny				
8. Geomorphology				
9. Hydrogeology				
10- Geological hazards				
11. Impact structures and extraterrestrial rocks				

### 3.4 Geological map with sites (*guidelines point 5.2*).

Please provide a geological map as precise as possible including the boundaries of the aspiring geopark. The geological map should show all the main geological units and the location of the geological sites and should contain a clear legend. Including basic topographic information in the geological map is strongly desirable.

Additionally, tectonic, structural and geomorphologic maps should be included if the territory has such values.

### 3.5. Geological description

Please provide a complete but succinct description of the main geological features of the aspiring geopark (units, structures, landforms etc.). Provide good pictures and scientific diagrams when necessary to illustrate your explanation.

### 3.6. Geological history / evolution

Please provide a complete but succinct description of the geological evolution of the territory. Provide good pictures and scientific diagrams when necessary to illustrate your explanation.

### 3.7. Distinctive geological features (*guidelines point 3.1*)

Please indicate if there is any existing UNESCO Global Geopark in the same geological context or within the same GGN regional network of the applicant with similar geological heritage and do provide a short description about the main distinctive geological features of the applicant.

## 4. Geological sites list (*guidelines point 5*)

Please read carefully the section 5 of the guidelines to select the geological sites.

### 4.1 Number and distribution of geological sites

Please give an explanation about:

- The number of geological sites.
- The way they have been selected. Why and how did you choose these sites?
- The geographical and geological coherence of the sites distribution on the map. Are they well represented geographically? Do they represent well the geological diversity of the territory?

## 4.2 Inventory of geological sites

Please fill the attached table with the list of all the geological sites indicating their main type of geological interest and mark their level of significance. Add as many lines as needed and place first those sites with international value. Use numbers to refer to the geological interest (table 3.1 of the guidelines). Note that those sites marked to be international or global reference must be justified in the description file of each site. Section 4.3 of this template.

Table 4.2. List of geological sites		Type of Geological interest	Level of significance			
N	Name of the geological site		Global reference	International	National	Local
1	K/ Pg boundary of Zumaia	2	X			
2	Giant trilobites of Canelas	3		X		
3	Genbudo cave	1	X	X		
4	Shillin karst	8	X	X		
5	Permian Triassic boundary at Old Wife			X		
6	Thrust complex of Monte Perdido	6		X		
7	Upper Ordovician Paleontological site	3			X	
8	.....					
9	Coastal landslides from Green point area	8				X
10	Shallow lake system of Los Ilanos	8				X
..	...					

NOTE: delete the examples provided and create your own table with all your geological sites. Place first those sites with international value.

## 4.3 Description files for selected geological sites

Please select the most relevant geological sites (all the sites stated to have international significance plus a selection of national/local sites which allows to have a general view of the aspiring geopark's geology) and provide a detailed description of each site by filling the following template. Lay out each file (geological site) with an easy understanding structure.

### TEMPLATE FOR THE DESCRIPTION OF THE GEOLOGICAL SITES

- NAME OF THE GEOLOGICAL SITE (capital letters). The name of the site must reflect the main geological element.
- Location (coordinates)
- Geological period (according to IUGS – ICS chart)
- Type of geological interest
- Level of significance (local, national, international..)

- Geological description of the site. Use only relevant information to make a complete description of the site.

- Good and relevant pictures and scientific diagrams needed for a full understanding.

Only for those sites considered having international value:

- Clear justification for the international significance.

- Supporting bibliography.

## 5. Justification of the international significance and scientific references

### 5.1. Justification of the international significance (*guidelines point 4.2*).

Please provide a sound and complete justification to prove that the geological heritage of the aspiring geopark has international scientific significance. This explanation should clearly demonstrate that some of the geological features of the aspiring geopark are among the best of its kind in their specific geological context and considering their main type of geological interest.

### 5.2. Scientific tradition and bibliography (*guidelines point 4.1*).

Please give a concise and complete view of geoscientific tradition and the research activity within the aspiring geopark.

Provide a complete list of scientific publications (international and national) directly related to the geological features and sites of the aspiring geopark. National publications titles and abstracts must be translated into English.

The most relevant publications must be cited in the text.

## 6. Additional annex

Add any other information data that may help evaluators to assess the international geological significance of the geological features.



# TEMPLATE FOR IUGS DESKTOP REVIEWERS



## Assessment of international significance of geological heritage in UNESCO Global Geopark applications

### Preamble

Your desktop review will serve the IUGS International Commission on Geoheritage to determine if the aspiring UNESCO Global Geopark contains geological heritage of *International Scientific Significance*. Your review will be compiled together with other reviews and the resulting final dossier that will be sent to UNESCO Secretariat. This final statement will be part of the UNESCO Global Geoparks Council discussion.

Your judgement should be based on the document provided: the descriptions in the dossier and the cited international scientific publications must be able to justify this significance. You may also bring to bear your own experience and knowledge in assessing the geological heritage potential of the area, indicating if there are important features that have been omitted. You can provide helpful comments for improvement of the general geological description, the geological sites list and respective descriptions, as well as the specific justification for its *international significance*.

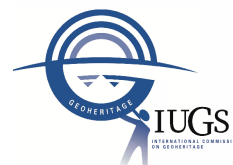
The geological heritage of *international significance* is considered here only for its scientific values and does not mean that the geological features have to be the most representative in the world, but rather that they must be considered to be among the best of their kind considering the regional geological / geographical context of the applicant territory and the main type of geological interest (guidelines, point 2 and 3). Significance does not mean exclusive, or outstanding, simply significant because it is of demonstrative importance.

According to the UNESCO Global Geoparks Operational Guidelines, paragraph 4.3: *The international significance of the geological heritage of each new UNESCO Global Geopark application will be assessed by desktop advisors following specific and publicly available scientific criteria. IUGS will be asked to coordinate this role and to ensure that all statements on the scientific value and international significance of the geological heritage of an aspiring UNESCO Global Geopark are available annually in time so that evaluators can access them ahead of the field evaluation mission. Other organizations may also be involved as appropriate.*

**Important note:** before making the desktop assessment please read the full document of the guidelines in detail.



# TEMPLATE AND CHECKLIST FOR IUGS DESKTOP REVIEWERS



## INFORMATION CONCERNING THE APPLICANT UGGP

<b>Name of the applicant aUGGp</b>	
<b>Country</b>	

## INFORMATION CONCERNING THE REVIEWER

<b>Name</b>	
<b>Nationality</b>	
<b>Organisation</b> Name and postal address ORCID / Scopus ID	
<b>Email address</b>	
<b>Do you have any direct relation or conflict of interest with the applicant territory?</b>	YES / NO. If yes, please specify
<b>Please briefly specify your competence for reviewing the geological content of this application</b>  How well do you know the area or the geological subject?  Have you visited the area?  Are you involved in scientific publication related to the territory?  etc.	

## EVALUATION OF THE INFORMATION PROVIDED IN THE DOSSIER

*NOTE: all the numbers refer to the section of the applicants' template.*

	NOTE: see scoring legend below the table	Score
<b>Checklist of information provided</b> Numbers refer to the corresponding point in the dossier provided (template for applicants of these guidelines)	2.1 Geographic location map	
	2.2 Topographic map of the geopark including boundaries and location of the main municipalities and geological sites	
	3.1 Geological or tectonic setting map with a proper legend	
	3.3 Main geological interest of the geopark and level of significance. Table 3.3 of the template.	
	3.4 Geological map of the geopark area	
	3.5 – 3.6 Description of the general geology, geological history, main units and main arguments	
	4.2 List of geological sites with their main type of interest and level of significance. Table 4.2 of the template.	
	4.3 Description files for the main geological sites with photos	
	5.1 Justification of the International significance	
	5.2 List of references (should be cited in the description)	

### QUALITY OF THE DOSSIER FINAL AVERAGE SCORE CHECKLIST

#### SCORE LEGEND:

**4. Comprehensive.** The information is well organised, accurate, complete and gives all data necessary to allow the evaluator to understand the setting of the aspiring geopark.

**3. Sufficient** – The information is enough to allow the evaluator to gain a general idea about the setting of the aspiring geopark.

**2. Incomplete** – The information provided is incomplete or not presented at an appropriate scientific level. Hence, provides no more than a very general introduction to the setting of the aspiring geopark

**1. Insufficient** – The information has not been provided or does not even allow the evaluator to form a very general idea about the setting of the aspiring geopark.

#### NOTE:

Sections 3.3, 3.5, 4.2, 4.3 and 5.1 should be always catalogued as sufficient or comprehensive.

A desirable dossier should not have less than 2,5 average points.

If the final average is below 2 the dossier will be considered insufficient.

GEOLOGICAL DESCRIPTION (point 3 of the applicants template)

<p><b>Is the geological description of the applicant territory accurate?</b></p> <p>Please make any comment about the quality of the description and documents provided (geological setting, map, general description, geological evolution...)</p>	<p><i>Yes / Sufficient / No.</i></p> <p><i>Please provide explanations</i></p>
<p><b>Have the main geological interests and their level of significance been correctly defined?</b></p> <p>Table 3.3</p>	<p><i>Yes / Sufficient / No.</i></p> <p><i>Please provide explanations</i></p>
<p>Is there any aspect of the geology of the applicant area that has not been addressed properly in the application?</p>	<p><i>Yes / No.</i></p> <p>If yes, please provide explanations and details</p>
<p><b>3.7 Distinctive geological features</b></p> <p>According to the information provided and your own experience, is there any UGGP in the regional network of the applicant with similar geological features?</p>	<p><i>Yes / No.</i></p> <p>If yes, please provide short explanation on the main geological novelties contributed by this application.</p>

GEOLOGICAL SITES INVENTORY AND DESCRIPTION (point 4 of the applicants template)

<p><b>4.1 Number and distribution of geological sites.</b></p> <p>Do the geological sites of the aspiring geopark represent well the geological diversity of the territory?</p> <p>Do the geological sites have a coherent geographic and geological distribution in the aspiring geopark?</p>	<p><i>Yes/No. Please provide explanations</i></p>
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<p><b>4.2 Significance of the geological sites</b></p> <p>Have the geological sites been well catalogued according to their International, national or local value? (table 4.2)</p>	<p>Yes/No. If yes, please provide explanations and details</p>
<p><b>4.3 Description files of geological sites</b></p> <p>Are the description files of the selected geological sites well presented according to the template?</p> <p>Is the information provided in the files correct, comprehensive and complete?</p> <p>Are the citations to bibliography correct and relevant ?</p> <p>Is the relevance, quality of the text, pictures and diagrams good?</p>	<p>Yes / Sufficient / No <i>Please provide explanations</i></p>

**INTERNATIONAL SIGNIFICANCE** (point 5 of the applicants template)

Please score according to: <b>4. Yes, clearly</b> <b>3. Yes, partially</b> <b>2. Hardly</b> <b>1. No</b>		<b>Score</b>
<p><b>5.1 Justification of the geological international significance</b></p> <p>Does the application justify the international significance of the territory's geological features?</p>	<p>Yes / Sufficient / No. <i>Please provide explanations</i></p>	
<p>According to your experience / knowledge does this territory have geology of International significance considering its geological context ?</p> <p>Would you add or change anything from the arguments provided?</p>	<p>Yes / Sufficient / No. <i>Please provide explanations</i></p>	
<p><b>4.3 Significance of the geological sites</b></p> <p>Are there geological sites of</p>	<p>Yes / Sufficient / No. If yes, please provide explanations and details</p>	

<p>international significance presented in the application? Is their international value well described and justified?</p>		
<p>According to your experience / knowledge can they be considered among the best of their kind for their geological context / framework? Would you add or change anything from the arguments provided?</p>	<p>Yes / Sufficient / No. If yes, please provide explanations and details</p>	
<p><b>5.2 Scientific tradition and bibliography</b> Is a comprehensive list of scientific publications provided in the dossier? Is the bibliography relevant and well integrated into the text? Does the aspiring geopark seem to be aware of the scientific activity of the territory? Do these publications justify the international scientific value of the of the territory?</p>	<p>Yes / Sufficient / No <i>Please provide explanations</i></p>	
<p>According to your experience / knowledge are international or other relevant publications missing?</p>	<p>Yes / No If Yes, please provide a list with the most important ones</p>	

<p><b>FINAL AVERAGE SCORE FOR INTERNATIONAL SIGNIFICANCE</b></p>	
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NOTE: Final average score for international significance should not be below 2,5

## FINAL STATEMENT ON INTERNATIONAL SIGNIFICANCE

<p><b>Main geological elements of international scientific value.</b></p> <p>Considering the information provided by the applicant, the scientific references and your own experience; which features (if any) related to its geology of the applicant territory can be considered as of "international significance" from a scientific perspective?</p>	<p>Please list these elements and provide details to explain you answer for each of them</p>
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<p>Considering the previous questions please choose one option from the table below and write your final comments.</p>	
	<p><b>Green.</b> There is geological heritage of international significance and it has been clearly described and well justified in the dossier, both with a general view and with a good selection, description and justification of sites.</p>
	<p><b>Yellow.</b> There are geological elements with international significance, but they have been only partially described and partly justified in the dossier.</p>
	<p><b>Orange.</b> There might be geological elements with potential for international value, but they have not been correctly described and justified in the dossier. An improved version of the dossier could give an opportunity to describe and justify the international significance in the future.</p>
	<p><b>Red.</b> There is not enough valuable description and/or justification to prove that the geological elements of the territory might have international significance with the information available up to date.</p>
<p><b>Final comments:</b></p>	

**Signed:**

**Date**

## ANNEX 1

### SIGNIFICANT QUOTES RELATED TO GEOLOGICAL HERITAGE IN OFFICIAL UGGp DOCUMENTS

#### Statutes of the International Geoscience and Geoparks Programme and operational guidelines for UNESCO Global Geoparks

*"A UNESCO Global Geopark must have a clearly defined border, be of adequate size to fulfil its functions and contain geological heritage of international significance as independently verified by scientific professionals."*

*"The UNESCO Secretariat shall liaise with IUGS and other organizations, as appropriate, to obtain independent, desk-top scientific assessments."*

*"IUGS will be asked to coordinate this role and to ensure that all statements on the scientific value and international significance of the geological heritage of an aspiring UNESCO Global Geopark are available annually in time so that evaluators can access them ahead of the field evaluation mission. "*

*"The international significance of the geological heritage of each new UNESCO Global Geopark application will be assessed by desk-top advisors following specific and publicly available scientific criteria."*

*"A UNESCO Global Geopark must contain geology of international significance."*

*"UNESCO Global Geoparks must be single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education, research and sustainable development."*

*"Based on the international peer-reviewed, published research conducted on the geological sites within the area, the scientific professionals make a globally comparative assessment to determine whether the geological sites constitute international value."*

#### Self evaluation check list

*"Do you have clear evidence that your aUGGp has a geological heritage with an international value?"*

*"Is there comparable geology at another UGGp located within your country? Or those countries you share a border with?"*

*"Do you have a aUGGp geological sites database and inventory?"*

*"Do you have a map of the geological sites of your aUGGp?"*

*"Do you have a geological map of your aUGGp?"*

*"Do you have scientific publications about your aUGGp that are less than 5 years old?"*

#### Self evaluation Document A

*"Do your Geosites of international importance have an international recognition?"*

*"Do you have international scientific and academic research carried out on the sites of international importance?"*

*"Is there another UNESCO Global Geopark with comparable geological heritage in the same country (more than 100 kms away)?"*

*"Is there another UNESCO Global Geopark with comparable geological heritage in the same country's geographical region?"*

*"Does your country or the national geological survey of your country has have a geological sites inventory?"*

*"Do you, as an aspiring UNESCO Global Geopark have a dynamic and ongoing geological sites inventory? "*

*"Do you have an active geological sites' database for the aUGGp? "*

*"Do you have an existing detailed geological map of your aspiring UNESCO Global Geopark? "*

*"Do you have a geological heritage sites Geopark map of the aspiring Geopark with the geological heritage sites? "*

*"Are there universities using your aUGGp for campus or field work activities in any of the Earth Sciences disciplines?"*

*"Do you have at least five academic scientific papers from research conducted within the aUGGp's area during the last 5 years?"*



