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Geoparks: memory of Earth, future for People

ABSTRACTS BOOK

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ESTRELA ASPIRING GEOPARK: HERITAGE AND TERRITORY IN THE CONSTRUCTION OF A NEW DEVELOPMENT PARADIGM FOR COMMUNITIES

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Keywords: Aspiring Geopark, Heritage, Sustainable development, Territory-

With a unique Geological Heritage, Estrela constitutes the most important Mountain in continental Portugal, not only from the geological or geographic point of view, but also by an identity strongly marked by a history of adaptation to the territory. Since 1881, the year in which the great scientific expedition to serra da Estrela, organized by the Lisbon Geographical Society, occurred, studies that reveal the pivotal role of this territory and the relevance of its heritage have continued, with examples such as Hermann Lautensach, Suzanne Daveau, Orlando Ribeiro, Brum Ferreira or, more recently, Gonçalo Vieira.

In recognizing the scientific, educational and cultural value of this territory, the development of the application of Estrela for membership of the UNESCO Global Geoparks Network started in 2014, with the aim of submitting the application in 2017. The decision for this application is based on four main ideas: the valorisation and conservation of its 124 sites of geological interest, the development of a scientific and educational strategy that promotes knowledge and dissemination of the resources of this Aspiring Geopark, the construction of new tourism approaches based on new products, more sustainable and in line with its indigenous potential, and finally, in the promotion of a new way of communicating the territory, based on the UNESCO Global Geoparks Network brand, which could translate in to a new approach for this territory. A UNESCO Global Geopark only makes sense if it, in fact, involves a holistic strategy for territorial development, bringing together different resources, identity, history and communities, the last being a condition for the existence of this classification. Thus, the main goal of the classification of the Estrela as a UNESCO Global Geopark is that this recognition constitutes a new paradigm for sustainable development.

As such, over the past five years, the Estrela Aspiring Geopark has sought, through partners, the strong involvement of the 9 municipalities that comprise this application and the educational institutions and communities, to build a new development paradigm, in which rocks, geology and its heritage are the starting point for this enormous challenge. Through the sustainable vision of its resources, this Aspiring Geopark has involved different development vectors, such as geoconservation, education, science, tourism, the circular economy and sustainability. All of these vectors are structured in a holistic way, contributing to the sustainable development of this territory that seeks within the concept UNESCO Global Geoparks, an effective opportunity to define new development directions, changing the current paradigm and reinforcing the creation of wealth and added value for its communities and reversing the process of depopulation that Estrela has experienced since the beginning of the second half of the 20th century, in the belief that this will be the major development strategy for this Century.

TERRITORIAL MARKETING AS A TERRITORY PROMOTING STRATEGY: THE CASE STUDY OF THE ESTRELA ASPIRING GEOPARK

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Keywords: Territorial marketing, Strategy, Promotion, Estrela Aspiring Geopark.

A Geopark is, by definition, an eminently territorial development strategy whose premise is to place geology at the service of population development. In this sense, the management strategy of a Geopark is based on its ability to interconnect this heritage with all the assets that co-exist and guarantee its identity, starting from the valorisation of the endogenous resources and culminating with the increase of the sense of belonging by the populations.

The UNESCO Global Geopark classification, created at the beginning of this century for low-density territories, allows, through its underlying territorial development strategy, the construction of a strategic path for a territory, in which residents play a fundamental role in defining the place's identity, contributing to its "personality".

In this sense, this territory composed of 9 municipalities, with 2,216 km^2 and about 150,000 inhabitants, diagnosed as a low density territory, and strongly marked by high levels of population aging, presented the application dossier to UNESCO Global Geopark on November 23rd 2017, with the objective of contributing to the reversal of these trends through the creation of new development strategies.

As part of the management of this Geopark, the Territorial Marketing Plan of the Estrela Aspiring Geopark is being developed, starting with its geological heritage of international relevance, based on the landforms left by last glaciation whose maximum occurred 30 thousand years ago, and working it in a holistic way with all the material and immaterial resources of the territory, such as culture, heritage, history and symbolism, defining concrete actions that can contribute to strengthen the identity and sense of belonging of local communities, resulting in sustained economic growth.

Thus, the development of the Territorial Marketing Strategic Plan is a first step towards tackling the challenges of reversing low density trends, aging population and lack of opportunities for the new generations, since this instrument is an integrated tool that calls for concertation between public and private entities, promoting and exploiting the potential of the territory and mitigating its weaknesses, contributing to an increase in residents, visitors and investments.

As such, the purpose of this communication is to demonstrate that an application to UNESCO Global Geopark is, in itself, a territorial marketing strategy, based on its territorial framework and the analysis of the major questions that are posed to its development, including an internal and external diagnosis to their potentialities and weaknesses, confronting them with the traced diagnosis and with the opinion of local actors. From the crossing of this information, objectives and strategies can be created to contribute to the development of a territory, leveraged in its uniqueness and identity, allowing the creation of a structured offer, not only in what the territory has to offer but above all, in the experience it provides.

CITIZEN SCIENCE AND SUSTAINABLE DEVELOPMENT IN THE ESTRELA ASPIRING GEOPARK (PORTUGAL) STRATEGY

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Keywords: Sustainable Development, Agenda 2030, SDGs, Citizen Science.

The UNESCO Global Geoparks (UGGps) are territories of science, education and culture. These develop holistic approaches to sustainable development aiming to create new tools that can reinforce endogenous values and empower local communities. The Estrela Aspiring Geopark was created and implemented based on this reality and principles. Since the beginning, sustainable development of the territory was a priority, considering the uniqueness of the Estrela Mountain area and the importance of the protection and valorisation of its endogenous potential, with emphasis on the geological heritage. This approach corroborates a concern for sustainability and the Sustainable Development Goals (SDGs) of the Agenda 2030. In this context, the Estrela Aspiring Geopark is already dedicating each year to a specific SDG, through a plan of action in the areas of citizen science and education. This strategy aims to raise awareness, to promote and to define strategies to achieve the SDGs, adapting them to the reality of this territory. This project is based in an action plan programmed for the next 10 years. Especial attention will be given to SDG 13 “Climate Action”, which will be the theme of the year for 2020. This will include multiple actions involving local communities and scientists, in order to alert for or to solve concrete problems in this territory, related with specific geographic constrains. In fact, the UGGps, in pursuit of the aims of the International Geoscience and Geoparks Programme (IGGP) are territories whose development strategy must be leveraged by the SDGs of the Agenda 2030. The reality of each of the 147 UGGps and the multiple aspirant territories to this UNESCO designation must find on the SDGs the base for the development of their master plans in order to achieve an effective sustainable development. However, bearing in mind that all this work is based in a strong networking at a national and international level, we must consider that SDG 17 "Partnerships for the Goals” is a tool to connect all the SDGs. In this context, the Estrela Aspiring Geopark has established a network of partnerships with different stakeholders in the territory, as well as with the Global Geoparks Networks (GGN) and the European Geoparks Network (EGN). In Portugal, we highlight the partnership with the Portuguese Forum of UGGps and with the UNESCO Chair on “Geoparks, Regional Sustainable Development and Healthy Lifestyles”. This reality has allowed the management structure of the Estrela Aspiring Geopark to develop a set of partnerships and initiatives allowing a strong cooperation between the Portuguese UGGps and other Aspiring Geoparks, functioning as a platform of good practices, in order to contribute for a regional sustainable development.

THE ESTRELA GEOPARK SCIENCE AND EDUCATION NETWORK FOR SUSTAINABILITY

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Keywords: Estrela Geopark, Sustainable Development, Science Networking.

The Network of Science and Education for Sustainability of the Estrela Geopark (NSES), created by the Estrela Geopark in 2018, aims at supporting and fostering applied research in the Geopark's territory, based on an articulated set of interdisciplinary nuclei with close links to the Higher Education Institutions and the national scientific and technological system, highlighting the entities that carry out research in mountain regions. Besides, it will also serve as a catalyst for the new generation of scientists who will benefit from the more than 2,200 km^2 of this Geopark as a living laboratory.

The Network presents a dynamic structure, through a set of nuclei distributed throughout the territory, promoting science and education, and developing scientific research in complementary areas. Each Nucleus is coordinated by a Responsible Researcher (RR) and includes a team appointed by him. The Nuclei develop their R & D activity in articulation with public and private research units and technology centres, whose activity is developed in lines and projects closely related to the Estrela Geopark. Its priority activities will be defined within the framework of the Estrela Geopark's Strategic Plan for Science, as well as within the premises of UNESCO, with priority in the following areas: Geology and Geomorphology, Landscape, Culture and Heritage, Climate and Climate Change, Biodiversity and Ecology, Environment and Natural Resources, Territory Planning and Risks, Tourism, Leisure and Sustainable Development.

Thus, the nuclei aim at creating structures that promote science, education and scientific knowledge, in a collaborative way, based on the establishment of medium and long-term strategic partnerships between different actors of the territory and institutions that carry out research in the various themes of each nuclei, having as main objectives the cooperation in the identification of challenges, joint planning of activities, the definition of projects, the development of studies on the territory of the Estrela Geopark, the sharing of resources and infrastructures and the mobility and / or exchange of resources between R & D nuclei, with the aim of transferring, sharing and disseminating knowledge. In addition to these more specific objectives, the presented Network has as its mission the promotion of territorial cohesion, contributing to the holistic work that this Geopark advocates.

This Network promotes 5 nuclei of science and education in territory: Climate and Climate Change; Underground and Geothermal Water Resources; Biodiversity and Mountain Ecology; Tourism and Sustainability; Geoparks, Geodiversity and Geoconservation. In the medium term, it intends to expand this network to 9 nuclei, promoting its dissemination in the territory, enhancing territorial cohesion, with its activities defined in Estrela Geopark's Strategic Plan for Science.

This holistic strategy aims at putting scientific knowledge at the service of the communities, through an effective citizen science, implementing various activities with the direct involvement of the communities and its promotion.

"LITOTECA": A NEW PROJECT FOR NETWORKING AMONG PORTUGUESE GEOPARKS

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Keywords: networking, UGGp, Portuguese Geoparks, rock samples, geodiversity, Geoscience.

Networking is one of the four essentials of UNESCO Global Geoparks (UGGp), together with geological heritage of international value, management and visibility; it is focused not only in cooperation with the local people living in the UGGp, but also in cooperating with other UGGp's, learning from each other and, as a network, increasing the recognition and value of this UNESCO label.

This networking purpose, applicable and disseminated both nationally and internationally, is the basis for this abstract, that presents an initiative among the Portuguese Geoparks: the production, exchange and use of a "LITOTECA" (meaning deposit/archive of rock samples) to support educational, scientific and dissemination/promotion of Geoscience initiatives.

The "LITOTECA" encompasses a representative rock samples collection of the geodiversity from each Portuguese Geopark territory and its geological history, prepared by each Portuguese Geopark staff and shared with the other territory, on an "one for all" basis. Easy to use, made portable and adequately prepared and labeled with a short ID, the geological samples are suitable to be used by the Geopark staff, but also their stakeholders on several activities and for different purposes, from educational activities, to general public sessions, and exhibitions.

The Azores UGGp "Litoteca" includes 12 samples that illustrate the lithological geodiversity of the Azores Islands, including ankaramite, surtseyan tuff, ignimbrite, trachyte, basalt, scoria, pumice, volcanic sand, syenite and fossiliferous limestone samples.

The rock collection of Naturtejo UGGp shows a good representation of the rock cycle, including 27 sedimentary (diamictites to epigenic limestones), metamorphic (pelitic hornfels to gnaisses) and igneous (S-type granites to dolerites) samples.

The Arouca UGGp "Litoteca" includes rock samples of conglomerate, carbonaceous shale, quartzite, slate, metaconglomerate, metagraywacke, black quartzite, quartzodiorite, as well as several granite samples, including the iconic Nodular Granite of Castanheira ("Pedra Parideira/Rocks Delivering Stones").

The Terras de Cavaleiros UGGp collection is constituted by 12 samples representative of oceanic and continental lithosphere sequences and include dunite, serpentinite, gabbro, amphibolite, mafic granulite, and gneiss samples, among others.

The Aspiring Geopark Estrela also contributed to this networking initiative with a rock collection that includes about 30 samples of various granitic rocks, migmatite, dolerite, quartz, schists, shales, slates, hornfels, greywacke, phyllite, as well as glacigenic sediments (till).

THE ESTRELA GEOPARK'S GEOHERITAGE AND ITS VALORISATION

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Keywords: Estrela Geopark, Geological Heritage, Glaciation, UNESCO, Valorisation.

The Estrela Aspiring Geopark, with its more than 2200 km^2, is a territory made of a remarkable geological heritage that tells a story that began more than 650 Ma ago and extends to the present day. The main singularity of this Geopark is a result of the evidences left by the last glaciation, that had its maximum in serra da Estrela about 30 thousand years ago. Nowadays, these evidences associated with ancient glaciers make Estrela one of the most important places in Southern Europe for the study of glaciations, with high pedagogical, scenic and a remarkable scientific values. In fact, the geological and geomorphological elements of this territory make Estrela a living laboratory with enormous potential for the promotion of knowledge and learning.

In this perspective, the valorisation of Heritage is perhaps one of the most relevant missions of a Geopark, based on strategies that encompass different levels of action, whether in the context of Science, Education, Culture, Tourism and, inevitably, the Communication itself. The Geological Heritage should be valued and used as a platform to accomplish the different objectives for Sustainable Development defined by UNESCO, focusing on a strategy that ensures networking, community involvement, strengthening of the promotion of science, development of active strategies for formal and non-formal education, training of new tourism approaches and strong and effective territorial communication.

Thus, based on this valorisation, there are several initiatives under way that can be mentioned: the implementation of interpretive structures, which aim at fostering knowledge about the various geosites, always focusing on a holistic approach; the promotion of the Estrela Geopark Interpretation Centre, which allows a new tourist experience for all visitors of the highest point of Continental Portugal; the creation of strategies focused on nature and health tourism, which has shown itself to be a branch with increasing growth; the commitment to education and educational programs, with the aim of strengthening formal learning, but also educating and encouraging students to adopt a healthy lifestyle; the communication and promotion of heritage in an accessible way that contributes to the resident populations sense of belonging.

Underrated for a long time, Geological Heritage is at the moment the basis for an important development strategy, unparalleled in this territory, and born of the awareness of the scientific value of its geology and the history it contains. In this sense, this communication intends to demonstrate how the Estrela Geopark values its geological heritage and, through it, manages to create mechanisms for the preservation and creation of added value for its Communities, for whom this UNESCO classification is intended.

WILDFIRE RISK ASSESSMENT FOR ESTRELA GEOPARK, PORTUGAL: A KNOWLEDGE BASIS FOR THE ADAPTATION TO CLIMATE CHANGE

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Keywords: Climate Change, wildfire, mountain.

Mediterranean landscape is historically linked with wildfires, which have always played a crucial role in biomass control and nutrient cycling for the ecosystem. However, since human settling and development of agriculture, anthropogenic factors have become the main drivers of wildfire occurrence. In the last decades, due to harsher weather conditions and changes in human activities, wildfire impacts have raised in extent and severity. Wildfires are currently the most important natural hazard in mainland Portugal; and the Central region, due to its Mediterranean weather influence, the most affected by fires during dry seasons.

Estrela Geopark is a territory located in the Central region of Portugal, comprising Serra da Estrela mountain range and the surrounding population of more than 150,000 people with historical connections to this mountain. In recent years, it has been one of the most visited destinations in inland Portugal, supported mostly by its scenic and cultural values.

The territory contains numerous geosites concerning important evidences of the last ice age among other aspects, which make it eligible for a UNESCO Global Geopark designation, an application currently ongoing. Additionally, three major national rivers of Portugal have their headsprings in Serra da Estrela, including the Zêzere river, which supplies 60% of all the water consumed in the Lisbon region. Its montane ecosystem, acting as a refuge for endemic and endangered species, is acknowledged as a Biogenetic Reserve (Council of Europe), Site of Community Interest (European Union), and Wetland of International Importance (RAMSAR Convention), and as such, it is extremely vulnerable to climate changes and requires great attention.

This entire heritage is constantly threatened by wildfires year after year. Furthermore, it is well-known that high-altitude environments, due to high wind and low moisture, are more prone to fire propagation. The year 2017 held the worst records in fire occurrence and lives lost in the Portuguese history and 23% of Estrela Geopark area burned.

This region is acknowledged by a long-lasting tradition in shepherding activities, despite these been neglected by younger generations. This duality is suspected to have outstanding influence in wildfire occurrence in the region, because it puts together uncultivated lands with great fuel accumulation with elderly population using traditional fire-based techniques in land-clearing for agro-pastoral activities.

Along with the above mentioned, several other physical and anthropogenic predictors proposed in previous research on wildfire occurrence in the Mediterranean region were considered in a Geographically Weighted Logistic Regression, in order to assess local main drivers for wildfire occurrence throughout Estrela Geopark territory. The outcome map of this analysis indicates the local factors in which a slight effort of attenuation would lead to better results on the structural wildfire risk. This provides directions for the implementation of straightforward actions to prevent wildfire impacts in the territory, as a clear strategy for its adaptation to Climate Change scenarios.

THE INTERPRETIVE PANELS OF THE ESTRELA GEOPARK AS A TOOL FOR THE PROMOTION OF GEOLOGICAL HERITAGE

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Keywords: Design, Education, Interpretation, Geosites.

The territory of the Estrela Aspiring Geopark has a set of sites of geological interest, distributed over its 2,200 km^2, that lack interpretation, so, the geological history they contain is not understood by the generality of its inhabitants and visitors. Also, many of these geosites did not contain any type of interpretive structures, and those that had, where quite outdated. In this sense, the Estrela Geopark Association decided set this situation right, not only implementing new interpretive structures in many geosites, but also updating the existing ones that belong to the Serra da Estrela Natural Park. The field work was followed in permanence by the team's designer and the territory's managers, in order to verify the locations that visually allowed a better interpretation of the landscape, as well as the type of structure most appropriate for these places, ie. vertical or horizontal panels. In the high altitude areas of the Geopark, atmospheric conditions were one of the variables considered, since they have high incidence of solar radiation and, during the winter, snowfall is frequent. Having the places defined and the contents developed, terrestrial and aerial images were captured with the help of a drone, so that it was possible to show another perspective that would help the interpretation and of the landscape, namely of phenomena that occur in different time periods.

With all the necessary information collected and after listening the different technicians involved in this work, a unique, modern and appealing layout was created, allowing an immediate association with the Geopark. Based on the images. and amount of information with scientific thoroughness to be inserted, a limit of characters was stipulated. The layout of the panels was divided into sections: section for the panel title; section for the typology of the geosite(s); section for Portuguese and English text; section for main landscape interpretation photography; secondary photo gallery section; section for illustration, explaining the geological formation of the sites, in a simple and appealing way; section for location map of the geosite in the context of the Geopark; section for detailed map of geosites location and section for the technicians that worked on the panels. After that, several test prints to check the readability and luminosity of all the contents were made.

As such, this work intends to demonstrate the importance the conception of the interpretive structures has in the communication of science. The effectiveness of the interpretation of a Geopark lies, above all, in the way in which each territory can communicate and facilitate the access to contents, often restricted to a small group of scientists.

THE GREAT ROUTE OF THE ESTRELA GEOPARK AS A PROMOTION FOR NATURE TOURISM

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Keywords: Aspiring Geoparks, Sustainable development, Geotourism.

Between its geography and its historical and cultural context, serra da Estrela is facing new challenges today, anchored in its territorial identity, reflex of a diverse and multifunctional context. These new challenges embody a new paradigm for sustainability, based on the valorisation of its endogenous potential and on the refunctionalisation of its most identitary brands. Thus, it has been the aim of the Estrela Geopark to strengthen and / or foster the development of health, scientific, educational and nature tourism. Any of these products translate to a more sustainable, less seasonal and more territorial view of Estrela's tourism, to which we highlight the project of the Great Route of the Estrela Geopark, which, in an integrated and complementary way, aims at allowing the visit to large part of the territory of the Estrela Geopark, most of its geosites, and of all the municipalities that integrate this territory.

More than a Grand Route in the traditional sense, this project intends to establish a network of long distance and multi-stage routes, based on the old trail network of the Serra da Estrela Natural Park, connecting all the Geopark Doors and allowing a visit to all the territory and great part of its geosites. This network allows each visitor to choose the starting and arrival point, as well as their entire route, according to their interests and the time they want to spend while traveling through the Estrela Geopark.

Due to the unique characteristics of the Geopark, particularly in the higher altitudes, hiking is undoubtedly the best way to travel through its naturally irregular trails. However, a cycling route was also prepared, showing the best of the Estrela Geopark and its heritage for those who choose the bicycle as a privileged means for traveling and experiencing this territory. Visiting a region by bicycle is a profoundly different experience than by walking, even more in a mountainous territory like this, so, from the beginning of this project, a totally independent route was conceived, with complementarity to the walking version of the Great Route, and with the aim of providing an alternative point of view over the mountain.

The tourism phenomenon has in itself an inductive character, capable of promoting territorial resources and contributing to the valorisation of the endogenous heritage, it being an activity that is the engine for the development of many regional economies, when properly managed. By its nature, tourism is a complex phenomenon that integrates the political, economic, social, cultural, biophysical, ecological and aesthetic subsystems, and it is the symbiosis between these different domains that results in its sustainability. Thus, this project intends to be an innovative approach, based on the multifunctional diversity of the landscape of serra da Estrela, its geomorphological characteristics, its people and the stories of its history.

THE ESTRELA GEOPARK TOURIST PARTNERS NETWORK AS A SUSTAINABLE DEVELOPMENT STRATEGY

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Keywords: Partners, Tourism, Strategy, Sustainable development.

The Geopark Estrela Association's Strategic Plan for Tourism, elaborated for the period 2018-2022, identifies a broad set of strategic actions aimed at fomenting a new paradigm for tourism in this territory, of which we highlight the creation and enlargement of the Partners Network of the Estrela Geopark.

This future UNESCO Global Geopark believes that partners and partnerships are an important element in promoting the Estrela Geopark concept and brand, which are fundamental for the creation of solid and sustainable strategies. The notoriety of this territory, comprising 2216km^2 and around 150,000 inhabitants, will only be achieved if everyone works together and value the two pillars of the region's identity: heritage and local communities.

In this sense, Estrela Aspiring Geopark has structured four Partner Networks (Educational Partners, Institutional Partners, Business Partners and Local Producers), all of which work in different areas, but with a common goal, to enhance and preserve identity, in order to strengthen links and promote the territory, creating added value and promoting its integrated development. At the moment, one of the objectives is to expand the network so that the whole territory can be covered by the UNESCO Global Geopark brand, thus benefiting from the strategies that are inherent to this important classification.

Aware that the territories with the UNESCO brand have registered a growing demand, this partners network, intends to leverage the economic agents of the region and the local community, through its valorisation and later creation of tourist flows, work opportunities and wealth for the territory. Thus, working in a network makes it possible for the territory to gain scale and benefit from the existence of tourism products structured and transversal to the entire Geopark.

The establishment of networks and partnerships is an extremely important mechanism in building bridges for the community development process. It is these partnerships that bring the local agents and communities closer to tourists, thus constituting a strong tourism brand associated with the Estrela mountain range, with the objective of creating a destination capable of generating tourist flows, always having the principles of sustainability as a background.

The Estrela Aspiring Geopark recognizes that these partner networks can be the key to a diversified and qualified offer in Estrela territory. As such, we believe that a good tourism strategy will only succeed if we all know, believe and value the potential of this territory. In this way, the Estrela Aspiring Geopark will continue to work on the extension of these partner networks, together with all stakeholders.

In short, we intend with this work to demonstrate how the Partners Network of this Aspiring Geopark has been one of the main strategies for the sustainable development of the territory, enabling it with new instruments for the valorisation of its heritage.

FROM THE CLASSROOM TO THE MOUNTAIN: THE ESTRELA GEOPARK AS A STONE BOOK

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Keywords: Education; Communication; Estrela Geopark; Educational programs.

The geological history of serra da Estrela is an ancient one. It began more than 650 million years ago, with the formation of the oldest rocks of the Estrela Geopark. Later, other rocks formed and many geological and geomorphological processes occurred, giving rise to different forms of relief, in what is the most imposing mountain in Continental Portugal. Between mountains and valleys, plateaus and overdeepenings, granite boulders and rivers, we find an enormous biodiversity and a cultural identity that results from millennia of human occupation. With such geological, biological and cultural diversity, the territory of the Estrela Geopark constitutes a true stone book that, when read, can be an important tool for learning and building knowledge.

Issues related to Earth Sciences are not always easy to understand, especially when approached in a classroom context. Even when using teaching and learning facilitator methodologies, with the use of audiovisual media, not all students can easily understand the geological processes that occurred on Earth over its 4600 million years, as these are complex processes often difficult to imagine. In this context, the interpretation of the different landscapes of serra da Estrela allow the exploration of different topics taught in Schools, relating not only to geography, geology and biology, but also with history and archaeology, providing unique educational opportunities, such as a true open-air laboratory that facilitates perception and acquirement of knowledge considered essential for a better understanding of the history and evolution of Earth, life and its people.

The Estrela Geopark, with an approximate area of 2216km^2, has 124 geosites divided in 8 different themes, that range from sites that witness the recent glacial and fluvioglacial past of the mountain, to the oldest rocks of the territory, diverse granite landforms, panorama observation points, erosion by rivers, tectonics, the action of the cold, among others. Thus, the Estrela Geopark constitutes a territory with a remarkable heritage, where the work on sustainable development is sought in a holistic way, giving special focus to the promotion of Education and Science, as a strategy for Geoconservation and dissemination of scientific knowledge, since only one can preserve and value what is truly known.

With the aim of showing this fascinating book of stone, the Estrela Geopark has, since 2016, been promoting multidisciplinary educational programs that include outdoor and indoor activities, based on the programs established by the Ministry of Education and that directed to the three levels of Education, seeking to make available to the teachers a motivating and facilitating methodology of the teaching process, since the interpretation of the diverse landscapes of Estrela constitutes a tool of multiple learning, of knowledge and of pedagogical and didactic experiences, where the heritage, natural and cultural, is the living testimony of the dynamics of its landscape.