

Susana Martinez-Rodriguez

Giuseppe Pace *Editors*

Practices for the Underground Built Heritage Valorisation

Second Underground4value Handbook



cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

edizioni
Consiglio Nazionale delle Ricerche



COST (European Cooperation in Science and Technology) is a funding organisation for research and innovation networks. Our Actions help connect research initiatives across Europe and beyond and enable researchers and innovators to grow their ideas in any science and technology field by sharing them with their peers.

COST is bottom up, this means that researchers can create a network – based on their own research interests and ideas – by submitting a proposal to the COST Open Call. The proposal can be in any science field. COST Actions are highly interdisciplinary and open. It is possible to join ongoing Actions, which therefore keep expanding over the funding period of four years. They are multi-stakeholder, often involving the private sector, policymakers as well as civil society.

Since 1971, COST receives EU funding under the various research and innovation framework programmes, such as Horizon 2020 and now Horizon Europe. COST funding intends to complement national research funds, as they are exclusively dedicated to cover collaboration activities, such as workshops, conferences, working group meetings, training schools, short-term scientific missions, dissemination, and communication activities.

The COST Association places emphasis on actively involving researchers from less research-intensive COST Countries (Inclusiveness Target Countries, ITC). Researchers from Near Neighbour Countries and International Partner Countries can also take part in COST Actions, based on mutual benefit. For more information, please visit www.cost.eu.



Heritage and Community Identity, 3

A series of:



UNDERGROUND4VALUE

Series Editor: Giuseppe Pace

Scientific Committee:

Muge Akkar Erkan, *Middle East Technical University, Ankara (TR)*
Alfonso Bahillo, *Universidad de Valladolid, Valladolid (ES)*
Tony Cassar, *University of Malta, Msida (MT)*
Shirley Cefai, *University of Malta, Msida (MT)*
Nasso Chrysochou, *Frederick University, Limassol (CY)*
Szilvia Fábíán, *Hungarian National Museum, Budapest (HU)*
Beata Joanna Gawryszewska, *Warsaw University of Life Sciences, Warsaw (PL)*
Laura Genovese, *Institute of Sciences on Cultural Heritage, National Research Council (IT)*
Klodiana Gorica, *University of Tirana, Tirana (AL)*
Pinar Karagoz, *Middle East Technical University, Ankara (TR)*
Konstantinos Lalenis, *University of Thessaly, Thessaloniki (EL)*
Zili Li, *University College Cork, Cork (IE)*
Ernesto Marcheggiani, *Polytechnic University of Marche, Ancona (IT)*
Susana Martinez-Rodriguez, *University of Murcia, Murcia (ES)*
Sanjin Mihelić, *Zagreb Archaeological Museum, Zagreb (HR)*
Montserrat Pallares-Barbera, *Autonomous University of Barcelona, Barcelona (ES)*
Preston Perluss, *Grenoble IAE, Grenoble (FR)*
Renata Salvarani, *European University of Rome, Rome (IT)*
Carlos Smaniotto Costa, *Lusófona University, Lisbon (PT)*
Alice Tavares Costa, *University of Aveiro, Aveiro (PT)*

Practices for the Underground Built Heritage Valorisation

Second Handbook

Proceedings of the Second
Underground4value Training School

Edited by

Susana Martinez-Rodriguez and Giuseppe Pace

 **edizioni**
Consiglio Nazionale delle Ricerche

© Cnr Edizioni, 2023
P.le Aldo Moro 7
00185 Roma

ISBN print edition: 978-88-8080-538-3
ISBN electronic edition: 978-88-8080-537-3



This is an open access work distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 (<https://creativecommons.org/licenses/by-nc-nd/3.0/>). Users can redistribute the work for non-commercial purposes, as long as it is passed along unchanged and in whole, as detailed in the Licence. Consiglio Nazionale delle Ricerche must be clearly credited as the owner of the original work. Any translation and adaptation of the original content requires the written authorisation of Consiglio Nazionale delle Ricerche.

Published by
Consiglio Nazionale delle Ricerche
Istituto di Studi sul Mediterraneo
Piazzale Aldo Moro, 7 - 00185 Roma
www.edizioni.cnr.it
bookshop@cnr.it

Editing by CNR-ISMed: Aniello Barone, Paolo Pironti, Giovanni Ruggiero.

This article/publication is based upon work from COST Action CA18110 “Underground Built Heritage as catalyser for Community Valorisation”, supported by COST (European Cooperation in Science and Technology).

COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career, and innovation. www.cost.eu



Contents

Preface	vii
<i>Susana Martinez-Rodriguez and Giuseppe Pace</i>	
List of Contributors	xi
List of Figures	xiii
List of Tables	xvii
PART 1. LECTURES ON METHODOLOGY	
1. Decision-making Process on Heritage. Values and Statement of Significance	3
<i>Shirley Cefai</i>	
2. EthnoAlly: with the Smartphone as Field Assistant	13
<i>Alfonso Bahillo, Paolo S.H. Favero</i>	
3. Audience Development of Underground Built Heritage Sites	23
<i>Tony Cassar</i>	
PART 2. THE CASE-STUDIES STORYTELLING	
4. The case of Aya Napa Monastery	33
<i>Mia Trentin, Lola Vico Lopez</i>	
5. Dólmen de Antelas and Dólmen Carapito I. Reflections on megalithic heritage from the perspective of local communities	43
<i>María del Carmen Solano Baez</i>	
6. Camerano, the Underground City	71
<i>María Murillo-Romero</i>	
7. Camerano. A link between urban and rural UBH	79
<i>Ernesto Marcheggiani, Francesco Paci, Andrea Galli</i>	
8. Putting Underground Built Heritage at the Heart of Cultural Tourism. The ancient white marble quarries in Paros	91
<i>Tommasina Pianese</i>	
PART 3. RESEARCH GROUPS	
9. The White Marble of the Gods: a way back to the island of Paros	113
<i>Chiara Caravello, Tony Cassar, Giuseppe Pace, Tommasina Pianese</i>	

10.	A Multiscale Approach for Valorising Camerano Underground Heritage and Surroundings <i>Aida Beqiri, Shirley Cefai, Luciano Galone, Laura López-Gómez, Ernesto Marcheggiani, Sorina Radu</i>	139
11.	Rediscover Camerano: a multi-story city <i>Isabel Dólera Sevilla, Viachaslau Filimonau, Marija Jovanovic, María Murillo Romero, Andrew Pace</i>	147
12.	Twin Megalithic Towns. Activating synergies and strategies to valorise the megalithic heritage – the cases of Carapito and Antelas in Portugal <i>Gresa Calliku, Zuinder Horácio Cumandala Manico, Manuel de Maya Matallana, Carlos Smaniotto Costa, Maria del Carmen Solano Báez</i>	153
	General references	177

Preface

Susana Martínez-Rodríguez and Giuseppe Pace

This book collects all original materials produced during the Second Underground4value Training School, which was held at the University of Murcia, in Murcia (Spain), from 20 to 24 September 2021. This second School was the first in-presence event after more than 19 months confined to online meetings by the Covid-19, and for the 23 graduated trainees from 11 countries across Europe it revealed to be an experience even more challenging than the expectations and aspirations of the COST Action CA18110 “Underground Built Heritage as catalyser for Community Valorisation” (Underground4value).

The pandemic arrived just after the First Underground4value Training School, held February 2020 in the enchanted premises of the *Castel dell’Ovo* in Naples (Italy). Since that moment anything took place online, with each of us communicating from our homes, and the past way of working, with travels and moments of conviviality, became a far memory.

However, looking at the positive side, those days spent in the closed of our apartments became a moment of reflection, when some Action members deepened their thinking about Underground Built Heritage (UBH), others elaborated their main concepts, meanings, and values, and finally others focused on new and challenging methodological approaches to community empowerment or to assessing heritage values, and so on.

Also, we started questioning on the needed tools for supporting local communities in their efforts for valorising and protecting their underground landscapes. Afterwards, this long time of reflection became texts, writings, essays, articles, and books chapters of different authors, which

did not always bring to fully coherent results, sometimes influenced by the authors' different disciplinary backgrounds, other times by more practical needs, but certainly they greatly stimulated the debate and the critical reflection.

This reflection was also addressed to the training modules. In the Naples Training School, every morning the trainees were immersed in long sessions of lectures (4-5 each day), with too short time, then, for maturing and adequately applying and maturing learned concepts and approaches to their research work and producing then something original for the assigned case-studies. Nonetheless, thanks also to the tutors' support, they presented their sketched ideas in attractive posters that, during the pandemic, were transformed in chapters of a shared collective work.

The result was the first Handbook, edited by Pace and Salvarani, an impressive collective work imagined for providing theoretical and methodological support to professionals and researchers, but also to guide the subsequent training modules. Other outcomes of the first school were the two assessments of the training modules, done by trainees and tutors. The main positive point was to work together, side by side with other trainees, experienced and less experienced, coming from different disciplines, united by the common challenge to analyse a UBH case-study and provide creative options in few hours.

When the time for the second school came, we were in the middle of the second Covid-19 wave. Between performing the training meeting online, as we did for our Action's working groups meeting, and postponing it, the Action Management Board decided for the second option, and the training school dates changed several times until the last possible ones in September.

When the training days arrived, the Covid-19 was still representing a substantial limit to our mobility and several trainees and trainers had to delete their participation at the last minute, as well as some lectures were conducted online. Nonetheless, the general mood was great, and the TS magic came out again, with a real committed group of young and talented trainees, with less time dedicated to follow theoretical and methodological lectures, and more focused on their case-study storytelling to present this time in a PowerPoint presentation format. The University of Murcia, and especially the Faculty of Labor Sciences, the venue of the TS, provided us with excellent facilities and technical means for the development of the academic program. There was streaming access to all sessions; also, the presentations were fully recorded in high-quality format thanks to the technical support of TV.UM.ES.

The research groups, again, provided a fertile ground for creating alternative options to the ones discussed in the case-studies' living labs and re-

ported by the researchers, which performed the annual short term scientific missions.

This second handbook, structured in three parts, tries to catch all this, not replying the already published lectures, but giving more space to the case-studies and to the research groups' work. In this way, the research teams, composed by tutors and trainees, emerge as the real protagonists of this handbook.

Through their eyes, free from any predefined option and not tied to the local communities' expectations, the reader can penetrate the logic path, in some way connected to the Strategic Transition Practice approach, which created the pre-conditions for the options' definition.

The three chapters on concepts and methodologies are a step further than the previous handbook [1], being based on those theoretical contributions and more practical oriented. Specifically, the Cefai's chapter, "Decision-making Process on Heritage. Values and Statement of Significance", has the scope to better clarify some definitions, such as cultural significance, and where these are embodied. In particular, Cefai says that "Statement of Significance allows the decision-maker to take decisions as to how to intervene on a heritage site in a way that is ethically correct to the historic structure" [2]. Bahillo, by presenting the EthnoAly App, aims at showing to the reader how digital technologies are entering the anthropologists' lives, bringing together in one single space all those features that can be useful for conducting ethnographic fieldwork. Finally, Cassar, in his "Audience Development of Underground Built Heritage Sites", aims at defining connections between underground heritage sites and visitors, stakeholders, but also with sustainability and, sometimes, their very own existence.

All three chapters reinforce the UBH definition [3], which offers physical and spatial elements from the one side, and temporal and cultural elements from the other side.

The subsequent chapters, especially those developed by the trainees, deal with the case-studies, by both reporting STSM experiences and providing creative and out-of-the-box options. All these chapters are impressively built on the crucial relationship space-culture. As from the landscape ecology perspective, in UBH both physical and cultural elements can be framed in a localised and continuous interaction between nature and humankind. It is this interaction that gives shape to unique spaces and characterises species and societies. To understand the way in which societies interact with the heritage and change their behaviours, nevertheless, the reader should not be based on a single framework, but two at least. The first is the so-called *Theory of Practice* [4], based on three elements such as materials, competences, and meanings, aims at revealing social innova-

tion through practice. The second takes root from the innovation theory, and particularly from the transition studies, for providing tools to decipher how society and technology change [4]. By contaminating these two approaches with the Strategic Transition Practice (STP) [4], the participants presented wide-ranging case-studies' interpretations, related to spatial and cultural dynamics which can shape UBH and produce new physical and cultural components.

Following the path of the First Handbook, this new volume aims to make available to the scientific community and the general public an original product based on scientific comparison, real studies, and community experiences. Furthermore, in line with the COST Action philosophy, the final goal of all the authors in this handbook is to promote UBH as a valuable resource to celebrate and preserve, realising its full potential to support local communities' development.

REFERENCES

- [1] Pace G., Salvarani R., *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Rome.
- [2] Cefai S. (2023), "Decision Making Process on Heritage. Values and the Statement of Significance", in Martinez-Rodriguez S., Pace G., *Practices for the Underground Built Heritage Valorisation. Second Handbook*, CNR Edizioni, Rome.
- [3] Pace G. (2021), "An Introduction to Underground4value", in Pace G., Salvarani R., *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Rome, pp. 1-18.
- [4] Pace G. (2021), "Heritage Conservation and Community Empowerment: Tools for Living Labs", in Pace G., Salvarani R., *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Rome, pp. 197-234.

List of Contributors

Bahillo Alfonso, University of Valladolid, Department of Signal Theory and Communications, Valladolid (ES)

<https://orcid.org/0000-0003-3370-3338>

Beqiri Aida, University of Tirana, Faculty of History and Philology, Tirana (AL)

Calliku Gresa, BFL Architekten und Berater, Berlin (DE)

<https://orcid.org/0000-0001-8398-5842>

Caravello Chiara, University of Liège, LabVTP, URA, Faculty of Architecture, Liège (BE)

<https://orcid.org/0000-0002-7986-6637>

Cassar Tony, Heritage Malta, Digitisation Department, Malta (MT)

<https://orcid.org/0000-0003-1105-9105>

Cefai Shirley, University of Malta, Department of Conservation and Built Heritage, Msida (MT)

<https://orcid.org/0000-0002-7644-114x>

Cumandala Manico Zuinder Horácio, Lusófona University, ULHT - Architecture and Urban Planning, Lisbon (PT)

<https://orcid.org/0000-0002-5247-3825>

de Maya Matallana Manuel, University of Murcia, Department of Applied Economics, Murcia (ES)

<https://orcid.org/0000-0003-0897-2835>

Dólera Sevilla Isabel, University of Murcia, Faculty of Labour Sciences, Murcia (ES)

<https://orcid.org/0000-0002-7037-8426>

Favero Paolo S.H., University of Antwerp, Department of Communication Studies, Antwerp (BE)

<https://orcid.org/0000-0001-7414-1373>

Filimonau Viachaslau, University of Surrey, Guildford (UK)

<https://orcid.org/0000-0001-7353-5696>

Galone Luciano, University of Malta, Department of Geosciences, Msida (MT)

<https://orcid.org/0000-0002-5352-0566>

Jovanovic Marija, University of Management, Zajecar (RS)

<https://orcid.org/0000-0002-9286-2139>

López-Gómez Laura, University of Murcia, Faculty of Tourism and International Relations, Murcia (ES)

<https://orcid.org/0000-0003-1788-5661>

- Marcheggiani Ernesto*, Marche Polytechnic University, Department of Agricultural, Food and Environmental Sciences, Ancona (IT); Department of Earth and Environmental Sciences, KU Leuven, Leuven (BE)
<https://orcid.org/0000-0002-6879-9942>
- Martinez-Rodriguez Susana*, University of Murcia, Department of Applied Economics, Murcia (ES)
<https://orcid.org/0000-0002-0710-6030>
- Murillo-Romero Maria*, University of Basque Country, Donostia (ES)
<https://orcid.org/0000-0003-0258-249X>
- Pace Andrew*, Heritage Malta, Digitisation Department, Malta (MT)
- Pace Giuseppe*, Italian National Research Council (CNR), Institute for Studies on the Mediterranean (ISMed), Naples (IT)
<https://orcid.org/0000-0002-2360-585X>
- Paci Francesco*, Marche Polytechnic University, Department of Agricultural, Food and Environmental Sciences, Ancona (IT)
<https://orcid.org/0000-0003-1716-0572>
- Pianese Tommasina*, Italian National Research Council (CNR), Institute for Studies on the Mediterranean (ISMed), Naples (IT)
<https://orcid.org/0000-0001-6668-4255>
- Radu Sorina*, Maramureş County Council, Territorial Development Department, Baia Mare (RO)
- Smaniotto Costa Carlo*, Lusófona University, Interdisciplinary Research Centre for Education and Development, Lisbon (PT)
<https://orcid.org/0000-0002-1896-4663>
- Solano Baez María del Carmen*, University of Murcia, Department of Applied Economics, Murcia (ES)
<https://orcid.org/0000-0003-4431-9956>
- Trentin Mia*, The Cyprus Institute, Science and Technology in Archaeology and Culture Research Center (STARC), Nicosia (CY)
<https://orcid.org/0000-0002-6650-3132>
- Vico Lopez Lola*, The World Bank, Washington DC (US)
<https://orcid.org/0000-0002-7007-8829>

List of Figures

1.1: Layout of Statement of Significance	4
1.2: The Museum of Military History, Dresden (DE). New addition by architect Daniel Libeskind	6
1.3: Characteristics of heritage values	7
2.1: Architecture of the EthnoAlly Digital Tool	15
2.2: Samples of screenshots related to the audio-visual material	17
2.3: Samples of screenshots related to the track and interview functionalities	18
2.4: The web platform visualising a track in two different modes: map and video	19
2.5: The web platform search engine: by keyword and username	20
3.1: Visitor identities, adapted from J.H. Falk	26
3.2: Photos of the huge cisterns and tunnels found in Underground Valletta	26
3.3: Zip Lines within Slate Caverns, Wales (UK)	27
3.4: Photos from within the Wieliczka Salt Mine (PL)	28
4.1: The cave church dedicated to the Virgin	35
4.2: The church façade	35
4.3: The monastery. View from the top of the church	36
4.4: The monastery (left) and clubs (right) in the town centre	37
4.5: The Stakeholder Map	39
5.1: Paintings in the chamber. Dolmen de Antelas (PT)	45
5.2: Layout of the Dolmen de Antelas	46
5.3: Dolmen do Carapito I (PT)	49
5.4: Fieldwork in Dolmen de Antelas, Oliveira de Frades	53
5.5: Interviews with informants from Carapito	55
5.6: Dolmen de Antelas, 1993 excavation	57
5.7: Dolmen de Antelas, 1993 excavation	58
5.8: Dolmen de Antelas, 1993 excavation	59
5.9: Dolmen do Carapito I, 1964-65a - Left to right: Francisco	

Paixão da Cruz; António Francisco Caseiro Marques	62
5.10: Proposed general plan “Requalification of the Carapito Dolmen I”, Reconstituting the Mamoa	63
5.11: Proposal Requalification of the Carapito Dolmen I - Reconstituting the Mamoa. Side view 1 and 2	64
6.1: Camerano urban area and distances to other cities nearby	72
6.2: Map of the Underground city of Camerano	73
6.3: Collage of some architectural details of the Underground city	74
6.4: Potential benefits from Collaboration and Partnerships	77
7.1: Camerano case-study location	80
7.2: Example of "gradina"	81
7.3: Planimetry of Camerano caves’ network	82
7.4: Vertical section of Camerano	82
7.5: Historical functions of Camerano’s caves	83
7.6: The Landscape Matrix	86
7.7: The UBH Regional Network	87
8.1: The Lychnites marble of Paros	93
8.2: Inscriptions visible in the Quarry of Pan	94
8.3: Signs and techniques of marble extraction	95
8.4: Meeting with Markos Kovaïos, Mayor of Paros	97
8.5: Access to the Marathi quarries	101
8.6: Access to the Quarry of Pan	102
9.1: Example of Lychnites, Quarry of Pan	116
9.2: Venus of Milos, Louvre Museum, Paris (FR)	117
9.3: Hermes of Praxiteles, Olympia (GR)	117
9.4: The entrance of the Quarry of the Nymphs, Marathi, Paros	118
9.5: Names inscribed on the Quarry of Pan walls	119
9.6: Detail of the map of Paros in 1586 AD	120
9.7: The travel of the Parian Marble to Italy. Source: Detail from "Il Kouros ritrovato" exhibition in Civic Museum “Castello Ursino”, Catania (IT)	121
9.8: Detail of the lower section of the “Marmor Parium”, Archaeological Museum of Paros	122
9.9: Wall of Frankish Castle in Parikia	124

9.10: The “Vernacular” style of Paros	125
9.11: Map of Paros	126
9.12: Another map of Paros, from BBC “Mapping the world”	127
9.13: Schematic SWOT analysis realised by the Research Group 1	129
9.14: Schematic stakeholders’ analysis realised by the Research Group 1	130
9.15: Scheme representing the “Key Heritage Values” realised by the Research Group 1	131
9.16: Image of a couple wearing VR headset	135
10.1: Geographic positioning of Camerano	140
10.2: Showing the historic/cultural value, the social value, the spiritual value and the contextual value	141
10.3: Use of virtual reality or augmented reality to show the context of Camerano	142
10.4: On a city scale, it would be idyllic to link the different heritage sites with the Caves. This would help lead a visitor from one site to another	143
10.5: All proposals ideally are linked with the urban plan of Camerano’s historic centre	143
10.6: The caves can have various uses as long as the use is compatible to the site. For example, small exhibitions, wine tasting events, storytelling events for children, etc.	144
10.7: Advertising the already existing wine trekking route within Marche area, or creating new ones	144
10.8: Promote the site on the different media	145
10.9: On a regional scale, a mobility plan should be created to provide easy and efficient mobility be-tween the sites	146
11.1: SWOT analysis of Camerano	149
12.1: Dolmen de Antelas	153
12.2: Dolmen de Carapito I	154
12.3: Location of Antelas and Carapito	155
12.4: Main supporting slab painting	156
12.5: Rehabilitation project of the Dolmen do Carapito I	156
12.6: Dimensions of analysis	158
12.7: Dimensions of DRAFPO analysis	158

12.8: TMT Logo	166
12.9: The TMT Model	167
12.10: Festival in Carapito	168
12.11: Gastronomy - Wine harvesting	168
12.12: Heritage Cleaning in Carapito	169
12.13: The communication slider	169

List of Tables

3.1: The five major audience groupings by motivation identified by John Falk	25
4.1: SWOT analysis	40
5.1: Typologies of informants	52
5.2: Informants. Dolmen de Antelas	54
5.3. Informants. Dolmen do Carapito I	54
12.1: Population dynamics and health indicators, 2020	162
12.2: Human resources indicators, 2020	163
12.3: Indicators of economic activity and employment, 2019	164
12.4. Sustainable development and environmental indicators, 2020	165

PART 1

LECTURES ON METHODOLOGY

CHAPTER 1

Decision Making Process on Heritage Values and the Statement of Significance

Shirley Cefai

1.1. Definitions

This article will start out by clarifying some definitions so as to avoid any misunderstandings. The main definition that needs clarifying is that of Cultural Significance and where this is embodied.

According to the Burra Charter, Article 1.2 (ICOMOS 2013):

“Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.” [1]

Hence to be in a position to identify the cultural significance, it is clear from the definition above that this is linked to the values that past present and future societies attribute to the heritage concerned. It is also important to identify the fact that values attributed to a heritage site may be different for different individuals as this is usually dependent on the culture, associations and meanings that site has for an individual or a group of people.

1.2. What is a Statement of Significance and its purpose?

A Statement of Significance is a tool that is needed in the decision-making process of any intervention carried out on heritage. It will result in

a declaration of the value of the site with a brief explanation of what the site consists of and why it is important for society in general.

By identifying the values and in so doing recognising the character defining elements where these values are embodied, helps to clarify why these elements warrant preserving. The Statement of Significance also ensures that heritage values are communicated in an effective and consistent manner. By working systematically in this way, some characteristics or elements which may have been neglected, overshadowed or not identified, may be brought to light.

The Statement of Significance is thus divided into three main areas (Fig. 1.1) [2] [3] [4]:

- a. THE WHAT? - Brief description of the historic place.
- b. THE WHY? - Identification of key heritage values attributed to a historic place
- c. THE HOW? - A list of its principal character defining elements

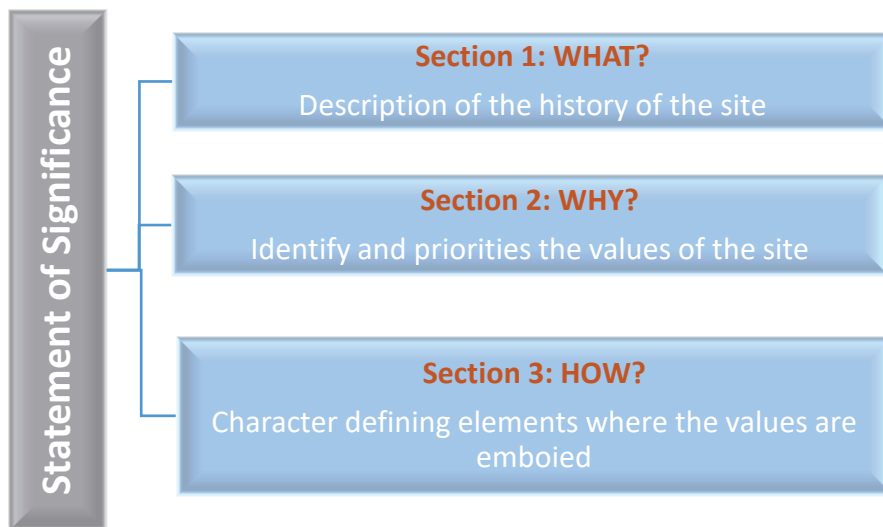


Figure 1.1: Layout of Statement of Significance. Source: Author

1.3. Purpose of Statement of Significance

As stated above, the Statement of Significance helps to decide how interventions should be carried out on a heritage site. It could take up other

stances as to how it can help to protect heritage places. For example, it could be part of a requirement for a national register. This would help in the identification and recognition and importance of a site, and hence the protection of such site.

It also could be used to provide information for visitors visiting a heritage place hence allowing the visitor to be aware of the salient points of the heritage site which he/she should scrutinize. The awareness towards heritage is a very important step towards protecting heritage in general and allowing the public to understand that what surrounds them, though possibly part of their everyday life may be also part of the past and hence part of who they are.

Finally, one of the most important aspects of a Statement of Significance is that, as stated above, it allows the attribution of heritage values to a place and hence identifies which characteristics should be protected so as to enhance such heritage values and hence would not be lost or destroyed [2] [3] [4].

1.4. Statement of Significance and the Value-Based conservation

The Statement of Significance supports a values-based approach in conservation since it is built on the values of the heritage site. Till the latter half of the twentieth century, the materiality of a heritage site was thought of as the aspect of a site that needs protection. Towards the end of the twentieth century, the intangible aspect of a site or the meaning of a heritage site was also considered as being important to be protected. But the intangible nature of a site occurs or exists because of the existing physical site. The meaning or the intangible aspect of a site is actually embedded in its fabric and hence the tangible (the physical fabric) cannot be separated from the intangible aspect (the meaning of the site) [2] [3] [4].

1.5. General guideline

The Statement of Significance should be written for a wide audience and not only for the educated few. It should be a narrative that first and foremost explains clearly the history of the place in a way that the general public can easily understand. The history must be complete but not too detailed. Everything that is written in the Statement of Significance is written in such a way to communicate the heritage value of the building – both the tangible aspect as well as the intangible aspect.

1.6. The three sections of a Statement of Significance

The Statement of Significance is divided into three main sections. The first section deals with the description of the historic place, whilst the second section identifies the heritage values attributed to the site and the final section would deal with the identification of the character defining elements

A historic place is a physical place that ideally has been formally recognised for its heritage value by the local authority or a physical place that has the possibility to be recognised as a historic place. It does not necessarily imply that the site would consist solely of historic fabric but could also consist of new additions. For example, the Museum of Military History in Dresden, Germany (Fig. 1.2) is a historic place but also consists of a new addition to the historic structure. As a whole it is considered to be a historic place.



Figure 1.2: The Museum of Military History, Dresden Germany. New addition by architect Daniel Libeskind

A historic place may be attributed different values by different individuals as every individual has his/her own background of information or world view. Different values may also be attributed by different societies or groups of society as every society/group will have its own culture. [2] [3] [4].

1.6.1. Section 1: Description of the historic place

In this section the description of the physical characteristics of the place should be given as well as the principle properties. This section should be able to explain why the place could, should or would be formally

recognised as a historic place. When describing the historic place, one must also consider and include in the description the context of the site and explain the tangible and intangible aspects of the place, for instance the views the place may.

The description should include the main period when it was built and the typology of the place. It is also important to state the geographic location of the historic place, identifying its boundaries which is determined by the context which is mentioned above. Of course, the description needs to go beyond the exterior of the heritage place but must also include the description of the interior of the place.

1.6.2. Section 2: Heritage Values

This section should be in a position to identify as to why this place is considered to be important. By identifying the heritage values a place possesses it then makes it possible to work on the next step to identify the character defining elements that express these values. A place is significant to a community due to the heritage values it possesses. Hence it is important to identify what these values are and their characteristics. (Fig. 1.3) [5] [6] [7] [8].



Figure 1.3: Characteristics of heritage values. Source: [7]

Different individuals will value a heritage place differently for different reasons as they associate with the place in a different way. Also due to the fact the definition of heritage encompasses more objects and places, the values we consider are now wider than historic and aesthetic value. We now also include social value, spiritual value and cultural associations.

A place may be valued because it is the oldest of its kind or it is an excellent example of a certain type of place or the work of a certain individual. It could also be valued because it is a good illustration of a particular activity or a particular phase in the history of a community, or

plays an important role in the current social or spiritual life of a community.

1.6.2.1 **Aesthetic Value**

The aesthetic value refers to the sensory qualities of a historic place – it could include not only seeing, hearing, touching but also tasting. The visual aesthetics can be expressed through form, colour, texture or materials, and also auditory ones.

A particular style of period of construction or craftsmanship may be the reason for the aesthetic significance of a place. The work of a well-known architect, planner, engineer or builder may also be the reason for the aesthetic significance of a place [7].

1.6.2.2 **Historic or Cultural Value**

The historic or cultural value may lie in its age or heritage district, its association with the important events or activities, people or traditions. A place may have historic or cultural value also if it has a significant role in the development of community, region or nation. The pattern of use, its natural or ecological features of the place as well as built features could also be of historic and cultural value [7].

1.6.2.3 **Scientific Value**

Scientific value is the capacity of a historic place to provide evidence which can be found in: form, materials, design and/or experience of the place. Such evidence can advance our understanding and appreciation of a culture. Written sources and archaeological sites could also be the source of scientific value [7].

1.6.2.4 **Social Value**

The social value considers the attachment a community has to a place in the present time and such places usually perform a key role to that community. It supports community activities or traditions or could also contribute to the society's identity. Such places help to bring the community together and create a sense of shared identity and belonging [7].

1.6.2.5 **Spiritual Value**

A place that has religious or spiritual meaning for a community or a group of people could be attributed with spiritual value. Religious or spiritual places could include mythological significance, landscape features associated with myth and legends, burial sites, rock cairns and alignments, etc... [7]

1.6.2.6 Writing the Heritage Value section

The heritage value section should be written as a narrative. Each value should be described and should include a statement about that value. This should be followed by an explanation about the context where the value is found and why the historic place is significant within that context. Only the significant values associated to the site should be included.

The heritage value section is not a state of fact but should be a statement of value. It should include information which relates to the heritage value of the place but not include its current use unless the use is one of its heritage values. [2] [3] [4]

1.6.3. Section 3: Character-defining elements

This section will answer the question, ‘What features of the historic place must be preserved in order to maintain its historic value?’ The character-defining elements identify the principal features of the historic place that contribute to its heritage value. Hence these elements are important to preserve as they are the reason why the place is attributed with heritage values.

The character defining elements could be either intangible or tangible features. These features are what express the heritage values associated with the historic place and these elements could consist of the material, form, location, spatial configuration, use as well as the intangible characteristic that consists of cultural associations of meanings that contribute to the heritage value of the historic place [2] [3] [4].

1.6.3.1 Writing the Character-defining elements

This section should be written in point form so as to make it easier to identify the features, and could also be enhanced with images. This section should lead the reader to understand where the values are embodied. This aspect of the Statement of Significance is crucial to be accurate if it is to be used for a conservation project and the decision-making process of the conservation project [2] [3] [4].

1.7. Completing the Statement of Significance

Once the Statement of Significance is written it is important to make sure that the three main sections work together. That is the history, cultural values support each other and are the individual sections consistent with the other two? Does the heritage value section and the character-defining elements section refer to the historic place as it was described in the description of the historic place? It is also important that the character-defining elements relate directly to the heritage values prioritised in the

heritage value section and also that the character-defining elements reflect the features that currently exist on the site. [2] [3] [4]

1.8. Conclusions

The statement of significance allows the decision-maker to take decisions as to how to intervene on a heritage site in a way that is ethically correct to the historic structure. It also allows the protection of the values which are identified and prioritised. One must also understand that any intervention, even for example like simple maintenance or a cleaning intervention will enhance some values but may also disregard others.

The statement of significance should be written in a simple manner that is understood by all and gives an understanding to all as to the importance of the site in question. It could, for example, help in nominating a site for scheduling as it may highlight values and characteristics which could have been overlooked previously. Identifying values that are embodied in particular physical elements within a building aids the protection of such characteristics.

The statement of significance can also help in the protection of the intangible aspect of a heritage site. In the values section, anthropological values could be added. In section 3, the characteristics or features linked to these anthropological values would be listed. Such features could also be attached to the memory of how the site was used in the past, and hence the intangible aspect of the site could also be protected.

The use of a statement of significance is versatile and should always be the starting point of any intervention carried out on a heritage site, be it an intervention of conservation, restoration, reuse, or reconstruction of lost parts of the building or any other intervention.

REFERENCES

- [1] ICOMOS (2013), *The Burra Charter & Practice Notes*. <https://australia.icomos.org/publications/burra-charter-practice-notes/>.
- [2] British Columbia, “Guidelines for Writing Effective Statements of Significance” [online]. <http://www.rdmw.bc.ca/media/Guidelines%20for%20Writing%20Statements%20of%20Significance.pdf>.
- [3] English Heritage, “Conservation Principles, Policies and Guidance.” [Online] <https://historicengland.org.uk/images-books/publications/conservation-principles->

sustainable-management-historic-environment/conservationprinciplespoliciesandguidanceapril08web/.

[4] English Heritage (2019) “Statements of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12”. [Online] <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/>.

[5] Diaz-Andreu (2017), “Heritage Values and the Public,” vol. 4, no. 1, pp. 2–6, [Online]. Available: <https://doi.org/10.1080/20518196.2016.1228213>.

[6] J. Paul Getty Trust (2002), “Assessing the Values of Cultural Heritage” [Online]. Available: https://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/assessing.pdf.

[7] de la Torre M. (2013), “Values and Heritage Conservation,” vol. 60, no. 2, pp. 155–166, Nov., [Online]. Available: <https://doi.org/10.1179/2159032X13-Z.00000000011>.

[8] Fredheim L. H., Khalaf M. (2016), “The Significance of Values: Heritage Value Typologies re-examined,” vol. 22, no. 6, pp. 466–481 [Online]. Available: <https://www.tandfonline.com/doi/full/10.1080/13527258.2016.1171247?scroll=top&needAccess=true>.

CHAPTER 2

EthnoAlly: With the smartphone as field assistant

Alfonso Bahillo, Paolo S.H. Favero

2.1. Introduction

A core part of the ethnographic fieldwork consists in bringing together the various materials collected during a day in the field. This daily activity must be managed in a coherent way for generating intelligible documents or archives for further consultation. The ethnographer must be capable, in fact, of finding later on his way through this mass of information, once failed the direct memory of the portrayed events. Perhaps, the laboriousness of this activity is mainly true for those ethnographers who conduct research in dense milieus, or in contexts where little time is left for them during the day to collect materials and thoughts.

Digital technologies are entering the anthropologists' lives on both the field and elsewhere, morphing the ways in which they conduct fieldwork, and 'how they record, process, analyse and communicate their findings' [8]. Smartphones, in particular, have greatly contributed to this shift. For those of us living in wired societies, they have become an integral part of our everyday routines, effectively affecting our experiences of events, locales, relationships, and bearings [5], [7], [1]. Moreover, as digital and mobile technologies are increasingly embedded on(to) the body, we are today also witnessing to an increased entanglement between material bodies and mobile/digital technologies [2], [4].

The digital tool presented here, EthnoAlly (the ethnographers' field ally), responds to the changed and changing fieldwork conditions. The tool was designed for the purpose of exploiting the possibilities presented by contemporary digital technologies in the context of ethnographic research.

The smartphone offers, in fact, the possibility to conduct what we call “serendipitous ethnographies”, that is to capture significant quantities of information, even in the most unexpected mundane moments.

Today, mundane consumer technologies have indeed inserted themselves into this scenario. Smartphones, in particular, have become prosthesis of the body of ethnographers, in a McLuhanian fashion [6], and hence repositories of different types of information. A smartphone is, in fact, a very handy tool for taking a quick image, for recording a sound, for storing a particular place on a map, etc. On top of these digital assets, there are today also increasingly powerful applications for visualising, organising and archiving audio-visual-geolocative information such as Apple Photos, Google Photos, Picasa, digiKam, or Google, Bing, wikiMapia, MapQuest, and Waze Maps, among other similar applications.

While the market is today filled with different applications and websites doing partially what motivates this work, the main goal of EthnoAlly is to bring together in one single space all those features that can be useful for conducting ethnographic fieldwork.

2.2. The Digital Tool

Let us immediately introduce the digital tool. First, it is important to emphasise that EthnoAlly is more than a smartphone application (app). It is a digital tool designed specifically for the purpose of conducting participatory audio-visual ethnographic research. Nevertheless, as it will be seen throughout this section, the target audience of this tool can cover a wide range of users. Briefly explained, EthnoAlly consists mainly of an App¹, allowing the user to collect audio-visual material, and a web-based platform helping the user to extract information from the multimedia material collected, and transforming it into an understandable structure for further uses. These two elements are connected by an additional component, the server in the cloud, which operates as a bridge between the app and the web platform. The server synchronises, archives, and organises the raw data acquired by the app, for bringing it to the web platform, which delivers its proper visualisation and data mining. The architecture of the complete digital tool is sketched in Fig. 2.1.

Nevertheless, into this section it will be described, accompanied with screenshots directly extracted both from the app and the web platform. The key of EthnoAlly is indeed not the app itself but rather the web platform, where the researcher will access the multimedia material about every user’s profile, their answers to the interviews, their movements in space, the speed of such movements, the stops enacted, their length, or even the

weather conditions during the fieldwork to better understand the user-spatial relationships.

The researcher will also be able to visualise the images, the textual, and the audio notes taken by the user. We do not, however, consider this material to be the actual research data. The material gathered with the help of the app will function as the seed on which to perform other types of enquiries. The researchers will adopt techniques inspired from the ethnomethodology [3], and enact a series of repeated interviews and observations, focusing particularly on glitches and misunderstandings.

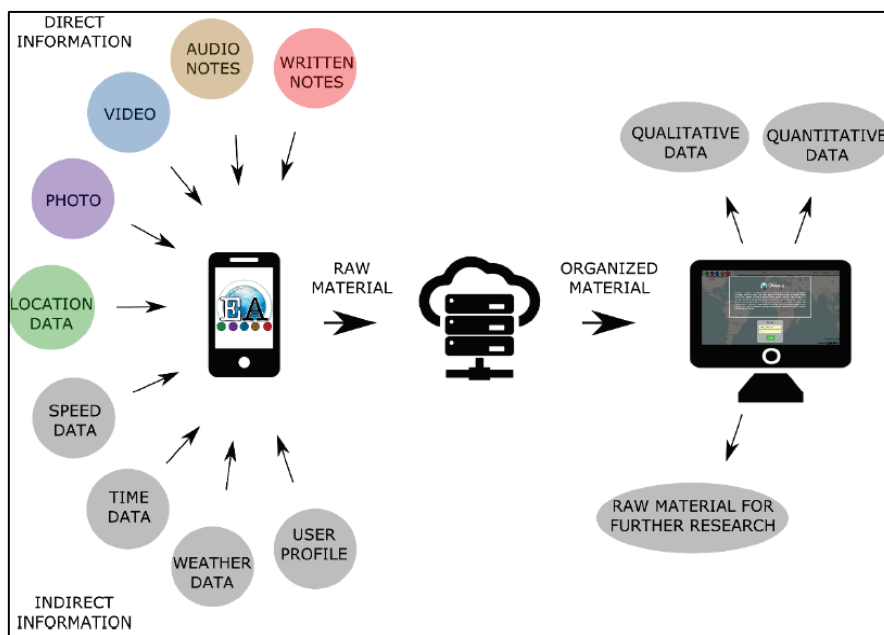


Figure 2.1: Architecture of the EthnoAlly Digital Tool

We will use the images, notes, and voice memos produced by other users² as support material for further interviewing our interlocutors (this time too in front of a camera), hence gaining the opportunity to go back to the collected material and ask for explanations regarding their practices and decisions. We believe that the material produced with the help of EthnoAlly can provide a unique platform on which to start building a layered understanding of specific and situated social actor's ways of experiencing the world in which they live. We call for an ethnographic methodology combining the old with the new, the established with the emergent.

Foregrounding the importance of focusing on the depth and layered, situated nature of human experience (i.e. small and slow rather than big

data), the tool builds on the integration of new technologies with more 'old-fashioned', established ethnographic practices such as participant observation, interviews, ethnomethodological inquiries, etc.

2.3. The Smartphone-based Application

The EthnoAlly app, primarily defined as a collector of audio-visual information, is able to gather different types of multimedia data, such as videos, photos, audio and text notes. All the material can be introduced by the participants thanks to a user-friendly interface. In line with this, it is important to highlight that our intention has been to develop an app to be used by a wide diversity of users. Taking into account that some professional profiles, or common users, are not familiar with smartphone environments, a great effort was made for designing an "easy-to-use" app. Additionally, it is important to point out our full commitment with the users' privacy. For this reason, all the collected information by any user cannot be seen by any other else, apart from the material set as public. By the term *public* we mean visible and available for any EthnoAlly participant. On the contrary the participant can declare the material as *private* which means that only the owner of the material can access or visualise it.

Moreover, EthnoAlly researchers can access all the gathered data, prior confirmation consent of the other users. Anyway, all this information is completely untied from any personal identification. In this way, researchers could use the material for research purposes, but they will never be able to associate the data with any specific user. The data gathered by the app can be divided into two different groups: direct and indirect data. Direct data are these audio-visual materials that are produced by the users while interacting directly with the environment, and they represent the principal data that any EthnoAlly user can pick up. These materials are: photos, videos, audio and text notes. Besides that, the indirect information represents the descriptive metadata.

This material is inferred by the app while it is being used, even in background. Some examples of this indirect information are the position and the time, what we can derive from them such as the participant's speed, or what we can get from the context such as the weather conditions. All these materials have a crucial importance to contextualise all the direct data properly and will help the researcher to completely understand users' behaviour. The first time the user logs into the app s/he is invited to fill an optional form with the aim of setting the user's profile. This profile is composed of information, such as the gender, age range, and country of residence. It is important to note that no sensible

data will be asked for filling the user's profile, such as any personal identification. Apart from allowing the user to take and/or edit audio-visual material (some screenshots are shown in Fig. 2.2), EthnoAlly app implements two functionalities, which will help the ethnographer by permitting EthnoAlly to do the job of recomposing such material during the fieldwork. These are the track and the interview functionalities. On the one hand, a track is a concept related to the activity performed by the user from the moment the track is activated until its ending. All the direct and indirect information acquired by the app during that period is automatically associated to the track. Furthermore, users can also attach any direct material taken in any other time, or through another method or app. For example, a user can link to a track photos or videos available in the gallery of their smartphone.

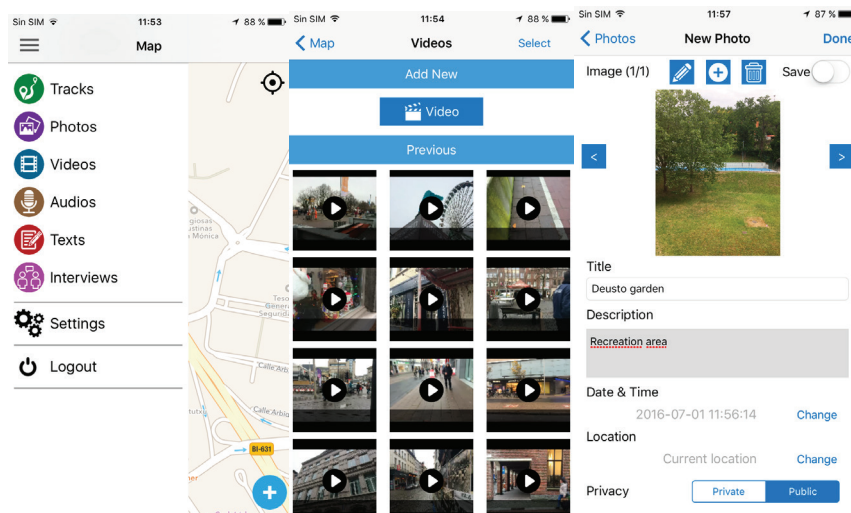


Figure 2.2: Samples of screenshots related to the audio-visual material

The result of this process is a route composed by all the materials hold and attached to the track (an example is shown in Fig. 2.3). Nonetheless, users can visualise and analyse all their tracks using the web platform in two different modes, which will be explained in the next subsection. On the other hand, the interview functionality allows the researcher to focus on the conversation, to get lost in the interviewee story. This functionality records the interview while the interviewer can show some audio-visual material on the same smartphone. When the interview ends, EthnoAlly automatically transcribes the audio into text conversation, and translates it into the selected language (an example of the app screenshots is shown in

Fig. 2.3). In this way, the researcher organises all the interviews, which can be easily reproduced anywhere and at anytime through the web platform. Therefore, we can easily imagine an ethnographer, or an anthropologist, or even a tourist or a local user, creating her/his diaries of a perfectly contextualised experience, or a journalist using EthnoAlly to gather all its interviews, contextualised and archived.

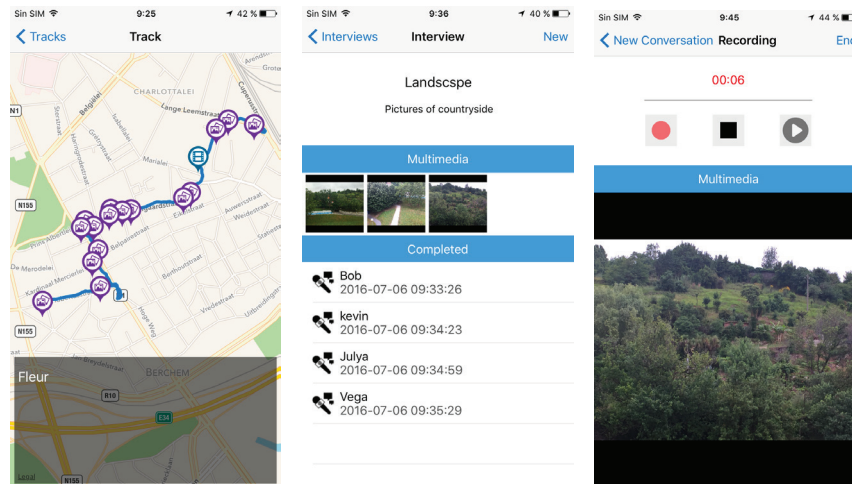


Figure 2.3: Samples of screenshots related to the track and interview functionalities

2.4. The Web-based Application

As it has been pointed out, the other main component of the digital tool is the web platform. This platform is fed by direct and indirect data gathered by the app, which are stored in the EthnoAlly cloud server. In this sense, the server is in charge of organising all the collected data. Then, this organised material is given to the web platform for its presentation, facilitating any further visualisation and analysis.

The most interesting functionalities of the web platform are the possibility of visualising and analysing all the gathered data, and the content search engine (<http://cloud.mobility.deustotech.eu/ethnoally>). On the one hand, it is easy to imagine the work of an ethnographer, who after a day of work collecting different information can easily view it throughout the web platform. All these data are contextualized, which means that all materials appear superimposed on the map in those exact places where they were collected (as it can be seen in Fig. 2.4, a created track).

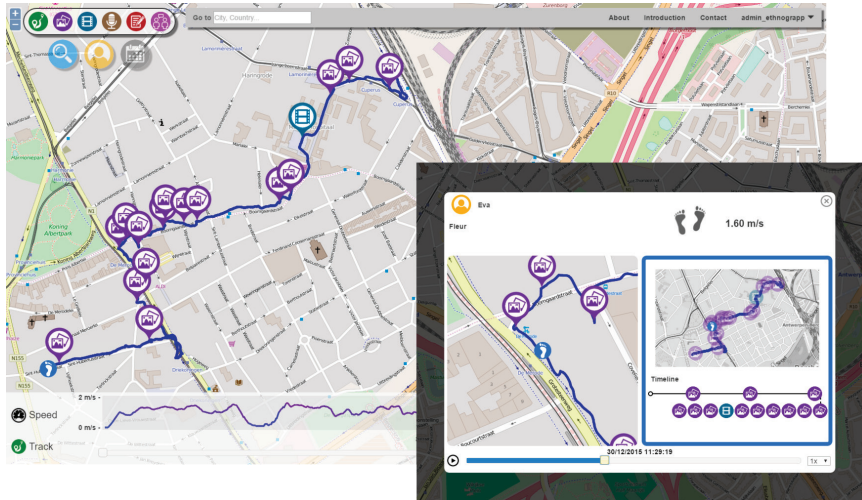


Figure 2.4: The web platform visualising a track in two different modes: map and video

Besides this, all information has additional contextual data associated, such as the weather conditions or the exact time when materials were collected. Analysing again the Fig. 2.4, we could also think of an eventual trekker, or a runner, visualising the route taken one day, and being able to know which sites s/he has visited. Additionally, the route may have associated materials such as written notes, audios, photos or videos, which appear on the route at the exact place where they were gathered. Furthermore, as it has been displayed in Fig. 2.4, tracks can be visualised in an especially created video mode. In this mode, a user can reproduce step by step the travelled routes. Every time the route reaches a point where a direct material was gathered, it is automatically shown or reproduced. On the other hand, to facilitate the search of the different content stored in the server, the web platform offers both to researchers and users a user-friendly search engine. This is one of the most valuable functionalities of the web platform. Thanks to this engine, any user can search any kind of content by keyword, user, or time-period. In Fig. 2.5, for example, a search by keyword of any type of content has been made (track, photo, video, audio or written note). The search term in question is 'street', and, in this case, one video matches with the search conditions.

Furthermore, searches based on users can be also made. In this case, the user can search any other user introducing her/his name. In this case, all the public content associated to the searched user is displayed, as it can be seen in Fig. 2.5. Additionally, searches based on time-periods can be also performed. Thanks to these functionalities, the web platform has a great research potential,

since researchers can access and visualise a wide variety of information, such as the users' movements in space, the speed of such movements, the stops enacted, their length, etc. They will also be able to visualise the images, videos, textual and audio notes taken by any user. Therefore, researchers can access to all the gathered material, both public (with the user's identity associated) and private (after the anonymization process).

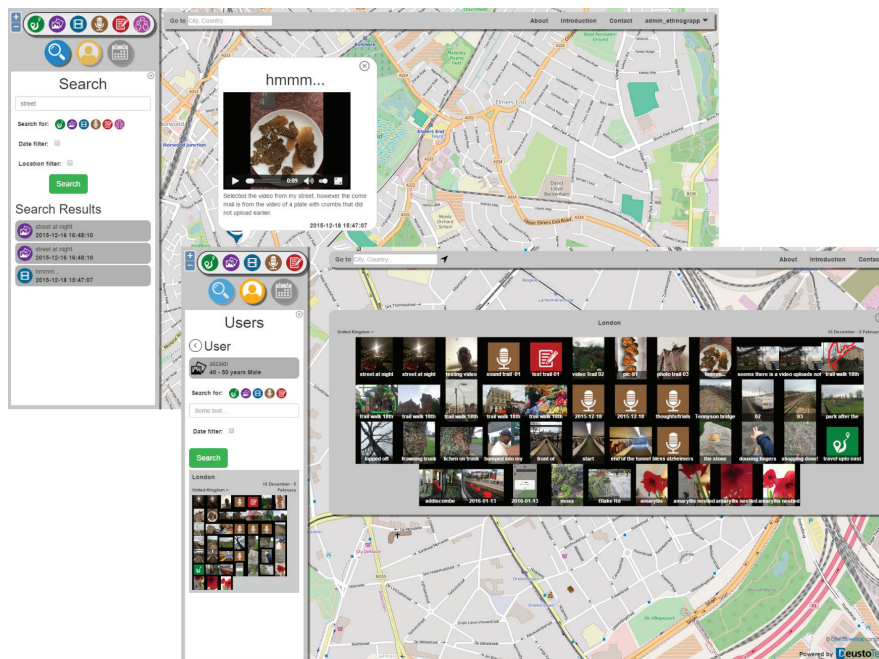


Figure 2.5: The web platform search engine: by keyword and username

In this way, they can analyse all these data, which can be classified into two categories: quantitative data, and qualitative data. The first of these categories, qualitative data, is composed by the directly gathered material, such as videos, photos, text or audio notes. Analysing this information, researchers can get an idea of the users' behaviour in certain locations. In this first category users are approached as individual actors, and the questions that researchers can answer with this material are for example 'what kind of actions perform the individuals in that park?', 'what elements are photographed, or filmed, by the participants in this street?'. Then, this can be synchronised with the available quantitative data (such as speed, user position, time), which may stimulate further questions about the user's motivations and hidden assumptions to take a photograph, video, create a textual or a sound note at a particular time and place.

Finally, despite the first objective of EthnoAlly was the audio-visual ethnographic research, it is worth mentioning that we have focused all our efforts on providing a pleasant experience and interesting features for the average user. In fact, these average participants are our priority users. For instance, another interesting functionality that EthnoAlly brings to its users is the possibility of publishing the organised material in social networks. This feature is especially interesting for travellers or tourists, which could easily share their travel experiences with their family or friends. For this functionality, the digital tool eases the process of audio-visual material creation, generating by itself a presentation with all the audio-visual data selected by the user. All this process is performed using the EthnoAlly web platform.

2.5. Conclusions

It is our aim, at a second stage, to further develop this app, possibly together with local authorities, into a popular tool (including geosocial and augmented reality functions) able to help participants to maximize and personalize their experiences of selected attractions. We envision for the future to find new synergies for small-scale projects capable of inserting the tool in contexts where the presence of an ethnographer may generate difficulties (such as the case of particular forms of marginalization or social invisibility, etc.). We are also expanding our explorations of the use of the sensors embedded in smartphones for monitoring the above-mentioned processes.

REFERENCES

- [1] Collins, S.G., Durlington, M., Favero, P., Harper, K., Kenner, A. and O'Donnell, C., (2017). *Ethnographic apps/apps as ethnography*. *Anthropology Now*, 9(1), pp.102-118.

- [2] Favero, P. (2016). *Analogization: reflections on life-logging cameras, action cams and images' changing meaning in a digital landscape*. In Cruz, E. & Lehmuskallio, A. (Eds.) *Digital Photography and Everyday Life: Empirical Studies on Material Visual Practices* (pp. 209-227). London/New York: Routledge.
- [3] Garfinkel, H. (1967), *Studies in Ethnomethodology*, Prentice-Hall, Englewood Cliffs, NJ.
- [4] Ibrahim, Y. (2015). *Instagramming Life: Banal Imaging and the Poetics of the Everyday*. *Journal of Media Practice*, 16, pp. 42-54.
- [5] Lapenta, F. (2011). *Geomedia: on location-based media, the changing status of collective Image production and the emerging of social navigation systems*. *Visual Studies*, 26, pp. 14-24.
- [6] McLuhan, M. (1994), *Understanding the Media-The Extensions of Man*, Cambridge: The MIT Press Print.
- [7] Tacchi, J., Kitner, K.R. and Crawford, K. (2012), *Meaningful Mobility*, *Feminist Media Studies*, 12:4, pp. 528-537.
- [8] Tratner, S.W. and Sanjek, R. (2015). *Preface*. In Sankjek, R. and Tratner, S.W (Eds.) *eFieldnotes: the Making of Anthropology in the Digital World* (pp. ix-x). Philadelphia: University of Pennsylvania Press.

NOTES

¹ EthnoAlly can be downloaded for free to iOS and Android-based smartphones.

² By “user” we mean any person able to collect data (in the form of images, notes, videos or audio) from a context.

Audience Development of Underground Built Heritage Sites

Tony Cassar

3.1. Introduction

The world is constantly changing and so are museums and cultural heritage interpretation centres. The closure of physical museums as a result of COVID-19 led us to rethink our audience strategies. Underground heritage sites are more than just an underground cave, site or building. These sites are in a relationship with visitors, stakeholders, sustainability and sometimes their very own existence.

Visitors are at the very heart of modern museums [1] and cultural heritage sites. Without visitors they will fail and, therefore, understanding them is crucial for their survival. Understanding audiences goes beyond the basic, oftentimes meaningless, demographic figures usually collected by cultural heritage sites. What motivates the public to visit museums and cultural heritage sites, their needs and expectations, as well as the reasons why some people refuse to visit at all, provide valuable insights into helping us understand audiences [2].

A comprehensive overview of the development of museum studies can be found in J.R Loomis's book, *Museum Visitor Evaluation: New Tool for Management* [3]. Understanding what motivates these people to visit museums and various cultural heritage sites, including those found underground, rather than engage in some other entertaining activity will help museums understand better their audiences and the visitor experience that should be offered. Equally important is the understanding of why many more people refuse to visit museums.

The visitor experience is vital to ensure the sustainability of museums and cultural heritage sites. Before, the visitor experience was considered a luxury add-on to what the museum offered. With the advent of this new visitor centred approach in museology, the visitor experience now lies at the very centre of the museum's existence. Contemporary museology shows that museums and sites have stopped focusing inward into their collection and are now looking outwards towards their visitors [4]. Creating visitor-centred experiences now lies at the very core, and this applies as well to underground heritage sites.

Very often underground heritage sites are not burdened by huge collections like most museums, the underground itself is the artefact. Still there are many cases where the visit to the site is designed just from a curatorial point of view rather than the focus being on the visitor experience. Understanding the expectations of visitors, what motivates them to choose visiting such a site, and the continuous changing realities of new audiences, such as those in Generation Z, will allow us to better design experiences that attract visitors and make underground heritage sites sustainable..

3.2. New ways of classifying audiences

The traditional gender and demographic analysis of visitors is not effective enough to really understand who the museum visitors are. People visit museums for personal reasons and not just as a result of their gender or because they come from a majority or minority part of the population. Although these personal reasons are also related to gender and ethnicity, they are very much influenced by the person's leisure choices [5]. In countries where tourism is very important, audience classification is sometimes split between locals and tourists. This again tells us very little useful information about why these visitors choose to visit.

In the past decades museums have shifted from their original conception as warehouses of artifact collections to institutions that can offer transformative experiences to individuals and communities. Underground heritage sites need to also offer such experiences to their visitors. Such sites need to be relevant to visitors' lives, the community and the larger society.

The more we understand what is expected from the visitor experience the more we can design experiences that will positively affect people's lives. The visitor experience is much more complex than what happens in the confines of the museum building or underground heritage site. Personal motivation, individual and group identity are all important shapers of the visitor experience.

One of the most effective ways of helping us understand visitor motivations is the development of personas. This will allow us to walk in the shoes of different visitors and understand what motivates them to visit a particular site. Building on his vast experience with studying museum visitors, John Falk devised a predictive model of the visitor experience [4]. This is important because it can help the museum meet visitors' needs and expectations. Falk's theory moves away from categorizing visitors by the traditional audience groups such as occupation and demographics, which is what most museums currently rely on to predict visitors to their institutions. In his book *Identity and the Museum Visitor Experience* he creates a preemptive model of identifying and classifying museum visitors according to their identities and their motivations for visiting a museum [6].

Based on hundreds of interviews of people visiting the California Science Center, Falk classified these visitors into 5 main groupings related to different types of leisure benefits perceived to be achieved by visitors; Explorers, Facilitators, Experience Seekers, Professionals [7].

Explorers	Professionals	Facilitators	Experience Seekers	Rechargers
Want to learn new information and understand new concepts	Want to see and study specific pieces or exhibits	Want to ensure that their companions meet their visit goals	Want to see the most renowned pieces and make memories	Want to relax in a peaceful atmosphere

Table 3.1: The five major audience groupings by motivation identified by John Falk

It is very difficult to neatly categorize human beings into specific categories. This is because motivations change, and it is normal that an individual's visitor type will change depending on the motivation of that specific visit. What is sure is that the one size fits all mass produced visitor model does not fit the museums and cultural heritage sites of the 21st Century. The book *Identity and the Museum Experience* stresses that every visitor is different with varying needs and interests. One characteristic that is, however, common in every visitor's motivational category is learning, be it explicit or implicit [7].

When identifying personas, it is very important to take diversity into account. Diversity is a broad term encompassing abilities and disabilities, culture, socio-economic status, gender, sexual orientation and much more. Underground heritage sites must take care to be accessible in both physical and cultural ways to the broadest possible spectrum of visitors. Digital technology can help underground heritage sites still be accessible to

visitors with limited mobility as such sites are not always easy to make fully accessible.

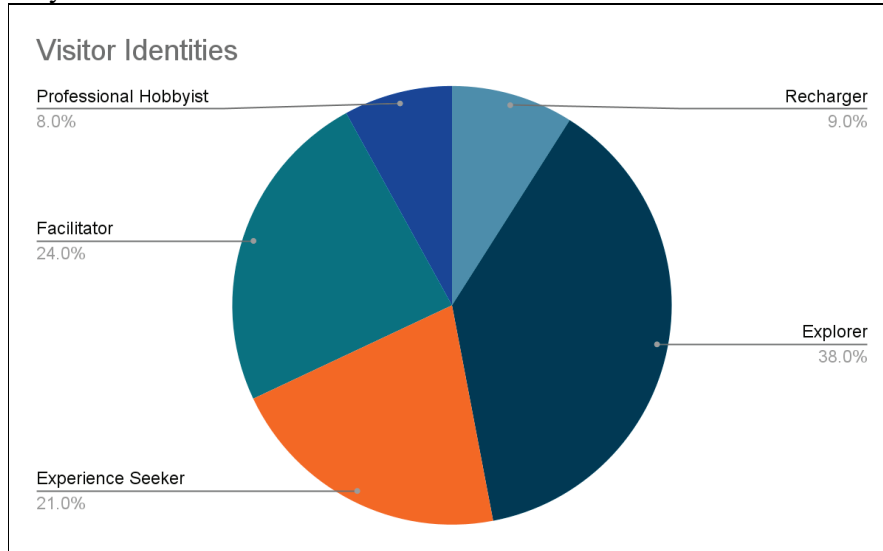


Figure 3.1: Visitor identities, adapted from J.H. Falk [7]

3.3. Applications

The Valletta Underground is a vast tunnel network hewn into the living rock beneath the baroque city of Valletta, by the Knights of Saint John and later expanded during WWII. This underground tunnel network has been scanned and documented and now opened to the public. Yet this site offers a number of accessibility challenges to people with limited mobility. The underground is accessible via narrow somewhat slippery stairs, given the continuous water seeping through the limestone rock walls. There are no lifts and some areas can be a bit claustrophobic for some.

In order to make such a site accessible to people with limited



Figure 3.2: Photos of the huge cisterns and tunnels found in Underground Valletta

mobility, a Virtual Reality system is currently being developed to allow visitors to explore the underground, at their own pace without setting foot inside the underground itself.

Bill Gates once said that “Content is King”. Our content should be accessible both in person and digitally. This refers not only to the internet but also to other technologies that play a part in modern-day museum and cultural heritage site visitor experiences. The digital revolution and emerging technologies offer many important tools that help us provide effective visitor experiences.

Of all generations living today, Generation Z (1997 - 2012), are the ones most influenced by online communication and online education. They are hyperconnected, experience oriented, experts in the use of social media, multicultural, blurred gender roles, very inclusive and love co-creation. This is a very important generation for museums as they are the future family makers of society, and they will have the main spending power in the coming years to decide if they want to spend any of it on cultural heritage sites. They are often misunderstood as there is a generation gap between designers of cultural heritage sites and this generation.

To attract such audiences, experienced designers must ensure they understand well what these future audience visitors expect. These include, personalised content, the ability to allow visitors to be involved, message driven content easy to find and access, social media presence not necessarily using FaceBook to connect and communicate, gender neutral services and exhibition bias, event driven content, as well as multidimensional exhibits that appeal to different types of learners including interactive games, collaborative projects and challenges.

Home to a wealth of North Wales slate mining history, Slate Caverns now houses



Figure 3.3: Zip Lines within Slate Caverns, Wales. Source: <https://www.zipworld.co.uk/>

world-first underground and above-ground adventures. With views across Snowdonia from the top of Titan 2, where visitors can zip 1080 m from half the height of Snowdon to the world’s only subterranean playground of its kind, Bounce Below, and Caverns, the most incredible underground adventure zip line and adventure course – there is something for everyone in all weathers!

Every visitor to an underground heritage site expects to learn something making such a visit different from visits to other venues such as theme parks. Although museums and cultural heritage sites offer many benefits related to leisure, the most dominant aspect of the visit is learning.

By understanding the Falk Visitor Experience Model, underground heritage sites can start making necessary changes to be more in line with the needs and expectations of their visitors.

The more we understand visitors and their needs, the better we can create an experience that meets their needs and expectations. Some sites do not even meet the basic human needs, such as comfort.

When designing visitor experiences we must ensure that we put a lot of focus on the way visitors interact with such sites. Museums and interpretation centres often spend all their energy on the brains of visitors and what they want their visitors to learn, and leave no room for the bodies of visitors. Basic amenities, such as toilets, refreshment areas, and even souvenir shops are services that are expected as basics by visitors. Underground sites may often provide more challenges to incorporate such



Figure 3.4: Photos from within the Wieliczka Salt Mine (PL). Source: Author Photos, 2019

services but there are many great examples of how this has been done effectively.

The Wieliczka Salt Mine, in the town of Wieliczka, southern Poland, welcomes thousands of visitors every day. This underground site is now an official Polish Historic Monument and a UNESCO World Heritage Site. There are many appealing features to the mine, such as the shafts and complex passageways, technology used in historic salt-mining on display, an underground lake, four chapels, and sculptures carved by miners out of the rock salt. There are also more recent sculptures by contemporary artists.

Although there are more than 800 steps to climb, the mine has been made as accessible as possible to people of all ages and does not require above average physical capabilities to visit. The use of projections and multimedia installations allows visitors to learn about old mining tools and machines and the methods of salt extraction and transport used in the past. Easy to use audio guides are provided to allow visitors to admire landscapes that can't be found on the surface: such as saline lakes and beautiful underground chambers, including the unique St Kinga's Chapel. Various visitor facilities such as toilets, souvenir shops, and even a refreshments area are offered within the site.

3.4. Audience Development

Attracting more visitors to underground heritage sites is the key to make them sustainable. This in turn would help them justify requests for further funding and assistance. Audience development is not simply getting more of the museum's existing visitors. NEMO – the network of European Museum Organizations describes Audience development as a tool to allow “museums to better reach current and potential visitors by more effectively meeting their needs and expectations and by developing stronger on-going relationships with the audience.” (the Network of European Museum Organizations NEMO, 2019). It is thus very important to find out why certain audience groupings are not being attracted by cultural heritage sites.

Audience development refers to the process of retaining existing visitors ensuring they become repeat visitors as well as attracting new audiences. It brings together different stakeholders be it curatorial, educational, marketing and visitor services. In today's visitor-centred approach to cultural heritage valorisation, audience development becomes the most important role for the underground heritage site.

REFERENCES

- [1] Stam, D.C. (1993). *The informed muse: The implications of 'the new museology' for museum practice*. *Museum Management and Curatorship*, 12(3), pp. 267-283.
- [2] Falk, John H. (2009), *Identity and the Museum Visitor Experience*, Routledge, New York. DOI <https://doi.org/10.4324/9781315427058>
- [3] Goldman, K. H., Schaller, D. T., & Adventures, E. W. (2004a). *Exploring motivational factors and visitor satisfaction in on-line museum visits*. Paper presented in D. Bearman & J. Trant (Eds.), *Museums and the Web*.
- [4] Falk J. H., Dierking L.D. (2013), *The Museum Experience Revisited*, Museum Experience Revisited, Routledge, New York.
DOI <https://doi.org/10.4324/9781315417851>
- [5] Vergo, P. (1989). *The new museology*. Reaktion Books.
<https://economiecreativa.wordpress.com/innovative-audience-development/>
<https://www.grin.com/document/445226>
- [6] Packer, J. and Ballantyne, R. (2002), *Motivational Factors and the Visitor Experience: A Comparison of Three Sites*. *Curator: The Museum Journal*, 45: pp. 183-198. <https://doi.org/10.1111/j.2151-6952.2002.tb00055.x>
- [7] Falk, J. (2016). *Museum audiences: A visitor-centred perspective*. *Loisir Et Société / Society and Leisure*, 39(3), pp. 357-370.
<https://doi.org/10.1080/07053436.2016.1243830>

PART 2

THE CASE-STUDIES STORYTELLING

CHAPTER 4

The case of Aya Napa Monastery

Mia Trentin, Lola Vico Lopez

4.1. Overview

“The 13th [of September] I landed again: after breakfast the consul wished me to go to see a place noted for its sacred character and natural beauty; the Greeks called it Agia Nappa (S. Nappa) [...] Here is a church built in a grotto, where was found a wonder-working image of the Virgin”.

Pietro della Valle, 1663[1, p. 213]

Pietro della Valle's words about the cave church and monastery of Ayia Napa offer a perfect insight into the site's religious value and natural landscape as visitors across the centuries perceived it. The cave church and cult site were the catalysts for the creation of the surrounding village and, for centuries, attracted religious and economic interests thanks to their position and sacred value.

The situation dramatically changed in 1974 after the Turkish invasion of Famagusta, which displaced many refugees from the city to the Ayia Napa and Protaras area. Thanks to its natural landscape and enchanting coastline, the area started developing touristic facilities to offer to the local and national economy the economic support previously provided by Famagusta.

Unfortunately, during this process, the cave church and the monastery lost their role as catalysers. They got lost in the new urban settings developed following the 1980s resort model based on nightclubbing and beaches.

In the last decade, this model started to show its limits, but after the Covid-19 pandemics it has become outdated and inefficient. Local stakeholders have finally realised their need of modifying the present

touristic offer, by adding elements such as history, tradition and culture to the resort model.

The first step was to restore the sociocultural and religious value and role of the cave church and the monastery, still proudly standing in the town centre. Moreover, the site is currently being turned into a museum addressed to locals and tourists.

Within this plan, the cave church plays a paramount role: the first space from which the monastic complex and the surrounding village originated.

With the COST Action CA18110 Underground4value, we focus on Ayia Napa as a case study for its long-lasting and intense history combined with its recent development. The main aim is stimulating and supporting the local community and stakeholders to rediscover and valorise the cave church, as a catalyst for local development, and the discovery and valorization of the diversified Underground Built Heritage of the area. All the south eastern coast and inland, in fact, is reach in natural caves that have been used across the centuries by the local communities creating a perfect interaction between the inhabitants and their landscape. The cave church, then, become the focal point of a network which aim to raise awareness and promote the valorization of this spaces, integral part of the local history and culture.

4.2. The Cave Church in Context

The village of Ayia Napa is located on the southeast coast of Cyprus, between cape Pila and Cavo Greco. The area has a peculiar geology, characterised inland by the presence of red soil rich in iron that also gave the name to the area, locally known as Kokkinochoria – red villages. Thanks to the exceptionally fertile soil, in the area it has developed a flourishing agricultural production that constitutes one of the primary incomes of the region.

On the other side, the coast is characterised by a limestone bedrock with high cliffs waning towards the sea and suggestive sandy beaches [2, pp. 24, 45-46]. The coastal villages, such as Ayia Napa, traditionally combined rural activities with fishing.

Moreover, the bedrock formation's presence has shaped the area's natural and anthropic landscape. Natural caves have been inhabited since the Neolithic period and are still used by shepherds as animal shelters. The limestone bedrock was also used to built underground sites, such as the tombs complex of Makronissos [3-4].

In this sense, the Medieval monastery of Ayia Napa represents a prominent example of the use and interaction of the local community with the underground spaces.



Figure 4.1: The cave church dedicated to the Virgin. Source: Authors' photo

The original site of the cult, started in a natural rock cave, was integrated into a church structure around the 12th century. The present form includes the monastic complex, developed around the shrine between the Lusignan and Venetian periods (12th-16th centuries), and the church dedicated to the Virgin [5, pp. 317-319]. The cult was also favoured by the presence of a holy spring – Agiasma - inside the cave church.

Across the centuries, the church has always been the religious landmark of the area, dominating the village with the imponent structure of the monastery complex.



Figure 4.2: The church façade. Source: Authors' photo

This was until the second half of the 1970s when the impact of Turkish invasion of the Northern part of the island heavily affected the area.



Figure 4.3: The monastery. View from the top of the church. Source: Authors' photo

4.3. The Current Situation: Thread and Potential

After the 1974 Turkish invasion the economy and the urban structure of Ayia Napa crucially changed. Famagusta, one of the major Eastern Mediterranean touristic destinations, was occupied and thousands of refugees moved to the south, settling down in Protaras and Ayia Napa. Gradually, towards the end of the 1970s, all the touristic activities previously hosted in Famagusta were reestablished mainly in Ayia Napa, thanks to its long and attractive coastline. Following the touristic trends of the 80s, Ayia Napa tourism focused on a resort model, benefitting from an enchanting natural landscape. Leisure activities and facilities have been integrated throughout the years to fulfil the traditional concept of holidays based on relaxation and amusement [6].

This model demonstrated economically successful and, in 2015, the city tourist industry counted 9.327 tourist accommodation keys, with 3.285.723 overnight stays of international tourist [7, pp. 689 ff]. Despite the economic income guaranteed by this model, some weaknesses have been identified in the last couple of decades. First, this kind of tourism investing only in beaches and clubbing is seasonal and, in Cyprus, concentrates from April to the end of October. In the second instance, tourist trends are changing, and people ask for more varied and engaging activities.

Moreover, these two weaknesses already spotted were enhanced by the Covid-19 pandemic.

The impact of the pandemics on Cyprus for 2020 and 2021 has been estimated, with a loss of 98% of the incoming tourism. Ayia Napa is one of the areas that suffered more, with an estimated reduction of 90% of revenue [8]. Unlike other areas of the island, Ayia Napa had oriented its offer primarily to a foreign public. It was challenging to attract locals during the pandemic, mainly for the 2020 season. In other areas like Paphos, a differentiated offer based on landscape and cultural assets ensured a reduced but constant flow.

In the last years, Ayia Napa stakeholders decided to undertake a different path, focusing more on alternative tourism, such as the cultural one, in order to extend the tourist season and provide a more varied offer to the visitors. The monastery was the first focal point of this operation.

An important project, promoted by the Bishopric of Famagusta and the municipality of Ayia Napa, was launched to valorise the site. According to this project, the complex will become a key historic landmark thanks to the implementation of a new and innovative museum. The plan is to display the history of the site and the surrounding area through the exposition of objects and findings, guiding the visitors to discover and learn more about the local cultural heritage and traditions.



Figure 4.4: The monastery (left) and clubs (right) in the town centre. Source: Authors' photo

4.4. The Short-Term Scientific Mission (STSM)

The STSM research has developed the following three-phase method:

1. Zooming in on Ayia Napa and data gathering
2. Identifying priorities and strategies, stakeholder mapping and SWOT analysis
3. Challenges and opportunities

Each phase can be repeated and analysed at any time.

4.4.1. Phase One: Zooming in on Ayia Napa - Data Gathering

During the fifteen days of the short-term scientific mission, data was gathered using a combination of different techniques:

1. formal in-depth interviews
2. field inspections
3. documentary analysis
4. informal conversations with local respondents.

We conducted one-on-one, in-depth interviews with stakeholders in the Ayia Napa community, including local people, relevant national or local authorities, relevant non-governmental organisations, experts and academics. A questionnaire was developed to gather stakeholder perspectives and information for identifying areas of improvement and good practice. In the early stages of testing this preliminary questionnaire with the local community, we found that it did not accurately capture the actual perceptions of tourism, sustainability and cultural heritage (CH) among Ayia Napa stakeholders. The need for a change in approach was apparent following the first stakeholder meeting. However, following a reflective discussion, we developed a new approach to stakeholder mapping, which included revising and simplifying the previous questionnaire in terms of language and content. Issues addressed included:

- the impact of tourism on the city
- the promotion of the UBH and CH
- community involvement in the CH and sustainable tourism strategies
- safeguarding the tangible and intangible heritage and the creative industries, among others.

4.4.2. Phase Two: Identifying Priorities and Strategies. Stakeholder Mapping and SWOT Analysis

Building on the results of the first phase, the second phase identified strategies and priority action areas through the stakeholder mapping (Fig. 4.5) and the SWOT analysis (Tab. 4.1).

Mapping included the general stakeholders' landscape, interconnected themes, and a city-level chart showing the different departments and services potentially involved in the project (Fig. 4.5).

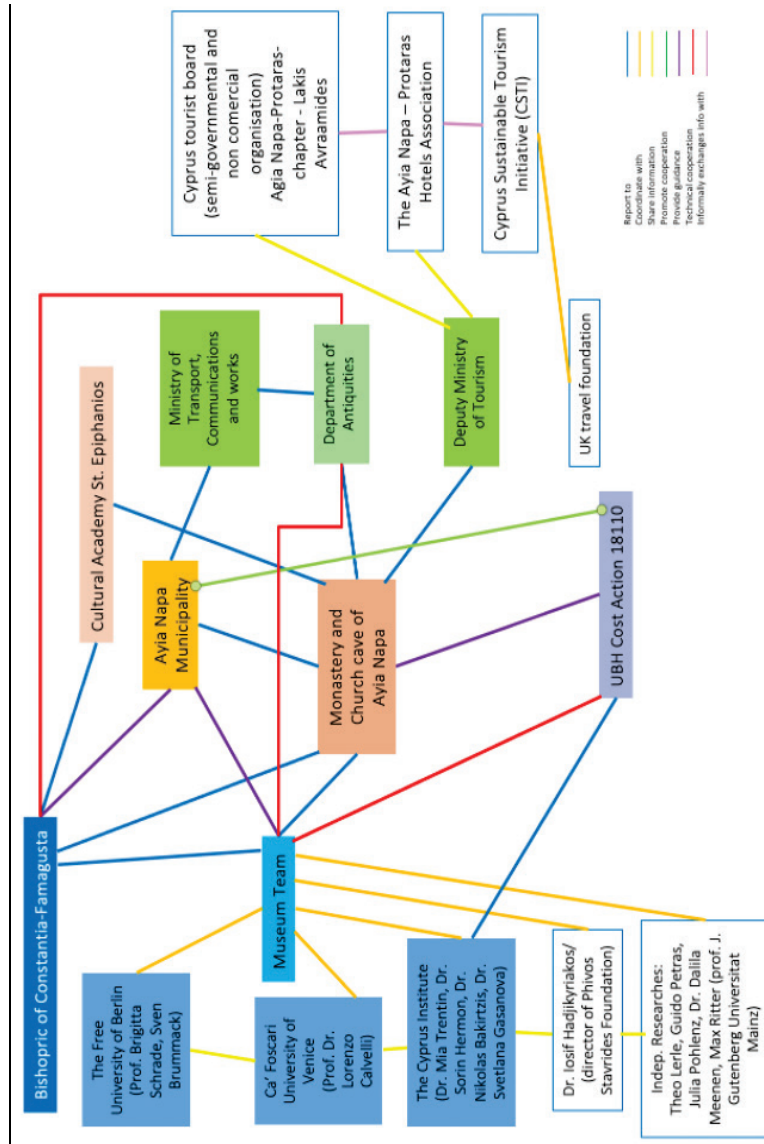


Figure 4.5: The Stakeholder Map

The Bishopric of Constantia-Famagusta could have the capacity to coordinate actions in the city, as it is connected with all stakeholders either directly or through the Monastery and Cave Church that it currently oversees.

Nevertheless, the Monastery and Cave Church play a central role and can influence policies that may be used to either enhance or support the institutions towards a more sustainable tourism. The Underground4value could significantly strengthen the UBH by providing technical support if requested.

<p>Strengths</p> <ul style="list-style-type: none"> - Geographical location and diversity (land, sea) - Strong historical and cultural heritage - Naturally preserved areas, low pollution - Ecological assets - International cooperation and partnerships - Well-developed infrastructure - Tourism-led industry - Political commitment 	<p>Weaknesses</p> <ul style="list-style-type: none"> - Lack of sustainable infrastructure and technologies (drainage, waste treatment, etc.) - Low climate resilience - Limited capacity for environmental protection - Lack of sustainable planning and preservation - Low community awareness of environment issues - Laissez-faire attitude inhibiting sustainable development - Dependence on external tourism
<p>Opportunities</p> <ul style="list-style-type: none"> - New tourism niches (spiritual, intangible heritage) - Heritage preservation strategy - Sustainable tourism plan - Vocational training and jobs in tourism, the cultural heritage and artisanal crafts - Creation of a new brand - Integrating UBH and sustainability dimensions into the beach tourism model - Shift in residents' perceptions 	<p>Threats</p> <ul style="list-style-type: none"> - Effects of climate change - High levels of construction and urban development - Degradation of heritage sites - Shortening of tourist season due to climate change - Balance between economic growth and heritage preservation

Table 4.1: SWOT analysis

4.4.3. Phase Three: Challenges and Opportunities

The City around the Monastery and Cave Church

Situated at the heart of the city centre, the Monastery and Cave Church, together with the neighbouring square, are the main attractions for visitors and events. Although the city centre is the main focus of attraction, during the summer there is heavy traffic and noise pollution, resulting in the degradation of its urban appearance.

This Ayia Napa landmark draws many pilgrims, in particular Russians and Cypriot believers. That is an excellent opportunity in terms of spiritual tourism and promotion of the intangible heritage.

The Museum Project

The museum, whose construction is supported by the Bishopric of Famagusta and the municipality of Ayia Napa, aims to promote and valorise the site by connecting its history to the surrounding area. As Bishop Vasilios of Constantia and Ammochostos explained, the monastery was converted into a museum because it is no longer appropriate to monasticism, due to its location at the heart of Ayia Napa's tourist area, hidden amidst a multitude of bars and nightclubs. The museum will also host the Saint Epifanios Cultural Academy, which will be accessible to academic research.

Beach and Club Tourism

The Covid-19 crisis has provided an opportunity to rethink the tourism system for a more sustainable and resilient future. As such, local residents wish to change the club and beach tourism model to the one focused on local and foreign families, guaranteeing a more constant flow of tourists. To achieve that, the City Council and local stakeholders are trying to erase the city's "bad reputation for nightclubs." The main street for clubs is in the city centre, but it remains relatively isolated because the city is developing towards other areas. As the Mayor said, they cannot withdraw nightclub licences, but the City Council is offering nightclub owners significant incentives to change their type of business

4.5. Main Results and Future Collaborations

The STSM has been conceived as an instrument within Underground4value to help community valorisation through the UBH reuse and heritage-led regeneration processes taking place in Ayia Napa. As the pandemics severely impacted this community, they could consider engaging in sustainable socio-economic recovery activities for long-term benefits and resilience.

Ayia Napa inhabitants see tourism as a significant benefit to society, with advantages far outweigh disadvantages. Ayia Napa's inhabitants and business owners would like to see more tourists and to establish a more regular flow of visitor numbers. The challenge lies in changing from a club and beach tourism model to a sustainable one while continuing to evolve. In this sense, policy intervention will be necessary to address the sector's structural problems, avoid chronic planning and management issues, and

encourage new tourism models. Underground4value can play a crucial role in coordinating a reflective approach, providing strategic advice, guidance, new tools and capacities to support sustainable, income-generating initiatives linked to local cultural heritage sites, fostering their relationship with the Cave Church and Monastery, and enhancing the importance of heritage in the lives of these communities.

REFERENCES

- [1] Claude Delaval Cobham (1908). *Excerpta Cypria. Materials for a history of Cyprus*. Cambridge University Press.
- [2] Charles Vincent Bellamy, Alfred John Jukes-Browne (1905). *The Geology of Cyprus*. William Bredon & Son.
- [3] Sophocles Hadjisavvas (1983). 'New light on the history of the Ayia Napa Region'. *Report of the Department of Antiquities of Cyprus*, pp. 315-318.
- [4] Sophocles Hadjisavvas (1997). *Agia Napa: Excavations at Makronisos and the Archaeology of the Region*. Cyprus Department of Antiquities.
- [5] Camille Enlart [1889] (1987). *The Gothic Art and the Renaissance in Cyprus*.
- [6] Regional Tourism Strategy & action plans for the free Famagusta area. Full report (2006). Famagusta Chamber of Commerce.
http://media.visitcyprus.com/media/b2b_en/Research_Projects/RegionalStrategyFamagusta.pdf
- [7] Cyprus Tourism Strategy. Final Report. Doc. N. 27. (2017). Available at https://issuu.com/presidency-reform-cyprus/docs/doc27._final_report_tourism
- [8] Data from the Cyprus Hotel Association available at:
<https://www.cyprushotelassociation.org/Resources/Files/Stats/2021/arrivals.pdf>

CHAPTER 5

Dolmen de Antelas and Dolmen do Carapito I

Reflections on megalithic heritage from the perspective of local communities

María del Carmen Solano Báez

5.1 Introduction

The Short Term Scientific Mission (STSM) about the Dolmen de Antelas and Dolmen do Carapito I was carried out within the framework of the COST Action CA18110 ‘Underground Built Heritage as a Catalyser for Community Valorisation’ (Underground4value). Each year, the Underground4value Management Committee selects four case studies from a list of candidate sites to advance knowledge about underground heritage. The megalithic monuments Dolmen de Antelas in Oliveira de Frades and Dolmen do Carapito I in Aguiar da Beira are one of the four case studies for the period 2020-2021 [1].

The Dolmen de Antelas and the Dolmen do Carapito I are two important megalithic monuments. However, visitors often do not tend to understand the importance of the dolmens because they lack the socio-cultural context. However, if visitors look at the dolmens as the first forms of organisation and coordination, and above all, as part of the history of humanity, they could evoke other emotions. These emotions could be increased by explaining the forms, structure and possible use, as well as by making them be aware of the myths and memories the local community has about the dolmens. For instance, Dolmen do Carapito I is known by the local community as Casa da Moura because of a local history, and Dolmen de Antelas is considered the Sistine Chapel of the Megalithic because of the high number of paintings within its internal chambre. These emotions,

memories, and relations of the local community with the megalithic heritage were part of the STSM research's objectives.

The purpose of the STSM was to achieve a holistic perspective of the valorisation of tangible and intangible heritage in both dolmens and to know the local communities' level of involvement in those processes. Furthermore, the planning process of the touristic-cultural route “MEG Rota do Megalitismo da Região Viseu Dão Lafões e Sever do Vouga” (henceforth MEG tourist-cultural route) was analysed. From a stakeholder’s perspective, the implementation of the MEG tourist-cultural route was studied to understand its planning process and its interaction with relevant local stakeholders and people from the communities of Antelas and Carapito. A territorial approach in its four dimensions: social, economical, environmental, and cultural, was used by the researcher of the STSM to contribute to the main objective of Underground4value [2] through the mapping of heritage-led regeneration processes and the valorisation strategies carried out in the Dolmen of Antelas and Dolmen of Carapito I.

This chapter reports the results of the STSM, which took place in November 2020, under the coordination of the University of Aveiro (UA) as the host institution, with the collaboration of the Town councils of Oliveira de Frades -in situ- and Aguiar da Beira -online-, facing sanitary restrictions due to the Covid-19 pandemics. In this regard, a special thanks goes to Filipe Soares Director of the Municipal Museum of Oliveira de Frades, and Hugo Lopes, architect of the Municipality of Aguiar da Beira, who, within the framework of Covid-19, actively collaborated by providing documents and meetings, and adjusting the procedures to the conditions faced. Last but not least, the guidance of the University of Aveiro under the direction of Professor Alice Tavares is highly appreciated.

Thus, the chapter is structured as follows: after the introduction, the second section briefly presents the case studies, the third section describes the work methodology and the fieldwork carried out, the fourth section presents the results of the STSM, and finally, some conclusions and aspects to be studied are offered for further studies.

5.2 The context

5.2.1. Dolmen de Antelas, Oliveira de Frades

Oliveira de Frades is a municipality located in the District of Viseu in Portugal; it is part of the Intermunicipal Community of Viseu Dão-Lafões. It is one of the few municipalities in Portugal without territorial continuity.

This means that its territory has two parts, one the one hand, the town of Oliveira de Frades, which is the larger part, and on the other hand, the smaller part of Arca and Varzielas [3]. The Village of Antelas is located in the Parish Pinheiro de Lafões, Oliveira de Frades. According to data from the 2011 population census of the Portuguese National Institute of Statistics [4], Pinheiro has a total population of 1,277 inhabitants; however, in Antelas, only approximately 60 people live there. Antelas has problems of depopulation despite its strategic position, very close to the main population centres, the industrial parks of Oliveira de Frades, and its privileged climate with long hours of sunshine and mild winters. Antelas, like the rest of Oliveira de Frades, have severe problems with forest fires, partly due to the depopulation of the territory.



Figure 5.1: Paintings in the chamber. Dolmen de Antelas (PT). Source: Municipal Museum of Oliveira de Frades, 2020

Over thousands of years, different peoples have passed through and settled in Oliveira de Frades, contributing to the humanisation of the landscape, and leaving traces that have created a diversified heritage. These remains date back to the Megalithic period, with the Dolmen de Antelas, considered a valuable jewel of European rock art [3]. The Dolmen de Antelas is named after its location in Antelas, where the road leading to the monument passes. It is in a rural environment, on the south-eastern slope of the Serra das Talhadas, in a flat and wide area, on a slight

undulation of the relief, in harmony with the environment, isolated, surrounded by eucalyptus trees to the north and pine trees to the south, with a distant water reservoir 50 m. to the east [5].

It was catalogued by the researcher Girão [6] and it is classified as a National Monument by Decreto n.º 29/90, DR, I Série, n.º 163, de 17 junho 1990 (classificou a "Anta pintada de Antela", na freguesia de

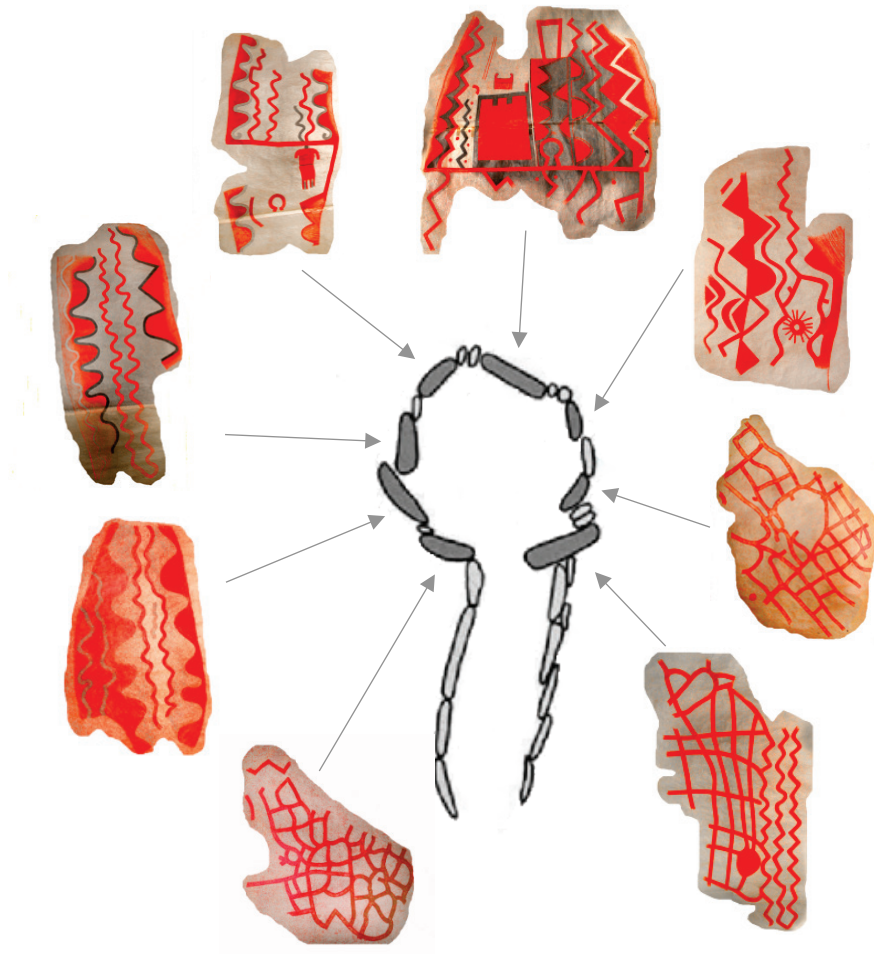


Figure 5.2: Layout of the Dolmen de Antelas. Source: Municipal Museum of Oliveira de Frades, 2020

Antela) [7]. According to the data in the register of the Sistema de Informação para o Património Arquitetónico, the period of construction is Megalithic. The initial use of the monument was funerary, however,

nowadays, its uses are cultural and recreational as a historical-cultural asset, and it is municipal public property [5].

The Dolmen de Antelas is composed by a polygonal chamber and a corridor [8] [9] [1]. This dolmen is one of the best examples of megalithic art at international level, thanks to the wide range of motifs painted in red and black inside the burial chamber [9] [10]. These paintings were first discovered in May 1956 as a result of archaeological excavations directed by Luís de Albuquerque e Castro, Octávio Da Veiga Ferreira and Abel Viana from the Geological Services of Portugal [11] [12]. After the excavation and study, the same archaeologists reburied the dolmen to protect the paintings and the dolmen remained in this way for 35 years until 1993 interventions.

The most distinctive feature of this megalithic funerary monument are the paintings, as all the pillars of the Chamber show paintings and some engravings, in which geometric, abstract and semi-naturalistic compositions predominate in black and two shades of red blood colour and zircon [13], identified as representations of the buried, purification symbols, gods, astral figures and natural elements, the headstone being the centre of the pictorial composition [5]. Because of the high number of paintings in the Chamber, the Dolmen de Antelas is considered the Sistine Chapel of the Megalithic.

Conservation and recovery interventions have been carried out in the Dolmen, as follows chronologically [5]. In 1991, the Town Council of Oliveira de Frades requested the intervention of the Direção-Geral de Edifícios e Monumentos Nacionais (DGEMN) for the execution of a project for the recovery and promotion of the dolmen. Later, in 1993, at the request of the Oliveira de Frades Town Council, Professor Domingos Cruz, from the Institute of Archaeology of the Faculty of Arts at University of Coimbra, drew up a technical and scientific report on a possible archaeological intervention and conservation of the Dolmen. During the same year, the second archaeological excavation was conducted under the direction of Professor Domingos Cruz, carrying out excavation, conservation and restoration works to make the Dolmen visitable. In 1995, the paintings were dated by the C14 particle accelerator method, using the organic matter of the black pigment, at the Oxford University Carbon 14 Laboratory, with the financial support of Instituto Português do Património Arquitectónico (IPPAR)¹ and the Oliveira de Frades Town Council [5].

The most recent intervention was in 2020, promoted by the Town Council of Oliveira de Frades, financed by the LEADER measure of the Local Action Group ADDLAP corresponding to the Rural Development Programme of the 2014-2020 programming period, financed by the

European Agricultural Fund for Rural Development (EAFRD)². According to the official information in the project application form, this conservation project contributes to the P6B priority related to the promotion of local development in rural areas, in line with the procedure set out in the NT6/2015 standard³.

5.2.2. Dolmen do Carapito I , Aguiar da Beira

Aguiar da Beira is a Portuguese municipality in the district of Guarda, Central Region in the Intermunicipal Community of Viseu Dão-Lafões. Carapito is a parish of Aguiar da Beira with 442 inhabitants according to the 2011 population census of the National Institute of Statistics of Portugal [14]. Based on the demographic and social study carried out by the Local Action Group ADD - LEADER territory to which the municipality of Aguiar da Beira belongs - this parish faces the structural problems common in European rural areas: the increase in population age, depopulation, the abandonment of agriculture, the migration of young people, unemployment environmental problems due to the aforementioned. According to official information from the Town Council, the economic activities in Carapito are agriculture, livestock, forestry, extractive and processing industry, catering and local accommodation, wood industry, civil construction, social action, transport and communications and trade [15].

The most emblematic heritage of Carapito includes the Manueline-style pillory, the parish church, the chapels, the transepts and the four Dolmens; one of them is Dolmen I, which is also known as Casa da Moura [16]. It is located on the west bank of the Ribeira do Carapito, surrounded to the north by a pine forest, in a rural environment, situated on a plain and isolated area. Its location on fertile soil indicates the existence of an agricultural community [17].

Dolmen do Carapito I is classified as a National Monument by Decreto no. 735/74, Diário do Governo, Serie I, no. 297, 21 dezembro 1974⁴ [15] [18]. Casa da Moura is the largest in the central region of Portugal thanks to its almost five-metre height and the motifs carved on the slabs of the chamber. Based on data from the register of the Sistema de Informação para o Património Arquitetónico [17], it is established that the period of construction is Megalithic. The original use of the monument was funerary; however, nowadays, it is used for cultural and recreational purposes as a historical-cultural asset. The Dolmen is reached via the CE. 583 in the direction of Queiriz, on the western edge of the Ribeira do Carapito.



Figure 5.3: Dolmen do Carapito I (PT). Source: Town Council Aguiar da Beira, 2020.

Different archaeological campaigns studied the Dolmen. J. Coelho did the first exploration in 1948, the second was in 1955 with the visit of Irisalva Moita, who reported its state of ruin, and the third was carried out in 1966 by Vera Leisner and Leonel Ribeiro [17]. According to information provided by the architect of the Municipality of Aguiar Da Beira, the one by Leisner and de Castro Nunes in 1965 were probably the most important ones, since they were the ones who found the two pillars with engraved solar and serpentiform motifs that determined that the fragmentation of the pillars could have been due to tectonic movements instead of human action. They also dated the remains by the radiocarbon method, which consisted of coarse pottery, microliths and silex blades, schist beads and limestone [19]. Despite being one of the most researched, this monument has not been fully restored. Due to the fact that works carried out in 1989 were not concluded, its deterioration increased and created feelings of disappointment among the inhabitants, who already, since the first excavations, had a deep interest in its restoration. In 2020 the

Town Council of Aguiar da Beira awarded the Requalification of the Carapito Dolmen I - Reconstituting the Mamoa [20]⁵; this intervention will allow to have a close image of how this monument would have been six thousand years ago⁶. The work, which will take around nine months to be completed, is financed by “Programa Centro 2020” [21]

5.2.3. Rota do Megalitismo da Região Viseu Dão Lafões e Sever do Vouga

The Intermunicipal Community of Viseu Dão-Lafões belongs to the Central Region of Portugal, and it is known as CIM Viseu Dão Lafões. Among the statutory purposes of the Viseu Dão Lafões are the strategic planning of the socio-economic and environmental development of its territory, the articulation and management of programmes for regional development, specifically those linked to the multiannual financial framework of Community policy, the articulation of municipal investments of inter-municipal interest, as well as the articulation of actions between municipalities and central administration services.

In the sector of culture and tourism, the CIM Viseu Dão Lafões together with Sever do Vouga promoted a touristic-cultural route with the same name "MEG Rota do Megalitismo da Região Viseu Dão Lafões e Sever do Vouga" funded by the Programme “Valorizar” of Turismo de Portugal - National Tourism Authority-. This route includes 14 municipalities, 13 of the CIM Viseu Dão Lafões (Carregal do Sal, Tondela, Vouzela, Oliveira de Frades, Castro Daire, S. Pedro do Sul, Viseu, Vila Nova de Paiva, Aguiar da Beira, Sátão, Penalva do Castelo, Mangualde, and Nelas) and the municipality of Sever do Vouga.

This tourist-cultural route connects 26 dolmens, six classified as National Monuments. The Dolmen de Antelas and Dolmen do Carapito I are two of the six National Monuments that form part of the route. It also involves seven museum spaces and an interpretation centre at the Escola Carvalhal de Vermilhas, in the Serra do Caramulo, in Vouzela. The route aims to develop a new cultural tourist offer based on the most emblematic megalithic monuments of Viseu Dão Lafões. It also intends to articulate this new offer with other existing regional routes, such as the Prehistoric Circuit of Nelas and Fiais/Azenha in Carregal do Sal, the Circuit of Talhadas and Cerqueira in Sever do Vouga and the Stone Giants Route in Vouzela. It also plans to integrate this route into the European Megalithic Routes project [22].

5.3 Methodology

In order to achieve the proposed objectives of the STSM, a three-phase qualitative methodology was followed based on a work plan agreed with the host institution. The qualitative methodological approach sought a complementarity between the academic world (universities) and territorial action (local stakeholders and key actors in local communities) to gain in-depth knowledge of their reality and intervention strategies. In this way, the approach made to the population narratives intended to understand their relationship with the underground heritage and how it takes part of their history as a territory. In this context, the multidimensional approach favoured collaboratively exchanging knowledge, following a three-phase methodology from a territorial perspective. That means territory and the megalithic heritage are considered units to study in all their dimensions: economic, social, cultural, environmental, and institutional. The three phases are presented below:

1st Phase. Preliminary to STSM: Initial characterisation

During this phase, the host institution provided information about the main actions for the preservation of both case studies, and it was done the Matrix of first questions and first ideas to organize preliminary information.

2nd Phase. During the STSM: Field-work

Given the World Health Organization's declaration of the emergency caused by the Covid-19, the host institution decided, in first place, to carry out on-site the work in Oliveira de Frades and after that, to carry out the work in Aguiar da Beira in a remote modality. Thus, stakeholders' mapping, in-depth interviews, and a DRAFPO analysis were conducted with primary informants for each case. The selection of tools for the data collection was planned considering eventual sanitary restrictions, trying to exchange information in a participatory manner, and adapting tools commonly used in the design of projects.

3rd Phase. After the STSM: Information integration and communication of results

All collected data were coded, analysed and integrated. Atlas.ti, a software for qualitative data analysis, was used for the integration process. In-depth interviews were not transcribed, but analysed and coded directly, as Atlas.ti allows the use of audio and video, preserving the originality of the answers. Lastly, all the information was integrated to produce the final STSM report.

5.3.1 Tools for data collection

Various qualitative tools were used to collect data to achieve a territorial approach, facilitating dialogue with the territory's main stakeholders and the local communities in both cases. The tools chosen sought to cover different profiles of informants and the possibilities of working remotely in the face of restrictions due to the pandemic. In parallel to in-depth interviews, participant observation, and informal conversations, the following tools were also used to collect data during the STSM:

- Matrix of first questions and first ideas. The matrix is a table that integrates key questions and concepts to frame preliminary ideas. This tool, commonly used at the beginning of project formulation, was adapted for the STSM. The table organised information from the first documentary review about the historical, economic, social and cultural context of the megalithic heritage of Antelas and Carapito. Afterwards, during the fieldwork, it was shared with some of the municipality's key informants so they could contribute.
- Actor mapping. This tool made it possible to identify both the potential interviews to be carried out and to understand the complex articulation and organisation of the local stakeholders responsible for harmonising all the elements around the monument in order to configure the tourism product in question. The informants were organised into five typologies (Tab. 5.1).

Code	Group of Stakeholder	Type
T1	Public institutions	Town Council, Consortiums, etc.
T2	Private institutions	Tourist transport, travel agencies, accommodation and restaurant services companies, etc.
T3	NGO	LAG, cultural institutions, volunteer associations, professional associations, etc.
T4	Experts/Technicians	Universities, academies, cultural institutions, etc.
T5	Civil society	Residents

Table 5.1: Typologies of informants

- Technique DRAFPO (Spanish acronym). This technique is a variant of SWOT analysis, in which the elements are weaknesses, resistances, threats, strengths, potentials and opportunities [23]. This tool can show both the positive and negative aspects of a given case study. Not only does it offers the advantage of addressing problem situations, but it also does possible actions to deal with them. Another advantage of this tool is its usefulness for investigating

complex issues in short periods. It can be convenient when circumstances make it advisable not to prolong the process in time (short cycle) and to obtain participatory results (when working with some groups in certain circumstances).

5.3.2 Field work in Covid-19 context

The fieldwork was carried out in 16 days. The STSM work conducted by the researcher was reported to the Advisor of the University of Aveiro, Professor Alice Tavares. The researcher also worked with Filipe Soares, Director of the Municipal Museum of Oliveira de Frades and Hugo Lopes, architect of the Municipality of Aguiar da Beira. To develop the STSM, the University of Aveiro promoted debates with experts in the field of management and conservation of Underground Built Heritage. Both the planners and local stakeholders of the MEG tourist-cultural route and experts linked to Tour Sensations and Rota do Românico. To complement the work, UA provided on-site visits to Antelas to obtain information from



Figure 5.4: Fieldwork in Dolmen de Antelas, Oliveira de Frades

local stakeholders, such as the Municipality and cultural associations, and in general from the local community.

The fieldwork was conducted from the viewpoint of the key informants of the territory (local stakeholders and key actors in the local community). Thus, information was collected using the various techniques described above. In both contexts, three profiles of informants were identified: institutional representatives of the municipality who provided an institutional vision, technicians of the municipalities responsible for all the actions of regeneration and promotion of the megalithic heritage which provided a technical and strategic vision; and finally, a citizen's vision from the local community and NGO.

In Oliveira de Frades informants from the three identified profiles were available and in-depth interviewed. The details of each group of interviewees are showed below (Tab. 5.2).

In Aguiar da Beira all interviews were conducted online, so, signed consent was obtained for recording. In this context it was not possible to carry out visits onsite. In this territory, informants from the three identified profiles were available, with whom in-depth interviews were conducted.

The details of each of the groups of interviewees are presented in Table 5.3.

Perspective	Type	
Institutional and strategic perspective	T1	President of Câmara Municipal de Oliveira de Frades.
	T1	President of Junta de Freguesia de Pinheiro de Lafões.
	T1	Councillor for Culture and Heritage. Câmara Municipal de Oliveira de Frades.
Technical perspective	T4	Director of Museu Municipal de Oliveira de Frades
Citizen perspective	T5	3 Inhabitant of Antelas.

Table 5.2: Informants. Dolmen de Antelas

Perspective	Type	
Institutional and strategic perspective	T1	President of Câmara Municipal de Aguiar da Beira.
	T1	President of Junta de Freguesia de Carapito.
Technical perspective	T4	Municipal technician at Aguiar da Beira Municipality in charge of conservation actions in the Dolmen de Carapito.
	T4	History teacher and a specialist in local heritage.
Citizen perspective	T5	Inhabitant of Carapito. Teacher and helped Domingos Cruz and Raquel Vilaça in the excavations that took place in Carapito in 1988 and 1989.
	T3/T5	Inhabitant of Carapito. Caruspinus, local newspaper representative.
	T3/T5	Inhabitant of Carapito. Founder of Caruspinus newspaper.
	T3/T5	Inhabitant of Carapito. Aquilaris local cultural association representative.

Table. 5.3. Informants. Dolmen do Carapito I

Contextualising the fieldwork conducted in the context of the pandemic, one of the main difficulties was the constant change of regulations and the

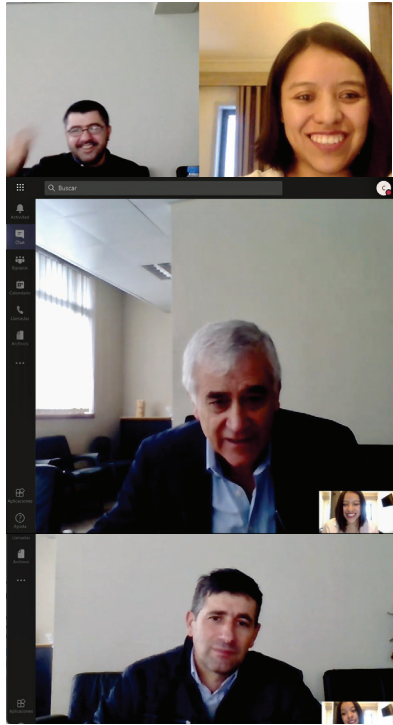


Figure 5.5: Interviews with informants from Carapito

effects of the second wave of the pandemics, such as curfew restrictions, which limited the possibility of carrying out certain activities. The STSM researcher underwent a PCR before travelling from Murcia to Aveiro⁷, to facilitate her arrival in the case study municipalities and to build confidence. Upon arrival in Aveiro, the measures were stricter and a first adjustment to the work plan was made. Afterwards, it was decided to work first at Oliveira de Frades. Even though the sanitary restrictions and the weather conditions, the Dolmen de Antelas was the first monument visited, as it could not be postponed due to the possibility of increased restrictions⁸. From that moment, the work in Oliveira de Frades was entirely in charge of the Town Council. Conversely, the visits to Carapito were restricted, and the work was fully carried out online. This decision was taken shortly after, provoking a second adaptation of the

work plan at the same time of the fieldwork in Oliveira de Frades.

Thereby, the Covid-19 context determined most of the activities. The different actions of promotion and awareness organised by the Towns Councils were suspended; hence, one of the main objectives was partly achieved: to know the principal actions of involvement of the local community in a broad sense. Therefore, most of the information collected by the STSM researcher refers to actions carried out before the pandemic.

5.4. Findings

The results of the STSM are presented below in three sections. Firstly, the results of the case study of the Dolmen de Antelas; secondly, the findings of Dolmen de Carapito and thirdly, the general characterisation of the MEG tourist-cultural route. It is important to highlight that it is not intended to show a comparative analysis between the two monuments but

rather a characterisation of the problems identified in two of the 26 monuments which take part of the MEG tourist-cultural route Antelas and Carapito, respectively.

5.4.1 Main findings Dolmen de Antelas, Oliveira de Frades

During the STSM it was possible to observe the development of the project for the Conservation and Preservation of the Dolmen de Antelas financed with funds from the LEADER media of the GAL ADDLAP. It could be seen that the Town Council has progressed in recovering the Dolmen de Antelas, moving from physical actions to holistic interventions. The analysis of this project shows that the Town Council intends to add economic and social value, recognising that it is necessary to develop strategies for the revitalisation of this space. In fact, part of these actions involves inviting researchers and students to visit and study the dolmen, an objective to which the STSM has contributed.

This project also intends to develop awareness campaigns to promote respect and preserve the heritage among the younger public, specifically through the social network and by printing information leaflets. This activity is one of the most developed ones by the City Council; in the interviews, the informants' grandchildren were present as observers, who, when listening to their grandparents' narratives, reiterated that at this moment, their voice should be heard and that it would be their turn in the future to be the ones to occupy that place.

Thus, the results of the fieldwork showed that in the village of Antelas is still possible to have the population's memories. Some inhabitants remember that since they were children, they have known the importance of the Dolmen de Antelas and witnessed the monument's interior, guiding researchers of different profiles. They also remembered playing around the monument and guiding the first international visitors and researchers from the entrance of Antelas to the monument, as the road to the Antelas Dolmen passes through there. This fact generates a deep sense of pride among the local community and appreciation for the monument maintained over the years.

A few of them were also observers of the excavations in the 1956. They are witnesses to the progressive deterioration of the paintings. In the interviews, they recurrently mentioned that they observed a difference in the colour intensity of the paintings between the first excavation, the intervention of 1993, and the current restoration of the monument. Therefore, they are particularly interested in carrying out conservation work. In this regard, they are aware of the rescue actions promoted by the municipal authority to resolve urgent problems related to the conservation of the paintings, such as humidity problems. Despite that, they express

their interest in actions to promote the importance of the monument, and they also express their desire to encourage more awareness-raising actions among the younger generations.



Figure 5.6: Dolmen de Antelas, 1993 excavation. Source: Photographs collected during fieldwork by the Author and provided by Carlos Rosa after his interview

One of the most relevant aspects of the fieldwork during Covid-19 time has been the interest generated among the local community. Once contact

was established with the local stakeholders involved, the research, with all the limitations of mobility and the exigencies of social distance, became, in a way, part of a collective commitment to work for the preservation of the heritage.



Figure 5.7: Dolmen de Antelas, 1993 excavation. Sources: Photographs collected during fieldwork by the A. and provided by Carlos Rosa after his interview.



Figure 5.8: Dolmen de Antelas, 1993 excavation. Sources: Photographs collected during fieldwork by the A. and provided by Carlos Rosa after his interview

This vision was reinforced when fieldwork with the local community progressed. The more the research objectives became visible to the local stakeholders, the more the involvement of local stakeholders increased and led to important discoveries, such as the acquisition of a total of nine photographs of the excavation process carried out in 1993 and the subsequent restoration of the Dolmen. Carlos Rosa provided this material to the STSM researcher a day after his interview, in which he mentioned

his appreciation and respect for the monument, which motivated him to photograph the work done.

The director of the municipal museum indicated that this is valuable material because until now, only a few black and white copies were available, and therefore the exact restoration process was unknown. The municipal museum included this material in the museum's exhibition, which celebrated its 20th anniversary in 2021. These photos will increase the information about the Dolmen and will allow the population the possibility to identify with the process of protecting the municipality's heritage.

In addition to the above mentioned activities, during the STSM the Town Council of Oliveira de Frades conducted conservation works on the Dolmen. In complement to the conservation works, a video was made to explain the problems of the Dolmen de Antelas, as one of the most current strategies for promoting heritage. In this video, in which the local community of Antelas participated, they informed on the main problems, such as the deterioration of the paintings and the need to work on the recovery of the intangible heritage of the Dolmen de Antelas. Collecting local community's memories is part of this effort since, in recent years, there has been an increasing appreciation of ethnographic and cultural elements. Consequently, there is a trend towards greater involvement in conservation at the institutional level.

Seven projects where Dolmen de Antelas has a role were also identified. They are mentioned in what follows:

- Creation of the National Network of Prehistoric Art for the knowledge, conservation, enhancement, dissemination and promotion of prehistoric art, including the Dolmen de Antelas as a central element.
- Re-edition of the Monograph of Oliveira de Frades; this is important to preserve the history of the Municipality.
- Patrimónios do Tempo (Heritage of Time). It is an integrated project for the Municipality's intangible and tangible heritage. Part of the actions is financed through the local action group ADDLAP. The objectives of this project include the elaboration and publication of the Heritage Charter, the creation of a digital project for an online database of the Municipality's heritage creation of the Heritage of Time Roadmap in the Municipality, connecting about 40 archaeological/historical monuments and sites associated with rural/intangible heritage.
- Megalithic Art Centre. Designed as a core element of the touristic activity linked with Dolmen de Antelas: It integrates tourist and

economic dynamics: preservation and dissemination of heritage. The centre intends to increase visitors' average length of stay and complement a more comprehensive tourist offer, similar to what happens with the Romanesque Route in the North region. The Municipality applied to the Vlorizar Programme and is awaiting approval.

- PR6 OFR – Rota das Pedras Milenares (Short Distance Footpath). This route aims to connect all the megalithic monuments of Oliveira de Frades. The route goes from the industrial area to Dolmen de Antelas, and would take advantage of the importance of the Dolmen de Antelas to promote the rest of Oliveira's heritage.
- Involvement of the local community. The Municipality promoted volunteering actions linked with the underground heritage, such as excavations, heritage cleaning, and tour guides. In that way, the local community can contribute making some places accessible and visitable, and to appreciate the underground heritage's significance.
- Inventory of all the heritage in the Municipality. Oliveira de Frades has an *inventory* of all the heritage of the Municipality, based on Google Earth Pro, which is continuously updated once there are discoveries or rediscoveries.

5.4.2 Main findings Dolmen do Carapito I, Aguiar da Beira

La Freguesias of Carapito is regarded for its environmental and ethnographic values. Despite its low population density, Carapito has all the primary services, including the school and church, which are two elements determining the centre's importance and its capacity to maintain essential services for the rural surroundings. In fact, the community has a strong agricultural tradition, deeply connected to the identity elements of the territory.

Moreover, there are formal and informal networks promoting territorial changes, which are strongly involved in its economic and socio-cultural dynamisation, for instance the "Aquilaris Património Vivo". The most significant action they promote is the deep connection of the local community with the endogenous values of Carapito. In addition to the actions undertaken by this association, the interviewees referred to other various actions carried out by the local community for the heritage awareness and care, such as the cleaning days of the monuments, the recovery of the memories of the local population, and a short book with the history of the Dolmen being written by Caseiro Marques, founder of the local newspaper of Carapito, Caruspinus. Thanks to this connection, different generations have sought to contribute to the conservation of the

Dolmen, which, despite being almost five thousand years old, they consider to be their own.

In this regard, during the interviews, a deep feeling of appreciation for the monument was visible. The local newspaper's editor of Caruspínus confirmed the local community's deep relationship with the monument and, even more so, their sense of pride in it. As part of the information received from his interview, he provided a couple of photographs (Fig. 5.9) which, although, from his point of view, did not tell a historical fact, reflected an important aspect: the people of Carapito see the Dolmen as a monument and are very proud of it. Therefore, they like to visit and show it to other people who visit Carapito. He explained that reflecting on the photos, he identified one particular detail: all but one of the people in the images were born in Carapito; the only one who was not born there is the current priest of Carapito. He suggests that these photographs were taken when he began his work as a priest on 1 July 1964. He imagines that as part of his reception, he was given a short trip to the Dolmen to show it to him, which, from his clothes, must have been in late summer or autumn. A token of his pride in the Dolmen.



Figure 5.9: Dolmen do Carapito I, 1964-65a - Left to right: Francisco Paixão da Cruz; António Francisco Caseiro Marques. Source: Collection of Afonso Paixão Tenreiro, provided by Álvaro Caseiro de Almeida

It was also said that, although the people of Carapito were always proud of the Dolmen, the interest began to decrease in the late 1990s or early 2000s because it was increasingly degraded and no longer pleasant to visit.

Even so, many visits were made. For example, in 2015, the association Aquilaris organised an event to clean the other three dolmens, and many people participated⁹.

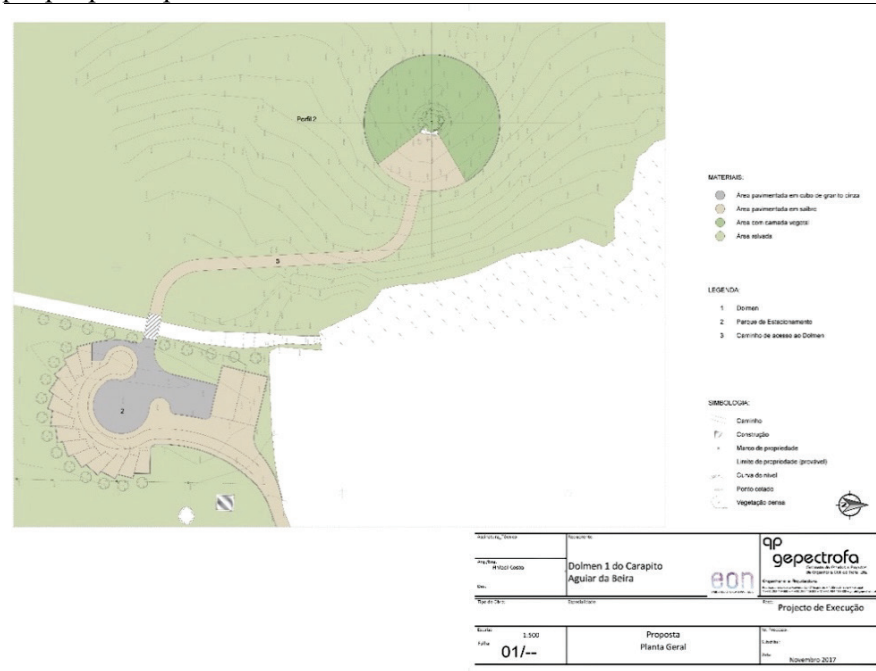


Figure 5.10: Proposed general plan “Requalification of the Carapito Dolmen I”, Reconstituting the Mamoa. Source: Town Council of Aguiar da Beira, 2020

Nowadays, the Dolmen do Carapito I is being reconstructed to valorise the monument and rebuild the mamoa. It is a project that the inhabitants of the territory expect to contribute to the enhancement of their heritage. All interviewees referred to that project and insisted it was the most expected one, as it was an intervention that has been waited for more than thirty years by the local community. That project was presented as the best way to enhance the monument. However, it would be valuable to know if the Architects of the Town Council had the opportunity to know other alternatives for the valorisation of the monument so that they could decide which would be the best intervention.

The most representative of the information referred about this intervention in both the interviews and DRAFPO analysis are:

- The hope generated among the population owing to the potential they see in the project to promote the monument at regional and national levels.

that address all the dimensions of the structural problems that Carapito faces as a rural area. In order to achieve this, it is a priority to make the territory economically viable, with the support of tourism, but not as the only solution. Moreover, it is intended to promote in an integrated and complementary way the tourist products of Carapito with those of Aguiar da Beira, such as Eno-gastro tourism, thermal tourism, and rural tourism.

5.4.3 Main findings about megalithic route planning

Due to a living lab not being carried out, the route's potentialities and limitations were identified based on the in-depth interviews and the information presented in a webinar organised by the host institution. This Webinar was related to "Built heritage as a catalyser of community valorisation. The Portuguese experiences". In this meeting, various experiences were presented, from which we sought to learn from consolidated experiences that have shown significant results.

From the theoretical approach adopted, the territory is a dynamic resource created as a vector of strategies based on endogenous resources [24] [25] [26] that promotes the coordination of local stakeholders [27] [28]. Thus, from this level, the successful transformation of the cultural heritage in general, and the underground and ethnographic heritage, in particular, into tourism products requires the active involvement of the local community [29] [30]. A second main element is the involvement of the local community in the identification, cataloguing, valuation, and promotion of this heritage [2] [29]. In this sense, the MEG tourist-cultural route recognises the high value of the heritage, as well as its potential for tourism development. In the framework of the webinar dedicated to megalithic art, the executive secretary of the CIM Viseu Dão Lafões, Nuno Martinho, stated that "megalithic art, if properly valued, adds a high potential for development and attractiveness to the territories" [31]. Specifically, the involvement of the Antelas and Carapito communities varies in intensity, being limited or very limited in the initial stages of route planning. Nevertheless, the promoters of the MEG tourist-cultural route project aim to promote the megalithic heritage, to encourage investment in cultural tourism and to integrate the regeneration efforts of the monuments in the various municipalities involved, where initial investments have already been made.

The elements linked to the sustainability of the intervention are still not assessed in a balanced way. In territorial planning processes, there is often little consensus on the optimal level of participation and the extent of participation. There are experiences of participatory territorial planning and other examples where experts design, programme, implement and evaluate. Experience shows that the former is more complex and time-consuming but more efficient and, above all, more sustainable [29]. In

contrast, the latter is more agile, but this does not always translate into optimal long-term results. The first results of the interviews indicate that the MEG tourist-cultural route faces planning of the second type. It has an excellent technical design integrating 26 monuments and 14 municipalities but attempts to involve the local community so far are limited and imprecise, as it is absent in the initial planning of the project.

The preliminary results of the analysis also identify that the MEG tourist-cultural route has a design based on a linear top-down perspective by exogenous local actors, hence the possible absence of local community involvement. According to the information gathered, it is intended to incorporate the participation of the local inhabitants at a later stage in the design, implementation, and integration of the routes at the local level and based on the capitalisation of good practices from other consolidated tourist-cultural routes. In this sense, it can be identified that this is not a specific planning model for this tourist-cultural route but a form of planning in the Portuguese context. This model capitalises on experiences in which, through the creation of cultural containers, thematic routes and museums, tourist products are generated where the incorporation of the participation of the population is carried out in the last phase of the process through awareness-raising and educational actions (for example, Rota do Românico).

Land ownership around the monuments was also an aspect that emerged from the analysis. As the area of influence of some monuments is privately owned, there are no regulatory constraints on construction, and these activities can physically damage the monuments (e.g., Dolmen de Antelas). In this sense, although it is difficult to ensure that the building will be stopped in the long term, the role of the Administrations at different levels in trying to limit or contain this type of construction can be vital in promoting modifications in favour of the conservation of the monuments.

Finally, another preliminary result is the heterogeneous visions linked to the type of tourism to be developed. Based on the objectives of the MEG tourist-cultural route project, at the supra-municipal level, there is a clear interest in the development of cultural tourism and its incorporation into the European Megalithic Routes project. However, at the local level, tourism variants ranging from rural tourism to scientific tourism are promoted. At the local level, the potential of integrating these variants into the MEG tourist-cultural route to generate positive synergies that complement the tourist product offer is being considered.

5.5 Conclusions

The STSM contributed to identifying actions for the recovery and enhancement of underground heritage, linked explicitly to the Dolmen de

Antelas and Dolmen do Carapito I. The data collection tools used facilitated the creation of a means for reflection on the case studies. In a context marked by health restrictions, they made it possible to integrate different typologies of informants, which contributed to the emergence of relevant data and, above all, helped to achieve the objectives proposed by the STSM. From the narrative approach, usually used in rural contexts for community work, storytelling, and the possibility of giving a voice to all the people in the community who construct the territory, is part of the process of reclaiming its history and heritage. In this sense, an approach was made to the population's narratives based on a horizontal rapport, which made it possible to understand their relationship with the underground heritage and how it takes part of their history as a territory. The preliminary results of the analysis show that both local communities have generated a close relationship with the underground heritage.

The efforts for the recovery, conservation and promotion of the underground heritage carried out by both Town Councils is a recognisable task, as it is not always possible to count on this level of involvement and commitment from the local Administration. In both contexts, it has been possible to observe the profound interest in recovering the local population's memories of the Dolmens. In this sense, it is particularly important in contexts where work is being done on the recovery of intangible heritage, where people are an essential factor, to make the results available as a process of devolution, as this can strengthen the link with their heritage, improve their confidence in this type of initiative and even assist in the recognition of their contributions.

Identifying the relevant local stakeholders is vital as they can support the integral recovery of the underground heritage, not only from a technical point of view but also in terms of the particularities of their relationship with the local inhabitants and with the rest of those involved. Hence, the analysis of the tourist superstructure of a destination under construction, such as the MEG tourist-cultural route, is relevant because it allows us to understand the complex articulation and organisation of the stakeholders involved responsible for harmonising all the elements that create the tourist product in question. In this sense, it will be interesting to evaluate the efforts to integrate the different types of tourism that already exist in the 14 municipalities linked to the megalithic heritage. It will also be interesting to learn about the other multilevel management structures present in the territories from the route to understand how they make decisions and carry out planning with all the stakeholders.

REFERENCES

- [1] Underground4value "Dólmen de Antelas (Portugal)". (2021), [Online]. Available: <https://underground4value.eu/dolmen-de-antelas-portugal/>. [Accessed 2020 November 2020].
- [2] Pace G. (2021), "An Introduction to Underground4value," in Pace G., Salvarani R., *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Rome, pp. 1-18.
- [3] Town Council Oliveira de Frades. (2020), "História do Património". [Online]. Available: <https://www.cm-ofrades.com/link/sub/220/historia-do-patrimonio>. [Accessed 10 November 2020].
- [4] INE - Instituto Nacional de Estatística Portugal Portal do INE. (2021), [Online]. Available: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_doc_municipios_cse. [Accessed 12 August 2021].
- [5] SIPA - Sistema de Informação para o Património Arquitectónico. (2021), "Anta pintada de Antelas, IPA.00002437. Portugal, Viseu, Oliveira de Frades, Pinheiro," [Online]. Available: http://www.monumentos.gov.pt/Site/APP_Pages-User/SIPA.aspx?id=2437. [Accessed 2 October 2021].
- [6] Girão A. A. (1921), *Antiguidades pré-históricas de Lafões. Contribuição para o estudo da arqueologia portuguesa*, Imprensa da Universidade de Coimbra, Coimbra.
- [7] "Decreto n.º 29/90, DR, I Série, n.º 163, de 17 junho 1990 (classificou a "Anta pintada de Antela", na freguesia de Antela).
- [8] Carvalho A. F., Pereira, T., Gibaja J. F. (2018), "Primeira abordagem a partir dos conjuntos dos dólmenes dan Lapa da Meruje e de Antelas," in *De Gibraltar aos Pirenéus. Megalitismo, Vida e Morte na Fachada Atlântica Peninsular*, Fundação Lapa do Lobo, Lapa do Lobo, Nelas, pp. 217-232.
- [9] Sanches M. (2009), "Arte dos dólmenes do noroeste da Península Ibérica: uma revisão analítica," *Portvgalia Nova*, Vols. XXIX-XXX, no. 2008-2009, pp. 5-42.
- [10] Cruz D. J. (1995), "Dólmen de Antelas (Pinheiro de Lafões, Oliveira de Frades, Viseu). Um sepulcro-templo do Neolítico Final," *Estudos Pré-Históricos*, no. 3, pp. 263-264.
- [11] de Albuquerque e Castro L., da Veiga Ferreira O., Viana A. (1957), "O dólmen pintado de Antelas (Oliveira de Frades)," *Comunicações dos Serviços Geológicos de Portugal*, vol. XXXVIII, no. II, pp. 325-348.
- [12] de Albuquerque e Castro L., da Veiga Ferreira O. (1959), "Protecção e conservação do dólmen pintado de Antelas," in *I Congresso Nacional de Arqueologia*. Instituto de Alta Cultura, Lisboa.
- [13] DGPC - Direção Geral do Património Cultural. (2020), "Anta pintada de Antelas," [Online]. Available: from <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/>. [Accessed 22 November 2020].

- [14] INE - Instituto Nacional de Estatística-Statistics Portugal. (2021), "Caraterização sócio - económica dos municípios - Aguiar da Beira - Retrato Municipal," [Online]. Available: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_doc_municipios_cse. [Accessed 12 August 2021].
- [15] Town Council Aguiar da Beira "Carapito". (2020), [Online]. Available: <https://www.cm-aguiardabeira.pt/freguesias/carapito>. [Accessed 15 November 2020].
- [16] Cruz Domingos J. D., Vilaça R. (1990), "Trabalhos de escavação e restauro no Dólmen 1 do Carapito (Aguiar da Beira, Dist. da Guarda) - resultados preliminares," Porto.
- [17] SIPA- Sistema de Informação para o Património Arquitectónico. (2021), "Dólmen do Carapito 1 / Casa da Moura IPA.00001369" [Online]. Available: http://www.monumentos.gov.pt/Site/APP_PagesUser/SIPA.aspx?id=1369. [Accessed 2 October 2021].
- [18] Decreto no. 735/74, Diário do Governo, Serie I, no. 297, 21 dezembro 1974 Decreto n. ° 735/74. Artigo 1.
- [19] Leisner V., Ribeiro L. (1969), Die Dolmen von Carapito, Madrid.
- [20] Editor Notícias de Viseu, "Município De Aguiar Da Beira Requalifica Dólmen I Do Carapito," 08 August 2020. [Online]. Available: <https://www.noticiasdevisau.com/municipio-de-aguiar-da-beira-requalifica-dolmen-i-do-carapito/>. [Accessed November 2020].
- [21] Town Council Aguiar da Beira, «Requalificação do Dólmen I do Carapito - Reconstituir a Mamoa,» 04 September 2020. [Online]. Available: <https://www.cm-aguiardabeira.pt/noticias/532-requalificacao-do-dolmen-i-do-carapito-reconstituir-a-mamoa>. [Accessed 02 October 2021].
- [22] Sobral P. (2020), "Megalithic Rute.," in *Built heritage as cataliser of community valorisation*. The Portuguese experiences, Aveiro.
- [23] Alberich T., et al. (2009), Metodología Participativas. Manual, Madrid: CIMAS- Observatorio Internacional de Ciudadanía y Medio Ambiente Sostenible.
- [24] Landel P., Pecqueur B. (2009), "La culture comme ressource territoriale spécifique. Centre d'Etudes et de Recherche sur le Droit, l'Histoire et l'Administration Publique. Administration et politique: une pensée critique sans frontières," in *Dialogue avec et autour de Jean-Jacques Gleiza*, Presses Universitaires de Grenoble, Grenoble pp. 181-192.
- [25] Linck T. (2008), "Las Ambigüedades de la Modernización: la Economía Patrimonial, entre Representatividad y Consenso," *PAMPA*, no. 4, pp. 37-60.
- [26] Pecqueur B. (2005), "e développement territorial: une nouvelle approche des processus de développement pour les économies du Sud," in *Le territoire est mort. Vive les territoires!*, RD Éditions, Paris, pp. 295-316.
- [27] Leloup F., Moyart L., Pecqueur B. (2005), "La gouvernance territoriale comme nouveau mode de coordination territoriale?," *Géographie Économie Société*, vol. 7, no. 4, pp. 321-331.

- [28] Solano, M^a. C., Riquelme, P. J., y García, C. (2020). Disrupción rural: un primer paso para la construcción de destinos turísticos con enfoque territorial. Una visión integrada desde la "Grounded Theory". *TERRA.Revista de Desarrollo Local*, (6), 115-147. DOI 10.7203/terra.6.16601
- [29] Pace G. (2021), "Heritage Conservation and Community Empowerment: Tools for Living Labs," in *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Naples, pp. 197-234.
- [30] Solano Báez M. C. (2019), *El proceso de configuración de un destino turístico rural con enfoque territorial*. Doctoral thesis. University of Murcia. Murcia, Spain.
- [31] CIMVDL- CIM Viseu Dão Lafões, "CIM Viseu Dão Lafões realizou webinar dedicado ao megalitismo," 24 april 2021. [Online]. Available: <https://www.cimvdl.pt/cim-viseu-dao-lafoes-realizou-webinar-dedicado-ao-megalitismo/>. [Accessed 2 October 2021].

NOTES

- ¹ At present: Instituto de Gestão do Património Arquitectónico e Arqueológico (IGESPAR).
- ² Internal document of the Town Council of Oliveira de Frades. Application summary sheet. Project: Conservação e Preservação do Dolmen de Antelas. ADDLAP. Code: NOT/AP/23736/20171227.
- ³ Available on the RDP2020, website: <http://www.pdr-2020.pt/O-PDR2020>
- ⁴ Decreto n.º 735/74, Diário do Governo, I Série, n.º 297, de 21 de dezembro de 1974. Article 1 by which the following buildings are classified as national monuments: District of Coimbra: Municipality of Aguiar da Beira - Dolmen of Carapito I, also known as "*Casa da Moura*", in the parish of Carapito.
- ⁵ Portuguese name: Requalificação do Dólmen I do Carapito – Reconstituir a Mamoa.
- ⁶ It includes the replacement of the roof and the fallen supports, as well as the reconstruction of the mound that originally covered the monument, as well as a parking area and the enhancement of the landscape of the complex.
- ⁷ At that time, it was not compulsory, although a couple of days later it became compulsory for entry into Portugal and Spain.
- ⁸ Even on the visit's day, the teachers who took the STSM researcher to the monument had to return to Aveiro before 13:00h, as it was forbidden to travel between municipalities after that time.
- ⁹ Link video: <https://youtu.be/IHgA0IvC-QM>. Link new: <https://www.caruspinus.pt/dolmenes-ii-iii-e-iv-de-carapito-foram-alvo-de-limpeza-e-conservacao/>

CHAPTER 6

Camerano, the Underground City

María Murillo-Romero

6.1. Introduction of the STSM

The underground city of Camerano is one of the sixteen case studies developed in the context of COST Action 18110 “Underground Built Heritage as catalyser for Community Valorisation” during the period 2019-2023, still ongoing.

According to the MoU of the CA18110 [1], Underground Built Heritage (UBH) is a unique cultural resource, which might contribute to individual and collective identity, social cohesion and inclusion, being laid at the heart of a community's sense of place.

Through these sixteen case studies and their corresponding Short Term Scientific Missions (STSM), four by year of the project, the knowledge transmission and exchange reveals practices, imaginaries and local cultures associated with the UBH, renews their interpretation, and stimulates knowledge and the perspective vision of local communities.

The STSM of this case study, the Underground city of Camerano, was carried out on 1-16 November 2020 in Camerano, Ancona, Italy, and it was hosted by the Municipality of Camerano, specifically, Illaria Fioretti¹, Council member for Culture of the Municipality at that moment. Due to the COVID-19 pandemic, the research was conditioned by the declaration of a “state of alarm” in the main European countries, including Italy. In that sense, some of the programmed activities, as well, as the results derived from them, were unachievable, and, on the other hand, it was possible to face new situations which have allowed us to learn from this pandemic and to deepen in some possible collaborations.

6.2. Context and background: Camerano, the underground city, knowing its history

Camerano is a small Italian town, located in the region of “La Marca”, The Marche, in the province of Ancona, in the central west of the country, with a distance of 6km to the Adriatic coastline.

The territory of Camerano covers an area of almost 20 square kilometres and has a population of approximately 7200 inhabitants. Located on the hill that gives it its name, the city is crossed by a complex network of caves that gives rise to the underground city of Camerano.



Figure 6.1: Camerano urban area and distances to other cities nearby. Source: Autor's elaboration.

The historical occupation of this area of Italy is attributed to the Piceno people, from the XI century b.C. Subsequently, this territory was occupied by the Romans, the Goths, the Byzantine Empire and the Papal States until the last occupations carried out by the French at the beginning of the contemporary period. It was then recovered by the Papal States at the beginning of the 19th century and, finally, became part of unified Italy in the middle of that century. The continuous occupation of the territory that the region has undergone has left countless traces of the various cultures that have occupied it, making it an example of great importance as a meeting point of cultures and values.

At the beginning of the 20th century, the handicrafts that still characterise the economic life of the town began to develop; around 1940, also after the demographic increase, the urban area expanded. In the 1960s, Camerano experienced a real economic boom and became an industrial centre, with the establishment of numerous craft and industrial companies, especially in the musical instrument sector, Farfisa, and, later, in wood, metal and plastic processing, clothing and wine production: Rosso Conero. The industrial mentality and development have marked the history of the city and, still now, despite the crisis during the 90s, is an indispensable part of the community and its tradition.

The city, due to its size, has a small number of infrastructures, such as hotels, restaurants and exhibitions or museums, despite its huge heritage value. In addition, owing to its geography, many areas have difficult access by walking, but as a consequence, the views from any part of the city are breath-taking.

Camerano houses an exceptionally important artificial subterranean complex in the heart of its historic centre. The numerous intercommunicating caves - dug out of the sandstone substratum- form an intricate layout and display some extremely interesting and elaborate architectural structures; the rooms, several of which are round, are either vaulted (with domes, rib vaults or barrel vaults) [2]. The origin of this Underground city is completely artificial and its area of development is considerable, still impossible to quantify in its entirety, these are some of the reasons why it is called “city” instead of “cave”. The details of the spread of the Camerano’s Underground city are shown in Figure 6.2. This figure presents the spread found nowadays, but there is much more to discover.



Figure 6.2: Map of the Underground city of Camerano. Source: Autor's elaboration

There are no historical documents that attest to the historical origin of the caves. The only sources that mention them, count them as already complete and long-lasting artefacts.

The caves were subject to continuous reuse, with the consequent expansion and modification, depending on the necessities of the people, so much so that today it is difficult to recognise the different interventions. It is plausible to confirm that the underground city and the overground city have had parallel developments [3].

The origin of the caves, as well as their exact dating, could not be demonstrated with certainty, due to the absence of documentation in the case study. Despite this, some indications support the theory that the underground city of Camerano was excavated for residential, ritual and defensive purposes, and not as a quarry of material, or at least not exclusively.

One of the main indicators of this theory is the presence in almost all areas of architectural embellishments, carvings and decorative details that do not fit in quarries or simple storage rooms: domes, barrel vaults, circular rooms and decorative columns, decorated with friezes, ornaments and religious symbols are constants along the entire route. The details of these embellishments are shown in Figure 6.3.



*Figure 6.3: Collage of some architectural details of the Underground city.
Source: Autor's elaboration*

The diversity of uses of the caves, and their ease of expansion, are a direct consequence of the type of stone present in the area, which allows the creation of resistant and workable structures. This stone requires ventilation, which is why most caves have several exits and entrances. And It also ensured the survival of the people during the sieges [4].

The opening of the Underground city to public visitors was carried out after the requalification of the caves in 2008. This requalification was an initiative of the Municipality and some experts of the University, such as Alberto Recanatini, who, together, understood the opportunity of opening the caves and making them accessible.

The requalification consisted on connecting the caves expropriated by the municipality, to the circuit we are now visiting, maintaining their original characteristics and structurally reinforcing them for maintenance purposes.

Nowadays, since July 2020, the management of the caves is led by “Opera Cooperativa”, a cooperative business of experts in the cultural and tourism areas who also led other cultural projects in the region. They were the winners of the last public tender of the cede of use of the Caves and the tourism area.

6.3. The STSM: Mapping values

6.3.1. A multiscale approach of analysis of the case

Following the principles established in the discipline of geography for the approach to cultural landscapes as a territory [5], an analysis of the case study was made from its object scale to its territorial scale.

In that sense, the territory is understood as a sum of layers which are not only related on the map, there are social, economical and cultural issues, for instance, that have to be taken into account as a global network and to be analysed in their different scales.

The multiscale approach of analysis used in this mission is a methodology based on four pillars: morphology of the territory, territorial articulation, anthropogenic activities and perception [6]. These pillars are directly related to the most important precepts drawn from the definition established by UNESCO for historic urban landscapes:” Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”[7]. This methodology has been used by the STSM researcher during her doctoral research [8] combined with the work developed by Sobrino Simal [9]about how to approach the historic urban landscapes of production in Seville.

Applying this idea to the Camerano case study, analysing the bibliography and the current estate of the caves in any of their aspects, it was possible to identify several networks, cultural, economical, and historical, that would allow it to establish future collaborations and partnerships. Furthermore, the development of this fieldwork allowed us to focus on three of the four pillars mentioned before and to deepen the perception through the interviews and the secondary data compiled.

6.3.2. Storytelling through interviews

One of the main benefits of being able to carry out this research was the opportunity to connect with the people of the area and to be able to extract from this interaction enough information to propose solutions or strategies for the valorisation of these unique spaces through the local community.

Unfortunately, owing to the COVID'19 pandemic, as it was mentioned in the Introduction, some of the activities and tools planned for this STSM were modified or cancelled. Even though the research was conducted successfully, thanks to the effort of the Host Institution and the Host Ilaria Fioreti. In that sense, the Living lab was impossible to manage due to the COVID'19 measures.

To support the perception pillar of the multiscale analysis carried out several interviews of the main stakeholders of the area were conducted. In that sense, these interviews assess the possibility of establishing networks of local and regional participation to enhance relations in the territory.

The use of Storytelling in the STSM was considered one of the keys to connecting people and deepening their knowledge of the case study. "It has been demonstrated that people think narratively rather than argumentatively or paradigmatically"[10]. In order to achieve the main goal of the STSM and to develop the most accurate Storytelling of the case study, several interviews and online meetings were planned to know all the possible views from the key stakeholders.

Four major stakeholder groups were distinguished, according to their area of action:

- Public Administration: experts on urban and heritage policies and politicians.
- Management of Camerano Caves: manager of the caves, who is not the Municipality.
- Marketing and tourism area: there are some touristic and cultural networks in the region which include Camerano and its caves in their system.
- Local Infrastructures: hotels, bar and restaurants, shops and industry.

6.3.3. Recognising Camerano

As a result of the interviews conducted during the STSM and the on-field work, monitoring the existing and possible relationships between the stakeholders, some potential benefits have arisen from their collaboration and partnerships in the cultural and heritage sector in order to its valorisation and management. The main ones are recapitulated in the following table, Figure 6.4.

POTENTIAL BENEFITS FROM COLLABORATION AND PARTNERSHIPS
The joint participation of the stakeholders, grouped according to their area, would allow the concrete expression of the problems existing in each of them and the seeking of a common solution. For instance, instead of facing the same problem many times, it may be possible to be focused on one global issue as a collective.
The partnership and collaboration of the Camerano Caves Stakeholders, may increase the impact of the caves and its UBH on the community.
It might increase and encourage the acceptance of public policies and their involvement in projects on another level (regional, national, european, international).
Collective work, the union of stakeholders in a common front, would improve the relations between them and the conceptualisation of the city and the project as a system, a network, and not as a sum of agents.
It would also benefit the integration of Camerano and its caves in various cultural and heritage existing networks, associated with some stakeholders (industrial tourism, gastronomic tourism, etc.).

Figure 6.4: Potential benefits from Collaboration and Partnerships. Source: Autor's elaboration

6.4. Conclusions

Through this brief explanation of the work developed during the STSM of Camerano case study, the main objective was to show the possibilities and opportunities that offer this COST Action to enhance the valorisation of the underground built heritage using the local community as catalyser. Furthermore, for the STSM researcher, it was deeply relevant to share the methodology of analysis of the case in order to approach it to any other cases and to put in practice the Historic Urban Landscapes theory.

In conclusion, we would like to emphasise that the opportunity to carry out this type of mission, even under the constraints of the pandemic, is an indispensable tool for dealing with the valorisation of heritage. It offers a first-hand experience, in which it is possible to interact directly with the agents involved and the space to be valorised. In this way, it offers the possibility of obtaining a complete, more detailed image of the existing problems and, consequently, allows us to propose solutions that are more appropriate to the different needs of each case.

REFERENCES

- [1] Memorandum of Understanding of the CA18110.
Website:<http://underground4value.eu/wp-content/uploads/2019/05/CA18110-e.pdf>
- [2] Perrino, G. (2013) *Marches: off the beaten path*. Claudio Ciabochi editore, Fabriano, Ancona, Italy.
- [3] Recanatini, A. (1990). *Le grotte di Camerano. Descrizione e ipotesi*. Comune di Camerano. Biblioteca comunale.
- [4] Mainiero, M. (1990). Problematiche connesse alla presenza di cavità nei centri storici. CONVEGNO DI STUDI. LA MEMORIA DEL SOTTOSUOLO. 17/18 LUGLIO 1999.
- [5] UNESCO. 2019. "The UNESCO Recommendation on the Historic Urban Landscape Report." Paris: UNESCO. <https://doi.org/10.1515/9783110308389.77>.
- [6] Fernández-Baca Casares, R., Fernández Cacho, S., Salmerón Escobar, P., Arenillas Torrejón, J.A., Cuevas García, J., Díaz Iglesias, J.M., Durán Salado, I., et al. 2015. *Guía Del Paisaje Histórico Urbano de Sevilla. Volumen 1: Caracterización*. IAPH. Sevilla. <https://doi.org/10.1080/1367886022000016785>.
- [7] Consejo de Europa. 2000. "Convenio Europeo Del Paisaje." Florencia. http://va.www.mcu.es/patrimonio/docs/Convenio_europeo_paisaje.pdf.
- [8] Murillo-Romero, M. (In process) *The urban landscape of the wine of El Puerto de Santa María, Spain*. The University of Basque Country, Spain.
- [9] Sobrino Simal, Julián. 2018. *Estudio Temático 05: Los Paisajes Históricos de La Producción En Sevilla*. Edited by cultura y vivienda de la Junta de Andalucía Instituto Andaluz de Patrimonio Histórico, Consejería de educación. *Instituto Andaluz de Patrimonio Histórico*. Sevilla: Instituto Andaluz de Patrimonio Histórico, Consejería de educación, cultura y vivienda de la Junta de Andalucía.
- [10] <https://www.branding-toolkit.rockproject.eu/storytelling-the-city>

NOTES

¹ Personally, I would like to express my appreciation and deeply thankfulness for the excellent support provided during the field mission in Camerano (Ancona) and sites locations, as well as the collaboration and facilitation for documentation collection, interviews and meetings, which I received from the Municipality of Camerano, specifically, from my host contact Ilaria Fioreti, who has been an incredible host and guide during this STSM under the COVID-19 pandemic.

CHAPTER 7

Camerano

A link between urban and rural UBH

Ernesto Marcheggiani, Francesco Paci, Andrea Galli

7.1. Introduction

The second Underground for Value training school in Murcia, Spain, allows us to continue the narrative on the evolution of the project focusing on a real case, the city of Camerano in Italy. This new chapter will deepen our reflections on the opportunities that cultural heritage and the surrounding rural landscape offer to local communities. We will also conclude that it is precisely in this specific category of marginal territories that the general objective of CA18110 takes on a higher relevance since they are, 'by nature', the places of the weakest local communities. As described in a previous Handbook released on the first training school in Naples [1], Camerano seemed like a good opportunity for reflecting on the critical relationships linking local communities with places. What caught our attention from the very beginning of the COST Action CA18110 was that the value and collective meanings attached to the underground complex were a real popular expression, a clear signal coming from the local community.

That is why, in the following sections, we will focus first on the city of Camerano and its underground heritage, retracing what has happened since it was listed in the pool of cases. In particular, the covid-19 pandemic outbreak. Such an exogenous variable acted as a stressor testing the resilience of the tourism offer model and the community in Camerano.

The lesson learnt is that the stronger the feeling the folk have towards the local heritage, the more resilient the heritage site. We also introduce the idea that the town of Camerano represents a good example of reconnection, in our case, between the densely urbanised tourist coastline and inland rural territories. In our narrative, this connection is not only spatial

but also conceptual. In spatial planning, a good plan implies looking at the physical space and people, as a whole. Excellent plans do this by also taking natural and cultural heritage resources into greater account for the sake of the overall planning cycle. Therefore, we will ultimately widen the



Figure 7.1: Camerano case-study location

view, looking at the landscape around Camerano, exposing the potential offered by the extensive network of underground sites throughout the region, an important piece in the regional development plan puzzle often underestimated.

7.2. The origins of the mirroring city

Camerano is a medium-sized Italian town on the hills above the Adriatic Sea, close to Monte Conero Regional Park in the Marche region (Fig. 7.1). Its location makes it a real gateway between the densely urbanised and touristic coastline and the inland lands characterised by breath-taking countryside and high-quality local cuisine.

The presence of the caves is connected to the history of human settlements in the area. In these places, the specific morphology and geology of the hillside areas have always been managed by local communities to seek

refuge since the first human settlements in the Adriatic area. The traces of this phenomenon are represented by indentations of the hilltops, called "*gradina*". Among the possible hypotheses on the origin and meaning of the name 'Camerano' is the link with the idea of an indoor place because of the presence of caves [2]. It is difficult to suggest a precise date of origin. From a structural point of view, the earliest documentary evidence is linked to modifications of the underground cavities made between the 18th and 19th centuries. Although certain evidence dates back to the medieval period (1327). This can also be related to the history of the caves in the nearby town of Osimo (1276), [3].



Figure 7.2: Example of "*gradina*". [2]

However, if we consider the correlation between the spatial development of the underground network and that of the inhabited city centre before the recent expansion, we can assume to date the caves to the Picenian period because of two considerations: the comparison with other Italian hypogeal complexes and the distribution of human settlements prior to the medieval period, testified by the archaeological discoveries [4].

Although the Picenian civilisation left little evidence of any urban development [5], this hypothesis [4] appears stimulating, and finds indirect confirmation in the case of Numana, a neighbouring town, where two pits from the Picenian period have been found [6].

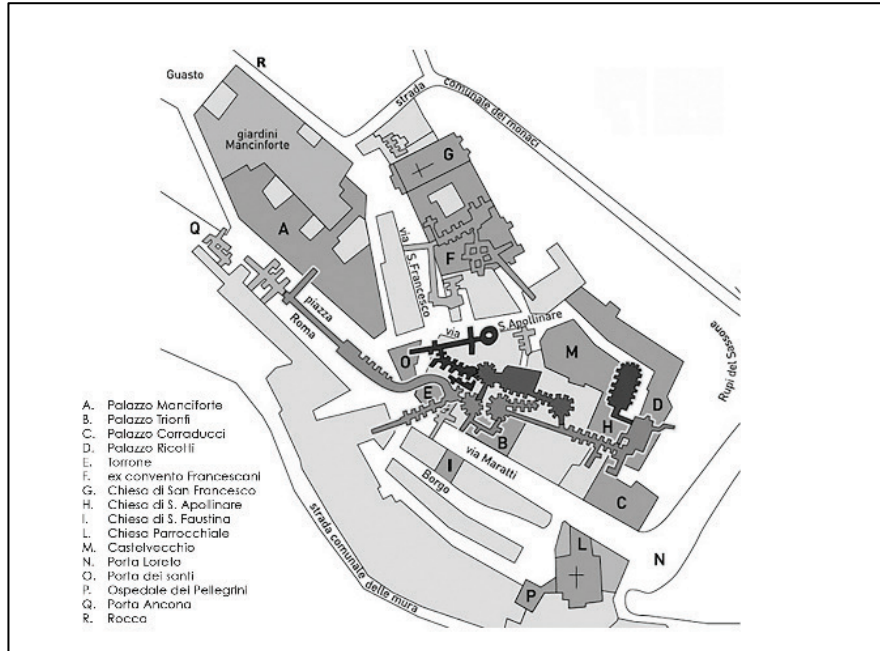


Figure 7.3: Planimetry of Camerano caves' network

As anticipated in the introduction, some structural features of the caves suggest their close connection to the population. Mapping the main elements of historical and artistic interest in these places shows the unique development of the so-called mirroring city. Each household in the city had a series of cavities (Fig. 7.3) that developed for various levels underground, some of them interconnected with the cavities owned by the neighbours, composing an actual network of tunnels through the underground of the city (Fig. 7.4).

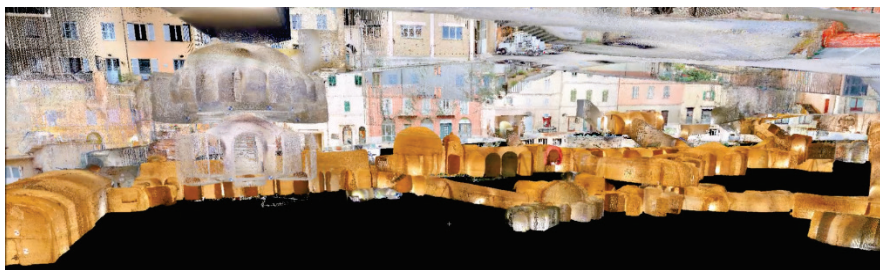


Figure 7.4: Vertical section of Camerano

The cave use was recursive in different historical periods, with often multiple uses in the same era, which helps to explain the difficulty to historically dating the caves. This is also because the private relationship be-

tween the householder and the underlying portion of caves occurred outside the official cadastral management and thus was poorly documented.

The main uses of Camerano's underground cavities can be traced back to four main functions: worship, (Fig. 7.5 a); water supply, (Fig. 7.5 b); shelter, linked to that use is an important collective memory of the people of Camerano, (Fig. 7.5 c), in July 1944, during World War II [7,8]; food storage for agricultural goods (Fig. 7.5 d).



Figure 7.5: Historical functions of Camerano's caves

7.3. The development of the tourism model

The touristic exploitation of Camerano's underground heritage started in 1996 and was made possible by the administration's careful management of its territorial assets and municipal properties. At the end of the 1990s, the town was faced with the consequences of the economic crisis triggered by a downturn in the manufacturing sector that led to the closure of some important companies and the loss of sectors of the local production system based on the district model. Among them, the Farias's production facility, a notorious musical instruments factory that had known a moment of fame and development since the end of Second World War, left a vast idle surface. The brownfield remained unused until 2005.

In the same year, the surface fell into the interest of a multinational company, IKEA, which proposed to acquire the surface and create a new store. Given the large size of the store, the operation required several plan-

ning requirements that were subject to planning agreements in the Town Plan of the Municipality of Camerano. The administrative burden to the IKEA company to get the building permit included, among others, approximately 650,000 € to a service centre of 1,500 m² in compensation for the town hall.

The managing smartness shown by the city council allowed for establishing an actual business framework in favour of the underground heritage with the choice to give up the service centre requesting instead the investment for the corresponding sum to be sued to design and implement the recovery and enhancement of the caves under the historic centre.

Initially, the visit model was managed by the local tourist office and based on guided tours held by volunteers. Given the growing success and the contemporaneous difficulties in guaranteeing a safe visit, the city decided to privatise the tour system. The tourism business model chosen to make the underground network accessible even more professionally is today based on a public-private partnership.

Since July 2020, Opera, a private company, is running the site visits under a specific legal contract agreed upon with the town hall, which owns 80% of today's accessible network of caves. The company manages the tours and any connexion with professional guides. The revenues are divided between the company and the municipality, with a discreet success. The average number of visitors is 25'000 a year, generating an income of 300'000 euros.

The outbreak of Covid-19 represented a test of resilience for the tourist offer model and for the entire community of Camerano. Opera is a mid-sized business-oriented company which had to re-adapt its management approach and business method to survive. That has meant changing the visit routinely to cope with safety restrictions, although continuing to yield revenues.

7.4. Why Camerano fits U4V

According to Pace et al., the definition of underground built heritage (UBH) adopted by the COST Action "...encompasses three types of building activities: architectural, urban, and landscape heritage beneath the surface of the earth, which the current generation resolves have cultural values" [9]. Moreover, the Underground4value challenge is to promote the UBH as a resource and valorise its full potential to support local communities' development [10]. To do that, strategic transition practices experimented on by the local community are a vital key issue for the entire project design [11].

In the Action methodological context, Camerano fits perfectly as a study case and a living lab. In particular, the current situation is characterised by a strong identitary tie between the local community and the history of the caves, but at the same time, by considerable uncertainty for the future, considering the recent economic recession and the difficulty of maintaining an effective model of tourism, especially in the post-pandemic scenario.

The main issues are twofold: a) the lack of experts with a broad vision of the various possibilities for valorising the site inside its historical landscape; b) the need to trigger a planning process in the city that has at its core the need to reconnect the site within a wider landscape, overcoming the marginality from which it currently suffers.

During Underground4value, three main objectives have been accomplished so far:

- the implementation of the living lab, in collaboration with a team from the Marche Polytechnic University
- the monitoring of the underground heritage sites using innovative technologies (3D cloud points) and the mapping of stakeholders (structured interviews)
- a series of actions to involve the city in the Underground4value context, such as supporting a short-term scientific mission, activating a dialogue between institutions to define new planning tool including the site itself, and creating a relational network with similar UBH sites in the region.

7.5. Looking beyond Camerano: underground heritage and its surrounding landscape

Camerano stands in the agricultural peri-Adriatic colonisation space of the Romans. However, between the fifteenth and sixteenth centuries, a typical agricultural landscape took place by almost completely substituting woods lands with mixed systems of arable and vineyards or olive trees. That is the remnant rural landscape that we still see today.

The landscape matrix is the starting point of a new planning vision the city of Camerano wishes to uphold, starting from the acknowledgement that the future of the model offer must look beyond the city walls. Although the Marche region can boast a rich heritage of underground spaces, including Camerano (Fig. 7.6), the development of a thematic network capable of attracting tourist flows is not yet complete. During the survey of the Camerano caves, it was found that there were other underground struc-

tures in the surrounding areas: some were very similar to those in Camerano, while others had different origins and functions.



Figure 7.6: The Landscape Matrix

From a first analysis based on the historical functions, five potential thematic networks could be defined:

- **water supply function:** aqueducts' tunnel, wells, cisterns, emissaries.
- **military-strategic function:** tunnels used to defend against sieges, secret passages to exit the walls of fortified centres.
- **food storage function:** storage in underground cavities of food and wine that has always been a rural tradition
- **cultural or religious function:** caves that housed hermitages or small religious structures intended for the hospitality of pilgrims and wayfarers.
- **mines or quarries:** hypogea used in the past as mines or quarries of stone, or other minerals

Noteworthy is the geographic distribution of functions. While the religious use was uniformly distributed along the Apennine belt from north to south, hypogea with multiple functions (defence, food storage and water supply) lay on the coast, in the province of Ancona (Fig. 7.7).

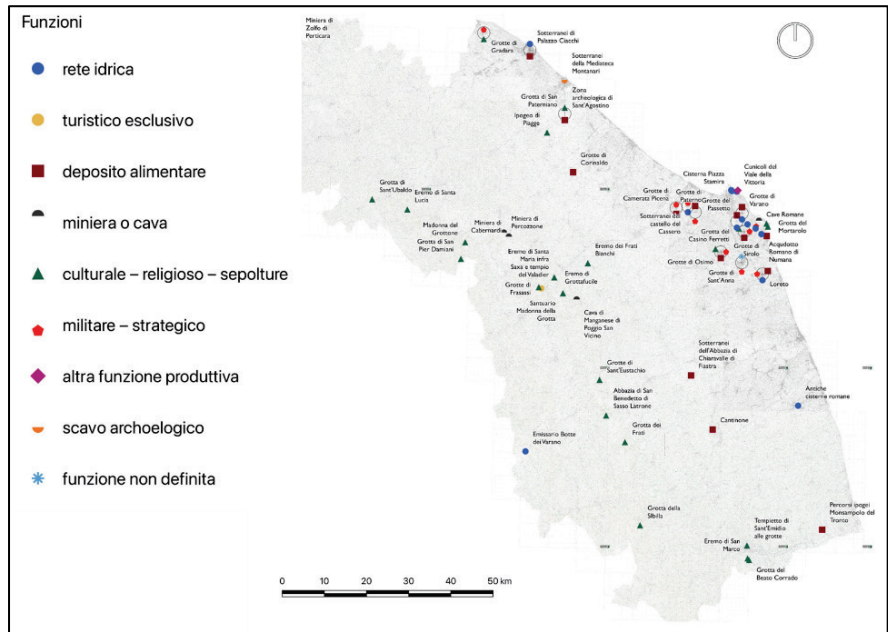


Figure 7.7: The UBH Regional Network

From this survey, which was undoubtedly carried out at an introductory level and required further study, emerges the possibility of creating one or more networks that would gather and unite the hypogea present.

Camerano has already tried to create a network with the nearby caves of Osimo by creating a cumulative ticket for visiting the caves in both towns, in the promotion of tourism, both Camerano and Osimo are often mentioned. Considering the presence of similar structures in the rest of the Region, this embryo could be used as a starting point to create one or more networks by linking the other hypogea elements.

7.6. UBH and urban-rural network potential

The caves in the Marche Region are often small and scattered throughout the territory; some are unused, abandoned or used by private owners. Problems of maintenance and safety during the visits and ownership of property rights make difficult their management and exploitation.

Facing these difficulties, individual administrations or owners prefer leaving the underground sites closed or exploiting them sporadically rather than engaging in permanent touristic activity.

Combining them in a thematic network would bring several advantages:

- management, maintenance, and safety: a network would enable sharing of skills, technologies, and equipment to make the necessary investments more efficient.
- Promotion of exploitation: the tourist exploitation of a network of sites would improve the promotion, and organisation of thematic visits (e.g., single ticket), increasing the flow of visitors to all the network nodes concerned.
- Creation of a tourist attraction for the whole region that can increase the tourist flows of the whole area and not only of individual municipalities.

Finally, it is possible to use underground structures for both tourism and cultural events, film productions, and artistic residences. This leads to a better promotion and publicity of the places and related revenue activity. These are just some of the networks that could be created; investing in more in-depth research into the underground structures in the region and their state of conservation and use could identify the potential for exploitation and possibly the creation of further thematic networks.

A network covering the entire region, especially if it is intended to exploit cultural tourism, is an excellent tool to increase the connection between the inland areas and the coast: for decades, the Marche Region has been faced with the problem of inland areas experiencing a period of crisis, abandonment of the territories and depopulation with a shift of productive activities towards the coast, which is better connected and provides more services.

A network of tourist and cultural attractions helps to link up, promote and create new activities in the inland areas as well, thus providing an additional development engine to stop their crisis and decadence.

The evolution of European territorial policies, such as the “Common Agricultural Policy” and the “Development and Regional Cohesion Policy”, objectively created excellent conditions for framing landscape planning at the very local scale. All current Operational Programs activated at the policy level (Leader, Rural Development Program, Inner Areas strategy, etc.) consistently show this trend by focusing on the local community and supporting a widened accessibility to financial resources.

A whole set of thematic objectives and priorities foster the idea of a strengthened landscape vision (care of places, enhancement of resources and sustainable production systems). In this vision, moreover the above mentioned potential network of regional UHBs, other elements could be seized (transition management, generative welfare, accessible and sustainable tourism, and technological innovation) for the development of local and regional initiatives. At the cutting edge of this debate, Camerano could represent an opportunity to steer such an approach to the landscape.

REFERENCES

- [1] Marcheggiani E., Galli A., Fioretti I., de Seris M. (2021), *Valorisation of Rural Heritage and Touristic Bias. Potential Benefits to Local Community*, in Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation A Handbook - Proceedings of the First Underground4value Training School*, Cnr Edizioni, Roma, pp. 121-131.
- [2] Morroni M. (1979). *Ipotesi varie sull'origine ed il significato del toponimo Camerano*, Osimo.
- [3] Morroni M., Recanatini A., Toccaceli F., Donzelli N., Pincini C. (1990). *Terra di provincia. Tra Aspio e Gradina*, Ancona.
- [4] Recanatini A., (2000). *La città segreta, correlazioni tra sviluppo urbano di superficie e rete ipogea nei centri storici alle falde del Conero. I casi di Camerano e Osimo*. In Campagnoli M., Recanatini A. (Eds), *La memoria del sottosuolo*, Atti del Convegno di studi (Camerano, 17-18 luglio 1999), Jesi, pp. 169-188.
- [5] Naso A. (2000). *I piceni. Storia e archeologia delle Marche in epoca preromana, presentazione di Giovanni Colonna*, Longanesi, Milano.
- [6] Finocchi, S. (2018). *Numana (AN). Picus. Studi e ricerche sulle Marche nell'antichità*, 38, pp. 253-282.
- [7] Recanatini A. (1997). *Le grotte del Conero. Ricerche di speleologia archeologica nel Parco del Conero*, s.n., Jesi.
- [8] Recanatini A. (1999). *Il paese e la guerra. Camerano e gli avvenimenti della Seconda Guerra Mondiale: appunti, documenti, testimonianze e memorie, 1939-1945*. Biblioteca Comunale, Camerano (AN).
- [9] <https://www.cost.eu/actions/CA18110/>
- [10] Pace, G (2021), Introduction. in Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation A Handbook - Proceedings of the First Underground4value Training School*, Cnr Edizioni, Roma, pp. 1-20.
- [11] Pace, G. (2020), *COST Action Underground4value: Living Labs for the Underground Built Heritage valorization*. EGU General Assembly 2020, EGU2020–10408.

Putting Underground Built Heritage at the Heart of Cultural Tourism

The ancient white marble quarries in Paros

Tommasina Pianese

8.1. Introduction

The ancient white marble quarries located in the Island of Paros (Greece) represent one of the underground built heritage (hereinafter UBH) cases selected within the COST Action CA18110 “Underground Built Heritage as catalyser for Community Valorisation” (Underground4value).

This four-year action, funded by the European Union, aims at “promoting UBH as a valuable resource to preserve, and to re-use and value, realizing its potential to support local communities’ development” [1]. To this end, *Underground4value* established and implemented an expert network, to promote balanced and sustainable approaches for preserving UBH, and using underground heritage as catalyser for urban and rural areas for regeneration policies [1].

The Paros marble quarries are a unique cultural heritage but, once the extraction activities ended, the sites were abandoned without any real public commitment for their conservation. In the Underground4value perspective, this could happen through the local community engagement. The sites could become an important heritage of the local people and valued as a primary attraction for the many tourists who visit the island each year. Therefore, the case was fully aligned with the Underground4value’s objectives and ideal for testing the STP methodology [2].

Coherently, the Short Term Scientific Mission carried out between 5th and 19th June 2021 in the island of Paros, had a twofold objective. The first was to assess:

- Actual condition and preservation of the ancient marble quarries
- History and cultural values of the Paros marble quarries, and its meaning for Paros community
- Involved stakeholders, their interests, roles and relationships
- Existing projects for the site valorisation and stakeholders' expectations in terms of development (by considering economic, social and environmental impacts)
- Current drivers/constraints to a successful conservation and promotion
- Current governance structure, including formal and informal mechanisms of collaboration among Stakeholders.

The second was to use this knowledge to support the establishment of a living lab, organised with meetings, with the scope of facilitating an open dialogue among all relevant stakeholders to:

- Define a shared sustainable strategy for the Old Quarries valorisation, which balances different stakeholders' interests;
- Identify a governance structure along with mechanisms to ensure community development through the successful re-use and valorisation of this UBH.

The STSM on the ancient quarries of Paros contributed to the scientific objectives of Underground4value, by studying the governance structure and highlighting process features and mechanisms of collaboration for the case of the ancient Paros quarries. Then, it further helped to test the methodology envisaged by the action for experimenting new approaches of UBH valorisation and supporting the local community development.

This chapter is structured to first describe the case study (paragraph 2) and then the research method (paragraph 3). In paragraph 4, the main results of the scientific mission are presented and organised around the themes emerged as the most relevant for a successful project of protection and valorization of the Old Quarries of White Marble. The described "vision of the quarries" is the one that emerged from a stakeholders' meeting in the organised living lab, as well as from that meeting comes out, as a major need, the idea of starting a dedicated organisation, having the task of supporting public institutions to elaborate and implement an effective valorisation project for this site. General conclusions and my personal reflections, then, are stated in the last paragraph.

8.2. Case study description

The ancient white marble quarries are intertwined with the history and culture of Paros through time. If not the most important, they are one of the distinctive elements of the island's identity. They represent a worldwide monument too, as they have a cultural and historical value for all humanity.

Korres defines these quarries as “a whole, which historically covers about two and a half millennia and is at the same time classical archaeology, a monument of nature and an industrial archaeology of our time” [3].

In those tunnels, everything creates a strong connection between the past and the present. It is a combination of modern and ancient remains, it is like a museum of “industrial-archaeological activity, as it combines archaeology with a site of industrial history, because the mines were part of an industrial production process.

The most famous white marble quarries are located in the centre of the Paros Island, near the village of Marathi, where the extraction of marble took place from the Early Cycladic period until the 19th century. They include a number of magnificent underground galleries, the most important of which are the Quarry of the Nymphs and the Quarry of Pan, the source of the extremely pure and highly translucent *lychnites* marble (Fig. 8.1).



Figure 8.1: The Lychnites marble of Paros. Source: Author photo

The Parian marble became the dominant medium in monumental art from the 6th century BC and maintained its dominant position through the classical period and afterwards up to the 3rd century AC. Quarries have been a source of economic prosperity and splendour for the island in ancient times. The capital city of Paros was known as the “brilliant city”, with 40.000 inhabitants including refined sculptors and expert carvers who experimented for the first time with

innovative techniques to extract large blocks of the finest white marble supported by a large number of slaves working under harsh conditions in the quarries. In the galleries one can still see the points where the stones were extracted and roughly carved inside the galleries, and then transferred where the artist could finish them, usually in ad-hoc ateliers set up outside the quarries.

The white marble of Paros was famous throughout the world and was exported not only in rough blocks but also in the form of art works, such as statues, columns, funerary monuments, and sarcophagi. Hermes of Praxiteles, Venus de Milo, Augustus of Prima Porta are just a few of the famous works of art adorning major museums in Europe.

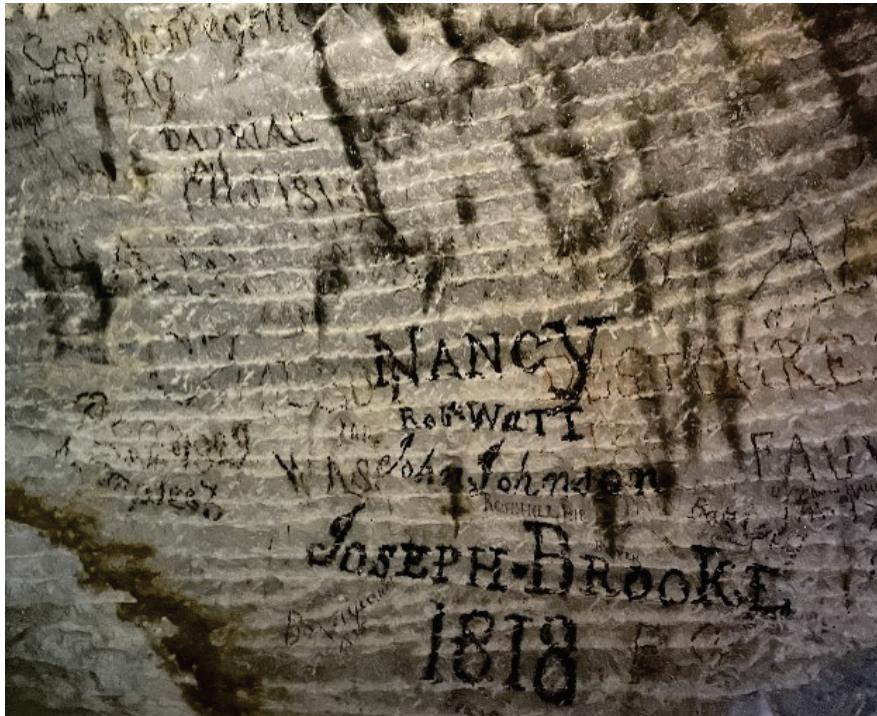


Figure 8.2: Inscriptions visible in the Quarry of Pan. Source: Author photo

The ancient quarries were reactivated in the 19th century by a Franco-Belgian company, which extracted the remaining deposits of *lychnites*. In the external areas, it is still visible the place where a teleferic was used to transport the marble blocks, along with a series of buildings that were used by the company for the different extraction activities. Once the white marble was exhausted, the company went bankrupt and the disused quarries were forgotten until the 1960s, when a growing number of local

people started paying attention to these hidden treasures which led in 1974 to their designation as an "archaeological area" by the Ministry of culture.

In the 1990s, the cultural association Archilochos, based in Paros, contributed to the process of re-discovering this UBH through the organization of an international archaeological conference entitled Paria Lithos, held in Paros in 1997. It brought together several relevant researchers and documented the unique importance of these ancient quarries.



Figure 8.3: Signs and techniques of marble extraction. Source: Author photo

In recent years, the interest of the local community for valorising this heritage has increased. In this respect, they obtained the Ministry's recognition in 2018 of the overground area containing industrial buildings from the 19th century operation of the quarries as a "historic site". In autumn 2019, two events were organised by local cultural associations. The first was

organised in Athens by the Federation of Parian Associations, with the participation of all institutions involved in the protection and valorization of the ancient white marble quarries (i.e., Ephorate of Antiquities of the Cyclades, Municipality and District of Paros, etc). The second was held shortly afterwards on the island of Paros by the Friends of Paros, which brought together the Municipality of Paros, representatives of the Ministry of Culture, local associations and high-level guest speakers. This event has laid the foundations for all relevant parties to work in partnership towards the protection and valorisation of the ancient quarries.

It has resulted in the establishment of a Scientific Committee, whose chairman is the head of the archaeological system, along with a Coordinating Committee for the valorisation of the old quarries chaired by the Mayor of Paros, including representatives of the Southern Region, the Ministry of Culture, and five local associations to steer the implementation of actions to protect and valorise this underground site.

In 2019, the association Friends of Paros also applied to Underground4value for including the site among the case-studies and establishing a living lab, for mobilising and engaging local stakeholders in

a collective initiative to protect and promote the ancient underground quarries and the wider archaeological area.

In spite of these considerable efforts, with the exception of the access path to the ancient quarries, the area is abandoned and the galleries are still inaccessible. In particular, the Quarry of the Nymphs is barred, and the Quarry of Pan is open without any security measures. These sites are of particular importance as they have produced a unique material, the best quality of Parian marble, the *Lichnites*, and some of the most interesting extraction technologies have been developed and improved in those tunnels.

8.3. Research method

In conducting the on-field research in Paros, we followed the case studies' methodological approach [4]. Case studies assume the study of an unexplored phenomenon into its real context, in which the boundaries between the context and the phenomenon are not evident, and behaviours are not controllable [5]. Researchers have an idea of single parts of a phenomenon, and case studies enable them to understand "how" each part connects to the others and "why" a complex phenomenon exists [4] [5].

We also referred to the conceptual framework (i.e., HUL approach and Place Management) and community-engagement tools. In particular, "Underground4Value" has envisaged the adoption of an innovative approach of community engagement to introduce social innovation in UBH, named Strategic Transition Practice [2]. The STP postulates that a "transition" should not be interpreted as a cause-and-effect, but as a practice-oriented built on emergent ideas and projects that may undergo metamorphosis over time and change meaning. Its constituting elements are: continuous experimentation of different solutions (experiment-based); actions structured in a succession of short but radical steps; it includes a process of practices (i.e. Practice-oriented) and oriented to support the community to a collective construction of meaning (Community-oriented) by actively engaging all stakeholders (Co-design thinking) to develop a collective learning at the community scale (Collective learning) [2].

For the data collection, we used multiple sources before and during the on-field mission at the Old Quarries of White Marble in Paros as successively explained.

1) *Virtual meetings*: from November 2020 to April 2021, three meetings have been organized with key informants (e.g., the CA18110 Chair, the President of the Friends of Paros, a representative of the Municipality of Paros and two tour guides). These meetings aimed at

introducing ourselves to the case of the Old Quarries and have a first understanding of its dynamics and criticalities.

2) *Interviews*: From October 2020, 17 in-depth formal interviews were done with a variety of stakeholders interested, directly or indirectly, in the Old Quarries valorization. The interviews were based on a questionnaire composed by 11 questions aimed at understanding their expectations and perceptions about the conditions of the marble galleries, the importance of their re-use and valorization for the local communities, the challenges along with their “visions” and “meanings” of the site and proposals in terms of the governance structure and mechanisms of collaboration (see the Appendix). Remotely, mainly due to covid-19 restrictions, and face-to-face, we interviewed a number of institutional stakeholders (e.g., the Mayor, his assistant and councillors of the Municipality of Paros (n.6), a representative of the Cyclades Ephorate for the Ministry of Culture (n.1), cultural stakeholders (e.g., representatives of local associations including Friends of Paros Association (n.3); Federation of Parian Associations (n.2); Marathi-Vounia "Agios Minas" (n.1)), tourism stakeholders (e.g., the president of the Hoteliers' Union (n.1); tour guides (n.2); a walking tours organizer (n.1).

This knowledge base was combined with informal talks with members of the local community (collective stakeholders), mainly working in the tourism sector (e.g. hotels, restaurants, rent car services) to understand their awareness about the Quarries' relevance, their opinion about their preservation, and if they think important to develop plans for their valorisation.



*Figure 8.4: Meeting with Markos Kovaïos, Mayor of Paros.
Source: Author photo*

3) *On-site visits*: During the on-field mission, we visited the Old Quarries of White Marble and the surrounding area, the archaeological museum and the different villages of the Island of Paros (e.g. Paroikia, Aliko, Naussa).

4) *Documents*: Primary data has been triangulated with a variety of documents related to the Old quarries of Paros' history and actual conditions including photos, maps, press release, scientific reports and official documents, articles and books.

5) *Face-to-face meeting*: A meeting was organized on June 14th involving 10 stakeholders including representatives of governmental, cultural and tourism. The meeting was moderated together with the Action Chair Giuseppe Pace based on the living lab approach, which assumes user participation in the innovation process. This approach is driven by two key ideas: a) involving users as co-creators on equal grounds with the rest of participants and b) experimenting solutions in a real-world situation [6].

Once introduced the objectives of "Underground4value", we stimulated conversations among participants invited to first describe their "vision" of the quarries, and then discuss about problems, ideas, and potential solutions. We mediated among different stakeholders in order to:

- 1) reach consensus on a shared "vision" of the old quarries and on socially and environmentally innovative solutions that balance the interests of different stakeholders
- 2) identify a governance structure and mechanisms of collaboration adequate for the effectiveness of a potential project of re-use and valorization of this UBH.

8.4. Findings

Given the historical and cultural value of the old quarries of white marble of Paros and their potential for the local development, the on-field mission was firstly oriented to identify the stakeholders involved in the old quarries, discussing with them the potential of a valorisation project for this site as well as the main criticalities in its implementation. On the basis of this knowledge base, we supported the local actors to identify a shared solution about the activities to be implemented and the modalities with which to realise this valorisation project.

The key aspect concerned the "governance structure" and related mechanisms of collaboration among stakeholders, taking into account that the Ministry of Culture - its central services in Athens and the Cyclades Ephorate of Antiquities - is statutorily responsible for the protection and valorization of this archaeological area.

Following the main results of the scientific mission are presented and organised around most relevant themes to the protection and valorisation of the ancient white marble quarries of Paros.

8.4.1. Main stakeholders involved in the Old Quarries of White Marble in Paros

Based on data collected during the STSM, the main stakeholders involved in the Old Quarries of White Marble can be grouped in:

- *Institutional stakeholders*, as decision-makers including the Ephorate of Cyclades Antiquities, the Municipality of Paros and Province of Paros, the Ministry of Culture.
- *Cultural stakeholders*, including volunteers and cultural associations interested in the recovery of this site as part of the Parian identity and culture, like Friends of Paros, the Federation of Parian Associations, Archilochos, the Institute of Archaeology of Paros and the Cyclades.
- *Tourism stakeholders*, including hotels, travel agencies, tourist information center, restaurants, that believe important to leverage the cultural side of the island starting from the valorization of the marble galleries.
- *Collective stakeholders*, including mainly residents with respect to which two distinct situations emerged from the on-field mission. From one hand, there are many local people who are not aware of the historical importance of this Underground Built Heritage, which refers to both the ancient art and technology and the industrial history of the place with the 19th century buildings once the headquarters of the Franco-Belgian company.

Several respondents have stressed the importance to engage local community as the more the residents know about the history and value of this unique and timeless monument, the more they will be willing to protect it [7]. In this respect, in 2010 an event was organised outside the old quarries, where artists made sculptures which are now located in the area surrounding the Municipality of Paros. Respondents believe that similar events, together with activities in schools, should be included in a systematic plan of actions in order to continuously stimulate local community.

On the other hand, the on-field mission revealed the presence of another part of the local community who recognise the historical and cultural value of the marble galleries and thus are very interested in the recovery and enhancement of the ancient white marble quarries. In this regard, several local associations -including Friends of Paros, the

Federation of Parian Associations, Archilochos- are actively engaged and collaborate with the Coordination Committee established in 2019 for the Old quarries to identify a suitable solution for their reuse and valorization.

However, some respondents stressed the potentialities of involving other actors in the project of reuse and valorisation of the old white marble quarries. In particular, some referred to the opportunity to engage:

- *Alumni association of American universities*: professors of some relevant universities declared themselves willing to support projects for the recovery and valorisation of the white marble galleries. They would give financial support, as well as conduct studies related to different disciplines (geology, landscape architecture, business models etc.) to answer the current criticalities for the protection and management of the quarries
- *Polytechnical School of Athens*: some professors and researchers, including Manolis Korres, have been involved in important projects for the recovery of archaeological sites (including holy sepulchres in Jerusalem), and their contribution could give a boost to the process of valorization of this underground site.
- *Diazoma association*: a not-for-profit association involving architects and other professionals, which worked on the valorisation of ancient Greek theatres and, more recently, on the creation of cultural routes and archaeological parks. This association supports the activity of the Ministry of Culture proposing projects based on private and/or public funds (e.g. European funding) and may be involved the definition of cultural routes, e.g. guided tours connecting different cultural sites on the island combined with gastronomy.

These actors have specialised skills, crucial for this UBH valorisation. In particular, Greek and American Universities would be involved to conduct the propaedeutic studies, while the Diazoma Association would be involved to develop the business model for this project. However, this request for external support could be an element of reflection, in terms of community empowerment.

8.4.2. Expected opportunities from a project of re-use and valorization of the White Marble Quarries

All stakeholders participating in the research recognised the possibility of a variety of positive impacts deriving from a project of reuse and valorization of this UBH. In particular, they stressed as the recovery of this unique underground site and the creation of an archaeological park could be a driving force for the island, making it attractive all year round and

overcoming the seasonality of tourism currently concentrated in the summer months [8].

More importantly, this would attract cultural tourism and, therefore, high-quality tourists who are interested in cultural heritage, respectful and interested in learning about the history, culture and traditions of the place [9]. This would enable Paros to differentiate its touristic offer from the other islands of the Cyclades, by capitalising on its cultural heritage and on the archaeological sites that are present throughout the island.

A project of reuse and valorisation of the old quarries would have a number of economic, social and environmental benefits. The economic



Figure 8.5: Access to the Marathi quarries. Source: Author photo

benefits will concern the Marathi area, where the old quarries are located, but it is expected that they will extend to all the island if the project of valorisation of this archaeological site is inserted in a broader model of sustainable tourism with a long-term perspective. Some potential economic benefits are the creation of new jobs, a boost of local investments in cultural heritage and services related to tourism including potentially alternative tourism like eco-tourism, bike tourism, digital nomadism etc.

Some stakeholders believe that the social benefits will potentially outweigh the economic ones, reflecting the impact on improving the quality of life of the local community and the enhancement of their sense of community while respecting cultural authenticity [10]. In particular, it will allow preserving and promoting Parian culture and traditions, increasing the awareness of the importance of the site with a consequent

improvement of the community's image and pride, also by pointing out the brightness of the Parian people that first invented technologies for the extraction of marble. Finally, the old quarries could become a meeting place for residents through the organisation of cultural events and activities, strengthening the sense of social cohesion.

From an environmental point of view, a serious effort in the old quarries valorisation would give the start to an environmental regeneration of the whole area surrounding the archaeological site.

8.4.3. Constraints to the conservation and valorization of the White Marble Quarries

Despite the above-mentioned opportunities, data collected during the on-field mission put into foreground some issues that have prevented so far the implementation of a conservation and project of protection and then valorization of the Old Quarries.

The first issue concerns the access to the old quarries because, although the underground is State property (called "ius soli"), the overground areas surrounding the site are owned by privates who still reside there (see Figure 8.5 and 8.6). Negotiations for the purchase of these areas have been ongoing for some time, but at the time of the on-field mission no conclusive agreement had been reached.



Figure 8.6: Access to the Quarry of Pan. Source: Author photo

Similarly, some respondents have expressed concerns about the stability of the Marathi underground tunnels due to the mining activity in the nearby open-cast quarries (known as modern quarries). In this respect, although no official studies are available, the Ministry of Culture is considering whether to suspend or renew the concession to the extraction company, possibly restricting it to an area further away from the

ancient quarries so as the vibrations do not compromise the stability of a site of such archaeological and cultural value. In this decision-making process, the Ministry will take into account the economic implications,

because the extraction company employs a number of residents. A further problem could be ongoing project of 22 wind turbines, to built on the opposite side of the old mines valley, compromising the aesthetics of the site and the surrounding landscape.

The second issue relates to the bureaucracy that mainly concerns the central administration and creates bottlenecks to the valorisation of the old quarries. The institutional framework, on the one hand, due to its severity, contributes to the protection of archaeological sites, but on the other hand it makes difficult any valorisation initiative. Moreover, the office of the Ephorate of Cyclades is responsible for numerous archaeological sites in the Cyclades islands, with few resources for supporting and managing all processes of valorisation, especially in islands, such as Paros, so rich of archaeological artefacts and sites. However, the representative of the Minister of Culture emphasised their extreme interest in the protection of the white marble quarries, as well as the intention to guarantee the safety in each gallery and to enhance the area, also applying for European funding.

Finally, it emerged a lack of robust planning of the whole recovery effort and the need of an integrated project of protection and valorisation of the old quarry. In the planning process, Paros municipality demands for a role and to be supported, although the underground quarries are under responsibility of the Ministry of Culture.

In this respect, environmental cultural parks have a different status, as demonstrated by the Paros Park, which is located in the west north part of the Island. In this case, in fact, a municipality-owned company has successfully taken care of this site, returning it to the local community, which has the possibility to attend events such as concerts and film projections.

If it is true that since 2019 there is a Steering Committee created expressly to manage the ancient marble quarries of Paros stakeholders, the on-site mission highlighted the need for a dedicated public-private, on not-for-profit organisation with the authority for speed up the decision-making processes, and with operative and organisational capacity for elaborating, in a participatory way, a comprehensive strategic plan for the ancient white marble quarries valorisation.

8.4.4. A not-for profit organization for supporting a project of valorization of the Old quarries in Paros

One of the key issue emerged throughout the on-field mission is the need to define a governance structure, in charge of supporting the institutions (ministry, municipality etc.) in the valorisation project of this underground site. In this regard, stakeholders participating to the meeting held on June 14th, 2021 suggested that a possible governance body could

be represented by a not-for-profit organisation that gathers all relevant actors, such as the Ministry of Culture, the Municipality of Paros and the cultural institutions to create the preconditions for a sustainable strategy for the protection and valorisation of the old quarries.

This would be different from the public-private partnership, in that the not-for-profit organisation would be an organisation with an informal supporting role for the Ministry of Culture, in charge of providing suggestions that are in no way binding and without ever being able to enter into the management of the site, which is the exclusive competence of the Ministry. Actually, a similar solution was recently successfully adopted for the expansion of the airport on the Island of Paros, for which a not-for-profit organisation was created to raise funds, with the participation of also airlines companies interested in the operation.

The scope of action of the over-mentioned not-for-profit organisation would concern:

- a. the collection of funds for the entire operation of recovery of the ancient mines, also applying for European funding
- b. definition of a plan of essential studies including reports on: the condition of the galleries with the following establishment of a monitoring system, geotechnical and geological research to locate all galleries also through the digital mapping, etc... The operational implementation of these studies would be under the responsibility of the Ministry which, given the large number of archaeological sites on Greek territory, has internally all the technical skills and professionalism necessary for the recovery of this underground site
- c. Coordination of the activities until the realisation of the project of valorization of the old quarries with a constant dialogue with all the actors and involving the local community.

As for the point c), the organisation would be in charge of numerous activities including supporting in the process of expropriation and/or progressive acquisition of the entire areas, up to the promotion of the site.

First, the not-for-profit organisation should work on the definition of a shared vision of the ancient quarries, which balances different stakeholders' interests and expectations. This activity is fundamental for the definition of a shared sustainable strategy for the valorisation of the ancient white marble quarries of Paros and for the narration of the place that will showcase the monument of the ancient galleries, the incomparable story of Paros marble and its extraction, and its wider cultural value around the world.

In a broader perspective, the participants in the meeting agreed about the importance for Paros to redefine its image and, relying on its archaeological sites, to differentiate itself from the other islands of the Cyclades and reposition its tourist offer towards cultural visitors. In this

territorial marketing strategy, the white marble quarries should correctly be the main asset around which the new image of the island is defined. A role would be also played by the archaeological museum, that would act as a connector between all the archaeological sites, allowing tourists to understand the long history of the island through the artefacts and then consciously visit the individual sites.

A valorisation plan of the old quarries will, thus, contribute to change completely the Paros profile and would contribute to a model of sustainable tourism, which takes care of the local community interests (Paros has only 13,000 stable inhabitants) and develops a sustainable plan for welcoming tourists, without overburdening the local community (e.g. waste management, circulation of cars on the island).

This territorial marketing strategy demands for community engagement and, therefore, for a virtuous cycle of collaboration among institutions, tour operators and local communities [11]. In this respect, the institutions, together with the tour operators, could develop and promote thematic tours of the island based on marble or even programmes including other Cycladic islands of geological interest [12]. Tour guides, as well as all accommodation actors and residents, could act as ambassadors of the place and contribute to the projection of this restored/new cultural image of the island to the outside world. Due to the role played by the local community, it is important to make local people aware of the cultural importance of the island, and specifically of the timeless monument represented by the Parian marble and its quarries, that is, by organising continuously events to keep high attention (e.g. year celebrations dedicated to quarries, with two or three events each month).

Second, the not-for-profit organisation should elaborate a plan for the Marathi quarries' valorisation, in the context of the already delimited archaeological park, which will include quarries, landscape, and buildings from the 19th century industrial architecture. This plan must also provide valorisation opportunities to the private owner included in the archaeological area, in order to make them part of the valorisation process.

The storytelling of the site must, therefore, combine these different components, by addressing archaeology (i.e., understanding the human activity through the analysis of material culture), geology (i.e., understanding of the geology and geomorphology of a site), industrial heritage, and local traditions and crafts with visits to small quarries and current mines [13].

During the mission, it became clear the importance for the archaeological park to promote the site inside ("space visit" in the underground) and outside the old quarries ("around the space" in the underground).

As far as space visits are concerned, the maximum capacity of visitors along with paths should be defined, i.e. patterns to the main sites that are properly signposted, safe, with adequate resting places or where the guide can explain (e.g. the Quarry of Pan and the Quarry of the Nymphs). In this process, it is important to involve international and local tour guides, who can contribute with suggestions about the practical aspects of a tour and the needs of the visitors. At the same time, it is also important to involve people who have worked in the quarries, as these can be used for the narrative around the quarries.

As for the outside area, the existing buildings could be used for a museum with different sections. For example, an area could be focused on geology, i.e. on the “lychnite”; an area could host copies of the statues and/or digital tour (videos and/or photos) where - thanks to the existing technologies - it is possible to see the sculptures made in the world with Parian marble or to observe during the reproduction of the way the marble was extracted; an area could be devoted to a laboratory and experiential educational activities (e.g. sculpture workshops). A number of pedestrian routes and recreation areas could be positioned in the surrounding area, with restaurants, bars and shops and spaces hosting events (cultural events, concerts, etc.).

Finally, the not-for-profit organisation should participate in national and international programmes and events aiming at increasing the recognition of the site as well as starting to support the process for the inclusion of the Old Quarries among UNESCO heritage sites.

8.5. Conclusions

The aim of the STSM was to identify stakeholders and to work jointly with them towards the definition of a sustainable strategy for the valorisation of the ancient white marble quarries in Paros. Stakeholders pointed out the opportunities deriving from the creation of an archaeological park in the Marathi quarries. They consider that would make the island attractive to cultural tourists, interested in learning about history, culture and traditions, thus differentiating its offer from other Cyclades islands' ones. They also recognised constraints that have prevented to date the successful conservation and promotion of the Marathi quarries. These comprised:

- A strict control by the Minister of Culture and the administrative bureaucracy
- The impossibility of accessing the surrounding areas owned by privates
- The instability of the underground galleries, also due to the mining activities in the nearby quarries.

Following a living lab approach, the discussion with the main stakeholders focused on their “vision” of the quarries, problems and ideas. Immediately, it became apparent the need to establish a dedicated organisation in charge of supporting the institutions in the elaboration and implementation of an effective plan for the site valorisation. Likewise, it emerged the importance to engage the local community with using participative tools.

In this direction, a possibility arises from the establishment of a not-for-profit organisation that gathers representatives of the main stakeholders whose scope of action would be:

- a) Definition of a shared vision of the ancient quarries to be used for the storytelling centred on the incomparable story and cultural value of the Paros marble
- b) Definition of essential studies, including geomatics for mapping the galleries and geotechnical investigations for assessing their stability
- c) Elaboration of a plan for the archaeological park, with attention to both the “space visit” (in the underground) and “around the space” (in the overground)
- d) Collection of funds
- e) Participation to events aiming at increasing the recognition of the site and supporting the process for its inclusion among UNESCO heritage sites.

REFERENCES

- [1] Pace G. (2021a), *An Introduction to Underground4value*, in: Pace G., Salvarani R. (Eds.) *Underground Built Heritage Valorisation A Handbook*. Proceedings of the First Underground4value Training School, Roma: CNR edizioni, Chapter 1, pp. 1-18.

- [2] Pace G. (2021b), *Heritage Conservation and Community Empowerment Tools for Living Labs*, in: Pace G., Salvarani R. (Eds.) *Underground Built Heritage Valorisation A Handbook. Proceedings of the First Underground4value Training School*, Roma: CNR edizioni, Chapter 17, pp. 197-234.
- [3] Martinos H. (2018), *An action plan to save and promote the ancient quarries of Paros*. The Bulletin n. 17 – summer 2018, Friends of Paros, p. 11.
- [4] Yin R.K. (2003), *Case Study Research: Design and Methods*, Newbury Park, CA, Sage Publications.
- [5] Miles M.B., Huberman A.M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, Sage Publication.
- [6] Almirall E., Lee M., Wareham, J. (2012), *Mapping living labs in the landscape of innovation methodologies*, *Technology innovation management review*, 2(9), pp. 12-18.
- [7] Parga-Dans E, Gonzalez PA, Enriquez RO. (2020), *The social value of heritage: Balancing the promotion-preservation relationship in the Altamira World Heritage Site, Spain*, *Journal of Destination Marketing & Management*, 18.
- [8] Rahatmawati I., Bahagiarti S., Prastistho B., Setyaningrum T., Zakaria M.F., Priyandhita, N. (2020), *The Intention to Repeat Visit Tourist on the Geotourism Object of Cave Bentar, Tanjungsari, Yogyakarta*, *Journal of Environmental Management & Tourism*, 11(8), pp. 1931-1937.
- [9] Richards G. (2018), *Cultural tourism: A review of recent research and trends*, *Journal of Hospitality and Tourism Management*, 36, pp. 12-21.
- [10] Buonincontri P., Micera R., Murillo-Romero M., Pianese T. (2021), *Where Does Sustainability Stand in Underground Tourism? A Literature Review*, *Sustainability*, 13(22), 12745.
- [11] Rindam, M. (2014), *Cave Tourism: The Potential of Asar Cave as a Natural Tourism Asset at Lenggong Valley, Perak*. In 4th International Conference on tourism research (4ICTR), 12.
- [12] Margiotta S., Sansò P. (2017), *Abandoned quarries and geotourism: An opportunity for the Salento quarry district (Apulia, Southern Italy)*, *Geoheritage*, 9(4), pp. 463-477.
- [13] Rybár P., Štrba L. (2016), *Mining tourism and its position in relation to other forms of tourism*. In Proceedings on the GEOTUR 2016: International Conference on Geotourism, Mining Tourism, Sustainable Development, and Environmental Protection. Florencia: IBIMET-CNR, pp. 2-7.

ANNEX

Protocol guide that informed the interviews to Stakeholders

PART 1: On the old marble quarries of the island of Paros

1. Could you briefly narrate your personal experience of the marble quarries, if there is any?

2. In your opinion, have they cultural and economic value for the community? If yes, please explain.
3. Would be important the marble quarries' valorisation for you and/or your activity? If yes, for what scope? (e.g., increasing the attractiveness of the Paros island; preserving local culture)
4. Do you envisage economic, social and environmental benefits from the valorisation of the old quarries? If yes, please describe some potential benefits.
5. In your opinion, what are the current challenges and barriers to the valorisation? (Obstacles and bottlenecks in terms of regulations, funds, technologies, competences, cultural factors, relational factors, environmental factors, economic factors, missing human resources, etc.)
6. Do you consider that the current state of the quarries to be problematic and, if so, what does it need to be done in order to protect and valorise the quarries?

PART 2: On Stakeholders

7. Do you consider yourself/your organisation an actual/potential stakeholder in any activity related to the quarries' valorisation? If yes what would be your/your organisation commitment in participating to a valorisation strategy?
8. Could you identify the actual stakeholders (decision-makers, tourism businesses, non-governmental organizations, educational institutes, and the local people) and the role they played in the past? If yes, please describe and provide your suggestions for future implementation.
9. In your opinion, what relevant stakeholder is missing and should be engaged/activated in future to make the valorisation of the quarries successful?
10. Did you collaborate with some of these stakeholders? If yes, please describe your organisation connections to these stakeholders (How often? Collaboration contents? Barriers? Solutions?)
11. Do you believe possible to establish trust and reciprocity among these stakeholders, in order to create a positive climate of cooperation and partnership for the quarries' valorisation? If yes, which form would be more appropriate? Formal (plans, committees, public-private-partnership, financial mechanisms, consortium, etc...), Informal (public forum, interest groups, associations, laboratories of ideas, etc...)

PART 3

RESEARCH GROUPS

CHAPTER 9

The White Marble of the Gods

A way back to the island of Paros

Chiara Caravello, Tony Cassar, Giuseppe Pace, Tommasina Pianese

9.1. Introduction

This chapter expands and reports on the results of the research carried out, during the second Underground4value Training School held in Murcia from 20th to 24th September 2021, by our Research Group n.1¹, one of the five teams set up for rethinking selected UBH sites' valorisation and proposing new meanings. Composed by three trainees, two tutors in presence and one online, our team challenged since the beginning the two statements intended by the assigned research question "Structuring participatory processes for creating an archaeological park of the Paros marble quarries".

Firstly, we confronted the statement "creating an archaeological park": in a country abundant of archaeological sites such as Greece, is this park an adequate instrument for catalysing sustainable development and promoting the cultural transition of an island, Paros, primarily known as a popular tourist spot? Secondly, we questioned about a better framing for "the participatory processes", with the local community not only focused on a self-generated imaginary, but on a global imaginary, eventually produced or exposed outside the island itself, such as the Parian marble statues in the most famous world's museums.

The common feeling was that such a-priori 'solution space', the archaeological park, was not enough for promoting community identity, building new meanings, and creating local development. However, to confirm or to refuse the research question, we needed a full immersion in

Paros and its valuable resources, having few of us an adequate knowledge of the island, its history, the society, the economy, its old quarries, the white marble of Paros, and the masterpieces carved from it and dispersed all around the world in the most celebrated museums and galleries. To that scope, the lectures of Konstantina Aliprandi, architect of the Paros Municipality, and Tommasina Pianese were very helpful. The last one, supported by a COST Short Term Scientific Mission grant, recently visited Paros and the site, studied the island history, interviewed the local stakeholders, and participated to their living lab. Their presentations, reported in another part of the Handbook [1], opened up a brainstorming in the team about the archaeological park of the quarries and its relevance.

Everyone agreed that creating a park, as promoted by the international association “Friends of Paros” [2], would be definitely an important resource for protecting the quarries, monitoring the site, managing its accessibility, and promoting it as a relevant touristic attraction. But it would never happen because the proposed territorial imaginary, which does not consider the touristic demand’s change and the triumph of electronic medias, is not fully attractive for local and international stakeholders. In absence of an up-to-date storytelling, the suggested archaeological park would not be enough for catalysing the island’s cultural transition, and even would not see the light, because the many constraints and criticalities as described by Pianese [1].

The archaeological park attitude, mainly based on a zoning philosophy, lost its power in favour of a wider strategic thinking approach, based on “a collective process of construction of meanings, visions, answers, and solutions” [3]. As a result, we agreed on reframing the assigned research question, and focusing on how to catalyse sustainability and local community development in Paros, by shifting the storytelling from the physical place - the old quarries - to the extracted material - the white Parian marble - and its carved masterpieces.

Putting the storytelling at the core of the strategy means promoting a cultural transition in the way local stakeholders, mainly involved in tourism, and their potential customers perceive the island of Paros. Nonetheless, to focus on the white marble demands for developing a process of place’s virtualisation, with the symbolic and metaphoric dimension prevailing on the territorial one [4], and therefore asks for creating imaginaries “more fluid, ubiquitous, autonomous from the time and space dimensions” [4].

However, this storytelling should be simultaneously filtered by long-term, mid-term, and short-term imaginaries, including quarries, buildings, archaeological sites, artefacts, writings, and oral narratives. Any proposal must interface the *genius loci* - given by material, immaterial, territorial,

historical, anthropological and socio-economic heritages - the *mass culture industry* - which reuses and updates long-held imagery, confirming, expanding or betraying it - and the digital and trans-media - which has imposed a violent acceleration on the cultural industry, assigning greater role to tourists themselves in constructing the image of places.

In the following paragraphs, we introduce the methodological approach bringing to the idea of creating a *digitalised museum* focused on the Parian marble. Thanks to the opportunities offered by ICT, the team imagined a physical/virtual space telling the story of this unique material, the quarries, the artists workshops, and finally its products, those masterpieces of the Classical age disseminated in museums and heritage sites worldwide. By doing that, the museum will bring all of them back home.

9.2. Methodological approach

The proposal is based on the application of some blocks of the Strategic Transition Practice (STP) [3], adopted in sequential steps, and including the use of different analytical tools, such as SWOT analysis, stakeholders' analysis, and site-specific asset analysis.

As already introduced, team's activities began with a preliminary phase for exploring the Parian Marble quarries valorisation scopes and potential practices. We defined a strategic approach focused on the Parian marble importance, a working setting based on heritage digital assets, and a new storytelling. That helped us expressing our initial ambitions and defining our mission statement.

The ecological landscape, such as the physical aspects of the Paros Island and the quarries, as well as policies, society, economy, and touristic trends, was shortly analysed by using the existing literature, especially the collective book "Paria Lithos" [5], and the results of Pianese STSM [1]. As focal point of this phase, the features of the Parian marble were studied and exposed. This analytical phase concerned the description of the marble characteristics, its uniqueness and relevance in the antiquity, and the techniques used for carving it.

A second phase of the analysis consisted of identifying the most famous objects, architectures, sculptures, and artworks made with the Parian marble. Objective of this phase was to demonstrate the outstanding values and worldwide distribution of Parian marble artefacts from ancient times to the present day. The third phase of the analysis concerned the Paros Island and the sites of the marble quarries, their historical, geographical, socio-economic, and spatial features, including an overview of the current condition of the marble quarries. To this scope, the team reported studies

of international and local scholars, as well as interviews with local stakeholders and citizens.

Using this background, the team defined preliminary scenarios, for considering different potential strategic aspects to support the old quarries' valorisation based on actual Greek regulatory/legal framework, local society, economy, traditions, habits, and storytelling. These scenarios, then, helped to formulate the team's shared ambitions, and to frame them in a process for empowering the Parian community. Considering the short time available for finalising the exercise, we imported the mapping of stakeholders and target groups from Pianese [1], as well as the list of community leaders, visionary, and the so-called agents of change. Also, the comprehensive picture of Paros community and old quarries is strongly dependent on Pianese analysis [1].

Based on these potential stakeholders' strengths and constraints, we developed an inside-out scenario with strategic options, which brought to define a sustainable vision of this UBH. This vision is based on a tangible/intangible "solution space": an on-site visitor interpretation centre and a virtual museum for re-connecting to the island and to the old quarries all Parian marble masterpieces placed all around the world.

9.3. The context

9.3.1. The uniqueness of the Parian marble and its masterpieces

Our first phase explores what made the Parian marble and its most precious quality called *lychnites* (Fig. 9.1) so valuable, celebrated, and favoured for important Greek and Roman sculptures.

Looking at the *lychnites*' characteristics, it is a crystalline marble derived from metamorphism on carbonates, homogenous and compact, composed almost exclusively of white crystals of calcium carbonate. The result is pure-white, uniformly fine-grained, with very rare accessory minerals and no severe tectonic deformation, which makes it entirely flawless. The uniform texture and grains are responsible for its most precious characteristic, the high translucency.

Considered as the "most translucent of all Classical marbles" [6], with the light transmitted through 35 mm, more than the Carrara marble (25 mm) and the Pentelic one (15 mm), this marble is also "equally translucent for light rays entering in any direction" [6]. All these qualities made it the white marble *par excellence*, and many well-known antique sculptures and architectures were created from it, including many famous statues to be found today in the world's greatest museums.



Figure 9.1: Example of Lychnites, Quarry of Pan. Source: Giuseppe Pace photo

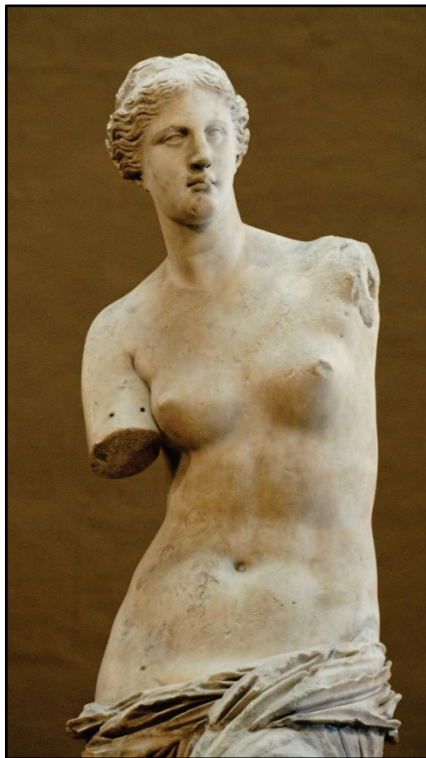


Figure 9.2: Venus of Milos, Louvre Museum, Paris (FR). Source: © Marie-Lan Nguyen / Wikimedia Commons



Figure 9.3: Hermes of Praxiteles, Olympia (GR). Source: © Carole Raddato / Wikimedia Commons

The *Venus of Milos* (Fig. 9.2) and the *Nike of Samothrace* at the Louvre Museum in Paris (France), the *Hermes of Praxiteles* (Fig. 9.3) at the Archaeological Museum of Olympia (Greece), the *Statue of Antinous* at the Archaeological Museum of Delphi (Greece), the *Augustus of Prima Porta* at the Vatican Museums in Rome (Italy), the *Medici Venus* at the Uffizi Gallery in Florence (Italy), the *Barberini Faun* at the Glyptothek of Munich (Germany), and the *Lycian sarcophagus of Sidon* at the Istanbul Archaeological Museum (Turkey) are just a few of the exemplary works of art to be mentioned.

Although discovered and initially extracted from the open-cast quarries of Agios Minas, the *lychnites* was usually mined underground in tunnels, being the lower part of thick marble layers. The most famous are the quarries located in the Marathi area, named the Quarry of the Nymphs and the Quarry of Pan [6], which probably remained accessible and exploited until the 17th century. Above all, the Quarry of the Nymphs (Fig. 9.4) became the principal emblem of Paros and attracted visitors at least since early 15th century AD [9].



Figure 9.4: The entrance of the Quarry of the Nymphs, Marathi, Paros. Source: Giuseppe Pace photo

Once this quarry was filled with debris and its interior could not be visited anymore, 18th-19th century AD travellers moved their attention to the one of Pan, which survived free of debris and its interior was easier to penetrate, as indicated by a long list of names inscribed on its walls (Fig. 9.5).

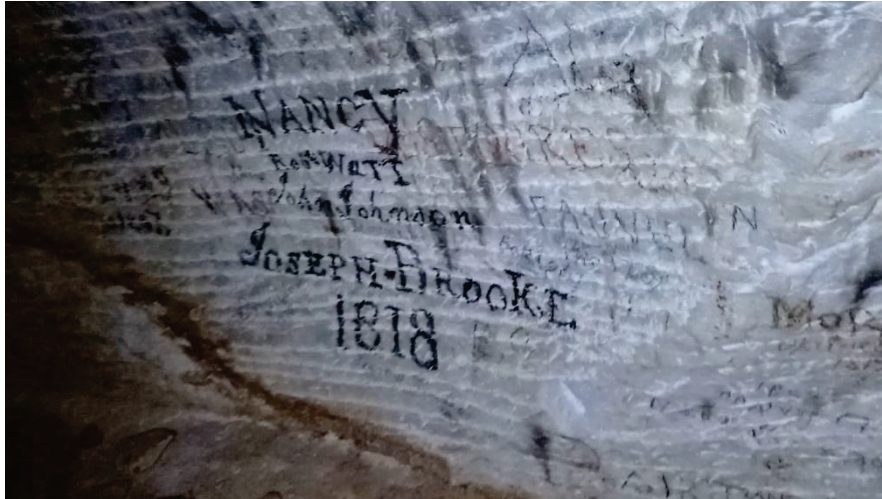


Figure 9.5: Names inscribed on the Quarry of Pan walls. Source: Giuseppe Pace photo

Because the high reputation of these quarries, the *lychnites* extracted from tunnels was counted as the principal marble of Paros [9], and, for long time, these underground quarries provided the only technical information about the exploitation of *lychnites*, with a chamber and pillar method employed for the removal of the marble blocks.

In Marathi, intensive quarrying of *lychnites* occurred between 500 and 300 B.C., but output of the quarries continued during Roman times and increased again in the Middle Age until the Byzantine period when, under Venetian and Turkish rule, the quarries became inactive. Only after the creation of the Greek State, extractive activities restarted there and *lychnites* quarries re-opened with small-scale local companies, which mostly ended their operations after second world war [7]. In 1879, a French-Belgian company took over Marathi quarries and started developing them by building a modern infrastructure. Around the quarries they made steam-driven industrial buildings, and a railway line with wagons for transporting the marble blocks to Parikia, the main port of the island [8].

However, the *lychnites* exploited in Marathi represents only a small part of the Parian production of marble, necessary for carving about 70% of the sculptures excavated in the Aegean islands and many others for the Roman

Empire. In fact, “Paros possessed a good variety of additional marbles, all known under the general heading *Paria Lithos*” [9].

The map prepared by Thevet for the *Grand Insulaire du Pilotage* (1586 AD) (Fig. 9.6) reveals five cave-like underground quarries and a group of quarrymen.



Figure 9.6: Detail of the map of Paros in 1586 AD. Source: [8]

Together with the archaeological evidence of Paros, this cartography tells us about a larger number of underground Parian quarries. In addition to underground quarries, there were several open-cast marble quarries, characterised by different marble types, ranging from pure white to banded grey blue [9]. In the valley southwest of Marathi close to the village of Choridaki, there were “at least 20 ancient quarries of different sizes and shapes” [6, p.29].

These quarries, known as Lakkoi, extend over 2 km and offer other impressive landscapes. Their marble was generally coarser grained than the Lychnites, with several accessory minerals. Many of these quarries, according to several sources, were supplying larger marble blocks used for building, among others, the *Acropolis* of Athens, the *Temple of Zeus* in Olympia, the *Temple of Apollo* in Delphi, the *Temple of Apollo Epicurus* in the Peloponnese, and many buildings in Sicily and other southern Italian colonies. Not by case, in Southern Italy the Lakkoi quarries are the ones known as the extraction places of the most precious Parian marble, as mentioned in the exhibition “Il Kouros ritrovato” at the Ursino Castle of Catania (Fig. 9.7).

Even the roof of the *Athenian Parthenon* was made from the Parian marble [10] and is reported that also the columns of Salomon Temple in Jerusalem were hewn from the finest Parian marble [11]. Another well-known ancient treasure realised with this marble is the so-called “*Marmor Parium*”, a stele arrived the year 1627, along with other pieces of sculpted or inscribed marble, at the Earl of Arundel’s palace in London and dating back to the 264 BC [12].



Figure 9.7: The travel of the Parian Marble to Italy. Source: Detail from “*Il Kouros ritrovato*” exhibition in Civic Museum “Castello Ursino”, Catania (IT)

In London, however, it arrived only a higher part of the Stele, which was studied, transcribed, and placed in the garden of Arundel’s palace. The Stele suffered many damages during the English Civil War (1642–

1651), some of its parts were stolen, and some others were used for repairing the building. Finally, in 1676, the survived fragments of the Stele were donated to the Oxford University [12]. The second section had a more straightforward history: it has never left Paros. It was found in a private property southeast of Parikia in 1897 and still today is housed at Archaeological Museum of Paros (Fig. 9.8).

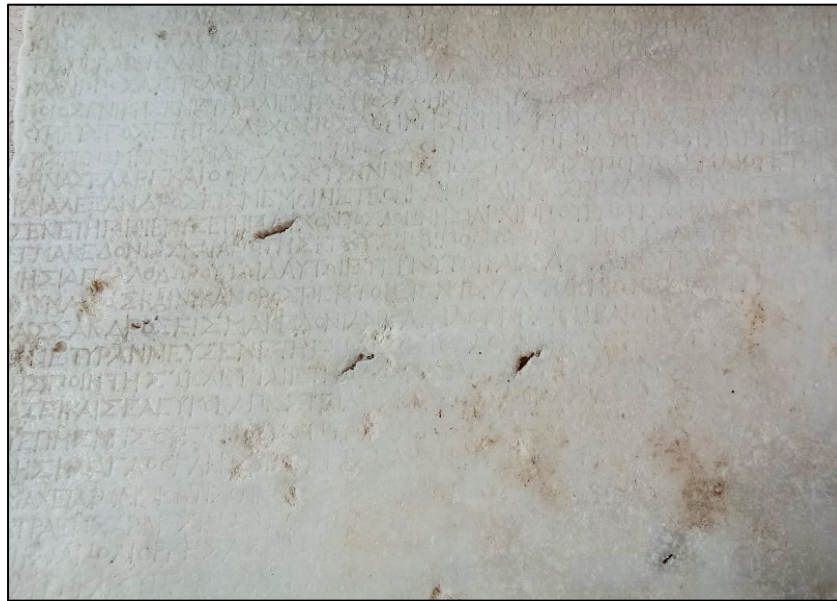


Figure 9.8: Detail of the lower section of the “Marmor Parium”, Archaeological Museum of Paros. Source: Giuseppe Pace photo

The discovery confirmed the hypothesis that Paros was the place where also the first section came from [12]. The two sections form a monumental inscription that an unknown author wrote in Attic Greek, as a sort of compendium of the Greek history, from the mythological past to the year 263 BC [13]. The names on the inscription spell magic, and the distant events invite our “imagination to retrace the footsteps of memory and to search amid the vestiges of material culture for the beginning of things, for paths to knowledge” [13]. These words could, therefore, be a good starting point for the Parian marble to come back to Paros, that is, where things began.

9.3.2. Paros throughout the times: from an artist spot to a mass touristic destination

A second phase of analysis was dedicated to investigating the island history and its connections to the white marble extraction and carving.

First traces of settlements in Paros come back to the so-called Cycladic civilisation (about 3200 BC), but first consistent archaeological sites date back to 1200 BC, when Mycenaeans landed on the island.

Although trade in marble and marble artefacts from Paros, as reported by Herz [6], were already flourishing in the Early Bronze Age (2300-1700 BC), the Parian marble became widely exported only after the Mycenaeans, when Phoenicians began trading and travelling all over the Mediterranean, transporting products (cedar, wood, weapons, iron, etc...), and the marble too. By the 600 BC, quarrying marble was a main activity in both Paros and Naxos, which dominated sculpture production [14], and the commercial distribution of rectangular shaped blocks was widespread throughout the Aegean Sea [6]. In the classic period (500-323 BC), thanks to its economic development, the city of Paros was one of the most beautiful and significant cities of Greece. It became the place for the finest craftsmen, artists, and sculptors. Its power and wealth made it to stand up to the Athenian confederation, choosing alliances according to its interests and often provoking the anger of Athens, with the result of damaging Paros's economy. Nonetheless, "...the Parian sculpture workshops delivered to all Aegean raw materials, parts of sculptures, final products, as well as groups of marble craftsmen" [8].

In Hellenistic times (323-167 BC), thanks to its unique white marble, Paros, and the fame of *lychnites* already extended far beyond, the island attracted many artists and sculptors' ateliers, which were often located just at the entrance or close to the quarries. Parian contractors started to expand and build many temples and other building at Delos, which soon became the greatest trade-market centre of the Aegean. In these times, Parian craftsmen were distinguished for their talent in creating statues and decorated sarcophagus, as well as for the ceramic pottery.

Throughout Roman period (167 BC – 330 AD), the most obscure of the island history, the Parian marble demand remained high and the economic rewards great enough to make profitable obtaining *lychnites* from underground quarries [6]. In the Byzantine period (330 – 1204 AD), the island played a key role in the transition from the Paganism to the Christianity, which was often forced violently upon citizens. In addition, the island suffered many attacks from pirates, which made the island little safe.

With the Venetian domination (1204-1537 AD), the Sanoudos family governed the island for about 200 years, built all the Paros castles and fortifications, using part of the ancient building and, obviously, the Parian marble (Fig. 9.9).

Without exploiting its main economic resource, the marble, the island appeared deserted except for the monasteries, which owned the biggest

part of the land. The population, suffering hardship and severe poverty, started working the land, whose ownership finished in the hands of Venetian aristocrats. Once re-established a certain prosperity, the islanders benefited of the Italian Renaissance in both science and arts, and the Parian marble's demand raised again.



Figure 9.9: Wall of Frankish Castle in Parikia. Source: Giuseppe Pace photo

During the Turkish rule (1537-1821 AD), Paros and the other Cycladic islands obtained a special status of self-government. The Turks never settle

on the island and many people from other parts of Greece searched for refuge on the island, which raised its relevance, as proved by the Consulates established on the island since early 17th century by states, such as England and France, as well as the continuous visits of travellers. In addition, after the end of the Russo-Turkish War (1774), the development of the Greek merchant fleet supported the flourishing of the island economy and generated several public works and the so-called vernacular architecture of Paros and Cycladic islands (Fig. 9.10).



Figure 9.10: The "Vernacular" style of Paros. Source: Giuseppe Pace photo

After the Greek Revolution (1821), Paros started a new age, which can be divided in three periods. The first, called of *self-sufficiency* (1821-

1945), was characterised by a traditional society and a close economy, with little effort to export marble. As previously introduced, a concession was given to “Cleanthes”, a French-Belgian company, for exploiting the Marathi quarries. “The construction works carried out by the company inside and outside the quarry dramatically altered the landscape” [15]. In addition, at the beginning of the 20th century the business went bankrupt, and all industrial infrastructure was abandoned.

The second period is called the *internal migration* (1945-1970), when poverty obliged thousands of islanders to migrate. In 1953, the last quarries of white Parian marble were abandoned, and the workers had to migrate to find work in other quarries, such as the quarries of Penteli in Athens, the mines of Lavrio, or to change work and entering in the building construction sector.



Figure 9.11: Map of Paros. © Illustration: Philippos Avramides

Finally, in the third and current period, the *tourism* (1970-today), Paros began to be appealing as tourism destination, and its fate changed with the development of sectoral touristic-related activities in transport, accommodation, restoration, culture, and entertainment. Tourism helped to preserve agriculture, animal-raising and supported the creation of many tourism-relevant professions. At the same time, it produced new landowners, increases building activities and seasonal population, without the support of a planning system or a political strategy. The transformation of farmland into residential and touristic plots, without any permit, endangered both natural resources and cultural heritage [8].

Nowadays, a simple analysis of how Paros Island is represented on the web can offer us a clear picture of its touristic trends and the connected storytelling. The island is mainly celebrated for its beautiful beaches (about 4,150,000 results on Google), less for its archaeological sites (743,000 results), even less for the quarries (118,000 results). Interesting proxies of the dominant storytelling are the recent touristic maps of the island, where the quarries are rarely represented and the Parian marble never mentioned, in favour of beaches, cocktails, vernacular places, windmills, and even monasteries (Figg. 9.11, 9.12).



Figure 9.12: Another map of Paros, from BBC "Mapping the world".
<https://ychef.files.bbci.co.uk/1600x900/p0110x6j.webp>

The current storytelling, promoted at international and local level, contributes to the idea of a Parian marble and its ancient quarries almost completely forgotten, despite their historical and cultural values for the island and the entire world.

In Marathi, except for a recently built walkway linking the entrance to the old site, both Quarries of the Nymphs and Pan belong to the State and are officially not accessible to visitors, with the first closed by fences installed by the Ministry of Culture, which in 1974 decided to establish there a protected archaeological area. In addition, in 2018 the abandoned industrial buildings, remnants of the Franco-Belgian enterprise, have been declared *historic site* by the Ministry of Culture [16], also thanks to the impressive Dimitris Vranas's photos of the site, an architecture expert whose work created a new storytelling and called for rescuing and protecting this industrial heritage [15].

In 2000, the quarries' surroundings, mainly owned by privates, were incorporated in the archaeological area for a total extension of 345.000 m² [16]. Such extension moved some private owner to fear that such potential limitation could reduce their freedom, and to oppose to the park option. In addition, in the archaeological area, on the other side of the mountain, operates a modern open-cast quarry extracting grey marble of low quality,

whose extraction activities performed with massive explosions would threaten the old underground quarries [16]. The other old underground and open-cast quarries in the Lakkoi area are even less considered and protected, although also these sites are also celebrated as previously mentioned.

Although some institutional interest and commitment, such as from the Ministry of Culture and the Parikia Municipality, the activism of local and international cultural associations, and the participation of representatives from the tourism/hotel sector, which produced studies of the ancient galleries and several proposals for the management and promotion of the archaeological area, no integrated, comprehensive, or shared plans have been developed for the recovery, securing, and valorisation of the quarries, not only as a main tourist attraction but also as an important part of the local story and identity.

Currently characterised by seasonal tourism, the island's economy looks for a new model of development, more sustainable and focused on the conservation of its ecologic landscapes. Many local stakeholders are aware of the importance of addressing cultural tourism, which may reduce the tourism seasonality by promoting its dispersed archaeological heritage throughout the year and increasing island's stays. However, this objective demands for reducing the distance between the high culture, often represented by expatriated and professionals, and the peasants, not simply by education means but making them curious, stimulating their specific interpretation, and hybridising the meanings. This transition represents a main cultural challenge and demands for dialogue and patience.

9.4. The marble as a new meaning for the local community

After analysed the features of the marble of Paros and its material and cultural value for the Paros community, the research group (see note 1) synthesised the current situation, by applying the SWOT analysis (Fig. 9.13).

The first identified strength was the cultural and artistic heritage embedded in the underground marble quarries. In particular, the presence of unfinished works of art in the quarries is seen as an important potential attractor for local and international travellers interested in ancient and contemporary sculpture. A second strength that was pointed out refers to the sense of adventure stimulated by the possibility of visiting this underground site, in general connected to the idea of an underworld exploration experience.

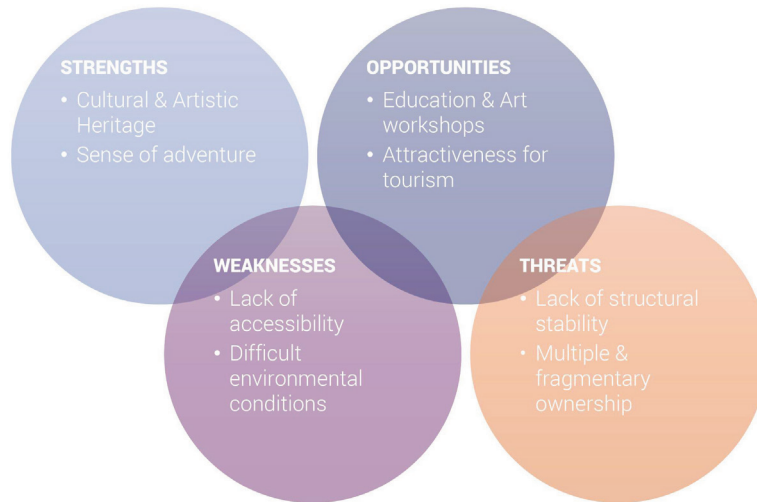


Figure 9.13: Schematic SWOT analysis realised by the Research Group 1 (2021)

The main identified weaknesses for the quarries' valorisation process were primarily the difficult or impossible accessibility to the underground quarries, considered that the physical visit is the only way to see and know the sites, given a lack of digital materials to remotely consult. Another challenging factor is certainly represented by the uncomfortable environmental conditions of the quarries, such as darkness and humidity.

The most interesting development opportunities for this site were related to the sectors of education and tourism. A reference was made, for example, to the possibility of introducing didactic or artistic workshops to foster direct knowledge of the material and the quarries, indirectly promoting their protection and valorisation. To this end, the workshops, or similar activities, should not necessarily be carried out inside the quarries, in the underground, but could take place outside, on the surface, in centres specially set up to reproduce the quarry environment in a realistic, immersive form, or in an abstract, informative form.

A major threat to this site is the possibility of structural collapses, due to geological factors and the physical instability of the quarries. In addition to natural phenomena, damage to the structure could be caused by disrespectful redevelopment and reuse of the site, which could then alter its equilibrium (e.g., excessive crowding, aggressive lighting, installation of non-reversible mobility structures, failure to comply with a protocol for access and use of the quarries, etc.), causing damage to the underground environment and the built heritage.

Following the SWOT analysis, the Research group worked on defining a map of stakeholders interested in the protection and valorisation of the Marathi quarries and their underground built heritage (Fig. 9.14). Seven macro-groups of actors were identified: statutory entities, cultural associations and volunteer groups, tourism entities and travel agencies, local community, and owners (see Pianese).

Since several actors are involved in more than one group, it can be said that the orders of interest may (ideally) coexist and (potentially) equally contribute to the protection and development of the Paros quarries.



Figure 9.14: Schematic stakeholders' analysis realised by the Research Group 1 (2021)

Statutory bodies include the Municipality of Paros, the Province of Paros, the Ministry of Culture and the Ephorate of Antiquities of the Cyclades.

Cultural associations and voluntary groups, such as the “Friends of Paros”, count various local people actively involved in preventing the deterioration of the old marble quarries and fighting for official recognition of this important heritage.

The tourism sector, extended to travel agencies, comprises restaurants and hotels, but also tour operators and tourist guides who would have an interest in increasing their tours to the Paros quarries.

The local community, which involves the landowners and citizens, brings together both people who are unaware of the warmth and historical importance of this site, and people with a strong interest in the quarries, their valorisation and restoration.

Finally, the investigation of the broad set of characteristics, specific values, and variety of actors around this site led to the definition of four “key heritage values”, representative of four macro thematic categories: history, materials, art and culture. (Fig. 9.15).



Figure 9.15: Scheme representing the “Key Heritage Values” realised by the Research Group 1 (2021)

The category “history” refers to the evolution of quarrying on the island of Paros, and the development of industrial and commercial activities around marble. These activities brought economic prosperity and splendour to the island over many centuries.

The category “materials” encompasses the unique value of the physical characteristics of this stone, which explains why it has been selected to produce the most famous sculptures in the world.

The category “art” refers to all the works of art made from the Paros marble, who are now over the world, but also to architectural works made from this valuable material such as columns, funerary monuments, stelae or sarcophagi, and temples.

Finally, the category “culture” refers both to the network and flows of people and goods around the marble market over the centuries, and to the body of knowledge and techniques around the processes of marble extraction and processing.

The realisation of these three synthetic analyses, allowed the group to propose a hypothesis of strategy for the valorisation of the ancient white marble quarries of Paros.

At the first place, this strategy considers a priority increasing the Marathi quarries accessibility. In fact, as many other underground sites, they are not easily accessible to the public, because both structural and organizational problems. Probably, also in the future they will remain inaccessible to most people with mobility issues: they need to be reached by going down steps, or through tunnels, slippery surfaces, loose underfoot gravel and stones and dark passageways.

Then, we report some comments left by visitors to the Marathi sites on TripAdvisor.

“The gate is closed and there is a new fence that makes the access to the marble quarries impossible without climbing equipment. What a pity that there is nothing to see here anymore that would be worth a visit.” (TravelMedia5 – Hamburg, Germany)

“Not worth the effort. There is nothing there, just area that was once used as a stone quarry. A lovely walkway takes you halfway then a dirt track”. David and Tricia - Greater Sydney, Australia.

"The place is nice, thinking that the marble for Venus of Milos was extracted from here adds a charm, but it is rather difficult to visit it. Park the car and go by foot around the wire fence. There are actually 2 holes, one looks like a cave, the other more like a mine." Elena Ciocan Timisoara, Romania.

“It's one of the most disappointing places on Paros. A lack of information about the place on the spot, you don't even know where to go...” Kamil W Wroclaw, Poland.

Although all visitors wish to find out more about the site, only the most adventurous ones, and those ready to sneak behind the fenced area, would be able to really explore them. Other comments show that there is some awareness of the historical importance of these quarries, but also that available information is scarce and very limited.

9.5. A proposal for the valorisation of the marble quarries

In this paragraph, we present our proposal of valorisation strategy, mainly based on the opportunities offered by ICT for better exploiting this heritage. The idea is creating a sort of “digitalised museum”, whose storytelling is centred on the marble itself (e.g., the unique *Lychnites* quality) and its products (i.e., the masterpieces realised with the Parian marble and dispersed in museums and heritage sites worldwide).

Our ambition is to build a space in Paros, strategically at the beginning of the access route to the future Archaeological Park in Marathi, where on-site visitors can learn, through several artefacts and digitalised contents (e.g., videos), about the magnificent masterpieces carved from the Parian marble, which nowadays delight art lovers in every part of the world. We

imagine this space in the organisational form of a Visitor Interpretative Centre [17].

At the same time, all digitalised contents would be available online in a dedicated portal [18] and, thus, they would be accessible at any time and in any place by distant users. This online portal complements the Interpretative Centre.

In both physical and virtual contexts, the digital curation is indispensable for effective communication between visitors, curators, and collections. Likewise, it is vital that the design of the user experience would offer a valuable (on-site and online) experience with masterworks' description accompanied by other tools that enhance the sensory impact and the real experience of the visitors [18]. Making these sites accessible in a virtual way in today's internet-connected world would open accessibility to a much wider global audience than those who physically travel to the island for visiting in person. In addition, by promoting the portal in each Museum where a Parian marble's masterpiece is exhibited, would ideally connect each statue/marble block to its origin.

9.5.1. The Visitor Interpretative Centre

Visitors' interpretive centres are informal education venues where a specific cultural heritage venue, such as an archaeological site, is proposed to give an opportunity to the public to better understand the cultural heritage of the site [17]. Interpretive education programs are usually designed by linking place-based educational approaches with public informal learning tools to enable visitors to learn about the history and culture of a particular site. A variety of approaches and medias are combined, such as video exhibits, interactive displays, instructional kiosks, interactive computer simulations, or movie theatres. All of them aim to provide with a deeper understanding as well as educate and create meaningful links of intellectual and emotional connection between visitors and the site. Typically, the audience is the public, but specific educational activities are usually targeted to specific groups (e.g., after-school programs, thematic programs for adults with special interests, cultural tourism). With the scope of a deeper understanding of the area, our Visitor Interpretation Centre can be designed in many different forms.

This place could help not only tourists, but also local communities, to learn about the Parian history and culture, as well about the Parian marble, the quarries, and the masterpieces carved from them. In our case, the centre could be of strategic relevance for empowering the local community, by attracting their participation for its co-creation potential and for its role as educational experience at Paros old quarries. Its spaces would enable understanding and learning about the quarries' history,

ecology, and geology also in the future case when the Archaeological Park will become a reality and more visitors will be able to visit the underground tunnels.

Indeed, visitors could not understand the historical value of the site simply by visiting the quarries themselves: the bare marble walls would be not enough to explain the history and importance of the site. We believe that, for valorising its history, in the Visitor Interpretative Centre the storytelling focus should pass from the physical place - the old quarries - to the extracted material – the white Parian marble - and its carved masterpieces – with all connection to the museums hosting them.

By relying on ITC technologies available for the digitalization process, our ambition is also to create a series of digital contents tracing the history of quarrying and naming the marble in its different qualities, and then setting up bi-directional digital flows linking the Centre to the many artefacts around the world made from this material since ancient times. For the visitors - tourists, citizens, or researchers - it would be a wonderful opportunity to see the masterpieces coming back home.

The on-site visitor's experiences could be, in addition, enriched and strengthened by images, audio narrations, music and video tracks, 3D animations and models, augmented reality interactivity, and combined multimedia objects [18]. By improving the accessibility, physical and virtual, to this precious heritage, these tools are a crucial step in ensuring that everyone can enjoy, learn and live the experience that such an important heritage site offers.

9.5.2. The Parian Marble around the world

The proposed strategy includes the setting up of a cinema room with a large immersive screen near the quarries, in a surface building. Through this cinema room, the story of the most famous ancient statues made of Parian marble can be told to visitors, among others. By the use of this narrative technique, which does not require visitors to physically access the quarries, this strategy promotes the historical value of the Paros quarries as a source of the main material used for the creation of artistic marvels by the best sculptors of the ancient world. The use of a storytelling technique will help visitors to include the value of the Paros quarries, allowing them to appreciate the exceptional characteristics of the raw material extracted from this site, a uniqueness demonstrated by its use in the creation of these widely well-known masterpieces in contemporary times.

Immersed in this short documentary, the spectators will virtually visit some of the world's most prestigious museums, such as the Louvre and the British Museum, where they will discover the ancient and prestigious

Parian marble statues preserved there. The documentary would establish a strong cultural connection between the ancient and contemporary world, as well as an impressive physical link to the routes in which this precious material has been transported around the world over many centuries to the present day. This type of project represents one of many possible ways to enhance this underground built heritage and would overcome various threats and problems posed by this type of site, such as its structural instability.

9.5.3. Virtual Reality Room of the Old Paros Quarries

Visitors will be able to take a VR tour of the quarries without setting foot in the tunnels themselves. This will be done using VR headsets which they would wear in this VR room. The VR experience would allow visitors to "walk" through the tunnels and a virtual guide would explain the history of the sites, the rock formations, the mineral particularities of Paros marble and the history of the quarries.



Figure 9.16: Image of a couple wearing VR headset. Source: Tony Cassar photo

The use of the VR system as a means of explaining the underground world of the Paros mines was done keeping in mind the expectations of younger visitors particularly those from Generation X and Generation Z. These users find traditional static museums or interpretation centres not engaging enough and would find the use of VR headsets as a welcome digital tool that they would love to try out when visiting the interpretation

centre. The fact that the user of the VR headset can experience walking inside the mines in 360 vision gives an even more engaging experience by helping the visitor feel as if they are physically within the mines (Fig. 9.16).

9.5.4. The online museum

Making these sites accessible in a virtual way in today's internet-connected world would open the accessibility to a much wider global audience than those who physically travel to the island for visiting in person. The digital assets created to produce the immersive cinema and the VR room could be adapted to build a portal about Paros marble. Rather than just an information portal, visitors would be able to interact with the mines, the marble and the Interpretative Centre itself. Live high-definition webcams would allow them to see what's happening within the centre and the park around the mines. They would also be able to download the VR experience and view it on their VR headset at home on a desktop PC. The most important feature of this portal would be the setting up of an online catalogue of all the most important artefacts manufactured from Parian marbles, Metadata provided would include information about the sculpture, the art price itself, link to Greek mythology or history, where it was found and its current location, 3D model of the art piece (where available) and high res images of the artefact.

The digital contents in this online museum could be organized as “digital exhibition” (DE) and/or “thematic path” (TP). An online digital exhibition is a hypermedia collection accessible via the web, and made up of digital items, which are: focused on a specific topic, a concept, an idea, etc., linked together, updated periodically, and made accessible by system architecture designed to supply user-centred absorbing experiences. They can be generated through real events (i.e., an exhibition inside a museum) or be completely virtual. TD assumes a guided navigation: it aggregates content items about a topic and supply an interpretation perspective to the digital visitor who can then go deeper in detail and follow the path, discovering more details both for personal interest and for study or research. The advantage is the fact that TP provide a light way to the knowledge discovery, independently from the original collocation of the objects (which may be sparse) and combining many types of information (multimedia documents, video, quotes, references, articles, etc.) [18].

9.6. Final considerations

The proposed strategy enables to overcome several conflicts and barriers (e.g., accessibility, ownerships) focusing on history, research and

technology. Pointing out the uniqueness of this marble, proved by its choice for the most beautiful and fascinating statues, artefacts, and buildings of the Hellenistic times, an adequate and on time storytelling could begin a transition, probably long and complex, involving the local socio-cultural context - the Paros island, the villages, the touristic stakeholders – and reinforcing the old quarries’ role for the Parian community’s local identity. Thanks to such storytelling, the Parian marble receives its worldwide celebration, for its material uniqueness and beauty, as well as for its role in the history of art, attracting scholars, admirers, followers, interested, or simply tourists to visit (also virtually) the quarries and the old sculptors’ workshops, and finally helping celebrating and valorising the quarries, their surroundings, and Paros itself.

Therefore, priority should be given to the creation of a “virtual museum”, collecting and ‘exposing’ all masterpieces done with this unique *lychnite* marble.

Obviously, this solution space does not deal with a physical recovery of the underground quarries and their landscapes yet, but with the cultural transition, which could bring relatively quickly the Parian marble to the attention of the world and make local community more aware of its tangible and intangible value as world heritage.

REFERENCES

- [1] Pianese T. (2023), “Putting the Underground Built Heritage at the heart of cultural tourism. The case of the ancient quarries of white marble in Paros (Greece)”, in Martinez Rodriguez S., Pace G. (eds), *Practices for the Underground Built Heritage Valorisation. Second Handbook*. CNR Edizioni, Rome.
- [2] Martinos H. (2018), *An action plan to save and promote the ancient quarries of Paros*. The Bulletin n. 17 – summer 2018, Friends of Paros, p. 11.
- [3] Pace G. (2021), Heritage Conservation and Community Empowerment. Tools for Living Labs. Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation: A Handbook*. CNR Edizioni, Rome, p. 217.
- [4] Gola E., Ilardi E. (eds) (2019), *Immaginari dal sottosuolo. Le aree minerarie all’epoca del web: il caso Sardegna*. Manifestolibri, Castel San Pietro Romano (RM), p. 12.
- [5] Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens.
- [6] Herz N. (2010), “The Classical Marble Quarries of Paros: Paros-1, Paros-2, and Paros-3”, in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian*

Quarries, Marble and Workshops of Sculpture, The Paros and Cyclades Institute of Archaeology, Athens, pp. 27-32.

[7] Leivadaros R., Tsaimou C. (2010), “New evidence of Ancient Underground Exploitation of Parian Lychnites”, in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 83-90.

[8] Pittas G. (2008), *Paros. A journey into space and time*, Lefkes village.

[9] Schilardi D. U. (2010), “Observation on the Quarries of Spilies, Lakkoi and Thapsana on Paros”, in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 35-59.

[10] Weigand R. et al. (2014), *On the optical transmission properties of Pentelic and Paros marble*, in: Optical Society of America. OCIS codes: (330.7325) Visual Optics, Metrology; (160.4760) Materials: Optical Properties. <http://dx.doi.org/10.1364/AO.99.099999>

[11] Young R. C. (2010), *The Parian Marble and Other Surprises from Chronologist V. Coucke*, Andrews University Seminary Studies, Vol. 48, No. 2, pp. 225-249.

[12] Rotstein A. (2016). “Literary History in the Parian Marble”, in Hellenic Studies, Series 68. Washington, DC: Center for Hellenic Studies. http://nrs.harvard.edu/urn-3:hul.ebook:CHS_RotsteinA.Literary_History_in_the_Parian_Marble.2016

[13] Athanassakis A.N. (2010), “The Marmor Parium. A Reconsideration”, in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 187-191.

[14] Palagia O. (ed) (2006), *Greek Sculpture: function, materials, and techniques in the Archaic and classical periods*. New York: Cambridge University Press.

[15] Belavilas N. (2021), *The palimpsest of the Nymphs’ quarry at Marathi, Paros*, Parola, n. 13, edition 2021, pp. 64-72.

[16] Martinos H. (2018), *An action plan to save and promote the ancient quarries of Paros*, The Bulletin Friends of Paros, n. 17, Summer, pp. 8-11.

[17] Brody, M. (2014). Interpretive Centers. In: Gunstone, R. (eds) *Encyclopedia of Science Education*. Springer, Dordrecht.

[18] Li, Y. C., Liew, A. W. C., & Su, W. P. (2012, June). The digital museum: Challenges and solution. In 2012 8th International Conference on Information Science and Digital Content Technology (ICIDT2012) (Vol. 3, pp. 646-649). IEEE.

NOTES

¹ The Research Group 1 was composed by Kejsi Bodlli (AL), Chiara Caravello (DE), Rakel Vella (MT), with the tutoring of Tony Cassar (MT), Giuseppe Pace (IT), and Tommasina Pianese (IT).

A multiscale approach for valorising Camerano. Underground Heritage and surroundings

Aida Beqiri, Luciano Galone, Laura López-Gómez, Sorina Radu, Shirley Cefai, Ernesto Marcheggiani

10.1. Introduction

The work of this working group was part of the training school in Murcia. The participants familiarised themselves with the site of Camerano and the importance the residents gave to the site. The work also studies how Camerano relates to other heritage sites in the area and if it is possible to link all sites together and if yes, how this would materialise. Being an underground site the challenge here was to make it ‘surface’ so that the community is made aware of their heritage.

The group’s aim in this workshop was to identify how they could promote not only the value of Camerano but also its surroundings. This implied that they would not only consider the site of Camerano but also consider the context in which Camerano exists and hence increased the catchment area. The study will be a multiscale approach and will go from the macroscale to the microscale. At the end of the study, the focus will be on Camerano.

10.2. The Case-Study

10.2.1. Location

The municipality of Camerano is placed in the Province of Ancona, part of the Italian Marche Region. Situated about 10 km southeast of Ancona, it confines with the municipalities of Castelfidardo, Osimo, Sirolo, and Ancona (Fig. 10.1).

10.2.2. History

Camerano is well known for its extensive tunnel system that runs underneath most of the city. The origins of the caves are believed to be between the 7th and 4th century BC. In the 14th century, there is evidence of the caves' usage and in the 1940s the caves were last used as bomb shelters during the Second World War when the residents lived in the tunnels for 18 days to flee from the German occupation. After Second World War there is little documentation about the caves, as the community did not want foreigners to know about the existence of these underground caves. In the early 1980s, the caves were rediscovered by scholars who started documenting the underground heritage [1]. It was only in 1997 that the caves were open to visitors.

10.2.3. Heritage

Camerano is most notable for the extensive tunnel system lying underneath the old city. They offered an idyllic site for shelter in case of sieges or invasions and offered the community a location for secret meetings.

During the 18 days when the community used the site during WW2, the caves also housed a hospital and a church. In this way, the community could be served with any needs that may arise. They also offered a space for food storage and water supply which was obviously required during the 18 days that the community had to survive within the space.



Figure 10.1: Geographic positioning of Camerano

10.3. Methodological approach

The statement of significance was built on the review of the STSM report prepared by Murillo [2] together with the stakeholders’ interviews carried out with Francesco Paci [3]. A constructive brainstorming session was also carried out taking into consideration different perspectives – education, economic, urban planning and the geology of the site. The information gathered from this work was used to set up the statement of significance.

10.4. Decision-making process: Statement of Significance (SoS)

The first part of the SoS was explained earlier on in this document (Section 10.2.3) and that outlines the ‘What’ of the Camerano tunnels.

10.4.1. Values

The next step is to identify the values of the site. The values one could attribute to the caves is the Historic/Cultural values (Fig. 10.2) as the site is historically important and forms part of the culture of Camerano. Community or social value which gives the community their identity (Fig 10.2) also exists with this site as the community identify with it as part of who they are. The spiritual value is also present as it was used as a church in the WW2 period as well as the number of myths and legends which were spread amongst the community. (Fig 10.2). The caves also have a strong contextual value as well as the aesthetic value (Fig 10.2).

II. Statement of Significance (SOS)

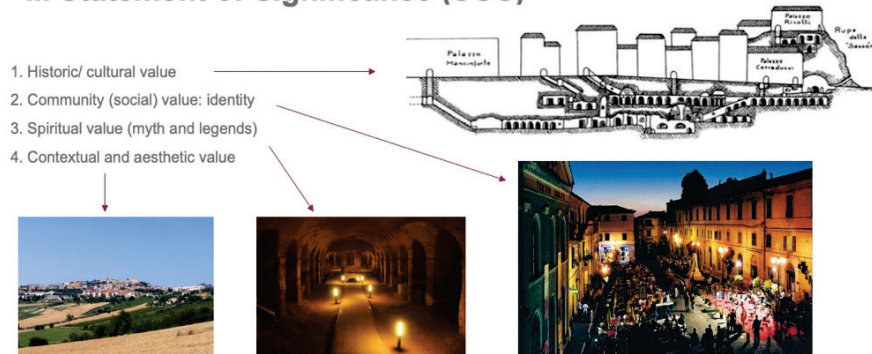


Figure 10.2: Showing the historic/cultural value, the social value, the spiritual value and the contextual value

10.4.2. Character-defining elements

The character-defining elements can be divided into tangible and intangible aspects. The tangible aspects of the site that help attribute the values to the site are:

- The tunnel system which create the site
- The other attractions to the site are the museum as well as the church within the tunnels
- The tunnels are within the “Rosso Conero” vineyard region
- As well as being part of the Marche Hypogea region.

The intangible aspect of the site is the number of legends and myths which exist around the site.

10.5. The Proposal

The proposal deals with the three main scales of the project: the city scale, the local scale, as well as the regional scale.

10.5.1. The city scale

There are many ideas that could help make the site more known to the community and the public in general. One way of promoting the site and make the public more aware of the importance of the site is to enhance the 3D scan of the caves. This would enable the use of augmented reality as well as virtual reality to promote and advertise the site. It would also allow easy access for all to the site by introducing them also to the context of the site (Fig. 10.3).



Figure 10.3: Use of virtual reality or augmented reality to show the context of Camerano

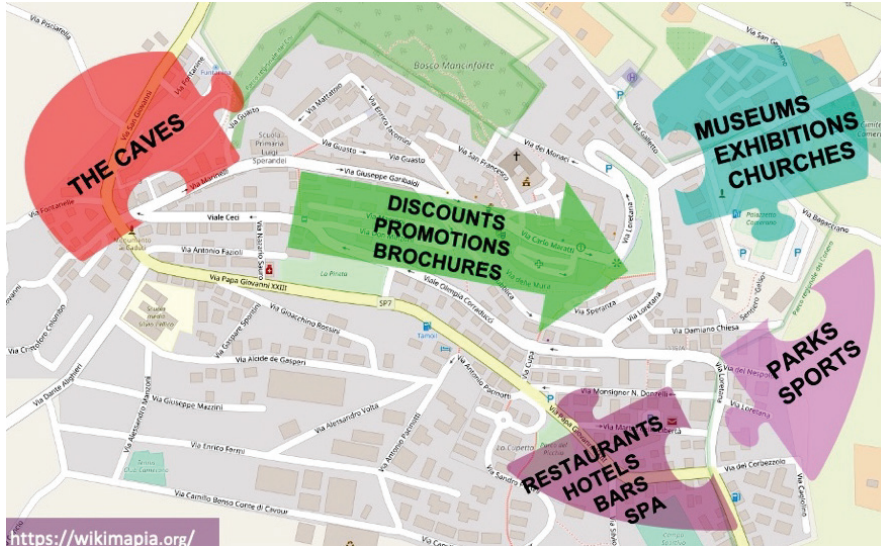


Figure 10.4: On a city scale, it would be idyllic to link the different heritage sites with the Caves. This would help lead a visitor from one site to another

On the city scale it is also important to link the Camerano caves with the other heritage sites in the area. This way other sites would be in a position to promote the Camerano caves and vice versa. (Fig. 10.4). Linking the different sites together could be promoted by offering discounts if an individual visits more than one heritage site in the area. This way sites are collectively promoted.

All the above ideas would be beneficial if it is linked with an urban plan for the Camerano historic centre zone. This would help to identify the historic sites to be considered in a particular catchment area. (Fig. 10.5).

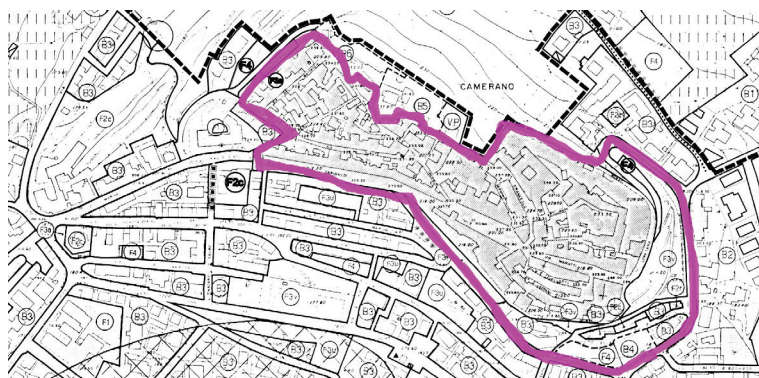


Figure 10.5: All proposals ideally are linked with the urban plan of Camerano's historic centre



Figure 10.6: The caves can have various uses as long as the use is compatible to the site. For example, small exhibitions, wine tasting events, storytelling events for children, etc.

Of course ideally the area should also offer ‘entertainment’ and hence use the sites so that the public are intrigued by the heritage sites. It is a well-known fact that heritage sites need to be used so as to be maintained and made known to the wider public. Of course, the used needs to be compatible to the site. The proposals here is to make use of the site for small exhibitions, wine tasting events, and storytelling events for children hence making the caves known even to the younger generation. (Fig. 10.6).

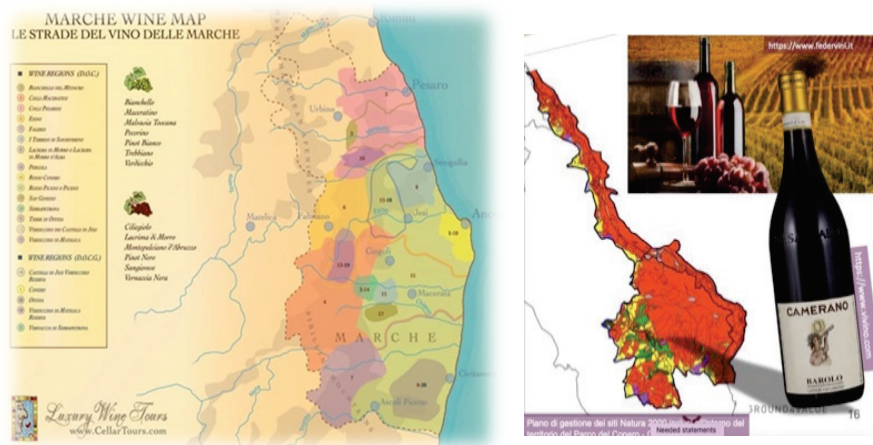


Figure 10.7: Advertising the already existing wine trekking route within Marche area, or creating new ones

10.5.2. The local scale

On a local scale it would be beneficial to understand also the context of the caves. This can be enhanced by the creation or publicising of an eco-trekking route that the public could follow and attract them to the area. For example, creating a wine trekking route within the Marche area (Fig. 10.7). On a local scale it is also important to promote the site on different media. The media could take the form of social media, broadcast media as well as the printed media. As far as social media is concerned one should use Facebook, as well as Instagram and twitter and any other social media that may exist in the future. This is the platform the younger generation is more accustomed to, but one must also consider broadcast media. This would include radio as well as TV. Besides these forms of media, one must not forget the printed media – which could take the form of brochures, magazines and books. (Fig. 10.8).

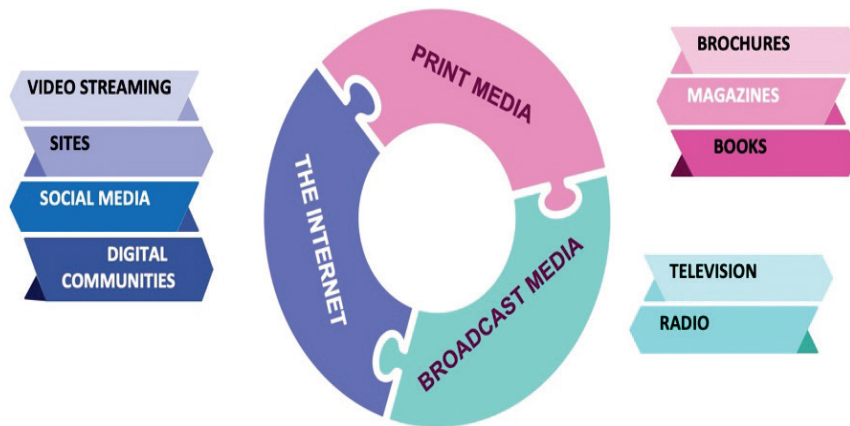


Figure 10.8: On a regional scale, a mobility plan should be created to provide easy and efficient mobility between the sites

10.5.3. The regional scale

A mobility plan should be created to aid the accessibility to the different cultural sites. This would promote the multimodal link between the cultural sites in Camerano, Ancona, Osimo, Varano, Sirolo, Aspio Terme etc. The mobility should take into consideration public transport, intercity bike lanes, upgrading of regional roads as well as making sure that the area is accessible for all (Fig. 10.9).

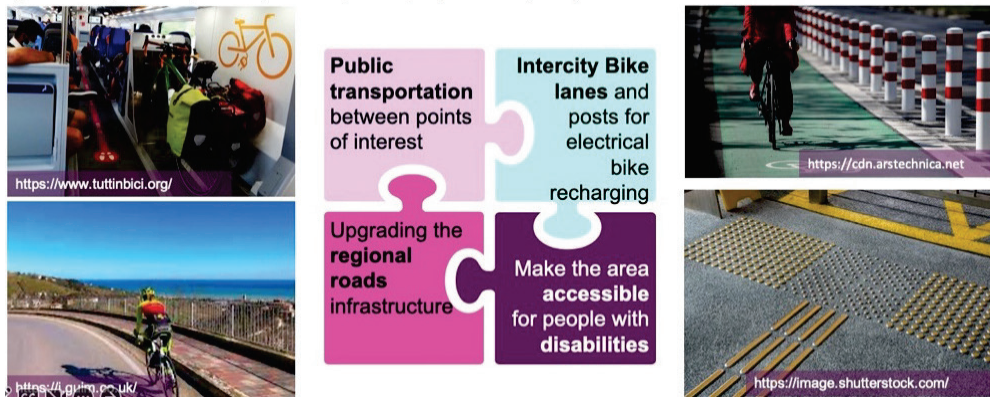


Figure 10.9: Promote the site on the different media

10.6. Why is the project sustainable?

The project would be sustainable because through the proposals put forward above, on the city, local and regional level, jobs would be created through the attraction of visitors to the sites. This would enhance the economic growth of the area and hence the quality of life of the residents and the area in general.

REFERENCES

- [1] Recanatini A. (1997). *Le grotte del Conero*. Ricerche di speleologia archeologica nel Parco del Conero, s.n., Jesi.

CHAPTER 11

Rediscover Camerano: a multi-story city

*Isabel Dólera Sevilla, Viachaslau Filimonau, Marija Jovanovic,
María Murillo Romero, Andrew Pace*

11.1. Introduction

This chapter explores the city of Camerano to evaluate the potential to valorise its underground heritage more effectively for the benefit of visitors and residents. The chapter will highlight slow tourism, with its related tourist activities, such as events and gastronomy, as a strategy for Camerano to consider in the future. Slow tourism in Camerano can be promoted through an annual calendar of complementary underground and surface-level events, which are small-scale, exclusive, and based on local knowledge. These events will provide synergies that will lead to spatial and territorial understanding linked to local communities. All of these issues will give to the visitors, and also residents, a more complete and immersive experience, contemplating harmony, and sustainability.

Rediscover Camerano: a multi-story city is the result of collaborative group work that will serve to strengthen community engagement and social innovation in Camerano through Underground Built Heritage. The work was undertaken by an international team of heritage management professionals and academics representing such backgrounds as tourism, arts, events marketing, and architecture. The work was undertaken in September 2021 at the University of Murcia during the Second Underground4value Training School.

11.2 Camerano

Camerano, the case destination under scrutiny, is introduced in detail in chapter 6 of this book by our tutor María Murillo-Romero. Hence, to avoid

repetition, the brief text below only contains some of the key facts about Camerano and its underground heritage.

Camerano (Province of Ancona, The Marches Region) is a city located in the central area of Italy, further to the east in a coastal area. Camerano has a total of 7,322 inhabitants in 2016 [1]. The city of Camerano is situated in a region of Italy which is well known for vineyards and gastronomy. The city is also located near an attractive coast popular with camping visitors. These visitors engage in nature-based tourism activities, such as hiking and birdwatching, among others.

The main tourist attraction of Camerano, which makes the city famous in Italy and beyond, is, however, its underground heritage. The city itself has a significant network of chambers and tunnels beneath the surface. The chambers have a long history of embeddedness within the city's community life, with the first documentary records dating back to 1327 BC. It is yet unclear why the chambers were built but evidence indicates that they have become an integral element of the local history and folklore. Over the centuries, the tunnels have expanded, creating a vast underground network of private property. It was not until the end of the twentieth century that ownership of the system was recovered by the local authority. This recovery was intended to boost the local economy through tourism and the preservation of local heritage, which, prior to Covid-19, received more than 25,000 annual visitors [2]. These unique selling points of the city and its host region of Italy form a significant part of the current study and its proposal for underground heritage valorisation, which aims to tie these points together.

11.3. Methodology

This study was underpinned by desk-based research involving an extensive review of the literature on the topic of underground heritage and its management, but also tourism in Camerano and its host region, alongside an analysis of personal accounts of some of the key stakeholders from the destination in question. The personal accounts of the stakeholders were shared by the team leader who went on a scientific mission to Camerano in 2020 and interviewed a number of actors of relevance, including local policymakers, destination managers, tourism industry representatives, and local community representatives. The interviews sought to understand how underground heritage in Camerano could be meaningfully valorised for the mutual benefit of visitors to the city and the local people. The opinions of these stakeholders were presented to the research team with a subsequent analysis and brainstorming undertaken to

deduce the most plausible visions for the future of more inclusive, sustainable management of underground heritage in Camerano.

The multidisciplinary backgrounds of the team members ensured a variety of perspectives were taken into account when analysing the supporting data and brainstorming for prospective solutions. These ideas were presented to the team leader and, following their feedback, the ideas were refined to ensure their feasibility and ability to be implemented. The refined ideas were summarised and presented to all attendees of the COST Training School.

11.4. Analysis

The team began its study by examining the strengths and weaknesses alongside the opportunities and threats of Camerano as a destination, using the SWOT method, whose objective was to identify the critical points for the success or failure of an organisation of a project to be proposed. The SWOT analysis builds an understanding of the internal environment of the study subject, such as the city of Camerano, to establish what its strong points and its weaknesses are. On the other axis, the SWOT analysis considers the external environment by attempting to identify opportunities and threats, ultimately aiming to offer solutions for the development of the subject, such as underground heritage in the city of Camerano. A summary of the SWOT results is presented in Fig. 10.1.

<p>Strengths</p> <ul style="list-style-type: none"> - Itinerary activities inside the caves (guide visits / theatre / wine exhibition / storytelling) - Engaged municipality and local community 	<p>Weaknesses</p> <ul style="list-style-type: none"> - Inadequate infrastructures in the city - Low tourism development - Potential maintenance / safety constraints
<p>Opportunities</p> <ul style="list-style-type: none"> - Regional events networks (Riviera del Conero tourism network, 16 municipalities) - Opera Cooperativa (experts in tourism and cultural management) 	<p>Threats</p> <ul style="list-style-type: none"> - Covid situation - Exclusive tourism competition (Numana, Sirolo)

Figure 11.1: SWOT analysis of Camerano. Source: Authors' own work

The SWOT analysis highlights various visitor activities in the city to be capitalised upon as a means of enriching the tourism offer of Camerano. The activities are related to various events and the arts. This capitalization can become possible due to the engaged municipality and its leaders who are keen to promote tourism in the city and encourage visitation of the underground as well as on-surface heritage of the city and its host region. Among the weaknesses, poor tourist infrastructure (for example, quality of local roads, availability of toilets, and restricted accessibility for those with

mobility impairments) inhibit tourism development in Camerano. Coupled with the limited marketing budget available to the municipality, this endangers valorisation of underground heritage via increased visitation and engagement of the local people. As for select opportunities that are worth highlighting, Camerano is part of the regional network of various events dedicated, among others, to gastronomy, arts, and creative industries. Regarding the threats, the ongoing pandemic needs to be acknowledged alongside competition for visitors to the region. For instance, the number of visitors to Camerano in 2020 dropped from 25,000 to an average of 5,000 visitors per year. Lastly, the neighbouring cities of Numana and Sirolo are also keen to develop tourism, and Camerano must either compete with these destinations or engage them in productive co-competition, i.e., a combination of competition and cooperation whereby destinations co-market each other.

The gastronomy of the region where Camerano is located is one of the key strengths of the city. Central Italy is characterised by such world-renowned foodstuffs and spices as saffron, truffles, Pecorino cheese, cured meats and carbonara pasta. In particular, the extensive vineyards that run through the Camerano municipality's fields should be highlighted. The Marche region, located on the eastern side of central Italy, is associated with white wines from the Trebbiano and Verdicchio grape varieties. The vineyards cover approximately 25,000 hectares of area and produce almost two million hectolitres of wine annually. Most of this wine is sold as *Vino di Tavola* or under the title of *Indicazione Geografica Tipica IGT Marche*. The best expressions of Verdicchio are found in the *DOCG Verdicchio dei Castelli di Jesi e Verdicchio di Matelica* [3]. The grape *Rosso Conero*, with which the *Rosso Conero DOC* and *Conero DOCG* wines are made, should also be highlighted in this regard as it is often referred to as a high-quality organic product [4].

Based on this strength, one of the team's proposals to increase tourism in Camerano was to encourage guided tours of the city's vineyards and wineries and offer visitors tastings of wine and appetisers from the rich gastronomy of the area. This strategy would enable Camerano to connect the underground city with the surface city in a unique manner. Indeed, after visiting the vineyards and wineries, the wine tasting could take place in the caves and be supplemented with tastings of other local agricultural produce, such as cheese and meat. This would not only add an extra layer to visitor experience but, concurrently, this could also encourage production of food and beverages among the local people.

The underground city could also be used to host 'Dine in the Dark' experiences. These have become popular in major metropolitan areas of the world, promoting the idea that if one sense is suppressed (for instance, vision), other senses are intensified. Camerano offers an ideal setting to

stage such ‘Dine in the Dark’ experiences given that its tunnels are naturally dark but can be used for locating dining tables and even mini kitchens. To add to this experience, visitors can be requested to consume food with their hands, without artificial lighting and without cutlery, which increases the sensations perceived by smell, taste and touch. Furthermore, music from the local area can be played to stimulate the ear.

These sensory events can be carried out and organised by the business people of the area, such as local farmers or food producers. Each one of them can prepare a different menu that can be tasted on certain days. With these ‘Dine in the Dark’ experiences, not only is the visitor offered an exclusive sensory experience, but they also highlight the gastronomic products of the area and allow the chefs and restaurants of Camerano to make themselves known beyond their establishments, thus aiding in marketing and promotion.

This proposal is well aligned with the concept of slow tourism. Slow tourism aims to encourage longer stay at a destination by engaging visitors in experiences created by or even co-created with the local people. Opposing the idea of ‘mass tourism’, slow tourism sets to give visitors the opportunity to find out more about the destination which they visit. Concurrently, by engaging the local people, slow tourism creates multiple benefits for local communities. These benefits stretch from extra income to better appreciation of the value of the area in which they live. When projected onto the context of Camerano, slow tourism coupled with gastronomic experiences can tell visitors about the underground city while exposing them to the on-surface city and the products which it has on offer.

Another proposal to connect both the overground and underground cities was grounded on the rich network of events in Camerano. These events could be more explicitly linked to underground heritage, using storytelling to market the underground city and add to the visitor experience. For example, to reinforce the sense of belonging of the citizens of Camerano to the underground city could be the realisation of community celebrations in the caves. Religious rites such as weddings or baptisms could be officiated for a small and exclusive group of attendees, preserving the integrity of the tunnels at all times. In a more commercial sense, and targeting external visitors to Camerano rather than its residents, various cultural events such as concerts, book presentations, art exhibitions, theatre performances, among others, could be staged in the caves. Acknowledging the ongoing threat of Covid (see Fig. 11.1), to minimise the risk of contagion by the COVID-19 virus and increase and revalue the events and activities carried out inside the caverns, it was proposed that the events staged in the underground could have a reduced and limited capacity and a maximum duration of one hour.

Considering other weaknesses of Camerano (Fig. 11.1), the issue of (under) exploitation and management should be recognised. Two major obstacles arise: on the one hand, the lack of experts in the field of landscape and territory valorisation and, on the other hand, the need to connect rural spaces that are separated and marginalised. The first of the problems is being solved through the COST CA18110 action, which aims to promote sustainable and balanced spaces that achieve the conservation of underground heritage. Regarding the second obstacle, the Landscape Research Center (LRC/CIRP) of the Polytechnic University of Marche is focused on preserving delicate heritage as a potential tourist attraction in the next decade [2]. To overcome the obstacle of low budgets due to the economic recession suffered in Europe in the last decade, a proposal of an ecological underground building heritage was put forward. This could promote Camerano as a place of balance for nature that generates positive and self-sufficient values, allowing rural development in the short, medium and long term.

11.5. Conclusions

This chapter reports on the results of an analysis undertaken to identify the strategies for Camerano to rediscover and promote itself as a city comprising multiple stories – historical, social, economic, and architectural. The administration of the underground heritage of Camerano faces a dual problem of lack of experts and budget, but these obstacles are being overcome thanks to COST CA18110 action and the Landscape Research Center (LRC/CIRP) of the Polytechnic University of Marche. However, there are still insufficient resources for improving the quality and reach of tourism in Camerano. A possible solution, posited in this chapter, to more effectively valorise the underground heritage of the city is to promote Camerano as a slow tourism destination, combining the slow tourism offer with gastronomy and social events, which will appeal to tourists and engage local economic development.

REFERENCES

- [1] Marche in dettaglio, 2022. Available on: <http://marche.indettaglio.it/eng/comuni/an/camerano/camerano.html>
- [2] Marcheggiani, E., Galli, A., Paci, F., Fioretti, I., and de Seris, M. (2021) “Valorisation of Rural Heritage and Touristic Bias: Potential Benefits to Local Community”, in Pace G., Salvarani R. (eds). *Underground Built Heritage Valorisation. A Handbook*, Cnr Edizioni, Roma, 2021. pp. 121-131.
- [3] Verdicchio, 2022. Available on: <http://www.verdicchio.it/es/curiosidad.html>
- [4] Italian Winemakers Association, 2022. Available on: <https://www.assoenologi.it/>

CHAPTER 12

Twin Megalithic Towns

Activating synergies and strategies to valorise the megalithic heritage – the cases of Carapito and Antelas in Portugal

Gresa Calliku, Zuinder Horácio Cumandala Manico, Manuel de Maya Matallana, Carlos Smaniotto Costa, María del Carmen Solano Báez

12.1. Introduction

This chapter reviews and discuss the results of the working group four¹, henceforth referred to as Twin Team. The purpose of the Twin Team was to design a model that activates synergies and strategies to valorise the underground megalithic heritage of Antelas in the municipality of Oliveira de Frades and Carapito in Aguiar da Beira, Portugal. In the frame of the re-usage of the UBH the Twin Team explores and provides proposals for facilitating community dialogue.



Figure 12.1: Dolmen de Antelas. Source: Archive Municipal Museum of Oliveira de Frades

Oliveira de Frades and Aguiar da Beira are among the 14 municipalities included in the touristic-cultural route "Rota do Megalitismo da Região Viseu Dão Lafões e Sever do Vouga", which is promoted by the Intermunicipal Community of Viseu Dão-Lafões together with Sever do Vouga and funded by the "Valorizar Programme" of "Turismo de

Portugal”. This tourist-cultural route includes 26 dolmens distributed among the 14 municipalities, six of which are National Monuments. The route aims at promoting a new tourist offer in the sector of cultural tourism based on the megalithic monuments of Viseu Dão Lafões. It also intends to articulate this route with existing regional routes, such as the Prehistoric Circuit of Nelas and Fiais/Azenha in Carregal do Sal, the Circuit of Talhadas and Cerqueira in Sever do Vouga and the Route of the Stone Giants in Vouzela [1].

In this regard, the ideas developed by Twin Team were backed by the Short-Term Scientific Mission (STSM) by Carmen Solano in November 2020. This STSM focused on the local community's memories and its relationship with tangible and intangible heritage, as well as on the involvement and empowerment of the local community in the context of



Figure 12.2: Dolmen de Carapito I. Source: Archive Town Council Aguiar da Beira

the touristic-cultural route “MEG Rota do Megalitismo da Região Viseu Dão Lafões e Sever do Vouga” [2].

Thus, the Twin Megalithic Towns proposal is in line with the main purpose of integrating the heritage assets into local and supra-municipal tourist routes. It also contributes to local stakeholders' main interest in recovering and promoting tangible and intangible heritage to minimise socio-demographic, economic, and environmental threats in the municipalities.

This pilot model proposes that both communities build on their differences and utilise them to generate a cooperative partnership for exchanging of the best practices, reduce corresponding weaknesses, and head toward mutual development. On the one hand, through this model, Carapito exchanges strengths with Oliveira de Frades on the other hand,

Aguiar da Beira's weaknesses become strengths with the help of the experience shared with Oliveira de Frades. In addition, this proposal is supported by a governance model that guarantees the adequate participation of the different agents present in the territory, particularly those with competencies in heritage protection.

The chapter is organised as follows. Section 2 provides a brief description of the Dolmens in Antelas and in Carapito. Section 3 explains the work methodology used to achieve the stated objective. Section 4 reports on the qualitative and quantitative analysis conducted for both cases in order to better understand the main challenges the territories and their heritage are facing. Section 5 discusses the key results and the model proposed by Twin Team. Finally, the last section is dedicated to conclusions and opportunities for further research.

12.2 The Dolmen de Antelas and Dolmen do Carapito

The Village of Antelas is in the Parish Pinheiro de Lafões, in the municipality of Oliveira de Frades in the district of Viseu, while Carapito

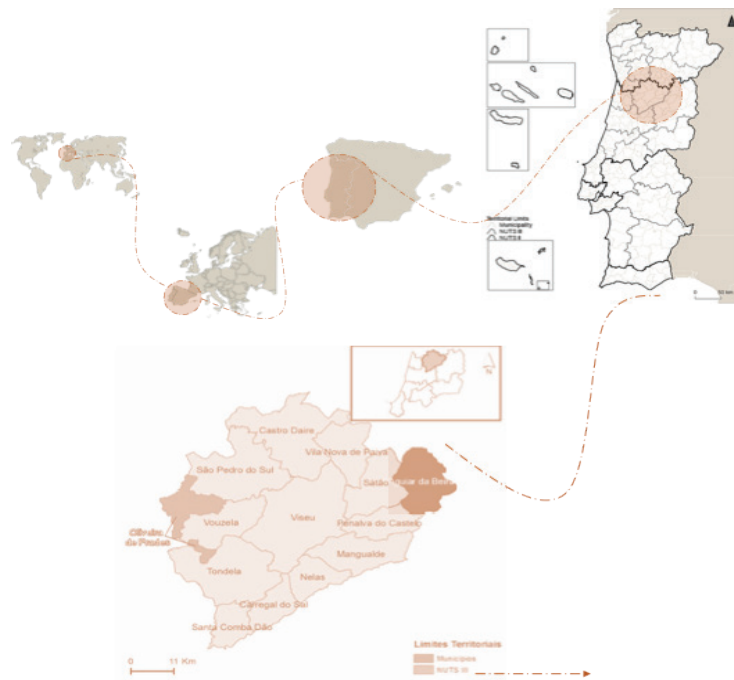


Figure 12.3: Location of Antelas and Carapito. Source: Own elaboration based on INE Portugal, 2021

is a parish of Aguiar da Beira, a municipality belonging to the district of Guarda. Both are in the intermunicipal community of Viseu Dão-Lafões, in the Central Region of Portugal, a statistical region that takes 31% of the Portuguese mainland area (Fig. 12.3).



Figure 12.4: Main supporting slab painting. Source: Archive Municipal Museum of Oliveira de Frades

The Dolmen de Antelas is one of the best preserved iconographic megalithic monuments in the Iberian Peninsula. The paintings were

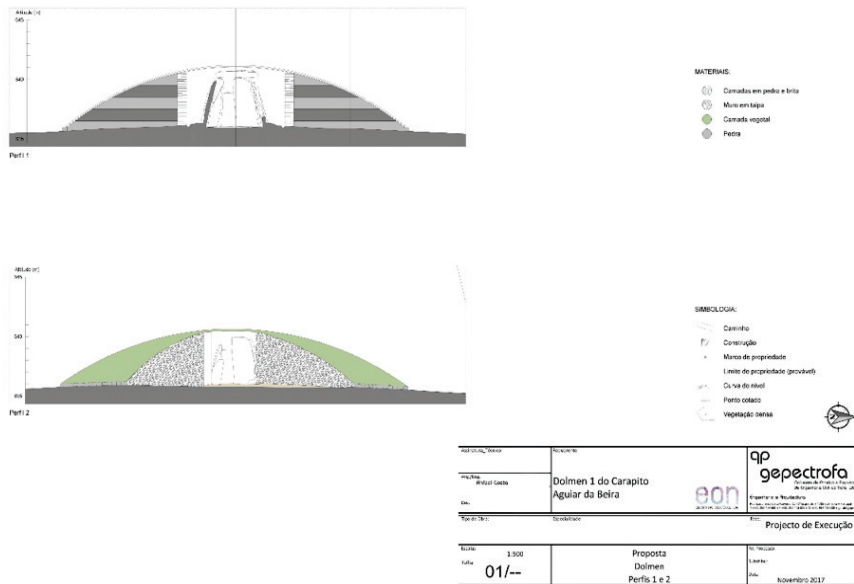


Figure 12.5: Rehabilitation project of the Dolmen do Carapito I. Source: Archive Town Council Aguiar da Beira

discovered in May 1956 during archaeological excavations directed by Luis de Albuquerque e Castro, Octávio da Veiga Ferreira and Abel Viana [3]. It is classified as a National Monument by Decreto n.º 29/90, DR, I Série, n.º 163, de 17-07-1990 (*classificou a "Anta pintada de Antela", na freguesia de Antela*) [4].

Its most distinctive feature are the pillars of the chamber that have paintings and some engravings [5] with schematic (geometric), symbolic (abstract) and semi-naturalistic (figurative) compositions in black and two shades of red [6]. The Dolmen do Carapito I, known as Casa da Moura, is classified as a National Monument by Decreto n.º 735/74, Diário do Governo, Serie I, n.º 297, 21 December 1974 [7] [8]. The Dolmen of Carapito is considered one of the most extraordinary megalithic monuments in Europe due to its almost five-metre height and the motifs carved on the slabs of the chamber. The survey of the megalithic monument was made in three different archaeological campaigns [9]. The one by Vera Leisner and João de Castro Nunes in 1965 is considered one of the most important [10]. According to Solano [2], at present, the Dolmen do Carapito I is being reconstructed. This project aims to rebuild the Dolmen as close to the original as possible, offering a close image of how it would have been six thousand years ago.

11.3. Methodology

In line with the work methodology applied in the STSM, a territorial approach was maintained to design a proposal that addresses the main interest of the stakeholders of both territories, i.e., that aims not only to the enhancement of tangible and intangible megalithic heritage for tourism development but also to contribute to minimise rural structural problems in these municipalities.

In this respect, within the perspective of territorial development, the concept of sustainable tourism destinations places the territory at the centre of planning. This leads to differentiate this concept from the idea of space, representing an innovation in the planning of tourism activity [11] [12]. In this vision, the territory is a dynamic resource, a vector of strategies constructed by common values to design measures based on endogenous resources [13] [14] [15] [16]. Thus, it enables innovation while promoting the coordination of key actors [17].

To achieve the proposed objectives, Twin Team had taken different steps:

- Documentary review.
- Creative brainstorming.
- Second-order qualitative analysis and quantitative analysis in four dimensions.

- Proposal development: TMT model and proposed territorial governance.
- Drafting general recommendations.

First, a critical documentary review of all available information on both contexts was carried out by performing a second-order analysis of the extended STSM report as well as technical reports, project dossiers, and other documents provided by each of the municipalities.

After the first approximation of the context, the creative brainstorming began. Each participant, from their discipline, brought ideas and, at the same time, discussed in depth the challenges faced by the territories.

During the brainstorming, Twin Team was aware of the need to deepen the analysis, so they expanded the qualitative analysis, and carried out a



Figure 12.6: Dimensions of analysis

quantitative analysis. Thus, the five dimensions of the territory were analysed: economic, social, cultural, environmental, and institutional.

For the qualitative analysis, to better understand the potentialities and limitations of the territory in general, and heritage management in particular, a critical review of the DRAFPO² analyses [18] obtained from the STSM was carried out.



Figure 12.7: Dimensions of DRAFPO analysis

In this way the Twin Team analysed issues such as:

- Characteristics, and aspects of special relevance of the megalithic heritage of Antelas and Carapito.
- Management structures of the tourism activity.
- Financing mechanisms.
- Participatory actions to involve local communities.

- Identify and systematise good practices on the management of the megalithic monuments of Antelas and Carapito.

For the quantitative analysis (socio-economic, socio-demographic, and environmental indicators), data were obtained from the Portuguese National Institute of Statistics. This contributed to the understanding of the problems mentioned in the DRAFPO analysis, such as the level of rurality or depopulation.

The proposal development started after the whole process of analysis and brainstorming. Therefore, the idea of proposing a Town Twinning with a governance system involving all stakeholders and the local community emerged. The identification of strengths and weaknesses helped to define aspects that could be shared by each territory in the framework of the twinning agreement. During the proposal analysis and design, the Twin Team was supported by an external supervisor who enriched the definition of technical aspects.

This model includes some recommendations and activities that could initiate the pilot twinning initiative, and the outcomes of this whole co-design process are presented in the following sections.

11.4. Qualitative and Quantitative analysis: Understanding a Risk Context

The basic objective of this section is to analyse the most relevant territorial and socio-economic conditions of the Portuguese municipalities of Carapito and Antelas. First, the problems identified through the DRAFPO analysis are presented in general terms, and subsequently, the quantitative analysis of these problems are carried out.

In general terms, the DRAFPO analysis for Carapito states:

Strengths: Beautiful landscapes. Grassroots movements promoting collective activities. A wide variety of local products such as wine and cheese. The authenticity of the place thanks to its high value of natural and cultural heritage. Strong connection with the underground heritage. Rural development initiatives created by the local population (accommodation, restaurants, etc.). Low level of inequality (lower than the regional and national average). Good level of human resources (especially in basic and secondary education).

Weaknesses: Ageing of the population (high maturity and potentiality indices), especially among farmers. Growing depopulation. Lack of generational replacement. Difficulties to fix population in the territory. Shortage of services (especially health services).

Threats: The main threat is the lack of population in the coming years, which can cause an increase in forest fires. Additionally, the low expenditure on biodiversity conservation (relative to the national average) poses a threat to the conservation of natural habitats. Carapito is also at risk of losing the ethnographic values of the territory due to the lack of generational replacement.

Opportunities: The Dolmen I de Carapito integrated into the regional route could structure other pedestrian trails/routes linking other dolmens. This fact opens the possibility of showing other territory's resources, such as the thermal baths, gastronomy, and festivities. The high quality of life provided by the low population density can favour multidimensional wellness through appropriate EU rural and local development policies. The high survival rate of enterprises in the first two years of life can favour the creation of a highly competitive and innovative business fabric.

Resistance: The municipality, NGOs and especially the local community are very interested in working together and willing to collaborate for the local development, therefore the chances of resistances are low.

General reflection: Carapito is a unique place because of its people, but people age or move out. It is difficult to maintain the population or reverse such structural problem in Aguiar da Beira. The key stakeholders consider that to preserve the heritage and maintain the territory's values, it is necessary to retain and attract people, and tourism is only part of the solution. Another important aspect is to have a well-preserved heritage to show to visitors and to motivate the population.

In general terms, the DRAFPO analysis for Antelas states:

Strengths: Antelas has beautiful landscapes, a good climate, with mild winters with long hours of sunlight. Population growth of the municipality thanks to a positive migratory flow. It has a maturity index lower than the average for Viseu Dão-Lafões and the Central Region. Low level of inequality (lower than in the municipality of Aguilar da Beira). Good educational data in secondary and basic education. The Dolmen de Antelas has the best-preserved collection of paintings. Town Council is committed to the protection and promotion of heritage. It is possible to obtain local people's memories of the excavations at the Dolmen de Antelas.

Weaknesses: Negative natural growth rate. People work nearby but do not live in Antelas and Oliveira de Frades. Shortage of services (especially in the health sector). Difficulties to fix population to the territory. Areas with high risk of forest fires, with often large forest fires.

Threats: The main threats to the Dolmen de Antelas are deterioration or possible vandalism and misguided promotion of the monument leading to

mass tourism. The low expenditure on biodiversity protection (relative to the national average) poses a risk to the conservation of natural areas.

Opportunities: Promote the construction of an interpretation centre for the Dolmen de Antelas to raise awareness among the population and visitors about the value of the heritage asset. To strengthen the link with the Regional Tourist Route and the Prehistoric Art Network to link the different projects of heritage valorisation with development in neighbouring municipalities. The high per capita income from tourism could be used to develop the other economic sectors of the municipality. The high gross value added per inhabitant and the very positive balance of trade reflect the high economic potential of the municipality.

Resistance: There is a low level of involvement of the local population in heritage recovery initiatives, therefore it is first necessary to raise awareness among the population in order to encourage their active participation. Otherwise, the local population may be reluctant to participate in local activities.

General reflection: The stakeholders recognise that to maintain the strengths of their territory they need to build relations with experts and universities. They also seek a low-impact and sustainable tourism policy to preserve the values of their heritage.

Some basic socio-economic data cited in the DRAFPO analysis will now be added to the work, to corroborate what has been explained above by means of an objective analysis of the statistical information available for which an analysis of indicators was carried out to define the characteristics and scope of different phenomena, such as depopulation and unemployment. Thus, the results of this analysis, which quantitatively deepens the most relevant territorial and socio-economic conditions of Carapito, Aguiar da Beira and Antelas, Oliveira de Frades, are presented below.

The demographic structure by major age groups is shown in Table 12.1; two indicators were used for this purpose, the maturity index, and the potentiality index. About the first, the municipality of Aguiar da Beira is the one with the most mature population structure, since people aged 65 and over have a greater weight than in Oliveira de Frades, as well as being well above the national, regional, and sub-regional average. The same occurs with the Potentiality Index, Oliveira has also the largest proportion of inactive population. This last indicator shows the weight of the age groups under 15 and over 65 years of age in relation to the age groups belonging to the active age groups from the labour market point of view (those aged 15-64).

Because of the greater weight of the older age groups compared to the younger groups, Aguiar da Beira has a negative population growth, and this is even more unbalanced if only the difference between births and

deaths is considered and ignoring migratory flows. The DRAFPO analysis of the municipality of Aguiar da Beira exposes therefore concerns about the depopulation of Carapito. The data show that this is indeed a worrying signal for the municipality.

Table 12.1: Population dynamics and health indicators, 2020

	Aguiar da Beira	Oliveira de Frades	Viseu Dão-Lafões (NUTS III)	Region Centro (NUTS II)	Portugal
Resident population Inh.	4.634	9.985	252.688	2.229.331	10.298.252
Population under 15 years old Inh.	387	1.241	28.933	265.456	1.382.628
Population 65 years or overinh.	1.188	2.242	64.110	548.889	2.309.648
Maturity index (%)¹	307	180,7	221,6	206,8	167
Potentiality index (%)²	98,3	87,1	77,8	73,8	72,3
Population density (Inh./km²)	22,4	68,7	78	79,1	111,7
Annual population growth rate (%)	-0,4	0,5	0,4	0,5	0
Natural growth rate (%)	-2,3	-0,6	-0,7	-0,7	-0,4
Physicians per 1000 inhabitants (Inh.)	1,7	1,8	4,7	5,3	5,6

Source: Own elaboration based on the Portuguese National Institute of Statistics (Territorial Statistics).

¹ Defined as the ratio of the population aged 65 and over to the population aged under 15.

² Defined as the weight of the inactive population (those aged under 15 and those aged 65 and over) over the working-age population (those aged between 15 and 64).

It is noted that Portugal and the territories analysed show negative natural growth, as a result the high levels of the two indices mentioned above, which means that the country is experiencing a process of population ageing typical of economically developed countries, which could endanger the pension system and the welfare state if the birth rate and policies to reconcile work and family life are not encouraged [19].

Such demographic structure tends to be more typical nowadays in rural areas; as the municipality of Aguiar is more rural than Oliveira, with a low population density (22,4 inhabitants/km²), much lower than the national average (111,7), although it should be noted that Portugal with a population density below than 150 inhabitants/km² would be characterised as a rural country according to the OECD methodology. The municipality of Oliveira de Frades also has a lower density than Viseu Dão-Lafões, the Centro Region and Portugal; although it is higher than Aguiar, both municipalities have a marked rural character.

Rurality has positive values associated with quality of life, as understood by the European Union, but to take advantage of it, rural areas should offer similar services as urban areas, at least in terms of those

considered as basic needs, such as health care and education [20]. As an approximate indicator of the level of services in a territory, the Twin Team has used the number of doctors per thousand inhabitants, which is clearly much lower in the two municipalities analysed than the average for Visu Dão-Lafões, Centro Region and Portugal. Logically, a lower provision of services reduces the attractiveness of these areas, encouraging migratory flows to areas with better provision of services and infrastructures.

Table 12.2 depicts the analyses of levels of human capital in the two municipalities, which is fundamental for studying their growth potential and future prospects in an information and knowledge-based economy. One of the indicators selected to measure the degree of qualification is the gross enrolment rate in secondary education. This expressed by the ratio of the population, regardless of age, that attends secondary education against the population which officially corresponds to this level of education (this ratio can exceed 100% if there are repeaters and those who start before the official age for entry to these studies). Aguiar da Beira gets the best results, above the sub-regional, regional, and national average, as well as in the secondary education completion ratio, which is also higher in this municipality. Oliveira also exceeds the national average in this indicator, so the results in the basic and secondary education stages are very acceptable, with failure rates in regular basic education being lower (in the case of Oliveira) or equal to the national average.

Table 12.2: Human resources indicators, 2020

	Aguiar da Beira	Oliveira de Frades	Visu Dão-Lafões	Region Centro	Portugal
Gross enrolment rate in secondary education (%)	153,1	76,7	125,4	123,2	122,9
Completion rate of regular secondary education	94,6	91,9	93,3	92,9	91,5
Retention and dropout rates in regular basic education	2,2	0,9	1,4	1,7	2,2

Source: Own elaboration based on the Portuguese National Institute of Statistics (Territorial Statistics)

Table 12.3 shows the results that provide information about the degree of economic activity in the two municipalities, in comparison with the three higher territorial units. The aim is to study whether the level of economic development is higher or lower in these two rural municipalities.

Looking first at the basic indicator par excellence, the one commonly used in economics to determine the degree of economic well-being of a territory, the gross value added per inhabitant (as an approximate indicator of the income per capita), it reflects significant differences that exist between the two municipalities. Oliveira has an added value per capita 2.7

times higher than Aguiar, as well as a favourable trade balance of 2,680.9 euros per person, which is much higher than that recorded for Viseu Dão-Lafões and Region Centro.

Regarding the ease of setting up a company, the indicator used informs us of the survival rate of companies in the first two years of life. In Aguiar da Beira it is higher than in Oliveira and in the other territorial units. Regarding the Gini Index of gross declared income per taxable person, both municipalities have levels of inequality lower than the regional and national average, which is clearly positive for a more cohesive society and for reducing poverty.

Table 12.3: Indicators of economic activity and employment, 2019.

	Aguiar da Beira	Oliveira de Frades	Viseu Dão-Lafões	Region Centro	Portugal
Gross added value per inhabitant (€)	5.394,91	14.621,93	6.648,5	7.604,1	10.139,3
Survival rate of companies born two years earlier (%)	61,6	49,4	53	53,2	54,3
Trade balance* (euros per inhabitant)	-39,7	2.680,9	282,8	684,8	-1.397,1
Gini coefficient of gross declared income per taxpayer (%)	36	34,3	38,9	38,6	41,7
Tourism earnings per capita (€/inhabitant)	113,08	14,12	48,23	73,65	140,38
Registered youth unemployment per 100 people aged 25-34 years (%)	...	...	5,9	5,7	7,2
Registered Unemployment per 100 people aged 15 years or more (%)	...	...	3,7	3,3	4,3

* The indicator is for the year 2020.

Source: Own elaboration based on the Portuguese National Institute of Statistics (Territorial Statistics)

About tourism and cultural activities, the municipality of Aguiar has very good performance on tourist income per capita, 8 times higher than Oliveira. Furthermore, in this indicator, Aguiar exceeds the average of Viseu Dão-Lafões, the Centro Region and Portugal. Its more rural character compared to Oliveira gives it tourist attractions that are more appreciated by the population, which reflects the importance of preserving the rural world, not only for strictly cultural or environmental reasons, but also for economic reasons and to create added values.

Analysing the behaviour of the labour market, included a couple of indicators that provided information about registered unemployment in the 25-34 age group and in the age group over 15. Although there is no data at municipal level, the data for Viseu Dão-Lafões and the Centro Region are

more favourable than the national average, reflecting the fact that this territory has an inclusive labour market for young people starting to enter the labour market, with registered unemployment rates for these groups being very similar to those for the general population.

Finally, in Table 12.4, the degree of socio-economic development is analysed, including three main areas: competitiveness, social cohesion, and environmental quality.

Table 12.4. Sustainable development and environmental indicators, 2020.

	Aguiar da Beira	Oliveira de Frades	Viseu Dão-Lafões	Región Centro	Portugal
Synthetic regional development index (global)	95,19	97,02	100
Synthetic index of regional development (competitiveness)	88,83	93,23	100
Synthetic index of regional development (cohesion)	97,89	100,47	100
Synthetic index of regional development (environmental quality)	99,36	97,57	100
Expenditure on biodiversity protection (€/inhabitant)	17,6	18,2	21	22	21

Source: Own elaboration based on the Portuguese National Institute of Statistics (Territorial Statistics).

Therefore, the Synthetic Regional Development Index is included, whose objective is to study the territorial asymmetries in the development process of the different regions and counties. The average for Portugal is equal to 100, so a lower value tells us that the level of development is lower than the national average. No data at municipal level are available, but it is interesting to compare the three territorial units, where Viseu Dão-Lafões and the Centro Region show lower overall development, because of lower territorial competitiveness, less cohesion (in this indicator the Centro Region is slightly above the national average) and lower environmental quality, although the territory of Viseu Dão-Lafões has an environmental quality very close to the Portuguese average. In Aguiar and Oliveira, less effort is made to protect biodiversity than should be the case based on the regional and national average.

DRAFPO alongside the synthesis of the qualitative and quantitative analysis of the Municipalities creates a better understanding of the socio-cultural, environmental, and economic factors that play a role for touristic development of the Megalithic Towns.

Four key aspects can be pointed out:

- The local communities have generated a relationship with the underground heritage. In Antelas people remember the different

excavations and are interested in knowing everything that happens around the monument; in Carapito, people have a very strong bond with the Dolmen I, even creating stories around it.

- Both cases want to work on the recovery and promotion of intangible underground heritage and involve the local community in the promotion of the territory and the tourist offer, this is especially relevant in Carapito where a documentation process has already been initiated by the local community.
- In addition, both municipalities acknowledge the underground heritage as an asset with the capacity to enhance their territorial development. They also wish to establish synergies with other Municipalities to boost the potential of their projects.
- The pilot twinning model of these two communities can be an inspiring initiative to encourage more twinning between communities.

Understanding the different types of stakeholders in Cultural Heritage valorisation, and more specifically of Underground Built Heritage in the Centro Region of Viseu Dão-Lafões will guide us into finding a common ground for the development of strategies for both Dolmen de Carapito and Dolmen de Antelas, and their corresponding municipalities of Aguiar da Beira and Oliveira de Frades. Besides, and sometimes because of the heritage values these Megalithic assets have, they offer great opportunities but also risks. An estimation, assessment and mitigation strategies shall be planned.

12.5. Twin Megalithic Towns (TMT) – A Model Proposal

After reviewing the results of the DRAFPO analysis, the Twin Team recognized some interesting dualities between the two towns. More specifically, both are located at the extremities of the Viseu Dão-Lafões, they follow different economic development strategies (one more industrial and the other more agricultural), they have different visitors flow as well as different ways to approach preservation and mitigation strategies for the Dolmens. Not only both towns are different, but at many of the above factors they scored opposite. Considering this, the Twin Team came up with the Twin Megalithic Town Model. This Model consist in a trial to acknowledge their differences and bring them into focus for the mutual development.



Figure 12.8: TMT Logo

As shows in the Figure 12.9, through this model Carapito in Aguiar da Beira exchange strengths with Antelas in Oliveira de Frades to the last one grows stronger. On the other hand, Antelas's weaknesses become strengths through the shared experience with Antelas.

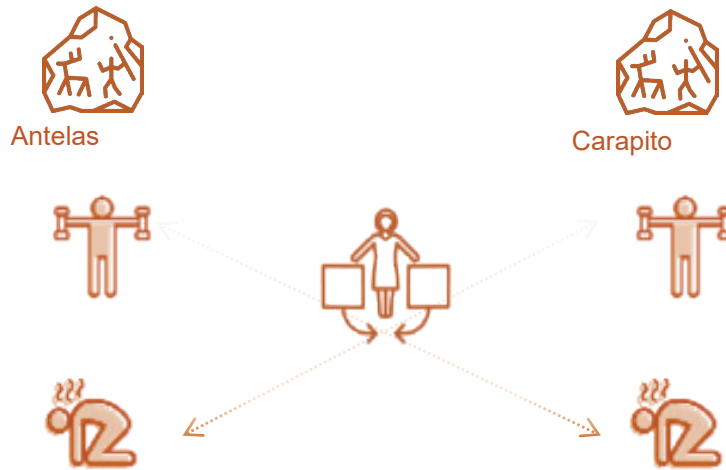


Figure 12.9: The TMT Model

There are three main elements enabling the success of this model: the Towns, the Community, and the facilitator. The eagerness of the Twin Towns to boost mutual development, the engagement of their communities, and fostering communication via the common Facilitator are a must have for the TMT to achieve sustainable economic, social, and environmental development through low-impact tourism. This type of development, though slower, could initiate a positive impact that in the long term could change the fate of both municipalities. Each one is now focused separately on industrial and agriculturally based economies. Involvement and raise of awareness of the local community, creating the firm belief that the conservation and promotion of the heritage values of the sites will impact their economy positively is one of the previewed end results of the model.

An example of two twin planned towns is the Twin Cities [21], the intention is to implement an analogical model, now between small rural communities by putting underground heritage and local community participation at the centre of the twinning process. The previewed steps to establish this process are:

- Understanding the individual potentials and limitations.
- Generation of synergies.

- Identification of the areas in which the towns can initiate their collaboration.
- Formalization of the twinning agreement.
- Defining a schedule for mutual activities and meetings.
- Scheduling of activities collectively.

Twinning could be initiated in different ways; one alternative could be at the municipal level between the municipalities of Oliveira de Frades and Aguiar da Beira focusing on generating synergies between Carapito and Antelas. Another possibility is to start the twinning between the parish of Carapito and the parish of Pinheiro for the work with Antelas and extend it to the rest of the municipality as lines of work are identified.

The importance of the TMT model lays in interchanging these experiences and best practices, the communitarian culture of Carapito meets the well assisted and organized events of Antelas. Through the above-mentioned activities local communities can contribute to make these sites accessible and promote sustainable growth.

In this model, the local community is key factor. Thanks to the strong link of both communities with their underground heritage as well as with all the heritage values in their territory, the involvement of the local communities can be strategic. In particular, the community in Carapito can help to increase the involvement of the Antelas' community by establishing a horizontal working relationship between the two communities.

Communitarian activities are key to the twin town development. For both, Antelas and Carapito, there are several town activities taking place. While in Antelas the activities are mostly controlled by local institutions and NGOs, in Carapito the initiatives are mostly organized by the community itself.

Some suggested activities that might be the starting point for collaboration could be as follow:

Festival and Tours are common point of growth. In Carapito, the community traditionally organises several socio-cultural events. Yearly



Figure 12.10: Festival in Carapito
Source: Archive Freguesia de Carapito



Figure 12.11: Gastronomy - Wine harvesting
Source: Archive Freguesia de Carapito

approach Twin Team are proposing is neither a top down nor a bottom-up approach. It is rather a facilitated process with the intervention of a highly prepared cultural heritage specialist. The facilitator is in direct contact with all the stakeholders from bottom up: community, local NGOs, local institutions, and local governing entities. The facilitator has an active role as moves up and down the slider to promote reasonable and sustainable solutions for the Twin Towns.

12.6. A proposal for territorial governance to support the Town-Twinning Model involving multi-stakeholders

The Twin Megalithic Towns Model's main purposes are the integration of the underground megalithic heritage into local and supra-municipal tourist routes, recovery, and promotion of the intangible heritage by the local community, its inclusion in strengthening the territory and tourist offer, and contribute to minimising rural structural problems in the municipalities. For these to be possible, it is essential to have a clear model of governance that includes and describes the stakeholders involved.

By the governance in this Model, it is understood how people with decision-making powers are responsible for the actions of the stakeholders in the project. Moreover, for the identification of stakeholders, the governance model of the proposal is based on the classification suggested by the Penta-helix model: the local community, academia, non-governmental associations, public administration, and the productive and financial sectors [24] [25]. Which also provides guidelines on the typology of stakeholders that should be involved in a strategic planning process from a territorial perspective. The Penta-helix model shows that the involvement of a more significant number of actors in the territory and the search for synergies between them is essential to achieving long-term sustainable initiatives.

In the context of the Twin Megalithic Towns Model, three levels of governance were identified: the citizen, the institutional and the supra-municipal level. Thus, the main stakeholders involved are:

- *In terms of citizen level:* it refers to civil society associations such as Aqualaris in Carapito and civil society.
- *Institutional level:* Parish of Pinheiro (Antelas), Municipality of Oliveira de Frades; Parish of Carapito, Municipality of Aguiar da Beira.
- *At supra-municipal level:* Intermunicipal Community of Região Viseu Dão Lafões, LAG ADDLAP (Oliveira de Frades) LAG ADD (Aguiar da Beira).

Concerning the type of relationship between the different levels specifically, based on Loughlin [26], from the perspective of contemporary territorial governance, the emphasis is on more significant political as opposed to purely administrative decentralisation, greater asymmetry and multiplicity, a transformation from the 'principal-agent' model of central-local government relations to the 'choice' model, and a vast space for experimentation, more non-hierarchical interrelationships. It also seeks to address the needs and interests of all stakeholders to improve outcomes in all areas, economic, social, and environmental [27] [28] [29]. To this effort, from the analysis carried out, it emerged that both territories need to:

- Identify individuals who have high levels of influence on community decisions.
- Get to know the stakeholders.
- Seek advice and counselling.
- Understand their motivations and interests.
- Define how collaborative work can be established.

These elements are considered by Argiolas et al. [30] as essential to achieve economic development. In this sense, public bodies are increasingly aware that a coordinated approach by all key stakeholders can also lead to greater efficiency. For this reason, Twin Team emphasises collaboration between the public, private and civil society sectors. In addition to aptitudes, competencies, resources and capacities, the combination of these factors potentially creates added value for the local territory. The public-private partnership crosses the traditional roles played by a public actor and a private actor to achieve social and economic development [30]. In the Town-Twinning Model, public-private partnership is essential to coordinate and regulate the implementation of proposed projects.

The DRAFPO results show that four actors can influence local governance: public authorities, development agencies, NGOs, and civil society. The involvement of the private sector in local policy making is minimal, especially regarding the Underground Built Heritage. However, the rest of the stakeholders could increase their importance by adopting a holistic strategy of interest representation that combines the company's interests and the territory. Consequently, communities share the same objectives of achieving local and national accreditation to attract tourists and enhance their reputation. Thus, Public-Private Partnership should be applied to achieve this goal.

In an optimal context, all actors participate in a horizontal and non-hierarchical relationship, exchanging information, making decisions, and executing different tasks of the planning process. In practice, however,

external forces intervene that affect how these elements combine, such as the political, economic or social context. In this regard, the facilitators of the process propose the levels of involvement of each of these stakeholders, while the experience of the previous participatory processes carried out in both Aguiar da Beira, and Oliveira de Frades helps to determine the tasks that need to be carried out for the joint work. In this way, a balance is sought in the protagonist of the agents, advancing towards harmonious spaces of participation.

Trust is a crucial component of a collaborative governance approach. Trust in local administration considers the degree of agreement among political and social interests about the selected model as well as the confidence of private stakeholders in public administration and its norms [31]. Due to the local government's strong commitment to cultural preservation in both areas, they can streamline interests and generate collaborative workspaces that help to build up trust between them. Trust is essential in this type of collaborative network to reach a consensus and to achieve common objectives. For this reason, open consultation spaces must be created where all agents can be represented, seeking harmonisation of interests, and avoiding imposing points of view, moving away from inflexibility and allowing the possibility of negotiation [32] so that the strategic organisation might become "a mediator, negotiator and animator" [33]. With the help of strategic approaches like co-creation and citizen science [32], participation would be the key to our project model's evolution.

The literature review, discussed by Fernández-Tabales et al. [31], reveals that there is currently significant uncertainty surrounding traditional models of planning and management of tourism destinations, some because of globalisation, particularly in rural environments. The seriousness of the problems faced by both rural communities (unemployment, rural exodus, forest fires, etc.) demands for efforts to create synergies towards planning instruments that alleviate these difficulties, as well as increase the participation of stakeholders in the planning processes.

To this end, in addition to the coordination of stakeholders with rigid structures of participation, the availability of flexible working structures has encouraged the involvement of stakeholders with a variety of profiles [34], leading to the development of a participatory process that is relevant and tailored to the local characteristics.

12.7. Conclusions

The work developed by Twin Team contributes to the transfer of knowledge to the different target stakeholders in Oliveira de Frades and Aguiar da Beira: planners, decision-makers, promoters, and facilitators of local development. The Twin Megalithic Towns proposal is aligned with the main interest of local actors: the recovery and promotion of the underground heritage, both tangible and intangible, as a contribution to minimise the socio-demographic, economic and environmental problems faced by the municipalities. In addition, both towns recognise the underground heritage as an important element with the capacity to promote the development of their territory. They also aim to establish partnerships with other territories in order to strengthen own projects. A pilot initiative is proposed in which both communities generate a cooperative partnership for the exchange of good practices for mutual development. This pilot twinning model can be an inspiring initiative to encourage more twinning between communities. This proposal was valued by all the participants - Trainers and Trainees - of the Second Training School of the COST Action CA18110 – Underground Built Heritage as Catalyser for Community Valorisation, having the best scores in analysis, methodological design, sustainability of the proposal, visual design, and oral presentation, obtaining the award for the best overall designed proposal.

REFERENCES

- [1] Sobral, P. (2020). Megalithic Rute. En Tavares, Alice, “*Built heritage as catalyser of community valorisation. The Portuguese experiences*”. Webinar. University of Aveiro, Aveiro Portugal.
- [2] Solano Báez, M. C. (2023). Dolmen de Antelas and Dolmen do Carapito I Reflections on megalithic heritage from the perspective of local communities, in Martinez-Rodriguez S., Pace G. (eds), *Practices for the Underground Built Heritage Valorisation*, CNR Edizioni, Rome.
- [3] de Albuquerque e Castro, L., da Veiga Ferreira, O., (1959). Protecção e conservação do dólmen pintado de Antelas. *I Congresso Nacional de Arqueologia*. Instituto de Alta Cultura, Lisboa. pp. 243-249.
- [4] Decreto n.º 29/90, DR, I Série, n.º 163, de 17-07-1990 (classificou a "Anta pintada de Antela", na freguesia de Antela). Available online <http://www.dre.pt/pdf1s/1990/07/16300/29722974.pdf> (Accessed on 22 November 2020).
- [5] Sanches, Maria. (2009). “Arte dos dólmenes do noroeste da Península Ibérica: uma revisão analítica”, *Portvgalia*, Nova Série, Vol. XXIX-XXX, 2008-2009, pp. 5-42.

- [6] DGPC - Direção Geral do Património Cultural. (2020). Anta pintada de Antelas. Available online <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/> (Accessed on 22 November 2020).
- [7] Decreto no. 735/74, Diário do Governo, Serie I, no. 297, 21 dezembro 1974.
- [8] Town Council Aguiar da Beira, (2020). *Município Aguiar da Beira*. Accessed 15 November 2020 from: <https://www.cm-aguiardabeira.pt/freguesias/carapito>
- [9] SIPA- Sistema de Informação para o Património Arquitetónico. (2021b). *Dólmen de Carapito I / Casa da Moura, IPA.00001369*. Portugal, Guarda, Aguiar da Beira, Carapito. Available online http://www.monumentos.gov.pt/Site/APP_PagesUser/SIPA.aspx?id=1369 (Accessed on 2 October 2021).
- [10] Leisner, V.; Ribeiro, L. (1969). *Die Dolmen von Carapito*, Madrid.
- [11] Solano Báez M. C. (2019). *El proceso de configuración de un destino turístico rural con enfoque territorial*. Doctoral thesis. University of Murcia. Murcia, Spain.
- [12] Solano, M^a. C., Riquelme, P. J., y García, C. (2020). Rural disruption: A first step towards building tourist destinations with territorial approach. An integrated vision from the Grounded Theory. *TERRA. Revista de Desarrollo Local*, (6), pp. 115-147. DOI 10.7203/terra.6.16601
- [13] Landel, Pierre-Antoine, Pecqueur Bernard, (2009). La culture comme ressource territoriale spécifique. Centre d'Etudes et de Recherche sur le Droit, l'Histoire et l'Administration Publique. *Administration et politique: une pensée critique sans frontières. Dialogue avec et autour de Jean-Jacques Gleizal*, Presses Universitaires de Grenoble, pp. 181-192.
- [14] Linck, T. (2008). Las Ambigüedades de la Modernización: la Economía Patrimonial, entre Representatividad y Consenso. *PAMPA*, (4), pp. 37-60. <https://doi.org/10.14409/pampa.v1i4.3151>
- [15] Pecqueur, B. (1996). "Processus cognitifs et construction des territoires économiques". In: Pecqueur, Bernard (Ed.), "*Dynamiques territoriales et mutations économiques*" L'Harmattan, pp. 209-226.
- [16] Pecqueur, B. (2005). "Le développement territorial: une nouvelle approche des processus de développement pour les économies du Sud", In: Antheaume Benoît y Giraut Frédéric (Eds.): "*Le territoire est mort, Vive les territoires*", Paris, IRD Editions.
- [17] Leloup, F., Moyart, L., & Pecqueur, B. (2005). La gouvernance territoriale comme nouveau mode de coordination territoriale? *Géographie Économie Société*, 7(4), 321-331. <https://doi.org/10.3166/ges.7.321-331>
- [18] Alberich T., et al. (2009), *Metodología Participativas*. Manual, Madrid: CIMAS- Observatorio Internacional de Ciudadanía y Medio Ambiente Sostenible.
- [19] Moral-Arce, I, Patxot, C., Souto, G (2008). "La sostenibilidad del Sistema de pensiones. Una aproximación a partir de la MCVL", *Revista de Economía Aplicada*, 1, pp. 29-66.
- [20] de Maya Matallana, M. (2016). Factores diferenciales del desarrollo de la comarca del Noroeste murciano. Murcia, Universidad de Murcia. <http://www.tdx.cat/handle/10803/396225>

- [21] Goetz, E.G., Kayser, T. (1993). "Competition and Cooperation in Economic Development: A Study of the Twin Cities Metropolitan Area". *Economic Development Quarterly*, 1993; 7(1) :63-78. <https://doi.org/10.1177/089124249300700106>
- [22] Figueiredo R., Paupério E., & Romão, X. (2021). "Understanding the Impacts of the October 2017 Portugal Wildfires on Cultural Heritage". *Heritage*, 4(4):2580-2598. <https://doi.org/10.3390/heritage4040146>
- [23] UNWTO: Report on Tourism and Culture Synergies. UNWTO, Madrid (2018)
- [24] Masek T. A., Veckie E. and Veckie V. W. (2015). "Applications of Penta Helix model in economic development". *Economy of eastern Croatia yesterday, today, tomorrow*, 4, pp. 385-393.
- [25] Putra, T. (2019). "A review on penta helix actors in village tourism development and management", *Journal of Business on Hospitality and Tourism*, 05 (01), pp. 63-75.
- [26] Loughlin, J. (2007). "Reconfiguring the state: Trends in territorial governance in European States". *Regional and Federal Studies*, 17(4), 385–403. <https://doi.org/10.1080/13597560701691912>
- [27] Mabrouk, M., Sperandio, S., & Girard, P. (2014). Stakeholder Mapping in a Collaborative Project for a Sustainable Development. 518–525. <https://doi.org/10.1007/978-3-662-44736>
- [28] Pace, G. (2021). Heritage Conservation and Community Empowerment: Tools for Living Labs, in Pace G. Salvarani R. (eds), *Underground Built Heritage Valorisation. A Handbook*. Naples, CNR Edizioni. Rome.
- [29] Zingraff-Hamed, A., Hüesker, F., Lupp, G., Begg, C., Huang, J., Oen, A.M., Vojinovic, Z., Kuhlicke, C., & Pauleit, S. (2020). Stakeholder Mapping to Co-Creat Nature-Based Solutions: Who Is on Board? *Sustainability*, 12, 8625.
- [30] Argiolas, G., Cabras, S., Dessi, C., & Floris, M. (2009). "Building innovative models of territorial governance". *Journal of Place Management and Development*, 2(3), 178–210. <https://doi.org/10.1108/17538330911013898>
- [31] Fernández-Tabales, A., Foronda-Robles, C., Galindo-Pérez-de-Azpillaga, L., & García-López, A. (2017). "Developing a system of territorial governance indicators for tourism destinations". *Journal of Sustainable Tourism*, 25(9), 1275–1305. <https://doi.org/10.1080/09669582.2016.1260136>
- [32] Smaniotto Costa C. (2021). Informal Planning Approaches in Activating Underground Built Heritage, in Pace G. Salvarani R. (eds), *Underground Built Heritage Valorisation*. Naples, CNR Edizioni.
- [33] Paquet, G. (1999). *Governance Through Social Learning*. University of Ottawa Press. <https://ruor.uottawa.ca/handle/10393/12952>
- [34] Goličnik Marušić, B., Šuklje Erjavec, I. (2020). "Understanding co-creation within the open space development process", In: Smaniotto Costa C., Mačiulienė, M., Menezes M., Goličnik Marušić B. (eds.): "*Co-creation of public open places. Practice - reflection – learning*". Lisboa. Edições Universitárias Lusófonas.
- [35] INE-Instituto Nacional de Estatística-Statistics Portugal. (2021). "Caraterização sócio – económica dos municípios". Available online:

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_doc_municipios_cse.
(Accessed on 12 August 2021).

NOTES

¹ Working group four was composed by:

Gresa Calliku (AL) (GC) is an architect that graduated from Hochschule Wismar, Germany. She now works for BFL Architects in Berlin. Previously, she was a guest lecturer at TU Darmstadt for a course on modular and mobile housing units. Her expertise and interests lie in topics such as resilience in flood-prone areas (fluvial, pluvial, and coastal flooding), the conception of mitigation strategies, and the use of geographic information systems for mapping, surveying, and designing sensitive built environments.

Zuinder Horácio Cumandala Manico (PT) (ZHCM) has a bachelor's degree in Business Administration from the University AIEC, Brazil, Master's in Urban and rural planning from the Harbin Institute of Technology, China, and is a PhD student at Universidade Lusófona, Portugal. He is an entrepreneur, polyglot, Computer Programmer, his research focuses on the study of Sustainable governance of waste management in emerging countries, and mapping environmental, economic, and socio-cultural activities to develop social and environmentally sustainable strategies.

Manuel de Maya Matallana (ES) (MMM) is Economist, Master in Local Development and Employment and PhD graduated at the University of Murcia, Spain in Labour Market and Decentralisation. He is a postdoctoral student in the Department of Applied Economics at the Faculty of Labour Sciences, University of Murcia. His research activities focus on the study of territorial socio-economic welfare, regional and urban economics and development theorization from a spatial perspective.

Carlos Smaniotto Costa (PT) (CSC) is a Landscape Architect and Environmental Planner, graduated at the University of Hanover, Germany. He is professor of Urban Ecology and Landscape Design at the Department of Architecture and Urban Planning of Universidade Lusófona/Lisbon. His research activities focus on sustainable urban development, strategies open spaces and nature conservation in urban context, co-creation and participatory processes along urban and landscape design.

María del Carmen Solano Báez (ES) (MCSB) is PhD in Society, Development and Labour Relations graduated at the University of Murcia, Spain. She is a research associate in the Department of Applied Economics at the Faculty of Labour Sciences, University of Murcia. Additionally, she collaborates in the area of Qualitative Data Analysis and Territorial Development of the Observatory of Rural, Local Development and Employment. Her research interests focus on territorial rural development, the emerging dynamics of rural tourist destinations and territorial imbalances in the urban-rural continuum (email tutor: mariacarmen.solano1@um.es).

During the Murcia Training School, formal analysis, investigation, and the TMT Model Proposal were carried out by GC, MMM and ZHCM under the supervision of MCSB as tutor and CSC as expert. Regarding this chapter, writing the original draft was carried out as follows: sections 11.1, 11.2, 11.3 and 11.7 were written by MCSB; section 11.4 MMM; section 11.5. GC; 11.6, ZHCM and MCSB. Final draft revision CSC. The logo and graphic design were done by GC.

² DRAFPO (by its Spanish acronym) is a variant of the SWOT analysis, in which the elements are Weaknesses, Resistances, Threats, Strengths, Potentials and Opportunities.

General References

- "Decreto n.º 29/90, DR, I Série, n.º 163, de 17 junho 1990 (classificou a "*Anta pintada de Antela*", na freguesia de Antela).
- Alberich T., et al. (2009), *Metodología Participativas. Manual*, Madrid: CIMAS-Observatorio Internacional de Ciudadanía y Medio Ambiente Sostenible.
- Almirall E., Lee M., Wareham, J. (2012), *Mapping living labs in the landscape of innovation methodologies*, *Technology innovation management review*, 2(9), pp. 12-18.
- Argiolas, G., Cabras, S., Dessì, C., & Floris, M. (2009). "Building innovative models of territorial governance". *Journal of Place Management and Development*, 2(3), pp. 178-210. <https://doi.org/10.1108/17538330911013898>
- Athanassakis A.N. (2010), "The Marmor Parium. A Reconsideration", in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 187-191.
- Belavilas N. (2021), *The palimpsest of the Nymphs' quarry at Marathi, Paros*, *Parola*, n. 13, edition 2021, pp. 64-72.
- Bellamy C. V., Jukes-Browne A. J. (1905). *The Geology of Cyprus*. William Bredon & Son.
- British Columbia, "Guidelines for Writing Effective Statements of Significance" [online]. <http://www.rdmw.bc.ca/media/Guidelines%20for%20Writing%20Statements%20of%20Significance.pdf>.
- Brody, M. (2014). *Interpretive Centers*. In: Gunstone, R. (eds) *Encyclopedia of Science Education*. Springer, Dordrecht.
- Buonincontri P., Micera R., Murillo-Romero M., Pianese T. (2021), *Where Does Sustainability Stand in Underground Tourism? A Literature Review*, *Sustainability*, 13(22), 12745.
- Carvalho A. F., Pereira, T., Gibaja J. F. (2018), "Primeira abordagem a partir dos conjuntos dos dólmenes dan Lapa da Meruje e de Antelas," in *De Gibraltar aos Pirenéus. Megalitismo, Vida e Morte na Fachada Atlântica Peninsular*, Fundação Lapa do Lobo, Lapa do Lobo, Nelas, pp. 217-232.
- CIMVDL- CIM Viseu Dão Lafões, "CIM Viseu Dão Lafões realizou webinar dedicado ao megalitismo," 24 abril 2021. [Online]. <https://www.cimvdl.pt/cim-viseu-dao-lafoes-realizou-webinar-dedicado-ao-megalitismo/>. [Accessed 2 October 2021].

- Collins, S.G., Durington, M., Favero, P., Harper, K., Kenner, A. and O'Donnell, C., (2017). *Ethnographic apps/apps as ethnography*. *Anthropology Now*, 9(1), pp. 102-118.
- Consejo de Europa. 2000. "Convenio Europeo Del Paisaje." Florencia. http://va.www.mcu.es/patrimonio/docs/Convenio_europeo_paisaje.pdf.
- Cruz D. J. (1995), "Dólmen de Antelas (Pinheiro de Lafões, Oliveira de Frades, Viseu). Um sepulcro-templo do Neolítico Final," *Estudos Pré-Históricos*, no. 3, pp. 263-264.
- Cruz Domingos J. D., Vilaça R. (1990), "Trabalhos de escavação e restauro no Dólmen 1 do Carapito (Aguiar da Beira, Dist. da Guarda) - resultados preliminares," Porto.
- Cyprus Hotel Association. Data available at: <https://www.cyprus-hotellassociation.org/Resources/Files/Stats/2021/arrivals.pdf>
- Cyprus Tourism Strategy. Final Report. Doc. N. 27. (2017). Available at https://issuu.com/presidency-reform-cyprus/docs/doc27_final_report_tourism
- de Albuquerque e Castro L., da Veiga Ferreira O., Viana A. (1957), "O dólmen pintado de Antelas (Oliveira de Frades)," *Comunicações dos Serviços Geológicos de Portugal*, vol. XXXVIII, no. II, pp. 325-348.
- de Albuquerque e Castro L., da Veiga Ferreira O. (1959), "Protecção e conservação do dólmen pintado de Antelas," in *I Congresso Nacional de Arqueologia*. Instituto de Alta Cultura, Lisboa, pp. 243-249.
- de la Torre M. (2013), "Values and Heritage Conservation," vol. 60, no. 2, pp. 155-166, Nov., [Online]. <https://doi.org/10.1179/2159032X13Z.00000000011>.
- de Maya Matallana, M. (2016). Factores diferenciales del desarrollo de la comarca del Noroeste murciano. Murcia, Universidad de Murcia. <http://www.tdx.cat/handle/10803/396225>
- Decreto n.º 29/90, DR, I Série, n.º 163, de 17-07-1990 (classificou a "Anta pintada de Antela", na freguesia de Antela). Online <http://www.dre.pt/pdf1s/1990/07/16300/29722974.pdf> (Accessed on 22 November 2020).
- Decreto no. 735/74, Diário do Governo, Serie I, no. 297, 21 dezembro 1974, Decreto no. 735/74. Artigo 1.
- Delaval Cobham C. (1908). *Excerpta Cypria. Materials for a history of Cyprus*. Cambridge University Press.
- DGPC - Direção Geral do Património Cultural. (2020), "Anta pintada de Antelas," [Online]. <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/>. [Accessed 22 November 2020].
- Diaz-Andreu (2017), "Heritage Values and the Public," vol. 4, no. 1, pp. 2-6, [Online]. <https://doi.org/10.1080/20518196.2016.1228213>.
- Editor Notícias de Viseu, "Município De Aguiar Da Beira Requalifica Dólmen I Do Carapito," 08 August 2020. [Online]. <https://www.noticias-deviseu.com/municipio-de-aguiar-da-beira-requalifica-dolmen-i-do-carapito/>. [Accessed November 2020].
- English Heritage (2019) "Statements of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12". [Online]

- <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/>.
- English Heritage, “Conservation Principles, Policies and Guidance.” [Online] <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesandguidanceapril08web/>.
- Enlart C. [1889] (1987). *The Gothic Art and the Renaissance in Cyprus*.
- Falk, J. H. (2009), *Identity and the Museum Visitor Experience*, Routledge, New York, <https://doi.org/10.4324/9781315427058>
- Falk J. H., Dierking L.D. (2013), *The Museum Experience Revisited*, Routledge, New York. <https://doi.org/10.4324/9781315417851>
- Falk, J. (2016). *Museum audiences: A visitor-centred perspective*. *Loisir Et Société / Society and Leisure*, 39(3), pp. 357-370. <https://doi.org/10.1080/07053436.2016.1243830>
- Favero, P. (2016). “Analogization: reflections on life-logging cameras, action cams and images’ changing meaning in a digital landscape”. In Cruz, E. & Lehmuskallio, A. (Eds.) *Digital Photography and Everyday Life: Empirical Studies on Material Visual Practices* (pp. 209-227). London/New York: Routledge.
- Fernández-Baca Casares, R., Fernández Cacho, S., Salmerón Escobar, P., Arenillas Torrejón, J.A., Cuevas García, J., Díaz Iglesias, J.M., Durán Salado, I., et al. (2015). *Guía Del Paisaje Histórico Urbano de Sevilla. Volumen I Caracterización*. IAPH. Sevilla. <https://doi.org/10.1080/1367886022000016785>.
- Fernández-Tabales, A., Foronda-Robles, C., Galindo-Pérez-de-Azpillaga, L., & García-López, A. (2017). “Developing a system of territorial governance indicators for tourism destinations”. *Journal of Sustainable Tourism*, 25(9), 1275-1305. <https://doi.org/10.1080/09669582.2016.1260136>
- Figueiredo R., Paupério E., & Romão, X. (2021). “Understanding the Impacts of the October 2017 Portugal Wildfires on Cultural Heritage”. *Heritage*. 4(4):2580-2598. <https://doi.org/10.3390/heritage4040146>
- Finocchi, S. (2018). *Numana (AN). Picus. Studi e ricerche sulle Marche nell'antichità*, 38, pp. 253-282.
- Fredheim L. H., Khalaf M. (2016), “The Significance of Values: Heritage Value Typologies re-examined,” vol. 22, no. 6, pp. 466–481 [Online]. <https://www.tandfonline.com/doi/full/10.1080/13527258.2016.1171247?scroll=top&needAccess=true>.
- Garfinkel, H. (1967), *Studies in Ethnomethodology*, Prentice-Hall, Englewood Cliffs, NJ.
- Girão A. A. (1921), *Antiguidades pré-históricas de Lafões. Contribuição para o estudo da arqueologia portuguesa*, Imprensa da Universidade de Coimbra, Coimbra.
- Goetz, E.G., Kayser, T. (1993). “Competition and Cooperation in Economic Development: A Study of the Twin Cities Metropolitan Area”. *Economic Development Quarterly*. 1993;7(1): pp. 63-78. <https://doi.org/10.1177/089124249300700106>

- Gola E., Ilardi E. (eds) (2019), *Immaginari dal sottosuolo. Le aree minerarie all'epoca del web: il caso Sardegna*. Manifestolibri, Castel San Pietro Romano (RM), p. 12.
- Goldman, K. H., Schaller, D. T., & Adventures, E. W. (2004a). Exploring motivational factors and visitor satisfaction in on-line museum visits. Paper presented in D. Bearman & J. Trant (Eds.), *Museums and the Web*.
- Goličnik Marušić, B., Šuklje Erjavec, I. (2020). "Understanding co-creation within the open space development process", In: Smaniotto Costa C., Mačiulienė, M., Menezes M., Goličnik Marušić B. (eds.): *Co-creation of public open places. Practice - reflection - learning*. Lisboa. Edições Universitárias Lusófonas.
- Hadjisavvas S. (1983). 'New light on the history of the Ayia Napa Region'. *Report of the Department of Antiquities of Cyprus*, pp. 315-318.
- Hadjisavvas S. (1997). *Agia Napa: Excavations at Makronisos and the Archaeology of the Region*. Cyprus Department of Antiquities.
- Herz N. (2010), "The Classical Marble Quarries of Paros: Paros-1, Paros-2, and Paros-3", in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 27-32.
- Ibrahim, Y. (2015). *Instagramming Life: Banal Imaging and the Poetics of the Everyday*. *Journal of Media Practice*, 16, pp. 42-54.
- ICOMOS (2013), *The Burra Charter & Practice Notes*. <https://australia.icomos.org/publications/burra-charter-practice-notes/>
- INE - Instituto Nacional de Estatística - Statistics Portugal. (2021), "Caraterização sócio – económica dos municípios - Aguiar da Beira - Retrato Municipal," [Online]. https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_doc_municipios_cse. [Accessed 12 August 2021].
- Italian Winemakers Association, 2022. Available on: <https://www.assoenologi.it/>
- J. Paul Getty Trust (2002), "Assessing the Values of Cultural Heritage" [Online]. https://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/assessing.pdf.
- Landel P.A., Pecqueur B. (2009). "La culture comme ressource territoriale spécifique". Centre d'Etudes et de Recherche sur le Droit, l'Histoire et l'Administration Publique. *Administration et politique: une pensée critique sans frontières. Dialogue avec et autour de Jean-Jacques Gleizal*, Presses Universitaires de Grenoble, pp. 181-192.
- Lapenta, F. (2011). *Geomedia: on location-based media, the changing status of collective image production and the emerging of social navigation systems*. *Visual Studies*, 26, pp. 14-24.
- Leisner, V., Ribeiro, L. (1969). *Die Dolmen von Carapito*, Madrid.
- Leivadaros R., Tsaimou C. (2010), "New evidence of Ancient Underground Exploitation of Parian Lychnites", in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 83-90.

- Leloup F., Moyart L., Pecqueur B. (2005), "La gouvernance territoriale comme nouveau mode de coordination territoriale?", *Géographie Économie Société*, vol. 7, no. 4, pp. 321-331. <https://doi.org/10.3166/ges.7.321-331>
- Li, Y. C., Liew, A. W. C., & Su, W. P. (2012, June). *The digital museum: Challenges and solution*. In 2012 8th International Conference on Information Science and Digital Content Technology (ICIDT2012) (Vol. 3, pp. 646-649). IEEE.
- Linck, T. (2008). Las Ambigüedades de la Modernización: la Economía Patrimonial, entre Representatividad y Consenso. *PAMPA*, (4), pp. 37-60. <https://doi.org/10.14409/pampa.v1i4.3151>
- Loughlin, J. (2007). "Reconfiguring the state: Trends in territorial governance in European States". *Regional and Federal Studies*, 17(4), 385-403. <https://doi.org/10.1080/13597560701691912>
- Mabrouk, M., Sperandio, S., & Girard, P. (2014). Stakeholder Mapping in a Collaborative Project for a Sustainable Development, pp. 518-525. <https://doi.org/10.1007/978-3-662-44736>
- Mainiero, M. (1990). Problematiche connesse alla presenza di cavità nei centri storici. Convegno di studi. La memoria del sottosuolo. 17/18 luglio 1999.
- Marche in dettaglio, 2022. Available on: <http://marche.indettaglio.it/eng-comuni/an/camerano/camerano.html>
- Marcheggiani E., Galli A., Fioretti I., de Seris M. (2021), *Valorisation of Rural Heritage and Touristic Bias. Potential Benefits to Local Community*, in Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation. A Handbook - Proceedings of the First Underground4value Training School*, CNR Edizioni, Roma, pp. 121-131.
- Margiotta S., Sansò P. (2017), *Abandoned quarries and geotourism: An opportunity for the Salento quarry district (Apulia, Southern Italy)*, *Geoheritage*, 9(4), pp. 463-477.
- Martinos H. (2018), *An action plan to save and promote the ancient quarries of Paros*. The Bulletin n. 17 – summer 2018, Friends of Paros, p. 11.
- Masek T. A., Veckie E. and Veckie V. W. (2015). "Applications of Penta Helix model in economic development". *Economy of eastern Croatia yesterday, today, tomorrow*, 4, pp. 385-393.
- McLuhan, M. (1994), *Understanding the Media-The Extensions of Man*, Cambridge: The MIT Press Print.
- Memorandum of Understanding of the CA18110. Website: <http://underground4value.eu/wp-content/uploads/2019/05/CA18110-e.pdf>
- Miles M.B., Huberman A.M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, Sage Publication.
- Moral-Arce, I, Patxot, C., Souto, G (2008). "La sostenibilidad del Sistema de pensiones. Una aproximación a partir de la MCVL", *Revista de Economía Aplicada*, 1, pp. 29-66.
- Morrone M. (1979). *Ipotesi varie sull'origine ed il significato del toponimo Camerano*, Osimo.
- Morrone M., Recanatini A., Toccaceli F., Donzelli N., Pincini C. (1990). *Terra di provincia. Tra Aspino e Gradina*, Ancona.

- Murillo-Romero, M. (In process) The urban landscape of the wine of El Puerto de Santa María, Spain. The University of Basque Country, Spain.
- Naso A. (2000). *I piceni. Storia e archeologia delle Marche in epoca preromana, presentazione di Giovanni Colonna*, Longanesi, Milano.
- Pace, G. (2020), *COST Action Underground4value: Living Labs for the Underground Built Heritage valorisation*. EGU General Assembly 2020, EGU2020–10408.
- Pace G. (2021), "An Introduction to Underground4value," in Pace G., Salvarani R., *Underground Built Heritage Valorisation. A Handbook*, CNR Edizioni, Rome, pp. 1-18.
- Pace G. (2021), "Heritage Conservation and Community Empowerment. Tools for Living Labs". Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation: A Handbook*. CNR Edizioni, Rome, pp. 197-234.
- Packer, J. and Ballantyne, R. (2002), Motivational Factors and the Visitor Experience: A Comparison of Three Sites. *Curator: The Museum Journal*, 45: pp. 183-198. <https://doi.org/10.1111/j.2151-6952.2002.tb00055.x>
- Palagia O. (ed) (2006), *Greek Sculpture: function, materials, and techniques in the Archaic and classical periods*. New York: Cambridge University Press
- Paquet, G. (1999). *Governance Through Social Learning*. University of Ottawa Press. <https://ruor.uottawa.ca/handle/10393/12952>
- Parga-Dans E, Gonzalez PA, Enriquez RO. (2020), *The social value of heritage: Balancing the promotion-preservation relationship in the Altamira World Heritage Site, Spain*, *Journal of Destination Marketing & Management*, 18.
- Pecqueur, B. (1996). "Processus cognitifs et construction des territoires économiques". Pecqueur, B. (ed.), *"Dynamiques territoriales et mutations économiques"* L'Harmattan, pp. 209-226.
- Pecqueur B. (2005), "Le développement territorial : une nouvelle approche des processus de développement pour les économies du Sud," in *Le territoire est mort. Vive les territoires!* IRD Éditions, Paris, pp. 295-316.
- Perrino, G. (2013) *Marches: off the beaten path*. Claudio Ciabochi editore, Fabriano, Ancona, Italy.
- Pianese T. (2023), "Putting the Underground Built Heritage at the heart of cultural tourism. The case of the ancient quarries of white marble in Paros (Greece)", in Martinez Rodriguez S., Pace G. (eds), *Practices for the Underground Built Heritage Valorisation. Second Handbook*. CNR Edizioni, Rome.
- Pittas G. (2008), *Paros. A journey into space and time*, Lefkes village.
- Putra, T. (2019). "A review on penta helix actors in village tourism development and management", *Journal of Business on Hospitality and Tourism*, 05 (01), pp. 63-75.
- Rahatmawati I., Bahagiarti S., Prastistho B., Setyaningrum T., Zakaria M.F., Priyandhita, N. (2020), *The Intention to Repeat Visit Tourist on the Geotourism Object of Cave Bentar, Tanjungsari, Yogyakarta*, *Journal of Environmental Management & Tourism*, 11(8), pp. 1931-1937.
- Recanatini, A. (1990). *Le grotte di Camerano. Descrizione e ipotesi*. Comune di Camerano. Biblioteca comunale

- Recanatini A. (1997). *Le grotte del Conero. Ricerche di speleologia archeologica nel Parco del Conero*, s.n., Jesi.
- Recanatini A. (1999). *Il paese e la guerra. Camerano e gli avvenimenti della Seconda Guerra Mondiale: appunti, documenti, testimonianze e memorie, 1939-1945*. Biblioteca Comunale, Camerano (AN).
- Recanatini A. (2000). "La città segreta, correlazioni tra sviluppo urbano di superficie e rete ipogea nei centri storici alle falde del Conero. I casi di Camerano e Osimo". In Campagnoli M., Recanatini A. (Eds), *La memoria del sottosuolo*, Atti del Convegno di studi (Camerano, 17-18 luglio 1999), Jesi, pp. 169-188.
- Regional Tourism Strategy & action plans for the free Famagusta area. Full report (2006). Famagusta Chamber of Commerce. http://media.visitcyprus.com/media/b2b_en/Research_Projects/RegionalStrategyFamagusta.pdf
- Richards G. (2018), *Cultural tourism: A review of recent research and trends*, Journal of Hospitality and Tourism Management, 36, pp. 12-21.
- Rindam, M. (2014), *Cave Tourism: The Potential of Asar Cave as a Natural Tourism Asset at Lenggong Valley, Perak*. In 4th International Conference on tourism research (4ICTR), p. 12.
- Rotstein A. (2016). "Literary History in the Parian Marble", in Hellenic Studies, Series 68. Washington, DC: Center for Hellenic Studies. http://nrs.harvard.edu/urn-3:hul.ebook:CHS_RotsteinA.Literary_History_in_the_Parian_Marble.2016
- Rybár P., Štrba L. (2016), *Mining tourism and its position in relation to other forms of tourism*. In Proceedings on the GEOTUR 2016: International Conference on Geotourism, Mining Tourism, Sustainable Development, and Environmental Protection. Florencia: IBIMET-CNR, pp. 2-7.
- Sanches M. (2009), "Arte dos dólmenes do noroeste da Península Ibérica: uma revisão analítica," *Portvgalia*, Nova Série, Vols. XXIX-XXX, no. 2008-2009, pp. 5-42.
- Schilardi D. U. (2010), "Observation on the Quarries of Spilies, Lakkoi and Thapsana on Paros", in Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens, pp. 35-59.
- Schilardi D. U., Katsonopoulou D. (eds), *Paria Lithos: Parian Quarries, Marble and Workshops of Sculpture*, The Paros and Cyclades Institute of Archaeology, Athens.
- SIPA- Sistema de Informação para o Património Arquitectónico. (2021), "*Anta pintada de Antelas*, IPA.00002437. Portugal, Viseu, Oliveira de Frades, Pinheiro," [Online]. http://www.monumentos.gov.pt/Site/APP_PagesUser/SIPA.aspx?id=2437. [Accessed 2 October 2021].
- SIPA- Sistema de Informação para o Património Arquitectónico. (2021), "*Dólmen do Carapito I / Casa da Moura IPA.00001369*" [Online]. http://www.monumentos.gov.pt/Site/APP_PagesUser/SIPA.aspx?id=1369. [Accessed 2 October 2021].

- Smaniotto Costa C. (2021). "Informal Planning Approaches in Activating Underground Built Heritage", in Pace G., Salvarani R. (eds), *Underground Built Heritage Valorisation. A Handbook*. CNR Edizioni, Rome.
- Sobral P. (2020), "Megalithic Route" in Tavares, A. *Built heritage as cataliser of community valorisation. The Portuguese experiences*, Webinar, University of Aveiro, Aveiro.
- Sobrinho Simal, Julián. 2018. *Estudio Temático 05: Los Paisajes Históricos de La Producción En Sevilla*. Edited by cultura y vivienda de la Junta de Andalucía Instituto Andaluz de Patrimonio Histórico, Consejería de educación. *Instituto Andaluz de Patrimonio Histórico*. Sevilla: Instituto Andaluz de Patrimonio Histórico, Consejería de educación, cultura y vivienda de la Junta de Andalucía.
- Solano Báez M. C. (2019). *El proceso de configuración de un destino turístico rural con enfoque territorial*. Doctoral thesis. University of Murcia. Murcia, Spain.
- Solano Báez, M. C. (2023). "Dolmen de Antelas and Dolmen do Carapito I Reflections on megalithic heritage from the perspective of local communities", in Martínez-Rodríguez S., Pace G. (eds), *Practices for the Underground Built Heritage Valorisation*, CNR Edizioni, Rome.
- Solano, M^a. C., Riquelme, P. J., y García, C. (2020). *Rural disruption: A first step towards building tourist destinations with territorial approach. An integrated vision from the Grounded Theory*. *TERRA. Revista de Desarrollo Local*, (6), 115-147. DOI 10.7203/terra.6.16601
- Stam, D.C. (1993). The informed muse: The implications of 'the new museology' for museum practice. *Museum Management and Curatorship*, 12(3), pp. 267-283.
- Tacchi, J., Kitner, K.R. and Crawford, K. (2012), *Meaningful Mobility*, *Feminist Media Studies*, 12:4, pp. 528-537.
- Town Council Aguiar da Beira ". (2020), *Carapito* [Online]. <https://www.cm-aguiardabeira.pt/freguesias/carapito>. [Accessed 15 November 2020].
- Town Council Aguiar da Beira (2020), «Requalificação do Dólmen I do Carapito - Reconstituir a Mamoa,» 04 September 2020. [Online]. <https://www.cm-aguiardabeira.pt/noticias/532-requalificacao-do-dolmen-i-do-carapito-reconstituir-a-mamoa>. [Accessed 02 October 2021].
- Town Council Oliveira de Frades. (2020), "História do Património". [Online]. <https://www.cm-ofrades.com/link/sub/220/historia-do-patrimonio>. [Accessed 10 November 2020].
- Tratner, S.W. and Sanjek, R. (2015). "Preface". In Sankjek, R. and Tratner, S.W (eds.) *eFieldnotes: The Making of Anthropology in the Digital World* (pp. ix-x). Philadelphia: University of Pennsylvania Press.
- Underground4value (2021). "Dólmen de Antelas (Portugal)". [Online]. <https://underground4value.eu/dolmen-de-antelas-portugal/>. [Accessed 2020 November 2020].

- UNESCO (2019). *The UNESCO Recommendation on the Historic Urban Landscape Report*. Paris, UNESCO.
<https://doi.org/10.1515/9783110308389.77>.
- UNWTO (2018), *Report on Tourism and Culture Synergies*. UNWTO, Madrid
- Verdicchio (2022). Available on: <http://www.verdicchio.it/es/curiosidad.html>
- Vergo, P. (1989). *The new museology*. Reaktion Books. <https://economia-creativa.wordpress.com/innovative-audience-development/>
<https://www.grin.com/document/445226>
- Weigand R. et al. (2014). *On the optical transmission properties of Pentelic and Paros marble*, in: Optical Society of America. OCIS codes: (330.7325) Visual Optics, Metrology; (160.4760) Materials: Optical Properties.
<http://dx.doi.org/10.1364/AO.99.099999>
- Yin R.K. (2003). *Case Study Research: Design and Methods*, Newbury Park, CA, Sage Publications.
- Young R. C. (2010). *The Parian Marble and Other Surprises from Chronologist V. Coucke*, Andrews University Seminary Studies, Vol. 48, No. 2, pp. 225-249.
- Zingraff-Hamed, A., Hüesker, F., Lupp, G., Begg, C., Huang, J., Oen, A.M., Vojinovic, Z., Kuhlicke, C., & Pauleit, S. (2020). *Stakeholder Mapping to Co-Create Nature-Based Solutions: Who Is on Board?* Sustainability, 12, 8625.



CA18110 - Underground Built Heritage as catalyser for Community Valorisation

The Action aims at guaranteeing continuity of use and significance to the underground historic fabric, revitalisation of the public realm and skills development for townspeople. It disseminates knowledge on underground culture and assist local communities' decision-making with adequate cultural, scientific, and technical knowledge of the underground built environment from many different aspects (i.e., archaeology, geotechnics, history, urban planning, cultural anthropology, economics, architecture, cultural tourism). To that scope, it establishes and implements an expert network, aiming at promoting balanced and sustainable approaches for the conservation of the underground heritage and, at the same time, realising the potential of underground space in urban and rural areas for regeneration policies. The experts are organised in five working groups (Knowledge Base Development; Conservation & Monitoring; Reuse and Valorisation Strategies, Planning Approaches, Dissemination and Exploitation Strategies). Each expert shares best-practices, by reporting on governance mechanisms, planning framework, stakeholders' involvement management, financing mechanisms, technical needs, and their direct impacts on the underground built environment preservation, environment, society, and economy, as well as potential negative externalities (i.e., 'gentrification', hard-branding, mass tourism, recreational villages, underground degradation...). Collected information are the basis for developing new research and training, open and accessible to all parties interested in the underground regeneration, and it will provide knowledge on main technical and organisational barriers to the underground regeneration and correlated solutions.



UNDERGROUND4VALUE

HERITAGE AND COMMUNITY IDENTITY, 3

Practices for the Underground Built Heritage Valorisation: Second Handbook

This book collects all original materials produced during the Second Underground4value Training School, held in September 2021 at the University of Murcia (Murcia, ES). In these pages, the reader can experience how a real committed group of young and talented trainees, organised in research groups, faced such a challenge of penetrating theoretical and methodological contents and then operating them to produce their case-study storytelling. This second handbook, structured in three parts, tries to catch all this, not replying the already published lectures, but giving space to the case-studies' description and to the research groups' work. In these pages, the research teams, composed by tutors and trainees, emerge as the real protagonists, by providing a fertile ground to create alternative options for the selected case-studies - the Old White Marble Quarries of Paros (GR), the Ayia Napa Monastery (CY), the Dolmens of Antelas and Carapito (PT), and the Underground City of Camerano (IT). Through their eyes, free from any predefined design and not tied to the local communities' expectations, the reader can penetrate the logic path, in some way connected to the Strategic Transition Practice (STP) approach, which created the pre-conditions for the options' definition. Following the First Handbook orientation, this new volume aims to make available to the scientific community and the general public an original product based on scientific comparison, real studies, community experiences, and creativity. Furthermore, in line with the COST Action philosophy, the final goal of this Handbook is to promote Underground Built Heritage as a valuable resource to celebrate and preserve, realising its full potential to support local communities' development.



Susana Martínez-Rodríguez. *Profesora Titular en Historia e Instituciones Económicas de la Universidad de Murcia. Doctora en Historia e Instituciones Económicas. Áreas de especialización: análisis de las sociedades mercantiles, historia empresarial desde la perspectiva de género. Vice-Chair de la Acción COST CA18110.*



Giuseppe Pace *is the COST Action CA18110 Action Chair, researcher at the Institute of Studies on the Mediterranean of the National Research Council of Italy. His main research fields are urban and regional planning, innovation processes, sustainability transitions, and community led local development.*

 **edizioni**
Consiglio Nazionale delle Ricerche



Euro 18,00