



Article Co-Creation of Narratives for "Minor" Sites of Cultural Heritage in Euro-Mediterranean Peri-Urban Areas: Conditions of a Small Temple on the East Coast of Attica, Greece

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Abstract: The protection and enhancement of places of cultural heritage in their contemporary context stand as major challenges in Euro-Mediterranean peri-urban areas, where heritage is vast and urbanization pressure is extremely high. This article refers to those historical and archaeological sites that are considered "minor" as they lack "exceptional character", or they appear in the shadow of major monuments and, thus, fall marginally within the scope of mainstream cultural policy priorities to protect and enhance significant monuments and heritage sites. This study presents the results of exploratory qualitative research that addresses questions about the in situ actual future and potential role of "minor" sites in cultural heritage awareness-raising and management. In a sustainable perspective, this article discusses the value of heritage fragments and public involvement in their enhancement within their territory with the use of digital resources and ICT. This study focuses on the alienated Small Temple on the beach of Loutsa within the wider archaeological area of Vravrona on the east coast of the metropolitan area of Attica/Athens. It concludes that co-creation of shared narratives can create a dynamic interface and constructive involvement of stakeholders and local communities provided that smart applications are combined and adapted to the specificities and conditions of the wider context.

Keywords: minor cultural heritage; co-creation of heritage narratives; smart heritage preservation and enhancement; archaeological area of Vravrona; peri-urban Attica

1. Introduction

This article focuses on the protection, preservation, and enhancement of "minor" sites of cultural heritage that have recently attracted attention through the new Information and Communication Technologies (ICT) potential in relevant applications. "Minor" heritage sites are considered those without "exceptional character", widespread in the Euro-Mediterranean landscape, which fall only marginally within the general official protection and enhancement measures. They are often inaccessible to the public, particularly exposed to the risk of degradation and destruction—especially in peri-urban contexts—and are the most exposed to anthropogenic pressures and radical transformations. Furthermore, minor heritage sites fall in a condition of complete isolation from their contemporary physical and social environment. There is a profound gap between the public perception and the actual value of heritage sites. Conventional cultural and heritage protection policies do not suffice to bridge this gap; this very widespread condition is particularly exacerbated for minor sites that pose complex challenges, and there is a need to identify adequate responses to re-establish a connection between people and the elements of tangible and intangible heritage, regardless of their exceptional nature. In recent practices deriving from projects of innovative digital technologies and ICT, there has been important progress in



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Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). the potential of smart heritage management, which could bring forward the involvement of local stakeholders and communities. These are unofficial, yet they set a challenge to foster the co-creation of new narratives, which could be applied in relation to minor sites in a long-term interface between top-down and bottom-up actions.

In sustainable perspective, the Landscape and Cultural Heritage Convention of the Council of Europe [1,2] has given significant impetus towards a democratic revision of landscape and cultural policies by placing people at the center of the planning and cultural processes, promoting participatory practices, and aiming at the involvement of communities [3]; they encourage new forms of interaction between society, cultural heritage, places, and landscape values. The Faro Convention refers to "heritage communities", meaning groups of individuals who do not necessarily belong to a specific geographical area, but who share the same interests and compete together for their own ends by overcoming geographical barriers. The European Landscape Convention has expressed the need for local communities to take responsibility for the care and management of the resources of their own territory, therefore including both tangible and intangible heritage elements.

Wide public involvement stands as a prerequisite of any endeavor for a common sustainable future. However, education in (inter)cultural and environmental sustainability, as well as public involvement and participation, are furthered by core values and progress in multiple intersecting contemporary paradigms (science and technology, political governance, eco-ethics, solidarity economy, activism and in-activism, aesthetics, and other fields), and are inevitably uncertain, controversial, and complex [4].

Thus, this article argues that numerous opportunities are open for the recognition, understanding, and dissemination of heritage data, but also for initiatives for the enhancement and management of heritage sites, given that they combine data sources and dynamic involvement of local communities and stakeholders, museums, citizens, and users. Co-creation of shared narratives and reinforcement of collective memory stand as the only barriers against the gradual degradation, devaluation, and eventual eradication of minor heritage sites. This study presents the conditions of the case of the Small Temple of Loutsa on the east coast of Attica, and its contemporary context, as an example of a minor cultural heritage site that would benefit from increased attention from both institutions and communities.

2. Materials and Methods

This study focuses on the Small Temple on the beach of Loutsa within the wider archaeological area of Vravrona on the east coast of Attica, as a typical example of a minor heritage site at risk of eradication by sprawling metropolitan areas. Thus, the case of the Small Temple serves as a case study to focus on minor sites of the vast cultural heritage in the Euro-Mediterranean area, and the potential for their recognition, protection, and enhancement in their contemporary urban context by means of digital technologies and ICT, co-creation, and crowdsourcing.

The research approach deals with the uncertainty and complexity of the field of interest [4], and rests on framing smart heritage management as a multidisciplinary field of practice requiring updated knowledge of humanities and the social, political, and environmental sciences, as well as ICT advances.

In this framework, our research followed an exploratory qualitative methodology in which the case analysis of the conditions of the Small Temple set forward the analytical research framework; it required and fulfilled the following:

- An overview of the literature on relevant international cultural heritage policies and recent approaches to the protection and enhancement of heritage elements;
- An investigation of projects, initiatives, and ongoing practices in smart heritage management in terms of their effectiveness in recognition and enhancement of minor cultural heritage sites, awareness-raising, co-creation of cultural heritage content, and reinforcement of collective memory;

- Multilevel case analysis of the Small Temple based on a literature study of its historical, archaeological, and protection status, and extensive empirical research in the wider area and context (landscape documentation and context interpretation, stakeholder analysis);
- Web investigation of the online materials currently available in order to evaluate the Small Temple's visibility, recognition, and protection in official spatial plans, as well as the use of digital technologies for the dissemination of its value. In particular, the study analyzed the sites of the main relevant official heritage agencies/institutions (ministries, archaeological ephorates, museums, and municipalities, while no significant bottom-up initiative has been identified).

In this article, research results are presented in short, and conclusions relate to the role of smart heritage management in sustainability education and the co-creation of local narratives by means of public involvement and participation.

3. Literature Review

3.1. "Minor" Cultural Heritage Sites

"Minor" cultural heritage sites are those without "exceptional character", which fall only marginally within the overall protection measures and enhancement of the vast Euro-Mediterranean cultural heritage. They are often neither accessible to the public nor fully documented, due in part to insufficient funds; therefore, they are often neglected, kept in complete isolation from their contemporary environs, and ignored by the wider communities in which they are located. Thus, they stand at risk of decay and destruction. Attention to "minor" sites or monuments of cultural heritage, and to their protection and enhancement, has been promoted by numerous expert international agreements: in the definition of "historical monument," the Venice Charter (1964) included its urban or rural context [5,6], which can express significant developments of specific civilizations or even historical events. This concept is expressed in Article 1 of the Venice Charter, where it is specified that its application is "not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time" [6] (Article 1, p. 1). In the same way, the Amsterdam Declaration (1975) of the Committee of Monuments and Sites of the Council of Europe affirmed that the European architectural heritage "includes not only individual buildings of exceptional quality and their surroundings but also all areas of towns or villages of historic or cultural interest" [7] (Consideration B, p. 5), which constitute the common values for European people; for this reason, according to the Amsterdam Declaration, they have "a joint responsibility to protect them against the growing danger with which they are threatened—neglect and decay, deliberate demolition, incongruous new construction and excessive traffic" [7] (Consideration C, p. 5). The Granada Convention (1985) promoted the adoption of integrated conservation policies in order to "facilitate whenever possible in the town and country planning process the conservation and use of certain buildings whose intrinsic importance would not warrant protection within the meaning of Article 3, paragraph 1, of this Convention but which are of interest from the point of view of their setting in the urban or rural environment and of the quality of life" [8] (Article 10, paragraph 4). Beyond the specific aspects of the restoration of monuments and sites, this document is focused on exploring recent approaches to cultural heritage that can help to illuminate sites considered minor, and to foster new measures for their protection and management with a broad contribution from society. These approaches have been significantly facilitated by new digital technologies and ICT.

3.2. Cultural Policies

In many parts of the globe, as observed by Gamboa [9], there is a profound break that places the public perception of heritage sites and their role on the one hand, and their conservation policies on the other. The wide recognition of the former by the communities is indispensable for their survival, so the need emerges for the formation of a sense of place in order to eliminate the dissociation between safeguarding the archaeological heritage and the expectations of the population. The conservation of cultural heritage elements and sites surrounded by modern communities and affected by urban growth can be achieved through participatory strategies that include "the community members' active involvement in the planning and execution of the program. This model expands the benefits but also the responsibilities of the invited groups and individuals" [9] (p. 76); at the same time, to ensure a balance between the social use of peri-urban archaeological sites and the maintenance of authenticity, the ICOMOS parameters aimed at preserving the aesthetic, historical, and social values of the sites remain an essential reference [9]. In the protection and conservation of cultural heritage, the role of communities can assume crucial importance, as evidenced by the Faro Convention [2], according to which the conservation of cultural heritage is not an end in itself, but is aimed at promoting the wellbeing of people and the widest expectations; in this way, the Faro Convention has picked up on the need for individuals to find something of themselves in heritage, with the right of all to have a role in cultural life [10]. In the context of integrating heritage values into the social dimension and democratic participation, new ways of creating heritage are affirmed, including those that emphasize recognition of the local and ordinary dimensions. According to Fairclough (2009), strong solidarity links the concept of this new heritage to that of the landscape introduced by the European Landscape Convention, in which the focus is on the context rather than the object itself; one of the central aspects of the Faro Convention was precisely to extract the heritage from its separate box and to make it part of wider debates; "equally, the two conventions are both crucial to the construction of most kinds of culture. Like the Florence Convention, the Faro one democratises; like the Florence convention, the Faro offers new ways of thinking. Neither of them is directive or prescriptive but both point the way forward across many hitherto constraining frontiers into new territory" [11] (pp. 30–31). Overcoming the vision centered on the cultural monument as such, the Faro Convention has placed people and their interaction with the outside world at the center of the cultural process; the latter was conceived through a democratic revision of cultural policies, opening up the concrete experimentation of participatory practices and community involvement [3]. Human development and quality of life through the sustainable use of cultural heritage are among the main objectives of the Faro Convention, also involving the field of archeology, which has added to its aims the perception of a public service for the benefit of the community [12]. These recent approaches to cultural heritage, along with the new related role of museums and sustainable tourism [13–16], are particularly significant for the tangible and intangible elements of minor heritage widespread in the Euro-Mediterranean landscape and in peri-urban contexts—particularly those exposed to anthropogenic pressures and rapid changes that involve the whole territory.

3.3. The Role of Digital Technologies and ICT in Cultural Heritage

Modern digital technologies, along with Information and Communication Technology (ICT) offer great advantages in the study, dissemination, and presentation of cultural heritage; in addition, they provide opportunities in terms of protection, maintenance, and conservation, i.e., for virtual archaeology applications, and for landscape documentation and collaborative planning through the creation of 3D content and accessibility on the Internet, and reinforcement of the collective memory [17–19].

Specifically, "the use of three-dimensional models managed through AR (Augmented Reality) and VR (Virtual Reality) technologies with mobile devices gives several opportunities in the field of study and communication. It also improves on-site exploration of the landscape, enhancing the "minor" archaeological sites, daily subjected to numerous emergency works and facilitating the understanding of heritage sites" [17] (p. 503). The 3D models of the territory and of the architectural heritage—in addition to being effective for documentation, investigation, protection, and management—facilitate the understanding and awareness of the landscape and its elements within local communities [20]; digital resources "can contribute to a better understanding of heritage and landscapes at local but also regional, national and international levels, allowing, through the dissemination of information by the network, to implement and possibly boost the economy of these sites through sustainable tourism strategies, with a marked cultural approach" [21] (p. 1646).

The creation of digital 3D models for the visualization of the landscape from various perspectives has long been used in landscape studies and planning, or in the assessment of environmental impacts, and thanks to advances in technology, it has increased the visual representation beyond the limits of still images, achieving greater realism. Moreover, for the past decade, 3D models have been accessible on the Internet, albeit with limitations due to the considerable size of their contents [18]. Structure from motion (SfM) is a recent photogrammetric approach that allows users to obtain three-dimensional models of an object or scene, starting from a series of its photographs, which are then processed by specific computer programs to create a cloud of 3D points corresponding to the surfaces of the photographed objects. From the point cloud obtained, through further processing it is possible to obtain rectified images, elevation maps, and 3D models [22]. The recent photogrammetry methodologies based on the SfM technique, together with the operational introduction of drones for image acquisition, are very versatile, with advantageous costs and a wide application potential [23]; these methodologies allow the creation of accurate 3D models of monuments, archaeological complexes, and landscapes with different purposes, including the study and analysis of sites, as well as the design of restoration and enhancement interventions [24]. Even in geoscientific research, which has long made use of high-quality digital topographic data generated via the sophisticated LiDAR technique, the SfM approach is proving to be an effective alternative, as it does not present high costs or complex procedural processing. The SfM workflow is based on taking overlapping images of the site from multiple viewpoints without specifying additional camera requirements, and the subsequent use of an algorithm that derives a high-quality 3D digital topography from the overlaid images [25]. The sharing of 3D models on the web is now favored by faster Internet connections, by the use of cheaper drones for shooting fixed aerial images of the territory, and by the latest 3D conversion software for processing still images [18]. The diffusion of digital photography and the growing tendencies of sharing images on the web allow wide visibility of monuments, urban sites, and landscape sites from all over the world; this circumstance favors the creation of detailed 3D models of the sites that can be created through new computer vision techniques and the use of images available on web sharing platforms such as Flickr [26].

The use of technology has the potential to redefine the relationship between the public and museums; the creation of personalized, multisensory experiences and learning opportunities is made possible by the use of the web, by personal mobile devices used to navigate between the museums' contents and spaces, and by emerging technologies such as augmented reality, games, 3D printing, and robotic installations [27]. The creation of 3D models of objects, places, or heritage landscapes with CAD software, or through 3D scanning for more precise results using laser or structured light techniques, subsequently allows, through specific software, the exploration of realistic models from every angle, even at a distance from the museum, thus multiplying the ways of using the heritage [28,29]. According to Marty [30] (p. 97), "online museum visitors are incorporating digital museum resources into their lives on their own initiative, have strong opinions about the role of digital museums overall, and are interested in creating relationships where museums, museum websites, and museum information resources feature prominently in their daily lives". Among the effects of the COVID-19 pandemic was that of the closure of museums in many countries, along with that of non-essential activities and structures; however, initiatives through social media and online cultural materials have allowed museums to disseminate culture and knowledge to a wide audience by consolidating and further developing digital approaches to culture and its access [31]. Finally, digital technologies prove to be very useful in the conception and development of co-creation and crowdsourcing initiatives aimed at the protection, dissemination, and enhancement of minor cultural heritage sites.

3.4. Co-Creation Processes for Cultural Heritage

The use of multiple digital technologies greatly fosters value co-creation for both cultural heritage organizations and the visitor experience; in particular, the implementation of digital technologies such as augmented reality, virtual reality, and 3D printing in the context of cultural heritage can enrich the visitor involvement and understanding and increase the attractiveness of the sites [32]. Co-creation processes constitute significant opportunities for the creation of narratives of "minor" sites capable of conveying their meanings and values in a more understandable way to the public, and of fostering a wider awareness of related issues to their conservation. Co-creation is nurtured at the interface between top-down and bottom-up actions, and through the involvement of stakeholders and local communities, institutional agents, museums, and NGOs, as well as local residents, initiatives, and visitors.

The roots of co-creation date back to the 20th century; however, the concept is still emerging, and presents different points of view from the managerial one most often considered, from which new ideas and opportunities emerge. Strands intertwined together—such as design, management science, literary theory, psychotherapy, or the open-source movement—can give co-creation the force of participation, democratization, and a sense of community beyond the conception of a research technique based on the co-optation of the creativity and skills of individuals [33]. Co-creative methods to involve all stakeholders in the definition and recognition of cultural heritage and participatory practices are among the research themes considered a priority by the EU in the current research on European cultural heritage. In particular, participatory practices are defined within the field of contrasting social and cultural inequalities in the process of the formation and recognition of cultural heritage [34]. The ability of visitors to actively participate in visits to museums or other heritage sites, as well as their lived experiences in context, should be part of the design processes of interactive installations for exhibition sites, and these processes should include the contributions of people in creating and sharing heritage [35].

Co-creation and collaborative storytelling focusing on shared cultural heritage resources and shared cultural understanding show potential for the development of social cohesion and underline the need to free cultural resources from formally closed and often remote institutions [36]. The creation of new narratives for the tangible and intangible heritage elements and the landscapes that host them include "literary routes" capable of rekindling the collective memory and relating places, literary connections, and sensory experiences to one another. As indicated by Scarfuto [37] (p. 3), literary routes "can string together landscapes to offer a robust cultural itinerary, where appreciation of both natural and cultural heritage values are considered". Co-creation processes are fostered by a positive and open relationship between management and local stakeholders, and thereby add value for a more engaging visitor experience, serving as a soundboard for local identity [38].

3.5. Crowdsourcing for Cultural Heritage

Crowdsourcing appeared in the commercial sector less than a decade ago, and is increasingly being explored as a nonprofit means of managing heritage resources in collaboration with the public [39]. Public involvement in cultural heritage can be achieved through crowdsourcing projects via participation in various types of activities contributing to shared and meaningful research goals or interests, with intrinsic rewards for participants and benefits for institutions.

Digital technologies are particularly important for crowdsourcing projects, as they reach large and niche groups, and provide near-instant data collection and feedback [40]. With the recent diffusion of crowdsourcing web platforms, heritage institutions can tackle tasks that were previously difficult to implement due to the limited human resources available, and can now manage large amounts of work thanks to the participation of external volunteers. In this way, a large group of experienced and inexperienced people can share, among others, manual and repetitive tasks. Crowdsourcing platforms allow

the active participation of individuals who turn from passive consumers of heritage into collaborators in specific projects for the benefit of institutions and, crucially, simultaneously acquire a greater awareness of today's heritage and its future conservation needs [41].

4. Case Study Analysis: The Small Temple on the Beach of Loutsa

4.1. The Small Temple and Its Context

The Small Temple of the beach of Loutsa is located in the Municipality of Spata– Artemida, which is part of the 13 municipalities of eastern Attica, together with the Municipality of Rafina–Pikermi in the North and of Markopoulo Mesogaias in the South. Today, the Temple retains only a marginal part of its original structure, and is bordered by a very narrow perimeter fence that isolates it from the contemporary context (Figure 1). It is not the only archaeological fragment of Loutsa—indeed, it is located about 200 m south of the Temple of Artemis Tauropolos (Figures 2 and 3; see also the position of the monuments mentioned in Figure 4), larger in size, and of which only the base remains today. The Temple of Artemis Tauropolos, along with a radius of 200 m from it, has been officially proclaimed an archaeological site of the Prefecture of Attica; however, there are buildings—including private residences and beach bars—in the space between the two ancient structures; near the north side of the Small Temple, there are other barely perceptible ancient elements.

No ancient sites are currently open to the public; the artifacts found in the Small Temple and in the Temple of Artemis Tauropolos can be found in the Archaeological Museum of Vravrona, ~6 km to the south (Figure 4).

The Sanctuary of Vravrona is the only accessible archaeological site in this part of eastern Attica (Figures 4 and 5), inside which there is also the 6th century Christian Basilica dedicated to St. George (Figures 4 and 6). Further west are the remains of an Early Christian Basilica from the first half of the 6th century (Figures 4 and 7), without any route dedicated to visitors, and further inside there is the Tower of Vravrona of the 13th century (Figures 4 and 8)—in good condition, but also without an itinerary for visitors. South of Vravrona there is the Porto Rafti Bay (Figures 4 and 9), the largest natural harbor in eastern Attica, characterized by a millenary human presence of which numerous testimonies remain—not the subject of this study—and which also lacks accessible heritage sites and their integration into the contemporary context. There are also no information signs to document the tangible and intangible values of the local cultural heritage; an example is the Ptolemaic Fort of the Koroni Peninsula Figures 4 and 9), of which a number of fragments remain among the vegetation; however, there are no facilities and no itinerary for visitors, despite its historical relevance and significant local landscape value.

The contemporary aspect of Porto Rafti is rather characterized by its tourist dimensions based on the sea, taverns, and beach bars, while its landscape and values have been subjected to a progressive process of radical transformation characterized by the proliferation of secondary residential units and tourist facilities, with an often-poor supply of urban services. A little more than a kilometer north of the Small Temple of Loutsa, overlooking the sea, is the Chapel of Agios Spiridon (Figure 4, site 11), which dates back to the 19th century, but which has been significantly modified by several modern interventions that have profoundly altered the original appearance of the small structure and the surrounding area. The chapel is located near a small marsh (see Figure 4), whose conditions are not optimal, due to illegal landfills within the area and activities that are incompatible with the protection of natural habitats, such as the intensive use of the beach right in front of the marsh, or the traffic generated during religious functions and weddings in the Chapel of Agios Spiridon. The small natural area appears heavily congested both by anthropogenic activities and by construction, asphalted roads, and arbitrary routes, and would require much more care and management for the effective protection of habitats and wild species.



Figure 1. The Small Temple (its remains are indicated in color) and its immediate surroundings at the beach of Loutsa: (**A**) northeast view; (**B**) east view; (**C**) northwest view; (**D**) southwest view.



Figure 2. The visible base of the Temple of Artemis Tauropolos, from the west view of the archaeological site.



Figure 3. The fence of the archaeological area of the Temple of Artemis Tauropolos on the road where the main access is located—currently not open to the public. The space in front of the site is often used for parking, making visibility of the site difficult.

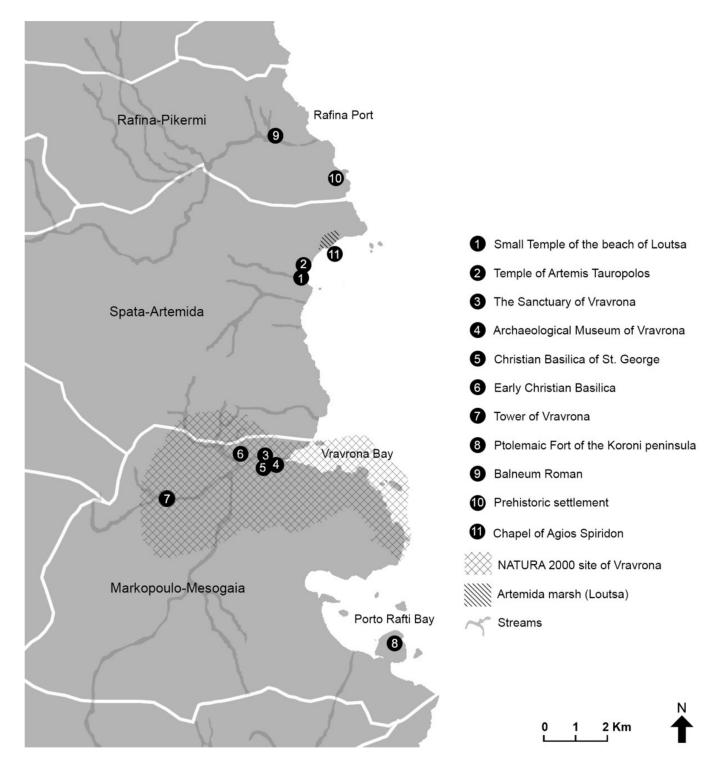


Figure 4. Location map of the Small Temple at Loutsa and other heritage sites (mentioned in the text) in the wider archaeological area of Vravrona at the east coast of Attica.

Less than 7 km north of the small Temple of Loutsa is the modern port of Rafina, where the ancient municipality of Arafinos was located, and where the elements of the heritage have almost completely disappeared, with the exception of the Balneum Roman (Figure 4), which after decades of neglect is currently the object of new archaeological excavations. The presence of water in past is marked by the Megalo Rema River, which has been channeled into its outlet to the sea; the areas located on both sides of the canal—especially those

in flat and gently sloping zones—are very urbanized and exposed to a very high risk of flooding [42]. Approximately 1.5 km south of Rafina are the remains of a prehistoric settlement, near the beach of Marikes (Figure 4); the site is not equipped for visitors, lacking both information signs and visiting routes.

The great potential represented by the remains of past structures in eastern Attica, of which only a few examples have been reported in this study, has been missed so far, and raises open questions in the more general context of the protection and management of the landscape and its cultural and natural resources.



Figure 5. The archaeological site of the Sanctuary of Artemis of Vravrona.



Figure 6. The 6th century Christian Basilica dedicated to St. George.



Figure 7. The Early Christian Basilica from the first half of the 6th century near the Sanctuary of Vravrona.



Figure 8. The Tower of Vravrona of the 13th century.

4.2. Historical Documentation

The Small Temple was part of the ancient community (dimos) of Halai Araphenides, the first archaeological evidence of which is an ancient decree of the Halai inhabitants found in 1926 [43]. Between 1956 and 1957, archaeological excavations brought to light the Temple of Artemis Tauropolos, of which only the base measuring 21×14 m remains. According to Ioannis Papadimitriou—the archaeologist who carried out the investigations—the entire area had been looted for years to obtain materials to be reused in the construction of new buildings [44]. The findings from the first excavations carried out at the Temple of Artemis, and from archaeological investigations conducted in the 1970s in Halai Araphenides, were analytically referenced and published by Konstantinos Kalogeropoulos only in 2013 [45] (Architectural Complex 5, pp. 224–227). As the latter indicates, the Small Temple on the beach was discovered in 1975; it is known as "Mikro Iero", or as the monument "Heroo Ifigenias", similar to the one in Vravrona's Sanctuary of Artemis; it is related to the Temple of Artemis Tauropolos not only in its proximity (~200 m), but also in having the same orientation and arrangement of the structures. The Small Temple has a rectangular plan of approximately 10×6 m, composed of an entrance (prodomos) and a main room (sikos), inside and around which are numerous offerings dating from the geometric to the classical period (5th-4th centuries BC) [45] (ibid). Some fragments present figures very similar to those found in the archaeological complex of the Sanctuary of Artemis in Vravrona [46], which is widely known because of its cultural and ecological landscape significance, linked with the worship of Artemis in antiquity, and has been systematically excavated, although not extensively since the 1960s [47]. The archaeological site of the Sanctuary of Artemis

and the nearby Archaeological Museum of Vravrona are surrounded by a natural and rural landscape that is part of the Natura 2000 European ecological network for the protection of natural habitats, and which gives the area a rare example of balance between cultural and natural heritage in peri-urban areas.



Figure 9. Porto Rafti Bay and its heavily anthropized landscape, on the right the peninsula of Koroni, at the top of which are the remains of the Ptolemaic Fort.

The cult of Artemis Tauropolos in Halai Araphenides is testified by Euripides' text Ifigenia in Tauris. In Halai, Oreste placed the tauric statue of the divinity, built a temple for his custody, and instituted the cult and the rite of Tauropolos. Iphigenia, who became the guardian of the sanctuary of Vravrona, ~6 km south of Halai, remained there until her death. At his grave, women who had gone into agony during childbirth used to present offerings [44]. The sanctuary of Artemis Tauropolos and its festival in ancient times attracted participants from all over Attica, making the demos of Halai Araphenides famous; moreover, the existence of a theatre-or at least of a space used for performances-is documented by ancient inscriptions, if not (yet) by monumental archaeological evidence. In this way, the cult of Artemis that dominated the eastern coastal landscape of Attica was intertwined with that of Dionysus; both deities are represented together in a stele with five suspended theatrical masks, found roughly half a kilometer west of the Temple of Artemis Tauropolos among important ancient remains during excavations whose results have never been published [48]. In Vravrona, although only the central part of the sanctuary has been brought to light—leaving out the entire complex, which is certainly considerably larger [49]—there is an archaeological site open to the public and equipped with a museum. In Loutsa today, very few fragments remain of the ancient Halai Araphenidai; the territory has undergone rapid urbanization, heedless of protecting the remains of the past. The ancient surviving remnants cannot be visited, as they appear isolated from the contemporary context, wherein they are awaiting enhancement and interpretation.

4.3. Contemporary Peri-Urban Context and Spatial Planning

The wider area of interest is located at the eastern coastal area of the fertile Messoghia plain in Attica, which has changed its morphology from rural to semi-urban following the transformation dynamics of the metropolitan area of Athens, which has gradually sprawled and absorbed the former countryside and remote suburbs since the beginning of the 20th century [50]. The metropolitan area, confined until the 1990s within the basin surrounded by the mountains, was subjected thereafter to significant urbanization phenomena, and sprawled towards the surrounding areas, at the same time representing a significant challenge for spatial planning and management. Since the mid-1990s, the Messoghia plain,

separated from Athens by the mountains of Himitos, has been affected by new sprawl and suburbanization dynamics associated with the construction of major infrastructure works such as the new international airport and a varied road and railway network, including the new high-speed road (Attiki Odos) in connection with the central area of Athens [51]. Without any adequate official planning, there has been an increase in the resident population, mainly represented by commuters to Athens, along with changes in land use, with a significant increase in residential land at the expense of rural areas. In addition to the profound transformation of land use and built-up morphology, these transformations have led to an increase in environmental degradation and pollution due to the inadequacy of sewage infrastructure, hydraulic systems, and waste recycling [52]. Sprawl is already consolidated into dense urban tissues along the coasts, where vacation houses, tourism, and related activities generate significant impacts on the landscape.

At the level of the entire region, the changes in land use/cover in Attica between 1991 and 2016 were characterized by a progressive increase in the discontinuous low-density urban fabric at the expense of agricultural land, which decreased by approximately half from 1991, while natural areas decreased to a lesser extent. The loss of agricultural land has affected all areas surrounding Greater Athens [53].

These significant changes have also entailed considerable pressures on the elements of cultural heritage, with concrete risks for their protection and the loss of wider landscape enhancement. Residential and tourism areas have irrationally been integrated in official urban plans (Rymotomika Sxedia B' Katoikias) that lack consistency and have covered almost all intermediate areas along the coast. Archaeological areas clearly documented and demarcated as protected areas by archaeological agencies (ephorates) have been incorporated ad hoc in official spatial plans and Land-Use Control Zones (ZOEs) [http://msa.ypeka.gr/ (accessed on 15 June 2020)]. The Vravrona and Artemis Tauropolos archaeological areas stand as fragile exceptions in the wider sprawl conditions. Land for agricultural production is restricted to small patches in ZOE plans, and is virtually unprotected due to applied building regulations. Furthermore, areas of environmental protection belonging to the European ecological network Natura 2000 (Erasinos stream and Vravrona wetland) remain at risk in the absence of clear environmental and land-use management plans in the past and present (Figures 4 and 10).



Figure 10. The area of the Natura 2000 site in Vravrona, and urban sprawl in its northern part.

4.4. Web Content

The research carried out on web materials concerning the Small Temple, referring to the main sites of the official agencies and institutions, brought forward only a few conventional references to it. The website of the Ministry of Culture and Sports [54] contains some information on the Small Temple of Loutsa (in Greek and English) in the section dedicated to the Temple of Artemis Tauropolos [55], where it is mentioned that "a Small Temple with a deposit containing a great many votives dating from Geometric to Classical times was revealed 200 m south of the Temple of Artemis Tauropolos. Finds from the sanctuary of Artemis Tauropolos and the small sanctuary [referring to the Small Temple] are exhibited in the Archaeological Museum of Brauron" (Vravrona).

The Archaeological Ephorate of Antiquities of Eastern Attica, which has jurisdiction in the wider area of the Small Temple of Loutsa, [56] does not have any specific content regarding the Small Temple on its website, excluding a link to the Temple of Artemis Tauropolos page of the website mentioned above. The ephorate uses its Facebook page (www.facebook.com/efaanat) to advertise activities or events concerning the monuments within its competence. The Archaeological Museum of Vravrona, in addition to presenting the Sanctuary of Artemis, contains the votive offerings of the Small Temple of Loutsa, and presents the numerous excavations that took place in the area of Messoghia. The Museum has no website of its own; instead, there are some pages within the site of the Ministry of Culture [57]. The Exhibitions section [58], where a brief description of the museum's exhibition spaces and installations is made, refers to the Small Temple of the beach in Artemida (Loutsa), and to the Temple of Artemis Tauropolos, whose finds are exhibited in the museum. Although the site is available in two languages (Greek and English), the available texts in English do not cover all sections of the webpage.

Among the various heritage elements in the surroundings of Loutsa, the archaeological site of Vravrona is certainly the one with the greatest visibility on the web. References on the website of the Greek Ministry of Tourism [59] present a brief description of this area, inhabited since the Neolithic, defined as one of the most beautiful in Attica and characterized by both ancient remains and an evocative natural environment crossed by the Erasinos stream.

5. Projects, Digital Media, ICT Apps, and Tools for the Protection and Enhancement of Cultural Heritage

As mentioned above (Section 2), in the framework of the research, a series of projects, initiatives, and practices were identified and selected for their relevance in the effective use of digital technologies and ICT in smart heritage management and co-creation. The selection was made based on the criteria of diagnosis, dissemination, and innovative content creation, relevant to minor heritage sites in the Euro-Mediterranean, as exhibited in the case of the Small Temple. The selection criteria are presented below in more detail.

- Diagnosis: This criterion brought forward projects aimed at recognizing possible risks and degradation for cultural heritage. Such initiatives, in addition to denouncing concrete risks for heritage, focus on unresolved issues that require communities' awareness and involvement;
- Dissemination: With this criterion were identified projects that focus on the presentation, dissemination, and sharing of cultural heritage contents, and could therefore be suitable for awareness-raising and stakeholder involvement;
- Innovative content creation: This criterion is central to smart heritage management. The projects fulfilling it favor processes of co-creation of heritage content and shared narratives with the involvement of experts, communities, and stakeholders; these projects represent a crucial new potential to restore value to minor sites and redefine their role in the contemporary environmental and social context. These projects furthermore contribute to facilitating the understanding, study, and knowledge of tangible and intangible cultural elements.

The results of the investigation of the selected projects are presented in Table 1 in terms of their content and purpose, process, and tools. Similar initiatives, thanks to the large contribution that they can trigger, can be of help for extensive interventions on minor heritage sites scattered in the Euro-Mediterranean landscape.

The Rekrei project is an example of a combination of the co-creation of value and the use of digital technology as a means to recover the heritage that is being lost, damaged, or destroyed [60]. Rekrei is an open-source platform developed by two founders following the destruction of the Cultural Museum of Mosul by Daesh in 2015; it is a place where, starting from the photos of the destroyed heritage, 3D models are built with the help of the voluntary public, who can choose from among the available active projects within the online platform, including uploading new photos, ordering existing ones, or creating 3D representations of the lost heritage with photogrammetric techniques. The quality of the 3D reconstructions is not always excellent; however, they are based on the only data currently available, and represent the only models of lost heritage. Finally, the Rekrei project promotes the dissemination and awareness of the heritage at risk in the world by involving the public and experts [41]. This project has the potential to give visibility to sites considered minor due to the scarcity of physical remains that have not been preserved over time or have been recently damaged; their value and physical appearance can be virtually reconstructed and disseminated using digital media and technologies.

Regarding the dissemination of cultural heritage, the EU-funded PLUGGY (Pluggable Social Platform for Heritage Awareness and Participation) project aims to develop an innovative social platform to foster the documentation and sharing of heritage by individuals, communities, industry, and museums. The project refers to the Faro Convention, for which cultural heritage is a common good and a responsibility for all, hence the need for greater actions of democratic participation [61].

Some of the selected research projects have been funded by the EU Horizon 2020 program. These are particularly committed to increasing public access and involvement towards cultural heritage, in particular: ARCHES, EMOTIVE, ITN-DHC/ViMM and iMARECULTURE. The ARCHES (Accessible Resources for Cultural Heritage Ecosystems) project brought together museum institutions, universities, and technology companies in the exploration through a participatory research methodology of technologies to make museums more inclusive and create innovative ecosystems—for example, in homes or educational centers—capable of increasing public access to cultural heritage [62]. EMOTIVE (Emotive virtual cultural experiences through personalized storytelling) aims to employ emotive storytelling in the context of cultural heritage sites to engage visitors and allow them to interact with their personal interpretation. The project moves away from the more traditional method of didactic site presentation, and its main objective is supporting cultural and creative industries in the creation of digital on-site and virtual cultural heritage experiences. Through the research and design activity of an international consortium comprising universities and research institutes, along with industrial and user-related partners, EMOTIVE provides authors of cultural products with the means to create highquality, interactive digital stories capable of engaging the public, enriching the contents with digital tools such as virtual or augmented reality, 3D reconstruction of physical space, or the creation of physical 3D objects [63]. The project ITN-DHC/ViMM aims at a more holistic approach to the documentation of the contents of cultural heritage, and the implementation of augmented and virtual reality technologies is already widely used, but with their potential not yet fully expressed. The project iMARECULTURE aims to disseminate to the general public the submarine archaeological sites spread throughout Europe that are still little explored, via virtual reality applications for virtual underwater visits, thus making shipwrecks and unreachable heritage sites accessible, albeit in a virtual manner [61]. This last experience has considerable potential in the Euro-Mediterranean context, which is characterized by the widespread presence of tangible sites of historical and archaeological heritage along coastal and marine areas. At the same time, the project is an emblematic case that concerns not only submerged sites, but potentially all sites considered unreachable, and which, thanks to advances in new technologies, can be known and presented to the public.

Project	Content and Purpose	Process and Tools
Rekrei https://rekrei.org/ (accessed on 2 August 2021)	Restore lost or damaged cultural heritage elements and sites through crowdsourced initiatives and communities' involvement.	Combination of data collection, photogrammetric 3D reconstructions, and web technologies.
PLUGGY https://pluggy.eu/ (accessed on 10 August 2021)	Enable and help communities and EU citizens to be consumers, creators, and managers of cultural activities by accessing both crowdsourced and digital archive contents.	Use of a social web platform and pluggable applications: PLUGGY3D, PLUGGY Pins, PlugSonic Suite, and Games Hunter.
ARCHES https://www.archesproject.org/ (accessed on 10 August 2021)	Make museums more inclusive and create innovative ecosystems through participatory research methodology.	Use of open-source software platform, data management, data discovery and visualization, and project/task management.
EMOTIVE https://emotiveproject.eu/ (accessed on 10 August 2021)	Provide the authors of cultural products with means and tools for the creation of high-quality, interactive, and personalized new narratives and digital stories.	Combination of virtual and augmented reality, 3D reconstruction of physical space, physical 3D objects, and interactive digital stories.
ITN-DHC/ViMM https://www.vi-mm.eu/ (accessed on 10 August 2021)	Disseminate cultural heritage contents in an online virtual museum combining a holistic approach and the state-of-the-art digital technologies.	Combination of augmented and virtual reality technologies and web platform.
iMARECULTURE https://imareculture.eu/ (accessed on 10 August 2021)	Make the unreachable underwater heritage visible through underwater augmented reality and virtual tours.	Use of virtual and augmented reality applications and web technologies.
MicroPasts https://crowdsourced.micropasts.org/ (accessed on 10 August 2021)	Help heritage community to collect and share large-scale archaeological data using crowdsourcing.	Use of a social web platform for several activities such as photo-tagging, transcribing field notes, 3D modelling and more.
HeritageTogether http://heritagetogether.org/ (accessed on 10 August 2021)	Collect crowdsourced digital images of heritage sites, produce heritage data, create 3D digital models and a digital archive accessible online through broad community engagement.	Photographic survey, archaeological data collection, use of photogrammetry, 3D digital models, and web technologies.
ToposText https://topostext.org/ (accessed on 10 August 2021)	Collect ancient texts related to landscapes (mythology, literature, geographic descriptions, historical events, etc.) and link them to location-aware maps for the interested public (e.g., travelers, students).	Website and mobile app locating text references on open maps, digital library of relevant keywords.

Table 1. Selection of projects potentially relevant to raise awareness of minor cultural heritage sites and their contemporary context.

Regarding the creation of cultural heritage content through the involvement of experts and communities, the projects selected were "MicroPasts" and "HeritageTogether". In the "MicroPasts" web platform, community members can participate in various co-production activities of archaeological and historical open data through crowdsourcing, design new research programs, and collectively finance new planned activities. "MicroPasts" uses web technologies and crowdsourcing to promote the collection and use of high-quality research data through institutional and community collaborations in the fields of archaeology, history, and heritage [39]. "HeritageTogether" is a project that brings together academics, archaeologists, and the public; it has collected over 13,000 crowdsourced digital images and, using photogrammetry, created 3D digital models of around 78 sites in Wales. Thanks to the community's commitment, it was possible to carry out surveys on the conditions of the sites, which are valuable in terms of site protection, as well as being useful resources for researchers [64].

6. Discussion

Recent advances in digital technologies and ICT increasingly represent a new set of dynamic tools to support the protection and enhancement of cultural heritage. They set new challenges that consolidate, yet go beyond, past prospects for heritage content applications in the Internet [65]. In the cultural heritage density of the Euro-Mediterranean context in particular, the challenge is most important for minor heritage sites that are remote or excluded. By means of interlinked smart apps—as exemplified in the previous section—and with the involvement of all interested stakeholders, minor heritage sites could emerge from the shade of officially prioritized cultural heritage sites, and be safeguarded and enhanced digitally and effectively in situ. Innovative digital tools have the potential to interlink and disseminate the vast available knowledge and reconstruct shared narratives of the wider public and local communities (Figure 11).

The Small Temple at the coast of Loutsa stands as an example of a minor site that is completely excluded from its contemporary physical and social context, despite the officially pronounced integration of archaeological areas and protection areas in valid spatial plans. The research results prove that there is a lack of connection between cultural heritage preservation, environmental protection, and spatial planning policies, and their actual implementation. It is important to note that the Small Temple on the coast of Loutsa is located a few hundred meters south of the remains of the Temple of Artemis Tauropolos, in an environmental context with considerable potential for the creation of an area open to the public that combines elements of cultural and natural heritage, aiming to protect and enhance local resources. However, different types of tourist infrastructure are permanently inserted between the ancient structures, preventing the natural formation of sand dunes that were once widespread along the coast, and today are almost completely eradicated. Similarly, the small wetland located at the north end of Loutsa beach is in a similar situation of isolation from the contemporary social and physical context, due to urbanization pressures and land use changes that are incompatible with the protection of nature in its perimeter areas and, in some cases, even internally (such as illegal landfills). The advancement of measures for the protection and enhancement of local cultural and natural resources is closely linked to the involvement of the public and local communities; however, as indicated by the European Landscape Convention [1], the dissemination and recognition of local values are essential steps that precede any other type of initiative.

From this research, it appears clear that advances in digital tools and ICT are still very much linked to physical restrictions and priorities. Loutsa's local heritage, in all its richness of attained archaeological knowledge and research, is not even significantly represented on the websites of the main heritage institutions; in addition, neither the website of the Ministry of Culture nor the few web pages of the Vravrona Museum—the most important heritage institution at the local level—make use of modern digital technologies or actively involve communities and stakeholders in the creation of content for heritage and its dissemination, preservation, and enhancement.

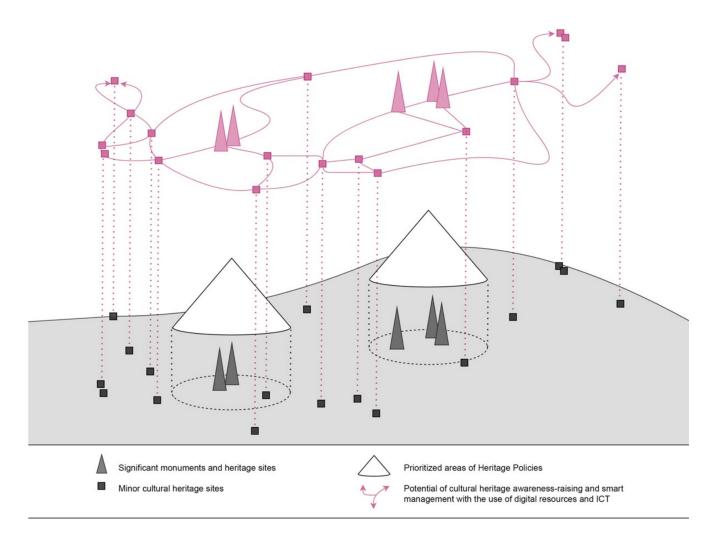


Figure 11. Visualization of the potential of digital technologies and ICT, not currently fully expressed in the Euro-Mediterranean context, in awareness-raising and enhancement of minor cultural heritage sites.

This study highlights that the contemporary approaches to cultural heritage and relevant public involvement have been significantly facilitated by new digital technologies and ICT, and that there are numerous new ideas in recent exceptional projects that gradually crystallize into new technological and market products. These make use of digital documentation, creation, and visualization technologies, as well as crowdsourcing, to encourage the co-creation of collective narratives of minor heritage sites, to educate and reinforce their meanings and values in the local communities, as well as to strengthen their perception by the public and the involvement of stakeholders (Figure 12).

The new technologies favor both the creation of content and the direct involvement of groups that participate on a voluntary basis, allowing an expansion of the possible initiatives normally in the hands of institutions with limited availability of resources. Codesign processes for cultural heritage are increasingly characterized by a wide variety of stakeholders that include, in addition to different heritage institutions, groups of experts, enthusiastic volunteers, students and teachers, and visitors. As in other cases [66], their involvement is crucial above all for the development of long-term projects that can trigger significant experiences for the participants and positive effects on the heritage in terms of visibility, protection, preservation, management, and improvement. Similar approaches are supported by the Faro Convention, which focuses on the role that heritage can play for society, and not on heritage itself [2].

In the common culture of sustainability, the case of the Small Temple on the beach of Loutsa showcases that this process must be preceded by the diffusion and awareness of landscape values—a pre-condition to recognize the necessity to adopt protection and enhancement measures, especially in peri-urban metropolitan areas where anthropogenic urbanization pressures are greater. As mentioned in the research framework, education in cultural heritage goes hand-in-hand with the co-creation and reinforcement of collective narratives in controversial and complex ways, especially from a sustainability perspective [4]. However, there is still a long way to go in terms of smart heritage management, as more issues arise with regard to digital inclusiveness in participation. There is a need for further research to embed "social resonance" in heritage, as most recent research results propose [67]. There is also a need for practices and applications to be combined on several levels, attitudes, and fields of action (policymakers, competent authorities in heritage and environmental protection, local communities, expert groups, and the public) in heritage preservation as well as in environmental and spatial planning.

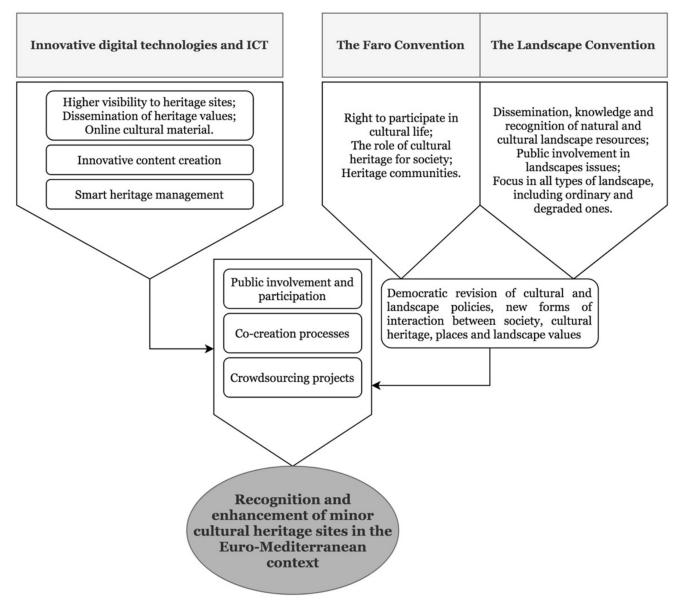


Figure 12. Opportunities for minor Euro-Mediterranean heritage sites thanks to the use of new digital technologies, ICT, and contemporary approaches to cultural heritage and public involvement.

7. Conclusions

The purpose of this article is to shed light on the opportunities for minor cultural heritage sites offered by new digital technologies and ICT, facilitating a wider involvement of communities, institutions, and stakeholders in the care and management of minor sites, as promoted by recent international cultural heritage policies. From a sustainable perspective, this study explores public involvement in the enhancement of local heritage with the use of digital tools and ICT resources.

An exploratory qualitative research methodology that included an extensive case analysis of the conditions of a minor cultural heritage site highlights the potential and the restrictions of the endeavor; the case of the alienated Small Temple on Loutsa beach on the east coast of the Athens metropolitan area provides reflections both for the constructive involvement of stakeholders and local communities in heritage issues, and for the protection and enhancement of cultural heritage sites in the wider Euro-Mediterranean peri-urban context, where heritage is threatened by the pressures of urbanization.

The protection and enhancement of minor cultural heritage sites of the Euro-Mediterranean landscape represent an open challenge that requires substantial efforts and further applied research, along with reflective local practices that address the specificities and conditions of the wider area. Nevertheless, future efforts need to focus on the broad potential of digital technologies, ICT, community engagement, and the co-creation of heritage narratives and experiences, as well as the underlying principles of the Faro Convention and the European Landscape Convention.

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