

Assessing the Conservation and Management Status in the Archaeological Site of Pella (Tabaqat Fahl) in Jordan

*Farrah O. Kazali**, *Monther M. Jamhawi***, *Rami I. Al-Ruzouq****

<https://doi.org/10.35516/jjha.v18i1.1216>

Abstract

The archaeological site of Pella (Tabaqat Fahl) in Jordan is a unique heritage site that represents a rich historical chronology and is listed on UNESCO's Tentative List of World Heritage Sites under criteria (i), (iii), and (iv). Pella is currently under the administration and management of the Ministry of Tourism and Antiquities (MOTA) and the Department of Antiquities (DoA) respectively. This paper assesses the site's status of conservation and management through investigating the current physical conditions, threats, managerial constraints, and opportunities. The paper explores the annual work carried out in the site over the past 15 years, including foreign missions, as well as the new visitor centre that the MOTA has established in the site recently. In addition, all stakeholders that have cross responsibilities in the site are identified. The results of this research highlight strengths, weaknesses, threats, and opportunities that face the site. It is evident that the site requires efficient conservation and management processes, as Pella has slowly deteriorated over the years, which has left it in a vulnerable and neglected state. Overall, the archaeological site of Pella holds immense opportunities for improvement and strengthening its Outstanding Universal Value (OUV) that can aid in inscribing it on the list of World Heritage Sites.

Keywords: Pella, Tabaqat Fahl, Jordan, Conservation, Management.

1.0 INTRODUCTION

The conservation and management of archaeological sites, or archaeological heritage management, has developed vastly on both national and international levels. For longevity in conservation of archaeological sites as well as enhancing their values, an inclusive and proactive management effort is needed that integrates physical conservation practices and other issues that include the intangible heritage, economic and social values, interpretation, visitor management and site operations. Therefore, archaeological heritage management has extended beyond the typical conservation practices, by not only being a value-based approach and managing change but also by revealing new areas of multidisciplinary studies

* Corresponding Author, Email: fkazali@sharjah.ac.ae, (Farrah O. Kazali). Orcid number: <https://orcid.org/0000-0002-7948-3951>, Graduate student, Arch. Eng. Dept., College of Engineering, University of Sharjah, UAE. MA Thesis: Developing an Integrated Conservation and Management Plan for the Archaeological Site of Pella in Jordan.

** Second Author, Email: mjamhawi@sharjah.ac.ae, (Monther M. Jamhawi). Orcid number: <https://orcid.org/0000-0003-0062-5038>, Associate Prof. of Heritage Conservation, Arch. Eng. Dept., University of Sharjah, UAE and Associate Prof. at the College of Architecture and Design in Jordan University of Science and Technology.

*** Third Author, Email: ralruzouq@sharjah.ac.ae, (Rami I. Al-Ruzouq). Orcid number: <https://orcid.org/0000-0001-7111-0061>, Professor, Civil Eng. Dept., University of Sharjah, UAE.

Received on 18/5/2023 and accepted for publication on 2/8/2023.

about historical, cultural, social, national identity discourses, and more (Sullivan and Mackay 2012: xvii).

However, there is currently a growing concern among the public and professionals that archaeological sites are finite non-renewable resources that are deteriorating at an increasing rate. This deterioration is caused by various factors such as neglect, poor management, increased visitation, vandalism, inappropriate past treatments, deferred maintenance, and treatment renewal (Matero 2006: 127). Archaeological sites are also threatened by natural deterioration caused by climate change, erosion, pollution, weathering, and biological decay (Pedregal and Diekmann 2012: 744). As such, there have been several international attempts by UNESCO to respond to issues of conservation and management of archaeological sites which include the Venice Charter (1964), the 1972 Convention, The Protection and Management of The Archaeological Heritage (1990), the Nara Charter (1994), and the Burra Charter (2013) (ICOMOS 2004: 7, 26, 104, 118).

Assessing a site's conservation and management status is necessary to completely understand the site. It is part of a four-phased structured plan which will guide in the process of decision making for sustainable conservation and management (Sullivan 1997: 16; Demas 2000: 34). Assessment of the site's conservation and management includes its current physical condition, threats facing it, managerial constraints and prospects that may impact the capability to protect and preserve the site (Demas 2000: 34). Thus, the management of an archaeological site is a complex process that would address the conservation and management needs necessary to the site as well as those of the natural setting, the social, cultural, and economic factors and statuses that are interrelated to one another, in addition to the relationship between change and continuity and their foreseen effects on the site as well as the community involvement. Consequently, this would lead to better understand the meaning and significance of the heritage property and for its sustainable development (Castellanos 2001: 109).

1.1 The Archaeological Site of Pella

Pella, also known as Tabaqat Fahl, is an archaeological site that dates from the Neolithic period to the present and is situated north of Jordan in the governorate of Irbid (Smith 1968: 134). It is a sizable 400,000 (m²) site (Figure 1.1) full of architectural and artistic remnants that represent a microcosm of settlements (Quaranta 2001).

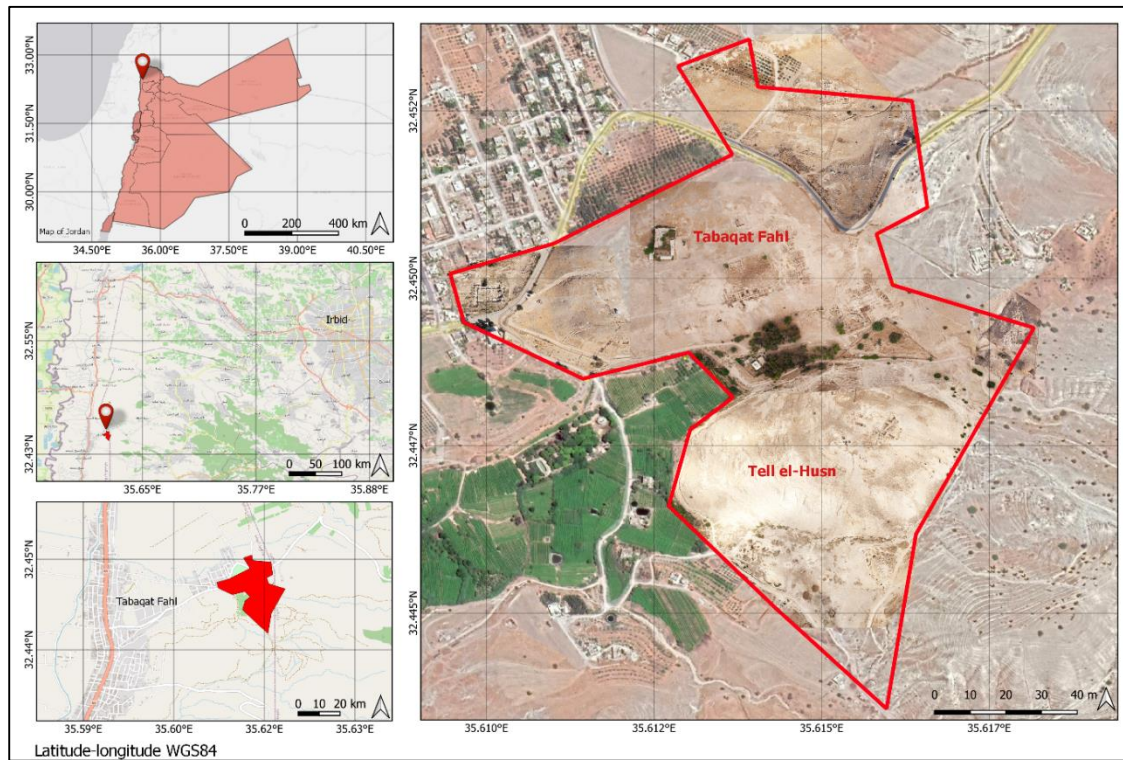


Figure 1: Location of the Archaeological Site of Pella (Kazali 2022).

According to Khalil (1984: 427) and Walmsley (1997-1998 vol. 9 no.1: 131; 2007: 240), Pella was a significant political and cultural center during the Hellenistic and Roman periods and was a part of the Decapolis. The site was active during the Byzantine and Early Islamic periods and is home to numerous well-preserved artifacts from the Bronze and Iron Ages. Despite this, each time period had its own monuments, with little reuse of earlier components, which contributed to maintaining a high level of authenticity to the site's history. The area was inhabited by a village during the Islamic period, which formed an administrative hub and placed a strong emphasis on mills, which helped to promote agricultural prosperity.



Figure 1.1: General view of Pella from the visitor's center (Kazali 2022).

Pella has a distinctive heritage because its main features are spread across two major mounds (Figure 1.2): the larger Tabaqat Fahl and the smaller Tell el-Husn (Bourke 2013: 2; Ababneh 2018: 102). Its geographic location was crucial in helping it develop into a “gateway community” for travellers and in forming a vital connection between various cultural and economic crossroads (Walmsley 2007: 131). The site is currently managed and administered by the Ministry of Tourism and Antiquities (MOTA) and the Department of Antiquities (DoA) in Jordan and was inscribed to UNESCO's Tentative List of World Heritage Sites in 2001 under criteria (i), (iii), and (iv) (Quaranta 2001).

Pella is a complex site with diverse cultural and historical development, influenced by human occupation, a harmonious material culture and built environment. It holds numerous values which include natural landscape and setting, historical, location, aesthetic and artistic, symbolic, architecture and urban, research, and lastly, socio-economic value (Kazali 2022: 96). Pella is a microcosm of diverse cultural-historical development. Its location and natural resources played a huge role through its trade-routes and natural sustenance as reasons behind settlements in this specific area. This has also influenced the socio-economic value via the local's relationship with the site. Further, Pella is strongly associated with several historical events and people, solidifying its significance in history (Ababneh 2018: 104).

1.2 Background on Investigations and Excavations

A full excavation of the site was started in 1967 under the direction of Robert Smith of the College of Wooster in Ohio, USA after the American Schools of Oriental Research (ASOR) and the Department of Antiquities (DoA) in Jordan started conducting archaeological investigations at Pella in 1958 (Bourke 2013: 2). The 1967 Arab-Israeli war, however, forced the suspension of future excavation activities. Robert Smith, together with co-directors Basil Hennessey and Anthony McNicoll of the University of Sydney in Australia, and the Jordan DoA, resumed the excavations in 1978 (Khalil 1984: 426). Except for 1990 and 1991 due to the Gulf War, the Australian team has excavated the site annually for a total of 19 seasons (Churcher 2008: 3).

2.0 CONSERVATION AND MANAGEMENT STATUS OF PELLA

Conservation and management of Pella is under the responsibility of the Department of Antiquities of Jordan. The Tabaqat Fahl office is dependent to the Irbid office, which is subordinate to the main DoA office in Amman. Thus, while the Tabaqat Fahl office manages daily tasks of maintaining Pella, it is the DoA office in Amman that develops major conservation and management plans for the site.

2.1 Background on management and conservation plans

The management of heritage sites in Jordan is multi-layered, involving a range of laws, policies, government agencies, nongovernmental institutions, and the private sector. There is no clear management plan specifically focused on the site. However, there have been regional master plans which included the archaeological site of Pella. The Jordan Valley Regional NGO Master Plan for Sustainable Development was established in 2015 with the goal of restoring the ecological and environmental values of the valley through sustainable actions (EcoPeace 2015: 7). The plan assesses the region's land use, cultural and natural resources, socioeconomic status, and water and soil needs with the goal of eliminating pollution by 2025. It also carries out interventions in water management, agriculture, environment, tourism, and culture until 2050. Pella was a target site for sustainable tourism and cultural heritage interventions from 2017 to 2019, including planning for

improvements, developing a commercial business model, design, and bidding (EcoPeace 2015: 188). Other management and conservation plans include the Department of Antiquities' Interpretation and Presentation project, which began in 2017 and aimed to provide illustrative panels at the visitor center but was halted due to the COVID-19 pandemic.

2.2 Stakeholders involved in Pella

According to Darabseh (2010: 55), the Jordanian government has reportedly made an effort to include various stakeholders in public decision-making in order to increase awareness of the importance of cultural heritage resources and foster cooperation among interested parties. While government agencies, nongovernmental organizations, and private institutions have shown interest in cultural heritage management, the Ministry of Tourism and Antiquities and the Department of Antiquities have given archaeological sites the most attention. Universities and the Ministry of Education have both participated in the study and investigation of archaeological sites (Darabseh 2010: 56). In addition, stakeholders at the local and international levels are involved in the preservation and management of Pella. Table 2.1 demonstrates the different categories of stakeholder groups along with their role and interest in protecting Pella.

Table 2.1: Stakeholder groups' roles and interest in the protection of Pella

Code	Stakeholder Group	Responsibility and Interest
G	Government Authorities	
G1	Ministry of Tourism and Antiquities (MoTA)	Responsible for development and promotion of the site, along with tourist related matters and investments.
G2	Department of Antiquities (DoA)	Responsible for protecting, monitoring, preserving, surveying and managing the site.
G3	The Ministry of Planning (MOP)	Coordinates and directs social and economic development projects in collaboration with private and public sectors, as well as civil society institutions.
G4	Ministry of Culture (MoC) and the National Library Department	Promotes the notion of culture and provide opportunities to further understand culture as a continuous stream of conceptual ideas by supporting publication, theatre, artists, writers, and exhibitions.
G5	Ministry of Education (MOE)	Includes the Ministry of Higher Education and Scientific Research and is responsible for developing educational curriculum, programs, and activities.
R	Local and Regional Authorities	
R1	The American Center of Research (ACOR)	Non-profit academic institution focused on understanding the Middle East's past and present. Acts as a conduit for cultural exchange and acquisition of knowledge.

Code	Stakeholder Group	Responsibility and Interest
R2	British Institute in Amman (Council for British Research in the Levant CBRL)	Promotes and distributes research in humanities and culture on countries in the Levant
R3	Jordan Valley Authority (JVA)	Manages and protects the land and water resources through maintaining environmentally sound infrastructure.
L	Local Civil Society and Community Groups/Professionals/NGOs	
L1	Local Community of Tabaqat Fahl	Connected to the site on various levels, which is a part of their identity.
L2	Universities in Jordan: Yarmouk University and Jordan University for Science and Technology (JUST)	Educational gain from site and involvement on small scale conservation projects. Creates more awareness on heritage resources within the country.
L3	Royal Society for Conservation of Nature (RSCN)	Devoted to conserving natural resources, biodiversity, and scenic areas.
L4	Friends of Archaeology and Heritage (FOAH)	Strongly associated to archaeology and encourages the local community to appreciate, preserve and protect sites.
L5	EcoPeace Middle East	Organization of environmentalists whose objective is to protect shared environment heritage. Responsible for Regional Plan of Jordan Valley.
L6	Local Consultants	Local planners, architects, consultants, and conservators play a role in technical discussions and decision-making.
I	International Entities	
I1	International Development Parties: UNESCO, World Bank	Monetary funds and expertise, due to Outstanding Universal Value significance
I2	Foreign research entities: University of Sydney, Australia and College of Wooster, Ohio, USA	Scientific research interest in excavating and protecting the site. Possible investors.
I3	Foreign Consultants	International planners, architects, consultants, and conservators play a role in technical discussions and decision-making, such in the case of ICCROM and UNESCO.
I4	Foreign Investors	Private or International investors.

2.2.1 Stakeholder's Chart

Figure 2.1 illustrates the relationship between different stakeholders and their relation to Pella. These relations have been identified as either weak, moderate, or strong, emphasizing their role.

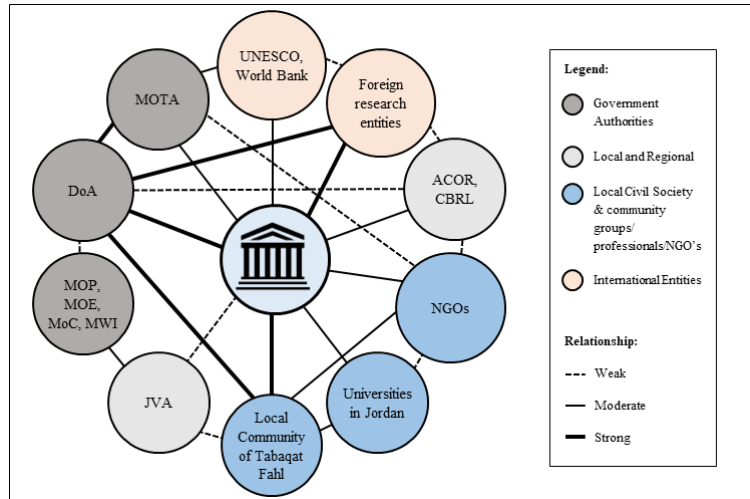


Figure 2.1: Stakeholder's chart showing the relationship between different stakeholders and their relation to Pella (Kazali, 2022).

3.0 METHODOLOGY

From literature, the authors could recognize the results of the Australian Missions' excavations and discoveries, and their chronological analysis of the site. However, nothing has been mentioned either in the Australian Mission' reports nor in the DoA archive about the conservation and management works at the site. However, it is very clear that the site has received major careful efforts to care for and preserve the site.

The following section describes the methodology carried out to analyze the conservation and management status of the archaeological site of Pella. Along with the observations carried out during site visits, interviews and surveys were designed to target the different stakeholder groups to compile their thoughts, expertise, and knowledge about the site.

3.1 Site Visit Observation

The investigations conducted by the researcher of documentation, archival and data collection and analysis from the CBRL, the DoA in Amman, as well as the subsidiary DoA office in Tabaqat Fahl, alongside online DoA archives and Australian excavation reports. Further, the researcher conducted field observations, through identification and analysis of the site's physical condition, state of conservation as well as factors affecting the site.

3.1.1 State of Conservation

Though Pella has undergone extensive excavations, this site is still not fully excavated. Most work carried out has been purely for archaeological purposes alongside safety repair works around excavation trenches and around the perimeter of the site. These now, are suffering from negligence, and fosters further factors of deterioration. According to the DoA office in Tabaqat Fahl, there have been no major conservation works or reports on Pella, other than the annual trimming and removing of weed and grass that have grown between the monuments in the archaeological site. There was a maintenance and cleaning

project in 2013, whose objective was to clean the archaeological remains on the site from weeds, stones and dust that were brought by heavy rainwater in the winter season. A wall with a length of 11m, height of 1m and width of 0.8m was constructed to act as a dam to reduce the strength of the rainwater flowing down the mounds and mitigate its impact on the site (DoA 2013: 2).

Other annual cleaning of the site has only been documented verbally (apart from 2013), with no prior content, work schedule or system of where and how to carry out this process. Photographs of cleaning the site from weeds and overgrown grass are taken annually, however evidence for these dates to only 2019. The rest house, the initial Visitor Center, was constructed in 1991 by the locals of Tabaqat Fahl and has been converted into a restaurant. It is located directly behind the Visitor Center and creates an integrated unit that provides all the services required for the visitor (FB Architects 2014: 2). This raises the question why they built a new visitor center, when the old one respected the site's authenticity and harmony of materials? The Visitor Center project which started in 2013 on the eastern plateau, changed the accessibility of the site from the western to eastern side. The new Visitor Center overlooks the site and acts as a starting point for tourists to collect tickets and access the site. The center's interior is equipped with brochures, local products and souvenirs as well as a few boards for explanation. The tourist visitor path project began in 2018 and was constructed into two parts. The first is at the beginning of the tourist path after descending from the visitor center towards the archaeological site and is a 90m uncut limestone path, that stops at the edge of the site. The second part is a 300m dirt path that is on the site and ends at the Canaanite temple (DoA 2018: 4). In addition, a wire fence was placed around deep excavation trenches on the site in 2019 for safety measures. However, many of these today are torn and in need of repairing and replacement. Overall, the site is not preserved as it should be, and there have been no professional interventions in assessing the site.

3.1.2 Current Physical Condition of Pella

Based on the researcher's observations and photos taken of the site, it is apparent that the main entrance to the Pella site is through the entry gate (Figure 3.1). However, visitors often begin their journey from the visitor center on the other side of the site (Figure 3.2), where several archaeological remains are present. The site's challenging geographic terrain, unclear paths, and steep valleys make it difficult to navigate on foot (Figure 3.3 and Figure 3.4). In addition, Pella lacks several up-to-date interpretation signs that could highlight the site's historic stratigraphy or tell the story of its sequence of continuous settlements (Figure 3.5). The site is further plagued by issues such as the growth of plants between monuments (Figure 3.6), littering (Figure 3.7), graffiti (Figure 3.8), and erosion (Figure 3.9). Broken wired fences are also present around deep excavation trenches, which pose a safety risk to anyone on site (Figure 3.10). As a result, the site is not adequately prepared to receive tourists who wish to explore it without a tour guide. The images below reveal Pella's physical condition:



Figure 3.1: Main gate entrance.



Figure 3.2: Visitor's center on the other side of the site.



Figure 3.3: Unclear path.



Figure 3.4: Geographic terrain and steep valleys.



Figure 3.5: Damaged interpretation signs around the site.



Figure 3.6: Biological growth between monuments due to ground water accumulation.



Figure 3.7: Littering on site.



Figure 3.8: Graffiti on columns.



Figure 3.9: Signs of erosion.



Figure 3.10: Incomplete and broken wired fence around excavation areas.

3.2 Interview

A series of open and closed-ended questions were used to gain as much useful data as possible. The interview is aimed towards Pella's conservation and management, and factors that may impact the site, both naturally and anthropogenic, as well as possible enablers that can help improve the site. Two interviews were conducted with experts and professionals in the field of conservation and management.

The first interview was conducted in August 2021, with Eng. Mohammad Dalqmouni, office manager. Dalqmouni expressed his concern in major factors impacting the site such as the local community's lack of awareness of the site's cultural significance, as well as the DoA's lack of technical capacity and expertise in conservation and renovation. He also stated that issues are not due to bad management, but complexity of management that leads to complications. He believes that focusing on certain parts of the site could positively improve the site's status as not all parts of the site are accessible for either tours or for security, noting that installing cameras and lighting in the entire the site is not an easy task. Dalqmouni further mentions proposals that have been submitted to improve the site's condition, which include new interpretation and presentation panels, a separate museum

for findings, and including the local community in further tasks revolving around the site such as delegating security guards from the local community (M. Dalqmouni, personal communication, August 2021).

The second interview was conducted in April 2022, with Hisham Al Majali, a Cultural Heritage Resources Field Manager at the American Center of Research. Al Majali clarified the management issue and coordination in Pella, explaining that all management is under one umbrella which is the MOTA, followed closely by the DoA, however due to an unclear organizational structure and delegations, miscommunication is a constant issue in conserving and managing sites. He proposes to start from scratch, and to first and foremost identify and clarify what the site is – whether it is an archaeological site and/or a touristic site, and based on this determine how legislation, budgets allocations, management, and conservation can be carried out efficiently. Further, he expressed that the site lacks a comprehensive conservation and management plan, and that sustainable development of the site needs to begin with the site itself and the local community, as well as the need to identify the diverse stakeholders (H. Al Majali, personal communication, April 2022).

3.3 Survey

Two surveys were designed, one targeted towards the local community of Tabaqat Fahl, and the second targeted professionals and experts in the field of conservation and management. Both surveys begin with general identification and information about the person conducting the survey. First, a sample size of 106 was collected for the local community's survey. 10 questions that targeted the local community act as a quantitative method to understand their opinions about the site. This was achieved through answering questions that identify the local's profession, number of years in Tabaqat Fahl, their familiarity with the site, the site's values, their views on the site's condition, who they believe holds the main responsibility and their willingness and standpoint towards helping the site. Second, a sample size of 37 was collected for the professionals' survey, which identified the stakeholder group and information about him/her. 16 management-oriented questions targeted the professionals to gain both their knowledge and expertise on the subject from a scientific background in a quantitative method. Further, their familiarity about the site, its values, and attributes, about the site's status and state of conservation and management, the challenges facing the site, and lastly the possible enablers to help improve the site's status. The questions are designed in a format of short answers and scale values. Both surveys share five questions for the purpose of direct comparison to determine what the most important values and attributes held by each stakeholder group, as well as their similarities, differences, and potential areas of conflict. Both surveys are collected, via Google Forms, and assessed and analyzed, via Microsoft Excel, into weighted results that are included in the integrated conservation and management plan.

Through analysis of the surveys, the following graphs have been derived that explain the nature of the samples collected. The surveys are distinguished from one another by highlighting the graphs in red, representing the local community, and graphs in orange, representing the professionals.

Sample data collected (Figure 3.11 and Figure 3.12) identify that 72% of the locals have lived in Tabaqat Fahl for over 4-10 years, with a higher profession rate in agriculture compared to an almost equal similarity between different professions in academic, commercial, industrial, and craftsmanship. Further, it is noted that 84% of the local community is familiar with the archaeological site of Pella, and regularly visited it over the past month.

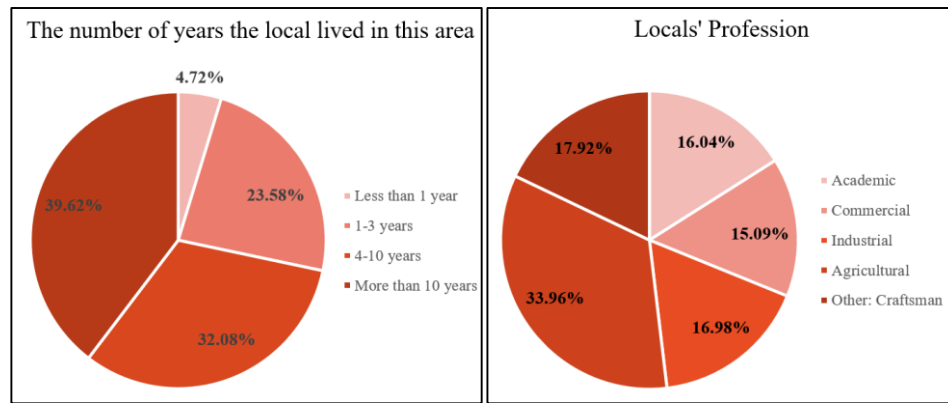


Figure 3.11: Local's familiarity to the site.

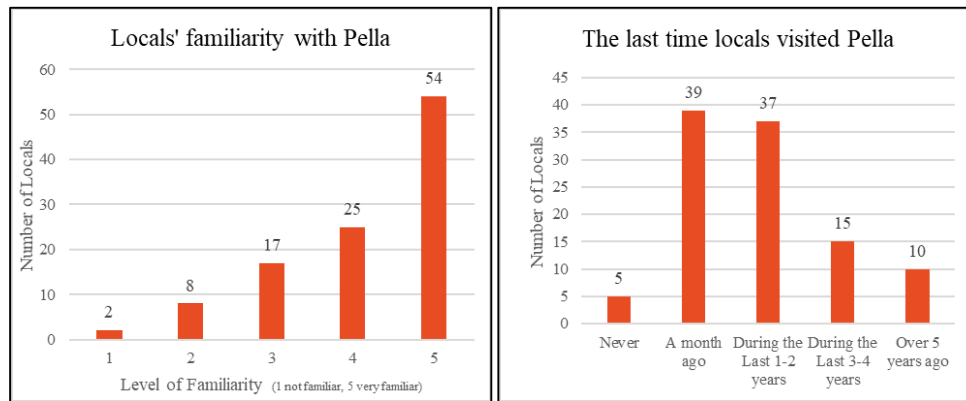


Figure 3.12: Local's familiarity to the site.

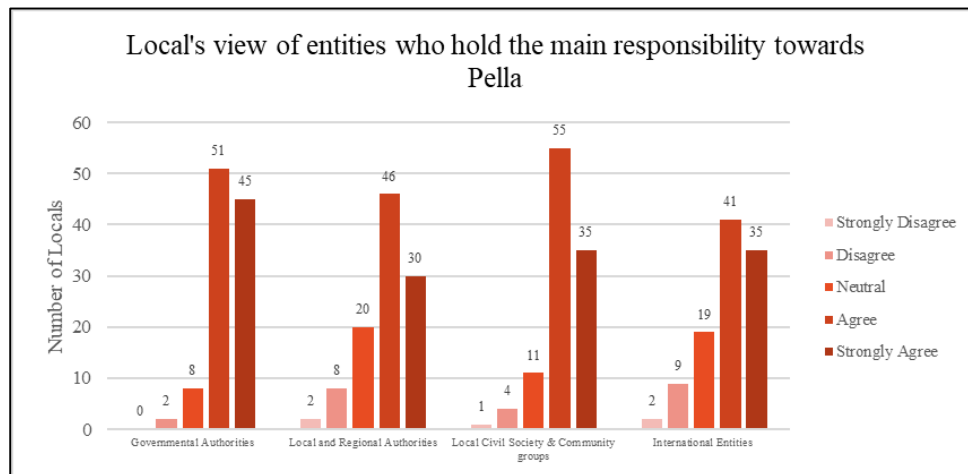


Figure 3.13: Local's view on who holds responsibility towards the site.

According to the local community's point of view, responsibility towards the conservation and management of the site falls firstly on governmental institutions and is closely followed by the local civil society at a weighted average of 29% and 26% respectively (Figure 3.13). Regarding Pella's status (Figure 3.14), an average of 88% have agreed and strongly agreed that the site is in an underdeveloped condition and in need of urgent maintenance, conservation interventions, management coordination, and is in a

neglected condition. However, there is an average of 8% who have remained neutral on the subject. When asked whether the local community is willing to help (Figure 3.15) and is ready to learn more about the site, responses varied across the spectrum where an overall average of 15% disagreed and strongly disagreed, 23% were neutral and 62% agreed and strongly agreed. Though most locals agreed to be a part of the conservation of the site, a large percentage of the locals are unaware of the role they have in conserving Pella.

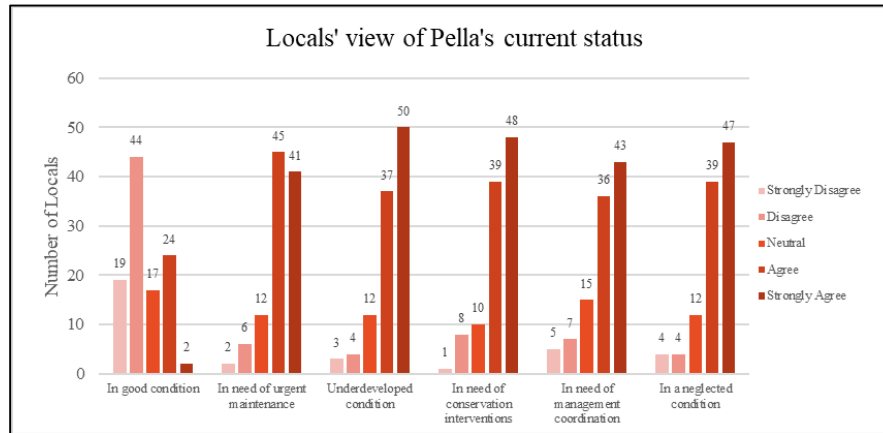


Figure 3.14: Local community's view of the site's status.

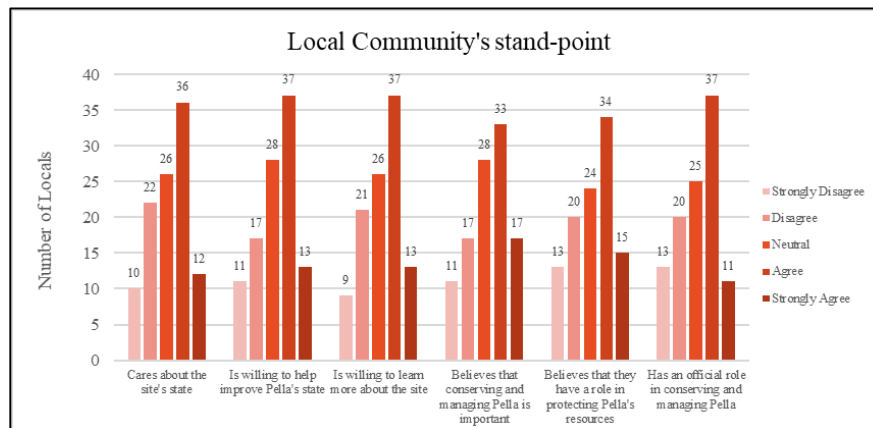


Figure 3.15: Local community's stand-point.

When professionals were asked, sample data collected (Figure 3.16) identify that 76% of the professionals are familiar with the site. With only 60% of which have visited the site over the past 1-2 years, and 18% of professionals who have never visited the site.

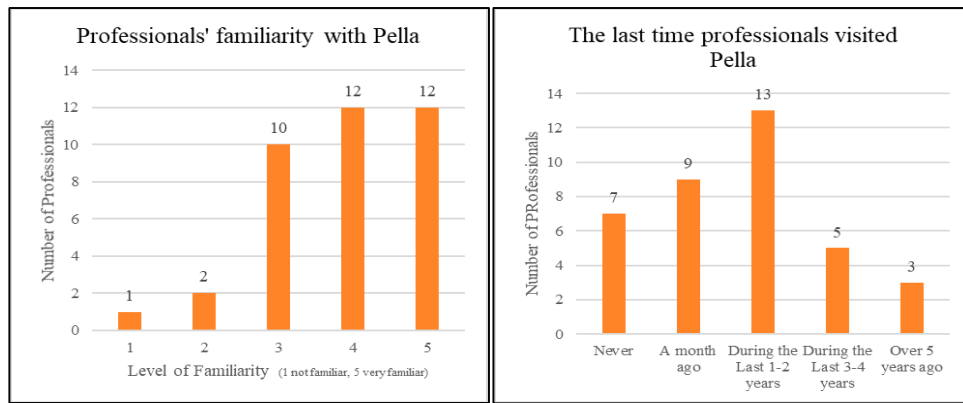


Figure 3.16: Professionals' familiarity to the site.

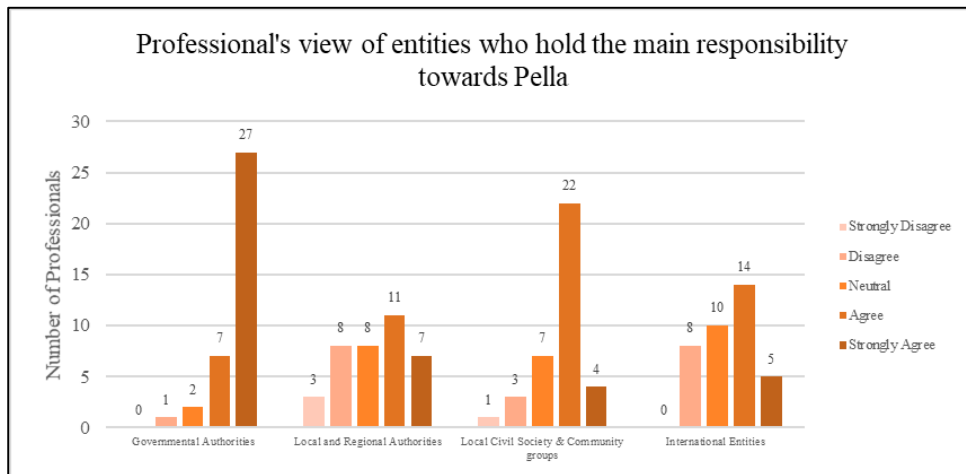


Figure 3.17: Professional's view on who holds responsibility towards the site.

On a weighted average, 38% of professionals agreed that responsibility towards the conservation and management of the site relies mostly on governmental institutions, followed by the local civil society at 25%, international entities at 19% and lastly, local and regional institutions at 18% (Figure 3.17). It has been expressed through the survey that an average of 85% of professionals view Pella as an important site that holds cultural significance as well as an Outstanding Universal Value, thus, when asked about Pella's status (Figure 3.18), an average of 71% have agreed that the site needs urgent maintenance, conservation interventions, and management coordination, there is 10% who view Pella in a good condition and is not neglected or underdeveloped. However, there is an average of 14% who have remained neutral, while 5% disagreed on Pella's needs to improve its status. In addition, when asked about Pella's management, answers varied widely across the spectrum (Figure 3.19). While describing its management characteristics as organized, centralized, and follows international charters, is up to date, is effective and efficient, has clear objectives and a clear chain-of-command, professional's opinions were almost equally divided, where 31% agreed, 32% disagreed, and 37% remained neutral on all characteristics.

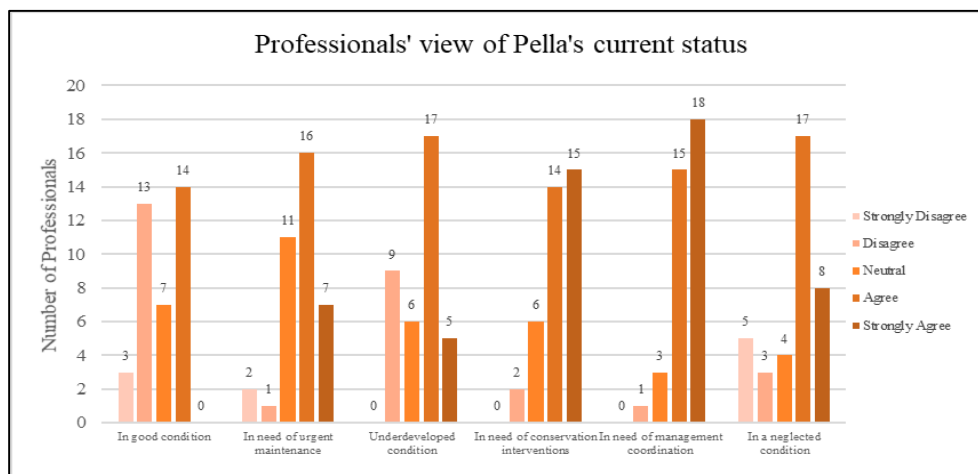


Figure 3.18: Professionals' view of the site's status.

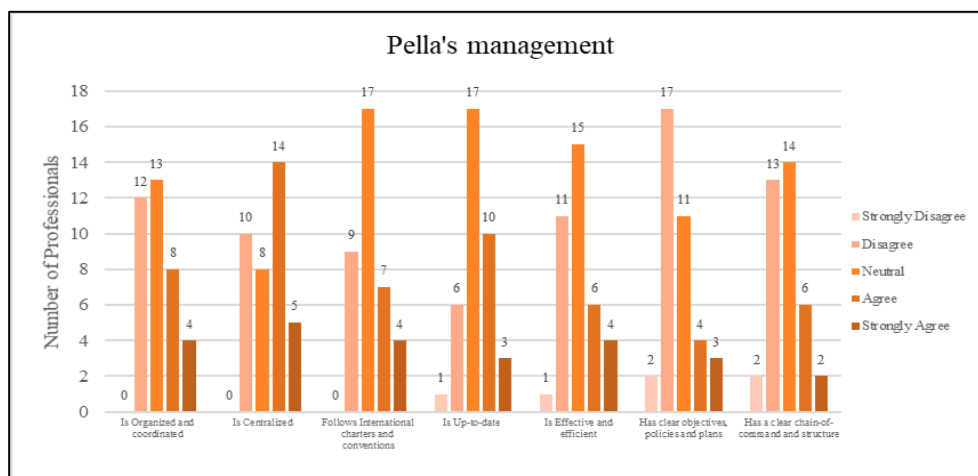


Figure 3.19: Professionals' view on Pella's type of management.

Alongside Pella's management characteristics, conservation and management interventions carried out on site (Figure 3.20), 55% of professionals agree that there have been minimal interventions done on site, alongside cleaning, maintenance, and monitoring, and the need for further research and studies. On the other hand, 13% of professionals agree that the site does not follow a conservation and management plan, and 32% of professionals remain neutral on interventions carried out on the site.

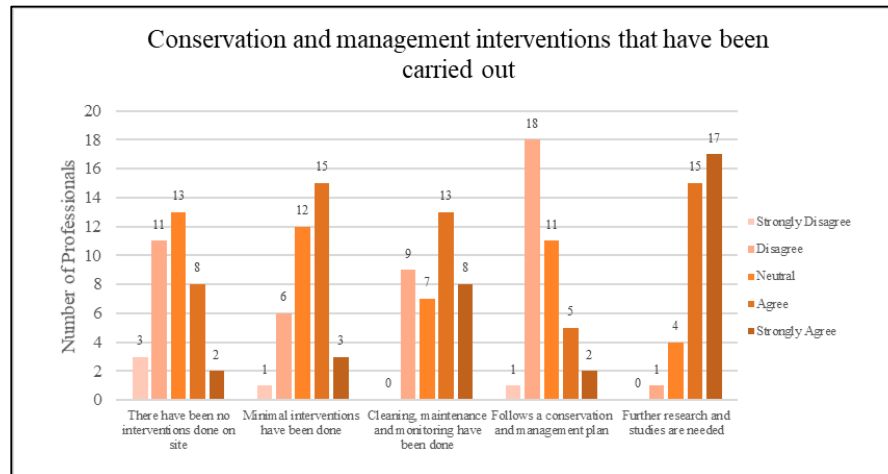


Figure 3.20: Types of interventions carried out.

Furthermore, when asked about factors that challenge the site and those that act as enablers to help improve the site, 46% agreed that conservation and site management, financial resources, technical capacity, and expertise, as well as technology, data and research act as major challenges facing the site. Whereas stakeholder awareness and inclusion, and awareness and engagement are moderate challenges at 24%. Further, legal administrative frameworks and the physical and natural environment are minor challenges at 18%. When compared to the factors that act as enablers, 42% have agreed that improved management and planning, and public awareness and engagement act as major enablers. While improved conservation interventions, and stakeholder awareness and involvement are moderate enablers at 39%. Lastly, administrative and legislative measures act as minor enablers at 19%.

As such, it can be observed (Table 3.1) that the major challenge facing Pella is its conservation and management at a scale of 3.36, while the minor challenge facing Pella is the physical and natural environment at a scale of 2.58. Likewise, the major enabler that can help enhance Pella's status is improved management and planning that is at a scale of 3.64, while the minor enabler is administrative and legislative measures that is at a scale of 3.53. It is to be noted that factors that challenge Pella are spread across a wider magnitude spectrum, unlike the enablers which are in a narrower range, indicating that the challenges are independent from one another, although, the enablers have a larger impact on the site if carried out.

Table 3.1: Statistics from survey results on Factors that act as Challenges and Enablers and their magnitude out of a scale of 5

Factors from major to minor challenges facing Pella (out of 5)			Factors from major to minor enablers that can help improve the status of Pella (out of 5)		
Major	Conservation and Site Management	3.36	Major	Improved Management and Planning	3.64
↓	Financial Resources	3.22	↓	Public awareness and engagement	3.62
	Technical Capacity and Expertise	3.02		Stakeholder awareness and involvement	3.56
	Technology, Data and Research	3.00		Improved Conservation interventions	3.53
	Stakeholder inclusion and collaboration	2.89	Minor	Administrative and Legislative Measures	3.53
	Awareness and Engagement	2.78			
	Legal and Administrative Frameworks	2.73			
Minor	Physical and Natural Environment	2.58			

3.4 Assessment

Based on literature and on the collected data above, the following analysis has been deduced, answering questions revolving around the conservation and management planning process. The assessments consider site sensitivities, challenges threatening the site as well as possible future risks. Criteria used for assessment are highlighted under Factor in each assessment.

3.4.1 Assessment of the Conservation Status

The assessment of the Conservation Status through literature, observation, interviews, and surveys, considers the state of conservation, and previous interventions, physical condition, environmental condition, and the human context. These have been complied, evaluated, and summarized in Table 3.2.

Table 3.2: Assessment of Conservation Status

Factor	Description and Impact
State of Conservation and previous interventions	Site's current conservation status is underdeveloped, and site is in a neglected state.
	Minimum interventions have been carried out, such as cleaning, maintenance, and monitoring, though reports show discontinued interventions that are not done regularly and do not have a common framework.
	Interpretation and presentation panels are in bad shape on site and do not convey the site's value or its story. Proposals have been submitted for improved interpretation and presentation on site which is still on hold.
	Absence of conservation guidelines or principles within Antiquities law is limiting.
	Lack of technical capacity and expertise in conservation and renovation.
	Insufficient systematic monitoring of site, conservation works, effectiveness of maintenance and cleaning done as well as during excavation works.
	Weakness and lack of conservation works will lead to further deterioration of exposed structures.
	No clear mechanism for archiving data, other than MEGA-Jordan which was last updated in 2011, rest of data is through reports from the Australian expedition, however no clear digital inventory of what is on the site and what is held in other museums across Jordan.
	No clear data on conservation measures during the Australian excavation seasons. The only recorded data found by authors during that time was purely of archaeological remains that have been investigated and recorded.
Physical Condition	On site: Incomplete repair works of wired fences around deep excavation trenches are dangerous to local community and visitors.
	Large number of excavated areas with no identification on site.
	On site: Damaged signage lacks in presenting the values and attributes of the site, which can lead to miscommunication of information.
Physical Condition (current status)	Site is very large with a difficult terrain, making it hard to reach all areas of it.
	Development: Demographic growth has resulted in organic urbanization and land change right next

Factor	Description and Impact
	to the site. There is no clear separation or buffer zone between the site and neighboring buildings and roads of the Tabaqat Fahl village. This disturbs the site's stability and protection, which can alter the cultural and natural setting.
	Earthquakes: due to its location at the edge of the Rift Valley, tectonic activity is common due to the fault line. Tremors and earthquakes can cause disfiguration and deformation of the archaeological and natural setting.
Environmental Condition	Climate Change: Temperature, humidity, wind, and rainfall accelerate the process of erosion and encourage further biological growth and decay between structures which can cause chipping and crumbling stones in structures.
	Overflow of spring water during winter season: due to groundwater and springs, floods are common especially during and after the winter, where the theatre is flooded annually, this encourages biological growth which is difficult and dangerous to remove as species such as snakes start to nest between the grown grass. Water and biological growth remove layers of material, promote erosion, chipping, and deterioration of stone surfaces.
	Rainwater flowing down mounds: water flowing down the mounds can lead to mass movement and mud slides. These can cause possible pulls and slides which are dangerous to walk on.
Human Environment	Large percentage of local community is unaware and lacks understanding what their role is in conserving the site.
	Local community is discouraged to help as they do not know how this will benefit them.
	Lack of community involvement, which can lead to dissociation of site from the public, reckless behavior towards the site, and seeing it as a burden rather than as a part of the heritage and the area's identity.
	Anthropogenic threat such as littering and vandalism graffiti which impact the site's authenticity and integrity.

3.4.2 Assessment of the Management Status

The assessment of the Management Status through literature, observation, interviews, and surveys, considers the management administration, organizational structure, objectives, policies, and practices, as well as stakeholder assessment. These have been complied, evaluated, and summarized in Table 3.3:

Table 3.3: Assessment of Management Status

Factor	Description and Impact
Administration	Lack of technical capacity and expertise on site, which lead to unsuccessful and undocumented conservation works.
	Unclear coordination in management led to lack of monitoring, maintenance and repair of the site which encourage further anthropogenic and natural threats.
	Neutral status on keeping data up to date.
	Unclear implementation of international charters and conventions.
	Unclear coordination of digital inventory of artefacts between the DoA and foreign expeditions.
Policies, Legislations, and Practices	Inefficient implementation of policies and practices on site, which keeps the site's future ambiguous.
	Unclear implementation of legislations to protect the site daily and its potential OUV.
	Unclear identification of the site's nature other than movable or immovable in Antiquities law.
	Absence of management guidelines or principles within Antiquities law is limiting.
	Interpretation and presentation of the site not up to date with all of the site's findings, which leaves visitors unsure as to what they are looking at and what the site has to offer, as well as insufficient number of panels on site.
	Values of the site not fully recognized and integrated into management of site and its practices.
Organizational Structure	Unclear organizational structure, chain-of-command, and delegations, between the DoA and MOTA, which has led to division of responsibilities, overlapping roles on site and to miscommunication in management.
Objectives and strategies	Unclear objectives, and sustainable goals due to lack of a clear conservation and management plan.
	Strategy plan was last updated in 2014 in a general manner covering cultural heritage sites in Jordan, however, there have been no strategies planned specifically for Pella.
Stakeholders' assessment	There have been no previous stakeholder questioning or interviews, and no representatives from the local community, thus no joint decisions were made including all stakeholders.
	Stakeholders and their responsibilities need to be further defined and organized.

Factor	Description and Impact
Visitor Management	Though there is a dirt path and paved path on site, movement on site is not clearly identified, which can lead to unmanaged visitor behavior.
	Uncontrolled access to site due to having two entrances can encourage further anthropogenic threats.
	There is no clear system to record visitors who access the site who might set off on less-used paths in a very large site, making it harder to reach them in case of an emergency.
	An insufficient number of experts on site, and a need to go to Tabaqat Fahl DoA office before accessing the site.
	Site is dangerous in several area via unclear paths, fragile rocks, and steep valleys; there are limited safety measures.
	Carrying capacity of the site is unknown as tourist visits have not been regularly documented, which needs to be studied to reduce possible risks and damage to monuments on site.
	Overlapping roles of guides in the site generates uncertainty in providing the services to visitors.

4.0 RESULTS: INTEGRATION OF ASSESSMENTS

Overall, it is apparent from the assessment that Pella is in a fragile state and needs immediate conservation and management interventions by professionals and expertise. Most of the major challenges facing Pella are of an anthropogenic nature, specifically, the lack of a conservation management plan due to not understanding the nature of the site or its values, as well as not involving the local community, or understanding their capabilities, and their relationship to the site. The SWOT analysis in **Error! Reference source not found.** integrates all assessments and compares them to one another, highlighting the results of the assessments.

Table 4.1: SWOT Analysis for Integration of Assessments

SWOT Analysis for Conservation Status	
Strengths	<ul style="list-style-type: none"> • Strategic geographical location. • Crossroads between different civilizations and trade routes. • The site's topography acts as a protection layer towards excavated areas, making it harder to reach them. • High level of authenticity, due to its location and setting, material and substance, and picturesque view of the site • The natural and cultural setting is intact and retains its size, features, and boundaries. • The site's diverse cultural values.

Weaknesses	<ul style="list-style-type: none"> • The site is in a neglected state. • Incomplete repair works and damaged signage. • Absence of conservation guidelines or principles within Antiquities law is limiting. • Anthropogenic threats: vandalism, littering, pollution. • Natural Threats: tectonic activity, climate change, floods, underground water. • Changes in accessibility of site from west to east have caused uncertainty in movement around the site, leaving it with no clear path.
Opportunities	<ul style="list-style-type: none"> • Potential to improve the conservation status of the site. • Proposals to improve interpretation and presentation on site. • Potential of local community benefiting from the site. • Potential to benefit more from underground water for the local community. • Efforts by the MOTA and DoA in creating new interpretation and presentation plan for the site, which could highlight the correct accessibility path through the site, hence a decrease in damage and vandalism. • Potential to fill technical capacity and expertise from local universities with conservation programs, such as the German Jordanian University who has been offering an “Architectural Conservation” program at its School of Architecture and Built Environment since 2016.
Threats	<ul style="list-style-type: none"> • Weakness and lack of conservation works will lead to further deterioration of exposed structures. • Lack of buffer zone increases the risk of deterioration and damage on site. • Lack of community involvement, risks dissociation of site from the public, reckless behavior towards the site, and seeing it as a burden rather than as a part of the heritage and the area’s identity.
SWOT Analysis for Management Status	
Strengths	<ul style="list-style-type: none"> • Centralized geo-information data system. • Follows the Antiquities law. • Collaborations with international experts on conservation works. • International recognition and collaboration. • The recognition of the need to conduct documentation before, during and after maintenance and cleaning.
Weaknesses	<ul style="list-style-type: none"> • Lack of a conservation management plan for the site. • Lack of coordination and synthesis with other responsible authorities. • The legal and legislative status is not comprehensive and does not emphasize the need for local community engagement. • Absence of management guidelines or principles. • Gaps in management. • No clear strategy for risk assessment.

Opportunities	<ul style="list-style-type: none"> • There is a capacity and base structure to create a highly dedicated specialized unit for documentation via existing database. • Potential for activating the role of other entities and partners and institutions in conservation and management processes. • Potential of creating educational programs with the focus on conservation management. • Sites in the Jordan Rift Valley with thermal springs can help in promoting sites of similar nature found in Pella. This includes the spring of Hammat Abu Dhâbleh. • Potential for promotion of Pella as a micro-tourism destination by creating campaigns for the district. Currently efforts are carried out by management at Pella and by Ms Muna Haddad, the founder and managing director of Baraka who specializes in ecotourism development projects and developing community-based tourism, however, this needs to be further encouraged.
• Threats	<ul style="list-style-type: none"> • Risk of miscommunication or misinterpretation because of unclear coordination and delegation. • Disengagement of the local community from conservation and management decision-making leads to loss of interest and sense of responsibility towards it. • Lack of risk preparedness plans lead to lack or response of inadequate measures. • Discontinuity of projects and initiatives.

5.0 CONCLUSION AND RECOMMENDATIONS

Based on the assessment, the 40-hectare site is currently underdeveloped and in a state of neglect, with minimal and irregular interventions lacking a standardized framework. There is a lack and gap in knowledge that is evident as the site requires efficient conservation and management processes, this is noted in the site's physical condition as well as its context as Pella has slowly deteriorated over the years, which has left it in a vulnerable and neglected state. It is possible to improve the conservation status of the site by implementing improved presentation and interpretation of the site, complete repair works, and determine the site's buffer zone. The local community's involvement is also necessary for the sustainability of the site's conservation and management as they can become key stakeholders in conserving the site while also benefiting from it economically. Additionally, creating educational programs focused on conservation management could be an approach to enhance the site's future prospects. The Archaeological Site of Pella retains immense opportunities for future research, planning, and sustainable development. As such, the site has great potential to be inscribed on UNESCO's List of World Heritage Site in the near future.

تقييم حالة الحفظ والإدارة في الموقع الأثري بيلا (طبقة فحل) في الأردن

فرح أسامة خزعلي¹، منذر محمود جمحاوي²، رامي عيسى الرزوق³

ملخص

يُعدُّ موقعُ بيلا الأثري (طبقة فحل) في الأردن موقعاً أثرياً فريداً يُمثِّلُ تسلسلاً تاريخياً غنياً، وهو ضمن القائمة التمهيدية المُرشَّحة للإدراج على قائمة التراث العالمي وفقاً للمعايير (i)(iii)(iv)، وتُدِيرُهُ حالياً وَتُنَظِّمُهُ وزارةُ السياحة والآثار وإدارة الآثار العامة في الأردن. تُقَيِّمُ هذه الورقة حالة الموقع في مجال الحفظ والإدارة من خلال مراجعة الظروف المادية المتوفرة والتهديدات والقيود الإدارية والفرص، وتُستَكشِفُ العملَ السنوي الذي نُفِّذُ فيه على مدار الخمسة عشر عاماً الماضية، بما في ذلك البعثات الخارجية وإنشاء مركز الزوار الجديد مؤخراً، إضافةً إلى تحديد جميع أصحاب المصلحة الذين لديهم فيه مسؤوليات متقاطعة، كما تُسَلِّطُ نتائجُ هذا البحث الضوءَ على نقاط القوة والضعف والتهديدات والفرص التي تواجهه. ومن الواضح أنَّ الموقعَ يتطلَّبُ عمليات صيانة وإدارة فعَّالة؛ حيث تدهورَ ببطء على مرِّ السنين؛ مما جعله في حالة ضعف وإهمال. بشكل عام، يوفرُ موقعُ بيلا الأثري فرصاً جيِّدةً لتحسين وتعزيز القيمة العالمية الاستثنائية التي يمكن أن تساعد في إدراجه في مواقع التراث العالمي.

الكلمات الدالة: بيلا، طبقة فحل، الأردن، الحفظ، الإدارة.

¹ طالبة ماجستير في إدارة حفظ التراث الثقافي، قسم الهندسة المعمارية، جامعة الشارقة، الإمارات.

رسالة ماجستير: تطوير خطة متكاملة لحفظ موقع بيلا الأثري في الأردن وإدارته.

² أستاذ مشارك في حفظ التراث، قسم الهندسة المعمارية، جامعة الشارقة، الإمارات؛ وأستاذ مشارك في كلية العمارة والتصميم في جامعة العلوم والتكنولوجيا الأردنية.

³ أستاذ دكتور في قسم الهندسة المدنية، جامعة الشارقة، الإمارات.

تاريخ استلام البحث 2023/5/18 وتاريخ قبوله للنشر 2023/8/2

REFERENCES

- Ababneh, A. (2018); "The Site of Pella in Jordan: A Case Study for Developing Interpretive Strategies in an Archaeological Heritage Attraction". *Near Eastern Archaeology*, vol. 81, no. 2, Pp:100–107.
- Bourke, S. (2013); "Pre-Classical Pella in Jordan: A Conspectus of Recent Work". *American Center of Research Newsletter*, vol. 25, no. 1 (Summer 2013), Pp: 1–12.
- Castellanos, C. (2001); "Sustainable Management for Archaeological Sites: The Case of Chan Chan, Peru, Sustainable Approaches to Building Conservation". In: *Managing Change: Sustainable Approaches to the Conservation of the Built Environment*, J. M. Teutonico and F. Matero eds., Pp: 107–116, Los Angeles: Getty Conservation Institute.
- Churcher, B. (2008); *Pella in Jordan: A Brief History of the Site*. the Pella Project, University of Sydney. http://www.astarte.com.au/Pella_in_Jordan_Booklet.pdf
- Darabseh, F. M. Q. (2010); *A Strategy for The Development of a Tourist Trail of the Decapolis Sites in Northern Jordan*. unpublished Doctor of Philosophy, Institute of Archaeology and Antiquity, College of Arts and Law, The University of Birmingham, England.
- Demas, M. (2000); "Planning for Conservation and Management of Archaeological Sites: A Values-Based Approach". In: *Management Planning for Archaeological Sites*, Pp: 27–54, Los Angeles: Getty Conservation Institute.
- DoA. (2013); *Tabaqat Fahal Project 2013* [Unpublished report in DoA Archives].
- DoA. (2018); *Presentation of the Tourist Visitor Path Project at Tabaqat Fahal Archaeological Site* [Unpublished report in DoA Archives].
- EcoPeace. (2015); *Jordanian National Master Plan for the Jordan River Valley*. web site: https://ecopeaceme.org/wp-content/uploads/2022/03/Jordanian_National_Master_Plan-2019_05_06-06_06_03-UTC.pdf
- FB Architects. (2014); *A report on the building operation plan Tabaqat Fahal Visitor Center Project* (تقرير خاص بخطة تشغيل المبنى لمشروع مركز زوار طبقة فحل), 1–5. Faris Bagaeen Architects, Engineers, Consultants.
- ICOMOS (2004); *International Charters for Conservation and Restoration = Chartes Internationales sur la Conservation et la Restauration = Cartas Internacionales sobre la Conservación y la Restauración, I MONUMENTS AND SITES*, Munich, Germany, 2nd ed.
- Kazali, F. (2022); *Developing an Integrated Conservation and Management Plan for the Archaeological Site of Pella in Jordan*. University of Sharjah.
- Khalil, I. J. (1984); "Pella in Jordan I. By Anthony McNicoll, Robert Smith, and Basil Hennessy". *American Journal of Archaeology*, vol. 88, no. 3, Pp: 426–427.
- Matero, F. (2006); "Making Archaeological Sites: Conservation as Interpretation of an Excavated Past (2006)". in: *Archaeological Sites: Conservation and Management*, Pp: 120–131, Los Angeles: Getty Conservation Institute.
- Pedregal, P. D. and Diekmann, A. (2012); "Is It Possible to Reconcile Protecting Archeological Sites with Opening Them to the Public? (2004)". In: *Archaeological Sites: Conservation and Management*, Pp: 743–750. Los Angeles: Getty Conservation Institute.
- Smith, R. H. (1968); "Pella of the Decapolis, 1967". *Archaeology*, vol. 21, no. 2, Pp: 134–137.
- Sullivan, S. (1997); "A Planning Model for the Management of Archaeological Sites". In: *The Conservation of Archaeological Sites in the Mediterranean Region*, Pp: 15–26, Los Angeles: Getty Conservation Institute.
- Sullivan, S. and Mackay, R. (2012); *Archaeological Sites: Conservation and Management*, Los Angeles: Getty Conservation Institute.
- Quaranta, R. (2001); "Pella (Modern Tabaqat Fahal)". *UNESCO World Heritage Centre for World Heritage Travellers*, <https://www.worldheritagesite.org/tentative/id/1554>
- Walmsley, A. (1997-1998); "Settled Life in Mamluk Jordan". *ARAM*, vol. 9, no. 1, Pp: 129–143.
- Walmsley, A. (2007); Households at Pella, Jordan: Domestic Destruction Deposits of the Mid-8th C. *Late Antique Archaeology*, 5(1), 239–272. <https://doi.org/10.1163/22134522-90000111>.