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Traditional Dwellings and Settlements

Working Paper Series

RISK MANAGEMENT STRATEGIES FOR CULTURAL HERITAGE IN LIBYA: INSIGHTS FROM GHADAMES CITY.

Fatma Seila, Gehan Selim, May Newisar

RISK MANAGEMENT STRATEGIES FOR CULTURAL HERITAGE IN LIBYA: INSIGHTS FROM GHADAMES CITY.



In today's globalized era, the increasing international challenges of heritage and the exacerbation of illegal human activities such as wars, urbanization, economic growth, and tourism pose risks to cultural heritage safety. Hence, global efforts have increased to manage and conserve cultural heritage and ensure its continuity of introducing societies' identities and consolidating the feeling of belonging.

Libya has a wealth of diverse cultural heritage. As a state in the post-conflict period, its cultural heritage is exposed to the exacerbation of the human threats it is exposed to. This requires appropriate management to avoid its adverse effects and maintain the safety and value of this rich heritage.

This paper aims to study the management strategies used in Libya to manage human risks. This is done by determining these risks and assessing their seriousness. Moreover, the effectiveness of the performance of cultural heritage institutions in addressing human risks is evaluated, in addition to the planning methods used and the approved strategies.

To obtain a more comprehensive understanding of risk management in Libya, this research uses a qualitative approach and a case study as a research design. The selected case study, Ghadames City, includes a World Heritage Site and four local sites. In addition, two institutions are responsible for overseeing and managing these sites. This makes it a suitable model for verifying the performance of various state institutions, as well as the possibility of generalizing results.

The initial results specified that the heritage management system in Libya lacks planning strategies and works with short-term plans. The institutions also work without the support of the main stakeholders. Furthermore, the results show a substantial difference in the performance of administrative institutions in the case study, attributed to the administrative independence granted to each of them. The research outcome will help to understand the adequacy of risk management strategies employed to conserve cultural heritage and propose a framework to enhance its performance.

1. INTRODUCTION

Shenzhen was a series of small villages, on China's border with Hong Kong, totaling around thirty thousand. Cultural heritage is a fundamental element of a society's national identity, reflecting their historical development, enhancing their social cohesion, and serving as an essential source of economic growth through tourism and cultural diplomacy. In Libya, cultural heritage holds significant importance due to the country's rich historical legacy, which extends from the ancient civilizations of the Phoenicians, Greeks, and Romans to the Islamic and Ottoman periods. The country boasts five World Heritage Sites, including Leptis Magna, Cyrene, Sabratha, the Old City of Ghadames, and the rock art sites of Tadrart Acacus. Each of these sites is a living testimony to the country's cultural and historical diversity.

Despite their great importance, Libya's cultural heritage sites face increasing threats, especially in light of armed conflict and political instability. Many global experiences have shown that wars and conflicts pose a

fundamental threat to heritage sites. Example can be seen in Syria, where sites such as Palmyra and the Citadel of Aleppo were severely damaged as a result of fighting, Iraq, which witnessed the systematic destruction of Assyrian and Islamic sites amidst the instability of armed conflict, and the bombing of the ancient city of Dubrovnik in Yugoslavia^{1,2}. Ideological extremism has also had a devastating impact on heritage, as was the case in Afghanistan when the Buddha statues in Bamiyan were destroyed, or when armed groups targeted the archaeological monuments in Timbuktu in Mali^{3,4}.

Libya was no exception to these challenges. Although its archaeological sites were not directly bombed during the Libyan Civil War of 2011, the political unrest, security vacuum and conflict that followed exacerbated the human risks threatening heritage. For instance, some sites were damaged due to armed clashes, such as the Qarmali Mosque in Tripoli, the Italian Theatre in Benghazi, and the ancient citadel in Sabha^{5,6}. Furthermore, Libya experienced deliberate demolitions of shrines and ancient tombs, as occurred with the Murad Agha Shrine and the tombs in the city of Zuwayla, amidst the rise ideological trends that reject Sufi and historical heritage^{7,8}.

In addition to the damage inflicted by armed conflict, Libyan heritage faces enduring challenges regarding its management and protection. Political and legislative instability following the revolution has weakened the institutions responsible for heritage, rendering heritage sites more vulnerable to theft, smuggling, uncoordinated urban expansion, and encroachment upon archaeological areas. A prominent example of this was the theft of the assets from a bank in Benghazi, which included invaluable archaeological treasures^{9,11}. Certain World Heritage Sites, such as Sabratha, Leptis Magna, and Cyrene, have also experienced an uptick in urban encroachments, in addition to overgrazing and agricultural activities near archaeological sites, highlighting the absence of effective control over these cultural properties^{7,8,12}.

Human activities that damage heritage sites in Libya were not solely a consequence of the revolution, but also stem from a lack of adequate preservation and care for heritage sites before the 2011 revolution. Libya is a country whose economy relies on oil, and heritage has not been a priority in any of the country's political eras^{5,13}. However, when examining the period of the 2011 revolution and prior to it, one finds that heritage sites suffered from mismanagement, insufficient conservation strategies, and a scarcity of funding. After the revolution, this issue was exacerbated by the weak enforcement of heritage laws and the absence of adequate protection for heritage sites^{5,14,15,16,17,18}.

Administrative issues in the management of heritage sites constitute a global challenge. Countries experiencing political instability due to wars, such as Syria, Iraq, Yemen, and Ukraine, face mismanagement, insufficient funding, and a lack of expertise due to death or migration². In this context, international organizations like the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the

International Council on Monuments and Sites (ICOMOS) have endeavored to develop frameworks to address these challenges, highlighting the necessity of effective management strategies to ensure the long-term preservation of heritage sites⁹.

Many countries have adopted and tailored these practices to their specific contexts, resulting in progress in managing threats to their cultural heritage. Notable examples are referred to as best practices in heritage management, as seen in relation to the 32 sites listed on the UNESCO website as exemplary cases²⁰. These cases (among others) have successfully identified deficiencies in their heritage management, arriving at solutions to address these gaps. Improvements were achieved by assessing the current situation and striving to enhance existing strategies.

This is what this study aims to achieve; to provide a comprehensive analysis of the strategies for managing human risks that threaten cultural heritage in Libya by examining the case of Ghadames city as an applied model for this issue. This study will identify the human risks facing heritage sites, whether caused by conflict, urban expansion, institutional neglect, or illegal human activities such as theft. Additionally, it will analyze the efficiency of the institutions responsible for heritage protection in addressing these risks.

The importance of this research lies in its ability to illuminate the actual challenges facing cultural heritage in Libya, particularly given the unstable political and security conditions in the country. By analyzing the case of Ghadames, broader insights can be gained regarding the issues experienced by institutions involved in heritage management, which aids in offering realistic recommendations for enhancing policies and procedures related to heritage protection. Furthermore, the results of this research can hold practical value for governmental bodies and NGOs operating in the field of heritage, as it may assist in developing a more effective framework for safeguarding archaeological sites from human threats. This study also contributes to raising public awareness about the significance of cultural heritage and its role in bolstering national identity, along with underscoring the connection between heritage management, political stability, and sustainable development. Furthermore, the applicability of this study's findings are not confined to Libya alone but offer a model that can be applied to other nations facing similar challenges. In this manner, the research enriches the academic dialogue on cultural heritage management in unstable regions and formulates more sustainable strategies for its long-term protection.

This paper begins by discussing the relevant literature, which establishes a proposed framework for evaluating risk management practices. Subsequently, it presents a detailed case study analysis of Ghadames city and outlines the methodology employed to gather data. This entails the collection of policy documents, and semi-structured interviews based on the framework suggested by the literature. It is followed by a discussion of

findings and proposed recommendations to enhance the management of human risk of cultural heritage in the case study, which can be generalized to the broader Libyan context.

2. LITERATURE REVIEW

2.1. Libya's Heritage Governance System

Libya's state institutions are structured hierarchically, with decision-making authority concentrated at the top, restricting flexibility at lower levels^{21,22}. Such centralization promoted uniformity but presents challenges when rapid adaptability is necessary. More decentralized institutions approaches could be more effective in responding swiftly to changing circumstances. The success of decentralized institutional power model relies on the communication and feedback mechanisms within the system, as well as the competence of senior officials²³.

The persistence of centralized institutions is rooted in Libya's political and historical context, including the centralized governance under the previous regime, which was characterized by a one-man rule²². Post-revolution attempts at decentralization have struggled to change entrenched structures. During the prior regime, strategic planning and resource allocation were often erratic due to fluctuating powers within ministries. These issues persist today, manifesting as inadequate planning, ineffective management, and low productivity within public institutions²². Additionally, Libya's tribal structure complicates decision-making, with the Shura Council of tribal elders playing a significant role in local governance, reinforcing the hierarchical nature of decision-making²².

In the realm of heritage management, the same centralized structure applies. The Antiquities Department, which oversees the protection and management of Libya's cultural heritage, operates under laws based on legal frameworks introduced during the Italian occupation of Libya, including the Antiquities Law of 1968 and the 1994 Law No. 3 concerning archaeological sites and museums. Despite the efforts of this institution to safeguard heritage, it faces persistent challenges due to the state's centralization of decision-making, leading to frequent changes in their administrative affiliations^{5,13}.

Globally, hierarchical decision-making models are common in cultural heritage management. For instance, in Saudi Arabia, national authorities lead decision-making, ensuring strong coordination but limiting local community involvement in conservation efforts²⁴. In China, a fragmented governance structure hinders coordination, making it difficult to implement cohesive conservation strategies²⁵.

Similarly, while Libya's centralized approach to heritage management aims to ensure uniformity and control, its poor execution has led to weak management and damage to heritage sites. A more flexible, participatory management model may be required to improve the preservation and sustainability of Libya's cultural heritage.

2.2. Learning from Global Best Practices in Heritage Risk Management

While Libya's centralized governance presents distinct challenges, many other countries confronting similar constraints have implemented adaptive strategies to enhance heritage management. Analyzing these global best practices provides valuable insights for addressing Libya's shortcomings.

Heritage management systems are guided by international standards developed by organizations like UNESCO and ICOMOS. UNESCO's operational guidelines emphasize the value of adaptive management systems that integrate legal, institutional, and resource elements in a flexible manner, ensuring adaptability to evolving challenges. These systems operate across various levels, from national frameworks to local adaptations, enhancing flexibility in heritage management²⁶.

Many countries have adopted UNESCO's heritage management systems, such as the Burra Charter, to tackle local challenges and improve practices. For instance, Jordan's management of Petra, a complex site with both cultural and natural features, uses a participatory planning process that involves all stakeholders - local communities, government agencies, and international organizations - in decision-making. This collaborative approach ensures that local issues are addressed, and management plans can adapt to future needs^{27,28}.

Similarly, Uganda's successful restoration of the Kasubi Tombs, with support from UNESCO and other international organizations, led to the site removed the site from the UNESCO in Danger List in 2023. This success emphasizes the importance of community participation and traditional knowledge in heritage management, ensuring that local communities have the skills and knowledge to protect their heritage²⁹.

New Zealand's risk management framework also offers valuable lessons, highlighting the need for flexible legislation and community engagement, particularly in response to disasters, and adapting regulations to emerging risks³⁰.

These practices provide key insights for Libya, highlighting the importance of engaging diverse stakeholders at every stage of heritage management. They underscore the need for legislation to evolve with the threats faced by heritage sites, ensuring that all actions taken are transparent and understood by all parties involved. Key themes from the literature (Figure 1) include participatory governance, community participation, legislative adaptation, and transparency.

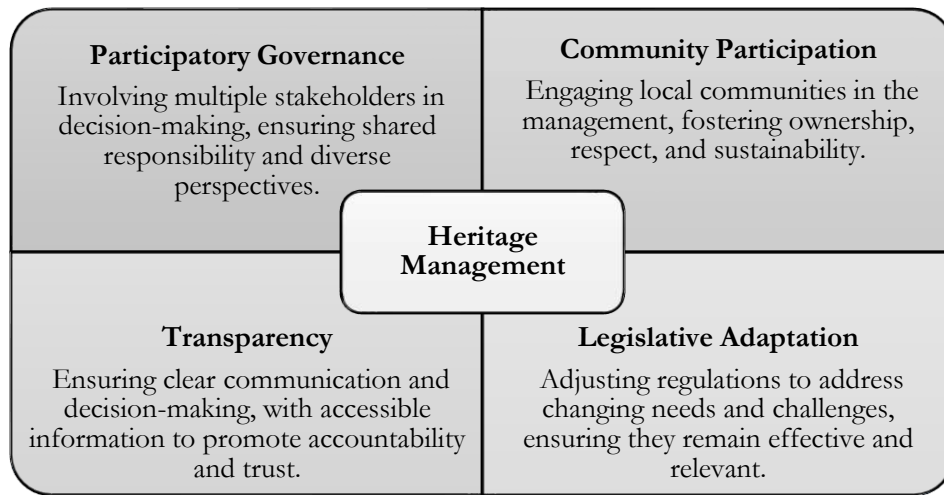


Figure 1. Factors for Enhancing Heritage Management (Source: Researcher).

The management of Petra exemplifies the role of participatory governance, where diverse stakeholders, including local communities, governmental bodies, and international organizations, engage in decision-making. This shift from top-down models to more inclusive and democratic approaches challenges traditional authority in heritage management, ensuring that community values are incorporated. By empowering local communities through direct involvement in decision-making, a sense of ownership is fostered, which is vital for sustainable conservation^{31,33}.

Likewise, the success of the Kasubi Tombs in Uganda highlights the importance of community participation, which preserves traditional skills, fosters a sense of ownership, and promotes social cohesion. This approach integrates economic, social, cultural, and environmental values, essential for sustainable development^{34,35}.

In the Libyan case, adopting similar stakeholder models would promote collaborative management and decision-making, shifting from centralized to more inclusive heritage conservation. Rooting conservation in local knowledge and traditions can enhance conservation outcomes.

New Zealand's experience also underscores the need for flexible heritage laws, particularly after disasters, to address emerging risks. Libya should review its outdated heritage management laws, incorporating improved risk management provisions to ensure the legal framework remains relevant and capable of protecting cultural heritage in the face of new challenges.

Finally, the importance of transparency in heritage management is evident in these case studies. Effective communication and open decision-making processes build trust and accountability among stakeholders, ensuring full commitment to conservation plans. Libya would benefit from adopting transparency in its heritage management system, ensuring efficient and informed conservation efforts.

Incorporating the principles that have contributed to the success of heritage management plans for other sites, this study integrates them into the risk management framework and assesses their applicability to heritage sites. The adoption of participatory governance, community engagement, and flexible legal frameworks forms a strong foundation for heritage management, fostering collaboration and transparency while addressing emerging challenges. This approach highlights the importance of risk management in safeguarding both the physical and cultural significance of heritage sites, ensuring their protection in the face of evolving threats.

2.3. Integrating Theory and Best Practices in Heritage Risk Management

Building on these global lessons, this section explores heritage risk management frameworks, particularly in managing human-induced threats. It culminates in a conceptual model integrating theoretical insights with the practical strategies observed in successful international cases.

Heritage risk management is vital for protecting cultural heritage from threats like natural disasters, climate change, human activities, and neglect. It involves identifying, assessing, prioritizing, and mitigating risks to reduce their impact on heritage sites. Recently, there has been a shift toward proactive risk management in heritage conservation, focusing not just on physical structures but also on preserving their cultural and symbolic value. This requires ongoing monitoring, collaboration, and strategic planning to protect heritage for future generations^{36,37}.

A typical risk management process includes defining the context, identifying risks, analyzing impacts, evaluating severity, implementing strategies, and monitoring changes (Figure 2). The ISO 31000 framework and ICCROM's guidelines stress the importance of stakeholder engagement and public awareness. Human-induced risks, such as vandalism, neglect, and inappropriate development, often arise from a lack of awareness about heritage value. This highlights the need for human risk management that incorporates heritage significance outreach, engaging communities and decision-makers to prevent threats.

The planning phase of heritage management is essential in linking theoretical frameworks to implementation. The value-based approach, which considers both the tangible and intangible aspects of heritage, has become key. Value-based conservation recognizes that heritage is more than its physical manifestations; it embodies

meaning to society. The Bora Charter defines heritage significance as embodied in a site's fabric, use, associations, meanings, and related objects³⁸. Thus, heritage should be managed not only for its physical attributes but also based on its societal values.

For example, Japanese heritage management prioritizes spiritual significance, as seen in the Ise Grand Shrine, which is rebuilt every 20 years while retaining its spiritual value. This illustrates that a site's significance can go beyond physicality and reside in its social and historical meaning³⁹. The value-based approach helps make informed conservation decisions, especially when resources are limited, ensuring the preservation of the most significant heritage⁴⁰ [40].

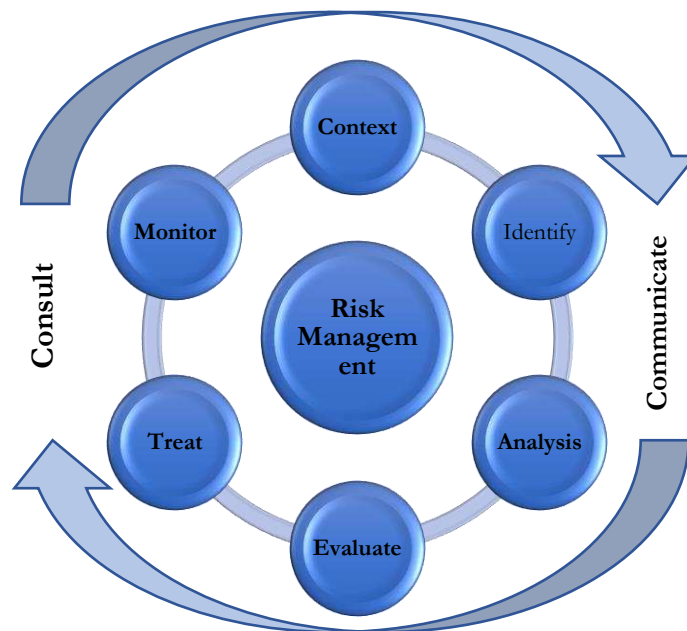


Figure 2. The ISO 31000 heritage risk management process (Source: Pedersoli Jr et al., 2016)

Despite its advantages, value-based management faces criticism. Assessments may not fully consider a site's historical significance or could reflect biased views of experts. However, inclusive stakeholder engagement and long-term historical analysis can mitigate these issues.

Incorporating value-based planning into Libya's heritage risk management framework can enhance sustainable conservation efforts, safeguarding sites in a manner that aligns with community values. Effective heritage risk management necessitates the comprehensive involvement of all stakeholders in management and decision-making, legislative adaptation, and transparency. By integrating value-based planning, heritage

conservation decisions can better reflect the cultural and historical significance of sites, thereby raising awareness and mitigating threats.

Based on those approaches, this study will assess the current state of cultural heritage management in Ghadames in term of human risk, considering all the aforementioned aspects as presented in Figure (3). Identifying issues in heritage management at Ghadames is essential for developing sustainable and adaptive management systems that align with local and global conservation objectives.

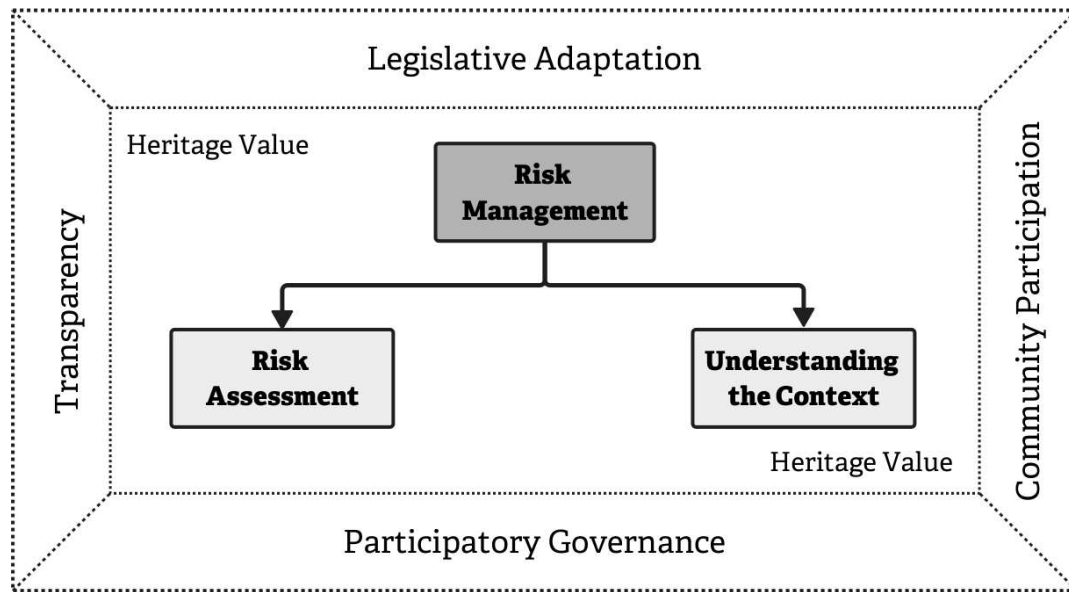


Figure 3. A theoretical framework for evaluating heritage management best in the literature (Source: Researcher).

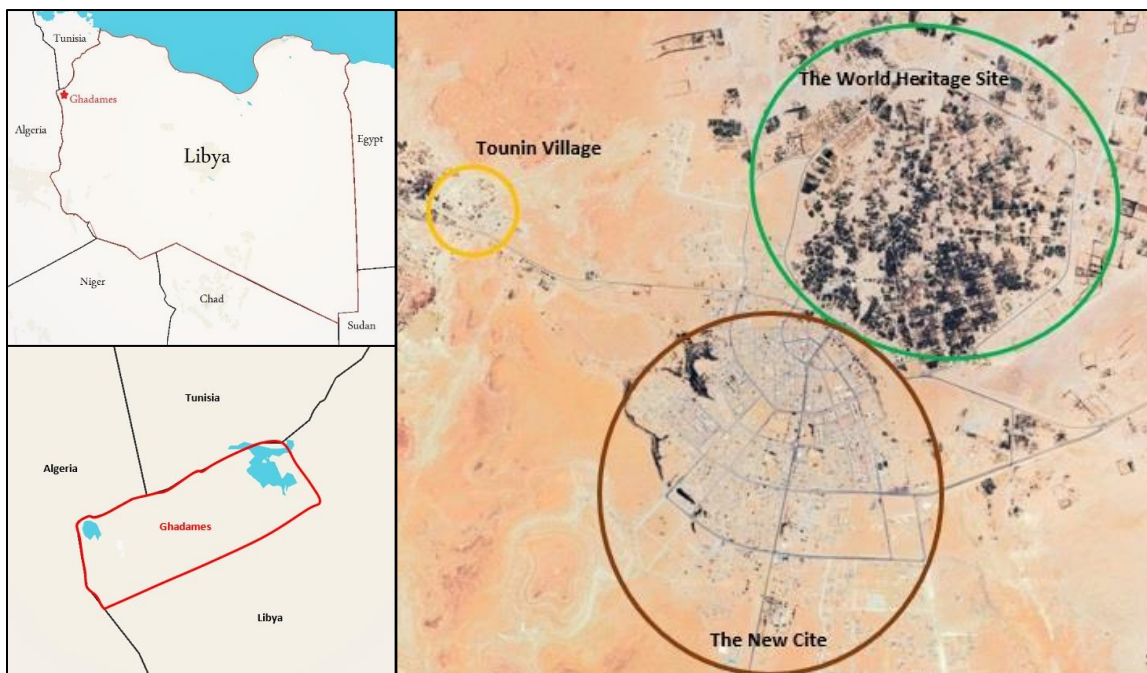
3. CASE STUDY: GHADAMES CITY

Ghadames is a desert city in western Libya, situated in the border triangle between Libya, Tunisia, and Algeria (Figure 4). The city comprises two parts: The Old City (OCG) and the new district. The old part, characterized by its multi-level mud-brick houses and intricate alleyways, has represented Saharan life for centuries. In contrast, a modern district has developed outside the OCG walls, showcasing contemporary housing, infrastructure, and services.

Ghadames, a city with deep historical, cultural, and architectural significance, owes its importance to its carefully chosen geographical location. The founders selected the site due to the presence of the Ain Al-Faras spring (Figure 4), which ensures the availability of water and for the natural protection provided by dunes to the south that shield the city from harsh desert winds. Additionally, the region was rich in essential building

materials such as clay, limestone, and gypsum, which allowed the city to be constructed and sustained over centuries. Ghadames' strategic location also made it a vital transit center for commercial caravans. Travelling between North and sub-Saharan Africa, these caravans transported goods and played an essential role in spreading knowledge, culture, and Islam to the city^{41,42}.

The historical significance of Ghadames is rooted in its role as a site of various successive civilizations, including the Romans, Phoenicians, and Arabs, and many sites in the city are evidence of those eras. These civilizations contributed to the city's rich cultural heritage, making it an important historical center. The city's exceptional architectural design is another key aspect of its significance. Using available building materials, the city's layout achieved practical and aesthetic value. Its design reflected the social structures of its inhabitants, promoting social cohesion through interconnected dwellings and meeting religious needs with separate spaces for men and women. This innovative urban planning contributed to the city's comfort and the functionality of daily life^{41,43}.



Ghadames' cultural and architectural uniqueness and its historical richness led to its recognition as a World Heritage site. In 1986, it was included in UNESCO's World Heritage List for meeting the criteria of being an outstanding example of a traditional human settlement that reflects the interaction between humans and the environment, especially as it faces the threat of irreversible change. Ghadames' global significance is further reflected in its recognition by the Arab Cities Organization in 1980 and the World Heritage Cities Organization in 1999.

3.1. Ghadames Heritage Sites

Ghadames city has many heritage sites, ranging from historical sites to archaeological sites and historical buildings. The most famous of these sites is the (OCG), with its distinctive architecture and sustainable urban planning that is adapted to the harsh desert conditions. Ghadames extends over an area of 8 hectares within 215 hectares of orchards and includes approximately 1,600 traditional buildings, including houses, mosques, schools, and shops, surrounded by a protective wall with seven gates⁴² (Figure 5).

The buildings within the OCG are a fine example of desert architecture, carefully designed to carefully designed to mitigate the effects of the harsh climate, resource constraints and social needs. The city's houses typically stand four floors high, reaching up to 12 meters, with floors staggered in layers. This staggered architecture often interlocks with neighboring structures, creating a unique load-bearing system that does not rely on structural beams but instead on support from surrounding buildings. While this design is highly effective in withstanding the desert environment, it requires regular maintenance to prevent cracks. If one building collapses, it can damage or even induce collapse in connected buildings due to the interconnected nature of the structure^{44,45}.

The building techniques used in Ghadames are traditional and simple, passed down through generations, and have stood the test of time and contributed to the preservation of the city. The buildings were built using local materials, primarily mud, palm trunks, natural roofing materials, and other materials such as gypsum, light stones, and hard limestone. The choice of materials is influenced by both their availability in the surrounding desert environment and the season, with careful attention paid to the preparation and treatment of materials to ensure their durability. This preservation of traditional methods has allowed Ghadames to maintain its unique architectural style and function, which is in perfect harmony with its environment^{44,47}.

The city contains some distinct buildings that were built later in different eras. One such building is the Tilwan School, which was originally built as a palace for the Ottoman governor before being reused as the first girls' school in Ghadames in 1940⁴⁸. While the Tilwan School does not follow the traditional architectural design of Ghadames, it does incorporate local materials and building techniques. Another notable building is the Ain Al-Faras Hotel, built by the Italians in 1926⁴¹. In contrast to the traditional architecture of Ghadames, the hotel was built with modern materials and design, which contrasts sharply with the city's unique character. Furthermore, there are modern buildings in the city's surroundings, such as the first modern school in Ghadames, which is still in use today as a center for memorizing the Holy Quran, and a government building that now serves as the headquarters of the Ghadames administration. These modern structures highlight the ongoing balance between preserving the integrity of Ghadames' historical architecture and adapting to the needs of the present.

Additionally, the city is home to several local attractions (Figure 6). The first is Tounin village, a miniature world heritage site located 3 km away from (OCG), featuring the same design and structure. Furthermore, Ghadames city houses archaeological remnants of palaces and castles from various eras, including the Temsammudin site which is Roman funerary monuments, the Maqdoul Palace also dates back to the Roman era. In addition, the Al-Ghoul Palace, locally known as Ras Al-Goual, shares similarities with other castles in Libya. Majazm Castle, built during the Ottoman era in 1845, is located about 40 km from the city. Furthermore, the city boasts an extant castle constructed during the Ottoman era and later expanded during the Italian occupation, now the site of Ghadames Museum. Unfortunately, all the local sites are in a state of neglect and abandonment, exposed to violations^{49,50}.

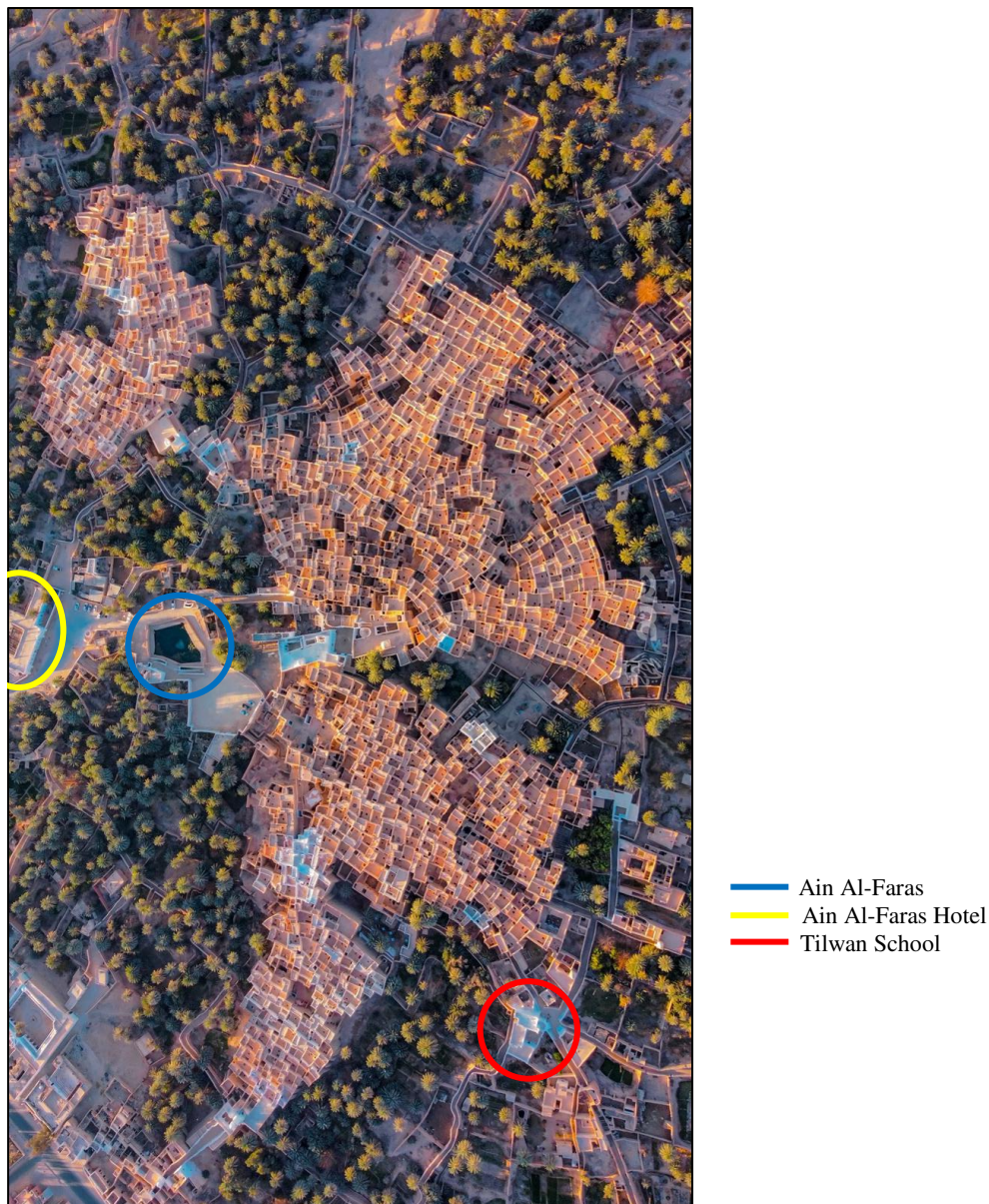


Figure 5. Aerial map of the old city of Ghadames (Source: Researcher, 2024).

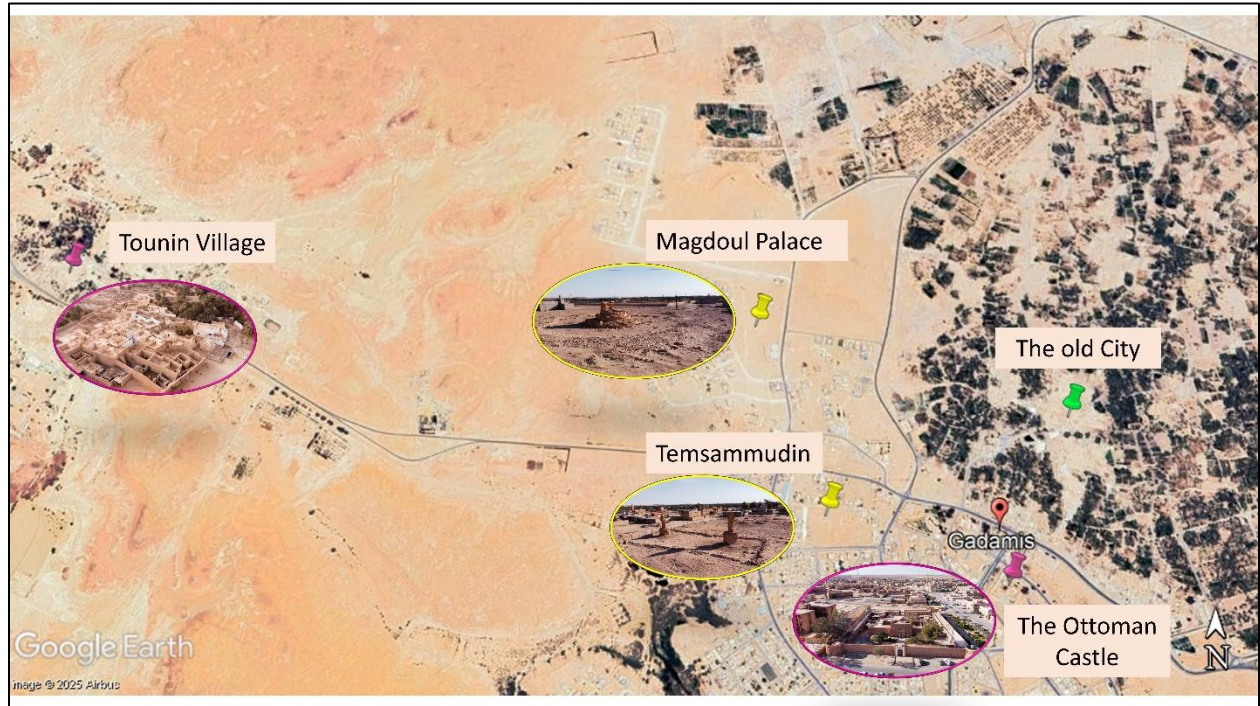


Figure 6. Location of some of Ghadames' local heritage sites (Source: Google Map, 2025).

3.2. Ghadames Heritage Institutions

Local heritage management institutions cannot be understood without first understanding Libya's higher institutions. Libyan heritage sites are managed by two central entities: The Antiquities Department and The Historical Cities Management Authority. Each has several branches spread across various cities. Some cities house branches of one or both national institutions, depending on the classification of the heritage sites they host and their legal affiliation with either. Furthermore, there are a few local institutions dedicated to specific heritage sites.

Ghadames has two institutions responsible for managing its heritage sites; the first is a branch of the Antiquities Department known as the Ghadames Antiquities Monitoring Branch (GAMB), established in 1985. This department however is regarded as an executive body rather than a decision-maker, particularly in significant tasks, as most of its responsibilities are directed by the central department. This body is responsible for all archaeological sites, such as Temsammudin, the Maqdoul Palace, the Al-Ghoul Palace, and Majazm Castle, in addition to the Ottoman Castle, which serves as its headquarters.

According GAMB's Resolution No. 2 of 2011, some of its duties include supervising the conduct of daily operations at heritage sites, implementing decisions of the central department, following up on monitoring plans and programmes, preparing periodic reports about them, inspecting immovable and movable antiquities

to ensure their safety and proposing methods for their preservation, and providing security and monitoring for buildings and sites⁵¹.

The second entity managing heritage at Ghadames is the Ghadames City Promoting Development Authority (GCPDA), one of two local institutions of this type established in Libya. One is located in the capital city and pertains to the old city of Tripoli, while the other is the GCPDA, which focuses on Ghadames. According to Resolution 401 of 2007, the GCPDA was established as an institution with legal personality and independent financial accountability. This institution is solely concerned with the Ghadames World Heritage Site.

The main tasks of the GCPDA are [52]:

- Carrying out restoration and maintenance work within the OCG.
- Paying attention to the farms surrounding the OCG and working to revitalize them.
- Implementing the provisions of Law No. (3) of 1993, which protects antiquities, museums, ancient cities, and historical buildings related to the UNESCO site.
- Providing traditional building materials that meet precise technical specifications.

The heritage sites of Ghadames, primarily managed by those two entities, are responsible for preserving the city's rich cultural and historical significance. However, despite their mandates, these institutions face challenges such as mismanagement and neglect, leading to risks ranging from structural deterioration to inadequate maintenance practices. This situation highlights the urgent need for improved governance, enhanced preservation efforts, and increased community engagement to protect Ghadames' invaluable heritage for future generations.

4. METHODOLOGY AND METHOD

This study employs a qualitative approach to evaluate heritage management strategies in Libya, concentrating on human risk management. Given the necessity of an in-depth examination of heritage management's current and historical status, it is beneficial to focus on a singular case study to identify all its aspects and the potential for effective management^{53,54}. Case studies allow for an in-depth study of a phenomenon's natural context and enable a comprehensive inquiry⁵³. The selected case study is that of Ghadames city, which encompasses two heritage institutions, thus making it an embedded case study (Figure 7). This is demonstrated by selecting one case with multiple units of analysis⁵³.

Moreover, one of the advantages of the case study as a research method is the potential to utilize multiple strategies for data collection, which this study necessitates. Initially, it relied on analyzing documents and policies related to administrative institutions and their operations, as well as the regulations governing their

activities. Semi-structured interviews were also conducted with staff of heritage institutions at both the national and local levels. This provided insights into the mechanisms of cooperation between them, alongside identifying the stakeholders relevant to the case study, who are a vital element that must not be overlooked when evaluating the effectiveness of the strategies adopted to manage heritage risks. This data collection approach offers a comprehensive understanding of the social context of the selected case, and the past and present challenges faced by management institutions in conserving heritage sites.

The study aims to evaluate the effectiveness of human risk management for Ghadames sites; therefore, the theoretical framework proposed in the literature was relied upon during the data collection phase.

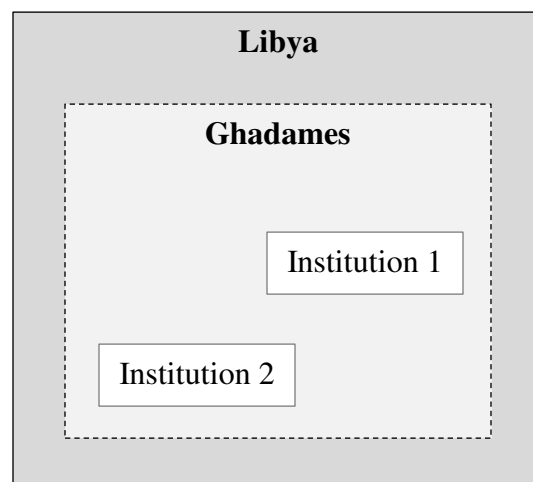


Figure 7. Single case study with multiple unities of analysis (Source: Yin, 2018).

4.1. Documents and Policy Analysis

The analysis of documents related to the two heritage institutions in Ghadames included a comprehensive review of political documents, laws, and correspondence. This process was crucial for understanding the operational mechanisms of these institutions and the scope of their authority to issue decisions. Furthermore, the analysis illuminates the nature of cooperation between these institutions and the parties concerned with heritage preservation.

Despite the challenges posed by the scarcity of available documentation due to the poor state of archiving practices in some institutions, and the significant loss and damage of many records during the 2011 revolution, the available documentation still provides valuable insights. These materials provided a detailed and clear view of the heritage institutions' administrative framework and status over time. In particular, they helped clarify the evolution of these institutions, highlighting the strategies employed in risk management.

This analysis also aided in recognizing the references upon which decisions were based, typically included in these documents.

Furthermore, the documents allowed the researcher to trace the historical trajectory of these institutions, providing a long-term perspective on their activities, achievements and challenges. This retrospective examination was invaluable because it provided a stable and objective account of the evolution of the institutions without being distorted by the biases or perspectives of the individuals involved⁵⁵. This approach facilitated the formation of a nuanced understanding of how these heritage institutions functioned and their interactions with other relevant actors over time.

The analysis of these documents offered a rich narrative about heritage institutions in Ghadames. The insights were also vital for understanding their historical context and contributions to heritage risk management.

4.2. Semi-Structured Interviews

This study conducted semi-structured interviews with 24 key stakeholders involved in managing heritage sites in Libya. These stakeholders included directors of heritage institutions, legal affairs officers, planners, and staff from implementation departments at both the national and local levels. Additionally, interviews were held with 10 local stakeholders directly connected to the management of heritage sites. The interviews continued until data saturation was achieved, ensuring sufficient responses were gathered to address the research inquiries thoroughly and that the interviews no longer provided new information^{56,57}.

The interview process began with probing questions designed to clarify participants' perspectives on the issue at hand, often uncovering aspects not immediately apparent to the researcher⁵⁸. In the second phase of the interviews, the focus shifted to a deeper exploration of the core subject of the study. Drawing on a theoretical framework established in the literature, this phase aimed to evaluate the performance of the heritage institutions. By doing so, the researcher could identify weaknesses within the institutions and ensure that the recommendations based on the interview findings would be both practical and effective. The questions varied according to the interviewee's role and area of expertise, enabling a more tailored approach for each participant.

To analyze the data collected from the interviews, thematic analysis and coding were employed, concentrating on identifying recurring patterns linked to key themes such as the effectiveness of legislation, risk assessment strategies, stakeholder participation, decision-making transparency, and the level of cooperation and coordination between institutions. This analytical approach aimed to evaluate how effectively existing

legislation responded to the challenges faced by administrative institutions in managing heritage sites. It also sought to understand the strategies employed for risk management, the process of developing administrative plans, and the relationship between central heritage administration and its local branches. Furthermore, it examines how relevant stakeholders were selected for participation in heritage management and evaluates the extent and quality of their involvement.

The study's findings helped identify the strengths and weaknesses of the administrative structures and offered insights into the mechanisms that either facilitated or hindered effective heritage site management. This comprehensive evaluation contributed to a deeper understanding of the operational strategies within Ghadames's heritage institutions and provided a solid foundation for formulating recommendations to enhance management practices.

5. FINDINGS AND DISCUSSION

5.1. Human Risk Facing Ghadames Cultural Heritage Sites

The interviews conducted in Ghadames revealed a clear difference in the level of attention given to various heritage sites within the city. While locals view the OCG site as a source of pride, other heritage sites have not received the same attention or care. The OCG is cherished by residents as the city's heart, representing its cultural identity. However, other sites do not attract much interest despite their historical and archaeological significance.

One such site is Tounin village, which bears similarities to OCG; however, its distance from the main area and its resemblance to the UNESCO World Heritage Site have resulted in reduced interest. Similarly, most locals have largely overlooked the archaeological remains throughout the city. These architectural remnants and archaeological sites, regarded by many as mere ruins, do not possess significant value in the eyes of the community. In fact, some sites, such as Qasr Maqdoul and Tamsammudine, are even resented by certain locals, as they occupy strategically important land within the modern city that could be utilized for more practical purposes.

The Ottoman castle (Ghadames Museum), another significant historical site, has similarly lost its prestige and appeal. The museum itself has been closed since 2011. The central part of the castle is now used as the headquarters of the local branch of the Antiquities Department, while the Public Safety Authority occupies the other section. Consequently, the castle is no longer regarded by locals as a historical monument but rather as just another government building.

The variation in the perceived value of different heritage sites among the residents of Ghadames has influenced the focus of the interview results. Most attention was directed towards identifying human risks to the OCG site, while some risks related to other sites were also acknowledged. The differing levels of importance attributed to these sites by the local community played a crucial role in shaping the nature of the identified risks. A summary of these risks and their assessment is presented in Table (1).

NO.	RISK	FREQUENCIES OF OCCURRENCE	RATE	IMPACT	RATE	RISK SEVERITY	RATE
1	Neglect of the museum maintenance	Almost certain	5	Catastrophic	5	Extreme	25
2	The neglect of OCG houses by residents	Almost certain	5	Major	4	Extreme	20
3	The government system	Almost certain	5	Major	4	Extreme	20
4	Vandalism and scribbles	Almost certain	5	Moderate	3	Very high	15
5	Urban sprawl	Probable	4	Moderate	3	High	12
6	Renting houses to expatriate workers	Probable	4	Moderate	3	High	12
7	Poor maintenance and non-original material	Possible	3	Major	4	High	12
8	Uncontrolled irrigation water in farms adjacent to the buildings	Improbable	3	Major	4	High	12
9	Unqualified workers	Improbable	2	Moderate	3	Medium	6
10	Allocating quarries to citizens	Probable	4	Minor	2	Medium	8
11	Uncontrolled domestic tourism	Possible	3	Moderate	3	Medium	9
12	Waste on farms, houses and the city outskirts	possible	3	Moderate	3	Medium	9
13	Theft	Possible	3	Minor	2	Medium	6
14	Use of heavy machinery inside the city	Rare	1	Insignificant	1	Very low	1

Table 1. The human risk of Ghadames Heritage sites and their level of severity

The human risks facing Ghadames' cultural heritage sites arise from multiple interconnected factors, many of which are rooted in local social, economic, and cultural conditions. The neglect of the museum and the houses of the OCG primarily results from a lack of awareness and institutional shortcomings. Residents and institutions frequently overlook the necessity of regular maintenance. Local indifference, particularly as new generations become increasingly disconnected from their cultural heritage, significantly contributes to this neglect. The governmental system is another major factor. Ineffective governance and political instability lead to weak enforcement of heritage protection laws and a lack of funding for conservation efforts. Institutional inefficiencies further inhibit the coordination of necessary conservation and protection activities, leading to further deterioration of heritage sites. To address these challenges, a values-based conservation approach is recommended, focusing on both tangible and intangible cultural values. This strategy has been successfully implemented in other regions, such as Uganda, where local communities have been actively involved in preserving their cultural heritage. In Ghadames, this approach would enhance community engagement in heritage conservation. Educational campaigns to raise awareness of the importance of Ghadames' cultural heritage could help residents and institutions recognize the significance of its preservation. Moreover, integrating local knowledge into conservation practices ensures that the community comprehends the cultural value of heritage sites and their protection.

Vandalism and graffiti, largely resulting from a lack of awareness and indifference among residents and visitors, pose significant risks to Ghadames' heritage. The "I was here" mentality, particularly prevalent among tourists, adds to this risk, as individuals overlook the long-term damage inflicted by such acts. This issue is further exacerbated by insufficient education and engagement with the cultural significance of heritage sites. To mitigate this phenomenon, public awareness campaigns could be implemented, educating residents and visitors about the importance of heritage conservation and the devastating impact of vandalism. The participatory management model successfully implemented in Petra, Jordan, can be applied to Ghadames to engage local communities in protecting their heritage, potentially reducing vandalism and enhancing residents' sense of ownership.

Urban sprawl, driven by economic pressures and inadequate urban planning that fails to prioritize heritage protection, poses another major threat. Renting homes to migrant workers and a lack of maintenance due to financial stresses on residents worsen the issue. One approach to address this challenge is to enforce zoning regulations to prevent urban expansion into heritage areas and ensure that future developments do not impact the authenticity of Ghadames' cultural sites. Furthermore, establishing sustainable urban planning frameworks that balance heritage conservation with economic development is vital for effectively addressing this encroachment.

Poor maintenance, resulting from unsuitable restoration materials and unskilled workers, poses a significant risk. Financial constraints and a lack of awareness regarding traditional construction methods has led to the use of materials and techniques incompatible with the original structures, further deteriorating heritage buildings. To address this situation, providing specialized training for local craftsmen and heritage experts on traditional construction methods and using local materials will help ensure that restorations are conducted using appropriate materials and techniques that preserve the integrity of heritage sites. Collaboration with heritage experts and relevant organizations can deliver the necessary training and guarantee the quality of restoration work. Another risk is water damage caused by uncontrolled irrigation practices. A lack of awareness about the damage caused by water misuse leads to moisture problems that affect the integrity of buildings. To mitigate this, local farmers must be educated on the importance of managing irrigation in a way that does not harm heritage sites.

Finally, tourism-related risks, such as uncontrolled domestic tourism and waste accumulation, arise from inadequate tourism regulation and mismanagement. The absence of systematic planning and oversight of tourism activities exacerbates unintentional damage, including littering, fires, and graffiti. To mitigate this, tourism management plans must be implemented to regulate tourism activities. This could involve establishing visitor limits, creating dedicated tourist routes, and imposing penalties for damage to heritage sites. Furthermore, encouraging community-based tourism investment can enable residents to benefit economically from tourism while fostering a sense of responsibility for preserving their cultural heritage. Addressing the human-induced risks facing Ghadames' cultural heritage sites requires a multifaceted approach that combines value-based conservation, public awareness, sustainable urban planning, and skilled labour development. By leveraging international best practices and adapting them to the specific Libyan context, these strategies can help mitigate risks and ensure the long-term preservation of Ghadames' invaluable cultural heritage.

5.2. Performance of Heritage Institutions.

The heritage in Ghadames is overseen by two institutions: one is a branch of a national institution (GAMB), and the other is a local institution (GCPDA). Their management approaches differ significantly, leading to varied outcomes in their work. Table 2 shows the results of the evaluation of these two institutions.

ASPECT	GAMB	GCPDA
Administrative affiliation	Affiliated with the Central Antiquities Authority	Administratively independent
Financing	Receives allocations from the Central Authority	Financially independent
Legal Structure	Operates under Libyan Antiquities Law No. 3	Operates under Libyan Antiquities Law No. 3
Human Resources	Facing significant staff shortage	Fully staffed
Administrative Strategies	Lacks formal strategies	Initiatives to adopt global strategies
Human Risk Management	No risk management	Manages human risks with inaccurate assessments
Collaboration with heritage partners	Limited cooperation	Initiatives to involve stakeholders in meetings and decision-making
Local Community Participation	Limited involvement	Strong initiatives to engage the local community

Table 2. Comparing the Ghadames heritage management institutions

As shown in Table 2, a comparison of (GAMB) and (GCPDA) reveals significant differences in their administrative structures, resource management, and effectiveness in managing Ghadames' heritage sites.

This disparity is due to their administrative independence; GAMB adheres to the Libyan administrative system, which is marked by centralization and lacks decision-making authority. Instead, it serves as an executive body responsible for relaying reports concerning issues and threats to the sites it oversees. This structure imposes a hierarchy that necessitates higher-level approval and financial support to act against threats or resolve specific problems. As a result, its operations are governed by routine procedures, which impede the execution of emergency projects and the ability to respond swiftly to threats. In contrast, GCPDA operates independently, both administratively and financially, with full authority to make decisions, implement plans, and finance them directly. Its administrative link to state ministries is merely supervisory and does not constrain its actual operations. However, the interview results indicate that this institution's internal structure is hierarchical; decision-making powers are restricted to a specific management level within the institution, which manages planning due to the lack of experience among many staff in such tasks.

Regarding legal affiliation, all heritage institutions in Libya are subject to Heritage Law No. 3 of 1994. However, this presents shortcomings as this law has become significantly outdated in light of recent events and developments in Libya, leading to an increase in heritage violations. While the law acknowledges most human threats identified in protecting heritage sites, the penalties imposed for these violations are

disproportionate and fail to sufficiently represent the extent of the potential damage to heritage sites. Consequently, the weak penalties in place do not adequately reflect heritage value, resulting in ongoing violations and undermining efforts to protect these sites. Therefore, it is of utmost urgency to update this law and adapt it to the current circumstances of the country.

The administrative performance of the two institutions was evaluated through interviews based on the framework that encompasses factors contributing to the success of other cases. It emerged in the interviews that neither institution had clear strategies for its work. Furthermore, when identifying and assessing human risks, it became evident that insufficient attention has been given to human threats to heritage sites in Ghadames, with interviewees largely considering that they do not pose a significant risk to the sites. Nonetheless, the reality is that risks do exist but are incorrectly assessed. Current risk assessments are grounded in experience across all sites and levels without following any systematic strategies.

In the case of the UNESCO site, it was found that most human risks are cumulative, and their effects increase over time, such as the risk of residents neglecting heritage buildings and their maintenance. Visually attractive, heritage buildings appear sound, but are not inspected or maintained until deep cracks and collapses became evident, which may occur over time. There is also the threat of graffiti and carvings on the walls, which is not apparent because the institution responsible for the site periodically paints the walls, which is expensive and exhausting, in addition to concealing these violations and making it difficult to assess their actual severity accurately. As for other local sites in Ghadames, human threats have been ignored because the archaeological sites are not of interest to the local community or the responsible institution, which poses a significant threat to their sustainability.

Regarding stakeholder involvement in decision-making, GCPDA is earnestly seeking to adopt this practice, but it has not yet reached a level that allows all parties interested in heritage to truly participate in the decision-making process. Several factors contribute to this situation, including stakeholders' confusion regarding the significance of their involvement in the session-making process. The initial steps of work are often unclear to stakeholders, and their participation is limited to the final stages, making them feel that this process is only formal.

Regarding community engagement, the work of GAMB is almost at a standstill, and stakeholders are not involved. In contrast, GCPDA is endeavoring to introduce initiatives to engage stakeholders. For instance, three individuals from each of the seven tribes of Ghadames were chosen to serve as links between the local community and the institution. These committees undertake several tasks, such as connecting citizens to the organization, facilitating communication among them, consulting citizens on projects proposed by the institution, and attending meetings on behalf of the citizens. However, these initiatives did not receive a

strong response from the Ghadames community, as enthusiasm was limited to a small group of citizens who remain connected to the OCG and appreciate its value. The vast majority of the population did not show much interest, either due to a lack of awareness regarding the significance of the heritage site or because factors like economic conditions which prevent them from prioritizing the site, contributing to a negative attitude towards it. Therefore, the greatest shortcoming in engaging the local community stems from the citizens and their lack of interest, despite all the efforts made by the GCPDA to involve them.

Despite the efforts of GCPDA, its work remains ambiguous to stakeholders and the local community. It suffers from a lack of transparency in its procedures, which reduces its effectiveness and adversely impacts interactions between the local community, stakeholders, and the institution concerning heritage protection.

There is no doubt that heritage management in Ghadames requires improvement. GAMB needs greater autonomy, by decentralizing decision-making, the institution can establish a more robust administrative structure and respond effectively to emerging risks without needing approval from a central authority. In addition, GAMB should secure funding to support essential conservation efforts and develop a structured risk management framework. For the GCPDA, enhancing transparency and fostering better stakeholder communication is crucial. A more inclusive decision-making approach would ensure effective participation from relevant partners. The GCPDA should also decentralize its internal decision-making, allowing more staff to engage in heritage planning and management.

To improve community engagement, it is crucial to implement awareness-raising campaigns about the cultural and historical value of Ghadames' heritage. This can be achieved by drawing from global examples like that of Petra in Jordan and the Kasubi Tombs in Uganda, where community participation played a key role in heritage management. In these models, local communities and government bodies worked together in decision-making, ensuring a more inclusive and adaptive approach. Ghadames can adopt a similar participatory governance model. Stakeholders, such as the seven tribes committee of Ghadames, municipal representatives, and local NGOs, could be more actively involved in preserving their heritage. This would foster a sense of ownership and responsibility for conserving Ghadames' cultural heritage.

On a broader scale, concerning legal reforms, Libya's Heritage Law No. 3 of 1994 needs updating to address contemporary risks and improve enforcement. Proposing heritage impact assessments for new developments and imposing stricter penalties for violations would align Libya's legal framework with international best practices, such as those in New Zealand. This would ensure that the Heritage Law remains relevant and effective in the face of threats, providing stronger deterrents for those who violate cultural heritage protections.

Furthermore, both institutions would benefit from investing in staff training in areas such as modern conservation techniques, risk assessment, and community outreach. These investments would build the capacity of both GAMB and GCPDA, ensuring they are better equipped to manage Ghadames' heritage sites. Developing local expertise through training will improve the institutions' ability to make informed decisions, encourage community involvement, and implement effective preservation strategies that are both sustainable and culturally sensitive.

6. CONCLUSION AND RECOMMENDATIONS

Ghadames' cultural heritage faces many threats posed by human activities, which differ in severity. Some of these risks, including neglect, lack of a functional government system, vandalism and graffiti, urban encroachment, misuse of heritage buildings, inadequate maintenance, and unregulated irrigation, have been identified as being of high severity. However, the seriousness of these threats has often been underestimated due to insufficient experience in risk assessment, resulting in a failure to accurately evaluate the true scope of the risks. Other threats, such as unskilled labour, uncontrolled domestic tourism, waste accumulation, theft, and the use of heavy machinery within the OCG, have been deemed to be of medium to low severity. These sites are not only crucial to national identity but also contribute to the shared heritage of humanity. Nevertheless, their preservation is severely obstructed by ineffective governance, institutional mismanagement, and a lack of cooperation from key stakeholders. Without urgent action, Ghadames' invaluable cultural heritage sites are at risk of further deterioration.

The management strategies currently in place for Ghadames' cultural heritage are fragmented and inadequate, primarily due to the shortcomings of the institutions overseeing them. Key institutions like GAMB and the GCPDA face significant challenges. GAMB suffers from complete administrative inefficiency due to its centralized dependency, which stifles decision-making and delays responses to emerging threats. Meanwhile, the GCPDA grapples with weak staff expertise, resulting in decision-making being confined to a specific group within the organization. At the same time, a lack of transparency in planning strategies undermines the effectiveness of stakeholder engagement.

Furthermore, both institutions experience limited community participation and lack interest in heritage sites. These issues are exacerbated by outdated laws and weak enforcement mechanisms, which fail to adequately protect heritage sites from risks arising from human activities. Consequently, Ghadames' cultural heritage is increasingly vulnerable to deterioration, and the protections and management strategies remain insufficient to safeguard these invaluable sites.

Given these challenges, several recommendations can be made at both the local and national levels to improve heritage management in Ghadames:

At the Local Level:

- Institutional Cooperation: Foster collaboration between local institutions, create a unified heritage management approach and engage all stakeholders.
- Community Participation: Encourage active participation in conservation initiatives to foster a greater sense of community engagement in heritage management.
- Heritage Management Transparency: Ensure transparency at all stages of heritage management to build trust, improve collaboration, and address issues early.
- Staff Training: Invest in staff training to enhance risk assessment, conservation, and stakeholder communication abilities.
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At the National Level:

- Legislative Reform: Revise heritage protection laws to safeguard cultural heritage by enforcing stricter penalties and more precise guidelines.
- Decentralized Governance: Transition to a more flexible, decentralized management system that allows local authorities to respond effectively to threats promptly and independently.
- Education and Awareness Programs: Enforce nationwide initiatives to foster a sense of responsibility for conservation and increase young people's awareness of cultural heritage.

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