

EUROPEAN INSTITUTE FOR INTERNATIONAL EDUCATION

M22 – Cultural Heritage Management

Sustainable Management of Cultural Heritage Sites: Balancing Conservation, Tourism, and Community Participation

for the Module M22 – Cultural Heritage Management

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Abstract.

Cultural heritage sites are the collective legacy of human civilisation, representing common identity, memory and social cohesiveness throughout generations. But the twin imperatives of preservation and public access have generated substantial management difficulties, especially as mass tourism continues to escalate strain on fragile heritage settings. This paper explores the concepts and techniques of sustainable cultural heritage management. The theoretical frameworks applied in this report are the Burra Charter, UNESCO's World Heritage Convention and Outstanding Universal Value (OUV). The research employs a qualitative case-study method to evaluate the management experiences of three world heritage sites – Angkor Wat (Cambodia), Machu Picchu (Peru) and the Old City of Dubrovnik (Croatia) – in order to uncover best practices and recurrent issues. The findings show that successful heritage management is built on integrated approaches that include physical conservation, visitor management, community involvement, legal protection and adaptive governance. The paper concludes that sustainable management is not a static condition but an ongoing, iterative process that requires multi-stakeholder collaboration, enough resources and an ethical commitment to the protection of heritage for future generations.

Keywords: cultural heritage management, sustainable tourism, conservation, UNESCO World Heritage, community participation, visitor management

1. Introduction.

Cultural legacy is one of the most precious assets of mankind. Heritage sites are touchstones of communal memory, representations of cultural identity and engines of economic development via tourism. They have great importance, from ancient temples and mediaeval city centers to prehistoric landscapes and vernacular architecture. But these same features also make heritage places intrinsically vulnerable; the very attention they garner can pose existential dangers to their integrity and authenticity.

Over the past century, the concept of cultural heritage management has undergone a radical transformation. While early approaches prioritised physical repair and professional guardianship, modern practice emphasises the necessity of holistic, participative and sustainable management systems. Shared standards have been codified in international instruments, most notably the UNESCO World Heritage Convention of 1972, but the practical implementation of these principles is a very difficult task, especially in situations of rapid tourism growth, scarce financial resources and competing stakeholder interests. This study has dealt with the Option 1 of the M22 assignment brief: sustainable management of cultural heritage assets. It is structured around four main objectives: (1) to define and contextualise cultural heritage management; (2) to explore tensions between conservation and tourism access; (3) to analyse the roles of government agencies, local communities and heritage organisations; (4) to evaluate real world examples of sustainable management practice. The report seeks to make a nuanced contribution to the promise and problems of sustainable heritage management in the twenty-first century through the combination of theoretical viewpoints with evidence from case-studies.

2. Review of Related Literature

2.1 What is Cultural Heritage Management?

Cultural heritage management (CHM) is an extensive, interdisciplinary field that deals with the identification, protection, interpretation and sustainable use of heritage resources for the benefit of present and future generations (Timothy & Boyd, 2003). It lies at the crossroads of archaeology, architecture, history, planning, economics and social sciences, attesting to the multidimensional nature of heritage itself. The most generally used international definitions are those of the UNESCO World Heritage Convention (1972) which distinguishes between natural and cultural heritage and sets the notion of Outstanding Universal Value (OUV) as the criterion of global importance.

The scope of CHM has been widely discussed among scholars. As Ashworth and Tunbridge (1996) pointed out, heritage is by its very nature selective and political and what is conserved is a reflection of the views and power structures of those who control designation and funding. This critical approach has been developed by Smith (2006), whose concept of the 'Authorised Heritage Discourse' (AHD) shows how official heritage paradigms tend to prioritise elite, monumental and Western forms of heritage over vernacular, intangible or subaltern representations. Such critiques have stimulated an increasing interest in community-centred and rights-based methods in CHM practice.

The idea of sustainability, derived from environmental management, has become important to contemporary CHM. Sustainable heritage management is meeting the requirements of present visitors and communities without prejudicing the potential of future generations to enjoy the same resource (Frey & Steiner, 2011). This calls for a balance between economic viability,

social equality, environmental integrity and cultural authenticity – a hard equilibrium that varies greatly across diverse heritage contexts.

2.2 Theoretical Background

Several theoretical models support present practice in CHM. The Burra Charter (ICOMOS Australia 2013) is an internationally recognised process model for managing places of cultural value and emphasises the necessity of assessing cultural significance before any conservation action is taken. Its sequential steps: understand, retain, manage, document have been influential in the development of site management plans globally.

Avrami et al. (2000) introduced the concept of ‘values-based heritage management’ later adopted by the Getty Conservation Institute. This means that decisions about management should be based on a systematic assessment of the multiple values that stakeholders ascribe to heritage, including aesthetic, historical, economic, spiritual and social values. The pluralistic approach understands that legacy means different things to different communities, and that effective management must balance these sometimes opposing valuations.

From a planning perspective, Visitor Impact Management (VIM) and Limits of Acceptable Change (LAC) frameworks have been employed in heritage contexts to determine carrying capacities and monitoring thresholds (Farrell & Marion, 2002). Initially these methods were intended for nature sites, but have been modified for cultural heritage sites under tourism pressure. They offer organised approaches to analyse and respond to visitor-induced change.

2.3 Conservation Versus Tourism Conflicts

The link between tourism and cultural heritage is paradoxical by nature. Heritage resources generate demand for tourism, and revenue from tourism can be used to finance conservation operations; but, the footfall generated by tourism, atmospheric pollution and commercialisation can damage irrevocably the very resources upon which the tourism product depends (McKercher & du Cros, 2002). This dynamic, sometimes referred to as the ‘tourism-conservation dialectic’, has been well documented in the literature.

Nuryanti (1996) recognised three dominant paradigms shaping heritage-tourism relations: the promotional paradigm, which views tourism as an unambiguously positive benefit; the conservation paradigm, which regards tourism as a threat to be mitigated; and the integrative paradigm, which sees tourism and conservation as potentially symbiotic if managed well. The contemporary practice of CHM is mostly consistent with the integrative paradigm, but the conditions under which integration is possible are still debated.

The phenomenon of over-tourism, defined as the scenario where the number of visitors exceeds the social and physical carrying capacity of a destination, has been of particular scholarly and policy focus since the mid-2010s (UNWTO, 2018). Cities with a rich legacy like Venice, Barcelona and Dubrovnik have become typical of the disruptive effects of over-tourism: increased accommodation costs, displacement of residents, congestion and deterioration of property. Scholars have proposed more radical demand management measures like visiting quotas, temporal pricing mechanisms and diversion of tourist flows to less visited places (Koens et al., 2018).

3. Methodologically

This paper is a qualitative study based on secondary data, conducted through a systematic evaluation of academic literature, policy documents, UNESCO World Heritage Committee reports and institutional management plans. The case-study technique was chosen as it offers comprehensive, contextualised analysis of complex phenomena in their real-world settings,

an approach ideally suited to the multi-faceted dynamics of heritage management (Yin, 2018).

Three case studies were selected purposively for geographical diversity, representativeness of different types of heritage (religious/monumental, pre-Columbian/mountain, historic urban centre) and to cover a range of management contexts and challenges: Angkor Wat (Cambodia), Machu Picchu (Peru) and the Old City of Dubrovnik (Croatia). The three sites are all on the UNESCO World Heritage List and have been the subject of continuous scholarly and policy study, meaning that there is a wealth of secondary data available. Data were collected from peer-reviewed journal papers (through Google Scholar and JSTOR), UNESCO periodic reports and State of Conservation reports, ICOMOS evaluation documents, publications from national heritage agencies and respectable grey literature (e.g. reports from the World Bank and UNWTO). A thematic analytic approach was adopted, grouping information around four major themes: conservation difficulties, stakeholder dynamics, visitor management solutions and sustainability outcomes. The paper has its limits, being a desk-based study. The report notes that primary fieldwork and stakeholder interviews would have produced richer, more nuanced insights but the conclusions should be interpreted as illustrative rather than definitive.

4. Results

4.1 Conservation Problems

Several recurring conservation concerns were noted across the case studies. Physical decay is a frequent concern: stone and brick structures are susceptible to atmospheric pollution, biological colonisation (lichens, mosses and invasive plant roots), water infiltration and ground subsidence. The vast expanse of the temple complex at Angkor Wat (about 400km²) renders full physical conservation a massive logistical and financial task (Bélizaire, 2020). Seasonal monsoon rains accelerate the deterioration of the carved sandstone reliefs; and groundwater depletion induced by urbanisation and the tourism infrastructure threatens the structural stability of the temple foundations.

A second key concern is damage caused by tourism. The main causes of plant loss, erosion of paths, and damage to the terraced agricultural constructions at Machu Picchu have been recognised to be due to foot traffic on the Inca Trail as well as inside the citadel itself (Ministerio de Cultura del Peru, 2017). In 2019, the site attracted more than 1.5 million visits, leading to recurring concerns from UNESCO and ICOMOS concerning management shortcomings. Similarly, in its pre-pandemic peak years, Dubrovnik had visitor numbers close to 1.5 million a year, resulting in recorded congestion on the mediaeval city walls and wear and tear to limestone paved surfaces.

The third concern is political economy and governance fragmentation. At all three sites, the responsibilities for heritage management are shared across several government ministries, sub-national agencies, international entities and private sector operators, resulting in coordination difficulties and accountability gaps. In Cambodia, the APSARA National Authority has historically been constrained by capacity and tensions between conservation imperatives and the pressures of economic development from the fast rising tourism sector (Winter, 2007). In Peru, the execution of integrated management plans has been hindered by the overlapping jurisdiction of the Ministerio de Cultura, the regional government and the commercial concession operators.

Climate change is an increasingly important and neglected threat. Sea level rise is threatening coastal cultural sites, more frequent and strong precipitation events are accelerating erosion at sites such as Machu Picchu, and temperature extremes are contributing to the thermal expansion and contraction of masonry. Cultural heritage is identified as one of the most

irreversible casualties of climate change by the IPCC's sixth assessment report (2022), because destroyed or damaged sites cannot be reproduced.

4.2 Roles of Stakeholders

Effective sustainable heritage management requires the involvement of a diversity of stakeholders with their own interests, capacities and basis of legitimacy.

Government agencies are the institutional backbone of heritage governance. Legal preservation, policy development, and budget distribution are the responsibility of dedicated heritage ministries or agencies at the national level (eg the APSARA Authority in Cambodia, the Ministerio de Cultura in Peru, and the Ministry of Culture and Media in Croatia). These agencies usually prepare and implement site management plans, consult with UNESCO and monitor the enforcement of heritage preservation legislation. But their effectiveness is often hamstrung by inadequate funding, political influence and bureaucratic lethargy.

International bodies, especially UNESCO and ICOMOS, play a significant role in standard setting, technical aid and accountability. The process of inscription by UNESCO, the periodic monitoring and the Reactive Monitoring system under which properties are referred to the 'List of World Heritage in Danger' are strong incentives for national governments to improve management. In 2017 the Croatian authorities faced considerable pressure from the danger of being placed on the Danger List to implement visitor management measures at Dubrovnik (UNESCO World Heritage Committee, 2017).

Local communities are increasingly regarded as key participants in heritage management, rather than simply as benefactors or stakeholders to be consulted. Community-based conservation models, where local people are engaged in decision-making, monitoring and benefit sharing, have resulted in better sustainability outcomes than top-down, expert-led systems (Sofield, 2003). In the Angkor region, community-based livelihood projects have tried to combine cultural conservation and poverty alleviation by training local guides, craftspeople and hospitality workers. However, in practice, effective community participation is patchy and usually weakened by power imbalances, elite capture and the marginalisation of indigenous and minority voices.

Heritage landscapes are greatly affected by the scale and pattern of tourism that the commercial sector, such as tour operators, hotel chains and food and beverage concessionaires, enables. When their business interests align with conservation interests (e.g. through heritage tourism premiums), private sector actors can be powerful advocates for sustainable management, but can equally be vectors of unsustainable growth when profit maximisation takes precedence over environmental and cultural considerations. Ring-fencing a portion of commercial revenue for conservation through public-private partnership models presents a promising method for alignment, while their governance needs careful design.

4.3 Case Studies of Sustainability Practices

The three case studies represent a spectrum of sustainable management strategies with applicable insights.

Angkor Wat, Cambodia. The APSARA National Authority of Cambodia, together with the International Coordinating Committee for the Safeguarding and Development of Angkor (ICC-Angkor), a multinational agency created in 1993, manages Angkor Wat, the world's greatest religious site. This kind of international partnership between France, Japan, the United States, Germany and other donor countries and UNESCO has been important in mobilising the technical skills and funds for conservation efforts at a scale beyond the capacity of the Cambodian state (Bélizaire, 2020).

Major sustainable management initiatives at Angkor include: the Zoning and Environmental Management Plan (ZEMP) that establishes spatial buffers and land-use regulation to contain urban sprawl and agricultural encroachment; systematic structural consolidation of temple monuments using original-material anastylosis methods; the establishment of a dedicated research centre and documentation programme through photogrammetry and 3D scanning; and a community benefit-sharing scheme channelling a portion of entrance revenues to infrastructure of surrounding villages. Entry fees – at USD 37 per day for international visitors – produced almost USD 100 million in 2019, providing a significant conservation funding stream (Cambodia's Angkor Enterprise, 2019).

But despite all these gains, difficulties remain. Rapid hotel expansion in Siem Reap has put pressure on the water table levels risking temple foundations. Mass tourism (2.6 million visits in 2019) has led to overcrowding at the most renowned sites, notably at dawn viewing points where crowd control has been challenging. The APSARA Authority has tried to use timed entry systems and temporal dispersal tactics, but execution has been patchy.

Machu Picchu, Peru. Machu Picchu, a combination natural and cultural World historic Site inscribed in 1983, is an example of both the opportunities and the urgent challenges for the management of a globally recognised historic destination. The physical context of the site, situated in a biologically sensitive cloud forest ecosystem at an elevation of 2,430 metres above sea level, places stringent constraints on its carrying capacity.

With increasing crowds and warnings from UNESCO, the Peruvian government began requiring reservations in 2017 and lowered the daily visitor cap to 5,940 in 2019 (later lowered to 3,044 during the post-pandemic reopening). To avoid overcrowding in sensitive sections, the complex was separated into eleven discrete visitor circuits with defined time periods and directional flow mechanisms. Electronic ticketing and CCTV coverage have improved control over visitors. A landmark 2021 agreement between the Ministerio de Cultura and Yale University to return Inca artefacts preserved in North American collections to their ancestral homeland has strengthened the site's cultural integrity and its relationship to descendant groups.

Thanks to the community participation initiative of the Machu Picchu Management Unit, local guides who speak Quechua are trained and artisanal marketplaces selling authentic Andean items are supported, thus increasing community interaction in Machu Picchu. But the global iconic stature the monument has brought with it has also brought financial pressures, including a controversial proposed cable car project that threatens to undermine the integrity and authenticity of the site.

Old City of Dubrovnik, Croatia. The mediaeval walled city of Dubrovnik, inscribed in 1979 and enlarged in 1994, is a fascinating case study in controlling over-tourism in a living historic site. By the mid-2010s, the entrance of huge cruise ships (carrying up to 10,000 day guests in peak periods) and the growth of the city as a filming location for international television programs led to severe congestion and displacement of residents.

Dubrovnik's city administration and the Croatian Ministry of Culture adopted a comprehensive Visitor Management Strategy in 2017, under threat of being placed on the Danger List. Key measures were: limiting cruise ship arrivals to two ships per day and 5,000 cruise ship passengers per day; limiting the size of vessels; introducing timed entry to the city walls; monitoring visitor flows in real time using digital sensors; and launching a 'Respect the City' awareness campaign aimed at visitor behaviour. The initiatives succeeded in reducing visitor numbers from a peak of around 1.24 million in 2016 to under 1 million by 2019, while sustaining tourist revenues via value-over-volume pricing techniques.

A key element of Dubrovnik's strategy is integrating resident wellbeing into heritage governance. The population of the Old City had dropped from 5,000 residents in the 1990s to just under 1,700 by 2018, leading the city to implement rental regulations to deter short-term

lettings, provide financial incentives for permanent residency, and establish a Resident Forum to ensure community voices would be heard in decisions about management. This socially-oriented approach reflects the growing awareness that a 'living' heritage city needs a resident population to sustain its cultural vitality.

5. Discussion

The case studies highlight a number of cross-cutting themes with substantial implications for sustainable heritage management policy and practice.

First, the results confirm that there is no one-size-fits-all approach to sustainable heritage management; successful approaches need to be context-specific, and sensitive to site-specific biophysical conditions, governance structures, tourism patterns and community dynamics. What works for a walled mediaeval city in Croatia will not work for a mountain castle in Peru or a temple complex in Southeast Asia. This highlights the need for site specific management plans produced through thorough examination and extensive interaction with stakeholders, as encouraged by the Burra Charter approach.

Second, the case studies highlight the crucial relevance of carrying capacity management. All three sites have introduced or are developing visitor quota systems, timed admission and spatial flow management, a recognition that heritage resources are essentially non-renewable and demand must be actively moulded, not passively accommodated. These measures require political will to implement, as they may restrict short-term profitability in favour of long-term conservation. The Dubrovnik example shows that demand-management measures can be politically achievable when articulated in terms of protecting local quality of life as well as heritage treasures.

Third, community participation is both a moral duty and a practical requirement. Local communities are more likely to sustain heritage conservation throughout time, when they see themselves as beneficiaries and stewards, and not as displaced bystanders. The community benefit sharing arrangements at Angkor, the native guide training initiatives at Machu Picchu and the Resident Forum at Dubrovnik all exemplify attempts to operationalise participatory concepts, with various degrees of success. Real involvement is more than consultation, it is real decision-making power, which in most cases is still a distant goal.

Fourth, the findings underline the essential importance of international frameworks and alliances in mobilising resources and accountability beyond what national governments can do alone. The UNESCO inscription process and monitoring systems are not perfect and are sometimes bureaucratically burdensome, but they have demonstrably improved conservation outcomes at all three sites by generating reputational incentives and facilitating access to international technical assistance and finance. The construction of such systems, especially for sites in lower income nations where institutional capacity is limited, should be an international heritage governance priority.

Fifth, climate change adaptation needs to be an integral part of heritage management plans and not simply an add-on. Existing management frameworks at all three sites see climate impacts as a background issue rather than an urgent governance challenge. Given the IPCC's estimates of rapid climatic impacts on heritage environments, this situation is no longer sustainable. Heritage management plans should include climate vulnerability assessments, adaptive management methods and investment in climate-resilient conservation techniques. Finally, the integration of digital technologies presents an important, but under-exploited potential for sustainable heritage management. Remote sensing, photogrammetric documentation, real-time visitor monitoring systems and digital heritage interpretation tools can simultaneously enhance conservation monitoring, inform management decisions, reduce physical visitor pressure through virtual experience alternatives and create new forms of

community engagement. The closures due to the COVID-19 epidemic have expedited digitisation and shown the demand for virtual access to heritage and its capacity to supplement, rather than to replace, actual visits.

6. Conclusion

This paper has looked into important theoretical frameworks and explored the principles and methods of sustainable cultural heritage management through the investigation of three cases of worldwide importance: Angkor Wat, Machu Picchu and the Old City of Dubrovnik. The analysis indicates that sustainable heritage management is a complex, multidimensional task that cannot be reduced to physical conservation per se. It is the combined management of physical, social, economic and governance dimensions supported by a dedication to equity, authenticity and intergenerational responsibility.

The results reveal some key areas of urgency for practitioners and policy-makers involved in heritage management. Visitor management mechanisms need to be improved and more routinely enforced. Community involvement needs to go from tokenistic consultation to real co-governance. International partnerships need to be strengthened and adequately funded. Climate change adaptation needs to be incorporated into all parts of management planning. The promise of digital technology should be more systematically tapped.

Sustainable heritage management is not a destination but a direction, an ongoing, adaptive process of managing the tension between opposing forces and ideals in pursuit of the enduring objective of maintaining the world's cultural heritage for current and future generations. As the case studies show, if there is political will, institutional ability, community engagement and international solidarity, improvement is possible. The challenge for heritage practitioners in the twenty-first century is to develop and sustain these alignments in a time of increasing environmental, social and political change.

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Appendices

Appendix A: Visitor Arrival Statistics at Case Study Sites

Heritage Site	2017 Visitors	2019 Visitors	Visitor Cap Introduced
Angkor Wat, Cambodia	~2.3 million	~2.6 million	Partial (time-slots)
Machu Picchu, Peru	~1.2 million	~1.5 million	Yes (2017, 5,940/day)
Old City of Dubrovnik, Croatia	~1.1 million	<1 million	Yes (2017, 5,000 cruise/day)

Note. Visitor statistics compiled from UNESCO World Heritage Committee reports, APSARA National Authority (2019), Ministerio de Cultura del Peru (2017), and Croatia Tourism Board (2019). Figures are approximate.

Appendix B: UNESCO World Heritage Site Status of Case Studies

Angkor Wat, Cambodia: Inscribed 1992. Type: Mixed: Cultural & Natural. Currently on Danger List: No.

Machu Picchu, Peru: Inscribed 1983. Type: Mixed: Cultural & Natural. Currently on Danger List: No (previously 2003–2007).

Old City of Dubrovnik, Croatia: Inscribed 1979 / extended 1994. Type: Cultural. Currently on Danger List: No (threatened 2017).