



# Collective Action Dilemmas at Cultural Heritage Sites: An Application of the IAD- NAAS Framework

RESEARCH ARTICLE

ENRICO BERTACCHINI

PETER GOULD

*\*Author affiliations can be found in the back matter of this article*

]u[ubiquity press

## ABSTRACT

Cultural heritage sites generate multiple streams of value to stakeholder groups whose interests and objectives frequently diverge. Contention over the conservation and appropriation of the values generated by heritage sites—whether economic returns, contributions to social or political cohesion, or sacred or other personal values associated with sites—leads to governance failures with adverse consequences both for the sites and for the various constituencies involved. This matter is gaining increasing attention among heritage scholars and practitioners. The conservation and management of cultural heritage sites can be conceived as a collective action problem arising from the strategic interaction of multiple actors. In this paper, we propose that the Institutional Analysis and Development (IAD) framework, in conjunction with McGinnis' Network of Adjacent Action Situations (NAAS), can be applied to diagnose the drivers of conflict and management failures at cultural heritage sites. By illuminating the inter-related governance dilemmas arising at two UNESCO cultural World Heritage sites, Machu Picchu in Peru and Angkor in Cambodia, our analysis reveals how either contention over governance dilemmas or the evolution of site management strategy can be better understood by using the IAD-NAAS frame to explore stakeholder dynamics within governance-related action situations that have interdependent outcomes.

CORRESPONDING AUTHOR:

**Peter Gould**

Indiana University,  
Bloomington, USA

[pgould8@gmail.com](mailto:pgould8@gmail.com)

KEYWORDS:

Institutional Analysis and Development; Networks of Adjacent Action Situations; World Heritage; heritage management; commons; heritage sites

TO CITE THIS ARTICLE:

Bertacchini, E., & Gould, P. (2021). Collective Action Dilemmas at Cultural Heritage Sites: An Application of the IAD-NAAS Framework. *International Journal of the Commons*, 15(1), pp. 276–290. DOI: <https://doi.org/10.5334/ijc.1089>

## INTRODUCTION

From the 18<sup>th</sup> century until recent decades, decisions by governmental or private actors on the conservation and management of archaeological or historical parks, landscapes, monuments, or similar cultural heritage sites were based on sites' intrinsic historic, aesthetic or rarity value. In the latter 20<sup>th</sup> century, however, the focus shifted from this conservation-led approach. As global travel and tourism surged after 1950 and as public policy focused on resurrecting historic urban cores, the economic contribution of heritage resources came to dominate the discourse. In recent years, the intangible values of heritage resources such as personal and group identity, indigenous and human rights, or the contribution of heritage to cultural cohesion and social "wellbeing" have emerged as additional considerations (Avrami, MacDonald, Mason, & Myers, 2019). Economists have long characterized cultural heritage sites as a form of "cultural capital," productive resources that in combination with other inputs generate a stream of economic and intangible values over many years (Throsby, 1999). The changing emphasis in recent decades on which of those value streams should be given priority has expanded and diversified the range of stakeholder groups eligible to claim a voice in the heritage management process.

In the face of this growing complexity, existing methods for governing cultural heritage sites and managing stakeholders' contention over their values have been criticized increasingly as inadequate to the task. International agreements and organizations such as the World Heritage system of the United Nations Educational, Scientific and Cultural Organization (UNESCO) have been challenged as weakly empowered and politicized (Bertacchini, Liuzza, Meskell, & Saccone, 2016; Meskell, Liuzza, Bertacchini, & Saccone, 2015). National governments routinely assert monopoly rights over cultural resources although their capacity to fund heritage conservation and presentation is limited (Gould, 2018b). At the local, or operational, level, the distribution of benefits from heritage exploitation and the consequences of site preservation for adjacent communities are criticized as insensitive and inequitable (Aas, Ladkin, & Fletcher, 2005; Hampton, 2005; Herrera, 2014; Meskell, 2012; Smith & Waterton, 2009). The boundaries of cultural heritage site governance incorporate adjacent communities and distant governmental, corporate and private actors and institutions, each of which has a stake in decisions affecting the heritage site itself. Consequently, cultural heritage site management, with numerous stakeholders acting at different scales within an often inconsistent mesh of legal rights and informal interests, is inherently polycentric, and

unresolved contention among stakeholders can lead to governance failures with adverse consequences both for the sites and for the associated constituencies (Seyfi, Hall & Fagnoni, 2019). Heritage scholars have long recognized these problems but have not advanced methods to analyze the governance processes at play.

From this perspective, the conservation and management of cultural heritage sites can be conceived as a form of collective action problem arising from the strategic interaction of multiple actors, and site governance dilemmas readily map onto the Ostrom Workshop's Institutional Analysis and Development (IAD) framework (McGinnis, n.d.; E. Ostrom, 2005, 2010). However, traditional implementations of IAD analysis, which generally consider a single focal action situation, seem inadequate to fully interpret the challenges of governing the imbricated mix of stakeholders involved with cultural heritage sites. Recent contributions have extended the IAD framework to address interdependent collective action problems in polycentric governance contexts (Dennis & Brondizio, 2020; Gibson, Andersson, Ostrom, & Shivakumar, 2005; Lubell, 2013; McGinnis, 2011). In particular, McGinnis (2011) proposed the Network of Adjacent Action Situations (NAAS) concept in which actors engaged in governance task-related action situations influence the rules and outcomes of separate but interrelated action situations.

In line with this literature, this paper addresses whether the IAD framework, amplified by the NAAS construct, provides a useful approach to identifying contending interests at cultural heritage sites and assessing the consequences of stakeholder interactions. After explaining the nature and types of collective action dilemmas at heritage sites, we introduce the IAD-NAAS framework and suggest how the overlapping roles of key actors across governance tasks can be used to map the polycentric complexity of cultural heritage site management. We then illustrate the application of the IAD-NAAS through two examples of stakeholder strategic interaction in multiple interconnected action situations drawn from the public record of two UNESCO World Heritage sites, Machu Picchu in Peru and Angkor in Cambodia.

The contribution of the paper is twofold. First, we show how the IAD framework amplified by the NAAS construct constitutes a productive means to analyze both specific dilemmas involving the strategic interaction of actors at different levels of cultural heritage site management and changes over time in management strategies and priorities. Second, the paper advances the literature on interdependencies among collective action problems through a novel application concerning the governance of such sites.

## COLLECTIVE ACTION DILEMMAS AT HERITAGE SITES

Government monopoly over tangible cultural heritage resources is commonplace worldwide. State control and funding for the designation, exploration, preservation, conservation, and public presentation of cultural heritage has been justified by market failures that occur because heritage sites exhibit characteristics of public goods, generate positive externalities, or are perceived as merit goods (Benhamou, 2020; Rizzo & Throsby, 2006). However, this “top-down” model for governance of cultural heritage has been criticized both for a problematic track record for effectiveness (Meskell, 2010, 2018) and for adverse impacts on the tangible property and intangible traditional rights of local communities (Gould, 2018a; Smith & Waterton, 2009). Although cultural heritage sites rarely conform to the typical physical characteristics or property rights bundles identified with commons by Ostrom (2010), governance dilemmas involving access, use and conservation of heritage sites are analogous to generic governance tasks at natural resource commons such as assignment, appropriation, provision, monitoring and sanctioning.

Assignment dilemmas arise at cultural heritage sites when ownership rights or the right to control access to or present sites are unclear or disputed, generating contention among local communities, national conservation authorities, international organizations, and the tourism industry (Labadi, 2017; Porter & Salazar, 2005). This is a particular problem where the objectives of government authorities at different levels are in conflict with one another or where government authorities come into conflict with local and extra-local business interests or with indigenous or other adjacent local communities that have historic connections to cultural heritage sites (Breglia, 2009; Castañeda, 2009; Meskell, 2012).

Appropriation dilemmas, relating to who may or may not use and benefit from the economic and cultural values that flow from heritage sites, can lead to overuse and rent dissipation (Gardner, Ostrom and Walker 1990). Appropriation dilemmas at heritage sites are evident in congestion generated by mass tourism (Healy, 1994), degeneration in the physical integrity of cultural heritage sites (Comer, 2012), decreased quality of heritage experiences for tourists (Russo, 2002) and for local residents (Aas et al., 2005; Hampton, 2005), commercialization that undermines the authenticity of local traditions or cultural heritage attractions (Salazar, 2012; Waite, 2000), and often the outright exclusion of local residents from sites (Meskell, 2012). Even in the absence of tourism, development pressures can cause rent dissipation if

unregulated behavior by private or public actors leads to the destruction of heritage sites or their loss of social value (Labadi & Gould, 2015).

Provision issues in heritage concern practices for site preservation, conservation, and maintenance. Because heritage conservation and commercialization projects often generate an unequal distribution of benefits and costs, dilemmas over who should bear the cost of such interventions routinely arise. Provision dilemmas also emerge if public- or private-sector actors with stakes in the success of cultural heritage sites hold divergent views on the optimal level of conservation or have incompatible goals relating to providing for different uses for the site itself (Labadi, 2017).

Unsurprisingly given these assignment, appropriation and provision dilemmas, monitoring and sanctioning problems also arise at heritage sites when various government interests with distinct powers to regulate activities reach different decisions about site conditions and management as a result of incompatible socio-environmental contexts or institutional objectives (Labadi & Gould, 2015). A significant source of heritage collective action dilemmas is the fact that individual actors, for example national ministries, may play different and contradictory roles in different contexts.

## THE IAD FRAMEWORK AND ACTION SITUATION ADJACENCIES AT CULTURAL HERITAGE SITES

The IAD framework was developed as a tool to understand the conditions under which institutions and actors reach collective resolution regarding the governance of shared resources or the delivery of shared services. The IAD emerged from the study of governance at smaller-scale natural resource commons, which propelled an international research agenda into collective action at the community level (E. Ostrom, 1990, 2010). Simultaneously, both Elinor and Vincent Ostrom studied the governance of multi-scalar and multi-actor collective resources under the rubric of polycentric governance or nested institutions (E. Ostrom, 1999, 2008, 2010; V. Ostrom, [1972] 1999; V. Ostrom, Tiebout, & Warren, 1961). In recent years, as the concept of a “commons” has been expanded, the IAD has been applied to intangible resources, such as knowledge and cultural expressions (Frischmann, Madison, & Strandburg, 2014, Chapter 1; Hess & Ostrom, 2011).

Among commons scholars, IAD applications to natural or intangible resources typically have addressed complexity within the frame of one action situation. However, polycentricity in practice implies multiple interdependent

action situations in both hierarchical and peer-level interaction. Recent contributions have extended the IAD framework to account for more elaborate models. Studying international development aid programs, Gibson et al. (2005) identify major actors in the system and propose an “octangle” to capture the configuration of linked individual actors to explain the complexity of aid delivery and its outcomes. McGinnis (2011) introduces the Networks of Adjacent Action Situations concept as a means to analyze action situations whose outcomes influence the rules and other components of interrelated action situations. In his framework, action situations involving generic governance-related tasks are the fora in which collective action dilemmas are addressed. Dennis and Brondizio (2020) applied McGinnis’ approach but emphasized the importance of problem frames, or decision-maker priorities, in the evolution of action situation outcomes in regional water management. Lubell (2013), who focused on polycentricity rather than the IAD, has addressed dynamic public policy processes in environmental contexts that feature overlapping and interdependent policy actors, institutions and systems. In doing so, he incorporated findings from multiple disciplines to present a framework for analyzing networks of policy games whose outcomes are influenced by payoff or strategy externalities affecting

other actors and action situations in a manner parallel to the NAAS framework.

To date, none of these approaches has been applied in the context of cultural heritage sites. Due to the diversity of interests and values involved with heritage, collective action dilemmas typically arise within and between governance task-related action situations where multiple actors interact strategically. Because cultural heritage sites, especially those listed under the UNESCO World Heritage system,<sup>1</sup> are implicated in enormously complex polycentric governance challenges involving actors at different scales, decisions by any subset of actors impinge on the strategic options and payoff outcomes available to others. Following McGinnis (2011, pp. 55–60), we present in *Figure 1* a schematic representation of the major categories of actors involved in the management of heritage resources, their objectives, and the roles that each may assume in action situations arising from generic tasks relating to the governance of those sites. At a high level of abstraction, we identify eight generic actors (many of which are of course composed of multiple actors):

- 1) UNESCO, which represents international interests in safeguarding heritage sites through the implementation of the World Heritage Convention;

Governance Tasks (Generic Action Situations)							
Actor Types	Primary Objectives	Assignment / Appropriation (Consumption)	Provision / Production (Conservation, Curation, Visitor Experience)	Financing	Rule Making (Formal)	Monitoring / Sanctioning	Dispute Resolution / Co-ordination
UNESCO	Preserve OUV and enhance WHS Brand thru Master Plan approval & review process	Through Master Plan Review process make demands to limit appropriation & consumption		Limited funds for studies / Catalyze international funding	Master Planning to establish standards, procedures for granting and retaining WHS Brand / Determine which actors are entitled to participate (boundaries)	Annual or bi-annual reviews of site compliance with WHC requirements / In-danger or de-listing decisions	Convene parties in review process.
National Government Agencies (State Party Actors)	Preserve OUV and WHS Brand, economic value of heritage tourism, and positive social & cultural impacts	Regulate heritage use priorities among competing actors	Fund conservation / Establish standards and priorities for economic development projects	Allocate among other actors all revenues from site visitation, licenses, taxes	Master Planning to formalize standards and procedures for site use, management & conservation, in-country tourism	Monitor and enforce regulations affecting industry, local governments, community members, tourists	Interface between UNESCO, national and local agencies, local governments, tourist industry businesses
Heritage NGOs, Donors	Site preservation / Positive social & cultural impacts		Financial and/or technical support for conservation projects	Contribute funds and capacity-building expertise	Advocate for site preservation and/or economic development	Monitor compliance with grant conditions / Monitor site conditions	Advocate for site preservation
Site Managing Authorities	Site conservation / Efficient operations / Constructive relations with local communities	Manage tourism industry use / Manage local community use	Implement master plan	Use funds provided by others for hiring and purchasing	Translate Master Plans and national rules into site-level regulations	Enforce regulations affecting the site	Participate in / lead local dispute resolution
Local government authorities	Economic benefits from tourism (employment, income & taxes) / Access to national government agency support for improved infrastructure & services	Regulate tourist activity outside of site / Regulate local business and resident activities outside of site	Implement master plan / Fund local implementation activities including conditions in local communities	Distribute revenues received from other sources, local licenses, fees and taxes	Advocate on and implement national government regulations / Establish local rules and norms on land use and activities by local community members, businesses	Enforce local regulations affecting local community, businesses	Advocate with national government, local communities, local tourist industry on behalf local issues
Local Community / Civil Society Groups	Benefit from tourism (employment & income) / Improved community infrastructure and services / Access to use natural and heritage resources / Maintain community values / Avoid negative impacts of tourism	On-site use for community purposes / Off-site business & employment opportunities	Support tourist experience, provide business amenities for site and tourists / Pursue traditional community practices connected to heritage	Payment of taxes to national, local governments	Advocate for local community interests / Contribute to local norms on land use and activities by local community members		
Tourism Industry	Secure tourism revenues, profits & return on investment	Manage tourism promotion and operations	Invest in tourism facilities, service businesses	Invest in tourism facilities, service businesses / Tax payments	Advocate for national, local, international tourism businesses		Advocate for national, local, international tourism businesses
Visitors	Outstanding heritage experiences / Value for money	Consumption: Visit sites, enjoy tourist amenities		Payments for purchases of goods and services			

**Figure 1** Generic actors and generic action situations in heritage site management (Authors’ analysis, following McGinnis 2011, pp 57–60).

- 2) *National government agencies (State Party Actors)*, which may have ownership or direct responsibility for heritage sites and/or interests in national economic, social and political development;
- 3) *Heritage conservation interest groups*, including international government heritage agencies, nongovernmental organizations (NGOs), and financing sources;
- 4) *Site managing authorities*, which frequently are government agencies chartered to preserve, conserve, and manage visitation at heritage sites but also could be NGOs or nonprofit organizations;
- 5) *Local government authorities (LGA)* concerned with local economies dependent on tourism but who also represent other community values attributed to sites, especially among indigenous populations;
- 6) *Local community civil society organizations*, which may represent either sites' economic or cultural heritage values;
- 7) *Tourism sector interests*, local businesses, national and international travel corporations, tour operators, hotels and restaurants, and their supply chains, located within and outside of the countries that are home to heritage sites; and
- 8) *Visitors themselves*, whose patronage generates the stream of economic value at each site.

The governance tasks and actors (other than UNESCO) presented in [Figure 1](#) are engaged at virtually every cultural heritage site. Each generic governance task at a heritage site constitutes a distinct action situation that addresses one of many aspects of the heritage management process. Individual actors may be involved in several action situations at the same time, with roles that differ from one action situation to the next and the ability to influence the rules of linked action situations through their strategic interaction. As a result, the ultimate outcome of any governance task-related action situation at a cultural heritage site depends on the outcomes of adjacent governance task-related action situations.

## APPLYING THE IAD-NAAS FRAMEWORK TO CULTURAL HERITAGE SITES

To illustrate the application of the IAD-NAAS framework to collective action dilemmas at cultural heritage sites, we analyzed selected action situations at two well-known UNESCO-listed World Heritage sites, Machu Picchu in Peru and Angkor in Cambodia. World Heritage sites were selected because each is the subject of an extensive library of official documents and other literature upon which to

draw in developing this analysis. The two subject sites were selected because each has prominence at every political level from the local to the national to the international; each contributes substantially to their national and local economies through tourism; and each has been the subject of long-running UNESCO scrutiny of the sustainability of the site and of community involvement in governance.

Governance scholars recently have addressed interactions among constitutional-level actors, including UNESCO and national governments, particularly in the context of natural heritage sites (Morrison, 2017; Morrison et al. 2020). Conversely, in our case studies, we highlight the operational level of analysis because constitutional-level decisions are fragmented among national and international entities and collective choice-level processes involving multiple stakeholder groups in setting constitutional rules and sanctions rarely exist in cultural heritage site management. It is at the operational level, in day-to-day decisions on site use, tourism loads, financing and community development, that governance dilemmas are most acute and most politically charged and actors from all levels are engaged. Such a focus is consistent with the “bottom-up” approach to governance theorizing pioneered by Ostrom (1990).

Naturally, in contexts as complex as these, any number of interactions among the generic action situations identified in [Figure 1](#) could be analyzed. In [Figures 2](#) and [3](#), we selected three focal action situations from each case study site, identifying relevant actors, governance tasks, and outcomes drawn from official documents and scholarly literature. The particular action situations presented were selected because they have been core to the history of each site yet are sufficiently limited in their scope to enable a concise illustration of the applicability of the IAD-NAAS framework within the condensed context of a scholarly paper. Action situation boundaries were determined by identifying the stakeholders involved in each selected governance task. Arrows denote how the outcomes of one action situation affect any working components of another action situation.

Our goal is not to capture every nuance of the action situations. Rather it is to present in abstract form the essential factors that drove each action situation and the interactions among them. We selected two cultural World Heritage sites in order to draw upon the rich UNESCO documentary record to conduct the desk research that illustrates our argument. We intend to demonstrate through these cases the feasibility and usefulness of the IAD-NAAS framework in analyzing collective action problems at all types of heritage sites. Although our conclusions regarding the two UNESCO sites we profile are consistent with the documentary record, in Ostrom's

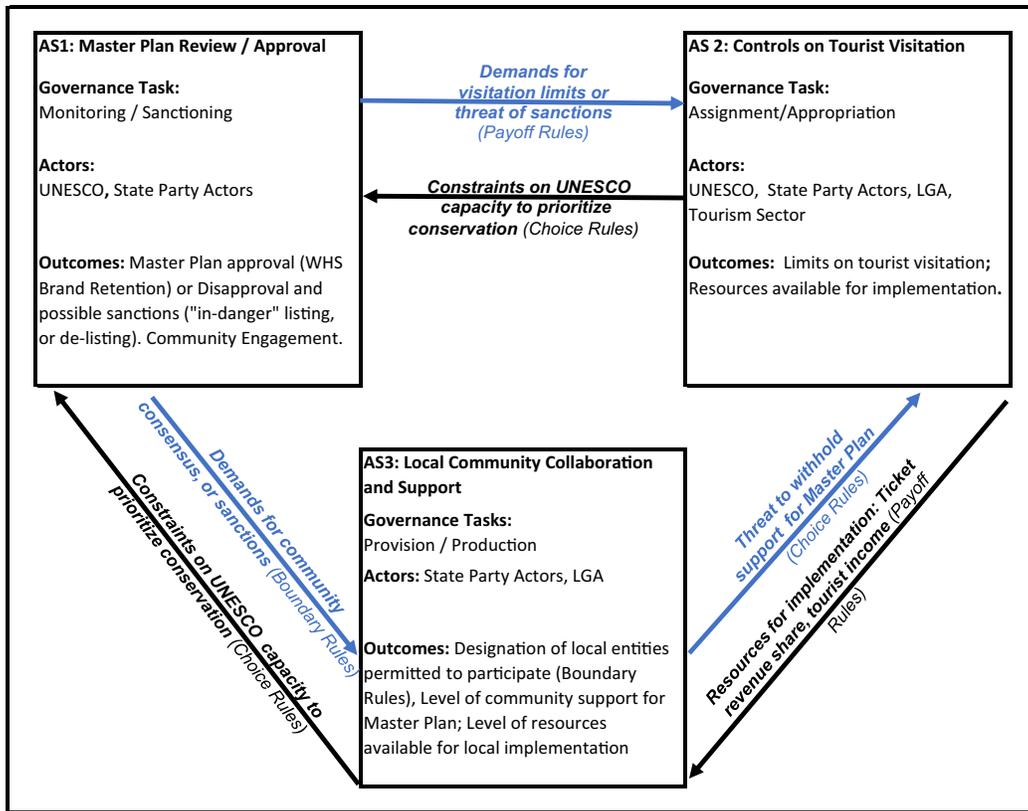


Figure 2 Machu Picchu Network of Adjacent Action Situations related to master planning and interactions.

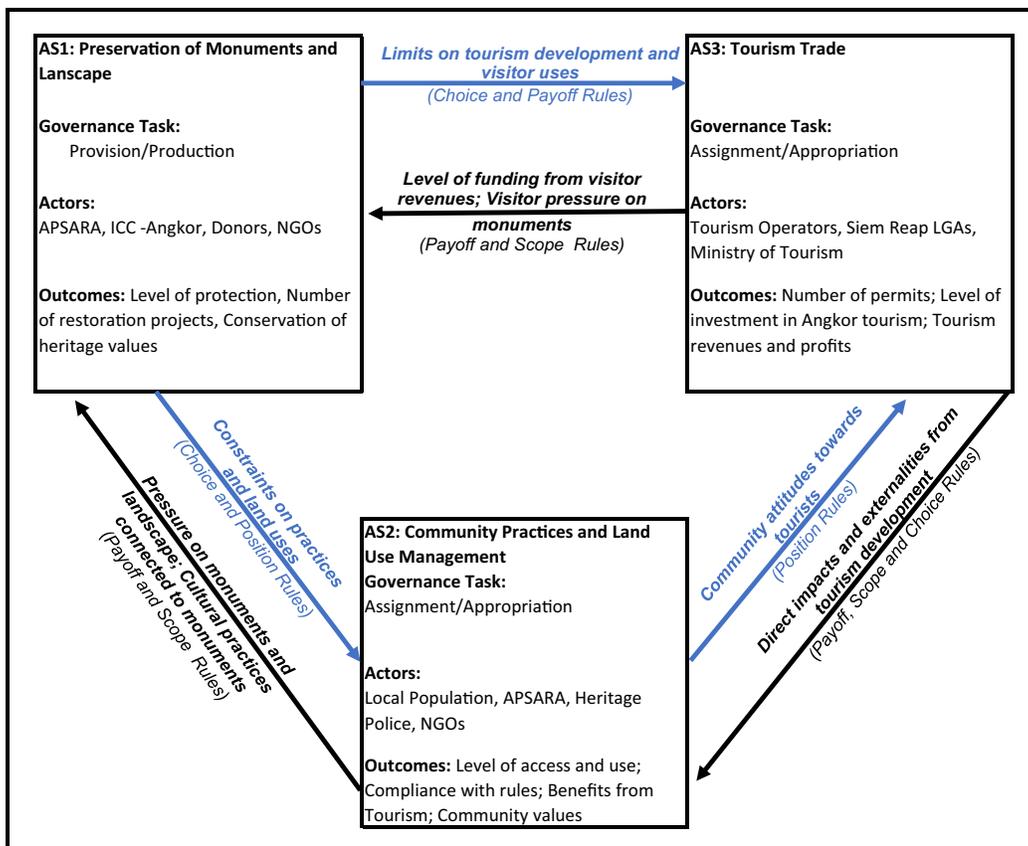


Figure 3 Angkor Network of Adjacent Action Situations related to resource uses and interactions.

terms this is a game model representation that does not purport to be either a post-hoc review of the actual action situations grounded in field research or a predictive model of likely behavior. It is intended to demonstrate the utility of the IAD-NAAS framework in understanding and resolving practical dilemmas at sites.

### **MACHU PICCHU, PERU**

The Historic Sanctuary of Machu Picchu, a cultural and environmental reserve of 326 square kilometers, was inscribed on UNESCO's World Heritage List (WHL) in 1983.<sup>2</sup> It contains more than 60 archaeological sites, the most important being the Inka citadel of Machu Picchu built beginning around 1400, situated in one of the most biodiverse areas in Peru. When Peru began aggressive tourism development in the 1990's, Machu Picchu became the engine for the heritage-based tourism industry in its southern highlands. Visitation to the site has expanded from a trickle to over one million visitors in recent years despite the logistical challenges involved in bringing people to this remote location. The modern town of Machu Picchu Pueblo houses families that work in the park and in hotels, restaurants, and shops that serve tourists. While a boon to Peruvian tourism and its government heritage managers, the explosive growth in tourism to Machu Picchu has led to contention over preservation and tourist exploitation among the stakeholders in the site.

Each national government responsible for a World Heritage site is required by UNESCO's World Heritage Committee (WHC) to produce a Master Plan for the site that protects the site's "Outstanding Universal Value" (OUV) while enabling tourism and economic development. From the early 1990's, WHC staff reports expressed concern about inadequacies in the Machu Picchu master plan and threats from tourist development to the OUV of the site. In 1999, the WHC staff tabled a proposal to include Machu Picchu on the List of World Heritage "In Danger" (UNESCO-WHC, 1999, p. 41), a step potentially leading to de-inscription from the WHL. Although the economic value of World Heritage listing is a matter of debate (Caust & Vecco, 2017), removal from the list at best would be an embarrassment and at worst could undermine Peru's national development strategies. After 1999, there ensued a multi-year interaction among WHC staff, Peruvian government ministries, and local and other stakeholders over the future of Machu Picchu. The master plan was updated in 2005 and its focus changed from a tourism-based strategy towards the conservation of the site (INC, 2005). The plan was updated once again in 2015 (Government of Peru, 2015) but in 2016, the UNESCO staff submitted an extensive chronicle of continuing problems to the WHC (UNESCO-WHC, 2017, p. 42) and again recommended placing Machu Picchu on the "In-

Danger" List. Shortly after, however, the WHC unanimously rejected that recommendation (Andina, 2017). A new master planning process, still underway in 2020, was accompanied in July 2020 by controls on entry to the historic site that effectively limit visitation to 2422 visitors per day (Government of Peru, 2020), well below peak levels in recent years until the Covid 19 pandemic closed the site in 2020.

Since 1999, three governance-related action situations illustrated in *Figure 2* have been at the core of interactions among the actors concerned with preservation and exploitation of Machu Picchu. Action Situation 1, UNESCO's process for review and approval of the site master plan for Machu Picchu (AS1—related to the governance tasks of monitoring and sanctioning) triggered Action Situation 2, negotiations over controls on tourism visitation (AS2—related to assignment and appropriation). Action Situation 3, achieving local community collaboration and support (AS3—related to provision and production of the site and the tourist experience) affects and is affected by both associated action situations. Organized community involvement in site management has been mandated by UNESCO and community investments and attitudes are essential elements of the tourist experience at Machu Picchu.

The two actors in AS1 share the objective to conserve the OUV of Machu Picchu and its World Heritage branding. However, UNESCO has internal incentives to demonstrate its regulatory effectiveness and maintain internal consensus with the WHC, while the State Party Actors also are focused on sustaining the economic benefits of tourism in AS2 and managing political relations with local actors in AS2 and AS3. UNESCO's internal dynamics incline WHC staff to critique inadequate plans but historically have made the WHC itself wary of sanctions. The State Party Actors face a choice between agreeing to visitation constraints called for by UNESCO and facing domestic criticism or risking UNESCO sanctions by aligning with LGA and the tourism sector actors to maximize tourism opportunities. The network of interactions among these adjacent action situations is the focus of this case analysis.

UNESCO triggers AS1 through annual or biennial Master Plan reviews, levying demands on State Parties for, among other matters, controls on tourist impact that affect the payoffs for domestic actors. UNESCO for many years urged execution of a "carrying capacity" study and implementation of controls over daily visitation to the Inka citadel via timed-ticketing or otherwise, which ultimately occurred only in 2020. The response to this new policy has been public criticism of the national government for acquiescing to UNESCO. State Parties need to accommodate local and national tourism interests that are the subject

of AS2, which constrains the choice of strategic options available to UNESCO (as, do the politics within the WHC that we acknowledge but do not analyze here).

Under pressure from UNESCO, the Peruvian government in 1999 (UNESCO, 1999) created a formal local governing entity, the UGM, including local organizations, the local Ministry of Culture and eventually a new “Amazon entrance” at Santa Teresa. That directive redefined the boundaries of AS2 and AS3 by empowering new actors. The process for securing local government consent and community support in AS3 further constrained UNESCO’s available strategic actions in AS1 because UNESCO mandated LGA involvement, and the outcomes of AS3 limit the choices available to the stakeholders in AS2 who need local collaboration and support and so must ensure that local actors enjoy adequate payoffs from the site. Finally, a portion of entrance fees to Machu Picchu are used to conserve the site and to finance local government activities within the LGA. Therefore, outcomes in AS2 directly affect the resources available to the local authorities, and hence the potential payoffs in AS3 from collaboration or defection by local communities. Although the LGA is not monolithic, as depicted in this paper, and consists of communities that themselves are in contention over resources, all components of the LGA do share the basic interests identified in *Figures 1* and *2*.

The objectives of the actors in each action situation are critical to the outcomes. The Peruvian parties are unified by their objective to preserve the economic benefits of tourism, but separated by the State Party Actors’ desire to reach agreement with UNESCO in order both to preserve the site’s OUV and to avoid sanctions from UNESCO. The LGA actors in AS3 are empowered by UNESCO and able to use the leverage of withholding local support both to constrain UNESCO’s choice options and those facing actors in AS2. However, without a vibrant tourist traffic to Machu Picchu, the LGA would be economically bereft and so is highly incentivized to compromise with other Peruvian political forces.

Thus, the ultimate outcome of these action situations depends on the degree to which UNESCO’s threats of sanctions are perceived to be credible and damaging, and the internal political dynamics among State Party Actors, the LGA, and the tourism sector. For almost two decades, the WHC has acquiesced to management plans for Machu Picchu that its staff deemed unsatisfactory and has balked at imposing sanctions. In that time, tourist traffic grew rapidly, as has alarm over potential damage to the site’s OUV. Although in 2020 the Peruvian government adopted visitor capacity limitations long sought by UNESCO, UNESCO also concurred in plans for a new entrance and visitor center that, when constructed, may support even greater

admissions to Machu Picchu. Peru also continues with plans for a new international airport at nearby Chinchero, which may further exacerbate visitor pressure and conflict among local communities. The consequences of these latest developments for Machu Picchu will not be known for years.

## ANGKOR, CAMBODIA

Stretching over 400 square kilometers in Cambodia’s northern province of Siem Reap, Angkor Archaeological Park is one of the largest archaeological sites in the world, containing remains of the different capitals of the Khmer Empire from the 9th to the 15th centuries. Along with its architectural, archaeological, and artistic significance, Angkor is a cultural landscape with cultural, religious and symbolic value still vibrant among the local population. A central characteristic of the Angkor World Heritage site is that the property remains inhabited, with more than 139,000 people distributed among 112 villages scattered over the site. Since its inclusion in the UNESCO World Heritage List in 1992, the site has been under the supervision of an international coordinating committee (ICC-Angkor) led by France, Japan and UNESCO whose primary purpose has been to coordinate the international cooperative effort to safeguard the monuments from decay and destruction and to support establishment of an institutional and legal framework for the protection of the site (ICC-Angkor & UNESCO, 2014; Miura, 2011b). Given the complexity and prominence of the Angkor site, a national Authority for the Protection of the Site and Management of the Region of Angkor (APSARA) was created in 1995. APSARA is responsible for the protection of the monuments and archeological areas and enforcement of the zoning law that regulates land access and use of the site, including visitor flows, on-site tourism services, and local population activities.

After a post-inscription period mainly characterized by conservation efforts, since 2000 Angkor has become a major destination for heritage tourism, today hosting over three million international and domestic tourists per year. In this second phase, UNESCO State of Conservation reports<sup>3</sup> and other literature suggest that dilemmas in the management of the site have arisen among conservation requirements, the desire for tourism development, and concern for the livelihoods and traditional values of the local population. Local communities have been allowed to continue living within the landscape subject to restrictions imposed by the legal framework established to protect Angkor Archeological Park.<sup>4</sup> These laws authorized expropriation in the public interest and prohibited alteration or modification to structures without approval from local authorities in the core and buffer zones of the World Heritage site (Miura,

2011a; Winter, 2007). Despite their traditional presence in the area and being stewards of traditional agricultural and intangible heritage practices connected to Angkor temples, local residents persist as mere “authorized users” (Schlager & Ostrom, 1992) of Angkor resources. At the same time, while tourism is the main driver of social and economic change in the Angkor area, the benefits from tourism development have not broadly benefitted local communities or been widely linked to community development (Hauser-Schäublin, 2011; Thyl De Lopez, Ponlok, Proeung, Sinoeun, & Thea, 2006). The Angkor Heritage Management Framework (Apsara et al., 2013) and Tourism Management Plan (Godden Mackay Logan, 2012) clearly address these issues. However, given the complexity and scale of the site, the effective implementation of the plans depends crucially on solving collective action situations whose outcomes are strongly connected. The policy setting characterizing the implementation of the management plan of Angkor is illustrated in [Figure 3](#) as a set of adjacent action situations involving the preservation of monuments and landscape, the regulation of community practices, and the management of tourism development.

Action Situation 1, preservation of monuments and landscape (AS1—related to provision and production, e.g. conservation, of the site itself) refers to the interaction among the main authorities of the site (ICC-Angkor and APSARA), donors and NGOs around the protection of monuments and landscape. The main resource produced and provided in AS1 is the preservation of Angkor as a public good. While the level of preservation depends on the level of funding and coordination of strategies among several actors, the outcome of AS1 is influenced by the outcomes of the two adjacent action situations relating to the management of local community practices and land use and the tourism trade, which together ultimately determine the pressure on the site, the economic contribution from tourism revenues, and the local population’s contribution to the archaeological heritage by sustaining intangible heritage values such as community practices and traditions. Depending on how APSARA implements, enforces or negotiates access and use policies, the other two action situations determine how Angkor’s tangible resources and heritage values are assigned and appropriated by the tourism industry and the local population.

Action Situation 2, community practices and land use management (AS2—relating to the assignment and appropriation of Angkor for community economic and traditional uses) is a separate forum, involving strategic interaction among the local community, APSARA, NGOs and the Heritage Police to shape the local population’s capacity to earn a livelihood and sustain heritage values

at Angkor. Residents within the Angkor site have a clear interest in upholding traditional socio-economic practices and access to land resources or, alternatively, securing social and economic benefits from the conservation of the site and tourism development. Although pro-poor and community development projects have been implemented by local authorities and some local community members do derive economic benefit from employment by APSARA, AS2 is the action situation potentially most influenced by the outcomes arising in the two adjacent action situations. Regulations imposing restrictions over traditional economic practices, construction projects and land tenure are in line with the objective of protecting the integrity and the heritage values of the monuments and the archeological park (AS1). However, they negatively affect choice and position rules that determine the economic opportunities and heritage values of the local inhabitants. Similarly, outcomes in the tourism trade action situation influence payoff and scope rules affecting community practices and the degree to which local inhabitants can derive direct benefits or are adversely affected by externalities arising from tourism development.

Action Situation 3, the tourism trade (AS3—related to the assignment and appropriation of site resources for tourism purposes) governs the trajectory of tourism development and its implications for tourism infrastructure outside of the heritage site. The private firms, national Ministry of Tourism, and local government actors (Siem Reap LGA) involved share clear incentives to develop Angkor as a visitor attraction, with outcomes such as the number of permits to develop tourism infrastructure, the level of investment, and the revenues and profits generated by the tourism sector. APSARA is not directly involved in AS3, but to protect the integrity and authenticity of the site it could influence the outcome of AS3 through AS1 by regulating the level of visitor flows to the site. This in turn affects the available choices and payoffs of players in the tourism trade that rely on maximizing Angkor as a visitor attraction in order to appropriate economic value from tourism development.

The network of adjacent action situations depicted in [Figure 3](#) can be used to analyze alternative outcomes in the management and conservation of Angkor over time, corresponding in part to different phases in the evolution of tourism planning and management at Angkor. During the immediate post-inscription period, conservation of the site was paramount to official stakeholders. With rapidly growing numbers of visitors and often unregulated development of the tourism sector, APSARA and other government authorities accommodated the tourism sector’s objective to extract value from exploitation of the site. The integrity and heritage values of the archeological park were protected mainly through restrictions over local

villagers' traditional economic practices, construction rights, and land tenure. While leveraging growing mass tourism demand, actors in the tourism trade action situation (AS3) did not internalize the negative externalities that tourist pressure generated on the integrity of the monuments (AS1) or on the local community (AS2). Furthermore, compliance with regulations that were in conflict with local population priorities proved to be problematic, increasing policing and enforcement costs for APSARA.

In a subsequent phase, APSARA, backed by the national government and the international community, took steps to overcome the negative externalities arising from mass tourism and the fast-growing tourism infrastructure. Winter (2007) suggests that attempts to give APSARA greater control of visitor management and transport facilities were intended to promote the site as a quality destination, enhancing tourist and visitor experience. However, the local tourism sector in AS3 opposed this policy proposal because it entailed more costs to adapt to the new tourism and visitor management system. At the same time, under this new policy, the local population in AS2, while obtaining some benefit from less tourist interference with religious and cultural practices, remained constrained by site conservation efforts aimed at preserving the "authenticity" of the cultural landscape and of old villages within the protected area (Miura, 2011a).

Finally, recent years have seen a further shift in management priorities toward a greater recognition of "living heritage" conditions within the Angkor site and attempts to find strategies to channel the benefits of tourism development to the local community. Under Angkor's Heritage Management Framework and the Tourism Management Plan, APSARA is obliged to implement a management strategy directed toward a greater recognition of local population practices and community values and simultaneously to promote tourism projects that foster greater participation by local communities. While this outcome may be equally desirable for APSARA and the local community, it remains difficult to achieve due to actors' conflicting incentives across adjacent action situations. Local governing authorities and the tourism sector will need to adapt to a profoundly different tourism model, generating losses on sunk costs and obstacles to channel positive economic benefits from tourism activities to the local population while preserving heritage values. For example, shifting to sustainable tourism implies a reduction of visitor flows, at least in peak periods, reducing the return on the investment made by public and private actors in the tourism infrastructure and accommodation facilities. Similarly, the acknowledged inability by the local population to supply the tourism market with

products and services (Mao et al., 2014) entails significant coordination costs among APSARA, the tourism sector, and local communities to develop community-based tourism programs. Finally, while existing restrictions on community practices and land use align with protecting the integrity and heritage values of the monuments and archeological park, they do not perfectly suit current "living heritage" conditions within the Angkor site.

## DISCUSSION

The case studies presented here demonstrate the utility of the IAD-NAAS framework by exploring collective action dilemmas at complex cultural heritage sites from two complementary perspectives. The Machu Picchu study applies the IAD-NAAS framework to repeated interactions that stretched over a period of 20 years in a network of action situations concerning one discrete issue—the approval of the site masterplan and UNESCO's desire to preserve the site's OUV in the context of a relatively static competition pitting tourist visitation levels against preservation of the site. The Angkor study applies the IAD-NAAS framework to a sequence of management decisions taken over a similar period of time but reflecting changing outcomes in adjacent action situations that result from changes in governance priorities that affected the actions and objectives of the actors involved.

The IAD was developed initially to probe the governance dynamics of natural resource commons (E. Ostrom, 1990, 2005). It has evolved over time to address more intangible commons resource systems such as scientific data and information, economic development aid, software, and scholarly output (Frischmann et al., 2014; Hess & Ostrom, 2011). As such, the boundaries of resource types to which the IAD has been applied have proven to be highly elastic. In most such studies, however, the focus generally has been on individual action situations. We argue that the IAD framework applied to a single focal action situation, however complexly elaborated, is inadequate to capture the multi-scalar, polycentric, and highly interactive dynamics of cultural heritage sites when viewed as resource systems subject to commons dilemmas.

Thus, our approach expands on the implementation of the IAD by Gibson et al. in *The Samaritan's Dilemma* (2005) and tackles the same class of problems considered by Lubell (2013) and McGinnis (2011). Gibson et al. focused on the behavioral incentives and interactions of the actors involved in a complex institutional context such as international development assistance, and highlighted actor interactions and the consequences of excluding particular actors from

decision making and implementation. We also emphasize the importance of actor interaction but position those interactions within governance-related action situations that highlight the conflicting roles individual actors may play while performing in differing governance tasks. Furthermore, while Lubell's *Ecology of Games* offers an abstract and eclectic approach that captures polycentric complexity, it is difficult to envision applying that framework in concrete heritage situations.

Instead, our analysis follows McGinnis (2011) to identify each action situation with a generic governance task in a manner that demonstrates how governance-related action situations impact upon one another and on the sites themselves. By focusing on action situations related to interlaced governance tasks, the case studies illuminate the tensions arising when state parties, local community groups, tourism industry actors and others play roles in multiple action situations that impact one another in the governance process. The more discrete assessment of actors enabled by the IAD-NAAS framework yields more productive and actionable insights into the dynamics of complex institutional settings.

In the case of Machu Picchu, for example, for two decades the stakeholder actors in adjacent action situations have faced largely invariant payoffs, the strategic constraints each set of actors imposes on the options of others have become more complex, and the distribution of power among the actors has led to continuing UNESCO dissatisfaction with management plans, potentially excessive but lucrative tourism, and consequent threats to Machu Picchu's OUV. The countervailing pressures across the adjacent action situations—tensions between development and tourism objectives, intra-governmental rivalries at UNESCO and within Peru, and pressures to conserve and protect Machu Picchu itself—have led the actors at Machu Picchu to settle for many years into a suboptimal Nash equilibrium in which no actor is fully content with the outcome.

At Angkor, by contrast, the roles and behaviors of various actors in governance-related action situations have changed over time as the over-riding objectives of the parties shifted from preservation to tourist exploitation and then to community empowerment. Those changing objectives strongly resemble the "frames" for governance decision-making emphasized by Dennis and Brondizio (2020) in their application of the NAAS to water management institutions. The Angkor example illustrates how an analysis based on the IAD-NAAS framework illuminates how and why networks of action situations adapt to changing circumstances when actors' frames for decision-making change.

## CONCLUSION

Although the dilemmas arising in conservation and management of cultural heritage are well understood by heritage professionals, methodologies for disentangling competing actors' objectives and interactions, and advancing collective interest in the heritage resource system, are in fact limited. This is the root of much criticism of heritage management in practice, and disputes among stakeholders and consequent management failures at cultural heritage sites have become a focus for scholarly attention. In this paper, we argue that the conservation and management of cultural heritage sites can be conceived as a set of interdependent collective action problems and the Institutional Analysis and Development (IAD) framework, in conjunction with McGinnis' Network of Adjacent Action Situations (NAAS), can be applied to diagnose the drivers of conflict and management failures at those sites.

The primary contribution of this article has been to demonstrate how through the application of the IAD-NAAS framework to the governance of heritage sites, heritage scholars and practitioners may better understand interactions among actors, objectives, rules in use, and the socio-environmental context of the communities involved. By analyzing the linkages among governance-related action situations, scholars and practitioners may be better able to identify and rectify the factors leading to dysfunction in site governance. With such knowledge, practitioners could investigate and experiment with changes to institutional rules, rewards, and sanctions in order to achieve more consistently desirable outcomes in cultural heritage management. Research into the potential for such a policy-related application for the IAD-NAAS constitutes an urgent next phase in the introduction of commons scholarship to the heritage field.

The second contribution of this article resides in extending the commons scholarship to cultural heritage sites. So far, only few works have addressed cultural resources under a commons perspective (Bertacchini, Bravo, Marrelli, & Santagata, 2012; Gerber & Hess, 2017) or have used the Ostrom's Workshop analytical tools to study community-based governance models of heritage conservation (Gould, 2018a, In press). By untangling the multiple collective action dilemmas arising at cultural heritage sites, our analysis helps to conceptualize cultural heritage sites in a more comprehensive way as multi-attribute, multi-use resources that are enjoyed and managed by a community of diverse stakeholders who operate at different scales and may express divergent interests in the uses of the resource. At the same time, the polycentric governance challenges posed by the conservation and management of

cultural heritage sites represent a novel field of empirical application useful to test the theoretical underpinnings of the recent literature extending the IAD framework to account for networks of interrelated action situations.

## NOTES

- 1 A World Heritage site is a landmark or area with legal protection under the 1972 international Convention Concerning the Protection of the World Cultural and Natural Heritage, administered by UNESCO. World Heritage Sites, which may be either of cultural or environmental/landscape importance, are designated by UNESCO through a selection process emphasizing sites' outstanding cultural and natural significance for humanity.
- 2 For UNESCO State of Conservation Reports and other documents relating to Machu Picchu, see <https://whc.unesco.org/en/list/274/documents/>.
- 3 For UNESCO State of Conservation Reports and other documents relating to Angkor, see <https://whc.unesco.org/en/list/668/documents/>.
- 4 1996 Law on the Protection of Cultural Heritage, 1994 Royal Decree establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management; and 2004 Royal Decree on the Zoning and Management of the Siem Reap/Angkor region.

## ACKNOWLEDGEMENTS

The authors wish to thank Jose Bastante, Etienne Clement, Michael D. McGinnis, Lynn Meskell, and Luis Armando Muro Ynoñán for their invaluable comments and factual clarifications on earlier drafts of this paper. We also acknowledge the extensive and thoughtful comments of two anonymous reviewers.

## COMPETING INTERESTS

The authors have no competing interests to declare.

## AUTHOR AFFILIATIONS

**Enrico Bertacchini**  [orcid.org/0000-0003-4832-5798](https://orcid.org/0000-0003-4832-5798)  
Università degli Studi di Torino, Italy

**Peter Gould**  [orcid.org/0000-0001-5654-4128](https://orcid.org/0000-0001-5654-4128)  
Indiana University, Bloomington, USA

## REFERENCES

- Aas, C., Ladkin, A., & Fletcher, J.** (2005). Stakeholder collaboration and heritage management. *Annals of Tourism Research*, 32(1), 28–48. DOI: <https://doi.org/10.1016/j.annals.2004.04.005>
- Andina.** (2017, 17 July 2017). UNESCO not to include Peru's Machu Picchu in 'World Heitage in Danger' list. *Andina Peruvian News Agency (wire service)*. Retrieved from <https://andina.pe/ingles/noticia-unesco-not-to-include-perus-machu-picchu-in-world-heritage-in-danger-list-673883.aspx>
- Apsara, et al.** (2013). *Angkor Heritage Management Framework*. Phnom Penh: UNESCO, APSARA and Government of Cambodia. Retrieved from <https://t7txp90beitcxr8s5rxpohy-wpengine.netdna-ssl.com/wp-content/uploads/2018/02/Angkor-Heritage-Management-Framework-October-2013.pdf>
- Avrami, E., MacDonald, S., Mason, R., & Myers, D.** (Eds.) (2019). *Values in Heritage Management*. Los Angeles: The Getty Conservaton Institute.
- Benhamou, F.** (2020). Heritage. In R. Towse (Ed.), *A Handbook of Cultural Economics* (pp. 255–262). Cheltenham, UK & Northampton, MA: Edward Elgar.
- Bertacchini, E., Bravo, G., Marrelli, M., & Santagata, W.** (Eds.). (2012). *Cultural Commons*. Cheltenham UK and Northampton MA: Edward Elgar. DOI: <https://doi.org/10.4337/9781781000069>
- Bertacchini, E., Liuzza, C., Meskell, L., & Saccone, D.** (2016). The politicization of UNESCO world heritage decision making. *Public Choice*, 167(1), 95–129. DOI: <https://doi.org/10.1007/s11127-016-0332-9>
- Breglia, L.** (2009). When patrimonies collide: The case of Chunchucmil, Yucatán. In L. Mortenson & J. Hollowell (Eds.), *Ethnographies and Archaeologies* (pp. 55–70). Gainesville: University Press of Florida.
- Castañeda, Q.** (2009). Heritage and indigeneity: Transformation in the politics of tourism. In M. Baud & A. Ypeij (Eds.), *Cultural Tourism in Latin America: The Politics of Space and Imagery* (pp. 263–295). Leiden: Brill. DOI: <https://doi.org/10.1163/ej.9789004176409.i-324.89>
- Caust, J., & Vecco, M.** (2017). Is UNESCO World Heritage recognition a blessing or burden? Evidence from developing Asian countries. *Journal of Cultural Heritage*, 27, 1–9. DOI: <https://doi.org/10.1016/j.culher.2017.02.004>
- Comer, D.** (2012). *Tourism and Archaeological Heritage Management at Petra: Driver to Development or Destruction?* New York, Dordrecht Netherlands, Heidelberg Germany, and London: Springer. DOI: <https://doi.org/10.1007/978-1-4614-1481-0>
- Dennis, E. M., & Brondizio, E.** (2020). Problem framing influences linkages among networks of collective action situations for water provision, wastewater, and water conservation in a metropolitan region. *International Journal of the Commons*, 14(1). DOI: <https://doi.org/10.5334/ijc.974>
- Frischmann, B. M., Madison, M. J., & Strandburg, K. J.** (Eds.) (2014). *Governing Knowledge Commons*. Oxford and New York: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199972036.001.0001>
- Gerber, J.-D., & Hess, G.** (2017). From landscape resources to landscape commons: focusing on the non-utility values of landscape. *International Journal of the Commons*, 11(2), 708–732. DOI: <https://doi.org/10.18352/ijc.745>

- Gibson, C. C., Andersson, K., Ostrom, E., & Shivakumar, S.** (2005). *The Samaritan's Dilemma: The Political Economy of Development Aid*. Oxford University Press.
- Godden Mackay Logan.** (2012). *Angkor World Heritage Area Tourism Management Plan*. Phnom Penh: Godden Mackay Logan, APSARA and UNESCO. Retrieved from <http://whc.unesco.org/document/134601>
- Gould, P. G.** (2018a). *Empowering Communities Through Archaeology and Heritage*. London: Bloomsbury Academic. DOI: <https://doi.org/10.5040/9781350036253>
- Gould, P. G.** (2018b). Privatization, public-private partnerships, and innovative financing for archaeology and heritage. In C. Smith (Ed.), *Encyclopedia of Global Archaeology* (2nd ed.). Cham, Switzerland: Springer. DOI: [https://doi.org/10.1007/978-3-319-51726-1\\_3384-1](https://doi.org/10.1007/978-3-319-51726-1_3384-1)
- Gould, P. G.** (In press). Democratic heritage and polycentric governance. In K. L. Samuels & J. Daehnke (Eds.), *Heritage & Democracy*. Gainesville: University of Florida Press.
- Government of Peru.** (2015). *Plan Maestro Del Santuario Historico de Machupicchu 2015–2019*. Cusco: Government of Peru.
- Government of Peru.** (2020). Machupicchu only will be able to receive a maximum of 2244 visitors per day. Retrieved from <https://www.machupicchu.gob.pe/machupicchu-only-will-be-able-to-receive-a-maximum-of-2244-visitors-per-day/?lang=en>
- Hampton, M. P.** (2005). Heritage, local communities and economic development. *Annals of Tourism Research*, 32(3), 735–759. DOI: <https://doi.org/10.1016/j.annals.2004.10.010>
- Hauser-Schäublin, B.** (Ed.) (2011). *World Heritage Angkor and Beyond: Circumstances and Implications of UNESCO Listings in Cambodia* (Vol. 2). Göttingen: Universitätsverlag Göttingen. DOI: <https://doi.org/10.4000/books.gup.292>
- Healy, R. G.** (1994). The “common pool” problem in tourism landscapes. *Annals of Tourism Research*, 21(3), 596–611. DOI: [https://doi.org/10.1016/0160-7383\(94\)90122-8](https://doi.org/10.1016/0160-7383(94)90122-8)
- Herrera, A.** (2014). Commodifying the indigenous in the name of development: Archaeology and heritage management in the XXI century Central Andes. *Public Archaeology*, 13(1–3), 69–82. DOI: <https://doi.org/10.1179/1465518714Z.00000000055>
- Hess, C., & Ostrom, E.** (Eds.) (2011). *Understanding Knowledge as a Commons: From Theory to Practice*. Cambridge, MA: MIT Press.
- ICC-Angkor, & UNESCO.** (2014). *20 Years of International Cooperation for Conservation and Sustainable Development*. Phnom Penh: UNESCO.
- INC.** (2005). *Plan Maestro del Santuario Historico De Machupicchu*. Cusco: Ministry of Culture.
- Labadi, S.** (2017). UNESCO, world heritage, and sustainable development: International discourses and local impacts. In P. G. Gould & K. A. Pyburn (Eds.), *Collision or Collaboration: Archaeology Encounters Economic Development* (pp. 45–60). Cham Switzerland: Springer. DOI: [https://doi.org/10.1007/978-3-319-44515-1\\_4](https://doi.org/10.1007/978-3-319-44515-1_4)
- Labadi, S., & Gould, P. G.** (2015). Sustainable development: Heritage, community, economics. In L. Meskell (Ed.), *Global Heritage: A Reader* (pp. 196–216). Malden, MA and Oxford: Wiley Blackwell.
- Lubell, M.** (2013). Governing institutional complexity: The ecology of games framework. *Policy Studies Journal*, 41(3), 537–559. DOI: <https://doi.org/10.1111/psj.12028>
- Mao, N., Grunfeld, H., Delacy, T., & Chandler, D.** (2014). Agriculture and tourism linkage constraints in the Siem Reap-Angkor region of Cambodia. *Tourism Geographies*, 16(4), 669–686. DOI: <https://doi.org/10.1080/14616688.2014.915878>
- McGinnis, M. D.** (2011). Networks of adjacent action situations in polycentric governance. *Policy Studies Journal*, 39(1), 51–78. DOI: <https://doi.org/10.1111/j.1541-0072.2010.00396.x>
- McGinnis, M. D.** (n.d.). *Updated Guide to IAD and the Language of the Ostrom Workshop: A Simplified Overview of a Complex Framework for the Analysis of Institutions and their Development*. Bloomington: Indiana University Ostrom Workshop in Political Theory and Policy Analysis.
- Meskell, L.** (2010). Conflict heritage and expert failure. In S. Labadi & C. Long (Eds.), *Heritage and Globalisation* (pp. 192–201). London and New York: Routledge.
- Meskell, L.** (2012). *The Nature of Heritage: The New South Africa*. Chichester UK, Malden MA and Oxford: Wiley-Blackwell.
- Meskell, L.** (2018). *A Future in Ruins*. Oxford and New York: Oxford University Press.
- Meskell, L., Liuzza, C., Bertacchini, E., & Saccone, D.** (2015). Multilateralism and UNESCO world heritage: Decision-making, states parties and political processes. *International Journal of Heritage Studies*, 21(5), 423–440. DOI: <https://doi.org/10.1080/13527258.2014.945614>
- Miura, K.** (2011a). Sustainable development in Angkor: Conservation regime of the old villagescape and development. In B. Hauser-Schäublin (Ed.), *World Heritage Angkor and beyond: Circumstances and implications of UNESCO listings in Cambodia* (pp. 121–138). Göttingen: Universitätsverlag Göttingen. DOI: <https://doi.org/10.4000/books.gup.311>
- Miura, K.** (2011b). World heritage making in Angkor: Global, regional, national and local actors, interplays and implications. In B. Hauser-Schäublin (Ed.), *World Heritage Angkor and beyond: Circumstances and implications of UNESCO listings in Cambodia* (pp. 9–32). Göttingen: Universitätsverlag Göttingen. DOI: <https://doi.org/10.4000/books.gup.304>
- Morrison, T. H.** (2017). Evolving Polycentric Governance of the Great Barrier Reef. *Proceedings of the National Academy of Sciences of the United States of America*, 114(15), 3013–3021. DOI: <https://doi.org/10.1073/pnas.1620830114>

- Morrison, T. H., Adger, W. N., Brown, K., Hettiarachchi, M., Huchery, C., Lemos, M. C., & Hughes, T. P.** (2020). Political Dynamics and Governance of World Heritage Ecosystems. *Nature Sustainability*, 3(Nov 2020), 947–955. DOI: <https://doi.org/10.1038/s41893-020-0568-8>
- Ostrom, E.** (1990). *Governing the Commons*. Cambridge, UK and New York: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511807763>
- Ostrom, E.** (1999). Polycentricity, complexity, and the commons. *The Good Society*, 9(2), 37–41.
- Ostrom, V.** ([1972] 1999). Polycentricity (1) and (2). In M. D. McGinnis (Ed.), *Polycentricity and Local Public Economies* (pp. 52–74 and 119–139). Ann Arbor: University of Michigan.
- Ostrom, E.** (2005). *Understanding Institutional Diversity*. Princeton and Oxford: Princeton University Press.
- Ostrom, E.** (2008). Polycentric systems as one approach for solving collective-action problems. *Indiana University, Bloomington: School of Public & Environmental Affairs Research Paper*, (2008–11), 2–23. DOI: <https://doi.org/10.2139/ssrn.1936061>
- Ostrom, E.** (2010). Beyond markets and states: Polycentric governance of complex economic systems. *The American Economic Review*, 100(3), 641–672. DOI: <https://doi.org/10.1257/aer.100.3.641>
- Ostrom, V., Tiebout, C. M., & Warren, R.** (1961). The organization of government in metropolitan areas: A theoretical inquiry. *The American Political Science Review*, 55(4), 831–842. DOI: <https://doi.org/10.1017/S0003055400125973>
- Porter, B. W., & Salazar, N. B.** (2005). Heritage tourism, conflict, and the public interest: An introduction. *International Journal of Heritage Studies*, 11(5), 361–370. DOI: <https://doi.org/10.1080/13527250500337397>
- Rizzo, I., & Throsby, D.** (2006). Cultural heritage: Economic analysis and public policy. In A. G. Victor & T. David (Eds.), *Handbook of the Economics of Art and Culture* (Vol. 1, pp. 983–1016). Amsterdam and Oxford: Elsevier. DOI: [https://doi.org/10.1016/S1574-0676\(06\)01028-3](https://doi.org/10.1016/S1574-0676(06)01028-3)
- Russo, A. P.** (2002). The “vicious circle” of tourism development in heritage cities. *Annals of Tourism Research*, 29(1), 165–182. DOI: [https://doi.org/10.1016/S0160-7383\(01\)00029-9](https://doi.org/10.1016/S0160-7383(01)00029-9)
- Salazar, N.** (2012). The glocalisation of heritage through tourism: Balancing standardisation and differentiation. In S. Labadi & C. Long (Eds.), *Heritage and Globalisation* (pp. 132–146). Abingdon & New York: Routledge.
- Schlager, E., & Ostrom, E.** (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land economics* (pp. 249–262). DOI: <https://doi.org/10.2307/3146375>
- Seyfi, S., Hall, C. M., & Fagnoni, E.** (2019). Managing World Heritage Site Stakeholders: A Grounded Theory Paradigm Model Approach. *Journal of Heritage Tourism*, 14(4), 308–324. DOI: <https://doi.org/10.1080/1743873X.2018.1527340>
- Smith, L., & Waterton, E.** (2009). *Heritage, Community and Archaeology*. London: Duckworth.
- Throsby, D.** (1999). Cultural capital. *Journal of Cultural Economics*, 23(1–2), 3–12. DOI: <https://doi.org/10.1023/A:1007543313370>
- Thyl De Lopez, T., Ponlok, T., Proeung, S., Sinoeun, C., & Thea, S.** (2006). Towards sustainable development in Angkor, Cambodia: Social, environmental and financial aspects of conserving cultural heritage. *EEPSEA research report series/IDRC. Regional Office for Southeast and East Asia, Economy and Environment Program for Southeast Asia; no. 2006-RR5*.
- UNESCO.** (1999). *Report of the World Heritage Centre-IUCN-ICOMOS Mission to the Historic Sanctuaru of Machu Picchu*, Peru, 18–25 October 1999. Marrakesh: UNESCO.
- UNESCO-WHC.** (1999). *Report on the 23rd Session, Bureau of the World Heritage Committee*. Paris: UNESCO.
- UNESCO-WHC.** (2017). *Report of the 41st Session of the World Heritage Committee*. Paris: UNESCO.
- Waitt, G.** (2000). Consuming heritage: Perceived historical authenticity. *Annals of Tourism Research*, 27(4), 835–862. DOI: [https://doi.org/10.1016/S0160-7383\(99\)00115-2](https://doi.org/10.1016/S0160-7383(99)00115-2)
- Winter, T.** (2007). *Post-conflict heritage, postcolonial tourism: Tourism, politics and development at Angkor*. Abington, UK & New York: Routledge. DOI: <https://doi.org/10.4324/9780203946381>

---

TO CITE THIS ARTICLE:

Bertacchini, E., & Gould, P. (2021). Collective Action Dilemmas at Cultural Heritage Sites: An Application of the IAD-NAAS Framework. *International Journal of the Commons*, 15(1), pp. 276–290. DOI: <https://doi.org/10.5334/ijc.1089>

Submitted: 18 November 2020 Accepted: 26 July 2021 Published: 17 September 2021

COPYRIGHT:

© 2021 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

*International Journal of the Commons* is a peer-reviewed open access journal published by Ubiquity Press.

