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Refining the Adaptive Capacity Framework for World Heritage Management

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ABSTRACT

Well-developed in the context of climate change, the concept of adaptive capacity has so far not been applied extensively to the study of World Heritage management. This paper applies the analytic framework of adaptive capacity to better understand how institutional attributes enable or hinder systemic adaptation in managing World Heritage sites as boundaries of practice expand due to changing concepts of heritage and emerging management challenges. Drawing upon case studies from Southeast Asia, the study proposes a refined framework with the following dimensions of adaptive capacity: cognitive frames, learning capacity, resources, formal governance measures, organizational relationships, and agency.

Keywords: *adaptive capacity, World Heritage, institutions, Southeast Asia, boundary of practice*

WORLD HERITAGE IN FLUX: EXPANDING BOUNDARIES OF PRACTICE

Ever since the World Heritage Convention was adopted in 1972, over 1000 sites have been inscribed onto the World Heritage List. From the very first recognition of iconic sites such as the Pyramids in Egypt and the Great Wall in China, the List today encompasses a range of sites that span a widening definition of heritage, particularly cultural heritage. To the extent that World Heritage is the poster child – rightly or wrongly – for the heritage sphere writ large, this growing diversity on the World Heritage List reflects more inclusive notions of cultural heritage. Expanding from the conventional recognition conferred on monuments, historic buildings, towns, and archaeological sites, the List today encompasses inter alia cultural landscapes both rural and urban, industrial heritage sites, cultural routes and vernacular heritage.

Global monitoring exercises reveal that the World Heritage sites are struggling with ever more complex issues than ever. A statistical analysis conducted

between 1979 and 2013 by the World Heritage Centre showed that the main issues identified by the World Heritage Committee affecting conservation across the world include: "management and institutional factors", "buildings and development", "social and cultural uses of heritage", "transportation infrastructure" and "other human activities" (UNESCO, 2014). Within Southeast Asia, the official Periodic Reporting exercise conducted in 2010 identified that the top issues affecting World Heritage sites in the sub-region identified by the States Parties themselves were "local conditions affecting physical fabric", "social and cultural uses of heritage", "climate change", "sudden ecological or geological events" and "buildings and development" and "transport infrastructure" (UNESCO, 2012).

These accumulated challenges are taking a toll on World Heritage sites. Out of the total number of sites that has been recognized as World Heritage sites, 54 are on the List of World Heritage in Danger as of mid-2019. This is clear indication that there is an ascertained or potential threat for losing the Outstanding Universal Value which defines the raison d'etre of the site. In addition to the sites that are in Danger, there are sites that are under close monitoring in terms of their State of Conservation by the World Heritage Committee. The situation at these sites is not so dire, however, there are concerns that their significance may be under considerable, and yet remediable, threat. Between 2000 and 2009, the number of sites under State of Conservation monitoring tripled from 34 to 104, while the number of sites in Danger quadrupled from 4 to 17 (Leitao, 2011). These numbers underreport the actual situation as there are far more sites facing conservation and management issues which have not registered on the radar of the World Heritage Committee.

In Southeast Asia, there are 38 World Heritage sites in total, encompassing 16 natural sites, 21 cultural sites and 1 mixed site. Over half, or 20 sites, have been identified as having issues related to conservation and management. Three sites have been or are currently on the Danger List. Fourteen sites have been subject to Reactive Monitoring, while two have received Advisory Missions.

A site can be under active monitoring by the World Heritage Committee for up to 10 years or even longer before being deemed to have graduated from this situation of concern. These cases of chronic poor management practice suggest that there are underlying failures to effectively reform management and governance institutions. Targeted efforts to raise technical capacity and improve management measures through training projects or revising management plans do not seem to translate into more systemic capacity to deal with conservation and management issues. Specifically, with mounting environmental and socio-economic pressures as well as more complex notions of heritage, there must be a more effective approach.

Rather than focusing on specific threats, the paper looks at World Heritage sites in the context of expanded "boundaries of practice" which place a strain on management institutions more broadly. Boundaries of practice are proposed to be broader than boundaries of knowledge because the latter may be limited to passive absorption of new knowledge, which may not be translated into behavioral change or action.

Practice is taken as the locus of analysis. Drawing on the work of de Certeau and Bourdieu in the field of sociology, practices are understood as "embodied, materially mediated arrays of human activity centrally organized around shared practical understanding" (Schatzki, Knorr Cetina, & Von Savigny, 2001). In organizational research, the details of practice are the linchpin for change: "Without accompanying changes in the way work gets done, only the potential for improvement exists" (Garvin, 1993). A practice orientation in institutional theory focuses on understanding the "knowledgeable, creative and practical work of individual and creative actors" in shaping institutional processes within a "field of practices" (Lawrence and Suddaby, 2006).

The past 40 years have seen significant shifts in the conception of heritage, and with it, attendant shifts in the way that heritage is governed. The literature identifies three major shifts: (i) in terms of evolving definitions of heritage, (ii) increasing complexity in heritage management, which has to confront challenges beyond narrow conservation concerns in order to engage with emerging threats and sustainable development issues, and (iii) the necessity for heritage institutions to adapt their management and larger governance practices accordingly.

These shifts are previewed here below, reflecting the comprehensive mapping done by Thompson and Wijesuriya (2018), and is explained further in the succeeding sections.

Table 1: Expanding boundaries of practice in heritage concepts, challenges and management/governance

	1960s-1980s	1990s	2000s	2010s
Evolving heritage concepts	Conservation of physical fabric	Values-based conservation	People-centred approaches	Heritage for sustainable development
Conceptual archetypes	Monuments and archaeological sites	Landscapes	Living heritage	Heritage and well-being
Expanding challenges	Material authenticity and integrity	Setting Ecology Social fabric	Intangible cultural heritage Traditional knowledge Rights	Disaster resilience Livelihoods Nature-culture continuum Sustainable development
Reframing management and governance	Technical conservation	Broader management Multi-disciplinary Systems approach	Participatory approaches	Heritage adding value Adding value to heritage

Adapted from Thompson and Wijesuriya (2018)

The first dimension in terms of expanding boundaries of practice is a conceptual one. Over the past 40 years, there has been a significant expansion of the concepts of heritage from the focus on monuments and sites to landscapes to living heritage and now to heritage and well-being (as thoroughly explained in Wijesuriya and Wood 2018.) The conceptual expansion of heritage may have spatial implications, such as in the case of historic landscapes, where it becomes necessary to consider the larger setting of a site beyond just a single building or group of buildings. This correlation with spatial expansion is not always the case, however, with other emergent categories of heritage such as industrial heritage.

Secondly, an unprecedented host of issues is now affecting heritage sites. Climate change, unprecedented rates of urbanization, industrialization, infrastructure development, the commodification of heritage and the explosion in global tourism are putting heritage sites around the world under greater pressure than ever. The conceptual expansion is related to the expansion in the management issues. As the definition of cultural heritage becomes broader, as reflected in the types of sites that are recognized on the World Heritage List, the types of challenges encountered become more complex.

These two shifts have an implication for the third shift, which is expanding management practice to deal with these evolving notions of heritage sites, with more extensive footprints and more complex socio-environmental issues at play. From a primary concern about physical conservation in the 1970s, heritage management now encompasses ecological issues, settings, intangible cultural heritage, traditional knowledge, rights, disasters, livelihoods, the nature-culture continuum, visitor management and sustainable development.

ADAPTIVE CAPACITY OF INSTITUTIONS

The reality is that most World Heritage management institutions are mired in narrow and conventional heritage mandates and practices. Some organizations have historical legacies dating back 100 years, with expertise in epigraphic studies, archaeological excavation or monument restoration. Many are now dominated by senior executives who were educated in the 1970s when the Venice Charter was the touchstone for heritage conservation, focusing on authenticity in physical conservation. Most are staffed mainly by architects and archaeologists. Few are equipped to deal with the gamut of emerging issues that now faces the heritage world. Boccardi notes that "going beyond the narrow boundaries of the heritage field is bound to create discomfort if not tensions among those who have presided over this area of work in past

decades (2018).

So how could these existing World Heritage management institutions cope with the expanding boundaries of practice? Building on the literature of institutional change, this study focuses on adaptive capacity as the lens to understand the factors which support or inhibit change in the face of mounting pressures and evolving frameworks.

There are multiple definitions of institutions. Institutions have been defined as "cultured-cognitive, normative and regulative elements that ... provide stability and meaning to social life ... Institutions are transmitted by various types of carriers, including symbolic systems, relational systems, routines and artifacts" (Scott 2001). Gupta et al use the definition that institutions are "systems of rules, decision-making procedures, and programs that give rise to social practices, assign roles to the participants in these practices, and guide interactions among the occupants of the relevant roles" (IDGEC Scientific Planning Committee, 1999). North (1990) clarifies further that institutions are "humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct) and formal rules (constitutions, laws and property rights)" (ibid).

Informal rules are further defined as (i) "rules that are not written down, or are not enforced by the state", (ii) "ethical codes or moral "norms" which are internalized and directly reflected in players' preferences" and (iii) rules that are "not deliberately designed, but are nevertheless followed because deviating from the rule is not individually rational if others follow it" such as "social norms" (Kingston & Caballero, 2009). Such informal rules form the backdrop within which formal institutions are embedded (Williamson, 2000).

The study of institutions and their evolution suggests that institutions are inherently conservative, and react incrementally to deal with problems (Gupta and Dellapenna, 2009). This evolutionary process in institutional change hearkens back to Veblen's (1899) notion of habits of thought. Institutions become entrenched through a process of institutionalization, whereby previous interactions, views and power relations become self-reinforcing (Klijn and Koppenjan, 2006). Historical developments create an ethos of path dependency which limits the system's ability to change or innovate. With path dependence, initial conditions have an outsize role in determining institutions and allows for inefficient equilibria to persist. Pahl-Wostl et al (2013) point out that "historical investments and institutional path dependencies have generated an interdependence of system elements, e.g., institutional design, technical infrastructure, knowledge, and distribution of power, that guarantee the functioning of a system and the convergence of expectations of actors".

The persistence of informal rules is important in undermining institutional change, noting that "following a change of formal rules, the informal rules…survive the change", so that the results "tends to…produce a new equilibrium that is far less revolutionary" (North, 1990). North further points out that informal constraints represent the major source of institutional inertia, as they change slowly in an evolutionary manner. In this way, new formal rules may not have any effect if "people generally expect others (including those charged with enforcing the rule) to act in a way which makes it effective" (Aoki, 2001), thus ensuring that the "rule-in-form" becomes a "rule-in-use".

Changing informal rules, particularly related to traditional norms, requires addressing underlying power structures. Senge (1990) explains that "Resistance to change is neither capricious nor mysterious. It almost always arises from threats to traditional norms and ways of doing things. Often these norms are woven into the fabric of established power relationships. The norm is entrenched because the distribution of authority and control is entrenched. Rather than pushing harder to overcome resistance to change, artful leaders discern the source of the resistance. They focus directly on the implicit norms and power relationships within which the norms are embedded."

Cautionary tales from the development sector abound, where well-meaning programmes introducing change "often fail if they do not redress the fundamental structural problems" (Lemos, Boyd, Tompkins, Osbahr and Liverman, 2007). Moreover, "it is important to understand empirically how these challenges can be overcome, especially in cases in which building adaptive capacity involves redistributive policymaking that can be met by fierce political opposition" (ibid).

The ability of a system to adjust is captured by the concept of adaptive capacity. Originally rooted in the natural sciences, the concept of adaptive capacity has been further elaborated within the social-ecological literature, which examines the

dynamics of social-ecological systems. The vast majority of the social-ecological literature on adaptive capacity in the past twenty years concerns climate change adaptation, although it has also been applied to organizational change studies and complexity theories (Weick & Sutcliffe, 2001). Adaptation has become a central concern of the work of policy makers, scholars and practitioners dealing with climate change, in the midst of accelerated climate change, which is bringing about unpredictable changes. The Intergovernmental Panel on Climate Change (IPCC) states that "Adaptation to climate change has the potential to substantially reduce many of the adverse impacts of climate change and enhance beneficial effects – though neither without cost nor without leaving residual damage…" (Mccarthy, Canziani, Leary, Dokken and White, 2001).

Gupta et al (2010) in their seminal paper define adaptive capacity as "the inherent characteristics of institutions that empower social actors to respond to short and long-term impacts either through planned measures or through allowing and encouraging creative responses from society both ex ante and ex post. It encompasses: the characteristics of institutions (formal and informal; rules, norms and beliefs) that enable society (individuals, organizations and networks) to cope with climate change, and the degree to which such institutions allow and encourage actors to change these institutions to cope with climate change." Similar definitions are offered by Yohe and Tol 2002, Smit et al 2000, Weick and Sutcliffe 2001. The framework developed by Gupta et al is notable as the first to systematically address adaptive capacity of institutions, as opposed to earlier work which looked into other units of society - households, organizations, local communities and nations.

Assessing adaptive capacity is difficult as "capacity is a latent condition that can only be observed when realized through some form of concrete adaptation" (Lemos et al., 2007). That said, within the rich literature on ecological-social systems, there is a broad consensus among scholars that there are three main issues that determine adaptive capacity, as identified by Janssen and Ostrom (2006): (i) investing in the production, distribution and communication of information and knowledge, (ii) encouraging institutions that permit evolutionary change and learning, and (iii) increasing level of resources (ibid). Put another way, this corresponds to an institution's ability to learn, to decide and to act.

This broad three-part framework has been further detailed by other scholars notably the well-received Adaptive Change Wheel (ACW) created by Gupta et al (2010) in the context of climate change adaptation. The ACW creates metrics for understanding how institutions contribute to adaptive capacity among social actors. The ACW covers six dimensions and 22 criteria. The dimensions were developed following a literature review and brainstorming, which allowed existing dimensions proposed by other scholars to be clustered together to ensure that the final proposed criteria would be distinct. The dimensions and their subsidiary criteria are arranged into a wheel formation, modeled in part on the Vulnerability Scoping Diagram developed by Polsky et al (2007).

The six dimensions of the ACW are: variety, learning capacity, room for autonomous change, leadership, availability of resources and fair governance. These are detailed as follows.

- Variety refers to how institutions "encourage the involvement of a variety of perspectives, actors and solutions". Given the complexity of many situations, adaptive capacity is dependent on having room for "multiple frames of reference", the involvement of different actors at different levels and from different sectors in the governance process, a range of different policy options that can be deployed as solutions, and the willingness to tolerate short-term redundancy for the sake of reaching long-term solutions.

- Learning capacity refers to institutions that "enable social actors to continuously learn and improve their institutions". The capacity to learn is predicated upon trust, and institutional patterns are needed that promote mutual respect and trust. Two types of learning are included: single loop learning ("the ability of institutional patterns to learn from past experiences and improve their routines" and double loop learning ("evidence of changes in assumptions underlying institutional patterns". Learning also requires an openness towards uncertainties.

- Room for autonomous change refers to institutions that "allow and motivate social actors to adjust their behavior". This requires having continuous access to information, particularly by accessing data within institutional memory; being able to act according to plan, ideally by providing such plans in advance of any occurrence such as disasters; and the capacity to improvise, which requires

reinforcing social capital to increase the "capacity of individuals to self-organize and innovate".

- Leadership refers to institutions that "can mobilize leadership qualities". Systems should make room for leaders who are visionary; entrepreneurial, that is, stimulate actions and undertakings; and encourage collaboration between different actors.

- Availability of resources refers to institutions that "can mobilize resources for implementing adaptation measures". In addition to the obvious human resources (which encompasses expertise, knowledge and labor) and financial resources which are needed to enact policy measures, authority is also identified as a key resource. One source of authority is statutory authority, whereby "institutional rules are embedded in constitutional laws".

- Fair governance refers to institutions that can "enhance principles of fair governance". Fair governance includes legitimacy of institutions, equity (which weighs whether institutional rules are fair), responsiveness to society, and whether the institutional patterns are accountable.

In addition to these factors, other scholars have identified agency as another factor which should be considered. Reflecting previous work (McClanahan and Cinner, 2012), Cohen et al (2016) propose agency as one of the practical factors determining adaptive capacity. In their framework, "agency" means the ability of different actors to make their own choices or to take part in making decisions that will influence their ability to cope with or drive change. Their framework also has four other dimensions, namely: assets, flexibility, learning and social organization. Assets includes resources (human, financial and authority). Learning refers to the ability to learn from past experiences or, more radically, to change underlying assumptions. Learning also reflects institutional memory in the form of on-going processes to monitor and evaluate policy experiences. Flexibility refers to the ability to engage with new ideas. Social organization includes attributes related to leadership.

Unlike the emphasis on human agency at an individual level which is espoused by Cohen et al, Bettini et al (2015) propose that institutional agency should be looked at. Institutional agency is felt to be an important dimension that responds to the gap regarding putting adaptive capacity into practice. They propose that adaptive capacity "should include the skills and resources needed to adapt, along with the access, influence, and the capability to harness and combine these system attributes into adaptation processes. Without this agency element within definitions, studies risk continuing to miss critical insight into how system capacities can be mobilized for adaptation, and how this can be achieved in different social contexts" (ibid).

Despite these studies, there is a gap in the literature regarding the identification of practical determinants of adaptive capacity (Adger and Vincent 2005; Lemos et al 2007a). Bettini et al (2015) point to the need to better understand "how system attributes are combined under particular conditions and within particular contexts to create the capacity to adapt".

The adaptive capacity of heritage sites, particularly World Heritage sites and cultural heritage, is a relatively new area of research, emerging mostly in the past five years. These studies are confined to adaptive capacity in the specific context of climate change. This area of scholarship is a subset of a larger and more well-established body of knowledge that concerns the impacts of climate change on heritage (see Cassar 2005, Bandarin 2007, Lefevre and Sabbioni 2018). It overlaps with a separate but related stream of work on managing disasters and other risks at heritage sites and World Heritage sites (see Jigyasu 2004, Mackee 2014, Korka 2018).

Heath (2008) analyzed the adaptive capacity of World Heritage sites in Australia. However, the key factors of adaptive capacity for this analysis were not articulated. Philips (2013) undertook a study of three World Heritage sites in the United Kingdom to look at adaptive capacity to climate change. The study proposes a conceptual model for assessing adaptive change, primarily drawing upon the ACW as a starting point. It finds that the heritage sector is lacking capacity particularly access to best practices and tools for climate change adaptation. Intersectoral collaboration also needs to be reinforced, specifically between the heritage sector and the emergency response agencies.

Since these two early studies, there has been growing interest in this topic, and case studies conducted on various sites. Daly (2018) looks more broadly at vulnerability, and assesses adaptive capacity as a component of overall vulnerability of the heritage values inherent at archaeological sites. The study proposes a six-step methodology, but does not propose a conceptual framework

for assessing vulnerability, particularly adaptive capacity in detail. Government heritage agencies in Australia, Ireland, and the United States have issued guidance notes on adaptation strategies for cultural resources, while other heritage organizations such as the International National Trusts Organization are mobilizing the heritage sector to initiate responses to climate change. The role of traditional knowledge in improving adaptive outcomes at heritage sites has been proposed (Carmichael, 2015).

Beyond the issue of climate change, the assessment of adaptive capacity as a conceptual and analytical device has not yet been applied to the study of World Heritage governance in general. Especially, its use has not been considered in terms of assessing the capacity of a system to adapt to a host of factors and pressures that disrupt existing governance and management institutions. Given the methodological advances that have been made in assessing adaptive capacity, this tool holds tangible promises for untangling other complex heritage governance issues. This study aims to adapt existing frameworks for assessing adaptive capacity as a means of better understanding institutional mechanisms driving the ability of World Heritage site institutions in response to emerging challenges.

RE-DEFINING ADAPTIVE CAPACITY IN THE CONTEXT OF WORLD HERITAGE

The paper addresses this gap in the literature on adaptive capacity, with the aim to propose a refined framework for studying adaptive capacity in World Heritage management institutions, beyond the issue of climate change.

The research draws on empirical evidence from three case studies: Historic Town of Ayutthaya" in Thailand, "Vat Phou and Associated Ancient Settlements within the Champasak Cultural Landscape", and George Town in Malaysia, part of the serial nomination of the "Historic Cities of the Straits of Malacca" along with Melaka. All three sites have been subject to monitoring by the World Heritage Committee in the past decade, in response to management challenges that were deemed serious enough to trigger official response from the Committee. The concerns of the Committee in turn led to a range of policy and planning responses from the respective site management institutions. However, the extent to which these responses translated into actual practice was a function of the various factors of adaptive capacity which will be discussed below.

The selection of the cases aims for theoretical replication (Yin 2013), in which the selected cases predict "contrasting results but for anticipatable reasons". The three cases differ in terms of their governance structures, their political setting and history, the role of government, private sector and civil society in policy processes and implementation. The comparison seeks to establish "a framework for interpreting how parallel process of change are played out in different ways within each context" (following Skocpol and Somers 1980, in Collier 1993). While the three models are located at different points of economic development and political complexity, it should be noted that the three are not necessarily meant to present a progression in terms of evolving from one model to the next. Nor does the comparison seek to identity an ideal model for heritage management as such. Given the specificities of each case, the study aims more to develop propositions that generalize analytically from each case to illustrate determining factors in the practices of adaptive capacity.

Ayutthaya was struck by catastrophic floods in 2011 and then had to deal with a secondary crisis triggered by World Heritage Committee's criticism of poor quality of post-flood restoration. This led to updating the site's Conservation and Development Master Plan and development control regulations, and to initiate training in upgrading conservation skills and knowledge. At Vat Phou, the construction of a new regional road, Route 14A, which commenced in 2010, upended the widely-held belief that the World Heritage site was limited primarily to the Vat Phou temple complex, not the larger cultural landscape. As a result of two Reactive Monitoring Missions conducted to the site by UNESCO and ICOMOS experts, the Lao government put into motion the drafting of a Cultural Landscape Master Plan and associated urban development regulations. George Town faces challenges in dealing with the historic city not just as an ensemble of significant buildings, but rather, as a multi-layered living Historic Urban Landscape. Concerns raised by the World Heritage Committee led the government to strengthen the organizations related to World Heritage management, namely, opening up a World Heritage office in George Town which was promised in the nomination dossier, upgrading the Heritage Department within the City Council of Penang, and establishing a Technical Review Panel. A Special Area Plan for the historic

city centre was also developed, and initiatives aimed at safeguarding intangible cultural heritage have been carried out.

Based on an extensive literature review, the study developed an initial framework for factors of adaptive capacity. Qualitative research from the field provided the basis for further refining the adaptive capacity framework in the context of World Heritage governance institutions as follows. Semi-structured interviews were conducted with key informants representing a range of organizations at all levels from local to national and in both heritage and related sectors. The data from the interviews was deepened and triangulated through document analysis. A range of documents were selected, mostly reflecting formal rules and processes: heritage management plans, urban plans, heritage management and conservation regulations, building control regulations, official reports, building statistics, newsletters of heritage organizations and NGOs, as well as news articles. Official World Heritage documents were also analyzed as a way not only of tracking the changes that were occurring, but also to juxtapose the official narratives prepared by the governments reporting to the international community against the other narratives provided by working level staff about the realities of change and implementation, or lack thereof. These included the State of Conservation Reports prepared by the countries as well as the responses from the World Heritage Centre and Advisory Bodies (in the form of synthetic State of Conservation analyses) and World Heritage Committee decisions which commented on the management responses. Furthermore, to get a sense of the dynamics of informal rules and processes, and their interaction with formal rules, participant observation was carried out through participating in meetings and consultations conducted mostly by the heritage agencies. Where direct participation in meetings was not possible, due to various constraints, open access videos of meetings, especially public consultations, were reviewed.

The data were transcribed and coded, with data and coding tabulated using a spreadsheet. Initial codes were assigned directly describing the content of the data, and then assigned to higher-level codes. The higher-level codes identified key socio-institutional factors for systemic change, spanning both formal and informal aspects. These codes represent dimensions of adaptive capacity which present an evolution from the existing frameworks presented in the literature on systems change. With a view towards generalization, pattern matching was conducted across the case studies in order to identify a refined set of factors of adaptive capacity that can be more broadly applied in the heritage sector, as presented in Table 2.

Investing in information and knowledge: cognitive frame and learning capacity

Shifting cognitive frames is found to be a prerequisite for institutional adaptation. Altering cognitive frames requires both a modification in discourse but more importantly in practice as well. Without these alterations, it becomes difficult to re-align institutional goals and operations to meet changing realities.

The case studies suggest that three aspects of cognitive frames need to be considered in the context of World Heritage governance institutions: (i) values, (ii) aspirations and (iii) conceptual framework, especially related to heritage concepts. Values and aspirations are sub-factors which are already well-articulated in the existing literature on adaptive change, as these drive the long-term visioning, coalition building and planning exercises that shape institutions.

Values, aspirations and cognitive frames which are starkly different from the status quo may require transformative change, not just incremental change. The case studies show that major triggers are needed to spark such change in order to overcome institutional inertia. In the context of World Heritage, raising the alarm by the World Heritage Committee, especially about possible Danger Listing, and the subsequent national shaming that occurs on the global stage, has proven to be a trigger. Another trigger is a dramatic disaster, such as the flooding that affected Ayutthaya. However, both sets of triggers may only be able to initiate change processes, and may not necessarily translate into systemic transformation.

The research highlights the importance of conceptual (heritage) frameworks as a key aspect influencing cognitive frames. In the heritage sector, there has been major conceptual changes within the past 50 years, encompassing beyond tangible heritage to also include other forms such as intangible heritage (Ahmad, 2006). As comprehensively mapped by Thompson and Wijesuriya (2018), heritage practitioners have seen a sea change from

Table 2: Proposed factors of adaptive capacity

Key determinants of adaptive capacity from literature (Janssen and Ostrom)	Proposed factors of adaptive capacity	Original sub-factors selected from literature	Refined sub-factors
Investing in information and knowledge	**Cognitive frames**	• Values • Aspirations • Problem frames • Logical frameworks	• Values • Aspirations • Conceptual framework, especially related to heritage concepts
	Learning capacity	• Single loop • Double loop • Triple loop learning	• Single loop learning • Higher order learning (double and triple loop learning) • Individual learning • Organizational learning
Encouraging appropriate institutions	**Agency**	• Empowerment and ability to decide and act, reflecting authority / status	• Status of organization • Statutory or other form of authority • Champions of change • Buy-in at leadership level
(Formal institutions)	**Formal governance structures**	• Legislation • Organizations • Regulatory processes	• Plans • Legislative or regulatory instruments • Organizations
(Formal and informal institutions)	**Organizational relationships ***	• Connections between and within organizations and actors	• Internal organizational relationships • External organizational relationships • Formal and informal relationships
Increasing resources	**Resources**	• Financial resources • Human resources • Social capital	• Financial resources • Human resources • Social capital

being defenders of heritage islands populated by monuments and archaeological sites (1960s-1990s), to acknowledging living heritage which requires opening up to other voices (1994 onwards), and finally to mobilizing heritage in the broader quest for sustainable development (2010 onwards). Many heritage institutions in most countries in this sub-region are still legacies of the first era of heritage work focused on monuments and archaeological sites. However, they are increasingly confronting changing concepts and norms of heritage practice fomenting within international heritage circles. These include not only more expansive definitions of heritage (cultural landscapes, historic urban landscapes, living heritage, along with industrial heritage and Modern heritage, for instance), but also participatory and rights-based approaches to heritage governance. Whereas many Southeast Asian institutions have become more familiar, and even adept, at adapting their rhetoric to align with international heritage discourse, it can be seen that their efforts at operationalizing such rhetoric are patchy or even nil. This signals at best a partial cognitive shift, at least at the level of discourse, but not a total cognitive shift that is needed as the basis for transformations in practice. As will be seen below, other determinants of adaptive change are needed to carry forward the momentum of any changes in cognitive frame, starting with learning capacity.

The research suggests that learning capacity is closely intertwined with cognitive frames and is the necessary step to transform abstract notions of change into practice and to confront new notions with existing frameworks of habit and operation. The sub-factors derived from the coding analysis related to learning capacity are proposed as follows: (i) single loop learning, (ii) higher order learning encompassing both double and triple loop learning, (iii) individual learning and (iv) organizational learning.

The adaptive change and organizational studies literature covers three types of learning: single loop, double loop (Agyris & Schon, 1978) and triple loop (Pahl-Wostl et al., 2013). Single loop learning leads to changes in existing routines, double loop learning revisits existing assumptions and triple loop learning requires changing fundamental assumptions. The key difference is that single loop learning brings about incremental change within existing worldviews and normative frameworks, whereas double and triple loop learning is necessary (but not sufficient) for more transformative changes to eventually occur. So, for instance, Ayutthaya grappling with improving ways of restoring monuments using internationally acceptable principles or dealing with disasters by preparing monuments and archaeological sites to endure risks falls squarely within single loop learning (which is not in itself an easy task per se). Vat Phou and George Town demonstrated higher orders of learning. The work at Vat Phou in developing a Cultural Landscape Management Plan required revising fundamental assumptions, practices and technical capacity in dealing with the site not only as a monumental temple complex. Beyond issues of heritage management, both Vat Phou and George Town struggled with questions of sustainable development for local residents, which is beyond the limits of heritage plans and regulations, but a key concern facing the long-term viability of the sites. The lack of ready tools to address this issue, despite being well acknowledged, illustrates the limits of existing institutions in the heritage realm.

Where is the learning taking place, and what effect does it have on the overall institutional system? Taking a cue from organizational studies (Senge, 1990) and institutional change theory (Leca, Battilana and Boxenbaum, 2008), the importance of looking at both individual learning and organizational learning should be emphasized. The case studies show that organizational learning needs to begin with individual learning. At the same time, individual learning needs to be institutionalized through organizational learning, so that new skillsets and knowledge by practitioners are enabled by new protocols and practices within the organization. The case studies echo the cautionary note raised in the literature that learning does not necessarily translate into changes in practice due to a variety of factors: knowledge is contested, learning cannot overcome institutional path dependencies and informal learning does not always translate into formal policy making. For instance, at Ayutthaya, learning among individual specialists and workers who underwent training on monument restoration had limited feed back into the institutional system as a whole, thus rendering organizational learning stagnant. On the other hand, at Vat Phou, the learning associated with expanding boundaries of practice to deal with cultural landscapes has given the Vat Phou World Heritage site management office a new niche within the heritage system in Lao PDR. Consequently, the office has been called upon to provide technical support to other provinces on the issue of mapping and urban planning. The ability of multiple organizations with overlapping mandates to take on new knowledge through innovative alliances in George Town was a driver for comparatively rapid cycles of programme design and implementation.

The case studies found that organizations with relatively loose mandates were more flexible in learning and thus more adept in adaptation. Technical agencies with extensive and deep expertise (or at least, self-perceived expertise) had a more difficult time “unlearning” old routines in order to learn new approaches (Gupta et al., 2010). Not having a permanent group of staff with a fixed mindset and skillset can actually create space for more learning and more innovative solutions. Within the heritage sector, this means not treating all problems as heritage problems requiring heritage solutions, which is the natural tendency of organizations with strictly defined heritage mandates. This flies in the face of conventional approaches in institutional capacity building within the heritage sector in Southeast Asia, which still places an emphasis on training and growing in-house staff as a priority, usually in technical matters related to conservation. More flexible outsourcing arrangements may in fact prove to be more effective to cope with new issues and emerging problems which may require a more innovative or multi-sectoral approach.

The case studies also indicated the importance of aligning learning across different social actors, including heritage organizations, non-heritage

organizations and the public at large. Many of the failures in adapting or transforming heritage institutions could be traced back to resistance among other stakeholders. The regular efforts at public engagement through media, festivals and public campaigns carried out in George Town for instance, have been a way to engage communities throughout Penang, bringing about more awareness about and greater commitment to the heritage agenda as reflected in a professed "greater willingness to pay" for investing heritage buildings (Ariffin, 2015). More didactic efforts at Vat Phou in informing other agencies and communities about the new landscape plan and laws were also delivered as part of a conscious effort in creating buy-in for institutional re-design. However, in both cases, greater awareness did not necessarily translate into greater compliance to actual heritage laws nor could it overcome more deep-seated forms of institutional resistance, as detailed in the following.

Encouraging appropriate institutions: Agency, formal governance structures and organizational relationships

The case studies showed that the ability to put in place appropriate institutions was key to translating shifts in cognitive frame and learning into practice (Lemos et al., 2007). Institutions spanned both formal and informal rules. Changing formal rules proved to be more straightforward than influencing informal rules which are more opaque and rooted in social norms and interests. That said, even changing formal rules themselves was not easy as it required buy-in and investment which was not always forthcoming. Underlying the ability of individuals and organizations to change was their agency.

This research confirms studies that pinpoint agency in terms of learning, deciding and acting as the linchpin for institutional change (Bettini et al., 2015). This concept is fleshed out further in more detail by suggesting that agency reflects the following sub-factors: (i) status of the actor, (ii) statutory or other forms of authority, (iii) champions of change, (iv) buy-in at leadership level. In the case of Vat Phou, the site management staff felt that the relatively low status of the World Heritage Site office vis-à-vis other government agencies hobbled their ability to negotiate or to influence decision making outcomes. The financial dis-investment in the office following the introduction of a new private tourism concession made it even more difficult for the office to maintain its influence, despite its statutory authority.

In the context strong institutional determinism, embedded agency thwarts individual or organizational innovation. To bring about adaptation, "culturally competent actors with strong practical skills and sensibility who creatively navigate within their organizational fields" are needed. Pro-active champions of change with enough seniority, or buy-in at the leadership level, are crucial.

In terms of the formal governance structures, the following sub-factors are proposed as being particularly important for influencing institutional adaptation in the heritage context: (i) plans, (ii) legislative or regulatory instruments, and (iii) organizations. Formal governance structures, compared to the other elements of adaptive capacity, are relatively low-hanging fruit, and the case studies show that they saw more change than other factors, and thus in theory had the potential to catalyze larger systemic adaptations or transformations.

The tendency among the World Heritage Advisory Bodies such as ICOMOS and subsequently the World Heritage Committee to many situations is to advise the preparation of a plan. Increasingly these plans are becoming *de rigeur,* and in many instances, the exercise of preparing the plan in itself becomes an all-consuming effort among States Parties, instead of tackling more endemic issues. The plan has become a convenient symbol of commitment and institutional resolve, and shorthand for institutional action when reporting to the World Heritage Committee. Plans run the gamut from Management Plans (now essentially required by the Operational Guidelines to the World Heritage Convention), to spatial plans and specialized plans dealing with conservation, disaster risk management, tourism, interpretation or other aspects of site management. In Ayutthaya, the authorities were tasked with updating the Master Plan and preparing a disaster risk management plan in response to the flood. In Vat Phou, the authorities prepared new land use plans and ultimately a Landscape Master Plan to complement an existing World Heritage management plan. In George Town, a Heritage Management Plan submitted at the time of World Heritage nomination fell by the wayside when the World Heritage Committee requested a Conservation Management Plan and a Special Area Plan (SAP).

The proliferation of plans belies the fact that preparing such plans is by no means simple. The case studies show that learning must occur in order to shift cognitive frames, and resources and policy-level support must be in place. New plans with new requirements symbolize change that can be threatening to those with vested interests in the existing order of things. For this reason, plans can take a long time to be prepared (such as the updated Ayutthaya Master Plan) or to be gazetted (such as the George Town SAP). Some plans die a quiet death (such as the George Town Heritage Management Plan) or are absorbed into other plans (such as the standalone Ayutthaya Disaster Risk Management Plan, which ended up as a sub-plan within the updated Master Plan, or the George Town Conservation Management Plan which has merged with the SAP for all intents and purposes). Once they come into life, though, plans can take on talismanic power as the seat of authority (hence the last-minute effort by Think City to lobby for including its Strategic Plan for the public realm as a late annex to the George Town SAP, ensuring that its suite of projects would become a statutory obligation). In theory, having a plan in place provides a clear framework for management objectives and actions.

Beyond plans, the case studies underscore the equal importance of accompanying legislative or regulatory instruments needed to support each plan and to give it teeth. In Vat Phou, the heritage authorities bemoan the fact that the new Landscape Master Plan and its accompanying Land Use Plan and Building Codes cannot be fully enforced, due to the lack of punitive measures and fines. This allows offending property owners to act with impunity, while the heritage authorities are unable to take them to task. Similarly in George Town, the operational weakness of the Penang State Heritage Enactment makes it difficult for heritage frameworks like the SAP to gain the upper hand over prevailing practices of unauthorized demolition and conversions to make way for new commercial ventures.

The final component of formal governance structures are organizations. The coding analysis from the case studies leads to proposing three sub-factors as follows: (i) internal organizational relationships, (ii) external organizational relationships, and (iii) formal and informal relationships. Creating changes in organizational structures and capacity helps to support the implementation of the plans and other instruments. Organizations may need to acquire new skills and knowledge in order to meet changing demands. Learning organizations demonstrate an ability to not only to acquire new knowledge, but also to modify its behavior to reflect such new knowledge. They are skilled at "systematic problem solving, experimentation with new approaches, learning from their own experience and past history, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization" (Garvin, 1993). The case studies showed that for both Vat Phou and George Town, learning led to putting in place new organizational structures, tasks and responsibilities.

Lastly, optimizing organizational relations was also found to be an important factor determining adaptive capacity. This includes (i) relationships between organizations as well as (ii) within organizations, spanning both formal relationships like committees as well as informal relationships based on trust and personal ties. For external relations, the case studies showed that it was relatively straightforward to set up formal mechanisms such as new committees or ad hoc alliances in line with new governance structures that are introduced. However, these formal mechanisms did not necessarily alter underlying relationships or power gradients, as seen at Vat Phou. Despite more frequent meetings between the Vat Phou World Heritage Site Office and other authorities in the context of developing and implementing the Cultural Landscape Master Plan and urban regulations, the more powerful District government and the Department of Public Works and Transport still frequently ignore or overturn the recommendations of the heritage office. Conversely, the case studies suggest that informal mechanisms were more dynamic in altering internal organizational relations, with internal silos being easier to overcome at an individual level through personal connections among colleagues.

Increasing resources

The research shows that the availability of resources is critical to institutionalizing change in the system in a long-term way. For instance, initial changes in terms of cognitive frame and learning can be stymied by lack of resources which are needed for institutionalizing longer-term organizational transformation. Organizational-level investment in terms of stable, regular funding and increases in technically-equipped staff is required to transform individual learning into organizational-level learning.

Having resources may or may not lead to long-term change, however. Both Ayutthaya and George Town saw a major one-shot cash infusion from the central government in response to their respective situational triggers. At George Town, this led to innovative programme responses through launching the George Town Grants Programme, confirming observations in the literature that such early stage funding can be used by institutional entrepreneurs in questioning or even reforming the existing system (Greenwood, 2002). On the other hand, at Ayutthaya, the post-flood budget in 2012 was directed entirely to the conventional task of monument restoration, rather than fresher approaches to dealing with flood risks. This indicated that increased resources by itself thus is not sufficient for bringing about institutional change, in the absence of other factors.

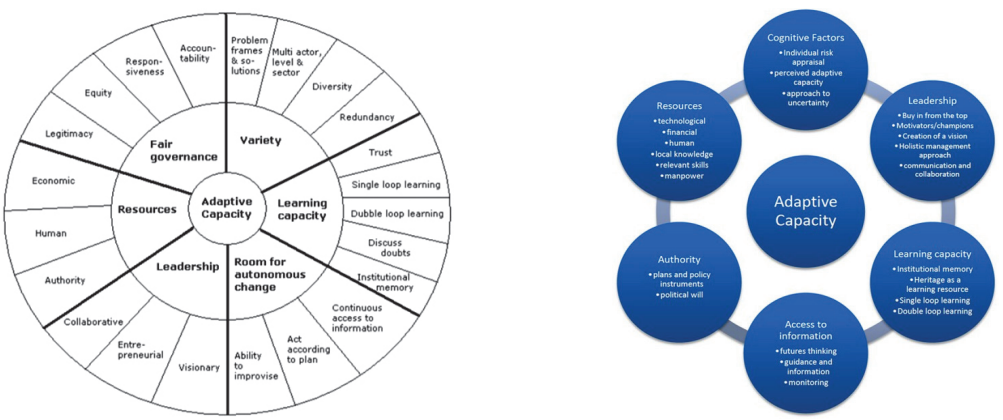
Ultimately, resource flows reflect embedded norms and power relations, and so systematic changes in resource flows requires changes in these underlying factors. If organizational relations are stacked against a transformative agenda, then the resource allocations will be designed to maintain the status quo. Controlling resource flows controls organizational behavior. When resource allocations have a politicized undercurrent, recipient organizations may become dependent and circumspect in their dealings with their patron organization. They may become vulnerable to the changing whims of their patron organization, especially in the case of heritage which may be a lower priority for development-minded local authorities.

Dynamics of adaptive capacity

Existing well-known frameworks such as the Adaptive Capacity Wheel developed by Gupta et al (2010) and more recently scholarship such as Phillips (2013) present the factors of adaptive capacity as discrete elements alongside one another, without a sense of their dynamics or temporal unfolding. (Figures 1 and 2)

The research suggests that the dynamic interaction among the different factors of adaptive capacity is important to capture and to explain, as a way of understanding the mechanics of institutional change. One schema is illustrated below showing a possible system dynamic. Other schemas could be developed in the future depending on the context and the empirical evidence. (Figure 3)

In this schema, shifts in cognitive frame and learning could drive changes in formal governance structures and formal organizational relations. Translating from these changes in formal structures into implementation, however, could be compromised if resource flows are not enhanced and if unsympathetic informal organizational relations remain unchanged. Agency is posited as a key factor that feeds into all stages of potential transformation, from the initial stage of learning, to alteration of formal structures, to implementation. Agency itself is influenced by other factors such as organizational relations and the availability of resources, which may undercut the agency of a particular actor and thus impede its ability to carry out change.



Figures 1 and 2:
Existing adaptive capacity frameworks developed by (left) Gupta et al (2010) and (right) Phillips (2013)

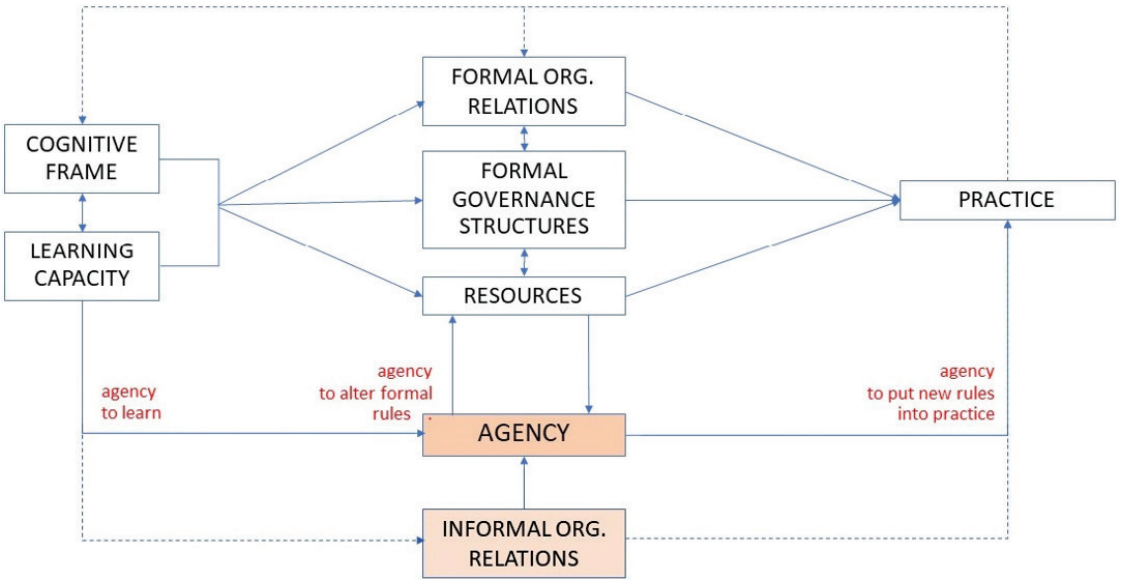


Figure 3:
Institutional dynamics and interaction of factors of adaptive capacity

NAVIGATING BOUNDARIES OF PRACTICE

Do institutions have more adaptive capacity in responding to issues within or outside of existing boundaries of practice? In a world of greater complexity, this research has delved into institutional responses against three dimensions of expanding boundaries of heritage practice: (i) in terms of evolving definitions of heritage, (ii) increasing complexity in heritage management issues, and (iii) the necessity for heritage institutions to adapt their management and larger governance practices accordingly.

In the context of the larger evolution in heritage theory, it may be possible to elide the two frameworks of heritage practice and adaptive capacity, particularly learning capacity. The research suggests that higher order learning is needed to move from conventional heritage practice focused just on monuments and sites to dealing with expanding concepts of heritage and heritage practice. Within conventional heritage practice, any improvements would fall within the remit of single loop learning. When heritage practitioners and organizations begin to deal with landscapes and living heritage, which requires values-based conservation approaches and people-centred approaches, then double loop learning is needed. While broader in scope, these are still considered within the sphere of heritage practice. However, once we begin to address larger issues of sustainable development, and the role of heritage both as a contributor to sustainable development as well as a beneficiary of sustainable development, then the discourse and practice need a quantum leap. This requires triple loop learning, in order to break down the established binary thinking and processes that pit conservation against development in a reductionist zero-sum game. The proposition that heritage adds value to sustainable development is still a new notion that requires both shifts in cognitive frames as well as learning, for policy makers and practitioners alike. (Figure 4)

Within a centralized institutional system characterized by maintaining characteristics, adaptive capacity is found to be higher outside existing boundaries of practice. Outside the organization's and individuals' routine and established mandate, it may be more possible to admit the necessity for change at a cognitive level, at least in the initial stages of programming (ascertaining the problem and formulating strategic goals). This cognitive shift and openness can then translate into efforts to learn and to adapt formal governance structures. However, for total systemic change to occur, deep learning is needed to attain some level of mastery in the new set of issues. Institutionalizing into formal rules and policy making is necessary to ensure that the

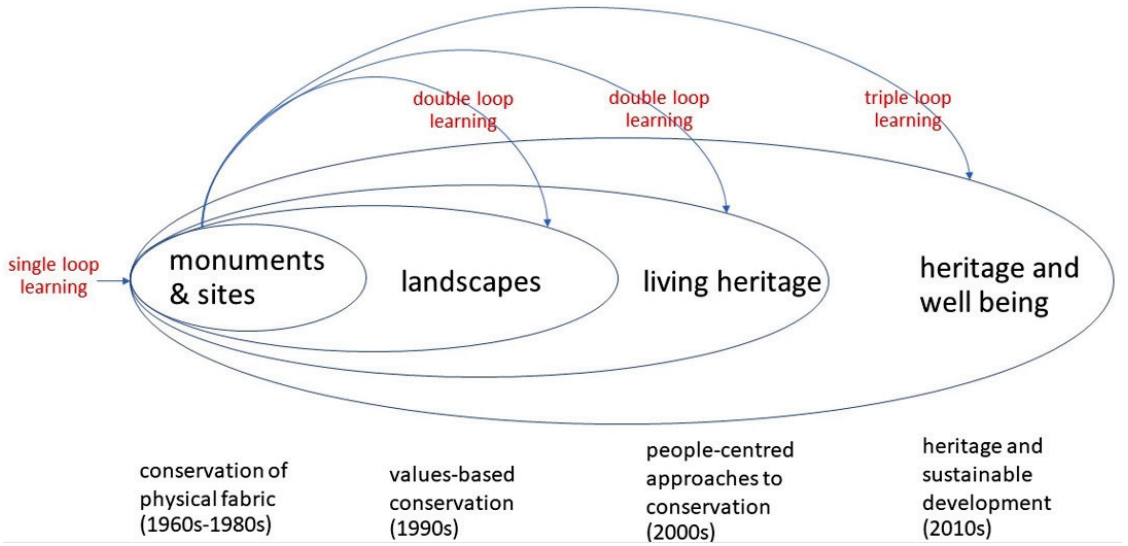


Figure 4:
The role of learning in expanding boundaries of heritage concepts and practice

organizational mandates, resources and relations are re-oriented to meet the new demands.

In contrast, within existing boundaries of practice, the process of change is more difficult to initiate and requires either exogenous pressure or internal champions. But once initiated, it can top up existing knowledge and practice, leading to incremental change. Centralized organizations with well-established sense of organizational identity are more reluctant to admit the need for change within their area of expertise. Getting over the initial stage requires significant investment of time and effort to generate buy in. Once learning begins to occur, however, even informal learning can be applied by individuals to their own professional practice. Ideally, such individual learning would translate into organizational level learning and then change processes. However, within existing boundaries of practice, organizations may be resistant to initiate any reform which may reflect badly on its existing authority and sense of expertise.

The presence of multiple institutional orders could make a system less "institutionalized" and less rigid, allowing actors to exercise greater agency, including agency to learn (Clemens & Cook, 1999). This seems to hold true for responding to both issues within and outside of existing boundaries of practice. Having multiple actors seems to particularly facilitate dealing with new situations which entails greater risk to organizations and individuals, including risk of failure. Polycentricity within the system may help distribute this risk. Distributed nodes of action could also mitigate the consequences of inaction by any one single organization or individual player, given the likelihood that different actors will have different risk profiles and may be spurred into action by a sense of competition. Organizations may thus be able to confront new issues using innovative tools and approaches and creating new alliances.

CONCLUSIONS

This paper highlights shortcomings in current World Heritage institutions and their ability to cope with new demands. The evolution in heritage concepts and practice —away from purely technical concerns to embrace more complex issues with social and environmental dimensions and the sustainable development agenda, implies that World Heritage management organizations should have a wider mandate than heritage. This applies at the level of World Heritage sites as well as the international processes and organizations that govern World Heritage.

It unpacks the evolution in heritage practice by delving into the institutional mechanics of change, by questioning how change comes about at the level of organizations, individuals and other social

actors interacting within an institutional system. The current heritage literature tends to paint this evolution in broad brushstrokes, highlighting major milestones such as the 1994 Nara Conference and new international conventions or doctrinal recommendations. Moreover, there are gaps in understanding practice at the level of World Heritage sites, the interactions of institutional actors involved, and how governance and management institutions negotiate such evolutions in their everyday operations. The study uses the empirical data from the field to map the progression and struggles of heritage institutions from their traditional milieu of monuments and archaeological sites to grappling with new heritage concepts such as landscapes and emerging management challenges such as disasters. It then synthesizes the empirical findings to develop analytical frameworks for institutional change using the concept of adaptive capacity.

The paper is innovative in applying adaptive change theory to World Heritage in a non-climate change context. It suggests the utility of adaptive change concepts and methodology as an analytic device in understanding the inherent characteristics of institutions to adapt and transform in a broad range of contexts, not just confined to climate change adaptation. Other studies of adaptive change related to heritage have all examined climate change. The larger literature on adaptive change is similarly focused almost entirely on climate change. This study shows that the adaptive change framework provides a practical way to reflect upon the rich literature of institutional change in a systematic and well-defined manner. However, it acknowledges that the existing adaptive change frameworks have their limitations as well, not capturing dynamic processes and interactions. In response to this, the paper proposes a refined framework for adaptive capacity which provides a means to understand, analyze and better visualize the interactions among different factors of adaptive capacity in a more dynamic manner.

This refined framework addresses adaptive capacity in the specific context of World Heritage management and possibly beyond. Following a review of the literature and drawing upon the empirical data from the case studies, six factors and 20 sub-factors of adaptive capacity are presented. The six factors are: cognitive frame, learning capacity, formal governance structures, organizational relations, agency and resources. Within the sub-factors, it is important to distinguish between individuals and organizations, such as for learning. The difference between formal and informal processes is also stressed, such as for organizational relations. This refined framework underscores in particular the role of agency as an important factor, which may prove to be enabling or constraining, as in the case of embedded agency.

The study suggests that it is important to see how different factors of adaptive capacity operate either in a mutually supportive or in an oppositional manner. It also traces the role of different factors at different stages of institutional response. For instance, it points out the importance of resources and organizational relations in ultimately determining or limiting an institution's ability to implement gains from learning and new governance instruments.

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