Trang An Landscape Complex

2020 Conservation Outlook Assessment

SITE INFORMATION

Country: Viet Nam
Inscribed in: 2014
Criteria: (v) (vii) (viii)

Situated near the southern margin of the Red River Delta, the Trang An Landscape Complex is a spectacular landscape of limestone karst peaks permeated with valleys, many of them partly submerged and surrounded by steep, almost vertical cliffs. Exploration of caves at different altitudes has revealed archaeological traces of human activity over a continuous period of more than 30,000 years. They illustrate the occupation of these mountains by seasonal hunter-gatherers and how they adapted to major climatic and environmental changes, especially the repeated inundation of the landscape by the sea after the last ice age. The story of human occupation continues through the Neolithic and Bronze Ages to the historical era. Hoa Lu, the ancient capital of Viet Nam, was strategically established here in the 10th and 11th centuries AD. The property also contains temples, pagodas, paddy-fields and small villages. © UNESCO

SUMMARY

2020 Conservation Outlook
GOOD WITH SOME CONCERNS

Finalised on 02 Dec 2020

The IUCN evaluation of the Trang An Landscape Complex concluded positively on the potential natural World Heritage values of this relatively small site under criteria (vii) and (viii). It describes Trang An as “a relatively small but exquisite geological property that displays more clearly than any other on the World Heritage List the end stages of karst landscape evolution near sea level in a humid tropical environment” (IUCN, 2014). The property’s size in the face of a number of potentially significant threats raised serious concern and the State Party has responded positively in regards to all requests made by the World Heritage Committee to address these threats. Its Outstanding Universal Value is in good condition and its geological and aesthetic values are presented in a landscape which is largely inaccessible and therefore mostly immune to disturbance. Visitation is comprised of three distinct groups, the vast majority of which are religious pilgrims who flock to the site in very large numbers during the festival season from January to March, a second group are those who visit the site year round for on-going religious purpose and the third group are the tourists who are attracted to explore and experience the cultural and scenic values of the property. Access is concentrated to six discrete nodes within the property, each of which has its own management needs. The concentration of visitor impact in these small discrete areas magnifies the threat of the rapidly increasing tourism pressure on the site and despite the observation that the physical conservation of the property
seems to be satisfactory, the absence of articulated measures to mitigate the negative consequences of overcrowding within these areas and within the buffer zone remains a concern. However, the cultural values of the Property, expressed in its archaeology, are presently being managed in a manner that does not adversely impact the Property's natural values.
FULL ASSESSMENT

Description of values

Values

World Heritage values

► Extraordinarily beautiful and awe-inspiring tower karst landscape

The tower karst landscape of Trang An is a spectacular system of forest-mantled limestone rock towers up to 200m-high. The property incorporates a footcave enclosed depression (cockpit) landscape that is considered by experts to be the best in the world. The cockpit landscape is characterized by sharp ridges enclosing deep depressions filled by waterways that are interconnected by a myriad of subterranean cave passages, all contributing to a multi-sensory visitor experience. As Trang An is a mixed site blending with the forests are extensive rice paddy fields bordering streams, with local farmers and fisher folk engaged in their traditional way of life. The dramatic mountains, secretive caves and sacred places in Trang An have inspired people through countless generations. (IUCN, 2014; World Heritage Committee, 2014)

► An exceptional geological site showcasing the final stages of tower karst landscape evolution in a humid tropical environment

The property demonstrates a series of classical karst landforms, including towers, cones, enclosed depressions (cockpits), interior-draining valleys (poljes), foot caves and subterranean cave passages with speleothems. These landforms are a result of the deep dissection of an uplifted limestone massif over a period of five million years. Trang An is unusual in being an autogenic (rainfed only) karst system. The presence of transitional forms between ‘fengcong’ karst with ridges connecting towers, and ‘fenglin’ karst where towers stand isolated on alluvial plains is an extremely significant feature of the property. Former fluctuations of sea level are evidenced by a series erosion notches in cliffs, with associated caves, wave-cut platforms, beach deposits and marine shell layers. (World Heritage Committee, 2014)

Other important biodiversity values

► Significant biodiversity values related to scenic amenity and karst landform development processes.

There are natural biological values that contribute to the scenery and aesthetics of the property and to the evolutionary processes that underpin the development of the property’s complex karst systems. The natural rainforest cover of the landscape ensures that natural karst processes are on-going. The property is also home to the “near threatened” native Chinese Serow (Capricornis milneedwardsi). (IUCN, 2013)

Assessment information

Threats

Current Threats

Low Threat

The relatively large resident population at the time of nomination combined with the relocation of an
unspecified number of them to ‘transformed’ landscapes in and around the buffer zone (IUCN Evaluation, 2014) had raised some concern, and the ongoing growth of the population in the buffer zone and the threat of residential and commercial development to landscape values is still a concern. Other concerns stem from dredging work being undertaken to increase access to foot-caves and the potential for domestic goats to escape into the Protected Natural Zone of the Property. Overall, current threat to the property can be considered to be low, but should visitation continue to increase at the current rate and without appropriate measures to mitigate the impacts, this could in the very near future, switch from being a potential threat to a current threat.

▶ **Dams/ Water Management or Use** *(Dredging for maintenance purposes)*  
 **Low Threat**  
 **Inside site, localised(<5%)**  

Dredging work is undertaken within the Property for maintenance purposes. The State Party contends that this does not impact the natural water flow regimes, water quality or water levels. Nonetheless dredging could be undertaken to improve foot-cave access so has the potential to adversely impact the Outstanding Universal Value (OUV) and needs to be the subject of a detailed Environmental Impact Assessment (IUCN, 2013; State Party of Viet Nam, 2014).

Dredging was required to open a new route to ease the problem of overcrowding in 2016 (State Party of Vietnam, 2018) but there is no evidence of an EIA having been conducted.

▶ **Invasive Non-Native/ Alien Species** *(Introduced animal species)*  
 **Low Threat**  
 **Inside site, widespread(15-50%)**  
 **Outside site**  

Four introduced animal species have been identified in the property: one is a species of snail found in the waterways and goats, cattle and water buffalo are grazed within the property. Natural karst processes are dependent on naturally functioning ecosystems including intact biodiversity and these processes may be impacted by introduced species. Domestic goats in particular are a threat to natural catchment processes in addition to potentially impacting the near-threatened Chinese Serow (*Capricornis milneedwardsii*)) (State Party of Viet Nam, 2013; IUCN, 2014).

There is potential for the goats to escape from where they are tolerated in the Multiple Use Zone into the Protected Natural Zone from which they will difficult to eradicate (WHC/ICOMOS/IUCN, 2019).

▶ **Housing/ Urban Areas** *(Settlements)*  
 **Low Threat**  
 **Inside site, scattered(5-15%)**  

At the time of its inscription some 14,000 people lived within the Property (State Party of Viet Nam, 2013) and areas near the Trang An Visitor Centre and between Ninh Binh city and the Property are being urbanized for resettlement of an unspecified number of people displaced from elsewhere within the Property (IUCN, 2014). There seems to be a substantial increase in the population of the buffer zone, particularly in the tourist gateways to the property in the past 5 years (IUCN Consultation, 2020) but no assessment of the current population has been found.

Concerns expressed by the World Heritage Committee about a proposed university area in the buffer zone have been relieved by advice from the State Party that there is no intention to build a university (State Party of Viet Nam 2018). The State Party was requested to undertake a Strategic Environmental Assessment for development of the buffer zone, taking into account potential impacts on the OUV of the Property prior to allowing any such development to take place (World Heritage Committee, 2016). In reply the State Party is of the opinion that there are no significant pressures on the buffer zone which remains fully effective in safeguarding the OUV and integrity of the Property. Therefore undertaking a Strategic Environmental Assessment for the development of the buffer zone was not regarded as a priority in 2018 (State Party of Viet Nam, 2018).

Since 2018, WHC/ICOMOS/IUCN have recommended that a Strategic Environmental Assessment (SEA) be prepared to assess the cumulative impacts of developments inside the property and its buffer zones to encourage comprehensive planning beyond a project-level assessment. Further, WHC/ICOMOS/IUCN have recommended that the existing management plan for the Property be augmented with an assessment and description of the present ‘character’ of the property and buffer zone in terms of uses and vernacular and traditional architecture. The objective should be to ensure that the buffer zone...
facilitates an appropriate ‘transition’ from areas outside the buffer zone into the property (IUCN Consultation, 2020).

Potential Threats

Inadequately planned and managed tourism poses a significant threat to OUV of the property and tourism is growing at an alarming rate. The identification of potential impacts by the increasing tourism and measures to mitigate such impacts are not adequately addressed in the revisions of the management plan. A sustainable carrying capacity for the property is also yet to be determined.

Tourism/ Recreation Areas

Increasing visitation

High Threat

The projected 2 million annual arrivals by 2020, which raised concerns about the potential impacts this could have on the property’s OUV (IUCN, 2014), was revised to 3.5 million in 2016 and a revised Management Plan was requested. The revised Plan did not include adequate measures concerning the management of tourism the State Party was requested to further revise the plan to limit overcrowding and to establish a justified maximum daily quota of visitors and detail the scope of facilities and services required to service the anticipated increase in visitation. The State Party was further asked to clarify whether or not any additional recreational activities are to be encouraged, where they will be permitted, what facilities will be provided and identify the potential impacts on OUV and how they will be addressed (World Heritage Committee, 2016).

The subsequent report submitted by the State Party included a revision of the Plan in the form of a Visitor Management Action Plan, which upon evaluation by the 2019 Reactive Monitoring Mission (RMM) was found to be an important management tool, but it does not achieve the desired outcome of establishing a justified maximum daily quota of visitors and it does not provide an assessment of the facilities and services required to address that quota. Importantly, it was discovered during the mission that the reported increase in visitation was severely flawed in that the baseline data was inaccurate and that what was being recorded was the total number of visits to the various visitor nodes of the Property and not the actual number of visitors. Further, the mission noted that while the nature of the tourism activities are passive (sight-seeing by boat) some, the Hoa Lu Ancient Capital for instance, do not require boats for access while other sites specifically include bird-watching activities and show-cave tours. Each of these areas require differentiated analyses of potential impacts of an ever-increasing number of visitors on scenic beauty, landscape appreciation, biodiversity values and visitor experience (WHC/ICOMOS/IUCN, 2019).

The The State of Conservation (SoC) report (2018) notes that currently recreation activities are limited to sight-seeing, walking, hiking and cycling and there is no evidence of undesirable impacts on the OUV from these activities. It notes that while the Management Plan does provide for support other appropriate recreation activities there has been no demand for new activities and at this time the Management Board has no plans to introduce new recreational activities or to develop any additional recreation facilities anywhere in the property (State Party of Viet Nam, 2018).

Tourism/ visitors/ recreation

Inadequately managed Show-cave tourism

High Threat

Although the 2019 mission did not visit the sites it is known that some caves have been developed as show-caves (with lights and pathways) in order to display the caves to tourists. Third party observations of intense coloured lighting, indicate that these caves are highly vulnerable to severe lampenflora impact. Furthermore, numerous images and associated text found in various online travel blogs note that the thousands of bats found in the caves are regularly and deliberately disturbed by visitors to the caves (WHC/ICOMOS/IUCN, 2019).

Overall assessment of threats

Low Threat

The present cultural landscape of paddy fields and rural dwellings provides an appropriate aesthetic landscape foreground to the scenic amenity of an extraordinarily beautiful and awe-inspiring tower
karst landscape featuring dramatic and precipitous fengcong and fenglin landscape elements. However the increasing population and consequent urbanization of the landscape is a high threat to these rural and natural values. Despite being recognized in the 2019 RMM report as having been derived from a flawed process, the forecast increase in visitors to 3.5 million by 2020 is highly alarming if it is inadequately planned and managed. This potential tourism growth along with its increased infrastructure support and service provision developments poses a high threat to the Trang An OUV.

Protection and management

Assessing Protection and Management

Management system

The Property is State-owned and controlled by the Ninh Binh Provincial People’s Committee. It is managed by the Trang An Landscape Complex Management Board. In 2017, the Board became embedded within the Provincial Tourism Department. Management is guided by a legally binding management plan which adopts a zoning system that allows for management prescriptions to be more effectively aligned to the varying protection and use requirements in different parts of the Property. Ongoing management priorities include: extended monitoring and control of tourist operations; development of visitor centres and services; ongoing research together with improved archaeological site conservation. Long-term concessionaire leases delegate authority for some aspects of conservation and tourism management to four private tourist operations within the property. From the time of its inscription onto the World Heritage list in 2014 the World Heritage Committee has expressed concern about some aspects of the Management Plan. The Plan presented as part of the nomination documents was revised in 2015 and in 2016 the State Party was asked to amend some aspects of the revised Plan, particularly in regard to management of overcrowding by the projected increase in visitor numbers (1 million to 2 million by 2020) (World Heritage Committee, 2016). The further revision was presented in the form of an Archaeological Heritage Management Plan and a separate Visitor Management Action Plan which revises the projected 2020 visitation from 2 million visitors to 3.5 million. The 2019 RMM report acknowledges the latter to be an important management tool, but notes that it fails to address the requests by the WH Committee. The report further notes that a new plan for the period 2021-2026 is being prepared (WHC/ICOMOS/IUCN, 2019).

Effectiveness of management system

The Management Plan provides a vision for management through to the year 2030 and addresses all foreseen issues by providing a background explanation of the issue, the objectives of management in regard to the issue, actions required to achieve the objectives and the evaluation measures required to ascertain the effectiveness of management. However, the fundamental flaw in this otherwise highly effective tool (TALC Management Plan, 2015 and its supplementary revision) is the failure to address the threat posed by radically increased visitation. Further to this the 2019 RMM report notes concern over multiple tools designed and implemented by different governmental authorities affecting management of the Property and calls for clarification of the importance of the Management Plan relative to decrees emanating from the national government, relevant provincial statutes, and the master plans relating to works within the Property and the buffer zone. It also notes a need for a mechanism of consultation within the Management Board and among all stakeholders to consider multiple needs for the preservation, presentation and promotion of the property. Both issues potentially lead to misalignment of priorities and confusion in decision making as witnessed by the inappropriate construction of an inauthentic village related to a popular film within the Property and the illegal construction of a 1km long concrete staircase. While these developments have been removed in response to requests by the WH Committee they emphasize the Advisory Bodies’ concerns that “the greatest threat to the nominated property is from inadequately planned and managed
tourism”. While the staircase was an unapproved development the management approval of the inauthentic village demonstrated that what constitutes appropriate use and development needs to be clarified in future iterations of the Management Plan (WHC/ICOMOS/IUCN, 2019).

The Management Plan does not provide sufficient detail regarding the scope of activities provided and their potential impacts in regard to some of the tourism nodes within the property which are operated under concession arrangements.

There is a strong focus on visitor management on the Trang An and Tam Coc routes but little detail about what is happening in Sunshine Valley, Galaxy Grotto and Bird Valley other than noting their visitor levels and that the number of boats operating in these areas is projected to increase by 140% by 2030. The operators of these sites are mandated to deal with tourism activities and related infrastructure development under supervision by the Management Board. In view of the Show-cave development in some of these areas and the very high potential for negative impact of Show-cave operations on geodiversity and biodiversity values there is a need for closer scrutiny of the standards being applied to the management of these visitor nodes. The 2019 RMM report notes the need for individual management prescriptions and carrying capacity assessment for each of the 6 nodes rather than considering a carrying capacity for the property as a single unit (WHC/ICOMOS/IUCN, 2019).

**Boundaries**

All of the key elements of a fengcong and fenglin Karst landscape are present within the inscribed property and the natural processes of Karst development are on-going. However, whilst the property was of sufficient size to include all of the values that underpin World Heritage criteria (vii) and (viii), the boundary as selected was not the most appropriate in relation to natural criteria, as it included developed areas and infrastructure which detracted from the OUV (IUCN Evaluation, 2014).

In its December 2015 response to the World Heritage Centre the State Party proposed minor boundary changes to resolve this concern and the proposed changes were approved by the Committee in Decision 40 COM 8B.36 (World Heritage Committee, 2016).

**Integration into regional and national planning systems**

Most of the property is secured within three statutory national protected areas and regulations concerning management, protection and promotion of heritage values have been developed at both central and provincial government level (State Party of Vietnam, 2013, 2014). Provincial aspirations clearly support tourism development and its potential benefits so it is essential that management of the property be planned in an integrated way with regional and indeed national tourism development planning. However, the 2015 revised management plan, which includes a section referred to as the ‘tourism management plan’ did not adequately address management of the potential for the projected increase in tourism to impact on the OUV of the property (World Heritage Committee, 2016). The placement of the Management Board within the provincial Tourism Department in 2017 is considered to strengthen the Board’s position in dealing with the pressures to further the property’s role in the economic development of the province. While this could also be seen to confirm that tourism is the primary management objective for the property the 2019 RMM report notes that ensuring a balance between tourism development and protection of the property is a key aspect of the new management plan now in preparation. Two recent cases of inappropriate /illegal developments highlight the need for an appropriate mechanism of consultation within the Management Board and among all stakeholders to consider multiple needs for the preservation and promotion of the property and the need to foster wider understanding of World Heritage values by stakeholders (WHC/ICOMOS/IUCN, 2019).

**Relationships with local people**

In February 2012, there were 14,383 residents in the property and 21,109 in the buffer zone, many of whom live in small villages and hamlets. There appear to have been commendable efforts to consult with local people during the nomination process with a view to securing broad based support for the site to become World Heritage. This included awareness raising campaigns, meetings and surveys to ascertain local support. Some local people were also involved in the development of the Management Plan for the Landscape Complex (IUCN, 2013)

The 2015 Management Plan cites the population to be 17,000 within the Property and 27,300 in the
buffer zone and notes the need to limit population growth by migration. A census of the population in 2020 is required to evaluate the measures taken to address the population trend. During the 2019 RMM it was noted that residents are concerned that the World Heritage inscription is impacting their ability to maintain and upgrade their homes without onerous consent processes. This is creating local resentment towards the World Heritage listing and needs to be addressed through ongoing and transparent consultation with relevant national authorities and community stakeholders (WHC/ICOMOS/IUCN, 2019).

Legal framework

The property is largely secured within three statutory protected areas owned by the Socialist Republic of Viet Nam and controlled by the Ninh Binh Provincial People’s Committee. It has been accorded the highest legal status for protection available in Viet Nam. Management of the property is delegated to a Management Board, which has extensive decision-making powers, responsibilities and resources. In 2017 the Board became embedded within the Provincial Department of Tourism but maintains its independence and its close functional links research institutes and commercial and community stakeholders. It is guided by a Government-approved and legally binding management plan which is modeled on the highest international standards to address all important factors affecting the property (World Heritage Committee, 2014; WHC/ICOMOS/IUCN, 2019).

In the Evaluation report, IUCN raised concern in regard to the delegation of management responsibility in the context of tourism development through the granting of a 70 year private sector lease over the 3,000 hectare Trang An – Tam Coc – Bich Dong Scenic Landscape. There are three additional 49 year leases over the areas known as Bird Valley (34 hectares), Galaxy Grotto (25 hectares) and Sunshine Valley (35 hectares). The leases are for the management of protection, conservation, tourist and promotional activities and delegates the management of the tourism services to these private sector interests. Concerns stem from this poorly defined protection regime and the latitude afforded by current laws in permitting tourism and other infrastructure development (IUCN, 2013; World Heritage Committee, 2014).

The 2019 RMM report notes that lease holders are allowed to operate and construct any facilities which are permitted in their license (or approved project). For any new development they must submit a proposal to the Provincial authority through the Management Board. Discussion about visitor management and potential impact of increasing visitation in the management plan is largely focused on the 3,000 hectare Trang An – Tam Coc – Bich Dong Scenic Landscape and the only discussion concerning the three smaller sites is presentation of some visitor statistics and a notation that the number of boats operating at each site will increase significantly in the coming years. Upon arrival at the gateways to these sites there is no attempt at presentation of the property’s OUV or evidence that the area is part of the World Heritage property.

The mission noted that the revised 2021-2026 Management Plan should include policy about private-public partnerships which applies to the distinctive tourist zones to develop a genuine spirit of partnership in sustaining the OUV of the property. The mission also learned (but did not directly observe the management practices being applied) of commercial show-cave and bird-watching activities at some of these sites and noted the need to establish a systematic monitoring programme to detect changes to the environment including the proliferation of lampenflora in the Show-caves and the impact of tourism on wildlife, such as bat and bird populations exposed to human activities (WHC/ICOMOS/IUCN, 2019).

Law enforcement

The property is well protected within a national and provincial legislative framework based on four primary national legal statutes applying to protection and use of the property. They include extensive measures for identification, recognition, protection, preservation, management, research, monitoring, reporting, and promotion of the cultural and natural values and attributes of the property. Importantly they include enforcement measures for specifying violations and illegal activities and for the discipline and prosecution of offenses. Data however, is unavailable to assess the effectiveness of enforcement measures (State Party of Viet Nam, 2015).

In general, enforcement is not a significant issue for management of the property although staff are positioned at strategic points in order to rapidly respond to potential incidents of inappropriate behavior
by tourists and in the event of illegal acts (e.g. the walkway construction) by commercial interests in the property, the Board has taken the appropriate action (WHC/ICOMOS/IUCN, 2019).

Regular law enforcement patrols are undertaken to detect any infringements against regulations in a timely manner (State Party of Viet Nam, 2020).

**Implementation of Committee decisions and recommendations**

In 2014 the State Party was asked to make a minor alteration to the boundary of the property and to submit a revised management plan to address the committee's concerns about effective management of tourism and to include in it effective measures to prevent overcrowding within the property.

In 2016 the Committee noted the change made to the boundary but again expressed its concern about the revised plans provisions for tourism management.

The State Party provided State of Conservation reports for 2017 and again for 2019 providing extensive detail of the steps it has taken to address the further concerns of the Committee expressed in Decision 40 COM 7B.67. The 2019 RMM report notes the progress made in addressing some of these concerns including the timely response to rectifying illegal and inappropriate tourism related developments within the property. It further commends to Board for initiating the study (2019-2021) to establish the property's carrying capacity and identification of the facilities and services required to simultaneously provide for the use and enjoyment by visitors while protecting and presenting the its OUV. The RMM provides numerous recommendations for consideration by the Board in the preparation of the 2021-2026 Management Plan (State Party of Viet Nam, 2018, 2020; WHC/ICOMOS/IUCN, 2019).

**Sustainable use**

At the time of nomination the World Heritage Committee expressed concern regarding the management plans emphasis on development and the potential impact of tourism (IUCN, 2014), and the State Party was asked to address these issues in a revised management plan. In 2016 the Committee had concern that the new plan did not include adequate measures concerning the management of tourism and cultural heritage. It was further concerned about a university development in the buffer zone and the State Party was asked to address these threats to sustainable use in an updated SoC report for examination by the Committee in 2018 (40 COM 7B.67).

Upon examination of this report (State Party of Viet Nam, 2018) the Committee noted the advice that there was no plan to build a university in the buffer zone but again noted concern in regard to the sustainable use of the property and the State Party was asked to:

- continue the studies to understand impacts from visitation and to establish a limit to visitation to ensure it does not exceed the carrying capacity of the property;
- further strengthen the regulations for tourism facilities;
- establish a consultation mechanism within the Management Board and among stakeholders to provide a balance between tourism, heritage management and nature conservation and to apply a clearer reporting protocol concerning development within the property, ensuring the necessary prior consultation of the World Heritage Centre and Advisory Bodies.
- undertake further assessment of the facilities and services required to service visitation needs.
- invite a Reactive Monitoring Mission (RMM) to provide advice for the implementation and revision of the Management Plan.
- submit an updated report on the SoC and implementation of the above for examination by the Committee in 2020.

The subsequent SoC report addresses the Committee's requests and maintains that there are no negative impacts from visitation. It presents details of the services and facilities citing the number of boats operating, the number of car parks (but not the number of parking spaces), the number of ticket offices, retail outlets, toilets (but not the number of stalls) and the number of information displays. It takes the position that what exists is adequate and will be added to as required (State Party of Viet Nam, 2020). It is of concern to note that while retail outlets number 239 the number of information displays is 2 and that the statistics provided do not include details of accommodation facilities. The 2019 RMM report reiterates concerns about tourism but notes the study to determine a carrying capacity and identify the services and facilities required to service that capacity, and notes that a management plan for the period 2021-2026 is in production.
At the time of nomination it was stated that the majority of residents were gardeners and fishers who had no detrimental impact on the values of the property. During the mission it was noted that the cultural landscape of the Trang An route has changed because the gardeners and fishers are now working in the tourism sector and are less dependent on farming and fishing, only growing 1 rice crop rather than 2 per year. The main gateways have developed very rapidly from dusty tracks with basic facilities to large and quite sophisticated villages comprising residences, retail outlets and a large number of accommodation facilities. The policy of limiting population growth in the property and buffer zone to natural, organic growth by restricting migration is noted, however, it would be very important to reassess the size of the population in/around the property and its impact on the values of the property (IUCN Consultation, 2020).

► **Sustainable finance**  
Highly Effective

The 2013 IUCN Evaluation report cites that the average annual funding for development and management of the property is an adequate USD500,000, with capital investment funding in the order of some US$7 million in recent years. The Management Board now has an annual budget in excess of US$ 5 million for maximizing the use of the property and the protection of its OUV (State Party of Viet Nam, 2020). The Management Board rates this as a large and steadily growing budget but its effectiveness will need to be re-evaluated in parallel with the 2021-2026 management plan when it is completed.

► **Staff capacity, training, and development**  
Mostly Effective

The Management Board has primary responsibility for all aspects of day-to-day management of the property; in 2015 it had a staff of 84 including an executive of 3, administration support (12), researchers (10), project management and infrastructure maintenance (14), Promotion and International Cooperation (6), Environmental Management (7) and a group of 32 responsible for ticket sales, security and guiding services. The plan specifically noted that there was a need to increase staff in the areas of researcher and international cooperation.  
Incomplete data in available reports indicate that in 2019 the Board had a staff comprising an executive of 3, administration support of 8, a technical and researcher division of 7, a foreign affairs and public relations division of 7, an environment and landscape management division of 13, 140 rangers and security staff and 95 guides. It is unclear where the role of project management and infrastructure maintenance has been placed (State Party of Viet Nam, 2020; WHC/ICOMOS/IUCN, 2019). The plan provides for staff training and capacity building but focuses specifically on cultural heritage management along with educational programs and interpretation. It does not mention any need for training in regard to geodiversity and/or karst management, biodiversity or, significantly given the forecast growth in visitation, tourism management. The plan acknowledges that there would be much to be gained from the ability of the Board to call on support and expert advice from external sources and it proposes to establish a Management and Scientific Advisory Committee (State Party of Viet Nam, 2015).  
In Decision 42 COM 7B.62 the Committee requested the State Party to further develop the sections within the Management Plan concerning archaeological heritage, in particular staff training and capacity building, so that the national human resources are continuously provided to ensure a long term and successful management of the archaeological heritage of the property. In response the State Party notes that the Board supports its employees to conduct research and take part in professional training courses to enhance their knowledge and expertise. The Board holds conferences and training courses for its employees, and Board members also take part in management and conservation workshops which are held by domestic and international organizations. Close cooperation with national and internal universities and research institutes also help the Board’s employees enhance their skills and expertise (State Party of Viet Nam, 2020). The 2019 RMM noted the efforts undertaken by the Board to provide a variety of training and development opportunities to its staff and that the staff had a variety of qualifications and areas of expertise. The mission notes that future challenges for management of the property will relate to documentation, museum management, exhibition design and artifact curation. Town planning and urban design matters will be significant challenges as the rural character of the buffer zone will face enormous challenges as development pressures increase. It further noted that while maintenance and
conservation of cultural assets are generally undertaken by the local community, the physical conservation of cultural values is a highly specialised activity requiring tertiary qualifications and considerable practical experience. It is desirable that the Scientific Advisory Committee includes at least one practitioner with skills in cultural heritage conservation to advise on the management of the historic sites and monuments. The RMM observed that the revision of the Management Plan indicates a positive attitude to upskilling, and a balanced approach to tourism planning and preservation activities and suggested that staff specialized in heritage conservation be included in decision-making processes (WHC/ICOMOS/IUCN, 2019).

Education and interpretation programs

The revised management plan acknowledges the important role of interpretation has raising awareness of and respect for the property's OUV and notes the Boards intent to develop and implement a comprehensive interpretation plan to help orient visitors to the property, influence their behavior and enhance their experience (State Party of Viet Nam, 2015).

In response to Committee’s request in 2018 that heritage promotion and marketing undertaken within the property be consistent with interpretation of its OUV the State Party advised the Committee that an archaeological display of artifacts' retrieved from excavations present the story of prehistoric human inhabitation of the property was completed in the Trang An Visitor Center. It further advises that the Board is in the process of establishing an archaeological exhibition on the of site replica film set which had been inappropriately developed to promote tourism and subsequently removed. The exhibition is intended to demonstrate the story of pre-historic life in Trang An, the principal element of the cultural OUV of the property (State Party of Viet Nam, 2020).

Although the State Party contends that this is in full accordance with the request by the Committee that heritage promotion and marketing be consistent with interpretation of the OUV the 2019 RMM indicates that this plan should be reviewed to determined that this location is the most appropriate for such a facility. If not the proposal should be abandoned and all remnants of the film set including toilets, pathways, grass huts, an iron ship - cum – bridge be removed and the island should be replanted with native vegetation to restore the aesthetic values of this area. In the absence of any evidence that the proposed interpretation plan is being developed the mission reiterated the important need to develop such a plan and noted that the plan should include individual plans for each of the 6 visitor nodes within the property (WHC/ICOMOS/IUCN, 2019).

The lack of progress on preparing an interpretation plan in the past 5 years, despite the management plan acknowledging the importance of such a plan, the issue that there only 2 interpretive displays in the property and that while there are guides employed in the property there is no requirement for visitors to be accompanied by a guide is serious concern.

Tourism and visitation management

Visitor management is a major issue for the property. Visitation is focused on 6 areas; the Hoa Lu Ancient Capital site managed by the Dept. Culture and Sport and 5 are managed by licensed concessionaires. Access to Hoa Lu is limited to foot traffic only whereas the 5 privately managed sites are dependent upon small rowboats (access to Bird Valley is by car, cycle or foot with an optional boating activity). This site also includes a substantial resort development and it (and reportedly one other area) has Show-caves which are accessed by both boat and foot traffic. The impact on cave values is unknown.

The property has two very distinct types of visitors; those who come to enjoy the spectacular scenery and observe the local culture and those, the vast majority of visitors, who visit the site as religious pilgrims. A challenge for management is meeting the very different needs and expectations of each group. The management plan presented in the nomination process projects an increase in visitation from 1 to 2 million by 2020 and concern regarding the capacity of management to cope with this increase resulted in the State Party being requested to submit a revised plan for consideration by the Committee in 2016. Noting some weakness in regard to visitor management the State Party was asked to further review sections of it (World Heritage Committee, 2016).

In 2018 a review was presented in the form of a Visitor Management Action Plan which revised the projected increase to 3.5 million by 2020 and while the original plan capped the total number of boats operating in the property at 3,000 by 2020 the Action Plan provides for an increase to 3,865 by 2020.
and that even more will be added as required. It notes that 70% of visitors arrive during the 1st quarter of the year (the festival season) and cites other important strategies to avoid crowding in the peak visitor season as follows:

- Increasing the number of trips per boat from 2 to 3 per day
- Suspending ticket sales if all boats are operating
- Opening a new route from the Trang An boat wharf during the peak season
- Encouraging visitors to select less busy arrival times, less crowded sites, and alternative destinations outside the property
- Improved parking/ticketing arrangements at the gateways.

The Action Plan did not include an assessment of facilities and services needed to meet the needs of the increasing visitation but states that there is no negative impact from visitation and that the management authority has the capacity to manage the projected visitation simply by adding more boats and more facilities. Upon review of the Action Plan the Committee reiterated the need to establish a justified limit to the number of visitors and to undertake an assessment of the facilities and services needed to service such visitors and protect the OUV. It also asked that a Reactive Monitoring Mission be invited to the property during 2019 to provide advice for the implementation and revision of the Management Plan. The subsequent mission noted that while management of visitation have been reactive rather than proactive, many sound strategies are being applied and that proactive measures are being initiated to reduce crowding. Despite these initiatives, forward planning for managing visitation is simply seen as a matter of increasing the number of boats available to carry visitors and increasing the infrastructure to support the increasing number of people. The mission noted that a study had been initiated to establish a carrying capacity for the site and reiterated the need for an assessment of facilities and services required. In 2020 the SOC report by the SP confirms that while a carrying capacity study has been initiated it maintains the stance that visitation is having no negative impacts and the Board has the capacity to manage the threat of overcrowding. It provides a schedule of services and facilities (except for accommodation facilities) which exist at present and notes the Board will increase these as required (State Party of Viet Nam, 2020).

There is no information provided in regard to human waste treatment capacity either within the property or its buffer zone where accommodation facilities are dramatically expanding.

**Monitoring**

The revised plan acknowledges the importance of monitoring and provides a comprehensive description of issues to be monitored throughout all aspects of the plan (State Party of Viet Nam, 2015) and the subsequent revision presented as two separate Acts Plans also note the importance of monitoring the cultural and natural values if the property the 2019 RMM report notes that aside from recording the numbers of visitors monitoring is generally limited to recording anecdotal comments about casual observations and that a program of research activities called the SUNDASIA project has been initiated and includes elements of wildlife monitoring. The report makes several recommendations in regard to increasing monitoring activities in regard to cultural heritage, biodiversity values and the environment as well as the impacts of high visitation on all aspects of the property (WHC/ICOMOS/IUCN, 2019).

**Research**

In response to the Committees’ request to provide continued support for ongoing archaeological research and publication the State Party advises that in June 2015, the Management Board signed a cooperative agreement with the University of Cambridge and Queen's University Belfast in the United Kingdom for a comprehensive new program of archaeological and palaeo-environmental research during the five-year period (2015-2020). In support of this the revised plan has a very strong focus on archaeological and palaeo-environmental research with a minor comment noting the need for research into the impacts of tourism and a passing comment about continuing research into the property's biological values (State Party of Viet Nam, 2015). The State Party’s State of Conservation reports for 2017 and 2019 provide extensive details about the international collaboration to enhance the research activities to further understand the cultural values of the property with particular reference to the SUNDASIA Project, a research programme aiming to provide a better understanding of how communities responded to past climate and environmental change, but also how that evidence can contribute to addressing the effects of anthropogenic-induced changes to today’s environment. The 2019 RMM report
commends the State Party for engaging in international cooperation and collaboration with national experts in the field of archaeological research, observing international standards of non-destructive techniques and in situ conservation and notes the establishment of a Management and Scientific Advisory Committee (WHC/ICOMOS/IUCN, 2019).

Overall assessment of protection and management

While Trang An has a reasonably effective protection and management regime in place and the OUV faces no significant threat, the weakness in its management capacity to plan and manage the rapidly increasing tourism demand continues to raise concern.

Assessment of the effectiveness of protection and management in addressing threats outside the site

Management and protection of the property's cultural OUV has been well catered for by the international collaboration to further understand its ancient cultural history and protection of the property's natural OUV is generally self-assured by its very nature and the inaccessibility to most of it. The main threat to the property is the rapid growth in visitor arrivals and the simplistic solution of adding more and more facilities to cater for more and more visitors. The various management plans have failed to properly address the different threats facing the 6 key visitor sites and also fails to acknowledge the very great difference in the needs of the different visitor segments; those who visit the site to appreciate its OUV and those who visit as religious pilgrims with no interest in the OUV. Changes to the character of the buffer zone need to be assessed.

Best practice examples

The State Party's response to the requests made by the Committee at the time of the site's inscription has been rapid and effective, in particular in addressing concerns raised about the boundary design of the site. The process of modifying these boundaries has included the participation of a wide range of stakeholders, and has benefited from advice provided by the Committee's advisory bodies (IUCN and ICOMOS) at the request and initiative of the State Party.

State and trend of values

Assessing the current state and trend of values

World Heritage values

Extraordinarily beautiful and awe-inspiring tower karst landscape

The Trang An Landscape Complex contains a relatively undisturbed "core area" of superlative natural phenomena and of exceptional natural beauty and aesthetic importance which is quite confined in its total area (IUCN, 2013). The site’s natural values remain intact but significant concerns about the potential adverse impact of the large and rapid tourism growth remain unanswered. A study has been commenced to determine an appropriate carrying capacity, however, there is an ingrained perception by the property’s management authority that there are no problems arising from overcrowding and if there are problems they can be simply resolved by adding more facilities and services according to demand. Concerns about an evolving theme-park approach to promotion of the site were resolved with the removal of an African-style village of grass huts constructed within the property to capitalise on a popular movie. Similarly, concerns about a visually intrusive 1km long concrete stairway illegally constructed to provide visitor access to a section of karst tower was removed in a timely manner. The 2019 RMM report expresses some concern about the proliferation of visually intrusive phone towers atop prominent karst features within the property. While some of these pre-date the inscription of the
property on the World heritage List and some may be regarded as providing an essential national service, many are new additions and, as reported to the mission, have been installed to facilitate social media communications between visitors to the property (WHC/ICOMOS/IUCN, 2019).

An exceptional geological site showcasing the final stages of tower karst landscape evolution in a humid tropical environment

The property displays a natural area of fengcong dominated karst in the inner part and protects an overall diverse karst landscape. The karst values of Trang An are substantially intact, however, they too are threatened by areas of development and human activity and by the potential impact from growing tourism (IUCN, 2014). Potential dredging impacts and potential alteration to the footcaves, including the adverse provision of utilities (cave lighting) are of concern as there is a trend towards opening new routes, likely through more caves, which will increase the dredging activity. The development of Show-caves with walking pathways and artificial lighting was noted subsequent to the 2019 mission but the proliferation of lampenflora in those caves has not been assessed (WHC/ICOMOS/IUCN, 2019). The recommended action to treat the lampenflora known to have developed in caves with artificial lighting to facilitate boat access has not been taken (IUCN Consultation, 2019).

Summary of the Values

Assessment of the current state and trend of World Heritage values

In response to the World Heritage Committee's concern as to the threat posed by development, human activities and increasing tourism to the property’s values the State Party revised the boundary of the property and has presented two management plan revisions for consideration by the Committee. In 2016 and again in 2018 the Committee concluded that these revisions did not include adequate measures concerning the management of tourism. In consequence the State Party was asked to address weaknesses in the revisions and to invite a Reactive Monitoring Mission to the property in 2019. The mission report notes that while the physical conservation of the property seems to be satisfactory it also identifies a number of matters for consideration by the State Party to guarantee the safeguarding of the property’s OUV. It further notes that the new management plan in preparation for the period 2021 to 2026 must clearly prioritize the protection of the property’s OUV (WHC/ICOMOS/IUCN, 2019).

Assessment of the current state and trend of other important biodiversity values

The forest cover and associated fauna are an integral part of the natural Karst landform development process at Trang An and the management of these values, their condition and change in condition and threats such as the presence of semi-wild domestic goats were acknowledged and monitoring of their numbers and any impacts on the property’s OUV is provided for in the revised plan (State Party of Viet Nam, 2015). However there is no evidence of systematic monitoring of goat numbers nor any attempt made to determine whether any have escaped into the Protected Natural zone. There is inadequate consideration of cave biodiversity in terms of an inventory of what exists within the caves nor is there any consideration of impact upon cave fauna by human uses such as research and tourism (WHC/ICOMOS/IUCN, 2019; IUCN Consultation, 2019).

Additional information

Benefits

Understanding Benefits
Outdoor recreation and tourism

Tourism contributes substantially to the local economy and the dramatic increase in tourism is seen as a very positive step by the management authority and the provincial government. The number of local people earning a living by rowing boats and working as guides in the property has increased substantially in recent years. Of even greater significance is the increase in the food, beverage and merchandise outlets at the gateways into the property and elsewhere in the buffer zone associated with the enormous expansion of tourist accommodation facilities. A notable impact of the growth of tourism related income is the reduced dependence on subsistence farming. During the mission it was noted that rice farming was less intensive than it was just 5 years ago with most farmers growing just 1 crop instead of 2 crops each year.

Facilities to support tourism (restaurants/cafes/accommodation) have expanded dramatically and have significantly changed the character of the buffer zone, particularly at the Trang An, Tam Coc and Hoa Lu gateways. The Management Board has taken significant effort to successfully control the style and extent of development such that a traditional Vietnamese ambience has been maintained.

History and tradition

There has been a remarkably long and continuous cultural history at the site for around 30,000 years and traditional festivals and cultural events are commonplace. (State Party of Viet Nam, 2013; IUCN, 2014)

Fishing areas and conservation of fish stocks,

Traditional agriculture,

Livestock grazing areas

Traditional landholders undertake agriculture that includes growing rice, raising livestock (ducks) and fishing. (IUCN, 2013) Goats, water buffalo and some cattle are allowed to graze in the Multiple Use zone. Agricultural activities are reducing as more of the traditional landholders become engaged in the tourism industry and there are anecdotal reports of fish stocks increasing. (ICOMOS/IUCN, 2019)

Factors negatively affecting provision of this benefit:
- Invasive species: Impact level - Low

The reduced agricultural activity may detract slightly from the previously known visual impact of the rice fields and the people working them as part of the experience of the Tam Coc boat route although this wont be a real issue unless the rice fields were abandoned completely. If this were to eventuate some sort of management intervention may be required to maintain the living culture appeal of the Trang An experience.

Goats pose a risk to biodiversity values if they were to escape from the Multiple Use Zone to the Protected Natural Zone.

Direct employment,

Tourism-related income,

Provision of jobs

Many locals are directly involved in the property as boat owners and operators, maintenance workers, security workers and many derive income by providing accommodation, supplying food and selling handicrafts (IUCN, 2013). Since then the number of visitors has all but tripled and the standard of services and facilities greatly expanded. The main gateways have evolved into sophisticated villages with a rapidly progressing socio-economic outlook.

The Management Board has a policy of allowing natural population growth in the property and its buffer zone by discouraging population growth by migration. It is unknown how successful this has been nor is it known what the population growth has been since the property was inscribed as a World Heritage site.

Summary of benefits

Benefits are derived from some 14,000 residents living within property and another 21,000 or so inhabitants in the buffer zone, which encircles the property. Tràng An is claimed by the State Party to be a unique example in South east Asia of human-environment interaction where local people live and work
following traditional subsistence practices, and have been present for 30,000 years (State Party of Viet Nam, 2013).
With the knowledge that there is a policy of restricting immigration to the area to allow organic population growth only, it can only be assumed that there has been a moderate increase in these populations, which, given that the number of visitors has increased three-fold, must be enjoying a considerable leap in economic benefit from the property.

Projects

Compilation of active conservation projects

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## REFERENCES

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