Nomination Dossier for
Inscription on the World Heritage List

BAGAN

Volume III :
ANNEX : R
The Integrated
Management Framework
(Management Plan)
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Ministry of Religious Affairs and Culture
with
Government of Mandalay Region and Government
of Magway Region
Message

I am proud to present herewith the Integrated Management Framework document for Bagan Cultural Heritage Site. This is a key document defining the management system with the objective of safeguarding the cultural heritage of Bagan while allowing for the sustainable development of the site and surrounding region.

Over the past four years, the State Party has committed itself to work closely together with the stakeholders and responsible international agencies to establish the Integrated Management System. It consists of various components including the Integrated Management Framework document, as well as the Integrated Plan of Actions. Furthermore there are sector plans dealing with regional planning, tourism and disaster risk management. There are also detailed recommendations, approaches and guidelines for technical aspects of conservation of monuments, mural paintings as well as stabilization of monuments. Practical steps for implementing Heritage Impact Assessments (HIA) are also included.

Considering that Bagan was greatly impacted by the Chauk Earthquake that struck on 24 August 2016, the organized and disciplined manner of response and rehabilitation has been exemplary. This has laid the basis for ensuring that the Integrated Management System will be properly implemented. Furthermore it has been possible to prepare and submit the World Heritage Nomination without further delay.

I would like to take this opportunity to thank all those who have contributed to the preparation of the Integrated Management System.

- The preparation of the Integrated Management System was funded by Government of Italy (Capacity building for safeguarding cultural heritage in Myanmar Project), Government of Switzerland (Institutional Capacity building for Managing Bagan within the World Heritage Framework), JICA (Bagan Tourism Development), National Federation of UNESCO Associations of Japan NFUAJ (Safeguarding Bagan within the World Heritage Framework) and World Bank (Post-earthquake assessment and preparation of DRM plan).

- I wish to thank UNESCO for their cooperation and support.

- I am grateful to the Site Managers and local authorities in Bagan, Local peoples from Bagan Region, Chief Minister and officials concerned of Mandalay Regional Government, officials concerned from Technology Universities of Ministry of Education and my colleagues of the Ministry of Religious Affairs and Culture, Department of Archaeology and National Museum for their enthusiastic participation.

Htun Ohn
Permanent Secretary
Ministry of Religious Affairs and Culture
Republic of the Union of Myanmar
The Republic of the Union of Myanmar  
Ministry of Religious Affairs and Culture  
Department of Archaeology and National Museum  
Office of the Director General  

Notification No. 005/2018  
Nay Pyi Taw, 6th Waxing of Tabodwe, 1379 ME  
(2018, January,22)  

Approval and Endorsement of implementation for World Heritage List in Bagan  

The Ministry of Religious Affairs and Culture has been approved and endorsed with implementing in inscription for World Heritage List in Bagan as follows documents:  

(1) Nomination Dossier of World Heritage List for Bagan  
(4) Annexes

Letter No- 114/1-4/3-A  
Date: 22.1.2018  

Kyaw Oo Lwin  
Director General
Nomination Dossier for Incription on the World Heritage List

BAGAN

VOLUME III : ANNEX :R
Integrated Management Framework (Management Plan)
This document is a component of the Integrated Management System for

Bagan Cultural Heritage Site, Myanmar

The entire set of documents (Nomination Dossier Volume 3 - Annex R) consists of the following:

1. Integrated Management Framework
2. Integrated Plan of Actions
3. Bagan Conceptual Regional Plan
4. Bagan Sustainable Tourism Strategy
5. Bagan Disaster Risk Management Strategy

These documents would be further linked to detailed plans developed for Bagan based on the above parameters adopted as the Integrated Management System.

Additionally the following documents are to be referred to in respect to related sections of the Management Plan (Nomination Dossier Volume 4 Annexes S – W)

6. Primary Heritage Laws relevant to Bagan (Annex S)
9. Guidelines for Post-Earthquake Temporary Structural Stabilisation of Monuments of Bagan (Annex V)
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<th>Term</th>
<th>Definition</th>
<th>Acronym</th>
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<tr>
<td>Bagan Cultural Heritage Property</td>
<td>The area of Bagan that has been demarcated as containing most of the cultural heritage attributes</td>
<td>MOC, MONREC, MOHT, MORAC, DANM, DA, MNCCC, BAGANCOM, AMA, MTF, JICA, UNESCO, OUV, SOUV</td>
</tr>
<tr>
<td>Bagan Cultural Heritage Site</td>
<td>The overall area of Bagan that includes both the cultural heritage property as well as the buffer zone</td>
<td></td>
</tr>
<tr>
<td>Buffer Zone</td>
<td>An area demarcated around the cultural heritage property that provides an added layer of protection with similar management and legal provisions.</td>
<td></td>
</tr>
<tr>
<td>Protective Planning Area</td>
<td>An area demarcated approximately 30 kilometres beyond the Buffer Zone spanning from Chauk to Pakokku towns as basis for regional planning</td>
<td></td>
</tr>
<tr>
<td>MOC</td>
<td>Ministry of Construction</td>
<td>MOC</td>
</tr>
<tr>
<td>MONREC</td>
<td>Ministry of Natural Resources and Environmental Conservation</td>
<td>MONREC</td>
</tr>
<tr>
<td>MOHT</td>
<td>Ministry of Hotels and Tourism</td>
<td>MOHT</td>
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<tr>
<td>MORAC</td>
<td>Ministry of Religious Affairs and Culture</td>
<td>MORAC</td>
</tr>
<tr>
<td>DANM</td>
<td>Department of Archaeology and National Museum</td>
<td>DANM</td>
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<tr>
<td>DA</td>
<td>District Administration</td>
<td>DA</td>
</tr>
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<td>MNCCC</td>
<td>Myanmar National Culture Central Committee is a high level coordination committee under the Vice President</td>
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<tr>
<td>BAGANCOM</td>
<td>Bagan Committee for the management of the cultural heritage property and buffer zone</td>
<td>BAGANCOM</td>
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<tr>
<td>AMA</td>
<td>Association of Myanmar Architects</td>
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<td>MTF</td>
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Preamble

Bagan Cultural Heritage Site spans across a bend in the Ayeyawady River between the hills of Tantkyi-taung and Tuyin-taung. The site is located in Nyaung U District of Mandalay Region and Pakokku District of Magway Region. The property covers some 50 square kilometres with an additional 180 square kilometres of buffer zone. The impressive landscape encompasses over three thousand monuments along with 2 towns and over 40 villages. The ancient capital city of Myanmar went through a major building spree during the eleventh to thirteenth centuries CE of which nearly three thousand monuments remain. Though the focus is on the Bagan Period, there are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the eighteenth and nineteenth centuries.

The site also boasts elaborate living cultural heritage continuing from the ancient times. The strong Theravada Buddhist culture pervades the daily lives of the local community and the visiting pilgrims. This is overlaid by a deep reverence to the spirits or Nats which are particularly dominant in Bagan, with their main centre being nearby Mount Popa. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production.

The communities living in the towns and villages are in a period of transition. Most locals are still farmers who depend on the meagre rainfall to cultivate their traditional crops such as groundnuts, sesame and flat beans on plots hemmed in by toddy palms. The ground is still ploughed using bullocks and bullock carts are still used transportation. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business. Tourism is also the caused for increased traffic, construction of infrastructure and buildings as well as physical wear and tear of the monuments.

Much of this golden period of Bagan is still hidden below the surface of the parched land. The urbanization and the expansion of the monument ensembles are not clearly understood. Development pressure mainly driven by tourism is ready to swamp the regulations put in place to conserve the monuments. To defuse these pressures while ensuring a livelihood for the local community requires a comprehensive planning approach. The consideration of a wide range of issues will allow for a realistic and effective management system to be put in place that ensures sustainable development while safeguarding the attributes and elements of Bagan that express its exceptional values.
The Integrated Management System for Bagan has been established consisting of adopted management frameworks, established processes and actions along with various sector plans. The process of developing and adopting the Integrated Management System for Bagan was begun in 2013. With regular consultation with government authorities, local representatives and community, it has been possible to come to an overall understanding of how Bagan needs to be managed to ensure that heritage is safeguarded while enabling the local communities to improve their livelihood. Close relationship has also been developed with related sectors such as local administration, tourism, agriculture, disaster risk management and environment protection. The management of Bagan will however depend on overall government policies and local governance. This requires regular review and amendments to the Integrated Management System to adapt to changing circumstances, however the overarching objective must be retained: “to protect the attributes expressing outstanding universal value of the World Heritage property as well as the locally recognised heritage values, while taking into account sustainable development including the standard of living, safety and economic viability of the community living within the World Heritage property.”

The Integrated Management System is defined by two main documents. The Integrated Management Framework document has been officially adopted by the State Party. The Integrated Plan of Actions document defined is a working document requiring ongoing amendments and changes to be carried out and would be the basis for establishing annual action plans. Additionally there are three further sector plans or strategies. The Conceptual Regional Plan provides an overview of the required planning in respect to land-use, settlements, infrastructure and environment. This has been prepared with inputs from various government agencies as well as the Association of Myanmar Architects (AMA). This is closely linked to the Sustainable Tourism Strategy which has been prepared in close collaboration with the Ministry of Hotels and Tourism, the Myanmar Tourism Federation and with support from JICA. Furthermore the Disaster Risk Management Strategy has been prepared with support from the World Bank.

**The Integrated Management Framework Document** consists of four main sections. The first section consists of defining the cultural heritage property including the statement of outstanding universal value (SOUV), the property boundaries and the buffer zone. The conservation approach and integration of sustainable development are also presented. The second section then provides the vision, approach and objectives of the management system. The third section defines the institutional, legal and resources frameworks as the basis for management. The last section provides the basis for implementation. Here the process of institutionalization, sector wise coordination and monitoring frameworks are provided.
Part 1. Defining Bagan Cultural Heritage Property

1.1 Introduction

1.2 Statement of Outstanding Universal Value

1.2.1 Brief Synthesis

1.2.2 Justification for Criteria

1.2.3 Statement of Integrity

1.2.4 Statement of Authenticity

1.2.5 Requirements for Protection and Management

1.3 Boundary and Buffer Zone

1.3.1 Boundary

1.3.2 Buffer Zone

1.3.3 Protective Planning Region

1.4 Significant Attributes of the Cultural Heritage Property
1. DEFINING BAGAN CULTURAL HERITAGE PROPERTY

1.1 Introduction

This section provides an overview of the cultural heritage site at Bagan. Bagan Cultural Heritage Site has been defined through the statement of outstanding value (SOUV) along with maps showing the Bagan Cultural Heritage Property boundary and the buffer zone. The parameters defining the site provide the basis for management, particularly in respect to the main attributes that need to be safeguarded, including their authenticity and integrity. The maps with boundaries of the property and the buffer provide the physical extent of the site where most of the attributes are to be found.

Additional to these basic requirements laid down for World Heritage, the section provides a broader approach with the introduction of a protective planning region extending to an area of 100 by 100 kilometres providing linkages to nearby towns and heritage sites and the basis for regional planning and dispersal of tourism activities. This leads into the next section of the document which provides approach and objectives of the integrated management system.
1.2 Statement of Outstanding Universal Value

1.2.1 Brief synthesis

Bagan is an extensive landscape of monuments and other features located on the Ayeyawady River in the central dry zone of Myanmar. It is a serial property of one major component and seven smaller components. Spreading over a vast plane, the river and the hills frame the landscape. The traditional boundary of Bagan is reflected by four corner stupas which are associated with the founding of Bagan and its empire.

Bagan was the heart of the largest Buddhist empire of its time, the centre of an economic, socio-political and cultural network in active exchange with other parts of the wider region. With its peak period being from the 11th to the 13th Centuries CE, and it was the primary focus of religious activity in this period – the Bagan Period.

The Buddhist tradition of merit-making was a powerful force in the creation of Bagan. It was during the Bagan period that merit-making became integral with Myanmar Buddhist culture. It remains central to Myanmar Buddhism today. This includes support for the sangha (monastic community), as well as festivals, celebrations, rituals and contributions made to the maintenance, repair and reconstruction of monuments.

After the decline of the empire and the shift of power to other centres, Buddhist patronage continued at Bagan albeit at a diminished scale. The civilisation’s religious, legal and administrative systems were maintained in the shift of power to later capitals.

Bagan includes 3,595 surviving monuments set in the landscape (stupas, temples, monasteries, ordination halls, a palace site and fortifications, sometimes as part of complexes, associated inscriptions, sculptures, murals and cloth paintings, and associated objects), as well as archaeological deposits and water management features.

The property incorporates 7 villages or parts of them, and parts of two towns. Continuing and strong Buddhist culture pervades the daily lives of the local community.

1.2.2 Justification for Criteria

Criterion (iii) – Bagan is exceptional and continuing testimony on an impressive and unprecedented scale of the significant cultural tradition of Buddhist merit-making, and also as the pre-eminent testimony to the peak of the Bagan civilisation in the 11th-13th centuries CE as the capital of a powerful and influential regional empire.

Criterion (iv) – Bagan is outstanding as the most extraordinary, rich and creative ensemble of monumental Buddhist architecture in the region, reflecting the strength of religious devotion and wealth of this early major Buddhist empire, and to centuries of continuous religious commitment.

Criterion (vi) – Bagan is a supreme example of the fundamental historical and living Buddhist tradition of and beliefs associated with merit-making, expressed through the remarkable scale, number and density of Bagan’s surviving stupas, temples and monasteries, and continuing religious activities.
The attributes of the property comprise the overall setting of Bagan (hills, vast plane, river and corner stupas), the landscape of monuments, the monuments themselves, inscriptions in many forms, murals and cloth paintings, sculptures, religious practices, the Old Bagan wall, a palace site, water management features, archaeological deposits, and objects held at the museum and elsewhere within the property.

1.2.3 Integrity

The property includes all of the attributes needed to express the potential Outstanding Universal Value of Bagan, and it is of adequate size. The overall historical structure of Bagan survives in the form of the river, the four corner stupas (two located on hills) and the collection of monuments within this area. It also includes the pre-eminent and very large collection of monuments set in the landscape from the Bagan period, and associated inscriptions, murals, cloth paintings and sculptures. This represents the main surviving evidence of the ancient capital.

Bagan is remarkable for the extent and condition of its surviving evidence, even though a range of factors have changed or diminished this evidence over time, including earthquakes, deterioration and losses, periodic reconstruction as part of merit-making, poor conservation works, removal of cultural property and modern developments. Decorative finishes and architectural details of monuments have been especially affected.

Merit-making practices elaborated in the Bagan period within both the local and wider community are in good health and robust. Although there is some concern about the growing extent of modern entertainment activities associated with annual temple festivals and other religious events.

Pressures include new tourism and township developments, new and upgraded infrastructure, exotic tree plantings, and potentially changes to agricultural practices.

1.2.4 Authenticity

The surviving monuments, archaeological remains, continuing religious practices and other attributes truthfully and credibly express the potential Outstanding Universal Value of Bagan. The attributes of the overall setting of Bagan, the river and corner stupas, as well as the large surviving population of monuments express the general form of ancient Bagan.

Considered individually, the large proportion of surviving major monuments and their decorative elements such as sculptures, stucco, murals and cloth paintings are also largely original in terms of location, form, design and materials. These monuments truthfully express the full splendour, creativity and technological achievements of the Bagan Period.

The stone and ink inscriptions are original in all respects and are truthful and credible testimony of merit-making, of Bagan as an ancient capital, and of its later history.

The fortifications and palace site at Old Bagan, other archaeological remains and the water management features are truthful and credible evidence of the civilisation.

The objects relocated to the Bagan Archaeological Museum (eg. sculptures and inscriptions) retain authenticity in terms of form, design and materials, and while removed from their
specific original locations, they remain within Bagan overall. Other objects are located at temples.

The site has retained its authenticity in terms of use and function as a place of worship and continuous religious practices, especially merit-making which has ensured that the monumental landscape has been sustained over centuries.

Generalised design features used in modern restorations and fully rebuilt monuments have been criticised in the past. None the less, these monuments are authentic in terms of the use, function and spirit of Bagan, connected to Buddhist merit-making, and the fully rebuilt monuments contribute to the authenticity of the general form of ancient Bagan at a landscape scale.

1.2.5 Management and protection


The overall management of Bagan is achieved through an Integrated Management Framework and Plan of Action which addresses institutional and legal frameworks, resourcing, coordination and monitoring. The framework also includes bylaws for conservation principles, building bylaws, rectification and development guidelines, as well as tourism, disaster risk management and regional planning. The framework is effectively overseen at the national level by BAGANCOM and is implemented by a wide range of responsible committees and agencies. The property manager is the Department of Archaeology and National Museum (Bagan Branch).

Long term management expectations include: strengthened community understanding and support; enhanced conservation of monuments especially in response to earthquake damage; removal or mitigation of adverse developments; harmonious tourism development; and increased monitoring and conservation capacity.
1.3 Boundary and Buffer Zone

1.3.1 Boundary

Bagan Cultural Heritage Property consists of eight components totalling 4,987.88 hectares.

Bagan Cultural Heritage Property boundaries are defined by eight components. The main section of the property covers the inner curve of the Ayeyawady River where most of the monuments are located (component 1). The town areas of Nyaung U and Myo-thit (New Bagan) have been left in the buffer zone though all the monuments within these areas will be provided individual protection. There are various important areas close to the towns which are included in the property such as to the east of Nyaung U (component 2) as well as 2 clusters of monuments within Myo-thit (components 6 and 7). Boundaries further extending from Tuyin-taung hill (component 4) and archaeological site (component 3) in the south east to Tantkyi-taung hill (component 8) across the Ayeyawady River to the west. The property also includes an important reservoir (component 5) linking the water management system from Tuyin-taung to the moat of old Bagan.

These components have been carefully selected to include most of the significant attributes and provide adequate protection. The boundaries have been reviewed and discussed by the relevant authorities at union, regional and district level as well as the affected communities.
1.3.2 Buffer Zone

The Buffer Zone encompasses an area of 17,821.97 hectares stretching from Tantkyi-taung to Tuyin-taung. The map below shows the outline of the Buffer Zone in yellow.

The buffer zone encompasses the entire Bagan Cultural Heritage Site including all the eight components. The buffer zone encompasses an area that extends to the south along the Naletaw Creek, around Tuyin-taung hill and the archaeological site at Yon-hlut-kyun. The boundary then is aligned along the highway until it reaches Nyaung U airport. The buffer zone excludes the airport but encompasses the area around Kyauk-ku-umin. The buffer zone also includes the entire Ayeyarwady River and the flood plains from the Naletaw Creek to the Kyauk-ku-umin. The buffer zone additionally encompasses the Tantkyi-taung hill.

The extent of the buffer zone will ensure that the main components of Bagan Cultural Heritage Property are given a further layer of protection by controlling development activities in the surrounding areas. Since the two main town areas are within the buffer zone, it will be important that the respective regulations ensures compatible development, ensuring the improved livelihood of the people but keeping in mind the impact on heritage and sub-surface archaeology. The buffer zone also provides guidance to developments that would impact the important landscape that links the components extending from the surrounding hills, the central plains as well as the Ayeyawady River, its islands and flood plains. Developments beyond the buffer zone that might affect the property would be addressed through the added Protective Planning Region linked to regional planning.
1.3.3 Protective Planning Region

Bagan Cultural Heritage Site has been provided a further Protective Planning Region beyond the buffer zone of the property as indicated on the map below:

The planning of Bagan will extend far beyond the boundaries of the cultural heritage area. The surrounding areas could develop to become threats but if planned properly would provide the means of solving many of the issues facing the cultural heritage site. To provide the basis for regional planning to be carried out a further Protective Planning Region has been defined which extends approximately 30 kilometres beyond the buffer zone. This area encompasses the surrounding towns of Chauk and Pakokku as well as important cultural site of Mount Popa and Sa-lay.

The Conceptual Regional Plan (refer Section 4.2.1 and attached document) has been prepared considering requirements of appropriate and sustainable development within a larger region around Bagan. Taking into account projections of several million visitors within the next few decades, the required infrastructure, services and activities for these visitors will be provided dispersed over the Protective Planning Region. The planning will also ascertain that activities that could affect Bagan Cultural Heritage Site would be mitigated, particularly those creating any form of pollution, be it air, water, soil, noise or visual.
1.4 Significant Attributes of the Cultural Heritage Property

As per the nomination dossier, the attributes that express the Outstanding Universal Value of Bagan have been listed as follows:

- landscape of monuments;
- overall setting of Bagan (river, corner stupas);
- monuments;
- inscriptions at Bagan – stone, ink, brick, votive tablets, glazed relief tiles, metal plates;
- murals/cloth paintings;
- sculptures;
- religious practices (merit-making);
- Old Bagan wall;
- a palace site;
- archaeological deposits;
- water management features;
- objects at the Bagan Archaeological Museum or at temples in the property; and
- architectural objects at Bagan Archaeological Museum.

The management system has been established to ensure that these attributes are safeguarded. This list of attributes can be categorized under the following headings:

1. **Landscape:**
   Settlements, agricultural and natural areas with sub-surface archaeology

2. **Monument**
   Different categories of monuments based on their significance

3. **Objects**
   Found in museums and in situ including murals, sculptures and inscriptions

4. **Archaeology**
   Sub-surface as well as mounds, fortification walls palace sites, water management features

5. **Cultural practices**
   Festivals, ceremonies, religious activities and beliefs
The attributes have been defined within the cultural heritage property that consists of eight components (refer boundary map under section 1.3.1). The overall setting for the monuments is defined by a flat landscape in a bend in the Ayeyawady River framed in by the Tantkyitaung and Tuyin-taung hill ranges on either side. The landscape is mainly covered with agricultural fields lined with toddy palms. There are also several traditional settlements and two towns. Under large part of this landscape there are archaeological remains that are still to a large degree not surveyed or indentified in detail.

There are between three and four thousand monuments scattered across the landscape consisting of stupas, temples, monasteries, ordination halls, image houses, city walls and gates, caves, as well as archaeological mounds and remains of ancient palace sites. There are 34 Grade 1 monuments (outstanding) that represent the most significant in respect to their historical and architectural value, present state of conservation as well as their ornamentation such as mural paintings. There are additionally 100 Grade 2 (exceptional) and 288 Grade 3 monuments (important).

In conjunction with the monuments there are various forms of arts and crafts which are an integral part of the architectural development during the Bagan period. These include some of the most exquisite examples of mural paintings are found from as early as the 11th century CE illustrating mainly Buddhist motifs. There are 485 monuments where mural paintings have survived in-situ. There are other forms of painting such as on cloth as well as ink inscriptions providing information on merit-making. Additionally there are sculptures, stucco decorations and glazed plaques.

Inscriptions are important records of the history of Bagan. They provide information on important dates and activities such as donations, merit-making activities, actions of important historical figures and construction dates. Over 800 inscriptions have been found within the Bagan Empire which have been translated and published. The inscriptions from the Bagan period can be categorized based on the materials that were used. These include inscriptions carved into stone slabs, ink writing on lime stucco, brickwork with texts, stamped and hand incised inscriptions on baked clay tablets, writing on glazed relief tiles as well as incised writing on metal plaques. In 2015 the Myazedi (Rajakumar) Quadrilangular Stone Inscription was inscribed on the Memory of the World Register. Written in 1113 CE this pair of stone pillars has text written in Pali, Mon, early Burmese and Pyu.

Religious practices are an important part of Bagan which also defines the cultural heritage property, its usage, function and maintenance. These would include festivals, rituals and daily activities of the local community. There is a range of Buddhist practices which are evidence of the historical and continuing cultural traditions and beliefs associated with merit-making. An important local ceremony is Ordination for young boys called Shinbyu.

The attributes that express Outstanding Universal Value of Bagan also consist of subsurface archaeology. Though not investigated sufficiently, they would encompass the Old Bagan Wall, the ancient palace sites, water management features and other archaeological deposits. There are many historical objects that have been relocated to the Bagan Archaeological Museum which are important attributes as evidence of the civilization. The damage caused by the recent earthquake has been a further reason for displaced objects being moved to the museum.
Part 2. Conservation Approach and Management Objectives

2.1 Vision for Bagan

2.2 Overarching Management Principles

2.3 Conservation Approach

2.2.1 General Approach

2.2.2 Approach for Landscapes

2.2.3 Approach for Monuments

2.2.4 Approach for Arts and Crafts

2.2.5 Approach for Inscriptions

2.2.6 Approach for Intangible Heritage

2.2.7 Approach for Archaeology

2.2.8 Approach for Museum Artefacts

2.2.9 Approach for Settlements

2.4 Conservation and Sustainable Development

2.5 Key Management Objectives

2.5.1 Overarching Themes

2.5.2 Key Management Objectives
2. **CONSERVATION APPROACH AND MANAGEMENT OBJECTIVES**

2.1 **Vision for Bagan**

The vision for Bagan was developed through a series of interaction programmes with government authorities, religious bodies and community members. It provides an overview of the most important aspects of Bagan which needs to be kept in mind when managing and planning the heritage property and surrounding areas.

1. **SAFEGUARD AND CONSERVE MONUMENTS**
   The monuments are the greatest assets of Bagan and must be safeguarded and conserved to be passed on to future generations.

   The points that were raised during the discussions pointed to the need to ensure quality of conservation works. There is a need for experts and crafts-persons. Great concern was shown towards visitors climbing on monuments such as at Shwe-san-taw which creates vibrations and impact the stability of the monument. In a similar manner the big busses driving around the heritage site impact monuments such as the paintings of Myinkaba-gubyaukyi-hpaya. Even the Tourist Guide Association suggested forbidding buses in sensitive areas.

2. **PRESERVE CONTEXT AROUND MONUMENTS**
   The areas around the monuments are both important to protect the monument but also as the visual context for the monuments and must therefore be preserved.

   The landscape around the monuments needs to be maintained and therefore development must be controlled. The traditional agriculture needs to be preserved and possibly in certain places revived. This is particularly in those areas abandoned when people were moved from Old Bagan. There are many activities such as the restaurants in front of Ananda that are not respectful towards the monuments. Furthermore electric posts are destroying the landscape.

3. **APPROPRIATE SETTLEMENT**
   Developments within settlements, both towns and villages, located in the heritage site as well as in the buffer zone need to be guided to ensure they are appropriate.

   There are large communities that still live within the cultural heritage site and buffer zone who have to carry out their daily activities to ensure their livelihood. These activities must however not negatively impact the monuments or subsurface archaeology. New construction must be controlled, whether they are private, monastic or commercial.

4. **ANCIENT CUSTOMS**
   Ancient customs, rituals and celebrations are an important part of the cultural heritage in Bagan and must be supported and promoted.

   Such activities must be appropriate to heritage with the full involvement of the communities. It must be noted that Bagan is not considered as purely a religious site, though religion is part of the cultural heritage. Local crafts are important as an additional income source for the locals. Community awareness is needed to help preserve the monuments.

5. **TOURISM as major source of income**
   The negative impacts of tourism need to be mitigated while the potentials used to ensure improved livelihood of the local communities.

   The infrastructure for tourists must be provided but in an appropriate manner. Access to all monuments need to be insured which means no monument must be within any private compound. The various activities that are linked to tourism such as vendors around monuments need to be controlled. The littering, inappropriate language and dress as well as overcrowding of the monuments need to be controlled, particularly when it comes to climbing monuments, driving vehicles close to monuments and disturbing the sanctity of the place.
2.2 Overarching Management Principles

A Management system can be understood as an operational instrument to utilize available resources to protect defined Outstanding Universal Value, while responding to circumstances in the given context. The principles that are to be observed in achieving the management goals are:

**Significance-driven**

The concern for the conservation of the significance of the site is at the core of decision-making and must be balanced against the interests of other sectors;

**Integrated approach**

The integrated management will follow a systemic and holistic approach to conservation, taking into account the significance of the monuments, the cultural and natural context within which they are found and the living heritage that lends them their local value;

**Process oriented**

The integrated management will focus on the processes and linkages between the components of the site and the various actors to allow for realistic long-term implementation;

**Bottom –up approach**

The integrated management will take into account the realities at the site level when developing conservation strategies. This is particularly so in respect to the living cultural heritage of the site;

**Promotes local empowerment**

Devolution of powers to the local site managers must be accomplished to whatever degree possible, however without losing the integration and coordination between the components of the overall World Heritage property;

**Socially and economically sustainable**

The integrated management will be prepared on an understanding of sustainability, both in respect to social as well as economic operations of the site;

**Local communities to profit**

Local communities will profit from developments that take place and all management and planning decisions will take into account the needs of the locals;

**Planning beyond boundaries**

The planning of Bagan will go beyond the boundaries of the cultural heritage site and buffer zone and will find means of addressing issues by defusing pressures into the surrounding regions;
2.3 Conservation Approach

This section provides an overview of mutual agreed approach to conserving the major attributes of the heritage property. This is the basis for working on detailed legal instruments and procedures.

2.3.1 General Approach

The general approach to conservation is to ensure that all significant attributes are safeguarded through regular monitoring, maintenance and control of activities that might impact the attributes. While ensuring that the attributes are safeguarded, activities linked to the local intangible heritage will be promoted. A balance will be achieved to ensure sustainable development taking into account the livelihood of the local community, their cultural identity as well as their spiritual sentiments. This will be the basis for the establishment of the Integrated Management System.

2.3.2 Approach for Landscape

The landscape in Bagan is created by the community, through their settlements and agricultural activities. This landscape is the setting for the heritage attributes comprising of monuments as well as subsurface archaeology. This close relationship has been the reasons for the cultural heritage attributes surviving through the centuries. It will be necessary to allow appropriate change within the landscape to ensure that agriculture remains feasible to the local community. This might include improved crops, farming practices, technology, processing of products, as well as marketing. All efforts will be made to ensure that it is feasible for the community to maintain the landscape. Detailed guidelines and procedures based on this approach are provided under 2.3.5 Development Guidelines.

2.3.3 Approach for Monuments

The general approach to conserving monuments will be to safeguard original fabric while allowing appropriate restoration of living monuments. The parts of monuments that have been recently rebuilt especially those using cement mortar will be rehabilitated over time. Interventions to improve structural stability, whether using traditional or modern materials, will be removable and documented to allow for monitoring and replacement. Conservation will include the various types of ornamentation used on the buildings, particularly mural paintings. Detailed guidelines and procedures based on this approach are provided under 2.3.2 Conservation Guidelines for monuments and historic buildings as well as attached document “Technical Conservation Recommendations for Bagan Monuments”

2.3.4 Approach for Arts and Crafts

The arts and crafts being produced by the local community has mainly focused on lacquer-ware. Lacquer-ware has been developed to a high level both in respect to quality and design for which Bagan is famous. The ancient skills of lacquer-ware production must be promoted and enhanced. Additionally other forms of arts and crafts need to be revived or introduced particularly those that would generate income for local community members. All forms of arts and crafts related to the monuments and their ornamentation also need to be revived and promoted to ensure that the means for restoring the monuments endure.
2.3.5 Approach for Inscriptions

Most inscriptions particularly those on stone have already been removed from their original location and placed in museums. The general approach for safeguarding inscriptions will first consider doing so in situ. Only when major threats are found which cannot be mitigated, then the inscription will be removed however clearly indicating its original location. Furthermore, if possible replicas will be place in the original location indicating them to be such. Inscriptions are an important source of information and they will be studied, particularly comparing the information to other sources while such information will be disseminated and published.

2.3.6 Approach for Intangible Heritage

Intangible heritage provides added significance to Bagan. This is due to the fact that many activities, practices and beliefs originating in the Bagan Period still exist today. This continuity in the living cultural heritage over many centuries is the basis for the identity of the place as well as the resilience that has allowed for Bagan to withstand the recurring natural disasters and the wearing away over time. Intangible heritage of Bagan will be promoted and where applicable will determine decisions on conservation practice.

2.3.7 Approach for Archaeology

The general approach for conserving subsurface archaeology will be to identify and safeguard and only where protection is ensured will excavation and presentation be done. Non-intrusive surveys will be carried out, risk maps prepared to ensure that construction work doesn’t damage subsurface archaeology and where necessary a watching brief and rescue archaeology will be carried out. Detailed guidelines and procedures based on this approach are provided under 2.3.2 Conservation Guidelines for monuments and historic buildings as well as the attached document: “Archaeological Research Strategy for Bagan”.

2.3.8 Approach for Museum Artefacts

The Bagan Archaeological Museum houses many objects of significance from the Bagan period. Most objects of significance were moved to the Museum for safeguarding and for conservation reasons, often when their original location is destroyed or degraded. The Museum also acts as a storage facility for the DANM. Architectural and stucco fragments that become displaced from monuments are kept in the Museum. Since the 2016 earthquake a large section of the storage area now contains fragments from damaged monuments. Nearly all of the collection has been recorded, either in detail or at minimum, through a photograph and identification number. The Museum collection is a significant resource for research.

2.3.9 Approach for Settlements

The settlement areas which include towns and villages will maintain their boundaries. Within these boundaries it will be possible for appropriate change to take place to ensure the livelihood of the local community. Though traditional buildings will be prioritized, appropriate buildings using modern construction materials and technology will be allowed. In the process of change, it will however be ascertained that heritage is not damaged, including monuments and subsurface archaeology. Detailed guidelines and procedures based on this approach are provided under 2.3.5 Development Guidelines as well as under 2.3.3 Building Bylaws.
2.4 Conservation and Sustainable Development

Sustainable Development must be pursued in Bagan World Heritage property. This means that conservation of cultural and natural heritage must go hand-in-hand with social and economic development, taking into account the needs of future generations.

Defining Sustainable Development

The Brundtland Commission defined Sustainable Development as, "development that meets the needs of the present without compromising the ability of future generations to meet their own need". Sustainable Development is considered to be based on the following three policy areas or "pillars"; economic development, social development and environmental protection with the additional fourth pillar being culture. By inclusion of culture – especially in respect to heritage conservation – the definition of Sustainable Development embraces a whole new dimension; that of our past. The conservation of "heritage" - be it cultural or natural - reflects the key principle of Sustainable Development; it is the conservation of that which we inherit from the past, which is of value and is worth of preservation for future generations.

Sustainable Development is the key to the long term preservation of the Bagan Monuments and Archaeological Area. The Integrated Management System will take into account:

**Economic Sustainability**

Economic Sustainability is achieved when all people have access to an improved standard of living without impairing future economic development.

**Social Sustainability**

Social Sustainability is achieved when transformations of social structures improve capacity of societies to achieve their aspirations while retaining their positive features.

**Environmental Sustainability**

Environmental Sustainability is achieved when the consumption of nature’s resources does not exceed their replenishment.

**Cultural Sustainability**

Cultural Sustainability is achieved when heritage (as defined in the second paragraph) is conserved without inhibiting society’s basic needs.

The conservation of Bagan Cultural Heritage site will depend on ensuring overall sustainable development. This would be linked to the livelihoods of the local communities, protection of the environment as well as ensuring appropriate tourism, infrastructure development and agriculture.

The management and planning of Bagan will take into account long-term implications of every action which includes passing on the cultural heritage as well as the environment to future generations in a state that will allow them to experience these as has been possible for us. Planning and management will not only take into account long-term vision but also coordination between a broad spectrum of sectors as well as a larger area beyond the immediate boundaries of the cultural heritage site ensuring development that is sustainable.
Relevance of the 2030 Agenda for Sustainable Development

The management of Bagan Cultural Heritage Site is closely linked to the local governance of an area spreading from Pakokku to Chauk and to Mount Popa. This large area spanning across the Ayeyawady River from Mandalay Region to Magway Region will require detailed planning for sustainable development. The resources required for that must be linked to government plans and polices. This will also need to consider the Sustainable Development Goals, particularly those goals and targets that refer to cultural heritage and cultural activities.

The preamble to the 2030 Agenda for Sustainable Development begins with the statement that “This Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. We recognize that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development. All countries and all stakeholders, acting in collaborative partnership, will implement this plan.”

Para 36 of the declaration states; “We pledge to foster intercultural understanding, tolerance, mutual respect and an ethic of global citizenship and shared responsibility. We acknowledge the natural and cultural diversity of the world and recognize that all cultures and civilizations can contribute to, and are crucial enablers of, sustainable development.”

Many of the 17 Sustainable Development Goals and 169 targets are relevant for Bagan. Within these are several targets that are specifically linked to culture and cultural heritage.

**Goal 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all;

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development.

**Goal 8** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;

8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

**Goal 11** Make cities and human settlements inclusive, safe, resilient and sustainable;

11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage.

**Goal 12** Ensure sustainable consumption and production patterns;

12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

These goals and targets will also link up with the objective identified for the management of Bagan Cultural Heritage Site allowing for resources put aside for achieving the SDGs to be used directly for the management of Bagan.
2.5 Key Management Objectives

2.5.1 Overarching Themes

The overarching themes are based on a comprehensive assessment of issues in and around the cultural heritage property. The management system must be established with the objective of addressing all identified issues. This document provides the framework which defines how the issues are to be addressed. The required actions to address these issues are provided in the Integrated Plan of Action document, a working document that is part of the overall Bagan Integrated Management System. The following list of overarching themes covers all identified issues.

A. Conservation of monuments and archaeology
   This cluster includes conservation of monuments, ornamentation and sub-surface archaeology as well as site interpretation and museum management.

B. Regional planning and transportation
   This cluster includes settlement planning, land-use management, infrastructure development and transportation management within heritage site and beyond.

C. Tourism management and infrastructure
   This cluster includes tourism activities, infrastructure and accommodations as well as the contribution that tourism will provide for the conservation of the heritage property and the local community.

D. Environment and pollution
   This cluster includes flora and forestry, fauna and wildlife protection, as well as management of water and waste.

E. Natural hazards and human threats
   This cluster includes mainly preparedness for earthquakes, flooding, heavy rainfall and other natural hazards as well as threats created by humans.

F. Agriculture and landscape
   This cluster includes the visual landscape, the link between landscape and heritage conservation, agricultural practice as well as non-agricultural landscapes.

G. Community – socio-economy and livelihood
   This cluster includes community empowerment and local governance, as well as livelihood from tourism, agriculture, traditional activities and new activities.

H. Intangible heritage
   This cluster includes festivals and performances, crafts and traditional activities, belief systems as well as the intangible aspects that define community life.

I. Management tools
   This cluster includes “One Map”, Heritage Impact Assessment (HIA), Data Management System (DMS) and other management tools and programmes.
2.5.2 Key Management Objectives

Based on the assessment of issues, the required actions and activities to address these issues, the key management objectives have been formulated. The objective of the management system is to address all the identified issues.

The system however will also remain flexible to adapt to changing circumstances and respond to newly arising issues. This section provides the outline of key management objectives as determined by the identified issues.

System

1. To have a functioning management system as an operational instrument to utilize available resources to protect defined Outstanding Universal Value, while responding to circumstances in the given context;

2. To establish management frameworks that guide all activities within the cultural heritage site as well as the buffer zone;

3. To ensure coordination amongst all related authorities and stakeholders with clearly defined procedures which ensures the highest quality, efficiency and effectiveness of activities while following the provided frameworks;

4. To establish BAGANCOM which will ensure coordination at all levels of government including the Myanmar National Culture Central Committee under the Vice President;

Conservation of monuments and archaeology

5. To ensure that all monuments are safeguarded from all possible threats by ensuring regular monitoring, cleaning and maintenance;

6. To ensure that all forms of ornamentation on the monuments are safeguarded and where necessary cleaned, maintained and stabilized;

7. To carry out archaeological surveys based on an overall research framework allowing various authorities, agencies and institutions to participate;

8. To prepare archaeological risk maps identifying the location of all subsurface archaeology along with the visible mounds and monuments to clearly demarcate areas requiring protection;

9. To develop conservation approaches and strategies for monuments, archaeology, artefacts and surrounding context and ensure that these are implemented with the best of expertise and knowledge;

10. To establish site interpretation standards ensuring the latest level of knowledge of the property as well as appropriate means of conveying the information to the various profiles of visitors;
11. To develop a strategy for improving museums as a basis for conserving and presenting artefacts as well as to ensure continued research on the heritage property;

12. To establish a comprehensive inventory system of all relevant artefacts in the property as well as in the museums while linking this to a data management system and a management system for protection;

**Regional planning and transportation**

13. To develop and implement physical planning, zoning and regulations for zones and subzones within the property, the buffer zone and the larger protected area, to ensure appropriate development in settlement, infrastructure, land-use, economy and protection of cultural heritage and environment;

14. Planning of transportation and transportation infrastructure considering the requirements for visitor access as well as circulation within the property, the buffer zone and the larger protected area, while taking into account the needs of the local communities;

15. To develop regional plans that ensure appropriate and sustainable development in the surrounding region, particularly in respect to land-use, settlements, infrastructure and environment;

**Tourism management and infrastructure**

16. To develop a visitor accommodation strategy for Bagan which ensures rectification of previous in appropriate development, promoting appropriate involvement of local entrepreneurs in towns and villages and providing solutions in a wider regional plan;

17. To develop tourism in a sustainable manner defusing the pressures for infrastructure and services as well as not exceeding the bearing capacity of the heritage site by extending planning to a region encompassing Pakokku and Chauk;

18. To develop means for tourism to partake in safeguarding cultural heritage, maintaining the landscape and supporting the livelihoods of the local communities;

**Environment and pollution**

19. To establish and implement an appropriate comprehensive water management strategy taking into account water sources, distribution, as well as usage for personal, commercial and agricultural use;

20. To safeguard indigenous flora while introduction regulations for plantations, particularly taking into account the impact on important attributes of the cultural heritage property and the character of the landscape;

21. To safeguarding indigenous fauna using key species such as the Star Tortoise, Burmese Roofed Turtle, Golden Deer, White Throated Babbler and the Laggar Falcon;
22. To establish and implement a comprehensive waste management and pollution control strategy to protect the environment: water, air and land, as well as other forms of pollution such as light and sound;

**Natural hazards and human threats**

23. To establish a disaster risk management plan which includes preparedness, response and recovery closely linked to the site management, local authorities as well as related national level management structures;

24. To ensure lessons are learned from the 2016 Chauk Earthquake as well as from the interventions carried out after the 1975 earthquake in Bagan;

25. To study the causes and impact of extreme climatic events such as flooding, heavy rain and storms and find means of response as well as long-term mitigation measure;

26. To develop means for monitoring the heritage site and monuments to minimize the change for human induced disasters to take place;

**Agriculture and landscape**

27. To develop and implement an approach to appropriate agriculture which takes into account the needs of the local communities, also ensures the landscape is maintained and provides means of improved productivity without further harming cultural attributes of the property;

28. To develop and enforce strategy for maintaining the landscape which includes agriculture but would also need to take into account plantations, changing usage as well as environmental factors;

29. To ensure the visual integrity of the unique landscape of Bagan is maintained by regulating tall and obtrusive structures to be erected in and around the heritage site;

**Community – socio-economy and livelihood**

30. To develop and implement a strategy for appropriate community livelihood linked to a comprehensive approach to sustainable development;

31. To develop marketing strategy and ensuring added value for Bagan products as a sustainable means of livelihood for local community;

32. To promote traditional skills as a means of livelihood, but also to ensure continuity for maintenance of the monuments and artefacts;

33. To ensure that local communities are not displaced whether due to economic, political or technical reasons;

34. To ensure empowerment of the local communities to allow them to partake in decision-making and local governance;
Intangible heritage

35. To promote cultural activities particularly those related to festivals, annual celebrations, rituals and important events such as Novitiation ceremonies;

36. To carry out research and documentation of intangible cultural heritage and develop safeguarding measures to support the continuation of ICH;

37. To develop a strategy for accommodating pilgrimage and merit making into the overall management of the cultural heritage property;

Management tools

38. To develop “Bagan One Map” with information from all the relevant authorities compiled on various layers, while ensuring related authorities regularly update the map and the map is used to ensure coordination particularly during planning phases;

39. To further strengthen interim Heritage Impact Assessment (HIA) system with related legislation, procedures and technical capacity and to use the tool to determine response measures for circumstances that are complex or go beyond the determined legal provisions;

40. To develop Archaeological Risk Maps (ARM) defining exact positions of subsurface archaeology, mounds and monuments to use as a basis for safeguarding these attributes, planning research and ensuring development projects do not have any major negative impact on these attributes;

41. To establish a data management system that is directly linked to management activities of monitoring, reporting, planning and decision making, requiring all information to be fed into the system, securely stored and easy access is provided where and when necessary;

42. To develop inventories of all relevant attributes of the cultural heritage property such as monuments, mural paintings and other forms of ornamentation, archaeological elements, landscape elements, views, etc.;

43. To develop capacity building and training programmes to continually improve the management capacity as well required expertise to safeguard and maintain the important attributes of the heritage property;

44. To regularly review the overall management system to ensure its efficiency and effectiveness and carryout regular amendments as required;
Part 3. Integrated Management Framework

3.1 Introduction to Management Frameworks

3.2 Institutional Framework

3.2.1 The institutional organization

3.2.2 Myanmar National Culture Central Committee

3.2.3 BAGANCOM

3.2.4 Involved authorities in and around Bagan

3.2.5 Organization of DANM Office in Bagan

3.2.6 International Involvement

3.3 Legal Framework

3.3.1 Introduction

3.3.2 Conservation Guidelines

3.3.3 Building Bylaws

3.3.4 Development Guidelines

3.3.5 Rectification Guidelines

3.3.6 Additional Management Tools

3.4 Resources Framework

3.4.1 Human Resource Management

3.4.2 Financial Resource Management

3.4.3 Material and Equipment Resource Management

3.4.4 Resource management and sustainable development
3. INTEGRATED MANAGEMENT FRAMEWORK

3.1 Introduction to Management Frameworks

The first section provided the definition of the site along with the main attributes. The second section provided the vision, approach and the management objectives based on identified issues that need to be addressed. The third section will provide the management frameworks required for the management system to achieve the management objectives. The management frameworks are categorized under three sections: Institutional Framework, Legal Framework and Resources Framework.

The Institutional Framework provides the organizational set-up of all those involved in the management of the heritage site. The DANM and the District Administration take a central role in managing Bagan Cultural Heritage Site and buffer zone. They will however need to coordinate with all other government authorities, line agencies, experts and community representatives. The coordination has been institutionalized through the Myanmar National Culture Central Committee as well as BAGANCOM which will function as an executive authority.

The legal framework consists of existing government legislation for all the various involved authorities as well as specific legal provisions adopted for Bagan Cultural Heritage Site and buffer zone. These special legal provisions consist of Conservation Guidelines for cultural sites, monuments and objects, Building Bylaws for new construction, Development Guidelines for the landscapes, public spaces, infrastructure and services and Rectification Guidelines for inappropriate components of the property.

The resources framework consists of sections dealing with human resources, financial resources and material and equipment resources. These are the resources required for managing the cultural heritage site.

View from Pya-tha-da-gyi Temple (#803) towards Hti-lo-min-lo Temple (#1812)
3.2 Institutional Framework

3.2.1 The institutional organization

The Myanmar National Culture Central Committee functions at inter-ministerial level, particularly the MORAC along with the Chief Ministers of Mandalay and Magway Regions. (The members and the TOR for the Myanmar National Culture Central Committee are provided in Section 3.2.2). The regular coordination management will however take place through BAGANCOM that functions at regional and district level and in close collaboration with the DANM. (The members and the TOR for BAGANCOM are provided in Section 3.2.3).

A summary of the main roles of each level of committee is as follows.

The management of Bagan Cultural Heritage Property, including the buffer zone and surrounding Protective Planning Region will be carried out at four level: highest level under the Vice President through the MNCCC, at Union level under the Minister MORAC, at Regional Level under the Regional Chief Ministers and at District Level under the District Administrator. Each of these authorities have specific roles and responsibilities.

Myanmar National Culture Central Committee (MNCCC)
- National coordination for cultural heritage, including World Heritage
- Major policy decisions including regional plan

BAGANCOM
- Overall coordinating committee for Bagan involving national ministries and Regional Chief Ministers
- Decisions on all planning and development matters in the property and buffer zone in accordance with the IMS except for standard implementation and routine matters, and decisions on plans, policies and emergency issues

Mandalay and Magway Regional Management Committees
- Coordination of regional government authorities including implementation
- Development of regional plan to be agreed by MNCCC

Nayung U and Pakokku District Level Working Committees
- District level coordination of government authorities regarding day to day management including implementation
- Decisions on day to day matters in accordance with the IMS and which have no impact

In reference to the overview chart:

The institutional organization for the management of Bagan Cultural Heritage Site, buffer zone and surrounding area is provided in the chart on the following page.

The central axis shows the main coordinating bodies that have been established under the Vice President.
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3.2.2 Myanmar National Culture Central Committee (MNCCC)

Myanmar National Culture Central Committee (MNCCC) was established in 2016 in order to carry out renovation task with momentum after designating ancient cultural zones and to discover and preserve Myanmar cultural heritages, ethnic cultural heritage and ancient cultural heritages.

**The members of MNCCC are:**

MNCCC is chaired by the Vice-President, with the Vice-Chair being the Union Minister for Religious Affairs and Culture.

Further members are Union Minister for Ethnic Affairs, Deputy Minister Ministry of Foreign Affairs, Deputy Minister Ministry of Home Affairs, Director President Office, Director General Office of the Union Government, Permanent Secretary Ministry of Information, Permanent Secretary Ministry of Agriculture, Livestock and Irrigation, Permanent Secretary Ministry of Education, Permanent Secretary Ministry of Construction, Permanent Secretary Ministry of Hotel and Tourism, Director General Department of Religious Affairs, Director General Member Department of Fine Arts, Director General Department of Historical Research and National Library, Director General Department of Agricultural Land Management and Statistics, Director General Member Department of Forestry, Director General National Archives Department, Director General Department of Social Welfare, Director General Union Attorney General's office, Rector National University of Arts and Culture (Yangon), Rector National University of Arts and Culture (Mandalay), Dr. Toe Hla Vice-Chairman, Myanmar Historical Commission, Representative Myanmar Arts and Crafts Association (Central), Representative Myanmar Artists and Artistes Association (Central), Representative Myanmar Motion Picture Association, Representative Myanmar Music Association (Central), Representative Association of Myanmar Architects, Representative Myanmar Engineers Association, Representative Department of Archaeology University of Yangon, Representative Member Department of Anthropology University of Yangon, Representative Department of History Ministry of Education, Representative Yangon Heritage Trust, Representative Bagan Heritage Trust, Representative Pyu Heritage Trust.

Permanent Secretary Ministry of Religious Affairs and Culture is Secretary while Director General Department of Archaeology and National Museum is Joint-Secretary.

**The functions of the MNCCC are as follows:**

(a) To engage in preservation, exposing and conducting research on cultural heritage regions

(b) To lay down policies for preservation of cultural heritages in cooperation with international governments and organizations

(c) To engage as necessary in formulating, amending and revoking laws and bylaws

(d) To designate regions out of ancient regions that should be regarded as cultural heritage regions
(e) To make a list of ancient regions, ancient buildings and ancient artifacts that are assumed to be regarded as Myanmar cultural heritages by the government.

(f) To restrict the land use for residential buildings, roads, motor roads, farms for livelihood and other business in cultural regions and adjacent regions that need to be protected.

(g) To lay down policies in uplifting national prestige and integrity, safeguarding cultural heritages and national characters and dynamism of patriotism.

(h) To preserve fundamental traditional cultures of Myanmar national races to ensure the youth are interested in and value and cherish traditional cultures of Myanmar national races.

(i) To constantly observe, discover, preserve and promote traditional cultural performing arts of Myanmar national races, traditional arts of ethnic communities and ten arts and crafts and so forth.

(j) To try for development and higher quality of cultural arts Myanmar national races.

(k) To discover and record cultural customs that are nearly extinction in order to safeguard and preserve traditional customs of national races.

(l) To categorize the tangible and intangible cultural heritages recorded and submitted by respective departments into three classes: world’s cultural heritage level, national cultural heritage level and region/state’s cultural heritage level.

(m) To enable tangible and intangible cultural heritages in Myanmar to be put on World’s cultural heritage list.

(n) To adopt policies for drafting and enacting safeguarding national intangible Cultural heritages.

(o) To adopt policies for drafting and enacting law on establishment of national museum and other kinds of museums.

(p) To set the levels of museums in regions and states depending on collected items on display, display pattern, level of educative performance of the museum to local people and structure of the museum building.

(q) To expand the numbers of historical site landmark gardens, archaeological site landmark gardens.
3.2.3 BAGANCOM

BAGANCOM functions at regional and district level and in close collaboration with the DANM. BAGANCOM takes on a central role to ensure that local governance through the regional and district governments take into account the legal provisions provided in the Integrated Management Framework that ensures that cultural heritage is safeguarded and development is carried out in a sustainable manner.

BAGANCOM will ensure the overall coordination, adopt plans and monitor overall procedures within the Cutlural Heritage property and buffer zone. Regular management coordination for operational matters will take place through coordination committees at the regional and district level. Separate Bagan management committees will be set up for Mandalay region and for Magway division to deal with coordination among the authorities within each respective region. The district level working committees for Nyaung-U district and Pakkoku district will provide the appropriate platform for the coordination of the various concerned authorities at the local level.

The members of Bagan National Coordinating Committee (BAGANCOM)

1. Union Minister Ministry of Religious affairs and Culture Chairman
2. Prime Minister Mandalay Regional Government Deputy Chairman
3. Prime Minister Magway Regional Government Deputy Chairman
4. Permanent Secretary Ministry of Home Affairs Member
5. Permanent Secretary Ministry of Construction Member
6. Permanent Secretary Ministry of Hotel and Tourism Member
7. Permanent Secretary Ministry of Transportation and Telecommunication Member
8. Permanent Secretary Ministry of Agriculture, Live Stock and Irrigation Member
9. Permanent Secretary Ministry of Education Member
10. Director General President Office Member
11. Director General Department of Archaeology and National Museum Joint Secretary
12. Permanent Secretary Ministry of Religious Affairs and Culture Secretary
Duties and Responsibilities of Bagan National Coordinating Committee (BAGANCOM) are as follows –

(a) To do national level policy making, instruction, management and decision making for heritage management of Bagan cultural heritage

(b) To make Bagan cultural heritage management to be in line with international rules and regulations

(c) To do regional collaborations and records so that cultural heritage within Bagan Cultural Heritage Region is not to be effected

(d) Bagan Cultural Heritage Region not to be effected by development projects

(e) To discuss UNESCO and other international guidelines and recommendations with committees and to implement them

(f) To make public awareness and management for UNESCO’s policies, processes, guidelines, instructions and recommendations so that concerned departments and local communities could follow them

(g) Social organizations within Bagan Cultural Heritage Region to collaborate each other to safeguard the cultural heritage as well as to exchange information to get social and economic benefits

(h) To search our cultural heritage and put in the hands of next generations to be safeguarded

(i) To have basic projects and plans so that national level related departments to work together and cultural heritage would not be effected and to be safeguarded,

(j) To do Bagan cultural heritage management according to the standards of cultural heritage and to collaborate together for Bagan management and local communities to understand and collaborate.

(k) To follow the rules and regulations for Bagan Property and Buffer Zone by local communities, authorities, departments after sharing knowledge, having consultation and persuading to motivate to collaborate.

(l) To manage BAGANFUND (Cultural Fund and Development Fund)

(m) BAGANCOM to establish management committees, coordination committees and working committees as necessary
3.2.4 Involved authorities in and around Bagan

All the government authorities and line agencies working within Bagan Cultural Heritage Site and buffer zone must coordinate their activities through BAGANCOM. This means that all activities carried out in this area need to be aligned to the provisions defined in this document along with the adopted legal provisions. The main authorities working within the area have been listed here however care must be taken to ensure authorities from both Mandalay and Magway are consulted at regional level and authorities from both Nyaung U and Pakokku are consulted at district level.

CRITICAL AUTHORITIES
The critical authorities are to be part of regular meetings required for the management of the property, the buffer zone as well as the surrounding region. This means that regular contact will be ascertained with routine meetings

1. General Administration Department
2. Land Management and Statistic Department
3. City Development Committee
4. Myanmar Police Force
5. Religious Affairs Department
6. Directorate of Hotel and Tourism, Bagan Branch
7. District Planning Department
8. District Commissioner Branch Group

IMPORTANT AUTHORITIES
Important authorities are those that have various activities going on within the property or buffer zone. This means that whenever required contact is established to discuss activities and coordination while ensuring the all parties are aware of the legal provisions established with for the property, buffer zone as well as the surrounding region.

Infrastructure and services
9. Road Transport Department
10. Irrigation and Water Resource Utilisation Department
11. Electric Power Cooperation
12. Myanmar Post and Telecommunication (Mobile) / Myanmar Post and Inland Water Transport
13. Department of Civil Aviation, Myanmar Airways
14. Road Transport rules and regulations Committee
15. District Health Department
16. Information and Public relations Department
17. Tourism Police Force
18. Telegram, Department of telecommunication

Tourism
20. Directorate of Hotel and Tourism
21. (A) Bagan Heritage Trust
   (B) Bagan Development Association
22. Myanmar Hotelier Association

Social and cultural issues
23. Legislation Office
24. District Courts
25. Immigration and National Registration Department
26. Social Welfare Department
27. Lacquer-ware college
28. Department of Education
29. Myanmar Economic Bank
30. Department of Traditional Medicine
31. Special Branch (Police Investigation)
32. Social Security Board
33. Department of Labour
34. Trade Promotion, Department of Trade

**Emergency services**
35. Myanmar Fire Brigade
36. Rescue and Resettlement Department
37. Myanmar Red Cross

**Agro-economic services**
38. Agriculture Department
39. Rural Development Department
40. Livestock breeding and veterinary Department
41. Agricultural Mechanization Department
42. Myanmar fishery Department
43. Grapes Garden, Department of Agriculture
44. Agriculture and Research Department
45. Myanmar Agriculture Bank
46. Myanmar Industrial Crops Development Enterprise Township office

**Forestry and environment**
47. Dry Zone Greening Department
48. Forest Department
49. Rafting Agency Office, Department of Forestry
50. Loka-nanda Wildlife Sanctuary, Nature Wildlife Conservation Department
51. Department of Meteorology and Hydrology

**GENERALLY UNRELATED AUTHORITIES**
The generally unrelated authorities are those that are not regularly involved in management of the property or its buffer zone. In case any of these authorities need to be contacted, they can be on an individual basis.

52. District Auditor Department
53. District Department of Sports and Physical Education
54. Nyaung-U Library, Department of Information
55. Bagan Library, Department of Information
56. Bagan Railway Station
57. Factories and General Labour Laws Inspection Department
58. Prison Department
59. Bureau of Special Investigation
60. Criminal Investigation Department
61. Air Force
62. Custom Department
3.2.5 Organization of DANM Office in Bagan

The DANM Bagan Office has been reorganized and expanded to be able to take on the responsibilities required to manage Bagan Cultural Heritage Site. An overview of the organization is provided here.

The office is headed by the Director supported by four Deputy-Directors. The Deputy-Directors are responsible for (1) Planning and Conservation, (2) Administration and Finance, (3) Research and (4) Museum. Each of the Deputy-Directors has two to three Assistant Directors heading their respective sections.

**Deputy Director Planning and Conservation** is responsible for 3 Assistant Directors. 
**Assistant Director Structure and Design** looks after Structure Section and Designs and Drawing Section. **Assistant Director Planning, Inspection, Archive and Documentation** looks after Planning and Inspection Section and Archive and Documentation Section. 
**Assistant Director Chemical Conservation and Laboratory** looks after Chemical Conservation Section and Laboratory Section.

**Deputy Director Administration and Finance** is responsible for 2 Assistant Directors. 
**Assistant Director Administration and Finance** looks after Administration Section, Finance Section and Landscape and Maintenance Section. **Assistant Director Training and Security** looks after Zone Security Section.

**Deputy Director Research** is responsible for 3 Assistant Directors. 
**Assistant Director Antiquity and Epigraphy** looks after Antiquity Section and Epigraphy Section. **Assistant Director Exploration and Excavation** looks after Excavation Section. **Assistant Director Information, HIA and GIS** looks after GIS and HIA Section and Information and Public Relations Section.

**Deputy Director Museum** is responsible for 2 Assistant Directors. 
**Assistant Director Museum** looks after Conservation Section, Museum Management Section and Engineering Section. **Assistant Director Public Relation, Research and Display Section** looks after Public Relation Section and Antiquity Collection and Display Section.

The staffing plan provides for overall 44 officers and 472 staff totalling 516 positions. Of these we have the following numbers for each section shown as (officers/staff).

- **Structure Section** (7/41), **Designs and Drawing Section** (1/16), **Planning and Inspection Section** (1/11), **Archive and Documentation Section** (1/13), **Chemical Conservation Section** (1/13), **Laboratory Section** (1/20), **Administration Section** (1/31), **Finance Section** (1/11), **Landscape and Maintenance Section** (1/38), **Zone Security Section** (3/36), **Antiquity Section** (1/7), **Epigraphy Section** (1/7), **Excavation Section** (1/20), **GIS and HIA Section** (1/11), **Information and Public Relations Section** (1/7), **Conservation Section** (1/14), **Museum Management Section** (1/45), **Engineering Section** (1/6), **Public Relation Section** (1/10), **Antiquity Collection and Display Section** (2/15).

Details are provided in ANNEX A of this document.
The DANM Bagan Office has been reorganized and expanded to be able to take on the responsibilities required to manage Bagan Cultural Heritage Site. An overview of the organization is provided here.

The office is headed by the Director supported by four Deputy-Directors. The Deputy-Directors are responsible for

1. Planning and Conservation
2. Administration and Finance
3. Research
4. Museum

Each of the Deputy-Directors has two to three Assistant Directors heading their respective sections.

### Deputy Director Planning and Conservation
- 3 Assistant Directors
  - 1. Assistant Director: Structure and Design
  - 2. Assistant Director: Planning, Inspection, Archive and Documentation
  - 3. Assistant Director: Chemical Conservation and Laboratory

### Deputy Director Administration and Finance
- 2 Assistant Directors
  - 1. Assistant Director: Administration, Finance, and Landscape and Maintenance
  - 2. Assistant Director: Zone Security

### Deputy Director Research
- 3 Assistant Directors
  - 1. Assistant Director: Antiquity and Epigraphy
  - 2. Assistant Director: Excavation
  - 3. Assistant Director: Information, HIA and GIS

### Deputy Director Museum
- 2 Assistant Directors
  - 1. Assistant Director: Conservation, Museum Management, Engineering
  - 2. Assistant Director: Public Relation, Research and Display

The staffing plan provides for overall 44 officers and 472 staff totaling 516 positions. Of these, we have the following numbers for each section shown as (officers/staff):

<table>
<thead>
<tr>
<th>Section</th>
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<td>Antiquity Collection and Display Section</td>
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Details are provided in ANNEX A of this document.

An overview chart is provided on the following page.
3.2.6 International Involvement

International involvement in the management and safeguarding of Bagan Cultural Heritage Site is required particularly in respect to specific technical expertise and financial support. Specific requirements for international expertise could be necessary for overall planning, providing solutions to technical problems in respect to infrastructure and services as well as for conservation of cultural and natural heritage.

All activities will be carried out through the decisions of the Myanmar National Culture Central Committee and BAGANCOM. This means all planning and implementation of projects within Bagan Cultural Heritage Site and buffer zone must be agreed upon by either of these two management authorities. International involvement within Bagan Cultural Heritage Site would best be coordinated through UNESCO and in close collaboration with ICOMOS Myanmar.

International involvement must follow the same procedures and guidelines as defined in this management framework. International teams must always work closely with local experts. Implementation wherever possible will be carried out by local contractors, artisans and labourers. Any projects implemented by international organizations or foreign government agencies must be established as pilot projects that have a strong component of training provided to local staff, experts and artisans. International projects must be time-bound interventions that are completed within a specified period.

Following the 2016 earthquake, international cooperation at Bagan has accelerated, with a number of bilateral and multilateral projects being initiated. In response, MORAC has convened international coordinating meetings with all partners, including local partners, every six months following the earthquake. Given the trend for increased international cooperation at the site, MORAC has the intention to concretize these meetings into a long-term coordination platform. This platform would provide a basis for harmonizing cooperation activities to serve key priorities and minimize duplications, and promote and monitor a consistent technical standard in conservation and management activities.
3.3 Legal Framework

3.3.1 Introduction

The legislation responsible for the conservation of cultural heritage in Myanmar are:

- The Protection and Preservation of Cultural Heritage Regions Law 1998
- The Protection and Preservation of Ancient Monuments Law 2015
- The Protection and Preservation of Antique Objects Law 2015

The English translations of the Protection and Preservation of Cultural Heritage Regions Law 1998 and related rules of 2011 are attached in Annex C. Amendments and new laws are being discussed and these will be included in the process of implementation using the latest laws and amendments. Particularly important will be the amendment to the Protection and Preservation of Cultural Heritage Regions Law 1998.

The overall legal framework specific to Bagan Cultural Heritage Site consist of 4 sections and must be seen as an integrated single set of legal provisions that has been agreed upon and adopted by the Government of Myanmar. The legal framework consists of “Conservation Guidelines” for monuments and other important attributes, “Building Bylaws” for new construction, “Development Guidelines” for towns, villages and landscape, as well as “Rectification Guidelines” for identified inappropriate developments.

Additional guidance is provided by the annexed documents “Technical Conservation Recommendations for Bagan Monuments”, “Guidance Note in Approaches for Conservation of Mural Paintings and Architectural Decorative Works at Bagan” and “Guidelines for Post-Earthquake Temporary Structural Stabilisation of Monuments of Bagan”.

The four components of the legal framework for safeguarding heritage and controlling development will be linked to an inventory of monuments and other important attributes as well as to a zoning plan. The inventory of monuments and other important attributes will list all monuments, specific archaeological sites as well as historical buildings. Additionally an Archaeological Risk Map (ARM) will be developed over time. The zoning plan will be linked to the provisions of the 1998 Cultural Heritage Sites Law and take into account the property boundaries and buffer zone as defined in Section 1.3 of this document. In cases where the legal framework would be considered to provide insufficient guidance, a Heritage Impact Assessment (HIA) will be carried out. This shall be done based on the annexed document “Practical Steps for Implementing the Interim HIA System at Bagan”.

The legislation and legal provisions at union, regional and district levels will be followed as provided for in each relevant sector. This is especially important for relevant legislation and legal provisions related to regional planning, tourism and disaster risk management. Such laws include the Development Committees Law (1993), Farmland Law (2011), Environmental Conservation Law (2012), Forest Law (1992) and The Protection of Wildlife and Protected Areas Law (1994). Additionally construction works must follow the Myanmar National Building Code (2016).
3.3.2 Conservation Guidelines

Preamble

Bagan Cultural Heritage Site is located in the central dry zone of Myanmar. The heritage site spans across the Ayeyawady River from Nyaung U Township in Mandalay Region to encompass the relic stupa of Tantkyi-taung in Magway Region. The heritage site consists of over 3000 monuments spread across an agricultural landscape. Most of these monuments originate from the Bagan Period, which reached its apogee as ancient capital city of Myanmar during the eleventh and thirteenth centuries CE. There are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the eighteenth and nineteenth centuries. Exceptional architectural and artistic achievements are manifested in the exquisite ensembles of monuments with their intricate ornamentation and outstanding mural paintings. The site and buffer zone incorporates two towns and 41 villages where elaborate living cultural heritage continuing from ancient times along with archaeological vestiges of ancient palaces, water management systems and fortifications. Till today many of these Buddhist monuments are revered. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production. Bagan is a major tourist destination for both local as well as international visitors, with great importance for pilgrims.

The basic principle of the conservation guidelines is:

• to preserve all those elements and attributes that contribute to the value of the monuments / historic building for which the monument has been listed and classified in the inventory and
• to ascertain that all other elements and attributes are compatible and appropriate to the building / structure and its context

The conservation of monuments and historic buildings must be carried out as per the value, condition and character of the specific monument. It is therefore not possible to formulate bylaws for conservation of historic buildings. Conservation must be carried out based on the classified inventory, which is the only legal document that defines each monument individually. The classified inventory must contain specific information on the monuments, to allow it to be used as the basis for conservation. This means that the “elements and attributes that contribute to the value of the historic building or structure for which the monument has been listed and classified in the inventory” must be clearly stated.

Conservation Guidelines for Monuments and Historic Buildings shall correspond to and follow up on the presently employed Post-Earthquake Rehabilitation Procedures and Guidelines 2016 which is valid during the post-earthquake rehabilitation period till January 2022.
1. **Timeframe and validity**
   The Conservation Guidelines shall be effective from the date of adoption by the government.

2. **Scope**
   The Conservation Guidelines address primarily tangible immovable cultural heritage. However, they also include provisions concerning movable and intangible cultural heritage as well as natural settings where relevant. They also apply to both immovable standing monuments as well as subsurface remains, including foundations and other subsurface archaeology.

3. **Categories**
   The Conservation Guidelines shall address monuments under the categories of “Inactive Monuments” and “Active Monuments”. Inactive monuments shall be further distinguished by the ratio of original fabric to reconstructed fabric. An additional category of “Historic Buildings” has been included to encompass structures that are not considered monuments.

4. **Levels**
   The Conservation Guidelines shall address cultural heritage at three levels: at “Monument Level” as well as at “Site Level”, and at “Object Level”. It is mandatory where relevant to consider all three levels.

5. **Glossary**

   **Monuments** refer to individual built structures that have been listed or could potentially be listed by the DANM for protection. For Bagan these would include the ancient brick or stone monuments and would include wooden monasteries. Therefore **Monument Level** refers to activities carried out taking into account a single built structure.

   **Site** refers to the context of the monument which would include monument ensembles, surrounding sub-surface archaeology, historic elements such as plinths and walls as well as the natural and cultivated landscape. Therefore **Site Level** would refer to activities carried out taking into account the entire context or ensemble of monuments.

   **Cultural Object** refers to movable or displaced components that are linked to a specific site or monument and have a defined location. Such objects can be important parts of the monuments or lone standing artefacts within a site. **Cultural Object Level** refers to the activities carried out related to movable or displaced objects.

   **Inactive Monuments** are those monuments of historic significance constructed usually for religious purposes before 1948, consisting to a large part of the original brick, stone or wooden structures not linked to a particular religious community and are to be conserved. Under special circumstances and the restoration of a monument of high cultural significance, might be allowed if sufficient evidence of its pre-disaster state is available and upon agreement of the Technical Committee and authorization by the DANM.
**Active Monuments** are those monuments of historic significance constructed before 1948, consisting to a large part of the original structure that are still being used for various purposes, often for religious activities, and are cared for by a specific community group or registered organization and are to be rehabilitated. Any necessary restoration works shall be executed ensuring original (pre-earthquake) traditional design, materials and construction techniques and any deviations thereof shall be executed with necessary justification being agreed upon by the Technical Expert Team and passed by the DANM.

**Historic fabric** refers to the parts of the monuments belonging to the structure initially constructed, or could be parts that would have been altered during its history but would however be of traditional materials, design and construction technique.

**Rebuilt fabric** refers to those structures or components that have been constructed often using modern materials mainly after the 1975 earthquake.

**Historic Buildings** are those buildings of historic significance constructed usually for secular and residential purposes within town and village areas within the first half of the twentieth century, consisting to a large part of the historic structure and are to be restored keeping as much of the historic fabric as possible and allowing non-intrusive reversible interventions to allow for appropriate use of the building.

**Conservation** refers all the processes of looking after a place, monument or object so as to retain its cultural significance. This could include maintaining the historic materials and structure which might require interventions that should however be removable and minimally-intrusive.

**Restoration** refers to returning the existing fabric of a site, monument or cultural object to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

**Reconstruction** refers to returning the existing fabric of a site, monument or cultural object to a known earlier state and is distinguished from restoration by the introduction of new material.

**Rehabilitation** refers to the act or process of returning a site, monument or cultural object to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions or features of the property which are of cultural significance. Rehabilitation might require additional provisions for activities and rituals as well as ensuring the overall integrity of the monument as per religious sentiments, which should however be achieved through the most appropriate interventions to be determined by the DANM.

**Adaptive reuse** refers to using an historic building for continued or a new purpose or function while ensuring a maximum of the old structure is retained with only slight removable adjustments. The decision for adaptive reuse must be consensus driven. **Consolidation** refers to a treatment used to strengthen deteriorated materials to ensure improved strength and stiffness at member or component level.
Stabilization is the temporary or permanent means of preventing further damage or collapse of the fabric.

Vulnerability refers to the characteristics and circumstances of a site, monument or cultural object that make it susceptible to the damaging effects of a hazard.

Structural Integrity or Stability refers to the ability of an item to hold together under a load, including its own weight, resisting breakage or bending.

Removable refer to treatments and materials that can be removed without damaging the historic material of the object.

Minimally-intrusive refers to interventions that do not require the historic structure and materials to be damaged or altered in any significant manner.

Rescue Archaeology is the rapid archaeological activity carried out on sites where the new construction has been proposed however the necessity of the archaeological investigation in that site has also been felt.

Watching Brief is when an archaeologist monitors the excavation of foundation and service trenches, landscaping and other intrusive works in cases when the presence of subsurface heritage could not be established in advance of development. If needed, the watching archaeologist will signal to interested parties when an archaeological find has been made in order for a rescue excavation to be commenced.

Natural Materials are the materials available in their natural state and whose physical and chemical characteristic has not been changed by industrial processing. They are bio degradable.

1. General provisions

6. Overarching principles
   I. To carry out conservation in a coordinated manner between stakeholders and authorities;
   II. To consider heritage at site, monument and object levels;
   III. To differentiate monuments between inactive and active;
   IV. To prioritize conservation of historic fabric of inactive monuments;
   V. To prioritize sentiments and requirements for active monuments;
   VI. To consider restoration of historic buildings which are not listed as monuments in inventories;
   VII. To follow mandatory procedures of preparation, design and implementation;
   VIII. To involve community;
   IX. To ensure requirements for pilgrimage while safeguarding heritage;
   X. To respect and carry out traditional procedures and rituals;
   XI. To utilize specialized artisans and conservators;
   XII. To give recognition to traditional crafts-persons
7. Authority and responsibility
The responsibility for all actions implemented within the Bagan Cultural Heritage Property rests with the DANM as defined in the Protection and Preservation of Cultural Heritage Regions Law of 1998. The DANM, with permission from the Ministry of Religious Affair and Culture, may delegate tasks to other national authorities as well as international and national specialized organizations and persons; however work shall only be carried out following the procedures and under supervision of the DANM.

8. Institutional Coordination
   a) **Myanmar National Culture Central Committee** has been established to ensure that coordination between the relevant ministries and line agencies of the Union Government and the respective regional governments of Mandalay and Magway and their respective districts.
   b) **BAGANCOM** has been established to ensure coordination between activities carried out by all authorities, experts and stakeholders.

9. Coordination mechanism
All activities being carried out within Bagan Cultural Heritage Site and buffer zone shall be coordinated through either the Myanmar National Culture Central Committee or BAGANCOM. Actions shall be carried out based on the decisions taken by these two committees and in line with the legal provision provided in this document.

10. Stakeholder consultation
The major stakeholders of the heritage site of Bagan shall be determined to ensure that they are included in the discussions. These would particularly include representatives of the local villagers, the religious communities as well as interest groups linked to traditional trades and crafts.

11. Manual for Rehabilitation of Monuments and Historic Buildings
For effective implementation and clarification of technical issues in the provisions of this guideline, a ‘Manual for the Conservation of Monuments and Historic Buildings’ shall be prepared.

12. Strategy, schedule and prioritization plan
Conservation work shall be carried out based on an overall strategy with priority listing of monuments and sites along with a tentative implementation schedule. The prioritization of monument shall be done based on the immediate risks, urgency for intervention, potential loss of significance, level of damage, significance, religious sentiments, liturgical requirements, as well as availability of resources for the particular monument.

13. Mandatory standard procedure
The stages and steps defined in this document shall be considered mandatory standard procedures for all government and non-government agencies and religious organizations dealing with conservation of cultural heritage in Bagan. These procedures shall also be the mandatory standard for agreements signed with international agencies and organizations.
14. Resource management and audit
All resources including funding and contributions in kind, labour or expertise for classified heritage shall be declared and registered by the DANM. The DANM shall audit the resources employed for each site, monument and object and make it publicly accessible.

15. Response based on damage assessment and documentation
The response and interventions shall be based on detailed condition assessments which ensure the highest possible level of research and detailed documentation taking into account transformation of the monument.

16. Vulnerability reduction of monuments
All interventions shall consider the reduction of vulnerability of monuments. Vulnerability assessments and appropriate interventions to reduce vulnerability shall also be carried out over time on non-damaged monuments.

17. Clarification of ownership
The ownership of sites, monuments and cultural objects shall be clarified in respect to legal, but also historical and cultural ownership. This shall allow for considerations of all owners and stakeholders in the implementation process.

18. Ensuring monitoring and maintenance
Regular monitoring and periodic maintenance shall be assigned to specific stakeholders, owner or site manager.

19. Hazards and multi-hazards considerations
Every site, monument and cultural object shall be provided maximum protection from all possible hazards such as earthquakes, but also flooding, landslides, fires, lightening and possibly hazards based on visitors and other functional requirements. This will be connected to a larger national level disaster risk mitigation policy and a site disaster risk mitigation and management plan.

20. Provisions for carrying out Heritage Impact Assessment (HIA)
Heritage Impact Assessments shall be carried out before initiating any conservation or development activities that may directly or indirectly affect the heritage value of any heritage site, monument or cultural object, including suspected subsurface remains.

21. Living heritage
(a) Sites, monuments and cultural objects can be closely connected to existing religious and other traditional beliefs and practices. In such cases living heritage contributes to the significance of the monument, while the monument allows for the performance of or is an expression of the living heritage.
(b) In such cases, conservation shall be carried out taking into due consideration the need to ensure the continuity of such traditional beliefs and practices.

22. Tourism and pilgrimage
(a) Tourism and pilgrimage shall be promoted to support the livelihood of the community. Visitation must be managed to ensuring safety for heritage and visitors, as well as respect for traditional beliefs and practices.
(b) Tourism and pilgrimage promotion shall however not lead to infrastructure
development and activities that have an impact on heritage. Any such activity shall
require a Heritage Impact Assessment (HIA) and archaeological investigations. This
should be part of a Sustainable Tourism Plan for Bagan Heritage Site.

2. Mandatory procedures

23. Organizational Chart for Mandatory Procedures

24. Prioritization of monuments for conservation
   a) The implementation procedure for conservation of monuments shall be done ensuring
      that those easily implemented and quickly completed are carried out first to allow for
time to carry out research and prepare design interventions for more complex
      monuments.
   b) Consideration shall be given to prioritize active monuments to ensure their safety and
      provide for the requirements of visitors. This will be followed by inactive monuments
      that are visited by tourists; keeping in mind that tourist will be invited to observe and
      participate where possible in an appropriate manner in the conservation procedures,
      however always ensuring safety.

25. Stage One - Preparation
   The first stage of conservation, rehabilitation and rectification of heritage at site,
   monument and object levels shall ensure necessary preparations and be carried out
   following the steps provided below.
   a) Documentation
      i. Detail documentation of the site, monument or object shall be prepared. Additionally
         documentation shall include information in respect to earlier interventions. Documentation shall also include information on the monument, its
         significance and its function(s) of over time. Minimum expected documentation
         would be (1) Architectural drawings; (2) Distress maps with measurements of
distress (e.g. cracks, out-of-plumb, deflections) over time (basic structural health
monitoring data); and (3) Photo documentation.
      ii. To plan out any interventions, detailed documentation and assessment of the
         damages caused by the earthquake shall be prepared. Previous documentation
         will need to be collected in the form of for example drawings, sketches,
         photographs or descriptive texts.
iii. The basic documentation requirements and the procedures for condition assessment of historic buildings and monuments shall be prepared keeping in mind compatibility to the data management system.

b) Assessment
Assessment of significance, earthquake damage as well as structural, material and functional issues of the site, monument or object shall be carried out. In addition to risk and damage assessment, a thorough condition assessment is required, including documenting condition, damage, risks and site by site priorities for intervention. Complete documentation of a site shall include, but may not be limited to: physical dimensions (of the site and the structures and objects it contains), its geo location coordinates (maps, drawings), photos before; photos after (or at various points in history); damage and risk assessment forms, condition assessment.

c) Research
i. Research shall be carried out wherever the existing documentation and general assessments are not considered to be sufficient. Research can included subsurface archaeology, structural analysis, material testing, geological investigations, seismological data, identification and conservation of salvaged artefacts and building components as well as in-situ conservation and stabilization of important works of art such as mural paintings and decorative stucco.

ii. Appropriate research, shall be carried out to improve the knowledge on the historic structures which will contribute to the significance as well as serve as the basis for planning out interventions.

iii. Many of the structures that are badly damaged will require major interventions that in many cases will be intrusive. This circumstance can be seen as an opportunity to carry out appropriate research, including rescue archaeology, on the surrounding site, the foundations and the various components of the structure. The sensibilities and beliefs of any related community shall be taken into account.

iv. Research shall be carried out on the base of multidisciplinary approach and to included structural aspects, testing of existing materials and new techniques and materials as well as the interaction between traditional and modern materials.

26. Stage Two - Design
The second stage of conservation of heritage shall ensure necessary design procedures and be carried out following the steps provided below.

a) Defining approach
The approach shall be based on the outcome of Stage One and the provisions in the guidelines for sites, monuments and objects presented in sections 3, 4 and 5 respectively and the overarching principles provided under Article 6.

b) Designing intervention
The interventions shall be planned based on the assessment and research carried out in stage one and shall be in line with the guidelines for sites, monuments and objects presented in sections 3, 4 and 5 respectively.

c) Planning implementation
Implementation shall be planned taking into account a realistic approach to implementing the conservation of the monument or historic buildings in respect to schedule and finances as well as ensuring quality of workmanship. This would include
material management, quality specifications as well as considering required skills and craftsmanship.

27. Stage Three - Implementation

The third stage of conservation of heritage shall ensure appropriate implementation, monitoring and quality control.

a) Implementation
   i. Only specialized artisans and conservators shall be allowed to work on the ornamental parts of the monument. They would need to have prior experience working on historic buildings and be identified by a roster that will be maintained by the DANM. This must go hand in hand with on-site training.
   ii. Communities who care for and are involved in functions linked to the monuments can be involved in the conservation process by contributing labour, materials or funds and monitoring the work.
   iii. The procedure for identifying contractors to carry out work on the monuments shall ensure the highest level of experience and expertise. Only pre-qualified local contractors with experience in working on historic structures and with a good track record shall be considered.
   iv. International involvement in the implementation process can be to provide financial, technical and managerial support as well as training.
   v. Documentation must be carried out of the entire implementation phase.

b) Monitoring
   i. All work shall be closely monitored on a daily basis by a responsible officer of the DANM. Periodic monitoring shall be carried out by a team which consists of DANM, expert technicians and patrons from Bagan. Monitoring shall ensure that work is being carried out as per the agreed interventions defined in stage 2 and as per the specified quality.
   ii. All work that is carried out shall be supervised to ensure compliance to the guidelines, and adherence to specifications as well as quality.
   iii. Quality control and quality assurance protocol with the standards and parameters for supervision of the ongoing work shall be established.

c) Project Audit
   At the end of every project a project audit shall be carried out as a basis for completion certificate. The audit would include design, quality and costing details and the guarantee that these have been followed on site.

28. Traditional procedures and rituals

a) Traditionally specific procedures and rituals shall be carried out considering that these procedures and rituals are part of the living heritage significance ensuring cultural continuity of the monument.

b) It shall be ensured that traditional procedures and rituals are respected and performed while carrying out any work.

29. Material availability and specification

a) The availability of materials and their specifications shall be considered in the design of conservation works.

b) The procurement of appropriate necessary materials shall be facilitated by the government.
c) The replacement with alternate materials where strongly justified shall follow strict rules in respect to compatibility, proven performance, demonstrable beneficial effect, no negative impacts, removability and possible future corrective measures.

30. Crafts-persons availability and training
   a) The master crafts-persons with the required traditional crafts shall be given high recognition and high priority will be given to the training of new craftsperson.
   b) It shall be ensured that work is carried out by crafts-persons with an acceptable level of expertise and experience or under the guidance of an experienced master.
   c) As many of the conservation treatments will require intervention by trained masons and crafts-persons, they should be given training to document their work a format prescribed by DANM.

31. Maintenance system
   a) All heritage sites and monuments shall be provided with a framework for maintenance and responsibilities shall be clarified among associated communities, other stakeholders and authorities. Where possible the resources for maintenance shall be ensured.
   b) The means and procedures for maintenance of, as well as the responsible bodies shall be determined.
   c) Provisions for periodic structural health monitoring for structural performance shall be established.

32. Capacity building and awareness
   a) Capacity building for undertaking recovery and conservation of cultural heritage shall become an integral part of the rehabilitation phase.
   b) Skills and knowledge shall be imparted to various target audiences including community volunteers, site staff and decision makers throughout the rehabilitation period to ensure their regular and appropriate involvement.
   c) During the rehabilitation process regular activities and interactions shall be carried out to inform and create awareness within the community as well as to a wider audience within the country but also at international level.

3. Guidelines for Monuments

33. Defining heritage at monument level
   As per the Conservation Guidelines for Monuments and Historic Buildings heritage at monument level shall apply to individual built structures that have been listed or could potentially be listed by the DANM for protection. For Bagan these would include the ancient brick or stone monuments as well as wooden monasteries. Monuments shall be categorized as inactive monuments and active monuments. Inactive monuments shall be distinguished by the ratio of historic fabric to rebuilt fabric. An additional category of historic buildings shall be included to encompass buildings of historic significance retaining largely historic fabric constructed usually for secular and residential purposes within town and village areas within the first half of the twentieth century.
34. Assessment and prioritization of Monuments

(a) Monuments shall be prioritized for conservation, based on the immediate risks, urgency for intervention, potential loss of significance, level of damage, significance, religious sentiments, liturgical requirements, as well as availability of resources for the particular monument.

(b) Prioritization shall be based on implementation strategy ensuring an annual plan beginning with monuments requiring less preparation and research allowing more time for preparation and research for the complex monuments.

(c) Monuments shall be categorized as inactive monuments, active monuments or historic buildings which shall determine the approach for post-disaster interventions. Inactive monuments shall be given further distinction in respect to the ratio of historic fabric to reconstructed fabric.

(d) Inactive and active monuments shall be assessed as per their vulnerability and shall be categorized under the 3 levels of (1) critically vulnerable (2) vulnerable (3) minimally vulnerable.

35. Conservation of inactive monuments – historic fabric

(a) Inactive monuments with critical structural damage shall be stabilized using the most appropriate methods and technology to ensure minimum intrusiveness, removability, renewability and with least visual impact. When in doubt, interventions should be of temporary nature and adopting an observational approach.

(b) Inactive monuments with damage that do not have structural implications shall be consolidated using traditional methods and materials. Modern technology and materials will only be allowed with sufficient justification along with approval from the DANM.

(c) For inactive monuments minor damage shall be consolidated using materials and techniques appropriate to the traditional structure.

(d) The sealing of cracks shall be carried out with appropriate and compatible materials to ensure that there is no adverse impact caused by the material, blends in with the existing structure and ensures that water penetration into the structures is hindered.

(e) Previous stabilizing interventions shall be assessed for their performance. These could be internal metal frames, external metal supports or ties, brick piers or concrete tie beams. Depending on the condition and effectiveness of the stabilizing interventions, they might need to be removed, retained, replaced, repaired or new stabilizing methods introduced.

(f) The ornamentation of the monuments such as mural paintings, decorative stucco work and glazed stone and terracotta shall be conserved and protected. Any damaged or dislodged elements shall be dealt with as per the provisions for objects as stated in Section 5.

(g) Any intrusive subsurface repairs or assessments should be preceded by a watching brief and, if necessary, rescue excavations by an archaeologist.


(a) Rebuilt structures or parts of structures not based on historic evidence or detailed documentation shall be considered inappropriate for conservation. Long-term plans will need to be developed for such structures.

(b) Past additions in modern materials, are to be assessed on whether they might be a threat to the monument. If assessments and comparisons to other similar
circumstances show that these additions could pose a threat to the monument, then these components shall be removed as long as the removal does not cause excessive damage to the structure. If necessary, traditional materials or techniques shall be used in any replacement.

(c) Rebuilt structures or parts of structures with major damage shall be removed carefully ensuring that any components of remaining historic fabric including foundations, plinths and sections of walls as well as ornamentation such as mural paintings and decorative stucco work are retained and conserved. For inactive monuments these removed elements shall not be rebuilt.

(d) Rebuilt structures with minor damage shall be allowed to remain with the understanding that these are not ancient historic monuments. Repair of this minor damage should not be at the expense of the conservation of genuine heritage.

(e) Any intrusive subsurface repairs or assessments should be preceded by a watching brief and, if necessary, rescue excavations by an archaeologist.

37. Rehabilitation of active monuments

(a) Active monuments shall be conserved to the maximum extent possible while seeking to accommodate changes necessary for their use as active monuments, while having no negative impact on significance.

(b) For active monuments with critical structural damage, the monuments shall undergo extensive and detailed assessment to find the most appropriate manner for vulnerability reduction and the monument to be stabilized for rehabilitation. The monument shall retain its historic structural system, which shall only be improved if there is valid justification. Should any foreign materials be introduced, these shall not be intrusive and shall be reversible considering its performance over time.

(c) For active monuments with major damage which however do not have structural implications restoration shall be carried out retaining as much of the historic as possible while stabilizing with appropriate methods and materials while ensuring vulnerability reduction. The use of “foreign” materials shall be provided special consideration when certain interventions are found to be critical and their application is removable.

(d) For active monuments with minor damage the affected part shall be repaired using materials of historic quality, chemical and physical composition and workmanship.

(e) Restoration should be based on complete documentation and to no extent on conjecture. Only if sufficient documentation is available and later alterations are considered inconsistent to the structures integrity shall an active monument be restored or reconstructed back to an earlier style.

(f) The monument shall be restored by reusing as much materials as possible in their previous location and function. When certain parts or elements of the monument need to be replaced, these will be done by using materials that are as similar to the historic as possible in quality, chemical and physical composition and workmanship.

(g) The ornamentation of the monuments such as mural paintings, decorative stucco work and glazed stone and terracotta shall be conserved and protected. Any damaged or dislodged elements shall be deal with as per the provisions for objects as stated in Section 5.

(h) Any intrusive subsurface repairs or assessments should be preceded by a watching brief and, if necessary, rescue excavations by an archaeologist.
(i) The foundations shall be retained as far as possible and shall only be strengthened if there is valid justification and only following rescue excavations by an archaeologist.

(j) Specifications and regulations shall be provided on the introduction of modern installations and services in the various types of ancient monuments depending on their vulnerability as well as their functions. Additionally there will be requirements for installations and equipment dealing with security against theft as well as fire hazards. Such activities will necessitate a watching brief and, if necessary rescue excavations in the case of intrusive subsurface service installation.

(k) Safety measures shall be introduced for visitors in active monuments, evacuation routes identify and other safety and security measures established in consultation with all stakeholders as well site managers.

38. Conservation / rehabilitation of historic buildings

(a) Historic buildings shall be conserved taking into account their structural system, main architectural components as well as decorative elements. Any required restoration works shall be carried out ensuring that interventions ensure that materials, techniques and craftsmanship are as per the historic records.

(b) Any alterations that might be required must ensure that the building does not lose its historic identity and the alterations are sympathetic, non-intrusive, reversible and visually compatible.

(c) For the conservation of historic buildings, either the historic function shall be maintained or adaptive reuse shall be assigned to ensure the regular upkeep and the continued value of the structure.

(d) In the case of structures that already have communities involved in using and maintain them, such as residences and monastic structures, these activities shall be supported.

(e) Specifications and regulations shall be provided on the introduction of modern installations and services in the various types of historic buildings depending on their vulnerability as well as their functions.

(f) The historic buildings that are still being used or are given new functions might require modern installations and services such as electrical and plumbing. Additionally there may be requirements for installations and equipment dealing with security against theft as well as fire hazards.

(g) Any intrusive subsurface repairs or assessments should be preceded by a watching brief and, if necessary, rescue excavations by an archaeologist.

39. Maintenance

(a) The monuments should survive in good condition over time which will require consideration of renewal and maintenance. All interventions shall take into account how they contribute to the performance of the structure over time.

(b) All interventions and restoration methods will ensure that procedures are put into place for regular maintenance and repair of decayed fabric. Maintenance and repair shall take into account traditional construction approaches and materials.
4. Guidelines for Sites

40. Defining heritage at site level
As per the Conservation Guidelines for Monuments and Historic Buildings heritage at site level refers to the context of the monument which would include monument ensembles, surrounding sub-surface archaeology, historic elements such as plinths and walls as well as the natural and cultivated landscape. If the site is otherwise not defined, as per the Protection and Preservation of Cultural Heritage Regions Law of 1998 an area within a distance of at least 120 feet (36.6 metres) from monuments must be kept free of any construction and shall be protected. The rehabilitation of heritage at site level shall follow the procedures as defined below.

41. Assessing the damage to the site
(a) Assessments of the sites shall include the state of conservation of monuments and cultural objects within the defined boundary and can include monument ensembles, surrounding sub-surface archaeology, historic elements such as plinths and walls as well as the natural and cultivated landscape.
(b) Archaeological Sites are composed of excavated and potential areas. The assessment at site level shall consider the state of conservation of the overall integrity of the defined area as well as the surrounding context.
(c) Assessments of monument within urban or settlements shall especially take into account the impact of any activities within the distance of 120 feet (36.6 metres) from monuments.

42. Site level interventions
(a) Sites shall require a Conservation Plans based on the assessments taking into account physical and socio-cultural aspects.
(b) All specific interventions defined within the Conservation Plans of the site shall be implemented.
(c) Archaeological Sites shall be protected from encroachment and required interventions shall be planned for immediate and long-term implementation in accordance with archaeological risk maps.
(d) Intrusive developmental interventions will be preceded by a watching brief and, if necessary, rescue archaeology.

5. Guidelines for Objects

43. Defining the heritage at object level
The heritage at object level shall include all cultural objects that are linked to specific sites or monuments with a defined location. Such objects are important parts of monuments “architectural elements” or lone standing artefacts “movable objects within a site”.

44. Assessing the damage to the object
Objects that have been damaged or displaced shall be assessed for their place of origin, physical state, function and whether they can be reinstated with or without additional remedies. Documentation, vulnerability and risk assessment, and appropriate interventions for the recovery and conservation of objects shall be carried out depending on the nature of objects.
45. **Object level interventions**
   a) Objects that have lost their critical functional role whether physical or intangible shall only be replaced if no other possibilities are found. These objects shall continue to be protected and exhibited in an appropriate place with clear indications to its place of origin.
   b) Objects that have been displaced shall be returned to its historic position. If this is not possible due justifiable reasons such as the lack of protection or loss of function, the displaced artefact may be exhibited in a different secure location however keeping clear reference to its origin.
   c) Bagan Archaeological Museum shall be the repository for all cultural objects from Bagan

46. **Rehabilitation of Objects**
   All displaced cultural objects shall be reinstalled in their historic location as far as this is possible. Displaced objects that cannot be reinstalled in their historic location or nearby shall be exhibited in a relevant museum as far as this is possible. Displaced objects that cannot be reinstalled or are not of sufficient quality for display shall be stored as historic evidence.

47. **Exhibition of Objects**
   An exhibition shall be established in the National Museum in Bagan, using fragments and photos to narrate the story of the emergency response and recovery of damaged heritage and how people of Bagan came forward to help in this task. This shall include fragments, decorations and friezes from previous earthquakes that have not been reintegrated. They shall be used to narrate the story of living heritage and continuing arts and craft traditions. This exhibition shall be used to raise funds and create awareness of the need to invest in disaster risk management for cultural heritage.

6. **Miscellaneous**

48. **Implementation**
   All works related to the conservation of heritage carried out either directly by the DANM or by other agencies with approval and in coordination and collaboration with the DANM shall be carried out as per the provisions of this guideline.

49. **Review and amendment**
   This guideline might be reviewed and amended in due time on the basis of experience gained in the course of conservation / rehabilitation of heritage, however without compromising its original spirit.

50. **Issues not covered**
   Issues that are not covered or addressed within this guideline shall be referred to the DANM.

51. **Conflict resolution**
   The provisions in this guideline shall overrule other standards or methodologies where they are in conflict with it. In such cases the advice of the DANM shall be final.
Overview of Conservation Guidelines

Three scales or levels

The Conservation Guidelines approaches monuments at three scales or levels which are at site level providing the text, at monument level dealing with the structure and at object level with are the individual parts which might or might not be displaced.

Example of Bulei Thi (#394)

Four monument categories

Inactive Monuments with original fabric
To maintain monuments in their existing form and state while conserving original

Example: Thabeik-hmauk #744 and Soemingyi Stupa #1145

Inactive Monuments with new fabric
To phase-wise rehabilitate monuments to original materials and possibly original form

Example: Temple #2067 and Stupa #1300

Active Monuments
To maintain and where necessary restore monuments as required by the responsible community within historic considerations

Example: Loka-nanda #1023 and Buphaya Stupa #1657

Historic Buildings
To restore and reuse historic buildings to ensure their continuity in respect to structure, architectural and decorative elements

Example: Building in Nyaung U and Monastery near Taung-bi
3.3.3 Building Bylaws

1. PREAMBLE

These Building Bylaws shall be valid for the cultural heritage area defined as the Bagan Cultural Heritage Site and buffer zone. These Building Bylaws are a part of the Legal Framework for Bagan consisting of four sections, also including Conservation Guidelines, Development Guidelines and Rectification Guidelines and shall be implemented within the this overall framework. The Bylaws will be read together with the Zoning Map.

Within the heritage area and buffer zone there are town and village zones where restricted building construction shall be allowed. Provisions for temporary structures have been made for agreeable activities within the cultural heritage property and buffer zone. Special provisions have also been made for building in appropriate traditional building styles.

The Building Bylaws also provides basic procedures for implementation. These procedures shall be further defined in detail and established as standard activity for the related authorities. To ensure that all related authorities and community representatives can participate, coordination shall be ensured through BAGANCOM.

1.1 Scope
The Building Bylaws shall be enforced for construction of any kind of building, shelter and shed, including construction related to plot development in the form of infrastructure and service.

1.2 Validity
The Building Bylaws shall come into effect on adoption by the Government of Myanmar and shall be valid until the bylaws are amended or superseded by new legal provisions.

1.3 Glossary

**Cultural Heritage Property** refers to the area within the boundary demarcating the World Heritage area.

**Buffer Zone** refers to the boundary demarcating the area around the Cultural Heritage Property providing added protection.

**Landscape Zones** refers to all areas outside the towns and villages as demarcated on the Zoning Map.

**Settlement Zones** refers to towns and villages as demarcated on the Zoning Map.

**Temporary Structures** refers to a structure that is built to use for a maximum of one year using light materials that can be easily removed.

**Traditional Style Building** refers to a building style that has traditionally been built by the local communities and as defined in the Buildings Bylaws.

**Village Style Building** refers to a building style that is considered appropriate for construction in village areas as defined by respective provisions of the Building Bylaws.
Town Style Building refers to a building style that is considered appropriate for construction in town areas as defined by respective provisions of the Building Bylaws.

2. GENERAL PROVISIONS

2.1 Link to Zoning Plan
The Building Bylaws shall be enforced in conjunction with the Zoning Plan for Bagan Cultural Heritage Site.

2.2 Temporary structures in Landscape Areas
Special provisions shall be made for Temporary Structures as defined in Section 3 to be constructed to facilitate carrying out permitted activities.

2.3 Building in Settlement Areas
Building shall be allowed within Settlement Areas strictly following the bylaws for Village Areas as defined in Section 4 and for Town Areas as defined in Section 5.

2.4 Special Provisions for Traditional Style Buildings
The construction of Traditional Style buildings as defined in Section 6 shall be allowed in all settlement areas as well as in the Buffer Zone.

2.5 Special Requirements for Buildings with non-residential function
All buildings with non-residential functions shall require permission from the District Administration Office as defined under Section 7 and necessary license according to the proposed functions; traditional activities shall be promoted while ensuring heritage is safeguarded;

2.6 Special Provisions for protecting Historic Buildings
The provisions for Historic Buildings shall refer to the Conservation Procedures and Guidelines and shall follow the regulations below:

i. An inventory of Historic Buildings shall be prepared;

ii. Historic Buildings shall not be demolished without permission and justification;

iii. Historic Buildings shall be regularly maintained and restored when necessary;

iv. Historic Buildings can be adapted for new function that are compatible and as per zoning regulations;

v. Additions and extensions to Historic Buildings shall only be allowed if they don’t conflict with relevant zoning regulations, are compatible in design to the original building and can if required be removed.

2.7 Special Provisions for protecting Ancient Monuments
The provisions for construction near Ancient Monument shall refer to the Conservation Procedures and Guidelines and shall follow the regulations below:

i. There shall be an inherent Restricted Zones around all historic monuments;

ii. There shall be no construction or development including buildings, infrastructure or service lines within the Restricted Zone and any activities or temporary structures constructed within this zone shall be carried out BAGANCOM as per provisions under Section 7 following the Conservation Guidelines.

iii. The Restricted Zone shall be comprised of an area not less than 120 feet from the outermost part of the ancient monument, plinth, walls or any component of the monument complex:
iv. Public access to Ancient Monuments shall be ensured other than when such Ancient Monuments are closed or cordoned off for security purposes.

v. No Ancient Monument shall be enclosed in any compound unless it is directly linked to supporting activities of living monuments.

2.8 Special Provisions for protecting Sub-surface Archaeology

The provisions for construction near Sub-surface Archaeology shall refer to the Conservation Procedures and Guidelines and shall follow the regulations below:

i. An Archaeological Risk Map (ARM) shall be prepared;

ii. Archaeological Sites shall be protected from encroachment and required interventions shall be planned for immediate and long-term implementation in accordance with archaeological risk maps;

iii. Intrusive developmental interventions shall be preceded by a watching brief and, if necessary, rescue archaeology. Watching Brief is when an archaeologist monitors excavation works and stops work if archaeology is found. Rescue Archaeology is rapid archaeological activity carried out on sites where the new construction has been proposed.

iv. Opportunity to carry out appropriate research must be taken, including rescue archaeology on the surrounding site.

2.9 Special Provisions for extensions of monasteries

Special provisions shall be given for extensions of monasteries however construction shall only be allowed in traditional style and materials, unless the monastery is within settlement areas where respective bylaws shall apply, while ensuring that monuments and subsurface archaeology are safeguarded.

2.10 Special Provisions for institutional buildings for health and education

Institutional buildings such as for health and education shall only be constructed within settlement areas and shall following the respective bylaws, while ensuring that monuments and subsurface archaeology are safeguarded, with provisions for minor adaptations as required for functional reasons based on adequate justification.

2.11 Special provisions for lacquer ware production

Permission shall be allowed for community members who produce lacquer ware to construct appropriate underground storage facilities that correspond to the scale of production as well as ensure that sub-surface archaeology is safeguarded.

2.12 Function of BAGANCOM

BAGANCOM shall be responsible for reviewing issues arising from conservation and development issues, awareness building, sharing concerns and conflict resolution as well as providing recommendations to the authorities.

2.13 Extended function of Municipalities within Cultural Heritage Site

The authority of Nyaung U Municipality and Pakokku Municipality shall be extended to all the villages within the Cultural Heritage Site particularly in respect to monitoring building construction and development work.

2.14 Registration of Contractors

Only contractors that are registered specifically with the District Authority to work within the Cultural Heritage Site shall be allowed to carry out construction work accordingly.

i. Registered contractors shall be given regular training and be made aware of the building bylaws and development guidelines.
ii. Registered contractors who carry out work against the provisions of the building bylaws and development guidelines, particularly threatening the heritage of the site shall lose their registration and not be allowed to work within the heritage area on top of the legal proceedings as per the law.

3. BUILDING BYLAWS FOR LANDSCAPE AREAS

3.1 Demarcation of Landscape Areas

The landscape areas are all areas within the World Heritage Boundary and Buffer Zone which are not designated as Town Areas and Village Areas as marked on the Zoning Map. This includes the landscape with monuments, archaeology, farming and public areas as well as areas designated as river and forest.

3.2 Regulations on Development Works within Landscape Areas of Property Zone

i. No walls or fencing shall be allowed other than permitted temporary structures for agricultural purposes;

ii. No roads, paths or other forms of infrastructure shall be constructed other than traditional earthen tracks for agricultural purposes and any such construction shall be carried out under direct instructions from the BAGANCOM District Administrative Committee and shall follow the Development Guidelines.

iii. Service lines including water supply, sewage disposal, electricity and communications shall not be constructed independently and any such construction shall be carried out under direct instructions from the District Administrative Committee BAGANCOM and shall follow the Development Guidelines.

3.3 Regulations on Development Works within Landscape Areas of Buffer Zone

i. No walls or fencing shall be allowed other than permitted temporary structures for agricultural purposes;

ii. Roads, paths or other forms of infrastructure shall only be constructed if heritage and especially sub-surface archaeology is not harmed and shall follow the Development Guidelines.

iii. Service lines including water supply, sewage disposal, electricity and communications shall only be constructed if heritage and especially sub-surface archaeology is not harmed and shall follow the Development Guidelines.

3.4 Permission for Temporary Structures

i. No permanent structures or buildings shall be allowed in the landscape area (i.e. in areas that are not settlement areas) however in the landscape areas of the buffer zone traditional buildings as defined in Section 6.

ii. Temporary Buildings as defined under Sections 3.5 and 3.6 shall be allowed within landscape areas with justification to facilitate carrying out permitted activities for a predetermined period not to exceed one year. It shall be possible to renew the permission of temporary structure if there are no indications that the temporary structure is being misused to carry out functions that are not permitted or is the cause for negatively impacting heritage or environment.

iii. These regulations shall be valid for all structures whether carried out by private, community, religious, social or government entities.
iv. The Building Permission shall be obtained following procedures defined in Section 7.

3.5 Functions for Temporary Structures
i. Permission can be given for temporary structures that can be used for functions linked to farming.
ii. Permission can be given for appropriate commercial activities in designated locations such as in front of temples and stupas, however restricted to reasonable numbers and in a planned manner. The layout and number of such temporary structures in front of any temple or stupa shall be determined by the BAGANCOM District Management Committee. Use of such land must be negotiated with the owner and appropriate compensation given.
iii. Permission can be given for appropriate structures for activities related to the cultural heritage of the local community.

3.6 Regulations for Temporary Structures
Temporary Structures shall fulfil the following regulations:

Function:
i. shall have the function as permitted under 3.3;

Mandatory conditions:
ii. shall be entirely removable;
iii. shall not be physically destructive to heritage;
iv. shall not have negative impact on the environment;

Overall design and aesthetics
v. shall be of simple rectangular plan with shed or gabled roof;
vi. shall not use designs as replicas from ancient monuments;
vii. shall not use designs from other cultures;
viii. shall not have any notice boards or advertisements, however limited signage of not more than 4 feet by 2 feet might be permitted as per provisions in Section 7.5 BAGANCOM

Dimensions:
ix. shall not exceed a minimum required space to carry out its function however with dimensions that are not more than 16 feet x 24 feet;
x. shall not exceed a maximum height of 12 feet at any location above ground;

Standard Design and materials:
xi. shall be built of light, traditional, locally available natural materials which excludes the use of any kind of masonry or concrete;

xii. shall have foundations if required consist of post holes or anchoring that does not exceed 12 inches depth while ensuring that sub-surface archaeology is safeguarded;
xiii. shall have a traditional sloping roof of light locally available natural material;
xiv. shall have where necessary external walls and partitions of traditional materials;
xv. shall have where necessary traditional doors and windows of light locally available natural material;

Services:
xvi. shall have electrical supply if required only if there are appropriate officially electrical supply lines close by and the main connection cables shall be laid in
a manner that is physically and visually least intrusive to heritage following procedures as defined in Section 7 BAGANCOM;

xvii. shall have water supply if required arranged with removable tanks placed on the ground within the temporary shelter;

xviii. shall have sewage disposal system if required using a septic tank system following procedures as defined in Section 7 and BAGANCOM ensuring that no damage is done to sub-surface archaeology;

xix. shall have a designated waste disposal system;

xx. shall ensure that any private communication or multimedia equipment and installations are kept visually inconspicuous, while commercial towers shall not be permitted.

4. BUILDING BYLAWS FOR VILLAGE AREAS

4.1 Demarcation of Village Areas

The Village Areas shall be clearly marked on the Zoning Map. The Village Areas within the property boundary are Myin-ka-ba, Taung-bi, Min-nan-thu, East Baw-saw, West Baw-saw and Thu-the-kan. A further 35 villages are located in the buffer zone.

4.2 Permission for Building Construction

i. Within the village areas temporary structures as defined in Section 3, Traditional Buildings as defined in Section 6 and Village Style Buildings as defined hereunder shall be allowed.

ii. These regulations shall be valid for all buildings whether carried out by private, community, religious, social or government entities.

iii. Building Permit shall be obtained following procedures defined in Section 7.

4.3 Regulations for Village Style Buildings

Village Style Buildings shall fulfill the following regulations:

Function:

i. shall have the function for residential purposes, related traditional activities including farming and crafts production, as well as with registered permits offices, shops, restaurants and visitor accommodations;

ii. Activities that are not considered to be traditional shall only be allowed if they are none polluting in respect to air, water, soil, noise and visual.

iii. Any related commercial activities shall be registered through the Building Permit process defined in Section 7.

Mandatory conditions:

iv. shall be single storey and integrate into the village setting;

v. shall not be physically destructive to heritage;

vi. shall not have negative impact on the environment;

Overall design and aesthetics

vii. shall be of simple rectangular plan with gabled or hipped roof;

viii. can consist of a core masonry building with light structure additions;

ix. shall not use designs as replicas from ancient monuments

x. shall not use designs from other cultures

xi. shall not have any notice boards or advertisements, however signage might be permitted as per provisions in Section 7.5 BAGANCOM

Plot:
xii. shall not exceed a coverage of 50% of the plot;
xiii. shall ensure a minimum setback of 5 feet from the boundary in all directions for the main building as well as extensions;

**Dimensions:**
xiv. the area of any single Village Style Building shall not exceed 600 sq. ft. with additional 600 sq. ft. extensions in light structure;
xv. shall not exceed a maximum height of 16 feet at any location above ground;

**Construction and materials:**
xvi. shall be built preferably of light materials but can include masonry or reinforced concrete columns and beams;
xvii. shall have foundations that do not exceed 3 feet depth while ensuring that no subsurface archaeology is damaged;
xviii. shall not have any basement floor;
xix. shall have a sloping roof of light material;
xx. shall have where necessary external walls and partitions of traditional materials or masonry plastered and painted in earthen huge or white;
xxi. shall have where necessary wooden doors and windows, while no rolling shutters shall be allowed;

**Services with house and plot:**
xxii. shall have electrical supply if electrical supply lines are close by and the main connection cables shall be laid in a manner that is physically and visually least intrusive to heritage and under direct instruction and supervision from the District Administration;
xxiii. shall have water supply if water supply lines are close by and the main connection pipes shall be laid in a manner that is physically and visually least intrusive to heritage and under direct instruction and supervision from the District Administration, or by means of having removable tanks placed on the ground within the compound;
xxiv. shall have sewage disposal using a septic tank system following procedures as defined in Section 7 and BAGANCOM, ensuring that no damaged is done to sub-surface archaeology;
xxv. shall have a designated waste disposal system;
xxvi. shall ensure that any private communication or multimedia connections, dishes or other such equipment and installations are kept visually inconspicuous, while commercial towers shall not be permitted.

5. **BUILDING BYLAWS FOR TOWN AREAS**

5.1 **Demarcation of Town Areas**

The Town Areas shall be clearly marked on the Zoning Map. The Town Areas include Nyaung U and Myo-thit (New Bagan).

5.2 **Special conditions for town areas within World Heritage property**

Town areas within the Property Zone shall be given full protection and development works shall be restricted. Already existing settlement areas shall follow the regulations as defined for villages. Unbuilt areas shall remain without construction and shall follow the regulations for Landscape Areas of Property Zone.
5.3 Special conditions for Shwe-dwin and Ashe-ya-naung

The villages of Shwe-dwin and Aseh-ya-naung, though included into the town extension area, shall however be considered villages and shall for better protection follow the regulations according to provisions for Village Areas.

5.4 Permission for Building Construction

i. Within the town areas temporary structures as defined in Section 3, Traditional Buildings as defined in Section 6, Village Style Buildings as defined in Section 4 and Town Style Buildings as defined hereunder shall be allowed.

ii. These regulations shall be valid for all buildings whether carried out by private, community, religious, social or government entities.

iii. Regulations for construction near ancient monuments shall be followed as defined in Section 2.5.

iv. Regulations for Historic Buildings, particularly in reference to Nyaung U shall be followed as defined in Section 2.6.

v. Building Permit shall be obtained following procedures defined in Section 7.

5.5 Regulations for Town Style Buildings

Town Style Buildings shall fulfil the following regulations:

Function:

i. shall have the function for residential purposes, related traditional activities including farming and crafts production, as well as with registered permits offices, shops, restaurants and visitor accommodations;

ii. activities that are not considered to be traditional shall only be allowed if they are none polluting in respect to air, water, soil, noise and visual;

iii. any related commercial activities shall be registered through the Building Permit process defined in Section 7;

Mandatory conditions:

iv. shall be maximum two storey with access to roof terrace covered only with a light structure;

v. shall not be physically destructive to heritage;

vi. shall not have negative impact on the environment;

Overall design and aesthetics

vii. Town Style Buildings shall have a simple designed to where possible merge with the existing character of the town;

viii. shall not use designs as replicas from ancient monuments

ix. shall not use designs from other cultures

x. shall not have any notice boards or advertisements, however signage might be permitted BAGANCOM as per provisions in Section 7.5

Plot:

xi. shall not exceed a coverage of 50% of the plot;

xii. shall ensure a setback of 5 feet from the boundary in all directions, however special consideration can be given for buildings along roads that already have interlinking facades leaving a 6” gap as provision against hammering between buildings during earthquake;

Dimensions:

xiii. the area of any single Town Style Building shall not exceed 2400 sq. ft.;

xiv. the town style building shall not exceed a maximum height of 30 feet at any location above ground, shall not be more than 3 floors and the top floor shall
be covered by a light gabled or hipped roof, flat concrete slabs shall only be allowed above the ground and first floor;

*Construction and materials:*

xv. shall be built preferably of light materials but can include masonry or reinforced concrete columns and beams;

xvi. shall have foundations that do not exceed 5 feet depth while ensuring that no subsurface archaeology is damaged;

xvii. shall not have any basement floor;

xviii. shall have a sloping roof of light material;

xix. shall have where necessary external walls and partitions of traditional materials or masonry plastered and painted in earthen hues or white;

xx. shall have where necessary wooden doors and windows, while no rolling shutters shall be allowed;

*Services with house and plot:*

xxi. shall have electrical supply if electrical supply lines are close by and the main connection cables shall be laid in a manner that is physically and visually least intrusive to heritage and under direct instruction and supervision from the District Administration;

xxii. shall have water supply if water supply lines are close by and the main connection pipes shall be laid in a manner that is physically and visually least intrusive to heritage and under direct instruction and supervision from the District Administration, or by means of having removable tanks placed on the ground within the compound;

xxiii. shall have sewage disposal if sewer lines are close by and the main connection pipes shall be laid in a manner that is physically and visually least intrusive to heritage or by means using a septic tank system BAGANCOM following procedures as defined in Section 7, ensuring that no damaged is done to sub-surface archaeology;

xxiv. shall have a designated waste disposal system;

xxv. shall ensure that any private communication or multimedia connections, dishes or other such equipment and installations are kept visually inconspicuous, while commercial towers shall not be permitted.

6. SPECIAL PROVISIONS FOR TRADITIONAL BUILDINGS

6.1 Demarcation of areas

Traditional Buildings shall be allowed in all settlement areas within the World Heritage boundary (MZ and AZ) as well as throughout the buffer zone, so far as it does not contradict other laws. The traditional building styles for the various sub-zones are given below.

6.2 Permission for Building Construction

i. These regulations shall be valid for all buildings whether carried out by private, community, religious, social or government entities.

ii. Building Permit shall be obtained following procedures defined in Section 7.

6.3 Typologies of acceptable Traditional Buildings

Traditional building typologies shall be registered and provided in the Annex to these guidelines. The typologies shall be provided with designated locations indicating
where they would be acceptable, i.e. in Nyaung U Town, in Myo-thit (New Bagan) Town, in Village Zones and Buffer Zone.

6.4 General provisions for Traditional Buildings

Traditional Buildings shall in all cases follow the provisions given below:

i. The total height of traditional buildings shall not be more than 25 feet;

ii. The total coverage of plot by traditional buildings shall not be more than 60%.

iii. In general traditional materials shall be exposed though if colours are used, these shall be natural earthen hues or white;

iv. shall not have any notice boards or advertisements, however signage might be permitted as per provisions in Section 7.5

7. BUILDING PERMIT PROCEDURE

7.1 Procedures for all categories of non-residential buildings

i. Request for permission submitted to District Administration;

ii. Checking for completeness, correctness, compliance with all legal provisions by District Administration;

iii. Notification to DANM and if required carry out site inspection to ensure safeguarding of heritage;

iv. Any contentious issues shall be taken to BAGANCOM for their recommendations;

v. Final approval shall be given by District Management Committee and permission given by District Administration Officer;

vi. Implementation begins with clearance and excavations closely monitored by the Municipality and if required by DANM;

vii. Implementation of foundation to be certified by Municipality;

viii. Implementation of main structure to be certified by Municipality;

ix. Completion certificate to be issued by District Administration based on recommendation of Municipality and DANM.

7.2 Permission procedures for service lines and infrastructure for all categories of non-residential buildings

i. Permission shall be required for electrical supply lines, water supply lines, sewage lines as well as any underground infrastructure such as reservoirs or septic tanks or soak pits.

ii. Request for permission submitted to District Administration;

iii. Checking for completeness, correctness, compliance with all legal provisions by District Administration;

iv. Notification to DANM and if required rapid assessment of impact on heritage and environment and related;

v. Any contentious issues shall be taken to BAGANCOM for their recommendations;

vi. Temporary time-bound building permit approval shall be given by District Management Committee and issued by District Administration Officer;

vii. Implementation begins with clearance and excavations closely monitored by Municipality and DANM as required;

viii. Completion certificate to be issued by District Administration based on recommendation of Municipality and DANM.
7.3 Procedures for all categories of residential buildings

i. Request for permission submitted to Municipality;

ii. Checking for completeness, correctness, compliance with all legal provisions by Municipality;

iii. Notification to DANM and if required carry out site inspection to ensure safeguarding of heritage;

iv. Any contentious issues shall be taken to BAGANCOM for their recommendations;

v. Final approval shall be given by Township Management Committee and permission given by Municipality;

vi. Implementation begins with clearance and excavations closely monitored by the Municipality and if required by DANM;

vii. Implementation of foundation to be certified by Municipality;

viii. Implementation of main structure to be certified by Municipality;

ix. Completion certificate to be issued by Municipality and if needed based on recommendation DANM.

7.4 Permission procedures for service lines and infrastructure for all categories of residential buildings

i. Permission shall be required for electrical supply lines, water supply lines, sewage lines as well as any underground infrastructure such as reservoirs or septic tanks or soak pits.

ii. Request for permission submitted to Municipality;

iii. Checking for completeness, correctness, compliance with all legal provisions by Municipality;

iv. Notification to DANM and if required rapid assessment of impact on heritage and environment and related;

v. Any contentious issues shall be taken to BAGANCOM for their recommendations;

vi. Temporary time-bound building permit approval shall be given by Township Management Committee and issued by Municipality;

vii. Implementation begins with clearance and excavations closely monitored by Municipality and DANM as required;

viii. Completion certificate to be issued by Municipality based on recommendation of DANM.

7.5 Permission procedures for signage

i. Request for permission submitted to Municipality;

ii. Checking for compliance with all legal provisions by Municipality;

iii. Notification to DANM and if required carry out site inspection to ensure safeguarding of heritage;

iv. Permission to be issued by Municipality and if needed based on recommendation DANM.
Annex to bylaws: Registry of Traditional Building Typologies

Typology 1: traditional village style building

Valid for: Buffer Landscape, Village, Town

Basic description: Single storey light structure with varying height of stilts with wooden structure and bamboo mat roofing and bamboo frond roofing.

Alternative: Timber can be replaced with metal and roofing can be corrugated metal sheeting

Typology 2: traditional village style building

Valid for: Buffer Landscape, Village, Town

Basic description: Double storey light structure on post foundations with wooden structure and bamboo mat roofing and bamboo frond roofing.

Alternative: Timber can be replaced with metal and roofing can be corrugated metal sheeting

Typology 3: traditional town style building for Nyaung U

Valid for: only in Nyaung U

Basic description: Double storey brick load bearing structures, with central wood posts, wooden flooring and corrugated metal roofing, along with vertical openings and plastered facades.

Alternative: Timber can be replaced with metal and roofing can be corrugated metal sheeting
Overview of Building Bylaws

Subzones and general provisions

The following sub-zones have been provided within the Cultural Heritage Property and Buffer Zone as demarcated in the Zoning Map on page 82 which will be linked specifically to the building bylaws but are also relevant to other legal provisions.

Building categories (Sections 3 - 6)
There are four building categories which have been provided within the building bylaws and an overview has been provided in the following pages. Each of these four building categories can is specific to particular subzones.

General Provisions (Section 2)
General provisions provide added protection of main cultural attributes (subsurface archaeology, monuments and historic buildings) as well as dealing with monasteries, institutional buildings for health and education and cellars for lacquer-ware production.

- Special permission without destroying archaeology
- Only in settlement areas following respective bylaws
- Special permission without destroying archaeology
- Service lines shall only be along roads and not visually intrusive
- No fencing
- The landscape shall not be divided with fencing or walls
- Underground services
  Digging to lay underground services needs permission

In Property
- TOWN
  Special provisions
- LANDSCAPE
  PROPERTY LP

In Buffer Zone
- TOWN
- VILLAGE
- LANDSCAPE
  BUFFER LB

Temporary Structure
T / V / LB / LP

Traditional Structure
T / V / LB
(* specific to subzone)

Village Style Building
T / V

Town Style Building
T
Overview of Building Bylaws

Provisions for temporary structures

This category of temporary structure is applicable within all town and village areas as well as landscape areas within the buffer zone as well as property zone. Required permission procedures apply must be followed on an annual basis.

The typology is based on a single story, rectangular, timber frame structure with wooden flooring and posts. The roofing is shed or gabled, of palm fronds or corrugated metal sheeting projecting on all sides.

Function:
farming, community functions, visitor services near temples, requirement for conservation activities

Mandatory conditions:
be entirely removable, not be physically destructive to heritage and the environment

Design and aesthetics:
Rectangular plan with shed or gabled roof
No designs replicated from ancient monument
No designs from foreign cultures
Maximum signage 4 x 2 feet with permission

Dimensions:
As required but max width 16 feet, length 24 feet
Maximum height 12 feet – including plinth to gable
Foundation post holes maximum 12 inches while ensuring archaeology is safeguarded

Material:
Traditional light material – no masonry or concrete
Roofing of traditional light material
Walls external and partition of traditional materials
Traditional doors and windows of light material

Services: (with permission and supervision from BAGANCOM)
Electricity connection if supply close by and connection is not visibly obtrusive
Water supply with removable tanks inside temporary shelter and not visibly obtrusive
Sewage disposal where required using septic tank while safeguarding archaeology and designated waste disposal
Communications, multimedia equipment and installations not visibly obtrusive
Overview of Building Bylaws

Provisions for traditional Buildings 1
Towns, Villages and Landscape in Buffer Zone

This category of traditional building is applicable within all town and village areas as well as landscape areas within the buffer zone. This is also a category that can be used for monastic complexes even in landscape areas within the property. Required permission procedures apply.

The typology is based on a single story, rectangular, timber frame structure with wooden flooring and posts. The roofing is gabled, of palm fronds or corrugated metal sheeting projecting on all sides. The openings are fitted into the wall framing. The building sits on stilts of varying height.

As shown in the images above there are variations in respect to materials, material finishes. Mostly the walls are of either bamboo matting fixed to a timber frame or wood panelling with a natural or varnished look. In certain cases the infill panels below the window sill are painted white. The stilts are of varying height from direct earthen floors to plinths that range from half to full floors, however the space below are kept open. Alternative materials that could be used would be for the framing to be of metal, particularly to save on wood.
Overview of Building Bylaws

Provisions for traditional buildings 2
Towns, Villages and Landscape in Buffer Zone

This category of traditional building is applicable within all town and village areas as well as landscape areas within the buffer zone. This is also a category that can be used for monastic complexes even in landscape areas within the property. Required permission procedures apply.

The typology is based on a double story, rectangular, timber frame structure with wooden flooring and posts. The roofing is gabled, of palm fronds or corrugated metal sheeting projecting on all sides. The openings are fitted into the wall framing. The building sits on a slightly raised plinth.

As shown in the images above there are variations in respect to materials, material finishes as well as colours. Mostly the walls are of either bamboo matting fixed to a timber frame or wood panelling with a natural or varnished look. In certain cases the infill panels are painted white or pastel colours. Alternative materials that could be used would be for the framing to be of metal, particularly to save on wood.
Overview of Building Bylaws

Provisions for traditional buildings 3
Nyaung U

This category of traditional building which is derived from the colonial period of Bagan is only applicable within Nyaung U Town. Required permission procedures apply.

The typology is based on a double story, rectangular, load-bearing brick structure with wooden flooring and posts. The roofing is corrugated metal sheeting either projecting or behind parapet walls. The openings on both floors are generally vertical to floor height with an added railing. The building sits on a brick masonry plinth.

As shown in the images above there are variations in respect to number of bays which can be 3 to 5. There are single storey additions towards the front either creating a terrace or covered with a sloping roof. There are also variations with staircases which can either be inside or then along the outside of the building. The buildings are plastered with some basic ornamentation bands and coloured either white, ochre or various shades of pastel. There are variations where similar scale is achieved using wooden construction.
Overview of Building Bylaws

Village Style Building

This category of temporary structure is applicable within all town and village areas as well as landscape areas within the buffer zone as well as property zone. Required permission procedures apply.

The typology is based on a single story, rectangular, concrete frame structure with cement flooring. The roofing is gabled, of corrugated metal sheeting projecting on all sides.

**Function:**
- residential, traditional activities, with permits offices, shops, restaurants and visitor accommodations

**Mandatory conditions:**
- Single storey and integrated, not be physically destructive to heritage and the environment

**Design and aesthetics:**
- Rectangular plan with hipped or gabled roof
- Core masonry structure with lighter additions
- No designs replicated from ancient monument or from foreign cultures - permission for signage
- No basement floor
- Exposed material or plaster and painted white

**Dimensions:**
- 600 sq.ft. + light extension of 600 sq. ft.
- Maximum height 16 feet – including plinth to gable
- Max 50% land coverage with 5 feet setback
- Foundation maximum 3 feet while ensuring archaeology is safeguarded

**Material:**
- Reinforce concrete frame with light roof materials
- Walls external and partition of brick masonry
- Wooden doors and windows

**Services:** (with permission and supervision from BAGANCOM)
- Electricity connection if supply close by and connection is not visibly obtrusive
- Water supply with removable tanks inside temporary shelter and not visibly obtrusive
- Sewage disposal using septic tank while safeguarding archaeology and designated waste disposal
- Communications, multimedia **equipment and installations** not visibly obtrusive
Overview of Building Bylaws

Town Style Building

The town style building can only be built in the town areas of Nyaung U and Myo-thit (New Bagan). Required permission procedures apply along with permission for special functions such as visitor accommodations.

The typology is based on a maximum three story, rectangular, structure with the first two floors of concrete frame and the top floor either terrace of light gabled roof structure of metal or wood with palm fonds or corrugated metal sheeting projecting on all sides.

**Function:**
residential, traditional activities, with permits offices, shops, restaurants and visitor accommodations

**Mandatory conditions:**
Maximum 3 story and not be physically destructive to heritage and the environment

**Design and aesthetics:**

- Rectangular plan with flat roof over 1st floor or hipped or gabled roof over 2nd floor
- No designs replicated from ancient monument or from foreign cultures - permission for signage
- No basement floor
- Exposed material or plaster and painted white

**Dimensions:**

- 2400 sq.ft.
- Maximum height 20 feet + 10 feet light
- Max 50% land coverage with 5 feet setback (ref*)
- Foundation maximum 5 feet while ensuring archaeology is safeguarded

**Material:**

- Reinforce concrete frame with light roof materials
- Walls external and partition of brick masonry
- Wooden doors and windows (no rolling shutters)

**Services:** (with permission and supervision from BAGANCOM)

- Electricity connection if supply close by and connection is not visibly obtrusive
- Water supply with removable tanks inside temporary shelter and not visibly obtrusive
- Sewage disposal using septic tank while safeguarding archaeology and designated waste disposal
- Communications, multimedia equipment and installations not visibly obtrusive
3.3.4 Development Guidelines

Preamble

Bagan Heritage Site spreads over a large landscape from Tuyin-taung hill across the bend in of the Ayeyawady River to Tantkyi-taung hill. This landscape which was created over centuries of human activity has been the setting for a vast number of monuments and subsurface archaeology. The communities that live within the heritage site continue maintaining the landscape. Change is coming rapidly with need for modern infrastructure and services along with the impact of growing tourism. While providing for the needs of the community, development must be guided to ensure that the tangible and intangible heritage of Bagan is safeguarded.

The “Development Guidelines” addresses the need for an appropriate approach to conserve the identity of the public and semi-public realm within the heritage site, both within the World Heritage boundary as well as the buffer zone. The public and semi-public realm encompasses the physical spaces, (such as within the settlement areas the squares, streets, tanks, etc. and natural environment such as the forest, agricultural fields, ponds, rivers, streams, etc.), the intangible heritage linked to these physical spaces and the public services and infrastructure that support the heritage site. These guidelines are to be read in conjunction with the “ Conservation Guidelines for Monuments and Historic Buildings”, the “Building Bylaws” and the “Rectification Guidelines”.

A close cooperation of numerous authorities is needed for the implementation of the Development Guidelines. Often these authorities are not concerned with the conservation of the historic context of the Monument Zones. The Site Managers need to take the lead role to coordinate such activities. The involvement of BAGANCOM is essential in ascertaining the awareness and compliance of related government authorities, line agencies and private parties. The coordination and cooperation between the various offices of the district administration must also be guaranteed.

1. Scope

The Development Guidelines shall be followed for any construction or development work being carried out within the heritage area of Bagan by government authorities, line agencies or private entities.

2. Validity

The Building Bylaws shall come into effect on adoption by the Government of Myanmar and shall be valid until the bylaws are amended of superseded by new legal provisions.

3. Glossary

- **Cultural Heritage Site** refers to the entire area covering the heritage property as well as the buffer zone.
- **Cultural Heritage Property** refers to the boundary demarcating the areas or eight components designated as the World Heritage property.
- **Buffer Zone** refers to the boundary demarcating the area designated as the World Heritage Buffer Zone and consists of the Protected Zone as per the 1998 Heritage Law.
- **Landscape Areas** refers to all areas outside the towns and villages as demarcated on the Zoning Map.
- **Settlement Areas** refers to towns and villages as demarcated on the Zoning Map.
Archaeological Risk Map (ARM) is mapping of subsurface archaeology to ensure that all development works are carried out ensuring the safeguarding of subsurface archaeology.

Rescue Archaeology is the rapid archaeological activity carried out on sites where the new construction has been proposed however the necessity of the archaeological investigation in that site has also been felt.

Watching Brief is when an archaeologist monitors the excavation of foundation and service trenches, landscaping and other intrusive works in cases when the presence of subsurface heritage could not be established in advance of development. If needed, the watching archaeologist will signal to interested parties when an archaeological find has been made in order for a rescue excavation to be commenced.

Heritage Impact Assessment (HIA) refers to a system of assessing activities and project that are planned or have already been implemented on their impact on heritage whereby solutions are provided to mitigate or remedy the impact.

GENERAL

4. Community needs and safeguarding cultural heritage
   The basic needs of the community living within the heritage property shall be given high priority and all activities carried out within the heritage property shall be done so keeping in mind that cultural heritage must be safeguarded;

5. Traditional function and land-use
   The traditional functions and land-use shall be maintained within the heritage property. In the buffer zone compatible functions can be introduced however follow all legal provisions; any changes to land-use within the Cultural Heritage Site shall only be allowed with permission from BAGANCOM; notifications shall be sent to all relevant authorities including the relevant Land Registration and Survey Departments.

6. Encroachment
   Encroachment of public and semi-public spaces is not allowed - at ground level, below ground level and above ground level – which includes the construction of aprons, plinths steps etc.; spaces that have traditionally been used for public and semi-public functions may not be encroached upon;

7. Disaster Risk Management
   Risk preparedness, especially in respect to earthquakes, floods and fires, shall be integrated into the overall planning of the heritage property; Risk management and disaster preparedness shall be done keeping in mind the authenticity and integrity of the historic area (refer to Disaster Risk Management Strategy Document);

8. Monitoring, Research and Heritage Impact Assessment (HIA)
   The design and implementation of development works shall take into consideration the need to safeguard heritage; priority shall be given to carry out research on any aspect of the heritage site to better assess the impact of development; any major works, particularly in the form of time bound projects that could have an impact on heritage shall require a Heritage Impact Assessment (HIA); contentious issues shall be decided by BAGANCOM;
GENERAL PROVISIONS FOR LANDSCAPE AREAS

9. Protection of landscape
The landscape created out of centuries of human activities shall be protected and maintained, allowing change that is consistent to the intrinsic character of the landscape over time;

10. Activities within the landscape
The landscape consists of monuments and subsurface archaeology that need to be conserved, agricultural activities that need to be sustained, intangible heritage that needs to be supported and new developments including commercial activities that need to be guided;

GENERAL PROVISIONS FOR SETTLEMENT AREAS

11. Layout and extent of settlements
The settlement structure, layout and extent of the settlements within the cultural heritage sites shall be maintained; In the buffer zone extension of settlements can be allowed however following all legal provisions;

12. Identity
The traditional identity of the public and semi-public spaces (squares, streets, ponds, etc.) must be preserved; the form, shape, boundaries and character of the public and semi-public spaces must not be altered;

13. Construction Sites
Construction sites within the heritage property must be properly secured to ascertain that no monument or historic building is damaged; provisions need to be made for the disposal of construction rubble and waste outside the heritage area;

ACCESS TO BAGAN

14. Flight access and airport
The existing Nyaung U airport shall not be extended, no larger airplanes than the ATR 72 or equivalent; Considerations shall be made to improve develop other airports nearby and develop better connections;

15. Railway access tracks and stations
Railway connections shall be improved to Nyaung U along existing track alignments; possibility of improving railway connections from newly developed nearby airports shall be planned; possibility of promoting steam engines and heritage rides shall be planned; railways shall also be developed along the west bank of the Ayeyawady from Pakokku to Seikphyu near Chauk;

16. Ship access and piers
Connection to Bagan by ships along the Ayeyawady River shall be promoted, however considering impact on the environment and heritage property; Ships shall not be allowed to be moored along the shores of the Ayeyawady within the heritage property; piers and other infrastructure for ship within the heritage property shall be removable and non-intrusive; ferry service across the river shall be improved;

17. Vehicular access and highways
Vehicular access shall be improved from Mandalay and Pakokku as well as from Meiktila and Kyaunkpadaung; Road access from Chauk shall be improved; an appropriate link road shall be planned to the south of the heritage property;
INFRASTRUCTURE / SERVICES within Heritage Property

18. Vehicular traffic planning
Traffic within the heritage property shall be planned systematically to ensure efficient local circulation while ensuring strategic dispersal of tourists; a hierarchy on transportation shall be developed with different levels of access for large vehicles, for cars and vans, for motorized two wheelers and for non-motorized vehicles; according to the hierarchical zoning, provisions for parking shall be made; emergency access for ambulance and fire brigade must be provided for; parking areas outside the core area must be developed;

19. Public transportation
Appropriate, non-polluting means of public transportation shall be provided throughout the heritage property linking the main settlements and the access points: airport, train station, piers, highway, peripheral parking;

20. Transportation infrastructure
Transportation infrastructure within the heritage site shall be kept to a minimum; any extensions, widening, construction or changes to roads within the heritage site shall be carried out only after detailed planning and a heritage impact assessment; changes to roads within the buffer zone shall only be carried out based on an overall transportation plan while ensuring that monuments and sub-surface archaeology is not affected;

21. Surface finish of public and semi-public areas including roads
Only where absolutely necessary and with prior justification will public and semi-public areas including roads within the heritage site be paved with hard non-permeable materials such as asphalt; the paving with hard non-permeable materials such as asphalt of roads or widening of existing roads shall be planned in correlations with traffic planning and only where large vehicles are allowed; in the buffer zone paving with hard non-permeable materials such as asphalt of roads shall be allowed while ensuring that monument and sub-surface archaeology is safeguarded; concrete shall however not be allowed;

22. Surface rain water drains
Historic and natural drainage systems shall be safeguarded and maintained; the historic and natural drainage systems can be augmented where necessary to ensure proper surface drainage throughout the heritage property; the surface drainage shall ensure safety of monuments and subsurface archaeology, roads and paths are kept from water logging and within settlement areas buildings are safeguarded; any digging works or laying of subsurface piping shall only be allowed after detailed planning, archaeological investigations based on archaeological risk maps, watching brief and where necessary rescue archaeology.

23. Sewage disposal
Digging for the construction of septic tanks, soak pits and sewer lines within the heritage site is only allowed within the settlement areas, with permission after detailed planning, archaeological investigations based on archaeological risk maps, watching brief and where necessary rescue archaeology. If sewer lines are planned outside the settlement areas, special investigations are required along with a Heritage Impact Assessment ensuring that monuments and subsurface archaeology is safeguarded; the impact on the environment shall follow national norms and closely monitored;
24. Water supply (excluding irrigation)
   Digging for the construction of water pipelines within the heritage site is only allowed within the settlement areas, with permission after detailed planning, archaeological investigations based on archaeological risk maps, watching brief and where necessary rescue archaeology. If water pipelines are planned outside the settlement areas, special investigations are required along with a Heritage Impact Assessment ensuring that monuments and subsurface archaeology is safeguarded;

25. Electrical distribution and supply
   Within the cultural heritage property electrical supply cables shall follow the alignment of roads and paths and not be built crossing the landscape; within the heritage site armoured electrical cables shall be installed underground along the roads and paths however ensuring that no digging is done below the surface of the original ground; if digging below the original ground is necessary, this shall only be done with permission after detailed planning, archaeological investigations based on archaeological risk maps, watching brief and where necessary rescue archaeology; the laying of only high-tension cables shall be done only after a Heritage Impact Assessment is carried out; transformers should be placed in such a manner that they do not affect the visual integrity of the site; connections to monuments and historic buildings shall be done in an unobtrusive manner, when posts are used they shall be painted in gray which is same as palm tree trunks; where possible exposed elements shall not be bright and shiny;

26. Lighting of public and semi-public spaces
   Functional lighting for public and semi-public spaces should be planned and installed in a manner that does not disturb the character of the place; cables must be concealed; when posts are used they shall be painted in gray which is same as palm tree trunks; where possible exposed elements shall not be bright and shiny; lighting for special occasions and festivals may be developed in a manner that enhances the traditional quality of the place;

27. Telecommunication and multimedia facilities
   Within the heritage property communication and multimedia cables shall follow the alignment of roads and paths and not be built crossing the landscape; within the heritage site armoured electrical cables shall be installed underground along the roads and paths however ensuring that no digging is done below the surface of the original ground; if digging below the original ground is necessary, this shall only be done with permission after detailed planning, archaeological investigations based on archaeological risk maps, watching brief and where necessary rescue archaeology; no communication or multimedia cables, equipment and installations should be placed in a location that affects the visual integrity of the historic site; any towers that need to be constructed must ensure they are not visually intrusive, remain below the height of the tree-line, and ensure monuments and subsurface archaeology are safeguarded; connections to monuments and historic buildings shall be done in an unobtrusive manner; when posts are used they shall be painted in gray which is same as palm tree trunks; where possible exposed elements shall not be bright and shiny;

28. Mechanical Installations
   The installation of utility and mechanical systems such as water or gas meters, antennas, air condition units should be inconspicuously placed;
29. Solid Waste Management
Provisions shall be made for disposal of solid waste with allocated collection points
(preferably with separation of bio-degradable, glass, metal, plastics, etc.); recycling
shall be promoted; composting biodegradable materials shall be promoted;
aesthetically designed rubbish bins should be provided and strategically located for
public and semi-public spaces; provisions for regular solid waste collection should be
made; the impact on the environment shall follow national norms and closely
monitored;

AGRICULTURAL AND PLANTATION ACTIVITIES

30. Preserving the agricultural landscape
The existing agricultural landscape within the heritage property shall be preserved to
whatever degree possible, ensuring that the delicate balance is maintained between
activities being carried out on the fields and their impact on the monuments and
subsurface archaeology;

31. Crops
Within the heritage property, traditional and crops that have been generally grown in
the past shall continue to be promoted, particularly sesame and ground nut; improved
crops, different varieties and new crops shall be allowed only after detailed
assessment on their impact on monuments, subsurface archaeology and visual
integrity of the landscape;

32. Irrigation and water management
Irrigation and water management plans shall be prepared for the heritage property;
within the heritage site only irrigation such as restricted drip irrigation that does not
impact the subsurface archaeology and dramatically change the microclimate to affect
the monuments shall be allowed; in the buffer zone appropriate and efficient irrigation
shall be developed; deep boring for use of ground water for irrigation shall only be
used for temporary emergency circumstances;

33. Plough, tilling and digging activities
Ploughing, tilling and other forms of digging into the ground shall be closely
monitored; within the heritage site traditional forms of ploughing or tilling using
bullocks shall be promoted; within the heritage site use of mechanical equipment shall
only be allowed through certification that it will not harm subsurface archaeology by
restricting depth and vibrations;

34. Plantation of trees and shrubs
Within the heritage site, the plantation of trees and shrubs shall only be allowed to
replace existing trees and shrubs or to plant toddy palms along plot boundaries; tree
plantations shall not be allowed without detailed assessment on its impact on
monuments and subsurface archaeology and general greening projects shall not be
allowed; within the buffer zone appropriate plantations will be allowed; planting of
foreign species shall not be allowed;

NATURAL FEATURES

35. Hill area protection
The natural environment of the hills shall be protected; care shall be given to ensure
proper protection is provided from erosion;
36. Forest areas protection
Forest areas shall be protected as per the Forest Law, 1992 and the Protection of Wild Life and Wild Plants and Conservation of Natural Areas Law, 1994

37. Ayeyawady River protection
The Ayeyawady River shall be protected from pollution and inappropriate use; the erosion along the banks shall be monitored and protective measures shall be taken where required; other than protective works, no construction shall be allowed along the banks of the Ayeyawady River within the heritage site however development can take place within the buffer zone strictly following legal provisions; the islands within the heritage site and buffer zones shall not be developed other than with traditional and temporary structures;

38. Protection of ancient and natural water bodies
All water bodies such as ancient reservoirs, tanks and moats along with natural streams and ponds shall be protected; The ancient and natural hydrology systems shall be maintained and where required rehabilitated to manage water resources and help mitigate flooding; No lake, pond, tank, water reservoir, canal, rivers, rivulets, streams, natural drain, spring or water source or any other water course shall be permitted to be filled up;

FUNCTION

39. Traditional Use and Intangible Heritage
Traditional functions and usage of public and semi-public spaces should be supported; traditional rituals, processions and festivals that have been performed over the centuries in the public and semi-public spaces must in no way be hindered;

40. Commercial Use
Use of public and semi-public spaces for private commercial use is not allowed unless specifically managed within allotted areas by the Site Manager and without disturbing the identity of the place; this also includes the public space in front of commercial buildings such as shops;

41. Commercial Signage
Commercial signage, hoarding boards, posters, banners etc are not allowed within the heritage site; however commercial enterprises may have signboards that follow strict norms of size and aesthetic quality as defined in the Building Bylaws; Certain areas within the Buffer Zone can be designated for restricted and appropriate advertisement;
3.3.5 Rectification Guidelines

The “Rectification Guidelines” provide the legal framework for rectifying existing inappropriate structures, buildings and other forms of development that have a negative impact on the attributes that contribute to the Outstanding Universal Value of the cultural heritage site. Inappropriate structures, buildings and other forms of development encompass legal and illegal construction and development activities carried out in the past that have ongoing physical, visual or sentimental impact on the environmental or cultural attributes of the heritage property.

1. Identification of inappropriate structures and other forms of development

Construction and developments that were carried out in the past that do not comply with the present legal provisions, impact monuments, subsurface archaeology or environment, or affect the cultural sentiment of the community shall undergo a Heritage Impact Assessment (HIA).

2. Emergency rectification

Should construction and developments that were carried out in the past or are ongoing have a continuing or increasing impact on monuments, subsurface archaeology or the environment, or affect the cultural sentiment of the community, rectification procedures shall be carried out immediately.

3. Rectification over time

Construction and developments that were carried out in the past that do not comply with the present legal provisions that however do not have continued or increasing impact on monuments, subsurface archaeology or the environment, or affect the cultural sentiment of the community, shall be rectified or phased out over a period of maximum 15 years as per the decision of BAGANCOM.

4. Timeframe for rectification

The duration of time allotted for rectification shall depend on the scale of investment, the legality of the development and whether it is located in the heritage site or buffer zone. The suggestion on timeframe shall be provided within the Heritage Impact Assessment.

5. Implementation and covering of cost for rectification

If the inappropriate structures, buildings and other forms of development are considered to be carried out illegally, the entire cost for rectification shall be borne by the developer. If at the time of construction and development they were considered legal, then the cost of rectification shall be borne equally between the developer and the government.

6. Compensation for the outcome of rectification

No compensation shall be given for the loss of property or income caused through the rectification of inappropriate structures, buildings and other forms of development; Consideration shall be given to construction and development that were legal at the time of execution and the developer has not been able to gain sufficient income from the investment.
3.3.6 Additional management tools

Various management tools have been established or are in the process of being established. These are important means of implementing and enforcing the legal provisions and are considered part of the legal framework package. These will be used within the overall management system; this means the institutional, legal and the resources frameworks. The following management tools have been highlighted:

Zoning map
The zoning map is closely linked to the legal provisions which are to be implemented as per the finalized zones and subzones. The main zoning is based on the maps provided in Section 1.3: Property Boundary, Buffer Zone and Protective Planning Region. Within these there needs to be clear distinctions subzones defining towns, village and the remaining landscape. The map has been provided at the end of this section.

“One Map” Coordination
A process has been started under the banner of “One Map” to harmonize the maps of all government authorities which would then allow for the heritage zoning to be made more functional. The compiled map will be made available for all the government authorities to use. This will allow for information to be shared and planning and decision-making to be done in a coordinated manner. The basic legal maps are the cadastre plans of the Survey Department used to determine ownership and usage at the level of individual plots. This should be the basis for all other maps to be prepared.

Archaeological Risk Map (ARM)
The archaeological risk map is being prepared defining which areas have subsurface archaeology, which areas could have subsurface archaeology and which areas most probably don’t have subsurface archaeology. The map will become part of the legal system for protecting archaeology. This will also be the basis for decision making in respect to any infrastructure or development works that might need to be carried out. Especially important are areas where villages and towns are encroaching on the surrounding landscape and there is a tendency to allow for expansion. The archaeological risk maps would be part of the legal framework of the management system and would be used as a safeguarding and decision making tool in the management processes.

Heritage Impact Assessments (HIA)
The implementation of Heritage Impact Assessments (HIA) will be a strategic means of ensuring that development and conservation activities in and around heritage properties are compatible and appropriate. For HIA to be an effective tool, it will be embedded in the legislation of the DANM and will be integrated in official procedures. This will give the DANM the authority to demand HIA wherever found necessary and defined by respective regulations.

Data Management System
An enormous heritage property such as Bagan will have lots of information on the various components of the property. The mapping must be linked to other forms of data collection as well as an overall management system. Without this data management system being fully integrated into the management, the mapping and collection of data along with
inventories will not be used. The survey and mapping as well as inventories are being prepared for Bagan. The data management system would link inventories, mapping and assessments to the map while additionally linking this to management activities such as monitoring and activity reports.

**Inventories of Significant Attributes**

Inventories have been prepared for monuments such as the one by Pierre Pichard which is being updated by DANM with support from UNESCO. Furthermore there is the inventory prepared by AMA after the earthquake along with damage assessments. The assessments carried out by DANM assisted by various organizations and experts will be linked to the information of the individual monuments as compiled in the data management system. Inventories are not only required of monuments but also various attributes such as monuments, subsurface archaeology as well as natural features, intangible heritage, etc. These inventories shall all be linked into a single data management system. The inventories shall be constantly updated and close cooperation shall be maintained to ensure that the inventory is used as a management tool.

**Training Programmes**

To ensure that there is sufficient capacity to implement the management system correctly regular training programmes are required. Such activities have already been carried out, particularly in respect to conservation and post disaster response and rehabilitation. Such activities shall continue to be carried out targeted specifically to requirements directly related to safeguarding heritage, but also in respect to overall management.

**Regular Review of Management System**

The circumstances under which the management system was established will change over time. This means that regular review of the efficiency and effectiveness of the management system need to be carried out. The coming five years will be defined by post earthquake rehabilitation and the establishment of requirements for World Heritage. The main factored defining the management will surely need to change over time and therefore the entire system shall be reviewed and amended accordingly every five years.
3.4 Resources Framework

Resources required for managing Bagan Cultural Heritage Site have been identified under three sections:

1. Human Resources
2. Financial Resources
3. Material and Equipment Resources

These resources need to be considered not as separate entities, but as part of a comprehensive package. For each of these resources the typology, source and general scale of will be defined. Detailed requirements would however need to be assessed in the Annual Action Plans linking it to the planned actions.

Resources are required for various categories of actions to address identified issues. For the management of the cultural heritage site resources are required to carry out:

1. Routine Actions
2. Time-bound Interventions
3. Emergency Response

Each category of action would require different types of human resources, financial resources and material and equipment resources.

The main objective of the management system is to maintain and safeguard the significant attributes of the cultural heritage site. As defined in Section 1.4 of this document the significant attributes can be listed under the following groups.

1. Monument: grade 1 outstanding, grade 2 exceptional, grade 3 important, non-classified
2. Objects: in museums and in situ including murals, paintings, sculptures and inscriptions
3. Archaeology – sub-surface as well as mounds, fortification walls palace sites, water management features
4. Landscape – settlements, agricultural and natural areas including the surrounding hill ranges and the Ayeyawady River
5. Cultural practices: – festivals, ceremonies, religious activities and beliefs, other forms of intangible heritage

The management of these different attributes will require differing resources both in typology as in scale.

The planning of required resources shall be given high priority directly related to all management issues that need to be addressed and the related actions that need to be carried out. For each action, the required human and financial resources shall be identified so that prioritization and implementation planning can be carried out in a realistic manner. In addition to the direct resource needs and use, the indirect implications on sustainable development of the heritage property shall be considered. This requires an in-depth consideration of the socio-economic implications of all activities that are carried out within the heritage property.

The following sub-sections will define the various types of resources and what they will be required for within the management system for Bagan Cultural Heritage Site.
3.4.1 Human Resource Management

Human resources for management of a cultural heritage site consist of people with the required knowledge and skills to maintain and safeguard the significant attributes. Human resources incorporate the managers and planners as well as those responsible for carrying out skilled or non-skilled activities on the site, their availability, motivation, training and remuneration.

Required Human Resources

For routine actions and the general management of the heritage site administrators will be provided, who can monitor the property, do reporting, carry out necessary procedures for guiding development, as well as managing the museum and database. The administrators at the cultural heritage site must understand the legal and technical aspects of safeguarding heritage. This would be essential for both for the DANM as well as at the District Administration. Particular importance needs to be given to the required experts for maintaining the monuments, the in situ ornamentation and artefacts as well those responsible for the museum objects.

For time-bound Interventions which include the preparation, planning, design, monitoring and auditing of projects, required expertise will be made available to ensure successful, efficient project are carried out. The experts, artisans, contractors, labourers must understand the legal and technical aspects of safeguarding heritage. The projects that are carried out, particularly in respect to conservation works and related research must have the best trained and experienced experts with the specific expertise in the tasks that they are to perform. For development projects there must be experts involved who have knowledge of working within a cultural heritage site.

For emergency preparedness and response trainers and responders shall be ensured both at local as well as national level, who are adverse to the conditions and requirements of a heritage property and are trained in dealing with monuments, historic buildings and cultural artefacts. All forms of hazards, whether natural or human induced, will be considered in the preparedness and response procedures.

Further requirements

Awareness and general understanding of cultural heritage: The administrators and decision-makers at local and regional level shall be provided training and awareness on conservation management procedures and requirements for the heritage property to ensure that all decisions and actions are appropriate and compatible to the relevant legal provisions and procedures as defined in the Integrated Management Framework document.

Collaboration and Monitoring: The management of a large heritage property that includes numerous settlements and agricultural zones require the close collaboration of all the departments of the local and regional government as well as line agencies to ensure coordination with the DANM. Collaboration will allow for efficient use of the scarce human resources.
Securing sufficient Human Resources

For the required human resources rosters will be prepared based on the following matrix. This means that human resources are required to manage the main attributers of the property in the fields of routine actions, time-bound interventions as well as for emergency response.

<table>
<thead>
<tr>
<th>HUMAN RESOURCE</th>
<th>Routine Action</th>
<th>Time-bound Interventions</th>
<th>Emergency Response</th>
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<tbody>
<tr>
<td>Monuments</td>
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<td>Landscape</td>
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<tr>
<td>Cultural Practices</td>
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</table>

The roster will be developed over time taking into account the local circumstances. When activities are developed in response to specific management issues, the required human resource will be determined and appropriately put into action.

**Local:** Local expertise will be used particularly in respect to monitoring the site, and activities requiring local knowledge. This will be an opportunity for local community to get involved in assisting in managing the cultural heritage site.

**National:** national expertise will be represented within advisory committees to allow for regular involvement in the management of the heritage property. This would include members of educational institutions and professional associations of archaeologists, architects, engineers, conservators, social and cultural studies,

**International:** International expertise will be kept on a roster to allow for support whenever required. This would be closely linked to ongoing research and support for project design and implementation.

The roster will also include **government officers and staff** in the various relevant departments who will be responsible for the respective sectors and category of actions. This is especially important since on-going training and meetings will be coordinated according to the assessment of capacity of the government officers and staff with respective responsibilities.
3.4.2 Financial Resource Management

Financial resources for management of a cultural heritage site consist of different forms of funding required for maintaining and safeguarding the significant attributes. Financial resources are required for managing the heritage property, for monitoring, reporting, maintaining, restoring and for emergency response. Incentives are also required for guiding development and for ensuring that heritage is safeguarded. This might consist of subsidies on restoration costs and services, tax exemptions (house, land, material, permits, etc.) and bank loans for restoration. Additionally, a fund will be required to support conservation.

Required Financial Resources

Funding **routine actions** will be through regular annual budget shall be provided for the site managers to allow basic functioning of monitoring, maintenance and administrative functions. Funding shall also be ensured for the running of the museum and maintaining a database. Funding will be augmented through the participation of the local and regional government in the administration of the heritage property.

Funding for **time bound interventions** will be provided to implement prioritized activities; however these funds will be separated from the regular budget. Time bound projects do not need to be aligned to fiscal years and can be planned and implemented through external contracts; however the responsibility for monitoring and auditing will remain with the site management.

Funding for **emergency response** as well as preparedness will be provided as a separate budget both at local as well as national level. Funding will be provided for training, awareness building, monitoring and planning as well as for equipment and site interventions. Minimum requirements will be fulfilled at site level with national level resources being made available when required. All forms of hazards, whether natural or human induced, will be considered in the preparedness and response procedures.

Further requirements

**Tourism:** The heritage property also has potential for large income directly from tourist entry fees as well as from taxation of tourist related activities. This income source, though considered to be national income shall be wisely used to ensure that the source of this income is safeguarded. This means that a substantial part of the income generated by the property shall flow back into the heritage property for management, conservation and disaster mitigation. Of the income from tourism, 10% will be put aside to be used directly for high priority time-bound interventions and emergency response (refer Integrated Plan of Actions document).

**Alternative Funding Mechanisms:** Annual budgets must cover site management as well as basic emergency preparedness, while extra budgetary funding could be ensured for time bound projects and emergency response. Alternative funding mechanisms can also be considered such as public-private partnership, private donations as well as international assistance. All these funds must however all flow into the same management system to ensure coordination under the supervision and responsibility of the site management.
Securing sufficient Financial Resources

As defined for human resources, the financial resources will be ensured based on the following matrix. This means that sufficient financial resources will be secured to ensure that all main attributes are managed and safeguarded through the three categories of actions.

<table>
<thead>
<tr>
<th>FINANCIAL RESOURCE</th>
<th>Routine Action</th>
<th>Time-bound Interventions</th>
<th>Emergency Response</th>
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</table>

The roster will be developed over time taking into account the local circumstances. When activities are developed in response to specific management issues, the required financial resource will be determined and appropriately allocated. Annual budgets will be coordinated by BAGANCOM between the various authorities as per the defined Annual Action Plan prepared on the basis of prioritized actions determined through the Integrated Plan of Actions (refer Integrated Plan of Actions document).

**BAGANFUND**: a fund will be established that will allow for high priority projects to be carried out along with emergency response focusing on conservation of the significant attributes of the property. This fund will be established and administered by BAGANCOM with close supervision from the Myanmar National Culture Central Committee. The fund will be provided 40% of the tourism fees as Cultural Fund and 40% as Development Fund. The fund will also be able to administer international grants along with local and international donations.

**Sustainable Economic Development** is required in Bagan considering the projected changes that will be taking place over the next decades. This means that the entire economy particularly of the villagers will be affected. A high priority will be given to improving the livelihood of local community members by providing support and incentives towards their traditional activities such as farming and local manufacturing and production. Financial support for communities to maintain their traditional buildings will be arranged.

Funding of development based on regional planning will be arranged by the government, through bilateral or multilateral loans and grants as well as through public private partnership arrangements, particularly with the need for infrastructure development in the surrounding areas (refer Regional Planning Strategy document).
3.4.3 Material and Equipment Resource Management

Material and equipment resources for management of a cultural heritage site consist of required appropriate materials and specialized equipment to maintain and safeguard the significant attributes. Material for the conservation of monuments and their ornamentation will be provided for which would include both traditional as well as highly specialized materials. In a similar manner basic equipment will be required for the management of the cultural heritage site, however highly specialized equipment would be necessary to carry out extensive survey as well as minutely detailed investigations.

Required Material and Equipment Resources

Material and equipment resources for routine actions will be provided to ensure that monitoring and maintenance of the cultural heritage site is possible. This means the basic requirements of transportation, communications and documentation will be provided. Additionally the material and equipment required for maintaining, cleaning and safeguarding the main attributes of the property will be provided. These requirements will be provided through the regular annual budget.

Material and equipment resources for time bound interventions will generally be linked to the particular projects. This means the material and equipment necessary for the particular time-bound intervention will be arranged for by those responsible for implementation. There are however certain material that are regularly required particularly for very specific tasks in conservation that might best be arranged by the government through specific developing specific suppliers or establishing stores. This is also the case for equipment particularly those required for regular recurring projects such as in monument conservation or archaeological investigations.

Material and equipment resources for emergency response will need to be stored and made available when required. These materials and equipment will be part of the disaster risk management planning (refer Disaster Risk Management Strategy Document). Certain basic equipment will be stored at site along with materials required for immediate response. A larger source of materials and equipment for emergency response needs to be accessible when required form regional or national level.

Further requirements

Research into traditional materials and construction equipment and techniques is required. There is already some understanding of how the various mortars were prepared based on inscriptions. Further scientific research is required to better understand these properties to work on reintroducing them in conservation. Furthermore there has been great debate on material production, particularly the large quantities of burnt brick which requires both the soil and the fuel for firing. Along with these the equipment and techniques used for construction will be better understood to allow for proper conservation. For example the glazing of ceramics and even stone would need to be studied and revived. Such research will be part of the activities to be carried out by the proposed research departments at Bagan Museum in collaboration with national and international researchers.
Securing sufficient Material and Equipment Resources

As defined for human as well as financial resources, the material and equipment resources will be ensured based on the following matrix. This means that the required materials and equipment will be secured to ensure that all main attributes are managed and safeguarded through the three categories of actions.

<table>
<thead>
<tr>
<th>MATERIAL AND EQUIPMENT</th>
<th>Routine Action</th>
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</table>

The roster will be developed over time taking into account the local circumstances. When activities are developed in response to specific management issues, the required material and equipment will be determined and appropriately sourced. This will be part of the detailed planning of actions (refer Integrated Plan of Actions document).

Government will acquire equipment that is necessary to carry out archaeology research and surveys. This will go along with establishing well equipped conservation labs. A detailed inventory of such equipment shall be made as required for work in Bagan. The inventory will determine the whether the equipment would be used regularly and would therefore need to be acquired. Depending on the expense, such equipment could be provided at either site level or national level. Furthermore equipment that is expensive and not regularly used can be leased or integrated into projects to be carried out by international partners who will provide the necessary equipment or the use of such equipment in the respective locations.
3.4.4 Resource management and sustainable development

The management of Bagan Cultural Heritage Site cannot be carried out as an isolated system and will need to collaborate with authorities and partners from various sectors. Resource management for the monitoring, conserving and safeguarding the heritage property must go hand-in-hand with the socio-economic development of the area. This is particularly necessary to include the local community as stakeholders who are caretakers of the heritage both through monitoring and maintenance but also through carrying out rituals and celebrations to maintain the intangible heritage of the property. The livelihood of the community is paramount in ensuring democratic procedures in decision making are established.

Local Community

The local economy in and around the heritage site is geared towards agriculture, handicrafts and tourism. The monuments are centres for tourist and pilgrimage while the settlements are vibrant areas for the local economy. The success of sustainable development of the heritage property will depend on a flourishing local economy.

The participation of local communities in activities which are appropriate and relevant to the heritage property shall be protected. This includes community participation in agriculture, production of handicrafts or services to the tourism sector. Taxation and providing subsidies and incentives shall be considered to protect the interests of the local communities and guide involvement of external inventors and developers. Taxation within the settlement areas shall be seen as potential tools for providing incentives to owners to conserve historic buildings.

Branding and marketing

Bagan product shall be branded linked to various methods of ensuring place of origin, quality as well as beneficiaries. This would be planned keeping livelihood of the communities in focus linked to the traditional skills and the production of local products.

The products of Bagan which are unique, of high quality and an expression of the local culture shall be identified. The market possibilities for these products shall be studied along with production methods. The markets shall be studied, whether local, tourist or for export and products marketed accordingly. A system for supporting the farmers will be established. This will need to be both in respect to finance and technical support that will be appropriate for the heritage site. Support could begin with setting up a farmers association. It will then be possible to look into adding value, processing, packaging, marketing and branding of products under the farmers association.

Tourism

Tourism is the most obvious source of income for any heritage site. In the case of Bagan, beyond the religious practices of merit-making, pilgrimage and tourism have become the driving force behind heritage conservation. Tourism has begun to dictate the local economy. The foreign, local and religious tourists contribute to the economy of the heritage property. The community is directly benefits through money spent on buying local products, accommodation and food. This is in addition to the entry fees collected by the government. A sustainable means of balancing these influences will be sought.
4. Implementation

4.1 Institutionalisation

4.1.1 Establishment of Frameworks

4.1.2 Establishment of Processes

4.1.3 Interim responses

4.1.4 Plan of Action - Annual Action Plan

4.2 Sector-wise Coordination

4.2.1 Regional Planning

4.2.2 Disaster Risk Management

4.2.3 Tourism Sector

4.2.4 Agriculture Sector

4.3 Monitoring Framework

4.3.1 Prioritization of attributes for monitoring

4.3.2 Reporting system

4.3.3 Monitoring and Reporting Schedule

4.3.4 Review and Assessment
4. IMPLEMENTATION

4.1 Institutionalisation

The implementation of the Integrated Management System is an ongoing process that requires regular review, amendment and detailing of action plans. The changing circumstances at site bring new challenges and issues which the management system needs to address. The management frameworks and processes that have been established will allow for appropriate actions to be carried out addressing the issues facing the cultural heritage site.

The management that is established focused on the cultural heritage property will work closely with the sectors relevant for the sustainable development of the site and surrounding planning region. This would primarily be the authorities and agencies linked to regional planning and the governance of the area demarcated as the Protective Planning Region. Additionally the management system will work closely with the authorities and agencies relevant to sustainable tourism development as well as disaster risk management. A further critical sector is agriculture which will largely determine the maintenance of the important landscape around Bagan. An overview of these sectors and relevant strategies have been provided in this section which will link to relevant attached documents: Conceptual Regional Plan, Sustainable Tourism Strategy and Disaster Risk Management Strategy.

The section also provides the required monitoring and reporting procedures and schedules along with the required reviews and assessments of the management system itself.
4.1.1 Establishment of Frameworks

Through the adoption of the Integrated Management Framework for Bagan Cultural Heritage Site, it is understood that the Government of Myanmar has in principle adopted the institutional, legal and economic frameworks as defined in this document. The Government of Myanmar will carry out the necessary procedures to legally establish these frameworks and ensure their continuity as per the conditions laid down in this document.

The required institutional framework for the management of the World Heritage property, including authorities and responsibilities have be clearly defined. The Myanmar National Culture Central Committee has been established under the Vice President to ensure coordination between all ministries, government authorities and line agencies as per the members list and terms of reference provided in Section 3.2.2. BAGANCOM has been established as per the members list and terms of reference provided in Section 3.2.3. These two committees will be the core institutional entities ensuring coordination at all levels of governance. This will be linked to the site level activities carried out by the DANM Bagan Office and the District Administration of Nyaung U and Pakokku.

The de facto World Heritage site manager, the DANM Bagan Office, has been provided sufficient capacity and resources for the efficient management of the heritage property. There are procedures in place for the World Heritage site manager to communicate directly with all the relevant authorities that are actively involved in the governance and development of areas with the heritage property. Regular interactions are taking place with the communities to ensure cooperation and good relationship. The site manager is in a position to carry out Heritage Impact Assessments (HIA) which has been established as a standard procedure within the governance system.

A set of legal provisions for Bagan Cultural Heritage Site has been adopted. These consist of “Conservation Guidelines”, for monuments and other important attributes, “Building Bylaws” for new construction, “Development Guidelines” for public and semi public spaces within towns, villages and landscape, as well as “Rectification Guidelines” for previous inappropriate developments.

The human and financial resources as well as material and equipment for implementing actions as defined in the Integrated Plan of Actions document have been assured by the government. This will allow for monitoring, routine maintenance, reporting as well as the functioning of BAGANCOM. The regular budget and staff will also ensure the running the museum, maintaining the data base, carrying out Heritage Impact Assessments and maintaining the “One Map”. Resources will also be provided for implementing time bound projects which focus on specific interventions that improve the condition of the cultural heritage site. Furthermore the resources required for emergency response including preparedness will be provided for.

The overall management framework also includes the planning linked to related sectors. These are particularly focused on regional planning, disaster risk management, sustainable tourism and the agriculture sector. The conceptual plans and strategies have been adopted as part of the Integrated Management System, however further detailed planning is required. These detailed plans will then become part of the overall management system.
4.1.2 Establishment of Processes

Management processes take place based on the institutional, legal and resources frameworks that have been established for the management of the cultural heritage site. For these processes to function, a clear means of communication needs to be established which ensures that necessary information is disseminated as per the requirements of each component of the system, in order for them to carry out their respective responsibilities. This also requires each component of the system to have the capacity to carry out their respective responsibilities.

The overall management procedure entails the following components:

- Monitoring on site and identification of issues
- Assessment of issues and reporting to relevant authorities
- Response by relevant authorities
- Routine Actions (RA)
  - To be planned into regular budget of the site managers and coordinated with related authorities and community
- Time-bound Interventions (TI)
  - To get extra-budgetary resources to carry out projects by hiring external experts and artisans for a specific task
- Emergency Response (ER)
  - To have resources ready for emergency response partially on site while further resources are accessible at national level
- All activities are handed over to site managers for coordination
- Information to be linked to data management system

To ensure an efficient and effective management of the heritage property, it is necessary to clearly define all essential management processes. These would include but not restrict themselves to the following procedures for decision-making and implementation: for any kind of conservation work; for any kind of construction work; for any kind of archaeological work; for visitor management; for providing services, for monitoring and for maintenance. These processes shall be strictly adhered to by the Site Manager and related authorities. Each step in the process would need to identify who carries out what action, what information is passed on, why it is necessary and how long it would take.

Clear processes will be put in place also to control development in the buffer zone and protective area to ensure that the Outstanding Universal Value of the World Heritage property is safeguarded. These would include but not restrict themselves to the following procedures for decision-making and implementation: for controlling pollution; for controlling construction of large infrastructure and tall buildings; for controlling traffic and for controlling flooding. Processes shall also be established to ensure sustainable development.
For each set of actions as defined in the Integrated Plan of Action, a detailed implementation process is required. For all activities, detailed step by step procedures are to be established and agreed upon. Standard procedures for various activities have been established, such as for building permit procedures as well as coordination amongst the authorities and stakeholders. For each of the category of actions (routine actions, time-bound interventions or emergency response) different formats would be required.

**Routine actions**

For the implementation of routine actions each process would roughly be developed following the given format:

<table>
<thead>
<tr>
<th>office or person dealing with issue</th>
<th>type of action or decision</th>
<th>required information to be received</th>
<th>maximum time for action or decision</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

This means that a detailed process flowchart will be prepared for all routine actions to be carried out within the cultural heritage site or buffer zone.

**Time-bound interventions**

For the implementation of time-bound interventions the following phases will be followed. This has been developed based on the rehabilitation check-list prepared after the Chauk Earthquake. The following three phases must be carried out including where relevant the various points mentioned under each phase.

Phase 1: Preparation would include:

(1) Documentation (2) Assessment (3) Research (4) Inventory of existing status (5) Temporary Interventions

Phase 2: Design and Planning would include:

(1) Structural Interventions (2) Conservation (3) Material – requirement and supply (4) Artisan – requirement and availability (5) Implementation Planning

Phase 3: Implementation would include:

(1) Rituals (2) Documentation of Implementation (3) Supervision and Monitoring (4) Handing over procedures (5) Audit – quality and financial

**Emergency response**

For the implementation of emergency response detailed procedures will be developed. Basic response procedures are also provided within the Disaster Risk Management Strategy which is part of the Integrated Management System. More elaborate procedures will be defined in the Disaster Risk Management Plan for Bagan which is going to be prepared over the following years. Training will be provided on these procedures.
4.1.3 Interim responses

Management transition

A certain change in approach and mindset will be required in the transition from the past management of Bagan to the one being adopted through this Integrated Management Framework. All the various aspects of this Integrated Management Framework have been discussed at various forums with relevant authorities, experts and stakeholders. The provisions that affect the community have been presented to the community for their agreement.

All activities within the Bagan Cultural Heritage Site and the buffer zone will need to be coordinated with the Integrated Management System. There are provisions within the Integrated Management Framework and the related plans and strategies that require strict implementation and compliance. To achieve this, all related authorities will need to be in agreement and work together. This commitment is the most critical aspect to the success of the Integrated Management System for Bagan. This will require all government authorities at Union level, Regional level as well as District level to commit to the implementation of the Integrated Management System.

No ad-hoc decisions

No ad hoc decisions will be taken when carrying out activities within the Bagan Cultural Heritage Site and buffer zone. The activities will be justified based on the provisions laid down in the Integrated Management System. Should certain decisions need to be taken which are not directly addressed in the Integrated Management System, the actions will need to follow the parameters laid down in Section 2 of this document under “Conservation Approach and Management Objectives”.

The Integrated Management System will require further detailed planning which have already been indicated particularly through the Conceptual Regional Plan and the strategic planning for Disaster Risk Management, Sustainable Tourism and for the Agriculture Sector. Activities in these sectors will be carried out based on planning.

Extraordinary circumstances: the 2016 Chauk Earthquake

The ongoing rehabilitation phase following the Chauk Earthquake of 24 August 2016 will largely determine the activities in Bagan for at least the next five years. Despite the destruction and loss due to the natural incidence, this must be seen as an opportunity to improve management and ensure resilience of the heritage property. This means that the additional resources provided for the rehabilitation of Bagan must consider establishing long-term management structures and procedures.

The post-earthquake rehabilitation phase will be carried out within the framework of the Integrated Management System. On phasing out rehabilitation activities, the long-term management of the property will come into effect. This would also be the time when the entire management system would need to be reviewed and possibly amended to accommodate changing circumstances.

The Integrated Plan of Action

The Integrated Plan of Action is a formulation of specific tasks that need to be accomplished to achieve the Key Objectives of the Integrated Management System. The Integrated Plan of Action is a separate working document. The Integrated Plan of Action has been developed which must be annually updated based on changing circumstances and emerging management issues. For each task or action, the lead agency, timescale, required resources along with possible interim measures will be indicated. Preparation and updating of the Integrated Plan of Action will be carried out by the under the coordination of BAGANCOM.

Annual Action Plan

Based on the Integrated Plan of Action, detailed Annual Action Plans will be prepared to implement tasks or actions within the framework of this integrated management framework. While the tasks or actions are being implemented, regular meetings will be held to check progress. The Annual Action Plan needs to coincide with the official fiscal year starting in April of each year.

Categories of Actions: All actions will be categorized under the following three headings:

- **Routine Activities (RA)**: these are all actions that are usually routines carried out over a longer period of time. This category includes actions such as monitoring and maintenance.
- **Time-bound Interventions (TI)**: these are actions that address specific issues which are carried out within a given timeframe. This category includes specific planning, restoration and infrastructure development.
- **Emergency Response (ER)**: these are all actions that are linked to response to emergencies. Such actions cannot be planned but are based on preparedness and mitigation.

Management issues are to be identified. These have been done under the following nine categories which are not necessarily fixed: (1) Conservation of monuments and archaeology, (2) Regional planning and transportation, (3) Tourism management and infrastructure, (4) Environment and pollution, (5) Natural hazards and human threats, (6) Agriculture and landscape, (7) Community – socio-economy and livelihood, (8) Intangible heritage and (9) Management tools. Based on the assessment of issues, the required tasks or actions to address these issues will need to be defined. The objective of the management system is to address all the identified objectives. The system however will also remain flexible to adapt to changing circumstances and respond to newly arising issues.

A series of actions will be determined to address each category of issues. The parameters of each issue will need to be provided: location, incident and priority as well as the category action (RA, TI or ER) that is required to address this issue. Further information on the individual actions is required. Each action will be provided with a timescale, responsible agencies and required resources.
4.2 Sector-wise Coordination

Bagan Cultural Heritage Site extends over a large area. The property boundary encompasses 4987.88 ha while the buffer zone extends out to 17821.97 ha. This huge area includes settlements, agricultural fields, as well as hilly, forested and riverine landscapes spanning across the two districts of Nyaung U in Mandalay Region and Pakokku in Magway Region.

The management or governance of such a large area will require the involvement of the entire local government bodies of the two districts and the close collaboration between all the different departments and line agencies. The regional governments of Mandalay and Magway will establish close links to ensure coordinated management of the heritage property across the Ayeyawady River. The scale of the required institutional setup is defined in detail in Section 3.2 above.

The management of Bagan Cultural Heritage Site will take into account the needs and aspirations of the local communities. The local communities will be seen as primary caretakers of the heritage together with the respective government authorities. The local communities will be supported in carrying out their traditional activities, whether these are related to their beliefs, local customs or livelihood. Keeping within the overall objective of safeguarding heritage and maintaining the environment, the concerns of the local communities will be prioritized over the interests of externally involved parties.

The governance of Bagan Cultural Heritage Site must be based on an in-depth understanding of Sustainable Development. The Sustainable Development of the cultural heritage site and buffer zone will be pursued. This requires the coordination between the heritage site managers and a wide spectrum of authorities, organizations and institutions dealing with development agendas. The principles for sustainable development will be clearly defined, acknowledged and adopted by all relevant actors and will be the basis for all authorities, organizations and institutions to work together with a shared vision and direction. This shall be relevant for all activities carried out within heritage property.

Particular importance for the sector wise coordination has been identified for the following four sectors: Regional Planning, Disaster Risk Management, Tourism and Agriculture. For each of these particular sectors focus has been given to ensure proper coordination between related authorities, experts, organizations and the community. The following subsections provide the basic framework for each of the sectors as a basis for more elaborate strategies and in certain cases plans to be developed.

This section will be read in conjunction with the following attached documents:
- 1. Bagan Conceptual Regional Plan
- 2. Bagan Sustainable Tourism Strategy
- 3. Bagan Disaster Risk Management Strategy
- 4. Bagan Agriculture Sector Strategy (being prepared later)

Should further sectors require more detailed strategies or elaborate plans developed to function within Bagan Cultural Heritage Site, then these will be attached to this existing list of documents.
4.2.1 Regional Planning

Considering the scale of the Bagan Cultural Heritage Site, regional planning is required. To guide development, a Bagan Conceptual Regional Plan has been prepared as a basis for further detailed planning. The Bagan Conceptual Regional Plan deals with the efficient placement of land-use activities, infrastructure, and settlement growth across a larger region surrounding the cultural heritage site of Bagan. The planning takes into account a primary region stretching from Pakokku to Chauk and further to Mount Popa. This area will however be seen within the larger associated region stretching from Mandalay to Magway and including Meiktila.

The development and implementation of the Bagan Conceptual Regional Plan requires the cooperation of all key government authorities and line agencies. Any planning done within the primary region will be coordinated within the overall regional plan. The regional planning will also be dependent on the related legislation. It is also critical that the Bagan Conceptual Regional Plan is understood within the overall Integrated Management System for Bagan Cultural Heritage Site and in conjunction with the strategies for disaster risk management, tourism and agriculture.

Bagan Conceptual Regional Plan: framework for guiding development

The core of the regional planning is the Bagan Cultural Heritage Site which brings with it various challenges and opportunities. The economic and physical development of Bagan is undergoing rapid change which if not guided could lead to the total misuse and destruction of the area. This could affect the cultural heritage, the environment and the livelihood and customs of the local community.

The guided development would consider the unique opportunities of the primary region stretching from Pakokku to Chauk and further to Mount Popa. It is also paramount to consider both sides of the Ayeyawady River in this guided development Plan. The framework for the guided development will address land-use, transportation and circulation, infrastructure and services, settlement and environment. All these would be directly related to the overall objective of safeguarding the cultural heritage site.
1. Land-use and settlements

The existing land-use in the Protective Planning Region will need to be determined in respect to the understanding changing trends. Settlement and agricultural areas are slowly transforming to cater to other service sector functions particularly to tourism. Settlement boundaries are shifting as the surrounding land is encroached upon. Agricultural land is sold off to build tourist facilities. There are certain areas, particularly towards the Tantkyi-taung area where industrial development and mining has taken place. To get a grasp of this situation these changing trends need to be understood and areas that are critical threatened need to be identified.

The land use categories in and around the Protective Planning Region can be classified under various headings. The main headings for land-use zones would be (1) settlement, (2) agriculture, (3) new developments and (4) natural. Each of these zones will have sub-zones which specify more in detail the characteristics of each function. For example under settlements there will be towns and villages. Under agriculture there would be traditional and irrigated. Under new developments there would be tourist facilities and industries. Under natural there would be forests and rivers. There will further overlays of (A) cultural attributes and (B) infrastructure which are point or linear elements. There are also overlays such as the Archaeological Risk Maps which determine the location of potential sub-surface archaeology below the above land-use or elements.

The land-use controls need to be determined particularly for the Bagan Cultural Heritage Site and its buffer zone. Here the controls on changing land-use trends need to be dealt with pro-actively. This means that particularly within the cultural heritage site land-use must not be allowed to change to ensure that the landscape is maintained. This has been addressed by the legal framework under development guidelines. Furthermore changes to land-use in the buffer zone must also be controlled, even if certain flexibility will be allowed considering proximity to monuments and sub-surface archaeology. The land-use in the Protective Planning Region would be part of the overall regional planning strategy rather than linked to the direct impact on cultural heritage attributes.

Each of the land-use sub-zone, point and linear attributes and potential elements would be linked to guidelines to control changes. The overlays of all these components will determine the conflict points which will then be addressed. This would need to be linked to special plans for the monument areas, potential archaeological areas, agricultural areas and areas of important natural features. Activities in each of these areas would need to be regulated.

The particularly complex category of land-use is the settlements zone. The settlement areas can be categorized under Towns and Villages. There are six villages within the boundaries of Bagan Cultural Heritage site. There are two towns within the buffer zone, which are Nyaung U and Myo-thit (New Bagan) and a further 35 villages (refer Map on following page). Some of these are only seasonal since they are located within the river flood plains and need to be regularly abandoned. Each of these settlements has clearly demarcated boundaries. The governance of these areas is coordinated by the District Administration together with the township and village representatives. The DANM is only responsible for the settlements within the boundaries of the cultural heritage property.
These are areas where people live, building their homes which adapt to the requirements of the families. These areas would be constantly changing for example to respond to growing families or when the inhabitants earn more and expect to improve their standard of living. These, especially the towns, are the areas where external investors come in to establish businesses such as hotels, offices and shops. They also speculate on cheap land in the surrounding areas which are restricted to development, but it is presumed that over time the regulations can be overturned or that the law can be blatantly disregarded. A practical and realistic strategy needs to be developed to take into account the needs of the community, but also to respond to the risks of uncontrolled growth and speculation on the safety of the cultural heritage and its surrounding context.

The development areas of the towns are slowly creeping into the surrounding landscape without a clear understanding of its impact. The villages, such Taung-bi and Myin-ka-ba which have not yet been incorporated into the towns, are bursting in their seams and transforming rapidly. There is a lack of understanding of the dramatic changes that are taking place within these settlements. Research is required on understanding the mechanisms of change taking place in each of the towns and villages. This would include the changes in demography, economy and requirements of physical infrastructure and services.

The boundaries of the settlements need to be fixed and regulations put in place to ensure that they are not changed incrementally. The changes within these boundaries need to be regulated while allowing for expansion in dedicated areas outside the heritage zones. This requires a regional plan to be put in place that caters to the additional needs of the heritage zones particularly in respect to settlements areas for the growing local communities.
2. Transportation, circulation and tourist accommodations

With the development of Bagan as an important heritage property which is a site of pilgrimage as well as a major tourism destination, transportation planning has become critical for sustainable development. Transportation is critical for accessibility as well as movement around the enormous site.

Planning of transportation and transportation infrastructure will provide an overall strategy for improved accessibility of Bagan. This will have four components: linkage by air, by road, by rail and by river. Each of these components will consist of an assessment of the overall national strategy and how it relates to Bagan. Based on the national level strategy, a detailed local level strategy will be established as the basis for detailed planning. A feasibility studies is needed in respect to requirement, possible number of visitors and their profiles, and how each of the components could contribute to the need for accessibility. This will then be followed by the detailed plan for infrastructure improvement requirements for each of the components.

The long-term planning of the airport facilities is a primary concern. Considering its proximity to the cultural heritage site, the existing airport at Nyaung U cannot be enlarged, flight frequency should not be increased and no larger planes should be allowed to land. This means an alternative solution would need to be considered. One option would be to use the Pakokku airport which needs to be renovated and equipped.

The highway connection links from Mandalay in the northeast and from the main Yangon to Mandalay highway near Meiktila to the southeast. Road connections will be improved between Nyaung U and the airport at Pakokku, to Mount Popa and south the Chauk. A further connection is needed between the highway and the Chauk to Myo-thit (New Bagan) road to ensure a bypass around the Heritage Zones. The railway system has great potential for the future. The upgrading of the entire railway network would improve connections to Bagan. A train link from Nyaung U to Pokka airport will be an immediate requirement should the airport be developed there. This local network could then be extended to Chauk and Mount Popa.

Transportation along the Ayeyawady is a national issue, however must consider the impact on Bagan. This means that traffic would need to be controlled in respect to quantity, loading as well as impact (pollution, noise). Any work on engineering the river to divert flows or carry out dredging to improve river navigation must go through stringent impact assessments. The river is however a means of accessing Bagan which provides visitors with a wonderful experience. The number and size of tourist vessels must be controlled as well as where they dock and for how long. Clearly there should not be any moored to the river banks being used as tourist accommodations.

Detailed transportation and transportation infrastructure plan for the Heritage Zones of Bagan will be prepared. Guidelines will determine the design of the categories of roads and paths, which would include surface material, drainage, lighting, plantations, signage and integration of service lines. Special provisions will be made for parking and availability of public transportation for visitors. The transportation within the Heritage Zones will be planned in detail with all roads and paths being designated to specific categories of vehicles.
The **roads and paths** will be categorized based on the allowed form of transportation which would be differentiated based on degree of possible impact on heritage, i.e. size, weight and form of motorization. The categories are (1) busses and trucks, (2) vans and cars, (3) motorized three and two wheelers, (4) Non-motorized vehicles and (5) pedestrian areas. Special consideration might be given to electric vehicles. The transportation network within the Heritage Zones will be planned according to these categories of vehicles and the potential impact on heritage and environment. Each category would also have guidelines in respect to infrastructure design including surface finish.

The number of visitors to Bagan is increasing steadily and increasingly more people are looking for **accommodations** in Bagan. The visitor profiles cover a wide range from the high-paying luxury tourists, to backpackers and national visitors and pilgrims. This requires various typologies and standards of accommodation. Inversely, the type of accommodations and their marketing can also influence the tourist profile. A detailed study is required of present visitor numbers and profiles over the year, linked to the national tourism strategy and extrapolation scenarios for visitors to Bagan over the next decades.

The **basic strategy for visitor accommodation** will be developed as per the outcome of studies on present visitor profiles and extrapolation scenarios. The main focus and support will be given on developing tourist accommodations outside the cultural heritage site. An example can already be found in Hotel Zone 4. These areas will however be developed to ensure appropriate local characteristics while providing the necessary services and entertainment for the tourists and allowing the local population to profit from this.

Considerations will be made on allowing **tourist accommodations in town areas and possibly in the villages** in a controlled manner. This will possibly mean the introduction of upgraded residential buildings and accommodations in heritage buildings that are restored and maintained. This will be a motivation for conserving historical and local buildings (and vernacular architecture in general). The construction of new buildings for such purposes will be dissuaded.

These should be **incentives for conserving historical buildings** and providing village style accommodations. The wonderful colonial period buildings in Nyaung U must be conserved, possibly through change in usage. Even the wooden framed buildings that provide the town with a distinct character must be conserved. In Myo-thit (New Bagan) the situation is different, since this is a town that was established only in 1990. Similar incentives could be used to conserve the wooden monasteries around Bagan. Certain monasteries which have been recently lost could be re-established to provide pilgrims with simple accommodations. The income source would be a great support for the monasteries, keeping in mind that the monasteries cannot request for support themselves.

Visitor accommodations have become one of the greatest threats to the Heritage Zones. The **existing hotels and guest houses** within the heritage site, including Hotel Zones 1, 2 and 3 will be assessed as individual cases to ensure that they do not impact the heritage. Resort complexes have been built in critical areas of the Monument Zone, such as in Old Bagan and along the banks of the Ayeyawady River. The designations of Hotel Zones (which are Hotel Zone 1, 2 and 3) have been removed. Necessary measures will be taken and over the next 15 years these hotels and resorts will be phased out.
3. Environment, pollution and sustainable services

Many of the issues linked to environmental planning lie far beyond the scope of managing the Cultural Heritage Site of Bagan. The effect of climate change is a critical issue for the delicate environment of Bagan which lies in the central dry zone of Myanmar. The pollution as well as the seasonal flooding of the Ayeyawady River is due to activities upstream from Bagan. The lack of watershed management, particularly the deforestation and lack of control of waste disposal are issues that will need to be tackled at national or even international levels. There are however some specific issues that can be addressed within the Protective Planning Region. These consist of local waste management, water management and the protection of flora and fauna.

Pollution control

A sustainable waste management system is required for Bagan which will deal with solid waste (littering), sewage, as well as other forms of air, water and land pollution. This entails the possible control at source or user, while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure. Solid waste is dumped mainly in the areas surrounding the towns and villages but also around monuments. Studies will be carried out to identify the sources and composition of the litter. This will allow for solutions in respect to appropriate collection and disposal. A campaign was started by the District administrator which will be streamlined, supported and augmented. Different forms of waste will be separated at source. Biodegradable waste will be composted and used as manure. Other waste such as glass, metals, paper and most types of plastics will be recycled. For this the necessary systems will be established which includes awareness, collection and processing. Some forms of waste such as hazardous industrial waste, waste from hospitals and even used oil will be collected separately and disposed off in a sustainable manner. It is only rubble that needs to be dumped, but even this can be used for developing infrastructure and for landfills outside the heritage site.

Drainage both natural and constructed, lead into the Ayeyawady River. This means that all the pollutants that are collected on the way end up in the river. This will need to be controlled, since the drainage will distribute pollutants within the heritage area as well as contribute to polluting the river. Sewage is mainly collected in septic tanks. There is no real system for sewage disposal. This will become a major issue as further development takes place. The additional problem with sewage is that it requires infrastructure that is placed underground which can be a threat to archaeology. The digging of septic tanks or the laying of sewage pipes could disturb the archaeology. Additional value of sewage, such as the possibility of creating bio-gas or converting the sludge into manure must also be considered. The discussions of using more complicated technology verses natural means of sewage disposal will also need to be clarified considering that such methods as reed bed treatment requires large areas of wetlands, not necessarily suited for Bagan.

Another critical form of pollution that has been identified is air pollution. Till today the contribution of air pollution due to traffic and industry is still considered to be negligible, however these need to be considered future threats and controlled. The main cause of air pollutions at present seems to be due to the burning of refuse, which might solve the problem
of littering, but leads to another problem of air pollution. In this respect, the disposal of solid waste must be managed in a sustainable manner.

Concern has also been raised in respect to noise pollution. The various causes might be additional activates linked to tourist attractions, but also various religious and community practices that are using larger and louder equipment. The noise pollution can also potentially be caused if airplanes, means of transportation (motorized vehicles on land and river) as well as construction and industrial activities. Provisions will need to be made to control possible noise pollution in the future keeping in mind the sanctity and character of the heritage zones.

A further form of pollution that has been mentioned is light pollution. The development of evening activities, the increasing electrification of the towns and villages and especially the lighting up of monuments are issues that need to be considered. This form of pollution would need to be studied specifically in respect to its impact. For example the impact of lighting up monuments will impact the animals living in and around the monuments such as the Laggar Falcon on Sulemani Temple. Specific solutions are required. Light pollutions must also be seen in respect to the impact on heritage by means of lighting in the temples where there are mural paintings. The lighting of heritage objects will need to be studied in detail and appropriate solutions identified.

The responsible authorities dealing with the various forms of environmental issues will be coordinated at union, regional and district level. Their respective legislation will be used to ensure that an effective and efficient system of managing the environment in the Protective Planning Region is established. The District Administration (Nyaung U and Pakokku) would have pivotal roles to play. They would have to work closely with the Department for Development Affairs (DDA) and Department of Environmental Conservation (DEC). This would be linked to the Development Committees Law (1993) and the Environmental Conservation Law (2012) respectively.

Water management

The water management entails the establishment of a clear approach to the collection, storage, distribution and use of water as a finite resource that is essential for the livelihood of the people and the continued existence of the ecology. Water is important for habitation and agriculture, which requires managing precipitation and the perennial streams including the Ayeyawady River. What are the issues that need to be considered in managing of water in Bagan?

Rain has been the main source of water for Bagan over the centuries. Bagan lies in the central plains of Myanmar which is a “dry zone”, for the Rakhine Yoma mountain range shelters this area from the humid monsoon sweeping in from the Bay of Bengal. The data provided by the Department of Hydrology and Meteorology shows that maximum rainfall is slightly over 100 millimetres in September and October. Throughout history, agriculture in Bagan has been dependent on the rains. The Department of Hydrology and Meteorology is responsible for monitoring the weather and providing daily forecasts as well as warnings of extreme conditions. They are also responsible for monitoring droughts. There was a long period of drought from 2013 to 2014. The concerning is that with climate change such
situations would become even more commonplace requiring alternative water sources to be considered.

**Other sources of water** are ground water and the perennial streams and rivers, most notably the Ayeyawady River. The use of ground water has been regulated this could impact the archaeology as well as the monuments by leading to changes in the ground water table. The decision to use ground water should be based on extensive understanding on its implications and the effects on the environment and the cultural heritage. Any water that is pumped up from the ground must be linked to a plan to recharge the aquifers. Even the water of the mighty Ayeyawady River must be considered to be finite. There are plans to further exploit the Ayeyawady as a source of water. This is taking place not only around Bagan but along the entire river which calls for a sustainable national level plan for the use of water from the Ayeyawady River.

The **collection and storage of rainwater** was carried out even during the Bagan Period, with the construction of a huge reservoir on the western side of Twin Hill. In ancient times rainwater was also collected at the village level, for every village has a reservoir. The collection of water at household level is of course not clear since hardly any research has been undertaken on the ancient dwellings of Bagan. This ancient system provides us with a model which needs to be reviewed as a possible means of collecting and storing water during the rainy seasons. How a similar system would be adapted to the present circumstances and needs will need to be studied and adapted to the regulations to safeguard the monuments and archaeology. (Photo shows ancient reservoir area)

The main focus on **water supply** has been the Ayeyawady River. A pumping station can be found in Nyaung U, which pumps water to supply the Nyaung U town. More detailed assessment of this system is required. A second source has been created where a branch of the river about ten miles long along the western side of Bagan (Loka-nanda) has been closed off to function as a reservoir during the dry season (as shown in the map provided by the Directorate of Water Resources and Improvement of River Systems). The level of the water here would be 4 to 5 feet higher than in the main channel, allowing for storage of water to a depth of at least 2 meters. Water is then pumped from this seasonal reservoir from the Loka-nanda Pumping Station. The rather controversial “Bagan River Multipurpose Beautification Project” proposes to create a second channel to exploit the ten meter level difference between high and low water. (This project must be critically reviewed since it intends on changing the entire river-scape, even proposing to use the river area for tourism infrastructure).

The **distribution of irrigation water** has been through irrigation channels which allows for large amounts of water to evaporate. This has not been allowed within the Monument Zone and Archaeological Zone, is however being done in the Protected Zone. The question that arises is whether farming requiring irrigation should be encouraged in this area at all. The distribution must be based on the need, which in itself requires strategic planning.

The distribution of water is more efficient with a well designed network of piping, as long as these are maintained properly. The question that arises in respect to piping is the impact on archaeology. The piping network would require detailed scrutiny in respect to archaeological impact and should anyway only be planned for areas the need for piped water is critical.
The main requirement for water is for private use in the towns and villages and for agriculture. These are two very different requirements and would need to be considered under different strategies. The water required for habitation, which means for consumption and for hygiene, is a basic necessity which must be guaranteed to all the citizens. This means that water must be provided to all the villages and towns. How this is done will be a critical part of the planning exercise, since water is scarce and the storage, distribution and use of water within the heritage areas could impact monuments and archaeology. This requires careful planning. The use of water for agriculture is a very different planning process. This needs to be integrated into the planning for a strategic approach to agriculture in Bagan. The need for irrigated water would first have to be clarified, since the agricultural processes in a “dry zone” would best correspond to its climatic condition. There are clearly means of engineering the environment to use it to grow different types of crops; however the basic question arises whether this would be the correct approach for Bagan.

The strategic planning required for water management will require the involvement of authorities at various levels. At the national level a water management policy is required which ensures efficient and sustainable utilization of water. At the provincial and local level, the distribution and usage of water needs to be regulated. Since the use of water is a crosscutting theme touching upon various sectors, a coordination system needs to be established. For Bagan these discussions will need to take into account the safeguarding of the heritage sites. A Strategic Plan on Water Management for Bagan is required. This will be linked to national level policies while taking into account the specific circumstances of Bagan as a heritage site.

Indigenous flora and plantation regulations

The landscape around Bagan has a unique character defined by the dry climate. Though a large part has been converted into agricultural land, there are still areas of forest and shrub. The only designated forestry areas within the township is the Loka-nanda Sanctuary. The area is about 104 acre focusing on the protection of the ecological system and specifically for the endangered species of Golden Deer and the Star Turtle. Twin Hill is not yet designated but application has been submitted. Another proposal which has been considered is in the Kyauk-ku-umin area east of Nyaung U town. The area around the Tuyin-taung range (Magway Region) is designated a reserve forest.

There are already numerous studies that have been carried out on the indigenous flora of the Bagan area. The various indigenous species will need to be listed in a manner which allows for this information to be used for planning and developing regulations. An additional aspect that would provide interesting insights would be to study the plant species that existed in the ancient landscape. This will require research in Palaeoethnobotany.

In 1997 a famous environmentalist began greening the area around Mt. Popa. The area which only has 20 inches of rain is of course not good for trees. However the initial green project was successful. This lead to the Dry Zone Greening Department being established and the first project in 1998 was carried out with support from KOICA. The project in the archaeological zone which was carried out by KOICA is over and the individual plantation work is being done locally. There have been numerous forestation projects under the slogan of greening the dry zones of Myanmar. A forest area is planned in the southern part of the
township outside the heritage area. The Dry Zone Greening Department is responsible for
the plantation of trees within the heritage area as shade for the tourists and visitors. Every
year about thousand trees are planted, with the locations being chosen by the temple
trustees.

The decision on what trees to plant are recommended by the Forest Research Institute
in Naypyitaw. The decision is based on usage that within three years the local community can
use the timber (this however contradicts the regulations on cutting and trimming the trees).
Trees that are usually planted are Eucalyptus, Neem, Kokko, Acacia and Cassia. Further
research on social and climatic impact of these trees is required. Further interesting topics of
research would be the link of the vegetation with the building materials used during the
various phases of construction in Bagan.

Vegetation can have extremely detrimental impact on heritage structures. The various ways
that vegetation impact heritage needs to be studied. This can be the actual physical
destruction of heritage through plants growing on monuments or over archaeology. The
threat of plantations to archaeology has not been taken seriously in Bagan, also because
very little in know in respect to potential archaeological sites. The impact of vegetation could
also be created through indirect influences such as the change in ground water or the
increase in humidity. Certain trees can affect the ground water level. Trees can also cause
shading and allow greater evaporation which increases humidity. These different means of
impacting heritage will be studied to allow for respective legal controls to be put in place while
providing alternative solutions.

The regulations that are established will be based on a certain definition of the significance
of the landscape. This will be linked to the outcome of studies on the original landscape and
the lists of indigenous plant species. The regulations will determine the species of trees that
can be used for reforestation taking into account the impact on water management, soil
improvement and needs of the community. The impact of vegetation, particularly trees, on
monuments and archaeology will be controlled. This will require clear regulations on
plantations to ensure that the impact of the trees on monuments is mitigated (regulations on
type, distance, etc.). The impact of trees on archaeology will be mitigated by preparing and
enforcing archaeological risk maps.

Ministry of Environmental Conservation and Forestry would take on a pivotal role in
determining the indigenous flora and working on plantation regulations within the heritage
zone. This would require close collaboration of the Forestry Department with the Dry Zone
Greening Department and the Forest Research Institute in Naypyitaw. The assessment on
the impact of plantations on heritage would require close collaboration with the DANM. The
district administration would also be involved to ensure monitoring of activities within the
heritage zones. The legislation on forestry is comprised of Myanmar Forest Policy 1995,
Community Forestry Instructions 1995. There are basically two categories of forests:
Protected Public Forest which is protected and not for use and Reserve Forest which can be
used for timber and non-timber forestry products. Additionally there are areas designated as
a Sanctuary for the protection of the ecology and specific species of flora and fauna.
Safeguarding indigenous fauna

The murals and stucco carvings show many species of birds and animals. Though some might be of legendary design, there seem to be many that represent actual animals found in Bagan during the historical times. This would make an interesting study which can be used in awareness building and promoting the safeguarding of the indigenous flora of Bagan.

Bagan has a **unique ecosystem** and the Ayeyawady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA). There are numerous endemic species of animals found in the area. The categorization of animals is done based on the degree of threat they are facing. These categories are: extinct, extinct in the wild, critically endangered, endangered, vulnerable, lower risk and conservation dependent. The species can be registered on IUCN’s Red List. The animals can also be categorized under the level of threat: threatened (T) near threatened (NT) least concern (LC) data deficient (DD) not evaluated (NE). For example we find the Laggar Falcon in Bagan which is a threatened species. This threatened species used to nest on the Sulemani temple, raising questions in respect to how to consider this monument as a habitat of a threatened bird species. After the damaged caused by the earthquake, it is not clear what has become of these Laggar Falcon. There are numerous endemic as well as endangered species of animals found in the Bagan area including the Star Tortoise, Burmese Roofed Turtle, Golden Deer, White Throated Babbler and the Laggar Falcon. The endemic species of Myanmar include four species of mammal, fifty-one species of reptile and numerous birds. The existence of these endemic species in Bagan must be identified and studied.

Safeguarding the indigenous flora will require a comprehensive and integrated approach including all the various stakeholders involved in Bagan. This means the various departments of the Ministry of Environmental Conservation and Forestry, including the Department of Environmental Conservation. The Loka-nanda Sanctuary is an important location for various endemic species and would become the centre for conservation and research. The government can institutions can be supported by such organizations as the Myanmar Bird and Nature Society (MBNS). Since awareness and education is an important part of this process, links need to be made to schools, educational institutions and community organizations that can disseminate the required messages.

An interesting approach to this project would be to put environmental conservation within the context of Buddhist philosophy of not harming nature. The management system will also include provisions for awareness raising and education on safeguarding endemic and threatened species. This would go hand in hand with developing an overall philosophy of safeguarding living being which needs to be understood as not only by stopping poaching but also by providing the basic requirements for the species to survive. A further dimension would be to link this to the historical images of the natural surroundings found in the ancient mural painting. These considerations will need to be converted into specific actions, policies, regulations and general considerations for overall planning in Bagan.
4.2.2 Disaster Risk Management

A Bagan Disaster Risk Management Strategy has been established as the basis for a Disaster Risk Management Plan for Bagan Cultural Heritage Site. The strategy responds to natural as well as human-induced hazards. The strategy focuses on reducing vulnerability while preparing for response and reconstruction. To ensure compliance by all authorities and line agencies, the Disaster Risk Management Plan for Bagan will be linked to the national policies, plans and processes.

Disasters are created through the combination of hazards and the vulnerability of a given site or structure. This interplay between hazards and vulnerability has been going on throughout history and communities had to learn to deal with such circumstances and survive. However it must also be understood that possibly even certain characteristics of hazards have been changing, for example due to climate change. The vulnerability of the environment in many cases has increased drastically due to growing populations and the uncontrolled spread of human habitat and construction with little consideration for risk reduction. There is much that can be learnt from heritage to reduce disaster risk; however these lessons need to be introduced into the mainstream planning and decision making.

The Disaster Risk Management Plan will be the basis for all authorities, organizations and institutions to work together in risk reduction and disaster preparedness with a shared vision and direction. The coordination will be facilitated between the authorities responsible for the management of the cultural heritage property and those responsible for disaster risk management. Detailed procedures will be put in place, which address risk reduction and disaster preparedness. The priority for action will be to establish the Disaster Risk Management Plan in cooperation with all relevant authorities, organizations and institutions.

Hazards and Vulnerability

Bagan has experience numerous disasters over the past years. The Chauk Earthquake affected 389 monuments in Bagan and many more in the surrounding area. This comes four decades after the devastating earthquake of 1975 showing a pattern of recurrence that has challenged the grand monuments over the centuries. The Post Earthquake Response in Bagan is quite exemplary. There are however some critical monuments that require in depth research and rehabilitation procedures. There are many lessons to be learned from these earthquakes which will help us better prepare and respond to future events.

Floods have affected monuments, subsurface archaeology as well as the settlements and recently this seems to have worsened. Every year the flooding creeps into areas which used to be inhabited in the past. The mighty Ayeyawady is eroding away the banks of Bagan threatening numerous monuments. This means that climate change and the destruction of the environment particularly in upstream watersheds are causing major havoc. In recent years we have had structures collapsing due to heavy rain. Additionally the ancient draining system of the site has stopped functioning causing localized flooding around monuments.

Throughout history there have been great fires that destroyed settlements and palaces with a village south of Bagan even being called “where the fire began”. Fires have been less destructive on the main brick structures but the wooden monasteries and historic buildings particularly in Nyuang U are extremely vulnerable.
Bagan Disaster Risk Management Strategy

Post-earthquake Rehabilitation Guidelines have been adopted by the government. This however needs to translate into resilience and disaster risk management as part of the long term management of Bagan. To develop a robust plan for dealing with disaster mitigation some of the activities have been identified are hazard, vulnerability and risk mapping at overall site level. This would be followed by developing an overall disaster risk management strategy for the site. This would then lead to a detailed process of interventions for reducing disaster risks in pilot areas with specific monuments. The outcome would be to develop resilience of key areas of the heritage property through participation of government authorities, experts and communities in preparedness, response and recovery.

The Disaster Risk Management Strategy which has been prepared in close collaboration between the Government, UNESCO and World Bank is attached as a separate document. The content of the document has been segregated into several sections following an executive summary with a distinct action plan along with an annex.

The first section consists of the context of Bagan particularly in respect to disaster risk management and previous major events and their impact. Here the present concept and definitions of disaster risk management particularly pertaining to cultural heritage is provided. This is followed by the national and international conventions, frameworks and policies.

The second section consists of information on essential site characteristics required for disaster risk management. This includes topographical maps and categories of inventories of tangible and intangible cultural assets. This also includes basic statistics of community members and their employment along with information on visitors, their origin, seasonality and other profiles. This then links to understanding of exposure at the site of defined assets.

The third section provides detailed information on natural and human-induced hazards along with their description, vulnerabilities and previous interventions. The description of each of the main hazards also provides information on and their expected risks to the site in terms of probability, frequency and severity. The main hazards would be earthquakes, flooding, storms (strong wind and rain) as well as other hazards such as slope stability and landslides along with fire and human activity.

The fourth section includes information on the management frameworks. The Institutional, legal and resources frameworks provide overviews of disaster risk management and cultural heritage at national as well site level. This means the related institutions, legislation as well as financial and technical support.

The last section provides the action plan, setting out targeted proposed actions. This would be linked to mitigation and preparedness including risk assessments in the site (by hazard and multi-hazards), risk prevention plan (countermeasures taken for specific hazards), emergency access and evacuation plan, equipment and team for emergency response as well as trainings and drills (local community, team responsible for tourist and visitors). The response would be linked to assistance for people and then for heritage, immediate damage assessment and protection of damaged heritage. This would be followed by rehabilitation with detailed damage assessment, treatment (repairs, retrofitting, restoration, etc.) and local community involvement in recovery.
Response and Rehabilitation after the 2016 Chauk Earthquake

Right after receiving news of the Chauk Earthquake of 24 August 2016, a short write-up was prepared to assist in immediate response. The text was translated into Myanmar and distributed within 18 hours. This document provided the basis for a successful response to the earthquake within Bagan Cultural Heritage Site. The following is the text:

<table>
<thead>
<tr>
<th>Considerations for immediate survey and response</th>
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<tr>
<td>Rohit Jigyasu, Duncan Marshall, Kai Weise</td>
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</tbody>
</table>

The **safety** of people is priority. This means that the damaged heritage structures must be secured and people should be prevented from entering them, especially in consideration of their possible collapse due to aftershocks. Accordingly no entry zones should be clearly demarcated.

The **capacity** of the involved authorities must be increased for rapidly assessing the damage, securing, stabilizing and protecting the damaged heritage structures as well as for salvaging and storage of heritage fragments and collections. This would require the involvement of additional DANM staff with support of the local administration and volunteers, who can be young professionals from architecture, structural/civil engineering and museology.

The required human and financial **resources** must be organized at a national level with further international support. Resources would also need to be mobilized from the private sector. This would require a quick assessment of the needs for materials, equipment and technical expertise for securing, stabilizing and protecting the damaged heritage structures and salvaging and storage of heritage fragments and collections.

The **initial survey** of the damage would need to be done possibly using available site maps to locate observations through reference number and possibly using GPS devices to take geo-location of images.

The **protection** of the monuments must be ensured.

1. It is crucial to prevent clearing of the debris from the monuments and no heavy equipment such as excavators or bulldozers should be allowed near the monuments.
2. Damaged monuments should not be demolished. This information must be circulated to the local authorities including the rescue teams (such as the army or police).
3. The damaged and collapsed monuments would ideally be cordoned off to prevent further loss. The damaged monuments need to cover to protect from rain.
4. Guards should be deployed to prevent the threat of looting of precious objects or fragments from damaged structures.

A **rapid damage assessment** form needs to be prepared aimed at knowing immediate priorities to prevent further damage. Overall assessment needs to be made of the damage caused by the earthquake on monuments as well as other attributes of the heritage site. The list of attributes must be immediately finalized. The initial assessment would be based on extent of damage on main structure as well as the various important elements such as mural paintings, stucco work, tiles, etc. Important statues and heritage objects that might be trapped in the monuments or buildings must be noted. The impact of previous interventions - the use of concrete, steel supports - also need to be assessed.

The **salvaging and storage** of artefacts that have been displaced or elements of the monuments that need special care must be planned and carried out. Safe and secure structures that can be used as storage areas need to be identified.
Prioritization of structures for protection and response need to be defined based on value and extent of damage. The feasibility of immediate stabilization measures must be considered and prioritized based on effectiveness and mitigating possible threat to people or heritage. The criteria for prioritization of protection must also be clarified.

The damaged and collapsed monuments must be covered to protect from rain. Shoring and stabilization works should ideally involve minimal intervention affecting the existing fabric, and be reversible. Appropriate design of shoring for emergency stabilisation of structures must be developed with the help of experts. The designs should ensure effective protection of vulnerable heritage structures and mitigation of risks due to aftershocks, rain etc. and should utilize local materials and resources as much as possible.

This might require specialists to train local contractors and craftsmen to work on appropriate and effective shoring, which should be able to last until full recovery and restoration works are undertaken. Special in-situ care must be given to the murals and other ornamentation, both as fragile fabric but also to protect any fallen and damaged fabric from further damage. Conservation work on damaged structures would need to be planned long-term and not be rushed. It should be based on detailed assessment of damage to be carried out at later stage after emergency measures have been put in place.

Response phase activities and prioritization

The response phase, which began immediately after the 24 August 2016 earthquake and ended on November 30 focused on identifying the extent of damage. The response phase included various degrees of assessment, salvaging artefacts and historic material as well as protecting the damaged monuments by covering and providing structural support. There is documentation of the work carried out during the response phase and a detailed outcome report needs to be prepared. This is very important to ensure that the transition from response to rehabilitation is clearly differentiated.

Rehabilitation plan and prioritization

The outcome of the activities of the response phase provides the basis for planning the longer term activities for rehabilitation. It has been noted that the DANM has proposed all 165 disaster-affected monuments to be considered for rehabilitation. This however needs more detailed analysis and planning to develop a strategic approach for rehabilitation. The prioritization for the response phase would not be valid for rehabilitation.

The rehabilitation of the 165 disaster-affected monuments would need to be planned in a systematic manner considering required time for carrying out full rehabilitation procedures as well complexity and required expertise. The projects would need to be differentiated based on need for only local expertise, national expertise or also international expertise. The monuments would also need to be clearly differentiated whether they are active (living) monuments or inactive (non-living) monuments since this would determine different rehabilitation approaches.

<table>
<thead>
<tr>
<th>Sl. #</th>
<th>Monu #</th>
<th>Monument Name</th>
<th>Time</th>
<th>Complexity</th>
<th>Category</th>
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<td>1-2 Y</td>
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**Implementation of rehabilitation process and guideline document**

An early draft was translated into Myanmar for the local authorities, particularly DANM to review and comment. There were various workshops and discussions held on the procedures and guidelines. Some amendments were done and the document seems to have been adopted “in principle” by the Ministry and DANM.

Further draft editions of the Rehabilitation Process and Guideline Document were prepared based on ongoing comments from international experts. A version compiled and submitted to UNESCO Bangkok on 20 December is the latest version of the document that has still not been finalized.

The various versions as well as the question of translation must be resolved immediately to ensure that this document becomes the basis for the rehabilitation process.

**Rehabilitation checklist**

The involvement of numerous national and international partners in the rehabilitation phase can lead to complications concerning coordination and communication. It would therefore be critical that all involved parties clearly define within the overall activities framework what specific sections they would be taking responsibility for. From the side of the government, it is also critical to sign off on the activities that have been satisfactorily completed to allow for the next steps of the rehabilitation process to take place. To facilitate this, a draft “Rehabilitation Check-List” has been prepared.

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<thead>
<tr>
<th></th>
<th>PHASE ONE: Preparation</th>
<th>Reference Document</th>
<th>Completion Date</th>
<th>Signature of Authority</th>
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<tbody>
<tr>
<td>1.1</td>
<td>Documentation</td>
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<td>1.2</td>
<td>Assessment</td>
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<td>1.3</td>
<td>Research</td>
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<td>1.4</td>
<td>Inventory of Salvaged Materials</td>
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<td>1.5</td>
<td>Temporary Interventions</td>
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<td>2.</td>
<td>PHASE TWO: Design and Planning</td>
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<td>Completion Date</td>
<td>Signature of Authority</td>
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<tr>
<td>2.1</td>
<td>Structural Interventions</td>
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<td>2.2</td>
<td>Conservation</td>
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<td>2.3</td>
<td>Material – requirement and supply</td>
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<td>2.4</td>
<td>Artisan – requirement and availability</td>
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<td>2.5</td>
<td>Implementation Planning</td>
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<td>3.</td>
<td>PHASE THREE: Implementation</td>
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<td>Completion Date</td>
<td>Signature of Authority</td>
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<td>3.1</td>
<td>Rituals</td>
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<td>3.2</td>
<td>Documentation of Implementation</td>
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<td>3.3</td>
<td>Supervision and Monitoring</td>
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<td>Handing over procedures</td>
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<td>3.5</td>
<td>Audit – quality and financial</td>
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The “Rehabilitation Check-List” can be used to clarify the content and schedule of any agreement with national and international partners for any given project. Should a specific party agree to only carry out certain parts of the activities on “Rehabilitation Check-List” then
the agreement should only be finalized once other partners are finalized for the remaining activities. During the implementation process, the same "Rehabilitation Check-List" can be used by the national authorities for the responsible official to sign off on the completed activities. This would also clearly show progress.

Each phase would need to be completed to an “acceptable” degree before the next phase begins. However there might be certain conditions where an intervention cannot be designed due to lack of research requiring the process to back-track or function parallel till a satisfactory outcome is achieved. Phase three implementation however cannot begin without national authorities agreeing to the design, interventions and overall implementation planning.

A more detailed explanation of each of the phases and sub-phases must also be attached to the “Rehabilitation Check-List” to ensure that there is clarity for all concerned parties.

Establishment of expert support network

The implementation of the Rehabilitation Phase was planned out to ensure that there is clear coordination between all involved parties. There was need for local coordination, national level coordination as well as coordination of all international involvement.

Local coordination focused on the daily monitoring of activities taking place on site. The key authorities responsible for this were the DANM office in Bagan along with the District Administration office.

The coordination at National and Regional level functioned through various committees and teams that were established.

The coordination of international involvement required specific agreements clearly defining the role of each international agency, institution or expert and their contribution within the larger framework of rehabilitation.
4.2.3 Tourism Sector

Tourism plays a major role in heritage conservation, both as a source of income as well as to gain acknowledgement for the heritage. However, without appropriate management, Tourism can have a negative impact on the property. To ensure that a balance is attained between safeguarding the heritage site while allowing for tourism development, the Bagan Sustainable Tourism Strategy has been adopted. The implementation of this strategy takes into account the impact of tourism on the heritage while ensuring maximum profitability for the heritage site. Regular interaction will be established between the authorities implementing the Sustainable Tourism Strategy and those responsible for the Integrated Management Plan.

Tourism is a critical part of managing World Heritage properties. During the second cycle of periodic reporting on the implementation of the World Heritage Convention in Asia and the Pacific, site managers were asked to comment on factors affecting their heritage. One of the most prominent factors considered to have both negative and a positive impact on World Heritage was tourism and the related infrastructure development, accommodations, including interpretation and visitor facilities. The positive factors are the income and prestige which comes with promoting and sustaining the heritage sites. On the other hand, many activities can cause physical damage, loss of ambience, spoil the environment and the surrounding context and even alienate the local community.

The Bagan Sustainable Tourism Strategy will ensure the all the elements which give Bagan its significance is protected while promoting it as a tourism destination. This means that measures are put in place to ensure that the monuments, the sub-surface archaeology as well as the unique environment are protected along with the traditional villages, festival and rituals. Tourism activities and the required infrastructure will then be developed ensuring that they don’t destroy that for which the tourists and pilgrims are actually visiting.

There have been various activities that have taken place in the past that have not respected the cultural and natural heritage of Bagan. We must make sure that such activities are stopped immediately. There will be a process established that allows development which is sustainable and only after its impact on heritage is assessed. The local communities will remain in their villages and carry out activities that ensure their livelihood while participating in the effort to protect the heritage of Bagan. The continuous or increasingly detrimental impacting of activities on the cultural or natural heritage of Bagan will be mitigated. The inappropriate buildings and infrastructure that have been constructed in the past will be phased out over a period of ten to fifteen years.

The Bagan Sustainable Tourism Strategy will bring together authorities and stakeholders of Bagan to ensure a comprehensive approach to visitor management based on a long-term vision. This means that management procedures and regulations will be put in place to ensure appropriate tourism activities are developed and promoted that respect natural and cultural heritage. Among other components, a detailed transportation plan will be created along with regulations on tourism infrastructure development within the heritage area. Furthermore the tourism development strategy will be linked to the regional planning that will ensure appropriate locations for tourism services and hotels. This would also allow planning for improved access to Bagan by air, road, rail and river.
Strategy points

The following strategy document has been established and adopted to ensure that tourism development is carried out in a sustainable and appropriate manner in and around the heritage site of Bagan. All activities, particularly those dealing with tourism in and around Bagan shall follow the provisions provided below:

Concerning overall approach for tourism in Bagan and sustainability:

1. Bagan is a heritage site, a sacred site, a place where communities live and work, and only then a tourist destination;
2. Tourism shall support the safeguarding of the heritage site;
3. Only activities that do not negatively impacted heritage shall be carried out;
4. Activities that enhance the protection of heritage shall be promoted;
5. Wherever possible the local community shall be prioritized to profit from tourism activities;
6. Long-term planning shall be carried out to ensure focus is not only on immediate gains;
7. The heritage site as a tourism product must ensure that there is a clear balance between the requirements and visions of the tourism sector and the need to safeguard the cultural heritage, the environment and the integrity of the local community;

Concerning tourism accommodations

8. Tourist accommodations within the town areas and home-stay in the villages shall be allowed as per the new legal framework being developed for Bagan. This will however be strictly controlled to ensure appropriate scale and compliance to the building bylaws while ensuring minimum impact on monuments and subsurface archaeology.
9. Large hotels and resorts shall be allowed only outside the heritage area. Planning provisions shall be made for good accessibility of the main heritage site from the peripheral areas where hotels might develop such as on either side of the Ayeyawady River upstream towards Pakokku and downstream towards Chauk.
10. All hotels and resorts located within the site, excluding those in towns that conform to the legal provisions, must be phased out by 2028. All further work on such resorts must stop. The hotels shall be entirely removed and the area shall be rehabilitated to become an archaeological area again. Procedures need to be clarified with the respective owners.

Concerning tourism infrastructure

1. The development of facilities and infrastructure for tourists within the heritage site shall visitor satisfaction in respect to basic needs, experience as well as information. These shall however be restricted to facilities that are non-intrusive, reversible and appropriate to the location and follow the legal framework being developed for Bagan.
2. Within the heritage site any facilities that need to be built shall adhere to the legal framework particularly to the building bylaws regarding temporary structures. Special care shall be taken with service lines for supply of electricity and water and disposal of sewage, waste water and solid waste.
3. The development of infrastructure linked to tourism activities shall closely adhere to the legal framework, in particular the development guidelines. The development of infrastructure shall only be carried out once an overall appropriate infrastructure development plan has been prepared, agreed upon and adopted by the government.
All government departments shall then follow these plans. This is particularly important for circulation (roads, paths, parking areas, and bus stops), airports extensions, railway lines and stations, jetties and piers for river traffic, as well as viewing mounts, decks and special access to temples and archaeological sites.

4. Any development projects that are not temporary or easily removable shall first have a Heritage Impact Assessment (HIA) carried out along with detailed sub-surface archaeological surveys linked to Archaeological Risk Maps (ARM). The project shall be developed taking into account the outcome of the assessment and survey.

Concerning tourism transportation and accessibility

5. Transportation within the heritage site will be a critical issue in ensuring heritage is protected. The distribution of visitors throughout the site in sustainable numbers needs to be targeted.

6. A hierarchical plan for transportation within the heritage site shall be established. This means that a detailed plan of vehicular movement must be prepared, agreed upon and adopted before any further infrastructure is developed. The plan shall allow general access to cycles and electric scooters with greatest restrictions to big buses. Accordingly parking facilities shall be provided with a hierarchical system of transportation.

7. The accessibility to Bagan shall be improved considering rising visitor numbers while taking into account its impact on the heritage site.

8. Nyaung U Airport shall not be extended and flight frequency shall be restricted. Should access to Bagan require larger flights and higher flight frequency, the option of moving the airport to other sites such as using the partially built one in Pakokku needs to be considered. Bagan shall become a no-fly zone.

9. Railway transportation shall be prioritized for tourism development. This could become especially important when the airport is relocated. Special trains with steam engines could become a major tourist attraction.

10. Road networks must link to the heritage sites with the main connections being outside the heritage area.

11. Travel along the river shall be promoted. Infrastructure development along the river banks shall be restricted. No major development of jetties and piers shall be carried out within the heritage area. Floating hotels shall not be allowed within the heritage area, can however be promoted further upstream or downstream.

Concerning tourist activities

12. Tourist activities shall ensure that they do not impact the heritage which includes the monuments, the subsurface archaeology as well as the cultural sentiments of the community. This would need to be based on detailed studied and discussions with community members.

13. All activities shall be planned taking into account of the number of tourist that will be visiting the site over the next years and considering the carrying capacity of each of the monuments and sites. In certain cases, such as monuments with mural paints, might require controlling the number of tourist at any one time and overall daily restrictions, possibly by charging extra fees to cover direct management expenses.
Concerning involvement of local community and ensuring their

14. Tourism shall be promoted while ensuring that it supports the livelihood of the local community. Great care shall however be taken to ensure that the lives of the local community members are not unduly disrupted.
15. Tourism activities shall consider the sentiments and values of the local community.
16. Tourism shall support local activities such as production of handicrafts and local agricultural products.

Concerning tourist during post-disaster rehabilitation

17. Tourism shall be promoted during the post-disaster rehabilitation phase to ensure continued support to the livelihood of the community. Tourists shall be encouraged to contribute to the rehabilitation efforts.
18. Provisions shall be made to allow visitors to observe the rehabilitation of Bagan. This would include possible means of observing ongoing restoration work but also by being provided information on the rehabilitation process.
19. Visitor management during the rehabilitation phase must be specially managed to allow for the experience however ensuring safety for heritage and visitors. Signage concerning possible threats must be clearly provided.

Post-Earthquake Tourism – promotion and management

Tourism can be promoted to support the livelihood of the community allowing visitors to observe the rehabilitation of Bagan. Visitor management during the rehabilitation phase must be specially managed to allow for the experience however ensuring safety for heritage and visitors. Tourism promotion should however not lead to infrastructure development and activities that have an impact on heritage. Any such activity must be justified through a Heritage Impact Assessment (HIA) and archaeological investigations. This should be part of a Sustainable Tourism Plan for Bagan Heritage Site.

There is great pressure to ensure that tourism continues to be promoted after the earthquake. The link between focusing on rehabilitation, ensuring safety while providing for tourism is something that needs to be worked on. This can only be achieved if these three issues are integrated into a single approach.

Tourism can be promoted along the lines that by visiting Bagan they are contributing to ensuring the livelihood of the local community that has been affected by the earthquake. The management of the tourists when they are in Bagan however must be planned in detail to ensure that they have a positive influence and the post-earthquake rehabilitation phase.

The rehabilitation of the heritage site can become an experience that can be shared by the tourist. This means that the rehabilitation activities wherever possible would need to be presented to the visitors. In the post disaster scenario, the primary focus must be to ensure that both the heritage and the visitors are safe. This requires a certain degree of planning to manage the visitor flow and ensure certain distance is maintained.
4.2.4 Agriculture Sector

One of the most unique features of Bagan is the expanse of cultivated fields interspersed with ancient brick monuments. The cultivated fields create the setting for the monuments. There are however numerous factors which are impacting the agriculture which includes natural phenomena as well as changing human activities. It is mainly due to the lack of funds that the local community has not been able to cultivate more profitable crops and use machines, irrigation systems and modern technology. The significance of the agricultural fields in respect to the overall value of the heritage site must first be determined. Accordingly, means of conserving this landscape need to be devised. The challenge is of course that this landscape depends on the farming community continuing their traditional means of farming.

Close cooperation is required between the farming community, the local authorities, the experts and the heritage site managers to ensure continued maintenance of the agricultural landscape. A Bagan Agriculture Sector Strategy will be developed. This will include means of ensuring the livelihood of the farmers while they participating in maintaining the heritage property and safeguarding heritage. The strategy will deal with retaining the existing agricultural landscape of Bagan as an interface between the contemporary living cultural heritage of the villagers and the ancient historic site.

In Bagan there is a clear and mutual dependency between archaeology and agriculture. Agriculture not only provides a livelihood for those living there, it also provides a context and setting for the diverse temples and pagodas. The challenge will be to ensure both can co-exist and thrive.

**Vision**

As the Bagan area develops and moves forward into the next century, it will need to give due consideration to a variety of stakeholders, of which agriculture is of importance for this report. Specifically, this will require a joint vision by all stakeholders of what agriculture and archaeology represents and require from the landscape and from its stakeholders, and what will be needed to work towards this vision.

**Process**

To ensure and implement this vision will require a process of dialogue amongst the various stakeholders. Within agriculture, the primary stakeholders are the farmers, the ministry of agriculture, the irrigation department, and a variety of support services such as input suppliers and traders.

One of the initial steps will be to get a better understanding of agriculture within the property and buffer zones. Much is already known, however there is a transformation on-going in agriculture in the broader dry region of Myanmar, and Bagan is part of this. So getting a better understanding of both the livelihoods and the agriculture management practices and options will be important. For the process to work capacity and understanding will need to be developed within agriculture, both for the farmers and all the other stakeholders around agriculture to understand and have data to support any future vision.
In other words, government authorities (archaeology, agriculture, irrigation, tourism) and local communities will need to work together, to conserve and develop the Bagan site at the same time.

Some of the initial observations on the process, which will be important to understand how agriculture fits within the process:

- Agricultural development in the Bagan site should be included in development programs of the Mandalay region, while respecting specific guidelines as may pertain to the property and buffer zones.
- Tourism is an important compliment of farm income, but opportunities may vary across the three property and buffer zones.
- A clear understanding of the different communities/stakeholders and demands being placed on the land within the property and buffer zones will need to be mapped out.
- All parties need to develop a common vision on the conservation and the landscape in/and around the heritage site.

Some initial observations on agriculture that needs to be taken into consideration within the above process:

- Agriculture is important in the Bagan landscape, which is the setting of the archaeology site. The landscape is a park landscape, where trees fulfil an important role as demarcations (important to also find out what they are demarcating) as well as a source of income. Most fields are rectangular and well delineated. Ploughing and harrowing seems to be done both by using bullock-drawn implements as well as tractors on larger tracks of land.
- Agriculture practiced today is not ‘original’, and needs not be preserved for that reason. It is highly probable that the agricultural landscape we see today is not what was in place a thousand years ago. Based on the best available knowledge the water management scheme that was in place during the Bagan period was primarily to supply the needs of the monasteries and people (https://doi.org/10.1017/trn.2016.6). The rice consumed was brought in from Kyaukse, so most likely not produced through a local irrigation system. Kyaukse district (east of Bagan – the region known as Ledwin “rice country”) became the granary, the economic key of the so-called North Country.
- Two of the most important crops grown include groundnut and sesame. There is a high demand for these oil seeds, which means there seems to be a good market for the crops. As such market is not a constraint at this point in time.
- Being in the dry region of Myanmar, the key limiting factor to agriculture is water, and rainfall variability. The farmers in the region have been struggling and adapting to this over the centuries, but climate change could be increasing the uncertainties.
- Farmers are needed to maintain the landscape - the property and buffer area is too big to be maintained otherwise by the DANM. If farmers lose interest in farming due to a lack of incentives, then the landscape would revert to bush. This is undesirable both from a point of view of losing the “park landscape” effect and bushes and trees taking over which could damage the monuments and sub-surface archaeological features.
Options and initial steps

Beyond developing a vision and a process, having agriculture as part of the management plan, will mean ensuring the development of vibrant agriculture within the site. There are a set of elements that need to be integrated into such a management plan:

- Serious estimations need to be made of the importance of agriculture in the livelihoods of the farmers across the property and buffer zones. Land ownership is an important element that needs to be considered and protected if agricultural livelihoods are to be protected.
- If the park landscape is accepted as an integral part of the Bagan “world heritage site image”, then guidelines will need to be developed with the local communities on how this landscape is maintained and managed, i.e. the trees, the agriculture, the livestock.
- Agricultural management practices in the property and buffer zones will need to differ with respect to the conservation and archaeology needs. Specific technologies will need to be identified and adapted to the respective property and buffer zones once the specific parameters are agreed-to from an archaeology perspective (e.g. depth of soil management, allowable water seepage, rooting depth, landscape perspective).
- While groundnut and sesame are the primary cash crops of today, parameters for the introduction of new crops and cropping systems need to be identified given that we need to be ahead of the curve and frame the agricultural landscape in heritage management timeframes.
- Mechanisation of land preparation and harvesting saves labour as farming households living in the property and buffer zones increasingly find complementary off-farm income, e.g. in the tourism industry. However, specific guidelines will need to be developed to avoid impact on known and presumed archaeology structures.
- Livestock is important for ploughing and transport of stover, and the provisioning of milk products. They are well taken care of and form an integral part of the mixed farming system in the Bagan area. Support to mixed farming systems should be a priority. At the same time livestock can play an important role in managing vegetation in agricultural land that is not cropped.
- Temple trustees, in varying degrees, are already engaged in maintaining the environment around the temples. This provides an opportunity for a respected local community group to be engaged in the visioning and co-management of the property and buffer zones together with the local farming community.
- Given that agricultural productivity is constrained by the variability in water availability in these rain-fed systems, it is imperative to explore different suitable options to provide irrigation support within conservation/archaeology sites.
- Toddy palms are an important feature in the landscape and have been traditionally used for tapping. Toddy palm products could be amenable for specialized marketing, building on peer review certification schemes linked to the Bagan Heritage site.

Landscape/zoning

As the landscape is depended on agriculture, there will be a need to develop a clear idea of what this landscape not only will look like but also what it should deliver to a wide range of stakeholders, including and especially the communities. It will be important to take a long term view on how the landscape needs to be maintained. This is vital to be able to set up the
guidelines. The development and agreement of this vision, which includes both agriculture and archaeology, will be the cornerstone to guiding and implementation.

To ensure the implementation of the vision the management plan has two interlinked tools/approaches at its disposal, zoning and incentives. For zoning, as agricultural practices differ according to function and natural resources, the regulation and accepted practices for each zone can and should be adapted to the zone. In other words, agricultural practices allowed in the buffer zone, might not be acceptable from an archaeological standpoint within the cultural heritage site boundaries. These trade-offs will need to be discussed with the stakeholders. To make the best decisions within regards to these trade-offs, two initial actions are required:

- A better understanding of the state of agriculture in the different zones. Agriculture is important for the local population, with a high demand for the agricultural products delivered. Yet issues of where there are possible productivity gains and the actual dependence, and type of dependence of agriculture still needs to be explored. Another area that could have a huge impact on future agriculture is to understand the food policies being implemented, as this might change markets and therefore the different agricultural produce developed.
- An understanding of the (if any) impact of the present agricultural practices on the different archaeological zones. This has not been mapped out but will be necessary when looking at the trade-offs.

Directly linked to zoning will be to ensure that there are adequate incentives in place to allow for the implementation of the vision. As the farmers are part of the landscape, it will be important to ensure their participation. In some cases this might mean including them as guardians of the landscape. To do this in a sustainable manner will need research on incentives and drawing mental maps to understand the role the temples and agriculture play within the economic, social and cultural life-worlds of the farmers. Understanding the incentives will provide a framework to start the dialogue within the communities. It will also help identify the specific agricultural practices to promote and explore. It will also allow for the dialogue with the agricultural experts to identify the appropriate technologies and management practices.

One area that might need special consideration as part of the landscape, the zoning and the incentives, is the distribution of benefits. As the practices might vary by zone, which was already noticed by those who have access to the island areas, ensuring a degree of equal distribution of benefits will only help in the long run. Again this can only be done through dialogue on understanding and adjusting the trade-offs as they get made.

**Agriculture/Water management**

The background information for this section has been extracted primarily from two documents:

As outlined by IWMI (2015), rainfall is highly variable at the onset of the wet season in the Dry Zone. This unpredictability impedes agricultural production by increasing the risk of drought at the beginning of the rain-fed crop cycle. Farmers’ difficulties are being compounded by lower than usual rainfall; historical records indicate that, in recent decades, there has been a significant reduction in the amount of rainfall received in northern parts of the Dry Zone in June.

They also conclude that small-scale water management technologies can bring many benefits and supporting small-scale agriculture is essential. Farmer managed technologies, such as rainwater harvesting ponds and small-scale pumping, have significant advantages in terms of their flexibility, reliability, ease of use and simple maintenance. All villagers benefit from having assured access to water for domestic uses and livestock watering, while those without land gain opportunities to work within irrigated farming systems. Across Asia, small-scale agricultural water management technologies have been demonstrated to improve yields, reduce risks associated with climate variability and increase incomes. In many countries, water management by smallholders is overtaking the public irrigation sector, in terms of the number of farmers involved, the area covered and the value of production.

There are five ways to apply water to crops (FAO 1997)

1. Surface irrigation: Running or impounding water over the surface and allowing it to saturate the soil to some depth.
2. Sprinkle irrigation: Spraying water into the air and allowing it to fall on to plants and soil as simulated rainfall.
3. Drip irrigation: Dripping water on to a fraction of the ground surface so as to infiltrate it into the root zone.
4. Subsurface exuders: Introducing the water directly into the root zone by means of porous receptacles.
5. Subirrigation: Raising the water-table from below (in places where the groundwater is shallow and controllable) so as to moisten the root zone by capillary action.

Small-scale irrigation methods include:

a. Methods based entirely on local materials and workmanship
   - Low-fired porous ceramic pots are placed on the surface or embedded in the soil within the root zone. When filled with water and dissolved fertilizers, the permeable clay receptacles ooze water and nutrients into the soil.
   - Sectioned ceramic pipes constitute line sources that feed elongated beds.

b. Methods based on imported materials but local fabrication
   - Moulded plastic pipes or extruded plastic tubing are perforated manually and laid over the ground to simulate drip irrigation.
   - Vertical sections of plastic pipes (or even discarded plastic containers such as bottles) are embedded in the ground.
   - Thin-walled plastic vessels are filled with sand or gravel to provide mechanical resistance to crushing.
Slit plastic sleeves cover the perforated sections of the tubes to prevent root penetration into the outlet holes.
- Sand filters prevent suspended particles or algae from clogging the outlets.
- Auxiliary containers are used to dissolve and inject fertilizer into the irrigation water.
- Vertical standpipes are used to deliver water from an underground pipe to small basins.

Within the context of the heritage zones (particularly the monument and archaeological zones), it would seem that irrigation directed at the root zone of the crops in a controlled manner would reduce potential damage to sub-surface archaeological features. Thus drip irrigation would be a potential candidate, while surface irrigation would be more problematic. The most effective and efficient method and associated practices would need to be evaluated against the soil types found in the heritage zones (i.e. water holding capacity and porosity), the quality of irrigation water (i.e. mineral content), and the target crops (i.e. field crops, horticultural crops). If rainwater harvesting ponds were to be used as the source for irrigation water, then these would have to be constructed outside the monument and archaeology zones.

As FAO (1997) notes, there can be no short cut to the process of adoption and adaptation of irrigation technologies and methods; it should not be rushed and must not be imposed from above. Rather, it should be nurtured by means of positive incentives, and the benefits will depend in each case on marketing opportunities and other local factors. Extension services can provide information, demonstrations and guidance to farmers where needed, while financial institutions can offer them credit on favourable terms to invest in appropriate irrigation technology. Such technology will only be accepted if it produces adequate returns, that is to say, if its benefits clearly justify the costs. At the same time within the Bagan context, clear guidelines differentiated by property and buffer zones would need to be explored and established.

**Toddy Palm/Peer review-certification**

Toddy palms are planted around the edges of the cropped land and are an important feature in the Bagan landscape. However, the use of these palms has declined over time and many of the sap-tappers have given up their traditional craft. A community-based approach to ensure the conservation and use of these iconic palms is reported on by Kalaya Lu and Aye Mya Nyein, Botany Department, University of Mandalay. They highlight the importance of promoting enterprises based on the diversification of toddy sap-based products, including products of high value and low perishability. Within this context, it is thus worth exploring whether toddy palm products could be amenable for specialized marketing, building on peer review certification schemes linked to the Bagan Heritage site.

One angle to this is the concept of geographic indications. As stated in UNCTAD, 2015. Why Geographical Indications for Least Developed Countries (LDCs)?:
- Limited product diversification and fluctuating market value of traditional products are issues that have been affecting trade flows of Least Developed Countries (LDCs) for decades. In spite of limited product and export diversification, mainly consisting of raw and low value added products (primarily commodities), a valuable array of traditional products and preparations is available in selected LDCs having potential to graduate to products of excellence which can compete globally. However, bringing small local producers upfront in the global value system does not necessarily carry them beyond...
subsistence. Competition in global markets is fierce, and many LDCs feel the need to
develop quality names for the use of food, for instance through the protection
geographical indications (GIs), to secure higher returns from sales.

- GIs can be considered as an opportunity to accomplish the following tasks: Protection
  of local species that serve as raw material (e.g. ingredients) for potential GI products;
  joint elaboration of Code of Practice/Book of Specifications/Product Specifications
  aimed at enhancing product quality but also at the design rules to build local
  awareness about environmental protection in these areas; support of collective
  management; and boost of local cohesion among potential GI users and consumers.
- Different legal schemes exist for protecting geographical indications.

The Food and Agriculture Organization of the United Nations (FAO) and SINER-GI have
developed a guide for promoting quality linked to geographical origin and sustainable
geographical indications (FAO and SINER-GI. 2009-2010. Linking people, places and
products. Second Edition). They describe the main steps as:
1. Identification: growing local awareness and appreciation of the potential of the product.
2. Product qualification: establishment of rules for value creation and the preservation of
   local resources.
3. Product remuneration linked to its marketing and to management of the local system.
4. Reproduction of local resources, boosting the sustainability of the system.
5. Public policies providing an institutional framework and possible support for the various
   stages.

Besides reviewing the specific opportunities for the marketing of toddy products from the
Bagan area as products with a geographic indication, one element would be to define
whether there is enough production in the property and buffer area to warrant such an
indication or whether the use of the Bagan name could be widened out to a larger well-
defined and controlled zone to warrant such an effort.

Participatory Guarantee Systems (PGS) are an alternative, but potentially linked approach.
They are locally focused quality assurance systems as promoted by the International
Federation of Organic Agriculture Movements (http://www.ifoam.bio/en/organic-policy-
guarantee/participatory-guarantee-systems-pgs; guidelines available on the website).
Participatory Guarantee Systems certify producers based on active participation of
stakeholders and are built on a foundation of trust, social networks and knowledge exchange.
PGS replaces expensive third-party certification and thus reduces the cost of products and is
particularly interesting for smallholder farmers. This may be an appealing and pragmatic
approach, not necessarily only for organic products, since it could be more easily confined to
the property and buffer area, but in itself may not be adequate to protect the association of
specific toddy products to Bagan.

But whichever path is chosen, the potential market demand for “Bagan” toddy products
needs to be carefully analysed to warrant the necessary investment and capacity
development. At the same time, it should not be forgotten that the toddy palm is an integral
part of the Bagan landscape. And should the market-pull not be enough to maintain the toddy
palms, additional support mechanisms would need to be explored together with the farming
community, given that the toddy palm also has social and cultural value.
4.3 Monitoring Framework

The periodic assessment of the state of conservation of attributes and the related management efforts needs to be carried out based on a monitoring framework with clear indicators. The monitoring framework consists of the means of monitoring change, threats or emergency situations within the heritage property or the buffer zone based on an understanding of the present status.

| threats | present status | change |

Primary monitoring will be carried out by teams from the DANM to ensure that the main monuments and their various components are safeguarded. This basic monitoring will be done systematically within the management of the DANM Bagan site office.

Development activities particularly linked to activities of the government and line agencies will be monitored by the District Administration Office. This focuses particularly on construction of buildings and infrastructure, tourism development works and possible changes in the land-use. The monitoring of community activities will be done by the local government at township or village level.

Considering that Bagan Cultural Heritage Site, and particularly the buffer zone together covers over two hundred square kilometres, it is hardly feasible to have a team monitoring all aspects of the heritage property. There must therefore be a prioritization of most important attributes that are pro-actively monitored at regular intervals while other aspects of the property are passively monitored in close collaboration with related authorities and stakeholders.

The most important partners in monitoring are local community members. This means that community members must be made aware of their role and the procedure for them to report any changes, threats or emergencies within the heritage property or buffer zone. Furthermore visitors as well as tourism sector staff, farmers and vendors would also be potential monitors who could report on the condition of monuments, the landscape or any other emergency situation. Such partnerships will be important to develop along with the procedures and means for them to report to relevant authorities as per the circumstance.

The procedures for reporting of any changes, threats or emergencies needs formalized and made clear to all potential site monitors. This means a clear reporting process will be developed with emergency phone lines to the DANM as well as the District Administration Office. Websites will also be established to easily send comments and photographs along with comments on the status.
4.3.1 Prioritization of attributes for monitoring

The DANM is responsible for the overall cultural heritage site, particularly the area within the boundaries. The buffer zone, though still a part of the cultural heritage site, will be monitored by the two relevant District Administrations. Within this division the monitoring of attributes will be defined in principle, with the main cultural heritage attributes being the responsibility of the DANM while related attributes and the context will be dealt with by the two relevant District Administrations. The attributes as defined in Section 1.4 of this report can be divided into five categories for monitoring. Each of these categories will have primary monitors as well as possibly secondary monitors.

1. **The monuments** are the most dominant attributes of Bagan Cultural Heritage Site. These monuments have been categorized: Grade 1 outstanding, Grade 2 exceptional, Grade 3 important and the remaining monuments as non-classified. The monitoring of the monuments require some degree of expertise particularly in respect to structural assessments, however other aspects such as deterioration, plant growth and misuse can be monitored by anyone.

   > The monitoring of the monuments has been carried out systematically by the staff of the DANM. The monitoring by the DANM gives priority as per the classification of the monuments. There are monuments that are under the management of Temple Trustees who are also responsible for monitoring their respective monuments and reporting to the DANM on any impacts or threats the monument might face. Monuments will also be monitored by visitors, vendors or even local community members who farm, live nearby or pass through an area.

2. **Cultural objects, whether they are displaced and in museums or ornamentation still in situ on the monuments** include mural paintings, other forms of building ornamentation, sculptures, cloth paintings and inscriptions. These attributes are the responsibility of the DANM and require constant monitoring.

   > The monitoring of cultural objects based on legislation is the responsibility of the DANM. These would consist of the objects that have been removed and place in the museum and those that are still in-situ on site. The monitoring of the artefacts within the museum is clearly the responsibility of the DANM. The objects that are in situ, particularly those that are part of the monuments such as mural paintings will be monitored by the DANM. There are however objects that are still being venerated by religious communities which would be monitored by the respective religious communities. They would report to the DANM if these have been affected or major threats are identified. Secondary monitors for cultural objects will be community members, vendors, visitors, tourist guides and others who visit or travel through the cultural heritage site.

3. **The sub-surface archaeology, archaeological mounds, fortification walls and water management features** are scattered across the cultural heritage property, with some of these also being located in the buffer zone. According to legislation, the DANM is responsible for these
The monitoring of sub-surface archaeology is closely linked to establishing a risk map and ensuring that all activities within the areas of potential sub-surface archaeology are regulated. This is closely linked to the monitoring of the landscape under point 4 which is mainly carried out by the District Administration and local governance at township and village level. There are however clearly demarcated archaeological attributes such as mounds, fortification walls and ancient water management features which need to be more directly monitored by the DANM as with the monuments under point 5. Secondary monitors for archaeology will be community members, vendors, visitors, tourist guides and others who visit or travel through the cultural heritage site.

4. **The landscape** creating the setting for the monuments and archaeology is an important part of the Bagan Cultural Heritage site, largely defined by agricultural fields, plantations, hills and the grand Ayeyawady River. The landscape is linked to the activities of humans within the environment, particularly in cultivation and habitat. This is however very closely linked to sustainability and the impact of such activities on the environment, particularly in respect to pollutions and overuse of resources. The activities that impact the landscape will partially lie with visitors, but mainly with the local community. The responsibility for maintaining the landscape within the cultural heritage site lies in part with the DANM, however practical implementation and enforcement of laws will be carried out by the District Administration and related authorities.

The monitoring of the landscape will primarily lie with the District Administrator and the local governance system at township and village level. The local government is responsible for directly dealing with communities and their activities. The DANM will be involved only when such activities directly threaten monuments, archaeology or cultural objects or have a major impact on the visual integrity of the cultural heritage site. Secondary monitors for the landscape will be community members, vendors, visitors, tourist guides and others who visit or travel through the cultural heritage site.

5. **Festivals, celebrations, processions, religious practices as well as the overall customs, belief system and way of life of the local communities** are important attributes to the cultural heritage site. This will also include traditional crafts and skills. These attributes must be supported by the authorities; however it is up to the communities to ensure their continued safeguarding practice.

The monitoring of such intangible attributes is a difficult task, since many of these will constantly be adapted and changed. The monitoring of intangible heritage will need to focus on trends of change often caused by external influences that endanger the basic identity of the local communities. Such changes need to be understood by the community and religious leaders who will then get the government authorities to assist them in ensuring appropriate continuity of cultural practices and support traditional crafts and skills.
4.3.2 Reporting system

The Integrated Management System in largely based on ensuring that regular monitoring is carried out which leads to efficient reporting followed by an appropriate response.

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The monitoring frame prioritizes have been established under the previous sub-section 4.3.1. There are various authorities and individuals involved in the monitoring of the various prioritized attributes of the site. These monitors will need to report their findings to a system that ensures appropriate response. The reporting system will be established based on the following format.

A. The collection of information will be done through standard methods of reports. However the coordination of information received from the various monitoring sources will need to be standardized. There will be two collection points for monitoring data, the DANM and the District Administration.

B. The information that is collected needs to be analyzed. The data would first be sorted by themes and required category of response. This would take place in the DANM for information on monuments, archaeology and cultural objects, while information on other aspects of the site will be analyzed at the District Administration Office. Here the possible requirement of an HIA will be determined.

C. Depending on the themes and required category of response, the information will be sent to either the District Administration or the DANM. Routine Actions would be integrated into the routine procedures of the DANM or District Administration Office. Time bound interventions would be noted for planning by the relevant authorities. The actions requiring emergency response would follow emergency procedures. The overall coordination of these activities will be ensured through BAGANCOM.
4.3.3 Monitoring and Reporting Schedule

On a yearly basis, work will be implemented as per the Annual Action Plan. The year is based on the fiscal year cycle. During the last three months of each fiscal year, the Plan of Action is to be reviewed and the next Annual Action Plan prepared. BAGANCOM is to meet on a monthly basis to monitor the implementation of the Annual Action Plan and the weekly site monitoring reports of the Site Managers. After every five years, a thorough review of the Integrated Management System is to be undertaken, allowing necessary amendments to be made.

Site Monitoring and Reporting

Weekly site monitoring shall be carried out by the Site Manager by filling out a monitoring form as per a monitoring plan. This form will be filled out regularly, stating whether activities have taken place or not, whereby a detailed history of the site is documented. Monthly reporting will be done to BAGANCOM. Information shall be presented as notification or for necessary decisions. Emergency reporting will be done directly to the BAGANCOM Secretariat.

Annual Progress Reports will be prepared in conjunction with the implementation of the Annual Action Plans. The progress report will explain whether targets have been achieved based on the predetermined indicators. Additionally an assessment of progress on carrying out actions of the given year will be made along with recommendation on what the requirements will be for the following year.

Monitoring and reporting on actions

An overall schedule and targets of completion will be prepared for the implementation of all the activities outlined in the Integrated Plan of Action document. This will be proposed within a five year period. The linkages and chronological order of the activities will need to be closely studied. An overall review of the issues and strategies will take place after a five year period.

The actions that are chosen and included in the Annual Action Plans will have detailed dates of commencement and closing. This will be linked to a detailed project description with the relative indicators provided.

Considering the overall schedule of activities, the targets and indicators for each activity will be defined in detail. The indicators in most cases will be a document or legislation that has been acknowledged or passed by the concerned authorities, implementation of certain provisions, completion of certain specific actions or establishment of an institution, body or programme.
4.3.4 Review and Assessment

BAGANCOM will coordinate activities related to the implementation of the Integrated Management System. Periodic Assessment will be carried out by BAGANCOM on the progress of implementing the Integrated Management System and the state of conservation of the heritage property including both the heritage site as well as the buffer zone.

BAGANCOM will have a regular meeting schedule; at least once every two months. The committee will ensure that the activities are being carried out as per the detailed Annual Action Plan. The committee will also develop strategies for obtaining necessary funds.

**Periodic Assessment** shall be carried out by BAGANCOM on the progress of implementing the Integrated Management System and the state of conservation of the heritage property.

**Monthly Assessment** of ongoing activities shall be done at the regular Coordinative Committee meetings. This will be based on the reports of Site Manager and the various authorities carrying out activities within the heritage property. The monthly assessment shall also include a progress report on implementation of the Annual Action Plan.

**Annual Assessment** of implementation of the Action Plan shall be done in conjunction to preparation of the next annual Action Plan. The overall Plan of Action shall also be reviewed and revised as found necessary.

**Five-Year Assessment** of the components of the Integrated Management System shall be carried out. The Integrated Management Framework and Integrated Management Processes for the heritage property, including institutional, legal and resources frameworks shall be reviewed and if necessary amended.

**Cyclical assessment of management system**

The entire Integrated Management System shall be reviewed and amended beginning every 5 years after adoption of any previous amendment. The Integrated Management System will need to incorporate the achievements and experiences of the previous five years and address the issues that are predominant in that given time. The Integrated Management System must remain flexible and adapt itself to ascertain the long-term objective of conserving the Outstanding Universal Value of the Bagan Cultural Heritage Property.
ANNEX

A. Detailed Organization Charts of DANM Bagan Office

B. Relevant laws, regulations and notifications

C. Strategy for promoting Archaeological Surveys and Research in Bagan

D. Clarification of legal provisions for Monasteries, Temple Trustees and for public and private Institutions in Bagan

Mural painting from Ananda-ok-kyuang temple (#2162)
A. Detailed Organization Charts of DANM Bagan Office

The chart provides an overview of the organization of Bagan. The chart at this scale is clearly not legible and the sections under each of the four Deputy Directors have been provided on the following pages. The charts also provide information on the staffing in detail. Individual staff with grading and pay scale is provided along with the positions that are presently not filled. This document would need to be updated as changes take place.
DANM Bagan Office Organization – under Deputy Director Administration, Finance and Security

Department of Archaeology and National Museum, Bagan Branch, Admin/Finance/Security Section.

O = Officers
S = Staff
T = Total

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DANM Bagan Office Organization – under Deputy Director Museum

Department of Archaeology and National Museum, Bagan Branch, Museum Section.

O = Officers
S = Staff
T = Total

Deputy Director (Museum)
9(O) 90(S) 99(T)

Assistant Director (Museum)
4(O) 65(S) 69(T)

Assistant Director (Public Relation, Research and Display Section)
4(O) 25(S) 29(T)

Conservation Section
- Staff Officer (Chemical) 1
- Junior Staff Officer (Conservation) 2
- Laboratory Assistant Grade-2 2
- Store Keeper Grade-4 4
- 1/14 15

Museum Management Section
- Staff Officer (Administration) 1
- Superintendent 1
- Accountant Grade-1 1
- Laboratory Assistant Grade-2 2
- Store Keeper Grade-3 4
- 1/45 46

Engineering Section
- Assistant Engineering (LP) 1
- Assistant Engineer Grade-2 (EP) 1
- Assistant Engineer Grade-2 (Civil) 1
- Senior Assistant Engineer Grade-3 (EP) 1
- Senior Assistant Engineer Grade-3 (Civil) 1
- Draftman-4 2
- 1/6 7

Public Relation Section
- Staff Officer 1
- Junior Staff Officer 4
- Store Keeper Grade-2 2
- Museum Assistant Grade-3 4
- Museum Assistant Grade-4 2
- 1/10 11

Antiquity Collection and Display Section
- Staff Officer (Collection) 1
- Staff Officer (Display) 1
- Junior Staff Officer 4
- Store Keeper Grade-3 2
- Museum Assistant Grade-3 4
- Museum Assistant Grade-4 3
- 2/15 17
B  Relevant laws, regulations and notifications

Protection and Preservation of Cultural Heritage Regions Law

GOVERNMENT OF THE UNION OF MYANMAR
MINISTRY OF CULTURE
The Protection and Preservation of Cultural Heritage Regions Law
(The State Peace and Development Council Law No.9/98)
The 5th Waning Day of Tawthalin, 1360 M.E. (10 September 1998)

The State Peace and Development Council hereby enacts the following Law: -

CHAPTER I: Title and Definition
1. This Law shall be called the Protection and Preservation of Cultural Heritage Regions Law.
2. The following expressions contained in this Law shall have the meaning given hereunder:
   (a) Cultural Heritage means ancient monument or ancient site which is required to be protected and preserved by reason of its historical, cultural artistic or anthropological value;
   (b) Ancient Monument includes the following that have existed before 1886 or that have been determined as cultural heritage:
      (1) architectural structure, shrine, stupa, temple, monastery, palace, residential building and carving image and painting thereon;
      (2) natural or man-made cave in which human beings had dwelt;
      (3) stone inscription and record;
      (4) road, bridge, sepulchre, sepulchral site and remains of excavated structure;
      (5) pond, city-wall, wall, gateway, moat, fort and any remains thereof;
   (c) Ancient Site means place or high ground where a town or settlement of ancient people or ancient monument had existed before 1886 or which is determined as cultural heritage whether it is in the process of excavation or has not yet been excavated;
   (d) Precinct of Ancient Monument means the enclosure of an ancient monument prescribed under this Law;
   (e) Ancient Monumental Zone means the zone where the ancient monument is situated and which is prescribed under this Law;
   (f) Ancient Site Zone means the zone where the ancient site is situated and which is prescribed under this Law;
   (g) Protected and Preserved Zone means the zone prescribed under this Law for the protection and preservation of the view of the cultural heritage, ancient monument and ancient sites in order that they may not be destroyed;
   (h) Cultural Heritage Region means the ancient monumental zone, ancient site zone or the protected and preserved zone prescribed under this Law;
   (i) Department means the Department of Archaeology.

CHAPTER II: Objectives
3. The objectives of this Law are as follows:
   (a) to implement the protection and preservation policy with respect to perpetuation of cultural heritage that has existed for many years;
   (b) to protect and preserve the cultural heritage regions and the cultural heritage therein so as not to deteriorate due to natural disaster or man-made destruction;
   (c) to uplift hereditary pride and to cause dynamism of patriotic spirit of citizens by protecting and preserving the cultural heritage regions;
   (d) to promote public awareness and will as to the high value of the protection and preservation of the cultural heritage regions;
   (e) to protect the cultural heritage regions from destruction;
   (f) to carry out protection and preservation of the cultural heritage regions in conformity with the International Convention approved by the State.
CHAPTER III: Determining Cultural Heritage Region

4. The Ministry of Culture may, with the approval of the Government issue notification demarcating any or more than one of the following kinds of zones as a cultural heritage region:
   - (a) ancient monumental zone;
   - (b) ancient site zone;
   - (c) protected and preserved zone.

5. The Ministry of Culture may carry out as follows for the acquisition of any land within the cultural heritage region if necessary:
   - (a) if the land is under the administration of any government department or government organization, coordinating in advance with the relevant government department or government organization;
   - (b) if it is the land in which there is right of cultivation, right of possession, right of utilization, beneficial right, right of succession or right of transfer, coordinating in advance with the relevant Ministry in accordance with the existing laws.

CHAPTER IV: Protecting and Preserving the Cultural Heritage Region

6. The Ministry of Culture may cause to be dismantled a building which is not an ancient monument and which obstructs the view of an ancient monument or surrounding natural landscape within the cultural heritage region.

7. The Ministry of Culture may direct the relevant Trust who is taking care of the ancient monument to do so without altering the original ancient form and structure and the original ancient workmanship.

8. The Ministry of Culture may determine region-wise the conditions to be observed in the construction of buildings within the cultural heritage region.

9. The Department shall carry out works of protection and preservation of the ancient monuments and ancient sites situated in the cultural heritage region.

10. The Department may prohibit any person from ploughing and cultivating within the boundary of the ancient monument or ancient site or from carrying out any activity that may cause damage to the cultural heritage in the cultural heritage region.

11. The Department shall, with the approval of the Ministry of Culture, carry out the following in the cultural heritage region:
   - (a) determining the precinct of an ancient monument;
   - (b) prescribing the conditions to be abided by the shops opened within the precinct determined under sub-section (a).

CHAPTER V: Functions and Duties of the Ministry of Culture

12. The functions and duties of the Ministry of Culture are as follows:
   - (a) carrying out works of protection and preservation, revelation of and research on cultural heritage regions;
   - (b) safeguarding the prominent and culturally of high value cultural heritage regions and the decaying cultural heritages that should be given priority in preservation;
   - (c) determining with the approval of the Government, the ancient monuments and ancient sites that should be determined as cultural heritage in the cultural heritage regions;
   - (d) carrying out with the approval of the Government to enable the ancient monuments and ancient sites that should be determined as world cultural heritage to be included in the list of the world cultural heritage;
   - (e) taking measures as may be necessary to prevent smuggling of antiquities from the cultural heritage region to foreign countries and to recover those antiquities that have been taken outside the country;
   - (f) carrying out public educative work for protection and preservation of cultural heritage regions, and for taking pride in the value of the cultural heritage.

CHAPTER VI: Applying for Prior Permission, Scrutinizing and Issuing

13. A person desirous of carrying out one of the following shall abide by the provisions of other existing laws and also apply to the Department in accordance with stipulations to obtain prior permission under this Law:
(a) within the ancient monumental zone or the ancient site zone -
   (1) constructing or extending a building;
   (2) renovating the ancient monument or extending the boundary of its enclosure;
(b) within the protected and preserved zone, constructing, extending, renovating a hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure;
(c) Within the cultural heritage region:-
   (1) carrying out the renovation and maintenance work of the ancient monument without altering the original ancient form and structure of original ancient workmanship;
   (2) carrying out archaeological excavation;
   (3) building road, constructing bridge, irrigation canal and embankment or extending the same.

14. (a) The Department shall, after scrutinizing the application submitted under section 13 in accordance with the stipulations, submit the same to the Ministry of Culture with the remark of the Department;
(b) The Ministry of Culture may, in respect of the matter contained in section 13 grant or refuse permission after scrutiny;
(c) When permission is granted under sub-section (b) the Department shall issue the permit to the applicant together with the conditions to be observed.

15. A person desirous of carrying out one of the following shall abide by the provisions of others existing laws and also apply in accordance with the stipulations to the Department to obtain prior permission under this Law:-
   (a) renovation of a building other than an ancient monument or extension of the boundary of its enclosure in the ancient monumental zone or the ancient site zone;
   (b) Within the protected and preserved zone, constructing, extending, renovation a building other than a hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure;
   (c) Digging well, pond and fish-breeding pond or extending the same within the cultural heritage region.

16. The Department:-
   (a) may, after scrutinizing in accordance with the stipulations the application submitted under section 15, grant or refuse permission;
   (b) Shall, when permission is granted under sub-section (a), issue the permit to the applicant together with the conditions to be observed.

17. The Ministry of Culture and the Department shall, with respect to the application for prior permission under this Law, scrutinize based on the following facts:-
   (a) whether it can cause obstruction of the view of the cultural heritage region or not;
   (b) whether it is clear of the ancient monument or ancient site or not;
   (c) whether it can obstruct the surrounding natural landscape or not;
   (d) whether it can undermine the grandeur of the ancient monument or not;
   (e) whether it can affect the security of the cultural heritage or not; and
   (f) whether it can cause environmental pollution or not.

CHAPTER VII: Prohibitions

18. No person shall, without prior permission granted under this Law, construct, extend, renovate a building or extend the boundary of its enclosure in the ancient monumental zone or ancient site zone.

19. No person shall, without prior permission granted under this Law carry out any of the following with respect to a building within the protected and preserved zone:-
   (a) constructing or extending;
   (b) renovating or extending the boundary of its enclosure.

20. No person shall carry out any of the following in the cultural heritage region:-
   (a) destroying an ancient monument;
   (b) wilfully altering the original ancient form and structure or original ancient workmanship of an ancient monument;
   (c) excavating to search for antiquities;
(d) exploring for petroleum, natural gas, precious stones or minerals.

21. No person shall, without prior permission granted under this Law, carry out any of the following in the cultural heritage region:-
   (a) carry out renovation and maintenance work on an ancient monument;
   (b) carrying out archaeological excavation;
   (c) building road, constructing bridge, irrigation canal, embankment or extending the same;
   (d) digging well, pond, fish-breeding pond or extending the same.

22. No person shall construct a building which is not in conformity with the conditions prescribed region-wise by the Ministry of Culture in the cultural heritage region.

23. No person shall plough and cultivate or carry out any activity which may cause damage to the cultural heritage within the boundary notified by the Department in the cultural heritage region.

CHAPTER VIII: Offences and Penalties

24. Whoever violates any provision of section 18, sub-section (a) of section 19 or section 21 shall, on conviction be punished with fine which may extend to kyats 50,000 or with imprisonment for a term which may extend to 5 years or with both.

25. Whoever violates any provision of sub-section (b) of section 19, section 22 or section 23 shall, on conviction be punished with fine which may extend to kyats 30,000 or with imprisonment for a term which may extend to 3 years or with both.

26. Whoever violates any provision of section 20 shall, on conviction be punished with imprisonment for a term which may extend from a minimum of 1 year to a maximum of 7 years and may also be liable to a fine.

27. The Court shall also pass any of the following orders on whoever is convicted of any of the offences under this Law:-
   (a) causing the building constructed to be dismantled;
   (b) causing the restoration of the extended building or boundary of the enclosure to its original position;
   (c) causing the restoration of the altered and repaired form of the building or land to its original form.

28. Whoever fails to abide by the order passed under section 27, shall be liable to a fine which may extend from kyats 500 to kyats 1000 for each day for failure to abide by such order.

CHAPTER IX: Miscellaneous

29. (a) The Provision of sub-section (d) of section 20 shall not apply to the drilling of petroleum or natural gas and mining of precious stones or minerals for the benefit of the State in the cultural heritage region.
   (b) If any circumstance arises for the drilling of petroleum or natural gas and mining of precious stones or minerals in the cultural heritage region for the benefit of the State, it shall be submitted to the Government and permission shall be requested.

30. In order to carry out the provisions of this Law:-
   (a) The Ministry of Culture may issue such rules and procedures as may be necessary, with the approval of the Government;
   (b) The Ministry of Culture and the Department may issue such orders and directives as may be necessary.

(Sd) Than Shwe
Senior General
Chairman
The State Peace and Development Council
The Union of Myanmar  
**The Law Amending the Protection and Preservation of Cultural Heritage Regions Law**  
(The State Peace and Development Council Law No. 1/2009)  
The 10th of Waning Day of Pyaytho, 1370 M.E. (20 January, 2009)

The State Peace and Development Council hereby enacts the following Law:

1. This Law shall be called the Amending the Protection and Preservation of Cultural Heritage Regions Law.

2. In section 2 of the Protection and Preservation of Cultural Heritage Regions Law:
   (a) the expression “that have existed before 1886” contained in sub-section (b) shall be substituted by the expression “that have existed since 100 years before the date on which the Department made inquiries as an ancient monument;”
   (b) the expression “that have existed before 1886” contained in sub-section (c) shall be substituted by the expression “that have existed since 100 years before the date on which the Department made inquiries as an ancient site;”

3. The fines contained in section 24 and 25 of the Protection and Preservation of Cultural Heritage Regions Law shall be substituted respectively by the expression “with fine or”.

4. Section 28 of the Protection and Preservation of Cultural Heritage Regions Law shall be substituted as follows:
   “28. Whoever fails to abide by the order passed under section 27 shall be liable to a fine which may extend from kyats ten thousands to one hundred thousand for each day of failure to abide by such order.”

(Sd.) Than Shwe  
Senior General  
Chairman  
The State Peace and Development Council
Protection and Preservation of Cultural Heritage Regions Rules

THE REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF CULTURE
Rules of the Protection and Preservation of Cultural Heritage Regions Law
Notification No. 1/2011
Naypyitaw The 9th waxing day of Wagaung 1373 ME - 8th August 2011

In exercise of the power conferred by sub-section (a) of section 30 of the Protection and Preservation of Cultural Heritage Regions Law, the Ministry of Culture hereby issues the following Rules, with the approval of the Government.

Chapter 1: Title and Definition
1. These Rules shall be called the Protection and Preservation of Cultural Heritage Regions Rules.
2. The expression contained in these Rules shall have the same meanings as are assigned to them in the Protection and Preservation of Cultural Heritage Regions Law. In addition, the following expression shall have the meanings given hereunder:-
   (a) Law means the Protection and Preservation of Cultural Heritage Regions Law.
   (b) Ministry means the Ministry of Culture of the Government of the Union. (State Cabinet)
   (c) Department means Department of Archaeology, National Museum and Library.
   (d) Director General means the Director General of the Department of Archaeology, National Museum and Library.
   (e) Applicant means any person or organization who applies to carrying out any of the matter provisions under section 13 and 15 within one of the kinds of Zones which determined as the cultural heritage region.
   (f) Form means the form which attached this Rules.

Chapter 2: Determining the Cultural Heritage Region
3. The Minister may confer the duty to the Department under section - 4, to report back after preparing the advance functions for issue notification demarcating any or more than one of the kinds of zones as a cultural heritage region.
4. After scrutinizing with stipulations under Annex (A) to go on field study, survey of Land, issue of map, investigate the history of Land, demarcate the kinds of zones, the staff or group of staffs who are conferred the duty by the department shall submit with such documents to the Director General. The Director General shall, after scrutinizing these documents continued to submit to the Ministry.
5. The Department shall, with the approval of the Government of the Union, according to the Notification issued to be determined as the Cultural Heritage Region, perform installation and declaration the stone inscription or any of the well known mark.
6. The Ministry may, under section - 5, confer the duty to the Department to coordinate in advance with the relevant Government Department or Government Organization for the acquisition of any Land within the cultural heritage region if necessary: if the land is under the administration of any Government Department or Government Organization and also if the land is under the occupier of private or private organization. The Department shall, expression with the map, history of Land, the sound/sufficient reasons for acquisition of relevant Land, continue to submit to the Ministry. The Department shall perform the acquisition of said Land & transfer of ownership when he gets the permit from the Ministry.
7. Although the documents are valid for acquisition of Land, the Land occupier refuses to transfer of ownership, the Department shall, with the approval of the ministry, and in accordance with the existing Laws, carry out the acquisition of said Land.

Chapter 3: Protecting and Preserving the Cultural Heritage Region
8. The ministry may confer the duty to the Department to investigate for cause to be dismantled a building which is not an ancient monument and which obstructs the view of an ancient monument or surrounding natural landscape within the cultural heritage region. According to discharge of the ministry, the Department shall with the valid documents submit to the ministry after
scrutinizing the non-ancient monument which is included or not included in Section - 6. The ministry may issue an order to be dismantled if he agrees to the scrutinizing & submitting with the valid document of the Department.

9. The building, which is not included in an ancient monument under section - 6 is owned by Government, may be dismantled by coordinating with the relevant ministry.

10. The building, which is included in an ancient monument under section - 6, is owned by private, may be dismantled by give notice to the owner.

11. The Department shall collect and report to the ministry the records of photograph sketch in detail and sources of history related to the original ancient form and structure and the original ancient workmanship of the ancient monument which are taken care by the relevant Trust. The ministry may, when the Department scrutinized & submitted the valid document, direct the relevant Trust to take care & maintain without altering the original ancient form and structure and the original ancient workmanship of the ancient monument.

12. The relevant Trust who desire to carry out works of protection and preservation of the ancient monument situated in the cultural heritage region without altering the original ancient form and structure and the original ancient workmanship, shall apply to get permission in advance in accordance with the section - 13.

13. The Department shall after coordinating with the relevant region or state, district, township authorized organizations, City Development Commit, Department of Land Schedule, stipulate the conditions to be observed region wise in the construction of buildings within the cultural heritage region and submit to the Ministry. The Ministry, shall, if necessary amend or add the supplement to the conditions submitted by the Department and then shall determine such conditions for each cultural heritage region.

14. The Department shall protect and preserve the ancient monuments and ancient sites situated in the cultural heritage region with necessary security plans. To carry out works of protection and preservation of these buildings, the Department can use the state allowance fund other than the donation from local and abroad (foreign countries).

15. The Department may prohibit any person from ploughing and cultivating within the boundary of the ancient monument or ancient site or from carrying out any activity that may cause damage to the cultural heritage in the cultural heritage region.

16. The department shall, within the cultural heritage region-
   (a) study and survey the existence, kind, position, history of Land and surroundings situation of such ancient monument and submit to the ministry for determining the boundary of an ancient monument.
   (b) determine the conditions to be observed by the shops opened within the above region under sub suction (a).

17. The ministry may confer the duty on the Department to carry out the works and function mentioned in section-12.

Chapter 4: Applying for Prior Permission, Scrutinizing & Issuing

18. The following forms shall be used for applying to the Department to get the prior permission of the Ministry relevant to either purpose mentioned in section 13 and 15 within the any kinds of zones or for issuing the prior permission-
   (a) constructing or extending a building within the ancient monumental zone or the ancient site zone shall apply with Form (1).
   (b) constructing or extending a building within the ancient monumental zone or the ancient site zone shall grant the permission with Form (2).
   (c) renovating or extending the boundary of its enclosure other building except the ancient monument within the ancient monumental zone or the ancient site zone shall apply with Form (3).
   (d) renovating or extending the boundary of its enclosure other building except the ancient monument within the ancient monument zone or the ancient site zone shall grant with Form (4).
   (e) renovating or extending the boundary of its enclosure the ancient monument within the ancient monumental zone or the ancient site zone shall apply with Form (5).
(f) renovating or extending the boundary of its enclosure the ancient monument within the ancient monumental zone or the ancient site zone shall grant with Form (6).

(g) constructing, extending, renovating a hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure within the protected and preserved zone, shall apply with Form (7).

(h) constructing, extending, renovating a hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure within the protected and preserved zone, shall grant with Form (8).

(i) carrying out the renovation and maintenance work of the ancient monument without altering the original ancient form and structure of original ancient workmanship within the cultural heritage region shall apply with Form (9).

(j) carrying out the renovation and maintenance work of the ancient monument without altering the original ancient form and structure of original ancient workmanship within the cultural heritage region shall grant with Form (10).

(k) carrying out archaeological excavation within the cultural heritage region shall apply with Form (11).

(l) carrying out archaeological excavation within the cultural heritage region shall grant with Form (12).

(m) constructing, extending, renovating other building except the hotel, motel, guest house, lodging house or industrial building or extend the boundary of its enclosure within the protected and preserved zone, shall apply with Form (13).

(n) construction, extension, renovation other building except the hotel, motel, guest house, lodging house or industrial building or extending the boundary of its enclosure within the protected and preserved zone, shall grant with Form (14).

(o) building road, constructing bridge, irrigation canal and embankment or extending the same, digging well, pond and fish-breeding pond or extending the same within the cultural heritage region shall apply with Form (15).

(p) building road, constructing bridge, irrigation canal and embankment or extending the same, digging well, pond and fish-breeding pond or extending the same within the cultural heritage region shall grant with Form (16).

19. The Department shall, after scrutinizing in accordance with the stipulation, the application submit to the ministry together with remark.

20. The Ministry may after scrutinizing the application submitted by the Department, grant or refuse to the applicant.

21. The Department may, when permission is granted by the Ministry, issue the permit to the applicant together with the conditions to be observed.

22. When the ministry and the Department scrutinize the application under section 13 & 15, shall base on the provisions of section 17.

Chapter 5: Declaring the prohibitions to be observed according to the kinds of Zone and Inspecting

23. The Department shall inform to the relevant regional authorized organization, that the prohibitions according to the kinds of zones within the cultural heritage region.

24. The Department shall set up the notifications including the prohibitions according to the kinds of zone within the Cultural Heritage Region.

25. The Director General or the person who is delegated by the Director General shall make regular inspection and surprised check the zones within the Cultural Heritage Regions.

Chapter 6: Miscellaneous

26. The Department shall report to the Ministry that implements the order passed by the Court under section 27.

27. The Director General may assign his duty to any appropriate person or group of persons.

28. The relevant ministries shall, if any circumstance arises for the drilling of petroleum or natural gas and mining of precious stones or minerals in the cultural heritage region for the benefit of the State, coordinate with the Ministry of Cultural and submit to the Government of the Union and request the permission.
29. The Department may, fixed by the Ministry, levy the admission fee of zone with Myanmar kyats or foreign exchange within the cultural heritage zone.

(sd)
Kyaw San
Union Minister
Ministry of Information and Ministry of Cultural

Annex (a)
C  Strategy for promoting Archaeological Surveys and Research in Bagan

A. Aim and Scope

The Archaeological Research Strategy for Bagan aims to:

1) Examine and interpret the urban character and social and economic life of Bagan in its setting
2) Support the Archaeological Risk Map (ARM) of the Integrated Management Framework/Plan of Action (IMF/IPA). The scope includes the 8 components of the proposed Property Zone and the Buffer Zone.

Figure 1 (Draft) Archaeological Risk Map

B. Objectives

The objectives are to propose and implement a programme of Archaeological Research for Bagan supporting the Archaeological Risk Map (ARM). ARM will define which areas have subsurface archaeology, which areas could have subsurface archaeology and which areas most probably do not have subsurface archaeology. The map will become part of the legal system for protecting archaeology.
This will also be the basis for decision making in respect to any infrastructure or development works that might need to be carried out. Especially important are areas where villages and towns are encroaching on the surrounding landscape and there is a tendency to allow for expansion. The Archaeological Risk Map would be part of the legal framework of the management system and would be used as a safeguarding and decision making tool in the management processes.

C. Research gaps, issues and projects

Archaeological knowledge of Bagan has been limited by the focus of research on the architectural heritage. As a result, water management, manufacturing and production, cultivation, the typology of settlement structures, ancient circulation paths and linkages between the monument ensembles are not understood. The spatial distribution of monastic and village communities and the construction, maintenance and management of water and field systems has not been defined. Earlier research needs to be collated, interpreted and published to build upon existing work and associated artefacts in the museum.

It important to develop projects that improve our knowledge of the heritage property. Research projects could focus on subsurface archaeology, material dating and developing a more accurate chronology, construction technology and materials, seismic performance of the historic structures and landscape. Little is known of Bagan beyond the brick structures and research is necessary to understand on the development of historic settlements and how the people lived. (IMF/IMP 2.2.2) Initial steps include assessment of published material and online publication of successive articles or an edited volume, The Archaeology of Bagan.

D. Research Issues

The urban character of Bagan developed in relation to the setting, with structures built across a broad plain between hill ranges and the river. Changes in the hydrological system and modification of the natural landscape stimulated and limited site selection. Reconstruction of the prehistoric to urban landscape can be used to interpret the relationship of manmade and urban elements of Bagan. The social and economic life can be assessed through classification of pottery, building methods and other evidence to define religious and village areas their interaction and trade networks.

While the remaining brick and stone structures at Bagan are abundant, wood, bamboo and thatch are the usual materials used for fences, houses and other structures such as rice barns and feeding troughs for animals. Due to the arid climate, some pieces of wood embedded in brick structures have survived, but detection and assessment of subsurface evidence of wooden features can explain the spatial layout of monastic, religious and village areas. These and other themes are summarized below.

(1) **Urban character**: prehistory, emergence, development and definition of the ‘city’
(2) **Setting**: environmental modification, impact successive changes on hydrology; locational continuity manmade features in relation to topography/ecology
(3) **Social and economic life**: agriculture, monastic/royal/village goods, trade, production
E. Implementation framework

To implement this strategy a Working Group to consider infrastructural and institutional frameworks is needed. The Archaeology Working Group may be composed of members of BAGANCOM, local teachers/scholars, and international experts. Collaborative teams can ensure continuity, reporting mechanism and publication. In supporting the Archaeological Risk Map, research projects by DOA and other local/international organizations can balance research aims and risk. A mechanism for assessing proposals through the Working Group may be facilitated by an Archaeology Research Centre located at the Bagan Archaeological Museum.

The conduct of archaeological research at Bagan and its reporting has relied on the professionalism of the researcher to submit a full copy of results to the concerned authority. The wider dissemination of research by the site authority has been low. Open exchange needed to develop a collaborative rapport with local and foreign researchers from institutions, non-profit organizations, including teachers, students, groups and associations and individual researchers. A common Archaeology Centre at Bagan for international and local organizations is recommended.

An Archaeology Research Centre would stimulate links between objects and their context – museum and architectural and archaeological sites. A study room for research on objects is
needed. The diverse audience needs including the pilgrimage value of site, outreach to secular and religious school can be addressed.

**F. Priority Research Project Recommendations**

Priority needs to be given to areas most at risk from development (Figure 1). Using this, a list of priority Research Projects with outcomes able to be realistically implemented and completed can be drawn up. Illustrative pilot project areas such as those in Components 2, 6 and 7 given below can initiate survey, field-walking, archaeological risk maps, auguring and other approaches as appropriate:

1) **Social and Economic Life**: Defining the spatial layout timber and brick structures in a single monastic compound.
   a. Compound 6 is a single monastic compound in which to assess evidence of previous wooden structure and their spatial relationship to the standing (renovated) brick structures. Adjacent hotel cooperation can strengthen community participation and maintain this isolated component within an urban growth area.

2) **Setting and Social Life**: Site selection and development of religious communities in relation to the landscape and hydrology.
   a. Component 2 (south) is a dense area of ancient and active monasteries around Nget Pyit Taung, Shin Arahan Kyaung and Nget Pyit Taung Kan (lake). The water flow of the lake has been destroyed by non-permitted hotel construction in an arid area where the water table depth exceeds 100 feet.
   b. Component 7 is medium-sized area of temples, stupas and monasteries and associated inscription (Magyikan) in a scrub covered undulating landscape with numerous dwellings at risk of impinging the boundaries.

3) **Urban Character and Setting**: Prehistoric habitation in relation to the hydrology and topography.
   a. Component 2 (north) - a low population area from the highway to the Ayeyawaddy River with Paleolithic tools at risk from its proximity to the two-lane highway.
   Systematic survey has not been conducted. Specimens are displayed in the museum from DOA initial exploration. Offers study of production areas along river bank including river pebble collection and sand harvesting.

**G. Methodology**

Appropriate field and laboratory methodologies include but are not limited to:

1. **Systematic Settlement Survey**
   1.1. Land survey, definition of survey artefacts followed by site-walking of 8 Component areas and Buffer making priority list project opportunities.
   1.2. Archaeological risk maps for hydrology (water table from tube wells, non-indigenous plants/trees) and intervention measures for drainage, services, waste to ensure no direct impact on archaeology.
   1.3. Publication of cartographic and text information with online application system for collaborative projects.

2. **Surface, Coring and Sampling**
   2.1. Augur Coring down to 10 meters providing samples of 20cm sections stratigraphic information
   2.2. Geoarchaeology collecting soils to be analysed for dating, function (indoor/outdoor, floor layer), plant remains, environmental interaction with water, etc.
2.3. Geophysics using Magnetometer; up to 2 meters of soil penetrated; operated by individual walking over study area
2.4. Ground Penetrating Radar (GPR); can penetrate up to 5 meters; operated by individual, stability issues for Bagan terrain

3. Excavations
   3.1. Vertical for research, chronology
   3.2. Horizontal for display, plans
   3.3. Educational purposes – public, local schools, online (see D.3. Museum and Site)

4. Mapping
   4.1. Paleo-hydrology and terraces – habitation areas and agricultural systems
   4.2. Photogrammetry using UAV to document site and create topographical maps
   4.3. LIDAR for detailed mapping of ground surface over large areas particularly forested areas
   4.4. Portable interface for public reporting Archaeological finds or damage e.g. Fix My Street (https://www.fixmystreet.com/around?js=1&pc=WC1H+OXG)
   4.5. Regional low density urbanism in dry tropical forest areas to assess Bagan as an expansive area of early settlement

H. Archaeological Importance of the Components of the Property Zone (Map 1)

Component 1 – major component divided here into 5 parts (1.1 north, 1.2 central, 1.3-south, 1.4-east, 1.5 far south).

1.1 includes an area of probable Neolithic settlement and first millennium CE villages of Bagan.
1.2 walled site with two excavated structures thought to be the fourth palace, finds need study

1.3 south including production areas and one area traditionally identified as a palace

1.4 east including an area traditionally defined the third palace site and significant water management features

1.5 far south including an area traditionally defined as the first palace by some scholars and significant evidence of first millennium CE settlement and production

**Component 2** – a medium component on the northeast. The north section includes the Paleolithic Than-tha-gone region and historic period monuments including six *umin* or caves. The south section includes the Nget Pyit Taung area and lake with further *umin* traditionally with the traditional hero Pyusawhti.

**Component 3** – a small component east of Tuyin-taung range containing the remains of a Yon-hlut-kyun traditionally identified as a palace site or preliminary encampment

**Component 4** – a medium component, the Tuyin-taung range with significant water management features

**Component 5** – a small component, is the Alan Bagan Kan lake and catchment dated by an 11th century inscription stone now in Bagan Archaeological Museum.

**Component 6** – a small area, in New Bagan containing a row of structures and second cluster of stupas delimited by an original wall. Illustrates complex documentation with renumbering during conservation but absence site assessment reports.

**Component 7** – a small area south of Component 6, containing a dense area of stupas, temples, monasteries reconstructed following conservation, unexcavated mounds and archaeological features. Numerous parts of the boundary are at risk from settlement encroachment.

**Component 8** – a medium component, the Tankyi-taung Zeidi and associated caves

### I. Wider Consultation
Others currently carrying out research at the proposed World Heritage Site of Bagan beyond those to whom this draft is circulated, include but are not limited to:

1. Teachers and students of the Field School of Archaeology and University of Culture (MORAC)
2. Teachers and students at the Universities of the Ministry of Education (MOE)
3. Gyles Innamore Trent University (Canada)
4. John Miksic and Goh Geok Yian (Singapore)
5. JICA (Japan)
6. Surat Lertlum (Thailand)

### J. Sample site examples by Type

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Figure 3 Sample of 85 features in Components 1-8 (not including Buffer Zone) to address Research Issues

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D. Clarification of legal provisions for Monasteries, Temple Trustees and for public and private Institutions in Bagan

The legal provisions for monasteries, temple trustees as well as public and private institutions concerning development works and activities in Bagan are defined through national legislation as well as the legal framework defined in the Integrated Management Framework document. All provisions are to be followed as defined. This document is a summary of the legal provisions and as such is a clarification specifically for social and religious institutions.

Safeguarding Cultural Heritage Sites, Monuments and Objects

1. Monuments, archaeological sites and cultural objects, along with their surrounding context shall be safeguarded as per legal provisions;
2. Any required conservation work shall be carried out by the DANM or through their delegation of works to respective competent parties;
3. Monasteries, Temple Trustees and public and private Institutions shall not be provided permission for any activities that fall outside the legal provisions as defined in the Integrated Management Framework document. Any special provisions that might arise due to extraordinary circumstances will be adopted through the Myanmar National Central Culture Committee and BAGANCOM.

Building Construction and Development works within the Cultural Heritage Site

4. Monasteries, Temple Trustees and public and private Institutions shall follow all the regulations and legal provisions as defined in the Integrated Management Framework which means
   a. Within the property structures can only be built within the town and village areas or else have to be temporary.
   b. In the buffer zone, building regulations have to be followed for town and village areas, while traditional style buildings are allowed also in the landscape.

Special Provisions Monasteries

5. Living monasteries shall have the additional provision for traditional buildings to be constructed within their monastic premises in traditional style, but only for monastic purposes, while ensuring that monuments and subsurface archaeology are safeguarded.
6. Functioning living monasteries in the property zone outside town and village areas shall not establish guest houses and will only build required facilities for the requirement of the resident monks or nuns.

Special Provisions Temple Trustees

7. The Temple Trustees shall follow all the regulations and legal provisions as defined in the Integrated Management Framework which means
   a. within the property structures can only be built within the town and village areas or else have to be temporary.
   b. In the buffer zone, building regulations have to be followed for town and village areas, while traditional style buildings are allowed also in the landscape.
8. Temple trustees shall respect the sanctity of the monument and its heritage value, ensuring that minimum required facilities are provided,
9. Parking areas shall follow the legal provisions under Development Guidelines ensuring that the landscape is not visually impacted while safeguarding the monuments and subsurface archaeology.

**Special Provisions public and private Institutions**

10. Public and private institutions which include schools, hospitals as well as other institutional and government facilities shall follow all the regulations and legal provisions as defined in the Integrated Management Framework which means
   a. that within the property structures can only be built within the town and village areas or else have to be temporary.
   b. In the buffer zone, building regulations have to be followed for town and village areas, while traditional style buildings are allowed also in the landscape.

11. Only institutions that are appropriate for the location shall be given permission to be constructed
Nomination Dossier for Inscription on the World Heritage List

BAGAN

The Integrated Plan of Action (Working Document)

The Ministry of Religious Affairs and Culture with Government of Mandalay Region and Government of Magway Region
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3.3 Formulating Annual Action Plans

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<td>Term</td>
<td>Definition</td>
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<td>Bagan Cultural Heritage Property</td>
<td>The area of Bagan that has been demarcated as containing most of the cultural heritage attributes</td>
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<td>Bagan Cultural Heritage Site</td>
<td>The overall area of Bagan that includes both the cultural heritage property as well as the buffer zone</td>
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<td>Buffer Zone</td>
<td>An area demarcated around the cultural heritage property that provides an added layer of protection with similar management and legal provisions.</td>
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<td>Protective Planning Area</td>
<td>An area demarcated approximately 30 kilometres beyond the Buffer Zone spanning from Chauk to Pakokku towns as basis for regional planning</td>
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<td>MOC</td>
<td>Ministry of Construction</td>
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<td>Ministry of Natural Resources and Environmental Conservation</td>
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<td>MOHT</td>
<td>Ministry of Hotel and Tourism</td>
</tr>
<tr>
<td>MORAC</td>
<td>Ministry of Religious Affairs and Culture</td>
</tr>
<tr>
<td>DANM</td>
<td>Department of Archaeology and National Museum</td>
</tr>
<tr>
<td>DA</td>
<td>District Administration</td>
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<td>MNCCC</td>
<td>Myanmar National Culture Central Committee is a high level coordination committee under the Vice President</td>
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<tr>
<td>BAGANCOM</td>
<td>Bagan Committee for the management of the cultural heritage property and buffer zone</td>
</tr>
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<td>AMA</td>
<td>Association of Myanmar Architects</td>
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<td>MTF</td>
<td>Myanmar Tourism Federation</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<td>OUV</td>
<td>Outstanding Universal Value</td>
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<td>SOUV</td>
<td>Statement of Outstanding Universal Value</td>
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Preamble

Bagan Cultural Heritage Site spans across a bend in the Ayeyawady River between the hills of Tantkyi-taung and Tuyin-taung. The site is located in Nyaung U District of Mandalay Region and Pakokku District of Magway Region. The property covers some 50 square kilometres with an additional 180 square kilometres of buffer zone. The impressive landscape encompasses over three thousand monuments along with 2 towns and over 40 villages. The ancient capital city of Myanmar went through a major building spree during the eleventh to thirteenth centuries CE of which nearly three thousand monuments remain. Though the focus is on the Bagan Period, there are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the eighteenth and nineteenth centuries.

The site also boasts elaborate living cultural heritage continuing from the ancient times. The strong Theravada Buddhist culture pervades the daily lives of the local community and the visiting pilgrims. This is overlaid by a deep reverence to the spirits or Nats which are particularly dominant in Bagan, with their main centre being nearby Mount Popa. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production.

The communities living in the towns and villages are in a period of transition. Most locals are still farmers who depend on the meagre rainfall to cultivate their traditional crops such as groundnuts, sesame and flat beans on plots hemmed in by toddy palms. The ground is still ploughed using bullocks and bullock carts are still used transportation. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business. Tourism is also the caused for increased traffic, construction of infrastructure and buildings as well as physical wear and tear of the monuments.

Much of this golden period of Bagan is still hidden below the surface of the parched land. The urbanization and the expansion of the monument ensembles are not clearly understood. Development pressure mainly driven by tourism is ready to swamp the regulations put in place to conserve the monuments. To defuse these pressures while ensuring a livelihood for the local community requires a comprehensive planning approach. The consideration of a wide range of issues will allow for a realistic and effective management system to be put in place that ensures sustainable development while safeguarding the attributes and elements of Bagan that express its exceptional values.
The Integrated Management System for Bagan has been established consisting of adopted management frameworks, established processes and actions along with various sector plans. The process of developing and adopting the Integrated Management System for Bagan was begun in 2013. With regular consultation with government authorities, local representatives and community, it has been possible to come to an overall understanding of how Bagan needs to be managed to ensure that heritage in safeguarded while enabling the local communities to improve their livelihood. Close relationship has also been developed with related sectors such as local administration, tourism, agriculture, disaster risk management and environment protection. The management of Bagan will however depend on overall government policies and local governance. This requires regular review and amendments to the Integrated Management System to adapt to changing circumstances, however the overarching objective must be retained: “to protect the attributes expressing Outstanding Universal Value of the World Heritage property as well as the locally recognised heritage values, while taking into account sustainable development including the standard of living, safety and economic viability of the community living within the World Heritage property.”

The Integrated Management System is defined by two main documents. The Integrated Management Framework document has been officially adopted by the State Party. The Integrated Plan of Actions document defined is a working document requiring ongoing amendments and changes to be carried out and would be the basis for establishing annual action plans. Additionally there are three further sector plans or strategies. The Conceptual Regional Plan provides an overview of the required planning in respect to land-use, settlements, infrastructure and environment. This has been prepared with inputs from various government agencies as well as the Association of Myanmar Architects (AMA). This is closely linked to the Sustainable Tourism Strategy which has been prepared in close collaboration with the Ministry of Hotels and Tourism, the Myanmar Tourism Federation and with support from JICA. Furthermore the Disaster Risk Management Strategy has been prepared with support from the World Bank.

The Integrated Plan of Action consists of two main sections. The first section is on Management Issues and Categories of Actions. The first part provides an overview of the management issues which have been arranged under nine clusters. This is followed by a section providing information on the categories of actions required to address issues along with recommendations on streamlining procedures. The second part provides information on the required actions that have been presented in table format arranged under the nine clusters of issues. Here the development of annual action plans is also highlighted.
1. Introduction to the Bagan Integrated Plan of Action

Bagan is a heritage site, a place of pilgrimage, a tourism destination as well as home to local inhabitants. The complexity of the site requires a comprehensive analysis of the critical issues to be determined which are addressed by the management system. An effective management system of a World Heritage property ensures that particularly the attributes expressing Outstanding Universal Value (OUV) are safeguarded.

The attributes that express OUV are mainly within the property boundary while the buffer zone provides added protection. The attribute of the buffer zone, which might not express OUV, would however also need to be protected within certain critical parameters. The attributes along with their location in relation to the World Heritage property boundaries and buffer zone are provided in the Integrated Management Framework Document. Furthermore an additional 40 kilometre Protective Planning Region has been defined.

The Bagan Integrated Plan of Action document is part of the Integrated Management System for Bagan Cultural Heritage Property and must be read together with other related documents, particularly the Bagan Integrated Management Framework Document. Additionally there are specific documents dealing with sector-wise management which include the Bagan Conceptual Regional Plan, the Bagan Sustainable Tourism Strategy and the Bagan Disaster Risk Management Strategy.

The heritage property does not exist in isolation and is closely linked with overall governance of the region and activities that go beyond conserving cultural heritage. This requires the establishment of coordination with related relevant sectors such as local administration, tourism, agriculture, disaster risk management and environment protection.
The Bagan Integrated Plan of Action document provides an overview of issues identified for the cultural heritage property of Bagan and the required activities and actions to address the issues. These processes need to be implemented based on the management frameworks defined in the Integrated Management Framework Document which has been adopted by the State Party.

The Integrated Plan of Action consists of two main sections. The first section is on Management Issues and Categories of Actions. The first part provides an overview of the management issues which have been arranged under nine clusters. This is followed by a section providing information on the categories of actions required to address issues along with recommendations on streamlining procedures.

The nine clusters of issues are as follows:

A. Conservation of monuments and archaeology
   This cluster includes conservation of monuments, ornamentation and sub-surface archaeology as well as site interpretation and museum management.

B. Regional planning and transportation
   This cluster includes settlement planning, land-use management, infrastructure development and transportation management within heritage site and beyond.

C. Tourism management and infrastructure
   This cluster includes tourism activities, infrastructure and accommodations as well as the contribution that tourism will provide for the conservation of the heritage property and the local community.

D. Environment and pollution
   This cluster includes flora and forestry, fauna and wildlife protection, as well as management of water and waste.

E. Natural hazards and human threats
   This cluster includes mainly preparedness for earthquakes, flooding, heavy rainfall and other natural hazards as well as threats created by humans.

F. Agriculture and landscape
   This cluster includes the visual landscape, the link between landscape and heritage conservation, agricultural practice as well as non-agricultural landscapes.

G. Community – socio-economy and livelihood
   This cluster includes community empowerment and local governance, as well as livelihood from tourism, agriculture, traditional activities and new activities.

H. Intangible heritage
   This cluster includes festivals and performances, crafts and traditional activities, belief systems as well as the intangible aspects that define community life.

I. Management tools
   This cluster includes “One Map”, Heritage Impact Assessment (HIA), Data Management System (DMS) and other management tools and programmes.

The second part provides information on the required actions that have been presented in table format arranged under the nine clusters of issues. Each issue is defined based on location, incident, priority and category of action required to address the issue. The action is then defined by time, lead agency and required resources. Based on the tables of actions annual action plans are going to be developed.
Part 2. Management Issues and Categories of Actions

2.1 Overview of Management Issues

2.1.1 Conservation of monuments and archaeology

2.1.2 Regional planning and transportation

2.1.3 Tourism management and infrastructure

2.1.4 Environment and pollution

2.1.5 Natural hazards and human threats

2.1.6 Agriculture and landscape

2.1.7 Community – socio-economy and livelihood

2.1.8 Intangible heritage

2.1.9 Management tools

2.2 Categories of Actions and Implementation Procedures

2.2.1 Routine Activities

2.2.2 Time-bound Projects

2.2.3 Emergency Response

2.2.4 Streamlining procedures
2. MANAGEMENT ISSUES AND CATEGORIES OF ACTIONS

2.1 Overview of Management Issues

The following section provides an overview of the major management issues that were identified during discussions and workshops carried out over the past three years. During this period of great political change, it has been possible to ensure the participation of local communities in the discussions and ensure that they are given the possibility to participate.

Particular focused workshops on each of the categories or theme were organized throughout 2015 where experts, authorities and stakeholders were invited. These provide more detailed recommendations that have contributed to the Plan of Action.

In some themes such as conservation of monuments, various workshops and discussions and activities have been carried specifically to deal with the affects of the 2016 Chauk Earthquake. The post-earthquake rehabilitation process will clearly define activities that are carried out over the next five year period.

The list of management issues that have been identified have been categorized under the following nine headings:

1. Conservation of monuments and archaeology
2. Town planning and transportation
3. Tourism management and infrastructure
4. Environment and pollution
5. Natural hazards and human threats
6. Agriculture and landscape
7. Community – socio-economy and livelihood
8. Intangible heritage
9. Management tools

Each of these categories of management issues has been defined within this section and will be the overall format for the plan of action as provided in Section 3 of this report.

The broader themes have been integrated into the regional planning and the sector plans particularly for tourism and disaster risk management. The following three plans are separately attached:

1. Bagan Conceptual Regional Plan
2. Bagan Sustainable Tourism Strategy
3. Bagan Disaster Risk Management Strategy

Each of these is being further developed as comprehensive plans in close collaboration with the relative authorities.
2.1.1 Conservation of monuments and archaeology

Monuments, mural paintings and other forms of ornamentation along with subsurface archaeology and the surrounding context will be safeguarded. Necessary actions are to be carried out to ensure conservation of all significant attributes. The clear understanding of these attributes will be ensured and respective interpretation provided. This includes the artefacts that are stored and displayed in the museum.

A. Monuments – structure and ornamentation

The conservation of monuments has been the focus of most activities within the Bagan heritage zones. The monuments are clearly the most prominent elements within the site which must also be considered the attributes that express the greatest significance. Various projects have been carried out to map, inventory and assess the monuments. Furthermore various projects have been carried out on structural conservation.

Conservation projects have been going on over a long period, especially after the damage caused by the 1975 and more recent 2016 earthquakes. There are various ongoing projects dealing with the conservation of monuments organized by UNESCO in close collaboration with the Ministry of Religious Affairs and Culture and the Department of Archaeology. There is however critical aspects of the structural stability of various structures that still have not been fully understood and will require further research.

The conservation approach and strategies has been discussed in depth after the Chauk Earthquake. The 2016 Chauk Earthquake has led to a concerted effort to assess damage caused to the monuments and discuss means of rehabilitation. The rehabilitation guidelines have been prepared based on these discussions. The link between the post-earthquake rehabilitation and the long term conservation approach and strategy will be reviewed and agreed upon. Previous interventions after the 1975 and the ongoing activities after the 2016 earthquakes will be taken into account.

The Department of Archaeology will need to take the lead role however the discussions would need be include both national as well as international experts. The theme will be further discussed in various ICOMOS platforms. The conservation approach and strategy will be the basis for amending the management system after the first five years have passed which would focus mainly on post-earthquake rehabilitation.

B. Ornamentation

Various projects have been carried out to map, inventory and assess ornamentation of monuments, particularly mural paintings. Furthermore various projects have been carried out on conservation of mural paintings. There is however insufficient conservation projects to safeguard all the exquisite mural paintings found within Bagan. Research is clearly still lacking particularly in respect to other forms or ornamentation such as glazed stone and terracotta, stucco, decorative stone and brickwork.

It is necessary to establish standardized conservation methods and approaches for the various ornamental components of the monuments. This has been started for mural paintings, however further work is required for all ornamentation.
C. Inventory system

The establishment of the inventory system is being carried out through a project organized by UNESCO in close collaboration with the Ministry of Culture and the Department of Archaeology. It would be best for those involved in the project to provide an overview of their work which would then be integrated into the management system.

The inventory is being prepared and close cooperation is required to ensure that the inventory can be used as a management tool. This will require future coordination between the teams preparing the inventory and those working on the management system. This would need to be studied more in detail.

There were three issues that need to be clarified. (1) The criteria for assessing value of monuments would need to be based on the criteria used for grading monuments. (2) The criteria for assessing present condition and relevant positions assessing treats would need to be based on the understanding of vulnerabilities and hazards. (3) It is critical for the practical utilization of the inventory to link the overall assessment to the management system.

D. Subsurface archaeology

Possibly due to the prominence of the monuments and a lack of resources, there has hardly been any archaeological research carried out. There are assumptions on the location of various early palace sites. The archaeological excavations that were carried out within Old Bagan have not provided a clear chronology of the sites. There are numerous parts of the heritage zones where archaeology is threatened by various activities and development. There are also a lot of questions raised concerning the urban morphology of the ancient settlements that can only be answered through archaeological research.

The archaeology at Bagan includes subsurface prehistoric and historic archaeology and art history, settlement archaeology and related technologies to assess structures, artefacts and contexts. Due to the lack of archaeological research, the settlement structures and settlement continuity, village life, manufacturing and production, irrigation, paleo-environment, landscape transformation, ancient circulation paths and the linkages between the monument ensembles are not known. Some research has been conducted on production sites (iron, ceramic, glass) but these studies need updating. This also includes training in traditional sculpture, mural painting, stucco, wood carving and other workmanship to maintain the above ground monuments. As Bagan is a religious site historically and through sustained pilgrimage, coordination between secular and religious conservation and renovation of temples and stupas is urgently needed. There is lack of information on dating and phasing of the archaeology in Bagan. The focus has been on the monumental and there is a lack of understanding of the non-monumental. It is not certain how the citizens lived since research has focused on brick structures and not on materials used for construction in the villages that might have constantly been replaced or shifted. The question that arises is whether there is a timber horizon beyond the brick horizon in Bagan. Additionally the transformation of the landscape over time through human intervention and possibly through changes in climatic conditions has not been understood. Archaeology has already been lost in locations such as along the banks of the Ayeyawady, in Old Bagan (where before being shifted the inhabitants dug for precious objects, as well as ongoing new construction), in New Bagan where the town has been built over archaeological sites, in Hotel Zones.
Being a long term activity, there would be continued outcomes as work progressed. The end result would include a detailed understanding of the entire site derived from the archaeological investigations that will go beyond the brick horizon. The initial outcome would however need to be a framework for such investigations to be carried out simultaneously by various teams. This would require base maps, basic mapping of existing information, prioritization of research areas, guidelines for archaeological research and standardized procedures. This would be carried out with training of local expertise.

E. Site interpretation standards

Site interpretation would be linked to a tourism strategy to improve the site experience for various categories of visitors. Site interpretation would go hand in hand with conservation efforts which prepare the monuments and archaeological sites to safeguard them while presenting them to visitors. This would need to be carried out through a project by an expert team which would include experts in history, archaeology, architecture, heritage, tourism, site management and designers. Site interpretation will be a critical issue when considering such an extensive site with a growing number and diversity of visitors. Site interpretation would be part of the section on tourism and visitor strategy of the management system.

Interpretation both on site and in the museum is not sufficient. The numbering of the monuments has provided some means of identification, however there are no accessible sources to link these numbers to names, dates and historical information. There are some very interesting “stories” that could be presented, however it has not been possible to provide sufficient interactive experiences, awareness building and explanations to the individual monuments, sites and exhibits. This is of course due to the lack of resources. It is necessary to find external resources and international experts to improve the interpretation provided in the monuments, archaeological sites as well as the museum for national and international visitors. The presentation methods can use many forms of media, however ensuring correctness of content.

F. Museum management

The strategy for improving the Bagan museum was not discussed during the workshop. This would however need to be reviewed and discussed during a separate event when international and national experts on museums can meet up to provide their contributions on how to better use the existing museum facilities as well as the vast number of artefacts. The outcome of these discussions would be included in the planning procedures and integrated into the management system.

The Bagan Museum – an intrusive building – has great potential to becoming a major attraction for visitors as well as being a centre of research. The Bagan Museum must be made functional, possibly by finding an acceptable international partner that could help improve the functioning of the museum as well as help fund the improvements. The museum should be used for awareness, education, research, community activities, documentation, library, database (with graded access), and other required processes within the management system. The Bagan Museum building itself might need some rectifications done to reduce the visual impact of the enormous structure. The interiors of the building would also need to be changed to function better as a museum.
2.1.2 Regional planning and transportation

Specific planning is needed for areas within the property boundary, within the buffer zone and then the Protective Planning Region. A Conceptual Regional Plan has been prepared for the Protective Planning Region, an area covering one hundred by one hundred kilometres to ensure appropriate sustainable development and control impact on the Bagan Cultural Heritage property.

The “Protective Planning Region” extends over two provinces of Mandalay as well as Magway across the Ayeyawady River. This requires high level government cooperation to ensure that the two provinces work together to safeguard this heritage which is not only of national but also international significance. The Myanmar National Culture Central Committee will also be required to ensure cooperation between the various union level ministries. This High Level Cooperation Committee for Great Bagan will consist of members who can ensure cooperation between the provinces and between the union ministries.

A. Settlement planning

The town areas Nyaung U and New Bagan (Myo-thit) which are related to Bagan Cultural Heritage Property are placed in the buffer zone but are closely related to the activities and functions within the property boundaries. There are however six villages that are within the boundaries which are Taung-bi, Myin-ka-ba, Bwa-saw, East Bwa-saw, Min-nan-thu and Thu-the-kan. Furthermore there are numerous villages in the buffer zone. These settlement areas have clearly demarcated boundaries. The governance of these areas, especially in respect to the zoning regulations of the Department of Archaeology is unclear. The cooperation between the local administration and the Department of Archaeology is insufficient.

Nyaung U is located on an old village site developing into a town during the colonial period. The documentation and analysis of Nyaung U town and its historical buildings, especially from the colonial period would be essential as a basis for further conservation and planning of the town. New Bagan was established in 1990 when the people living within old Bagan were resettled. The tragedy was that this impacted both the heritage around old Bagan as well as the archaeology in the area of the new settlement. The impact of this resettlement on the community as well as on the heritage – monuments, archaeology and the setting- needs to be studied.

Several critical issues have already been raised in respect to controlling the rapid development of the town areas which has led to encroachments into the surrounding areas. The socio-economy of the towns would also be closely linked to the changes that are taking place in respect to the standard of living of the people.

These are areas where people live, building their homes which adapt to the requirements of the families. These areas would be constantly changing for example to respond to growing families or when the inhabitants earn more and expect to improve their standard of living. These, especially the towns, are the areas where external investors come in to establish businesses such as hotels, offices and shops. They also speculate on cheap land in the surrounding areas which are restricted to development, but it is presumed that over time the regulations can be overturn or that the law can be blatantly disregarded. A practical and realistic strategy needs to be developed to take into account the needs of the community, but
also to respond to the risks of uncontrolled growth and speculation on the safety of the heritage.

The development areas of the towns are slowly creeping into the surrounding landscape without a clear understanding of its impact. The villages, such as Taung-bi and Myin-ka-ba which have not yet been incorporated into the towns, are bursting in their seams and transforming rapidly. There is a lack of understanding of the dramatic changes that are taking place within these settlement areas. Research is required on understanding the mechanisms of change taking place in each of the towns and villages. This would include the changes in demography, economy and requirements of physical infrastructure and services.

The boundaries of the settlements need to be fixed and regulations put in place to ensure that they are not changed incrementally. The changes within these boundaries need to be regulated while allowing for expansion in dedicated areas outside the heritage zones. This requires a regional plan to be put in place that caters to the additional needs of the heritage zones: a service zone with controlled development.

The town areas require specific planning tools to be put in place to ensure that development is guided. Planning should consider visions of what the town should look like and how it should function after ten and maybe twenty years. Strategies need to be developed to safeguard the specific characteristics of the towns. This could include the maintenance of green spaces and streetscapes. Detailed zoning is required with respective bylaws for new building designs as well as guidelines for the conservation of existing buildings, for infrastructure and for services. The regulations would also address function and usage of buildings and public areas.

B. Land use management

The planning of Bagan must extend far beyond the boundaries of the Heritage Zones. These areas could develop to become threats but if planned properly would provide the means of solving many of the issues facing the Heritage Zones. Development controls will be required for an area extending at least fifteen kilometres beyond the heritage boundaries in all directions. The planning would also be linked to the main infrastructure and service lines, Ayeyawady River, Mount Poppa as well as the towns of Pakokku, Ngathayauk and Chauk.

Considering the impact of developments at a greater distance, such as from areas that might experience development of polluting industries or structures that might have visual impact on the heritage, a broader zone around the entire heritage site needs to be defined. This greater monitored area would require basic controls on visual impacts and polluting activities. This area could be a zone that extends for example 15 kilometres in all directions from the edge of the finalized heritage site boundary. This area would extend up to the Pakokku Bridge to the west, Singu to the south and a similar distance to the west and north across the river.

The planning will be carried out by national experts such as the team proposed by the Association of Myanmar Architects (AMA) under the direction of the Myanmar National Culture Central Committee. The Conceptual Regional Plan has been prepared in close cooperation with the local government authorities and taking into account a realistic approach to improving the existing circumstances. The Master Plan will also take into account all other
ongoing planning projects such as the activities of JICA and UNESCO, particularly the preparation of the Integrated Management System.

The physical planning, zoning and regulations would be the basis for managing development and change in and around the heritage zones. This would be the basis for the heritage site managers and the local authorities to manage the site in respect to development controls. This would also be the basis for cooperation between all the various authorities that have activities in and around the Bagan that could impact the heritage site.

Considering that the population of the towns will grow, provisions are required for town extensions; however these need to be separate zones outside the heritage area. In addition to the detailed planning according to requirements of the new settlements, these new planning areas must also adhere to basic guidelines and bylaws to ensure that they don’t have any unacceptable negative impact on the heritage site.

C. Infrastructure development

The infrastructures and service lines in the Heritage Zones detailed regulations and standardization. These would be lined to transportation and tourism infrastructure plans. The alignment of service lines might need to be planned together with the alignments of roads and paths. This would be linked to network planning for electricity, water (drinking / irrigation / drainage), sewage as well as telecom and solid waste management.

The development of these different forms of transportation will also need to be planned in connection with the overall national strategy. These would be considerations in respect to the airport, railway station, river jetties, and road accessibility and parking. Any further town and tourist accommodation developments would be linked to transportation access. Transportation planning would be an essential part of ensuring the protection of the heritage site by channelling the visitors to specific areas; ensuring vehicular traffic does not damage monuments. Transportation is however also essential for the smooth functioning of the heritage site and allowing good accessibility from other parts of the country.

Transportation to Bagan needs to be strategically planned. Increased air traffic to Bagan will require appropriate planning for the airport. Increased traffic on the river and access to Bagan would need to be considered, in respect to both tourist traffic as well as the more heavy transportation of goods. Developing the railway would need to be considered as a sustainable option for the future. The introduction of the steam engine for tourist is a commendable first step in improving the tourist experience in Bagan. The road network to Bagan needs to be strategically planning in close collaboration with the extension plans and transportation planning within Bagan.

How does Myanmar want to develop its domestic airline network? Where does Myanmar want to have its airports with international connections? In respect to Bagan, the discussion arises on the capacity of the existing airport and its impact on the heritage property. Any need for expansion would raise the question on the possibilities of shifting the airport, such as to Pakokku. The road and railway link between Pakokku to Bagan would then need to be upgraded. By crossing the Irrawaddy River, this trip between Pakokku and Bagan in itself is a worthwhile experience when efficient transportation service is established.
The highway connection links from Mandalay in the northeast and from the main Yangon to Mandalay highway near Meiktila to the southeast. Road connections will be improved between Nyaung U and the airport at Pakokku, to Mount Poppa and south the Chauk. A further connection is needed between the highway and the Chauk to New Bagan road to ensure a bypass around the Heritage Zones.

The railway system has great potential for the future. The upgrading of the entire railway network would improve connections to Bagan. A train link from Nyaung U to Pakokku airport will be an immediate requirement should the airport be developed there. This local network could then be extended to Chauk and Mount Poppa.

D. Transportation management

With the development of Bagan as an important heritage property which is a site of pilgrimage as well as a major tourism destination, transportation planning has become critical for sustainable development. Transportation is critical for accessibility as well as movement around the enormous site. Accessibility to Bagan will be studied in respect to transportation by air, road, rail and river. This provides a wide range of possibilities which in itself will add to the travel experience.

Transportation along the Ayeyawady is a national issue, however must consider the impact on Bagan. This means that traffic would need to be controlled in respect to quantity, loading as well as impact (pollution, noise). Any work on engineering the river to divert flows or carry out dredging to improve river navigation must go through stringent impact assessments. The river is however a means of accessing Bagan which provides visitors with a wonderful experience. The number and size of tourist vessels must be controlled as well as where they dock and for how long. Clearly there should not be any moored to the river banks being used as tourist accommodations.

Transportation within Bagan heritage site must be planned in detail to ensure efficiency for the local population, but also considering the tourist experience along with ensuring that it doesn’t have any major negative impact on the heritage. Considering the many examples of the negative impact of motorized vehicles on monuments, traffic zoning along with the categorizing of size/weight of vehicles to specific routes is required, whereby certain areas can only be accessed by light, non-motorized vehicles.

The transportation within the Heritage Zones will be planned in detail with all roads and paths being designated to specific categories of vehicles. The categories could be defined by weight, number of passengers and means of motorization. Special consideration might be given to electric vehicles. Each category would also have guidelines in respect to infrastructure design including surface finish.
2.1.3 Tourism management and infrastructure

Tourism is a critical part of managing World Heritage properties. During the second cycle of periodic reporting on the implementation of the World Heritage Convention in Asia and the Pacific, site managers were asked to comment on factors affecting their heritage. One of the most prominent factors considered to have both negative and a positive impact on World Heritage was tourism and the related infrastructure development, accommodations, including interpretation and visitor facilities. The positive factors are the income and prestige which comes with promoting and sustaining the heritage sites. On the other hand, many activities can cause physical damage, loss of ambience, spoil the environment and the surrounding context and even alienate the local community.

A Sustainable Tourism Strategy document has been prepared and adopted to ensure that tourism development is carried out in a sustainable and appropriate manner in and around the heritage site of Bagan. All activities, particularly those dealing with tourism in and around Bagan must follow the provisions provided within the Sustainable Tourism Strategy document. This link between the tourism sector and the cultural heritage sector is critical for the sustainable development of Bagan along with the safeguarding of the cultural heritage attributes.

A. Tourism Activities

Tourist activities must ensure that they do not impact the heritage which includes the monuments, the subsurface archaeology as well as the cultural sentiments of the community. This would need to be based on detailed studies and discussions with community members. All activities must be planned taking into account the number of tourist that will be visiting the site over the next years and considering the carrying capacity of each of the monuments and sites. In certain cases, such as monuments with mural paints, might require controlling the number of tourist at any one time and overall daily restrictions, possibly by charging extra fees to cover direct management expenses.

Transportation within the heritage site will be a critical issue in ensuring heritage is protected. The distribution of visitors throughout the site in sustainable numbers needs to be targeted. A hierarchical plan for transportation within the heritage site shall be established. This means that a detailed plan of vehicular movement must be prepared, agreed upon and adopted before any further infrastructure is developed. The plan shall allow general access to cycles and electric scooters with greatest restrictions to big busses. Accordingly parking facilities shall be provided with a hierarchical system of transportation.

The accessibility to Bagan must be improved considering rising visitor numbers while taking into account its impact on the heritage site. Nyaung U Airport must not be extended and flight frequency must be restricted. Should access to Bagan require larger flights and higher flight frequency, the option of moving the airport to other sites such as using the partially built one in Pakokku needs to be considered. Bagan must become a no-fly zone. Railway transportation must be prioritized for tourism development. This could become especially important when the airport is relocated. Special trains with steam engines could become a major tourist attraction. Road networks must link to the heritage sites with the main connections being outside the heritage area. Travel along the river shall be promoted. Infrastructure development along the river banks shall be restricted. No major development of jetties and piers shall be carried out within the heritage area. Floating hotels shall not be allowed within the heritage area, can however be promoted further upstream or downstream.
B. Tourism Infrastructure

Tourism infrastructure development has not shown sufficient respect for cultural heritage. The development of facilities and infrastructure for tourists within the heritage site will ensure visitor satisfaction in respect to basic needs, experience as well as information. These will however be restricted to facilities that are non-intrusive, reversible and appropriate to the location and follow the legal framework being developed for Bagan.

Tourist facilities constructed within the heritage property have not shown sufficient care for the heritage. Within the heritage site any facilities that need to be built will adhere to the legal framework particularly to the building bylaws regarding temporary structures. Special care shall be taken with service lines for supply of electricity and water and disposal of sewage, waste water and solid waste.

The development of infrastructure linked to tourism activities will closely adhere to the legal framework, in particular the development guidelines. The development of infrastructure shall only be carried out once an overall appropriate infrastructure development plan has been prepared, agreed upon and adopted by the government. All government departments shall then follow these plans. This is particularly important for circulation (roads, paths, parking areas, and bus stops), airports extensions, railway lines and stations, jetties and piers for river traffic, as well as viewing mounts, decks and special access to temples and archaeological sites.

Infrastructure has been developed without following laws. Any development projects that are not temporary or easily removable must first have a Heritage Impact Assessment (HIA) carried out along with detailed sub-surface archaeological surveys linked to Archaeological Risk Maps (ARM). The project must be developed taking into account the outcome of the assessment and survey.

C. Tourism Accommodations

The number of visitors to Bagan is increasing steadily. This means that there are increasingly more people looking for accommodations in Bagan. The visitor profiles cover a wide range from the high-paying luxury tourists, to backpackers and national visitors and pilgrims. This requires various typologies and standards of accommodation. Inversely, the type of accommodations and their marketing can also influence the tourist profile. A detailed study is required of present visitor numbers and profiles over the year. This needs to be linked to the national tourism strategy and extrapolation scenarios for visitors to Bagan over the next decades. The establishment of visitor accommodations must be guided according to the results of these studies.

Visitor accommodations have become one of the greatest threats to the Heritage Zones. Resort complexes have been built in critical areas of the Monument Zone, such as in Old Bagan and along the banks of the Ayeyawady River. Many of these reports encompass listed monuments and construction has taken place over archaeology. This trend must stop. The designation of Hotel Zones that have been carved out of the Monument Zone (which are Hotel Zone 1, 2 and 3) must be removed. These Hotel Zones undermine the authority of the Protection and Preservation of Cultural Heritage Regions Law of 1998.

The Hotel Zone 4 however provides the basis for an appropriate tourist accommodation strategy. More such Hotel Zones outside the Heritage Zones (MZ, AZ and PZ) will need to be
identified, with however better planning. The Hotel Zones must be developed with sufficient commercial facilities and activities that they become sustainable entities. This must link to the activities of the local communities, supporting their livelihood.

There are possibly over a hundred hotels and guest houses within the town and village areas of the Heritage Zones. These are not always appropriate and in many cases are illegal. Guidelines are needed for visitor accommodations within the town and village areas. These should be incentives for conserving historical buildings and providing village style accommodations. The wonderful colonial period buildings in Nyaung U must be conserved, possibly through change in usage. Even the wooden framed buildings that provide the town with a distinct character must be conserved. In New Bagan the situation is of course different, since this is a town that was established only in 1990.

Similar incentives could be used to conserve the wooden monasteries around Bagan. Certain monasteries which have been recently lost could be re-established to provide pilgrims with simple accommodations. The income source would be a great support for the monasteries, keeping in mind that the monasteries cannot request for support themselves.

The main focus and support needs to be given on developing tourist accommodations outside the heritage areas. An example can already be found in Hotel Zone 4. These areas must however be developed to ensure certain characteristics while providing the necessary services and entertainment for the tourists and allowing the local population to profit from this.

Considerations might be made on allowing tourist accommodations in town areas and possibly in the villages in a controlled manner. This would possibly mean the introduction of home stay and accommodations in heritage buildings that are restored and maintained. This should be a motivation for conserving historical and local buildings. The construction of new buildings for such purposes would need to be dissuaded.

The existing hotels and guest houses within the heritage site, including Hotel Zones 1, 2 and 3 would need to be assessed as individual cases to ensure that they do not impact the heritage. Necessary measures would need to be taken and in the long run these will be phased out.

D. Tourism Contributions

The negative impact of tourism will need to be controlled while the positive impact promoted. This will be an essential balance which if not achieved will surely destroy the cultural heritage property. Various point need to be considered in respect to the overall approach of tourism in Bagan and sustainability. Bagan is a heritage site, a sacred site, a place where communities live and work, and only then a tourist destination.

Tourism must support the safeguarding of the heritage site. Only activities that do not negatively impacted heritage must be carried out. Activities that enhance the protection of heritage need to be promoted. Wherever possible the local community will be prioritized to profit from tourism activities. Long-term planning will be carried out to ensure focus is not only on immediate gains.
The heritage site as a tourism product must ensure that there is a clear balance between the requirements and visions of the tourism sector and the need to safeguard the cultural heritage, the environment and the integrity of the local community. Tourism will be promoted while ensuring that it supports the livelihood of the local community. Great care will however be taken to ensure that the lives of the local community members are not unduly disrupted. Tourism activities must consider the sentiments and values of the local community. Tourism must support local activities such as production of handicrafts and local agricultural products.

Tourism must also support the post-disaster rehabilitation. Therefore tourism must be promoted during the post-disaster rehabilitation phase to ensure continued support to the livelihood of the community. Tourists shall be encouraged to contribute to the rehabilitation efforts. Provisions need to be made to allow visitors to observe the rehabilitation of Bagan. This would include possible means of observing ongoing restoration work but also by being provided information on the rehabilitation process. Visitor management during the rehabilitation phase must be specially managed to allow for the experience however ensuring safety for heritage and visitors. Signage concerning possible threats must be clearly provided.
2.1.4 Environment and pollution

Bagan lies in the bend of the Ayeyawady River. This is the dry-zone of Myanmar and the small amount of rainfall defines the landscape. The landscape is however unique with the river and hills define the boundaries of the heritage site.

The environment is however susceptible to change due to natural hazards such as earthquakes and floods, as well as the impact of climate change. Human activities also impact the site through agriculture, tree plantations, as well as pollution.

This requires a clear understanding of the status of the environment and its impact on the heritage. Natural hazards and human activities can impact the heritage if not carefully planned. The management system must consider mitigation measures to ensure that the heritage is safeguarded.

A. Flora and plantations

The landscape around Bagan has a unique character defined by the dry climate. Though a large part has been converted into agricultural land, there are still areas of forest and shrub. What would be considered indigenous flora of the Bagan area? How does the vegetation impact the micro-climate and how does this have an impact on the heritage? How should plantations be regulated?

The only designated forestry areas within the township is the Loka-nanda Sanctuary. The area is about 104 acre focusing on the protection of the ecological system and specifically for the endangered species of Golden Deer and the Star Turtle. Twin Hill is not yet designated but application has been submitted. Another proposal which has been considered is in the Kyauk-ku-umin area east of Nyaung U town; however this is possibly not realistic. There are already numerous studies that have been carried out on the indigenous flora of the Bagan area. The various indigenous species will need to be listed in a manner which allows for this information to be used for planning and developing regulations. An additional aspect that would provide interesting insights would be to study the plant species that existed in the ancient landscape. This will require research in Palaeoethnobotany.

In 1997 a famous environmentalist began greening the area around Mt. Poppa. The area which only has 20 inches of rain is of course not good for trees. However the initial green project was successful. This lead to the Dry Zone Greening Department being established and the first project in 1998 was carried out with support from KOICA. The project in the archaeological zone which was carried out by KOICA is over and the individual plantation work is being done locally. There have been numerous forestation projects under the slogan of greening the dry zones of Myanmar. A forest area is planned in the southern part of the township outside the heritage area. The Dry Zone Greening Department is responsible for the plantation of trees within the heritage area as shade for the tourists and visitors. Every year about thousand trees are planted, with the locations being chosen by the temple trustees. The decision on what trees to plant are recommended by the Forest Research Institute in Naypyitaw. The decision is based on usage that within three years the local community can use the timber (this however contradicts the regulations on cutting and trimming the trees). Trees that are usually planted are Eucalyptus, Neem, Kokko, Acacia and Cassia. Further research on social and climatic impact of these trees is required. Further
interesting topics of research would be the link of the vegetation with the building materials used during the various phases of construction in Bagan.

Vegetation can have extremely detrimental impact on heritage structures. The various ways that vegetation impact heritage needs to be studied. This can be the actual physical destruction of heritage through plants growing on monuments or over archaeology. The threat of plantations to archaeology has not been taken seriously in Bagan, also because very little in know in respect to potential archaeological sites. The impact of vegetation could also be created through indirect influences such as the change in ground water or the increase in humidity. Certain trees can affect the ground water level. Trees can also cause shading and allow greater evaporation which increases humidity. These different means of impacting heritage will be studied to allow for respective legal controls to be put in place while providing alternative solutions.

The legislation on forestry is comprised of Myanmar Forest Policy 1995, Forest Law 1992, The Protection of Wildlife and Protected Areas Law 1994 and the Community Forestry Instructions 1995. There are basically two categories of forests: Protected Public Forest which is protected and not for use and Reserve Forest which can be used for timber and non-timber forestry products. Additionally there are areas designated as a Sanctuary for the protection of the ecology and specific species of flora and fauna. The regulations that are established will be based on a certain definition of the significance of the landscape. This will be linked to the outcome of studies on the original landscape and the lists of indigenous plant species. The regulations will determine the species of trees that can be used for reforestation taking into account the impact on water management, soil improvement and needs of the community. The impact of vegetation, particularly trees, on monuments and archaeology will be controlled. This will require clear regulations on plantations to ensure that the impact of the trees on monuments is mitigated (regulations on type, distance, etc.). The impact of trees on archaeology will be mitigated by preparing and enforcing archaeological risk maps.

Ministry of Environmental Conservation and Forestry would take on a pivotal role in determining the indigenous flora and working on plantation regulations within the heritage zone. This would require close collaboration of the Forestry Department with the Dry Zone Greening Department and the Forest Research Institute in Naypyitaw. The assessment on the impact of plantations on heritage would require close collaboration with the Department of Archaeology. The district administration would also be involved to ensure monitoring of activities within the heritage zones. Additionally the authorities, it might be necessary to get experts dealing with Palaeoethnobotany who can determine plant species of the ancient landscape.

The outcome of this project will determine the indigenous plant species and document these. If possible this will include the vegetation looking back over the centuries requiring respective archaeological research. The project will study the direct and indirect impact of plantations on heritage. This means determining how the trees can physically impact monuments and especially subterranean archaeology. The trees can also indirectly impact heritage by changing the micro-climate, which again would need to be studied in detail. Simultaneously, the project will need to determine other considerations, especially in respect to how plantations might impact other aspects of the environment as well as how possibly be beneficial to the community and visitors. Based on this detail understanding of indigenous
flora and the impact of plantations on heritage, a set of regulations will be formulated along with a system of implementation, enforcement and monitoring.

The management system will be required to control any changes that might take place within the landscape of which plantations would be an important aspect. The definition of the significance of the landscape will be defined in the management documents which would be linked to the lists of indigenous plants. The plantation regulations will be integrated into the legal provisions. This would also be closely linked to monitoring provisions.

B. Fauna

Bagan has a unique ecosystem and the Ayeyawady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA). There are numerous endemic species of animals found in the area. What are the possible approaches in helping safeguard the indigenous and especially the endemic fauna of Bagan?

The categorization of animals is done based on the degree of threat they are facing. These categories are: extinct, extinct in the wild, critically endangered, endangered, vulnerable, lower risk and conservation dependent. The species can be registered on IUCN’s Red List. The animals can also be categorized under the level of threat: threatened (T) near threatened (NT) least concern (LC) data deficient (DD) not evaluated (NE). For example we find the Laggar Falcon in Bagan which is a threatened species. This threatened species is nesting on the Sulemani temple, raising questions in respect to how to consider this monument as a habitat of a threatened bird species.

There are numerous endemic as well as endangered species of animals found in the Bagan area including the Star Tortoise, Burmese Roofed Turtle, Golden Deer, White Throated Babbler and the Laggar Falcon. The endemic species of Myanmar include four species of mammal, fifty-one species of reptile and numerous birds. The existence of these endemic species in Bagan must be identified and studied.

The murals and stucco carvings show many species of birds and animals. Though some might be of legendary design, there seem to be many that represent actual animals found in Bagan during the historical times. This would make an interesting study which can be used in awareness building and promoting the safeguarding of the indigenous flora of Bagan.

Safeguarding the indigenous flora will require a comprehensive and integrated approach including all the various stakeholders involved in Bagan. This means the various departments of the Ministry of Environmental Conservation and Forestry, including the Department of Environmental Conservation. The Loka-nanda Sanctuary is an important location for various endemic species and would become the centre for conservation and research. The government can institutions can be supported by such organizations as the Myanmar Bird and Nature Society (MBNS). Since awareness and education is an important part of this process, links need to be made to schools, educational institutions and community organizations that can disseminate the required messages. The project would need to be led by a prominent expert on environmental conservation, who can coordinate between the government authorities, the research institutions and community base organizations.
The outcome of this plan will be to identify the endemic and threatened species of animals found in and around Bagan. The requirements for safeguarding these species will be determined, whether it is in respect to their habitat or ensuring that there is no poaching. An interesting approach to this project would be to put environmental conservation within the context of Buddhist philosophy of not harming nature. A further dimension would be to link this to the historical images of the natural surroundings found in the ancient mural painting. These considerations will need to be converted into specific actions, policies, regulations and general considerations for overall planning in Bagan.

The fauna of Bagan is an important consideration for the overall management of Bagan. Specific procedures need to be put into place to safeguard the endemic and threatened species, including their natural habitat. National legislation will be converted into local level implementation and monitoring. The management system will also include provisions for awareness raising and education on safeguarding endemic and threatened species. This would go hand in hand with developing an overall philosophy of safeguarding living being which needs to be understood as not only by stopping poaching but also by providing the basic requirements for the species to survive.

C. Water Management

Water is important for habitation and agriculture, which requires managing precipitation and the perennial streams including the Ayeyawady River. What are the issues that need to be considered in managing of water in Bagan?

Rain has been the main source of water for Bagan over the centuries. Bagan lies in the central plains of Myanmar which is a “dry zone”, for the Rakhine Yoma mountain range shelters this area from the humid monsoon sweeping in from the Bay of Bengal. The data provided by the Department of Hydrology and Meteorology shows that maximum rainfall is slightly over 100 millimetres in September and October. Throughout history, agriculture in Bagan has been dependent on the rains. The Department of Hydrology and Meteorology is responsible for monitoring the weather and providing daily forecasts as well as warnings of extreme conditions. They are also responsible for monitoring droughts. There was a long period of drought from 2013 to 2014. The concerning is that with climate change such situations would become even more commonplace requiring alternative water sources to be considered. Other sources of water are ground water and the perennial streams and rivers, most notably the Ayeyawady River. The use of ground water has been regulated this could impact the archaeology as well as the monuments by leading to changes in the ground water table. The decision to use ground water should be based on extensive understanding on its implications and the effects on the environment and the cultural heritage. Any water that is pumped up from the ground must be linked to a plan to recharge the aquifers. Even the water of the mighty Ayeyawady River must be considered to be finite. There are plans to further exploit the Ayeyawady as a source of water. This is taking place not only around Bagan but along the entire river which calls for a sustainable national level plan for the use of water from the Ayeyawady River.

The collection and storage of rainwater was carried out even during the Bagan Period, with the construction of a huge reservoir on the western side of Twin Hill. In ancient times rainwater was also collected at the village level, for every village has a reservoir. The
collection of water at household level is of course not clear since hardly any research has been undertaken on the ancient dwellings of Bagan. This ancient system provides us with a model which needs to be reviewed as a possible means of collecting and storing water during the rainy seasons. How a similar system would be adapted to the present circumstances and needs will need to be studied and adapted to the regulations to safeguard the monuments and archaeology. The main focus on water supply has been the Ayeyawady River. A pumping station can be found in Nyaung U, which pumps water to supply the Nyaung U town. More detailed assessment of this system is required. A second source has been created where a branch of the river about ten miles long along the western side of Bagan (Loka-nanda) has been closed off to function as a reservoir during the dry season (as shown in the map provided by the Directorate of Water Resources and Improvement of River Systems). The level of the water here would be 4 to 5 feet higher than in the main channel, allowing for storage of water to a depth of at least 2 meters. Water is then pumped from this seasonal reservoir from the Loka-nanda Pumping Station. The rather controversial “Bagan River Multipurpose Beautification Project” proposes to create a second channel to exploit the ten meter level difference between high and low water. (This project must be critically reviewed since it intends on changing the entire river-scape, even proposing to use the river area for tourism infrastructure).

The distribution of irrigation water has been through irrigation channels which allows for large amounts of water to evaporate. This has not been allowed within the Monument Zone and Archaeological Zone, is however being done in the Protected Zone. The question that arises is whether farming requiring irrigation should be encouraged in this area at all. The distribution must be based on the need, which in itself requires strategic planning.

The distribution of water is more efficient with a well-designed network of piping, as long as these are maintained properly. The question that arises in respect to piping is the impact on archaeology. The piping network would require detailed scrutiny in respect to archaeological impact and should anyway only be planned for areas the need for piped water is critical.

The main requirement for water is for private use in the towns and villages and for agriculture. These are two very different requirements and would need to be considered under different strategies. The water required for habitation, which means for consumption and for hygiene, is a basic necessity which must be guaranteed to all the citizens. This means that water must be provided to all the villages and towns. How this is done will be a critical part of the planning exercise, since water is scarce and the storage, distribution and use of water within the heritage areas could impact monuments and archaeology. This requires careful planning. The use of water for agriculture is a very different planning process. This needs to be integrated into the planning for a strategic approach to agriculture in Bagan. The need for irrigated water would first have to be clarified, since the agricultural processes in a “dry zone” would best correspond to its climatic condition. There are clearly means of engineering the environment to use it to grow different types of crops; however the basic question arises whether this would be the correct approach for Bagan.

The strategic planning required for water management would require the involvement of authorities at various levels. At the national level a water management policy is required which ensures efficient and sustainable utilization of water. At the provincial and local level, the distribution and usage of water needs to be regulated. Since the use of water is a
crosscutting theme touching upon various sectors, a coordination system is required. In Bagan these discussions would need to focus around the safeguarding of the heritage sites. The heritage site management will coordinate between relevant authorities and will have a definite voice in the decision-making process. For the strategic planning, relevant experts in the field of environment, regional planning, engineering and agriculture are required.

The planning outcome will be a Strategic Plan on Water Management for Bagan. This will be linked to national level policies while taking into account the specific circumstances of Bagan as a heritage site. The water management would entail the establishment of a clear approach to the collection, storage, distribution and use of water as a finite resource that is essential for the livelihood of the people and the continued existence of the ecology.

The management of water has always been an important issue in Bagan. For the sustainable development of Bagan and its surroundings, the management of water is critical. The issue of water will take a prominent role in the Bagan, both as an essential resource, but also as a potential threat to the heritage. The use of water and the related infrastructure will therefore need to be closely monitored to ensure that there is no major negative impact on heritage. Critical aspects are construction of infrastructure and service lines in sensitive areas, the uncontrolled use of ground water, the seepage of access water into foundations of monuments and subterranean archaeology. The management system will provide water management policies, including regulations to prevent negative impact on heritage and the environment. The management system will also provide the monitoring mechanism to ensure compliance.

D. Waste management

A sustainable waste management system is required for Bagan. This was identified as a critical issue that needs to be brought under control for the sustainable development of Bagan. What are the causes of pollution? What mitigation measures need to be put in place?

One of the most obvious forms of pollution that can be observed in many parts of Bagan is littering. Solid waste is dumped mainly in the areas surrounding the towns and villages but also around monuments. Studies are needed to identify the sources and composition of the litter. This would allow for solutions in respect to appropriate collection and disposal. A commendable campaign has been started by the District Administrator. He has managed to bring about awareness on the deadly affects of pollution caused by toxic plastics seeping into the ground and drinking water. This campaign could be streamlined, supported and augmented. The understanding that waste can be a resource will need to be introduced. This would mean working on separation at source. Biodegradable waste can be composted and used as manure. Other waste such as glass, metals, paper and most types of plastics can be recycled. For this the necessary systems are required which includes awareness, collection and processing. Some forms of waste such as hazardous industrial waste, waste from hospitals and even used oil would need to be collected separately and disposed off in a sustainable manner. It is only rubble that needs to be dumped, but even this can be used for developing infrastructure and for landfills, though this should not be done within the heritage zones.

Drainage but natural and the constructed, lead into the Ayeyawady River. This means that all the pollutants that are collected on the way end up in the river. This would need to be
controlled, but since the drainage will distribute pollutants within the heritage area as well as contribute to polluting the river. Sewage is mainly collected in septic tanks. There is however no real system for sewage disposal. This will become a major issue as further development takes place. The additional problem with sewage is that it requires infrastructure that is placed underground which can be a threat to archaeology. The digging of septic tanks or the laying of sewage pipes could disturb the archaeology. The system of collection and treatment of sewage will need to be planned in a sustainable manner keeping in mind the how it might impact heritage. Additional value of sewage, such as the possibility of creating bio-gas or converting the sludge into manure must also be considered. The discussions of using more complicated technology verses natural means of sewage disposal will also need to be clarified considering that such methods as reed bed treatment requires large areas of wetlands, not necessarily suited for Bagan.

Another critical form of pollution that has been identified is air pollution. Till today the contribution of air pollution due to traffic and industry is still considered to be negligible, however these need to be considered as future threats if not controlled immediately. The main cause of air pollutions at present seems to be due to the burning of refuse, which might solve the problem of littering, but leads to another problem of air pollution. In this respect, the disposal of solid waste must be managed in a sustainable manner. Concern has also been raised in respect to noise pollution. The various causes might be additional activates linked to tourist attractions, but also various religious and community practices that are using larger and louder equipment. The noise pollution can also potentially be caused if airplanes, means of transportation (motorized vehicles on land and river) as well as construction and industrial activities. Provisions will need to be made to control possible noise pollution in the future keeping in mind the sanctity and character of the heritage zones. A further form of pollution that has been mentioned is light pollution. The development of evening activities, the increasing electrification of the towns and villages and especially the lighting up of monuments are issues that need to be considered. This form of pollution would need to be studied specifically in respect to its impact. For example the impact of lighting up monuments will impact the animals living in and around the monuments such as the Laggar Falcon on Sulemani Temple. Specific solutions are required. Light pollutions must also be seen in respect to the impact on heritage by means of lighting in the temples where there are mural paintings. The lighting of heritage objects will need to be studied in detail and appropriate solutions identified.

The cities of Yangon, Mandalay and Naypyitaw have City Development Committees that are responsible for waste management. However beyond these, the responsibility for waste management would fall under the Department for Development Affairs (DDA), Ministry of Progress of Border Area Development and National Races and Development Affairs. The official responsibilities in Bagan would need to be clarified, probably with the District Administration. Closely linked to the responsible authorities for waste management would be the authorities responsible for environmental conservation, the Department of Environmental Conservation in the Ministry of Environmental Conservation and Forestry. The preparation of a sustainable waste management plan for Bagan will however require an expert consultant who can coordinate among the numerous involved authorities as well as provide innovative and appropriate solutions. This would be done in close collaboration with DANM to ensure that impact on heritage becomes a key consideration.
The outcome of the planning exercise will be a sustainable waste management plan for Bagan. The plan would include immediate steps required to control pollution of the environment of Bagan which would include pollution of land, water and air. Waste will be understood to be a resource and the provisions for benefiting from this resource will be determined and introduced. Sustainable means of managing waste which would include innovative management, participation as well as appropriate technology. The entire cycle that the “waste” goes through will be considered in the plan so that there are no remains dumped anywhere near or within the heritage site. The basic approach would include undertaking awareness campaigns to ensure that the community gets involved in sustainable waste management. This entails the possible control at source or user, while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure. The planning would need to be based on legal provisions that can be transferred to the site management plan. The Development Committees Law (1993) and the Environmental Conservation Law (2012) would need to be consulted. Any further legal provisions required for Bagan would need to be identified and formulated in draft form.

The management of waste will be an issue that becomes part of the overall management system for Bagan. This critical issue will be closely linked to the safeguarding of the environment, conserving the landscape as well as ensuring the sustainable development of Bagan. The procedures devised for appropriate collection, processing and disposal of waste products will become part of the procedures of the management system.

The understanding that waste is a resource when properly handled will need to become the central concept which would align with the overall approach of managing Bagan in a sustainable manner.
2.1.5 Natural hazards and human threats

The key natural hazards that need to be considered are earthquakes and extreme weather which leads to drought and flooding. The complexity of dealing with these issues makes it necessary to develop a separate “Disaster Risk Management Strategy”. This will lead to a more comprehensive Disaster Risk management Plan which will ensure coordination between all required authorities, experts and stakeholders.

A. Earthquakes

The last major earthquake struck in 1975. This means that the memory of this incident still exists, allowing for further research on how the earthquake impacted the heritage property. The response at the time would also need to be documented, since many of the interventions might need to be monitored and possibly improved. The technology used at the time might not stand the test of time, such as the concrete ring beams that were introduced and hidden inside the structures.

Considering the possibility of further earthquakes striking the area and impacting Bagan, Preparedness is essential. Some very definite activities that can be carried out would be by first establishing a coordination system for responding to earthquakes for cultural heritage. Furthermore it would be possible to prepare and update of inventories of all prioritized heritage for proactive response and lists of community level heritage for support on request. This would go hand in hand with guidelines for consideration by search and rescue teams to be prepared and translated into Myanmar. Procedures for security to heritage sites in case of earthquakes need to be defined and training carried out with the armed forces. This would be further linked to establishing and providing training on methods and procedures for assessment, salvaging and safeguarding artefacts and components of collapsed historic structures, supporting and propping of damaged structures as well as covering against rain. Principles and guidelines for rehabilitation of historical structures would need to be prepared and adopted.

B. Flooding and heavy Rainfall

Extreme weather needs to be monitored keeping in mind the impacts of global climate change. Types of impacts caused by extreme weather, flooding and landslides and the methods used to repair and stabilize monuments need to be studied and documented. This goes hand in hand with securing unstable slopes, monitoring erosion on river banks and ensuring sufficient drainage in areas which are known for inundations. These measures will be linked to safeguarding heritage in all its forms which includes the monuments, the archaeology but also the intangible culture.

Extreme weather can also be considered in respect to lack of rain. This has devastating effect on the landscape, especially the farmland. The monitoring of drought shall be closely linked to the appropriate use of water resources and the local agriculture within the Bagan area. This can have an indirect affect on the entire heritage site by making people abandon farming which would change the entire landscape or then by pumping water whereby changing the entire hydrology. Further research would also be needed on the wetland ecosystem along the entire Ayeyawady River. Any projects that are planned within these areas must undergo stringent impact assessments. For example the projects such as Bagan...
River Multipurpose Beautification Project, the Integrated Water Resource management and the Navigation Enhancement between Nyaung U and Mandalay will need to consider how this would increase vulnerability and threaten the heritage as well as the environment.

C. Other Natural Hazards

Response systems and preparedness for cultural heritage sites shall be ensured for all critical types of natural hazards such as earthquakes and extreme weather (floods, storms and excessive rain) as well as taking into consideration the risk of fire. Since most registered disasters are caused by fire (65.9%), provisions will need to be made to ensure that fires hazards are considered in the disaster risk management plans. However landslides and river erosion must also be considered as critical natural hazards in Bagan.

Coordination shall be ensured between all authorises to prepare and respond to natural disasters, especially between the Ministry of Home Affairs, the Ministry of Social Welfare, Relief and Resettlement, the Ministry of Religious Affairs and the Ministry of Culture. Cultural heritage sensitivity shall be ensured in the National Disaster Preparedness Central Committee as well as the working committees and the armed forces. The national disaster training shall be invited to Bagan to carry out awareness that is sensitive to cultural heritage sites.

D. Human Threats

One of the major impacts on monuments is also due to vandalism and development pressures. Animals are herded around the monuments and cause damage. There are cases of vandalism and graffiti. Development pressure also impacts the sites. This is the case with electrical poles, cables including wiring and lighting inside the monuments. Other examples of infrastructure impacting the site are telephone towers. In many areas along the road and in the town areas advertising boards are being set up.

The development pressure also has caused major problems with garbage which is dumped all over the site. This has also been an issue with other visitor related activities such as the movement and parking of vehicles near monuments. Tourists enjoy climbing on the monuments to view the surroundings and the viewing the sunset has become a major event. There are souvenir shops around many of the monuments. Efforts have been made to control the behaviour of tourists and local visitor using signboards and having guards and specially trained guides for local culture. There is an increase in artificial landscapes often linked to tourism sites as well as along the main roads. The management of traffic and maintenance of roads has become an important issue to be addressed.

The developments along the river for tourist facilities such as hotels, guest house and restaurants are becoming a major issue, since it changes the entire river banks. The local agriculture is also changing with farmers growing modern cash crops which change the cultural landscape around the monuments. The use of tube wells for hotels, restaurants, agriculture and the public can cause problems to the monuments. During festivals many people come and set up temporary shelters around monuments which impact the structures. Encroachment can be seen around the town areas, especially New Bagan and Nyaung U.
2.1.6 Agriculture and landscape

One of the most unique features of Bagan is the expanse of cultivated fields interspersed with ancient brick monuments. The cultivated fields create the setting for the monuments. There are however numerous factors which are impacting the agriculture which includes natural phenomena as well as changing human activities. It is mainly due to the lack of funds that the local community has not been able to cultivate more profitable crops and use machines, irrigation systems and modern technology.

The significance of the agricultural fields in respect to the overall value of the heritage site must first be determined. Accordingly, means of conserving this landscape need to be devised. The challenge is of course that this landscape depends on the farming community continuing their traditional means of farming.

These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business.

A. The Visual Landscape

The scale and beauty of Bagan is striking. The persistence or continuity must be considered of the landscape as well as the community and their activities. There is a close relationship between the cultural heritage property and its natural setting. The site is located on the bend of the Ayeyawady River between the two hill ranges of Tangy-taung and Tuyin-taung.

The significance of Bagan is greatly influenced by the magnificent landscape. The unique landscape needs to be considered as the setting of the cultural heritage property, particularly taking into account the potential archaeology that lies under the surface. Such considerations would have major implications on the management system which would need to safeguard the attributes that qualify significance.

In the future the change in activities could impact the landscape. Change through neglect is something that will probably become more prominent over time. The existing landscape might be a new phenomenon – as an agricultural landscape – however even this could be considered a significant setting. To retain this, the form and methods of cultivation would also need to be retained.

As a setting, the visual integrity of the landscape plays a critical role in safeguarding the cultural heritage property. This means that two aspects have to be considered. There is the slow “internal” changing of the present landscape due to weather and traditional human activity. The present form of landscape is dependent on the local farmers continuing their activities. There activities are controlled by allowing farming only within a certain distance from the monuments.

There is however also the more dramatic change caused by “external” influences which could generally be taken as construction works. These could be towers, tall buildings and infrastructure works. Building heights are also controlled. There is however continued pressure to provide services to the communities and tourist without sufficient consideration for the landscape.
B. Landscape and Heritage Conservation

The agricultural landscape of Bagan is special. It provides the setting for the magnificent temples. The agricultural landscape is the interface between the contemporary living cultural heritage of the villagers and the ancient historic site. This interface between the monuments and community activity is an important testimony to the continuity in the cultural heritage of Bagan. The challenge will be to continue retaining this landscape by ensuring the continued agricultural activities that would be considered appropriate for the heritage zone.

Two levels of research would be required on the landscape, the historic one and the contemporary one. These are of course very closely linked but a better understanding is required not only on what the landscape looked like physically in the past, but also how it functioned as an ecosystem. This would then need to be understood as it moved through time. What has changed and what has remained the same over the centuries since the Bagan period? To be able to retain the landscape, the planning would need to address the detailed mechanisms of ownership and usage as well as the trend of change being inflicted by tourism, the introduction of new technologies and agricultural methods and possibly even climate change.

Certain means of ensuring the continuation of the traditional agricultural practices would require external influences to be controlled. This could be done through legal measures linked to land use (dealt with by the land registration office) and zoning regulations (dealt with by the Department of Archaeology in close cooperation with the District Administration). The purchase of agricultural land within the heritage zone should only be allowed for local villagers.

The planning of the landscape would be part of the physical planning that need to be carried out for Bagan. This would be closely linked to the mapping and determining the ownership while controlling the sales of agricultural land within the heritage zone. The planners will need to work closely together with the land registration office, the District Administration and the Department of Archaeology. The methods used to plan out the conservation of such a landscape would require the expertise of agronomists as well as anthropologists and ecologists.

The methodology that is derived from the research and planning would need to be converted to management tools. These tools would then be included in the Integrated Management System for Bagan. The complexity of this however would require interventions at various levels and the establishment of support mechanisms that might need to be considered even beyond the Integrated Management System such as the farmers association and the establishment of the Bagan Heritage Brand.

C. Agricultural Practice

Agriculture is the most important means of livelihood for the local inhabitants in Bagan. Even though this area is considered to be the dry zone of Myanmar, people have been farming throughout history. Due to the fragile landscape and harsh climate not much has changed in the means of agriculture and farmers have been very conservative. This has allowed for the landscape to be retained possibly as it was during the Bagan period.
There is no comprehensive understanding of what agriculture was like during the Bagan period. This could be studied through archaeological research or trying to study earlier sources of images and inscriptions. The question would be also whether there were changes in agricultural practices over the centuries which might have been linked to cultural but also climatic considerations. The research would need to look into what adaptations would still be considered appropriate for the heritage site of Bagan.

The planning would allow for a better understanding of the options for ensuring the continuation of traditional farming methods while allowing certain adaptations to take place that would still be considered appropriate. Mechanisms for guiding such developments could be put in place.

To carry out the studies various projects would need to be initiated with multi-disciplinary team of experts working closely with the farming community, the local government authorities and the Department of Archaeology. Such research could be carried out in close collaboration with the various planning projects that have been suggested. Agronomists would also need to study the traditional methods of farming along with the trend to adaptations while considering its impact on the heritage, the landscape on the local economy.

The safe-guarding and promotion of the traditional farming methods will need to be part of the management framework. This would be a consideration that is put as compulsory for any planning project being carried out in Bagan. The agricultural practices will change over time, however the management system will need to set broad guidelines or mandatory considerations for any change that takes place with the farming methods to ensure that these changes can be considered appropriate for the site.

D. Non-agricultural Landscapes

There are certain areas in and around the cultural heritage property which is not farmed. These are particularly along the hill ranges of Tantkyi-taung and Tuyin-taung which are covered with shrub. Various strips of land along the Ayeyawady River are also not farmed, though one must note that many of the flood areas particularly on the islands are seasonally cultivated. There are also areas around temples and in village and town areas which are not cultivated and are usually used for community or commercial purposes.

There are certain areas which are not being cultivated despite the fact that they are agricultural plots. There are various causes for the owners to stop plantation, which could be due to family reasons. However a big impact was when the community from Old Bagan were shifted to New Bagan. This is said to have caused not only a major burden on the individuals but also created chaos in the traditional community activities. Many families left farming to engage in other income generation such as tourism.

Development pressure has become one of the major causes for change in landscapes. There has been a tendency for plots to be sold to speculators and developers who plan on using this land for commercial purposes. Usually the plan is to build resorts. These plots are fenced in and are not cultivated which then changes the landscape entirely.
2.1.7 Community – socio-economy and livelihood

The communities living in the towns and villages must be considered as stakeholders and potential caretakers of the heritage site. The vast extent of the site does not make it practical for dedicated site managers to constantly monitor and guard the entire site. It would therefore require the partnership of the local inhabitant. The landscape itself is dependent on the care provided by the local farmers. In the case of intangible heritage, it is the local community that ensures its continued sustenance.

The community in Bagan is however changing, especially when considering the new investors moving to Bagan and the locals having to move out due to lack of income and rising prices. The change in the community will have direct impact on the heritage site, in respect to the landscape, setting and the activities that are an intrinsic part of the heritage site. Change is clearly inevitable, however a balance must be sought to retain the character of the site and ensure sustainable development.

This would require detailed discussions and studies that would lead to a better understanding of the community in Bagan. It is necessary to understand how they contribute to the value, participate in safeguarding the heritage and what possibilities there would be to ensure their continued participation in conserving Bagan.

A. Livelihood from Agriculture

Agriculture is still one of the main community livelihoods, even though only about six to seven months can be considered as farming season. The remainder of the time the people would probably need to get involved in other activities. It is interesting to note that the main tourist season only overlaps the farming season by maximum two months. If it would be possible to coordinate the two, it might just be a means of ensuring that the locals continue their farming during the rainy season and are then involved in tourism during the dry season. Many farmers are already involved in other trades such are carpentry. In any case, the community livelihood depends on additional sources of income beyond agriculture, which could be a boon but also a threat. This balance must be studied to ensure that the local economy and standard of living improves while conserving the farming heritage of Bagan.

Detailed research would need to be carried out on the present agricultural practices and how these are linked to the livelihood of the local community. The linkage of agricultural practice to traditions, the landscape and the impact on heritage would need to be studied in detail. A system for supporting the farmers must be established. This would need to be both in respect to finance and technical support that would be appropriate for the heritage site. Support could begin with setting up a farmers association. The adding value, processing, packaging, marketing and branding of products could be looked into under the farmers association.

The planning outcome would be an organized farming community that has better options for ensuring feasibility of continuing with traditional farming practices. The hardship of continuing with traditional farming would need to be compensated with a certain system of assurance for the farmers that even if the harvest is destroyed, they have a support system to fall back on. Should it be possible to support their farming activities while promoting secondary sources of income during the dry period, it could become a means of ensuring improved incomes, raised
standard of living and a contentment to be part of the effort in conserving the unique heritage site which clearly also has religious significance.

The farming community itself would need to get organized. For this the question would be whether this could be achieved by the local farmers themselves or whether some external facilitators would be required. Agricultural experts would however be required for the entire product processing, packaging and marketing. The establishment of a Bagan Heritage Brand would need to be studied in detail; especially how this branding can ensure the farmers profit and the quality is guaranteed.

The means of ensuring improved income, livelihood and standard of living while conserving the traditional agriculture and the agricultural landscape will be one of the most important objectives of the Integrated Management System. This means that the challenge would be to determine how the management system can contribute to this complex endeavour.

B. Livelihood from Traditional Activities

Marketing strategy for Bagan products, strategy for appropriate community livelihood and promotion of traditional skills are so closely related that it would be best to look at them as a single endeavour of livelihood linked to the traditional skills and the production of local products. These products would need to be marketed. One of the most important aspects of local heritage is the production of various crafts. These are usually sold in the local markets and sometimes to the walk in tourists or on stalls by the temple and pagodas. The crafts products such as lacquer ware, sand painting, as well as special agricultural products are quite unique for Bagan and would need means of marketing that allows them to profit from being produced in a place like Bagan. Such added value would help the local community profit from being in a heritage site while being proud of their heritage.

The products produced in Bagan which are unique, of high quality and an expression of the local culture would need to be identified. The market possibilities for these products would then need to be studied along with production methods. The markets would need to be studied, whether local, tourist or for export. A study would need to be conducted on the traditional crafts of Bagan and whether these are still exiting and being practices. This is closely related to the conservation requirements for the monuments and artefacts and in certain cases if not being practiced might even need to be revived.

The outcome would be a clear understanding of the feasibility of producing and marketing the products that are typical for Bagan. The linkages of the production to conservation practices, craftsmanship and the agricultural landscape would also need to be determined for planning purposes. The planning outcome would also need to target the need for crafts-persons for conservation works on the site.

The studies on handicraft, their production and the market feasibility would need to be studied by a team comprising of anthropologists with knowledge of product manufacturing and economists who understand the market for handicraft and local products. This information would need to be discussed and shared with the tourism sector as well as the Department of Archaeology, especially the newly proposed section on research and training (or they could be the ones carrying out this research in close collaboration with the museum).
The promotion of local crafts and agricultural products would need to become a key consideration in the strategy of managing the site. The crafts would be required to improve the livelihood of the local community while ensuring that they are available when conservation work needs to be carried out. The agricultural products would support the farmers who are a key partner in maintaining the landscape around Bagan. These aspects of local livelihood, local crafts and the marketing of these products will become part of the management framework and strategy to ensure that there is continued community involvement in the heritage site of Bagan.

C. Community Empowerment and Local Governance

Communities have not been involved in decision-making in respect to the future of their own livelihoods and habitat. Even though there is a close link between community activities and the cultural heritage site, there is a lack of acceptance or acknowledgement of their contributions. The local communities will need to become caretakers of the cultural heritage property and only then will it be possible for such a large area to be monitored and maintained. This would however require the local community to earn sufficiently to be able to improve their standard of living.

The empowerment of the community and their direct and active participation in the making decisions that affect their activities within the cultural heritage property is a critical part of the democratic process. Within the management framework and vision of this Integrated Management System, the local communities would be able to continue their customary practices. Not only this, but the system would need to support the traditional activities which are closely linked to defining the traditional landscape.

The involvement of the local community in the governance of the area would ensure their cooperation in monitoring and maintaining of the cultural heritage property. The devolution of certain powers to the local level has been a critical step in ensuring efficient, effective and realistic management. This would be the basis to ensure development along the lines defined by the Sustainable Development Goals (SDGs) while ensuring that the needs of the communities are taken into account.

D. Livelihood from Tourism and New Activities

The tourism sector will become the major employment provider which will impact local economic activities. We can already see the new generation embrace activities linked to the tourism sector, particularly in working in hotels, restaurants and as tour guides. This is obviously work that seems to fit better into the contemporary image for those who have had basic education. This is also linked to the fact that more locals are getting exposure to what is going on in the cities and beyond the national borders.

A balance must be sought between traditional activities and newly introduced activities such as those linked to the tourism sector. Traditional activities that are linked to maintaining crafts and skills must be supported. The manufacturing of local products whether handicrafts or agricultural products must be prioritized by the tourism sector. Should the local community give up on their local activities and totally embrace only new professions, it would be rather disastrous for Bagan.
2.1.8 Intangible heritage

Intangible heritage is defined in various ways depending on the context and purpose. The intangible is in constant flux as it adapts to changing circumstances. It is in the minds of humans that intangible heritage exists in the form of knowledge. Through the skills derived by the human body it is possible to express intangible heritage. The knowledge and skills are passed down from generation to generation and each generation will add, amend, elaborate or remove aspects as communities develop and change. This process, though allowing for change, ensures that communities retain their own identity whereby ensuring the overall safeguarding of cultural diversity. The intangible heritage of Bagan contributes to the significance of the cultural heritage property. The communities living within the cultural heritage property have ensured that some of their traditions have continued over centuries. These have become an integral part of the heritage property and their continuity must be safeguarded.

A. The 2003 UNESCO Convention on Intangible Cultural Heritage

The 2003 Convention defines five domains of ICH which are (1) oral tradition, (2) performing arts such as traditional music, dance and theatre, (3) social practices, rituals and festive events, (4) knowledge and practices concerning nature and the universe and (5) traditional craftsmanship. The convention’s goals are to safeguard intangible cultural heritage while ensuring its respect, raising awareness on its importance and providing assistance to do so. Safeguarding would mean “to ensure the long-term viability of intangible heritage within communities and groups”. There is no definition provided for “community” since the understanding of what a community is may vary from case to case. It is however necessary for communities to respect each other’s differences while conforming to internationally acknowledged principles of human rights.

B. Festivals and Performances

There are numerous traditional local festivals and performances. Some are still being performed even if they might have changed over time. The festivals are generally linked to religious activities such as the Pagoda festivals that Bagan is renowned for. There are also performances such as puppet shows that have become a tourist attraction, which present many local legends and myths. There are a number of pagoda festivals in Bagan. According to a list (in Myanmar) deposited at the Department of Archaeology, there are 55 pagoda festivals in old and new Bagan, and Nyaung U. These would include the ones at Shwe-zi-gon, Ananda, Loka-nanda, Manuha, Miya-zedi and A-lo-taw-pyae.

Pagoda festivals are occasions when pilgrims, both local Bagan residents and from all over the country, gather to make donations to the pagoda, both in cash and in kind. There are many forms of merit making events all through the festival. As well as making merit, the festival organizers generally include traditional and popular entertainments to attract and entertain the visitors. Vendors of all kinds of goods set up stalls to cater for the needs and desires of the pilgrims. The date of each festival is set by the lunar calendar. The duration varies from one month, to just one day and night. The donation received, and the rent collected from merchants who set up stalls, is managed by the temple trustees, and generally used for the maintenance and enhancement of the pagodas and their surroundings.
C. Crafts and Traditional Activities

There are still many forms of crafts and traditional activities that still exist in Bagan. There are some crafts that have been identified as being particularly significant for Bagan which include traditional lacquer-ware production, soybean paste production, traditional painting as well as building crafts such as bamboo scaffold building, masonry works and carpentry.

Lacquer ware are objects or utensils coated with lacquer which is a substance obtained from the sap of some trees (Toxicodendron verniciflum or related trees). The lacquer is applied in several coats to a base that is usually wood or bamboo. This dries to a very hard and smooth surface layer which is durable, waterproof and attractive to feel and look at. Lacquer is sometimes painted with pictures, inlaid with shell and other materials or engraved, as well as dusted with gold and given other further decorative treatments. The making of lacquer-ware is extremely labour intensive and time consuming. It may take 3 to 6 months to make small pieces, and over 1 year to make large pieces.

One of the many agricultural products from Bagan would be the typical soybean paste. Soybean paste is a famous relish of Bagan. In fact Bagan and soybean bean is inseparable, and local visitors are expected to buy soybean paste to take back as a gift. Soybean paste was made from soybean fermented by the leftover water after cleaning the rice for cooking. The production of soybean paste begins with the soybeans being cleaned two or three times, then boil about two hours on wood fire. After that, it is put into the bamboo sieving and cool water is poured on it. Fermentation liquid is then added and cooked for one and half hours on ground nut shells fires. After cooling for one day, the soya bean paste is packed.

There are many kinds of traditional painting: mural painting, cloth painting. Sand painting is a derivative. The painting style, motifs, techniques are applied to lacquer-ware production as well. There is an implication that the techniques have continuity from the Bagan period, especially for cloth painting which is still practiced nowadays. Among the monuments in Bagan, cloth painting can be found in the Kamikha pagodas groups, and pagoda no. 315/A. The pagoda’s cloth painting is now being displayed in the Bagan Archaeology Museum. The main themes of traditional painting are Nayi (male and female characters), floral design, animals (elephants, monkeys) and trees. Before painting, the cloth is treated with mixture of glue and yellow earth. After drying the design is made, and coloured by pigments made from natural substance from trees and minerals. But paintings on cloth today is made with acrylic colours, and sold as tourist products.

Building crafts such as bamboo scaffold building, masonry works and carpentry. All the conservation and maintenance of pagodas and monuments in Bagan employ bamboo scaffoldings. These are constructed in bamboo using wonderful designs. Brick masonry is important for the restoration of monuments and some masons still continue this tradition. This requires the use of traditional mortar. There are indications of ingredients in mural paintings. The brick work also includes decorative designs and sculpting of Buddha images, deities, and decorative designs. Additionally there is carpentry which is particularly important for example to make wooden frames that cover the Buddha images. Carpentry is also a trade which is learned through a system of apprenticeship, which has become difficult to continue due to the lack of interest from the young generation.
D. Belief Systems and Community Life

The communities in Bagan have a strong belief system in both religious practices as well as more traditional spiritual beliefs. There are numerous ceremonies and rituals that are regularly carried out. Some are elaborate events such as the Novitiation ceremony. There also still exists strong belief in the ancient spirits called Nats.

There are ceremonies of many kinds, some mark changes in the seasons, or in a person’s life cycle. They are events that are typically accompanied by some forms of merit-making with the presence of monks who chant the Dhamma (teachings of the Buddha), presentation of gifts to the monks, making donations to pagodas. Ceremonies related to Nat spirits beliefs involve making offerings to spirits, sometimes via spirit mediums. According to oral tradition, these practices are said to have originated in Bagan, or linked to some Bagan kings. The narratives may not be substantiated with historical evidences, but they form the collective memory of the inhabitants of Bagan today.

The Shinbyu Pwe is a ceremony for young boys to enter novice-hood for a period of time. It is an introduction into religion for boys. It is believed that all sons should join the Sangha (community of monks and novices) to continue the religious legacy. Novitiation is practiced all over the country. The ceremony is believed to have started in Bagan period. When a boy reaches the age of six, the family can begin to discuss the Novitiation ceremony. The parents, together with donation from relatives and others, can organize the ceremony themselves. Otherwise they can seek support from a patron, or sponsor (or donor), who is usually a well-to-do, and highly respected member of the community. A great deal of planning is needed to set the date of the ceremony, the expenses, discussion with the village head and village committee, plan for procession to the monastery which may need road blocks, plan for employing musical and dance performances, cooking for guests. Young girls also go through ear piercing ceremony together with the Novitiation ceremony. The day before the ceremony, the boys go to Thara-ba gate to make offerings to the Thara-ba Nats. On the day of the ceremony, the boys are dressed in special costume which resembles princes, and paraded through the village with their families, friends and neighbours.

The belief of Nats or spirits is still widespread. For example there are many rituals that are linked to the Nats that are found at the Thara-bar Gate. On the left side of the gate is the brother Mahakiri (or the Great Mountain) and on the right side is his sister. The Nat spirits of the brother and sister have become the tutelary spirit of Bagan. Local people present offerings to ask for blessing and protection. The offerings are presented on the occasions of Novitiation ceremony, ear-piercing ceremony, purchase of new vehicle, and warding off evil spirits. There is a practice of spirit medium, known as Nat Kadaw, at this shrine.
2.1.9 Management Tools

Various management tools have been established or in the process of being established. These will be used within the overall management system; this means the institutional, legal and the resources frameworks. The following management tools have been highlighted.

A. “One Map” Coordination

The information on maps of government authorities are not shared amongst one another making it difficult to coordinate planning and decision making. There are several levels of zoning in Bagan, however not all the information is readily available and each authority seems to have their own version of such maps. All the maps used by government authorities shall be compiled onto a single set of maps. The various zones provided by the authorities are all linked to certain legislation and this also needs to be coordinated. The basic legal maps are the cadastre plans of the Survey Department used to determine ownership and usage at the level of individual plots. This should be the basis for all other maps to be prepared. A process has been started under the banner of “One Map” to harmonize the maps of all government authorities which would then allow for the heritage zoning to be made more functional.

B. Heritage Impact Assessments (HIA)

Heritage Impact Assessment (HIA) can be a strategic means of ensuring that development and conservation activities in and around heritage properties do not cause an unacceptable degree of negatively impact. For HIA to be an effective tool, it must have legal justification and be integrated in official procedures. There are no standard procedures for assessing the impact of development and conservation works on cultural heritage. Till present, this task has been dealt with by a component of an Environmental Impact Assessment (EIA). This has not been satisfactory particularly since the EIA procedure is not linked to the governance system of heritage. To address this disparity HIA has been promoted particularly by the World Heritage Committee and the advisory bodies ICOMOS and ICCROM. The HIA procedure once established would of course not only cater to World Heritage, but can be used as standard procedure for all identified cultural heritage sites. HIA needs to be embedded in the legislation of the Department of Archaeology. This would give the Department of Archaeology the authority to demand HIA wherever found necessary and defined by respective regulations. The HIA procedure needs to be clearly defined within a set of regulations adopted by the Department of Archaeology. The regulations would identify under what circumstances HIA would be applied, as well as clarifying the format and process of implementation.

C. Data Management System

An enormous heritage property such as Bagan will have lots of information on the various components of the property. The mapping must be linked to other forms of data collection as well as an overall management system. Without this data management system being fully integrated into the management, the mapping and collection of data along with inventories will not be used. The survey and mapping as well as inventories are being prepared for Bagan. The data management system would link inventories, mapping and assessments to
the map while additionally linking this to management activities such as monitoring and activity reports.

Various inventories have been prepared in the past and a few are in the process of being prepared. Inventories have been prepared for monuments such as the one by Pierre Pichard which is being updated by DANM with support from UNESCO. Furthermore there is the inventory prepared by AMA after the earthquake along with damage assessments. The assessments carried out by DANM assisted by various organizations and experts will be linked to the information of the individual monuments as compiled in the data management system. Inventories are not only required of monuments but also various attributes such as monuments, subsurface archaeology as well as natural features, intangible heritage, etc. These inventories shall all be linked into a single data management system. The inventories shall be constantly updated and close cooperation shall be maintained to ensure that the inventory is used as a management tool.

D. Other Management Tools and Programmes

The archaeological risk map is being prepared defining which areas have subsurface archaeology, which areas could have subsurface archaeology and which areas most probably don’t have subsurface archaeology. The map will become part of the legal system for protecting archaeology. This will also be the basis for decision making in respect to any infrastructure or development works that might need to be carried out. Especially important are areas where villages and towns are encroaching on the surrounding landscape and there is a tendency to allow for expansion. The archaeological risk maps would be part of the legal framework of the management system and would be used as a safeguarding and decision making tool in the management processes.

To ensure that there is sufficient capacity to implement the management system correctly regular training programmes are required. Such activities have already been carried out, particularly in respect to conservation and post disaster response and rehabilitation. Such activities shall continue to be carried out targeted specifically to requirements directly related to safeguarding heritage, but also in respect to overall management.

The circumstances under which the management system was established will change over time. This means that regular review of the efficiency and effectiveness of the management system need to be carried out. The coming five years will be defined by post earthquake rehabilitation and the establishment of requirements for World Heritage. The main factored defining the management will surely need to change over time and therefore the entire system shall be reviewed and amended accordingly every five years.
2.2 Categories of Actions and Implementation Procedures

Based on the assessment of issues, the required actions and activities to address these issues, the more detailed management objectives have been formulated. The objective of the management system is to address all the identified objectives. The system however will also remain flexible to adapt to changing circumstances and respond to newly arising issues. This section provides the overview of the general categories of actions and activities that the system needs to carry out.

A management system will have three main categories of actions or activities which can roughly be defined as routine, time bound and emergency. A well functioning management system will have deal with all three categories, keeping a balance between them. Very often however systems fall into the difficult circumstance of addressing issues by only using a single category of actions or activities. There must be a conscious effort not to only use time bound actions or projects to deal with issues. Often this takes too long and does not address the need for regular maintenance or immediate response. On the other hand using only emergency response can be problematic, since often it is reactive to a situation which has already gone wrong. This balanced plan of actions must be carefully planned within the annual actions plans.

Routine actions and activities are generally carried out by the site managers and those who are regularly on site. This means activities such as monitoring, regular assessment and maintenance of the monuments and other important attributes of the site need to be done regularly and continuously. Time bound actions and activities would be projects which are usually set up to deal with a certain issue. This means that a given situation is improved at a given time bringing in specific experts. Usually such activities are time bound, often expensive and therefore can only be carried out under given circumstances. Furthermore Emergency Response deals with particular issues arising from an uncontrolled incident such as natural disaster, human activities or accidents. Emergency response requires large amounts of resources in a short time which needs to be arranged beforehand. Emergency responses should only be used when circumstances are really out of control which means that the necessary planning and mitigations measures might not have been sufficient. Reduction of vulnerability should be considered beforehand. These various categories of actions and activities have been further explained in the following sections.

Public consultation and local governance is critical in respect to all actions and activities. This has particularly become important in the context of the democratic system that the country has adopted with a focus on local governance. This would need to become standard procedure for all forms of actions and activities. The significance of public consultation and local governance however need to be understood and awareness as well as capacity building of the local authorities and community representatives has become an important part of managing heritage.

The implementation process must also be streamlined. The last subsection provides suggestions on how to carry out activities, taking into account traditional procedures as well as the procedures defined by the governance system. These procedures are to be streamlined to ensure that the system functions in an efficient and effective manner.
2.2.1 Routine Activities (RA)

**Routine actions and activities** are generally carried out by the site managers and those who are regularly on site. This means activities such as monitoring, regular maintenance and assessment of the monuments and other important attributes of the site need to be done regularly and continuously.

**Monitoring**

The main activity of the site managers would be to monitor all the important attributes of the property. Being so large, the site managers will need to find means of using the assistants of other government authorities as well as community and visitors. Monitoring is fundamental to develop an understanding of all issues pertaining to the site which then the management system would need to address. For the management system to address these issues, it would however be essential that the information collected through monitoring is fed into the management system. This means monitoring must be linked to reporting.

The reporting system will then determine whether addressing the issues that have been identified would be through routine activities, time bound project or emergency response. For each of these categories of actions or activities, a separate process has been established taking into account all the related authorities and stakeholders.

**Assessments**

The site managers and related expert would need to carry out assessment of the state of conservation of the property as a whole but also of the individual attributes of the property. This should take place on rotational throughout the property. As discussed, priority would be given as per the grading of the monuments. However assessment must not only stop with the monuments and their ornamentation, but also take into account the subsurface archaeology.

Assessments are also linked to determining the importance of any given issue and would be essential as a tool for prioritization. Assessment would also allow for measures to be determined that could entail any of the three categories of actions or activities.

**Maintenance**

Routine activities that need to be carried out would be maintenance. This would be cleaning and fixing small damages. For example a routine activity that is being carried out by the Bagan Heritage Trust has been killing and removing vegetation from the monuments. This is an activity that must be constantly implemented closely linked to the monitoring of the site.

Maintenance must also be to the infrastructure and services provided to the local inhabitants as well as for the visitors. The regular maintenance of the roads, service lines, drainage etc. is critical to ensure that unnecessary damage to heritage attributes is hindered. Uncontrolled growth of vegetation would also need to be cleared.
2.2.2 Time-bound Interventions (TI)

Time bound actions and activities would be projects which are usually set up to deal with a certain issue. This means that a given situation is improved at a given time bringing in specific experts. Usually such activities are time bound, often expensive and therefore can only be carried out under given circumstances.

Projects for regular conservation

There are over three thousand monuments along with mounds and un-surveyed archaeology throughout the large heritage property. Some of these monuments will require conservation targeting specific issues. Large activities that cannot be dealt with by the regular maintenance carried out by the site managers would need to be defined in the form of a one-time time-bound project. Such activities are to improve the state of conservation. For example the ongoing work on the Ananda Temple would be considered more than maintenance, rather a series of projects carried out by the Archaeological Survey of India.

Projects are would be required when developing the property, particularly in respect to required infrastructure or services. These might be in respect to improving security or providing visitor services.

Rehabilitation projects

Since the surveys on the affects of the Chauk Earthquake on 389 monuments, there have been a series of rehabilitation projects that have been carried out. Some have been smaller interventions or primarily just consolidation of the ancient structure. Other projects, particularly on living monuments, have been restoration to their previous form. There are still numerous large monuments that have been affected by the earthquake, often with pervious interventions, that require more complex rehabilitation. Monuments such as That-byin-nyu and Kyauk-ku-umin require much effort, large resources and a multi-disciplinary expert team.

Research projects

There is clearly lack of research in Bagan and much is still to be learned. It is therefore important to develop projects that improve our knowledge of the heritage property. Research projects could focus on subsurface archaeology, material dating and developing a more accurate chronology, construction technology and construction materials, seismic performance of the historic structures. Little is known of Bagan beyond the brick structures and research would be necessary on the historic settlements and how the people lived.

Research is not only required on the historic elements, but also on issues related to the sustainable management and development of the property. This particularly means appropriate agriculture: crops, working the land, water management, improving yield as well as how the livelihood of the communities can be improved by value adding and marketing. Research is also required on other forms of development and activities that would be required but appropriate solutions need to be sought.
2.2.3 Emergency Response (ER)

**Emergency Response** deals with particular issues arising from an uncontrolled incident such as natural disaster, human activities or accidents. Emergency response requires large amounts of resources in a short time which needs to be arranged beforehand. Emergency responses should only be used when circumstances are really out of control which means that the necessary planning and mitigations measures might not have been sufficient. Reduction of vulnerability should be considered beforehand.

**Response to natural disaster**

Bagan is particularly vulnerable to earthquakes, floods and heavy rain. Over the past years we have seen the devastation caused by each of these hazards. The Chauk Earthquake of 25 August 2016 officially affected 389 monuments within the heritage property while many more were affected in the surrounding area. The immediate response was well coordinated and carried out in a planned manner. The initial assessments, salvaging, protective covering as well as structural shoring were carried out within the first three months. This was followed by the ongoing rehabilitation phase where damaged monuments are being rehabilitated based on specially prepared guidelines. The experience from the earthquake response shall be clearly documented and used as a basis for further preparedness in future.

Every year Bagan is also affected by other hazards such as flooding and heavy rain. This has caused inundation of large parts of the property. Heavy rain has even caused direct damage to monuments, albeit to the newly constructed components. Response to such events must also be linked to improvement and maintenance of the drainage system within the property. This must be seen as a large issue which due to climate change could become more acute over time.

**Response to human induced disasters**

Human induced disasters are particularly to fires. Most monuments however are not susceptible to fires; however the historic buildings and wooden monuments would be more vulnerable to such hazards. The fire brigade and other emergency services would need to be integrated into the management system of the property.

Human activities however can have long term affects on heritage. Such long-term effects would not be dealt with through emergency response but with monitoring such things as humidity on the mural paintings and human access in, on and around the monuments as well as the subsurface archaeology.

**Response to accidents and illegal activities**

Emergency response systems must be in place to address accidents and illegal activities. Such emergency services would be linked to a system of guards but also to police and ambulance services.
2.2.4 Streamlining procedures

The implementation process must also be streamlined. The last subsection provides suggestions on how to carry out activities, taking into account traditional procedures as well as the procedures defined by the governance system. These procedures are to be streamlined to ensure that the system functions in an efficient and effective manner.

The overall management procedure entails the following components:

- **Monitoring on site and identification of issues**
- **Assessment of issues and reporting to relevant authorities**
- **Response by relevant authorities**

**Routine Actions**
To be planned into regular budget of the site managers and coordinated with related authorities and community

**Time Bound Action**
To get extra-budgetary resources to carry out projects by hiring external experts and artisans for a specific task

**Emergency Actions**
To have resources ready for emergency response partially on site while further resources are accessible at national level

- **All activities are handed over to site managers for coordination**
- **Information to be linked to data management system**

For all activities, detailed step by step procedures are to be established and agreed upon. Standard procedures for various activities have been established, such as for building permit procedures as well as coordination amongst the authorities and stakeholders.

The implementation of actions will also follow the points on the rehabilitation check-list. This means that the following three steps must be carried out including where relevant the various points mentioned under each step.

**PHASE ONE:** Preparation would include: (1) Documentation (2) Assessment (3) Research (4) Inventory of existing status (5) Temporary Interventions

**PHASE TWO:** Design and Planning would include: (1) Structural Interventions (2) Conservation (3) Material – requirement and supply (4) Artisan – requirement and availability (5) Implementation Planning

**PHASE THREE:** Implementation would include: (1) Rituals (2) Documentation of Implementation (3) Supervision and Monitoring (4) Handing over procedures (5) Audit – quality and financial
Part 3. Overall Management of Activities and Actions

3.1 Introduction to Actions

3.2 List of Actions

3.2.1 Conservation of monuments and archaeology

3.2.2 Regional planning and transportation

3.2.3 Tourism management and infrastructure

3.2.4 Environment and pollution

3.2.5 Natural hazards and human threats

3.2.6 Agriculture and landscape

3.2.7 Community – socio-economy and livelihood

3.2.8 Intangible heritage

3.2.9 Management tools

3.3 Formulating Annual Action Plans 98
3. **OVERALL MANAGEMENT OF ACTIVITIES AND ACTIONS**

3.1 **Introduction to Issues and Actions**

The following section will provide an overview of actions linked directly to issues that were identified and described under section 2.2 above. The issues have been placed within a table format. Each action has been presented in a simplified manner in the same table for a clear overview and easier assessment.

The charts provide an overview of the actions linked to a basic understanding of priority, category of action, timeframe, lead authority (-ies) and resources. This overview will allow for annual plans or even donor related negotiations to be carried out.

For implementation each of the actions will need to be detailed out as per the procedures that have been defined in section 2.2.4 above. It is important that all the stages are strictly followed. All actions must be carried out within the understanding of the integrated Management Framework.
3.2 List of Issues and Actions

Each category of issues has been addressed through a series of actions. The overall title of the chart will indicate the category of issues that the actions will be addressing. The categories are numbered from 1 to 9 as indicated in the introduction. The first section of the chart shows issues indicating the main parameters in respect to location, incident and priority as well as the category or categories of action(s) that is required to address this issue. The second section of the chart provides more detailed information on the individual actions. There might be more than one action linked to the same issue, which means the first section could be repeated. Each action would be linked to timescale, responsible agencies and required resources.

### ISSUES AND ACTION CHART

#### 1. Conservation of monuments and archaeology

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOCATION</td>
<td>INCIDENT</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

#### LOCATION
- within Boundaries (A)
- In Buffer Zone (B)
- in surrounding area (C)

#### INCIDENT
- Single location (S)
- Multiple locations (M)
- All over (O)

#### PRIORITY
- Critical (1)
- Important (2)
- Desired (3)

#### ACTION
- Routine Action (RA)
- Time bound Intervention (TI)
- Emergency Response (ER)

#### TIME
- beginning
- how long it will last

#### LEAD AGENCY
- Lead Agency
- Related Agencies

#### RESOURCES
- Human Resource
- Financial Resource
- Material Resource
- Equipment
3.2.1 Conservation of monuments and archaeology

Short introduction to Issues and Actions in reference to section 2.1.1:

This section provides an overview of actions addressing issues related to the conservation of monuments and archaeology. An overview of the issues has been provided under section 2.1.1.

This section on the conservation of monument and archaeology includes the following subheadings:

A. Monument Conservation
B. Conservation of Ornamentation
C. Sub-surface Archaeology
D. Site Interpretation
E. Museum Management

The overarching issues for this cluster are the insufficient procedure, resources and expertise in conservation and research. This is for monuments, but also for the ornamentation and archaeology. The monuments are being studied and safeguarded, however because of the vast number it is difficult to ensure overall monitoring. Conservation standards and procedure have also not been formalized. Lack of research also impacts site interpretation which requires accurate data. Furthermore expertise and resources are required for museum management. There is great potential for improving the Bagan Museum, however great effort is required from the museum management to include activities and community outreach. Myanmar is now a member of ICOM. Museum management and policies and procedures relating to both museums and movable cultural heritage need to be adhered to.

The actions provided in the following section will be addressing all these issues.
### ISSUES AND ACTION CHART

1. CONSERVATION OF MONUMENTS AND ARCHAEOLOGY

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>A. MONUMENT CONSERVATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lack of final and detailed inventory of monuments and their categorization</td>
<td>Prepare a final and detailed inventory of all monuments with categorization and location linked to GIS map</td>
<td>ongoing by 2018</td>
<td>DANM</td>
<td>staff with external support and resources</td>
</tr>
<tr>
<td>2</td>
<td>Lack of detailed documentation of all monuments with drawings / photos</td>
<td>Prepare documentation of all monuments with drawings / photos and link this to GIS data system</td>
<td>ongoing by 2022</td>
<td>DANM / AMA volunteers</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>3</td>
<td>No standard conservation procedures have been adopted</td>
<td>Develop conservation standards and procedures for brick and stone monuments of Bagan</td>
<td>2018 by 2022</td>
<td>UNESCO / DANM</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>4</td>
<td>Structural damage to certain monuments are still not sufficiently understood to stabilize</td>
<td>Further detailed study of complex damaged monuments is required along with appropriate interventions</td>
<td>2018 by 2022</td>
<td>UNESCO / DANM / MES</td>
<td>local and international support and resources</td>
</tr>
<tr>
<td>5</td>
<td>Rehabilitation planning not detailed out sufficiently to ensure</td>
<td>Detail out rehabilitation plan including plans for the complex monuments that were damaged</td>
<td>2018</td>
<td>UNESCO / DANM</td>
<td>local and international support and resources</td>
</tr>
<tr>
<td>6</td>
<td>Numerous structures were reconstructed over the past two decades and are not indicated as such</td>
<td>Identify all recently reconstructed monuments, indicate these are such and provide information on ancient foundation remains.</td>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>No.</td>
<td>Problem</td>
<td>Solution</td>
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<tr>
<td>7</td>
<td>Many monuments are being restored on the basis of them being living monuments</td>
<td>Clear procedures for registration of living monuments will be established which will be the basis for allow restoration work. 2018 continuous DANM external support and resources</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>Lack of monitoring of monuments due to large number and lack of staff</td>
<td>Ensure clear monitoring regime which would include innovative methods of using visitors and local community. (A)/(B) (M) (1) (RA) immediate continuous DANM staff with external support and resources</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>Only ancient stone and brick considered monuments requiring safeguarding</td>
<td>To develop inventory and conservation procedures to safeguard particularly the wooden monasteries and other historic buildings. (A)/(B) (M) (2) (TI) ongoing by 2022 DANM / AMA volunteers staff with local support and resources</td>
<td></td>
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</tr>
<tr>
<td>10</td>
<td>Lack of expertise in masonry and stone work for maintenance and restoration works</td>
<td>To develop training programme for masonry and stone work. NA (O) (2) (TI) Regular immediate continuous DANM staff with external support and resources</td>
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<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
<td>TIME</td>
<td>LEAD AGENCY</td>
<td>RESOURCE</td>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Lack of detailed inventory of mural paintings</td>
<td>Prepare a final and detailed inventory of all monuments with mural paintings with location linked to GIS map</td>
<td>ongoing by 2018</td>
<td>DANM</td>
<td>staff with external support and resources</td>
</tr>
<tr>
<td>2</td>
<td>Lack of detailed documentation of mural paintings with photos</td>
<td>Prepare documentation of all mural paintings with photos and link this to the GIS data system</td>
<td>ongoing by 2022</td>
<td>DANM</td>
<td>staff with external support and resources</td>
</tr>
<tr>
<td>3</td>
<td>Lack of monitoring of monuments due to large number and lack of staff</td>
<td>Ensure clear monitoring regime which would include innovative methods of using visitors and local community</td>
<td>immediate continuous</td>
<td>DANM</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>4</td>
<td>Lack of trained experts and conservators to look after mural paintings</td>
<td>Establish training for conservators for mural paintings to ensure that mural paintings are properly conserved</td>
<td>ongoing</td>
<td>UNESCO / DANM</td>
<td>International / local experts and external resources</td>
</tr>
<tr>
<td>5</td>
<td>Lack of knowledge of various ornamentation such as glazed stone and terracotta, etc.</td>
<td>Training from system of apprenticeship with current artisans on stone, terracotta, stucco, painting traditional techniques’</td>
<td>After 2022</td>
<td>DANM</td>
<td>International / local researcher and resources</td>
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<tr>
<td>6</td>
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<td>LOCATION</td>
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<td>PRIORITY</td>
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</tr>
<tr>
<td>1</td>
<td>There is a lack of research on sub-surface archaeology</td>
<td>C. SUB-SURFACE ARCHAEOLOGY</td>
<td>Lack of understanding of extent of sub-surface archaeology</td>
<td>(A)/(B)</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>Lack of dating and phasing of the archaeology in Bagan</td>
<td></td>
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<td>(A)/(B)</td>
<td>(T1)</td>
</tr>
<tr>
<td>3</td>
<td>Sub-surface archaeology is not being considered when planning development</td>
<td></td>
<td></td>
<td>(A)/(B)</td>
<td>(T1)</td>
</tr>
<tr>
<td>4</td>
<td>Insufficient expertise in use of modern methods and equipment in sub-surface archaeology</td>
<td></td>
<td></td>
<td>(A)/(B)</td>
<td>(T1)</td>
</tr>
<tr>
<td>5</td>
<td>Lacking field laboratory for archaeological research</td>
<td></td>
<td></td>
<td>NA</td>
<td>(T1)</td>
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</tbody>
</table>

**C. SUB-SURFACE ARCHAEOLOGY**

1. **There is a lack of research on sub-surface archaeology.**
   - To establish a programme for carrying out sub-surface archaeology, including above-ground monuments, distribution and interpretation.
   - Comprehensive non-invasive survey to be carried out to identify location of subsurface archaeology and create an integrated management framework.
   - Staff from DANM with external support and resources.

2. **Lack of understanding of extent of sub-surface archaeology.**
   - Targeted excavations to be carried out along with required dating to develop an absolute chronometric chronology.
   - Staff from DANM with external support and resources.

3. **Sub-surface archaeology is not being considered when planning development.**
   - The preparation of Archaeological Risk Maps indicating areas of potential sub-surface archaeology of importance and legally adopted.
   - Staff from DANM with external support and resources.

4. **Insufficient expertise in use of modern methods and equipment in sub-surface archaeology.**
   - Establish both academic and on-site training programmes together with international partners.
   - Staff from DANM with external support and resources.

5. **Lacking field laboratory for archaeological research.**
   - Establish field laboratory for archaeological investigations.
   - Staff from DANM with external support and resources.
<table>
<thead>
<tr>
<th></th>
<th>Records are not easily accessible from previous interventions</th>
<th>Compilation and publication of earlier reports and research as a bases for continued publication of reports</th>
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<tbody>
<tr>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
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<tr>
<td>8</td>
<td>Various areas of sub-surface archaeology under threat particularly around towns</td>
<td>To carry out immediate non-intrusive survey of sub-surface archaeology in areas considered to be under threat of development</td>
</tr>
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<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
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<td>9</td>
<td>Development work is carried out without consideration of possible sub-surface archaeology</td>
<td>Establish protocols for rescue archaeology and watching brief and implement when necessary</td>
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<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
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<td>10</td>
<td>Little collaboration with activities going on at other similar sites in the region</td>
<td>To establish partnerships with similar Buddhist sites carrying out archaeological investigations of high quality</td>
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<tr>
<td>NA</td>
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<td>(3)</td>
</tr>
<tr>
<td>11</td>
<td>Lack of understanding of threats to sub-surface archaeology</td>
<td>Carry out research to better understand impact of activities such as tree plantation, tube wells, ploughing of fields, use of fertilizer and waste</td>
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</tr>
<tr>
<td>1</td>
<td>Overall signage on site is haphazard, not standardized and often incorrect</td>
<td>Establish appropriate standardized signage with correct spellings at key locations throughout the heritage property by 2022. Lead agency: DANM / DOHT / DA. Resource: staff with external support and resources.</td>
</tr>
<tr>
<td>2</td>
<td>Lacking interpretation around monuments</td>
<td>To develop interpretation around monuments using appropriate means and detailed and correct information. Lead agency: DANM. Resource: staff with external support and resources.</td>
</tr>
<tr>
<td>3</td>
<td>No innovative forms of dissemination of information on site</td>
<td>Study innovative means of dissemination of information or tour guides such as using smart-phone apps. Lead agency: DANM / DOHT / MoRAC / MoHT. Resource: local expertise with support from other sites.</td>
</tr>
<tr>
<td>4</td>
<td>No programme for sensitizing visitors to the site in respect to culture, heritage and environment</td>
<td>Develop programmes for foreign visitors for them to be sensitized to the site, its culture, heritage and environment. Lead agency: DANM / DOHT / MoRAC / MoHT. Resource: local expertise.</td>
</tr>
<tr>
<td>5</td>
<td>Lack of appropriate information provided for both national and international visitors</td>
<td>Get national and international experts to help formulate site interpretation for both national and international visitors. Lead agency: DANM / DOHT / DA. Resource: International and local expertise and resources.</td>
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<tr>
<td>1</td>
<td>The presentation and activities of the Bagan Museum would have potential for improvement</td>
<td>Improve presentation of artefacts and regular curating with new exhibits or thematic possibly with international partners</td>
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<td>2</td>
<td>The museum building is intrusive</td>
<td>To design improvements to the reducing intrusiveness of the building which could particularly mean reducing the height and improving interiors</td>
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<td>after 2022</td>
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<tr>
<td>3</td>
<td>There is no conservation lab for the museum</td>
<td>Establishing a conservation lab which would link to conservation of the various categories of artefacts found in the museum</td>
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<tr>
<td>4</td>
<td>No regular research is carried out at the museum despite the great potential</td>
<td>Provisions for research to be carried out particularly in respect to artefacts of the museum and related themes</td>
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<td>NA</td>
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<td>2018 continuous</td>
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<tr>
<td>5</td>
<td>Potential for greater income generation</td>
<td>To look into innovative means of improving income generation through activities and appropriate use of facilities</td>
</tr>
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<tr>
<td>6</td>
<td>Lack of outreach to heritage site and community particularly in respect to intangible heritage</td>
<td>Develop outreach programmes as well as linking temporary exhibitions and research to local communities and intangible heritage</td>
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<td>2018 continuous</td>
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</table>

E. MUSEUM MANAGEMENT
<table>
<thead>
<tr>
<th>No</th>
<th>Issue</th>
<th>Action Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Lack of documentation, database, library and other forms of data management</td>
<td>Provisions for research to be carried out particularly in respect to artefacts of the museum and related themes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2018 continuous</td>
</tr>
<tr>
<td>8</td>
<td>Potential for developing education programmes on cultural issues</td>
<td>To develop educational programme for local schools, colleges as well as possibly international educational linkages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after 2022</td>
</tr>
<tr>
<td>9</td>
<td>Lack of integrated Museum Management policies and procedures</td>
<td>Develop policy and procedure manual for Museum Management – need local staff and international assistance and expertise.</td>
</tr>
<tr>
<td></td>
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<td>2018 continuous</td>
</tr>
<tr>
<td>10</td>
<td>No provision for Staff Training</td>
<td>Develop programs for staff training in all areas of Museum activities – need local and international assistance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after 2022</td>
</tr>
<tr>
<td>11</td>
<td>Lack of knowledge on ICOM</td>
<td>Organize workshops regarding ICOM obligations and guidelines.</td>
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<td></td>
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<td>2018 continuous</td>
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</table>
3.2.2 Regional planning and transportation

*Short introduction to Issues and Actions in reference to section 2.1.2:*

This section provides an overview of actions addressing issues related to the *regional planning and transportation*. An overview of the issues has been provided under section 2.1.2.

This section on the *regional planning and transportation* includes the following subheadings:

A. Settlement planning  
B. Land use management  
C. Infrastructure development  
D. Transportation management

The overarching issues for this cluster are the need for regional planning which encompasses the settlements, land-use and infrastructure development and transportation management. There are six settlements within the heritage property. Furthermore there are two main towns in the buffer zone closely linked to the heritage property and numerous villages. Development controls are required. Though there would be strict land-use regulations within the heritage area and to some degree within the buffer zone, planning is required in the surrounding area to deal with the development requirements of Bagan. These would include infrastructure such for services as well as transportation. Furthermore transportation management would be critical for access to the property and the circulation within the heritage property.

The actions provided in the following section will be addressing all these issues.
## ISSUES AND ACTION CHART

### 2. REGIONAL PLANNING AND TRANSPORTATION

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>ISSUE</strong> <em>(LOCATION, INCIDENT, PRIORITY, ACTION)</em> <strong>ACTION</strong> <em>(TIME, LEAD AGENCY, RESOURCE)</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>LOCATION</strong> <em>(INCIDENT, PRIORITY, ACTION)</em></td>
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<td></td>
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<td><strong>INCIDENT</strong> <em>(PRIORITY, ACTION)</em></td>
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<td><strong>PRIORITY</strong> <em>(ACTION)</em></td>
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<td></td>
<td></td>
<td><strong>ACTION</strong> <em>(TIME, LEAD AGENCY, RESOURCE)</em></td>
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<td><strong>TIME</strong> <em>(LEAD AGENCY, RESOURCE)</em></td>
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<td><strong>LEAD AGENCY</strong> <em>(RESOURCE)</em></td>
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<td><strong>RESOURCE</strong> <em>(LEAD AGENCY)</em></td>
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</tbody>
</table>

### A. SETTLEMENT PLANNING

| 1  | There are settlements within the heritage area that need clear development controls | Prepare development controls for the settlements in cultural heritage property taking into account community requirements and enforce controls |
|    | (A) | (M) | (1) | (TI) | ongoing by 2018 | DANM / DA | staff with support from local experts |

| 2  | There are towns and villages within the buffer zone that require clear development controls | Prepare development controls for towns and villages in buffer zone taking into account the community requirements and enforce controls |
|    | (B) | (M) | (1) | (TI) | ongoing by 2018 | DANM | staff with external support and resources |

| 3  | Lack of understanding of settlement characteristics and local requirements | To study characteristics of local settlements and their architecture to link with planning development controls considering local requirements |
|    | (A)/(B) | (M) | (2) | (TI) | ongoing by 2018 | DANM / DA | staff with support from local experts |

| 4  | Colonial heritage of Nyaung U not taken seriously and not documented | To study the colonial heritage of Nyaung U to develop means of safeguarding |
|    | (A)/(B) | (M) | (2) | (TI) | ongoing by 2018 | DANM / DA | staff with support from local experts |

| 5  | No procedures for boundaries of settlements to be amended | Establish legal provisions and procedures to amend settlement boundaries with clear parameters |
|    | (A)/(B) | (M) | (2) | (TI) | ongoing by 2018 | DANM / DA | staff with support from local experts |

<p>| 6  | | | | | | |</p>
<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>1</td>
<td>The land-use within the heritage property is changing</td>
<td>To freeze land-use within the heritage property with restricted change based on strict procedures</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(O)</td>
</tr>
<tr>
<td>2</td>
<td>The land use planning and changes within the buffer zone and surrounding areas not regulated</td>
<td>Land use planning within the buffer zone and surrounding areas needs to be planned along with development guidelines</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>3</td>
<td>The land use in the surrounding area is not regulated potentially allowing threats</td>
<td>Land use within the Protective Planning Region to be controlled particularly activities that can negatively impact the heritage property</td>
</tr>
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<td>(C)</td>
<td>(O)</td>
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<td>Location</td>
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<td>Incident</td>
<td>Priority</td>
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<td>3</td>
<td>Action</td>
<td>Time</td>
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<tr>
<td>C. INFRASTRUCTURE PLANNING</td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Water supply system is not adequate for the settlements</td>
<td>To improve water supply system including distribution lines while ensuring that heritage is not damaged, particularly sub-surface archaeology</td>
</tr>
<tr>
<td>2</td>
<td>No systematic sewage system has been developed</td>
<td>To improve sewage system including disposal while ensuring that heritage is not damaged, particularly sub-surface archaeology</td>
</tr>
<tr>
<td>3</td>
<td>Solid waste management is a major problem throughout the area</td>
<td>To establish solid waste management system linking software and hardware and related regulations</td>
</tr>
<tr>
<td>4</td>
<td>Electricity distribution lines are visually impacting the heritage property</td>
<td>To develop Master Plan for electricity distribution linked to road network with non-intrusive and appropriate designs</td>
</tr>
<tr>
<td>5</td>
<td>Telecom towers are visually impacting the heritage property</td>
<td>To find appropriate solutions for telecom providers that ensures visual impact is minimal and acceptable</td>
</tr>
<tr>
<td>6</td>
<td>Haphazard road widening and black-topping taking place</td>
<td>To develop Master Plan for road development linked to transportation planning</td>
</tr>
</tbody>
</table>
### Continued C. SUB INFRASTRUCTURE PLANNING

<table>
<thead>
<tr>
<th></th>
<th>Plans for airport links to Bagan without enlarging Nyaung U to be planned keeping in mind option of Pakokku Airport as an option</th>
</tr>
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<tbody>
<tr>
<td><strong>7</strong></td>
<td><strong>Existing airport at Nyaung U will soon not be sufficient</strong></td>
</tr>
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<td>(C)</td>
<td>(S)</td>
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</tbody>
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<table>
<thead>
<tr>
<th></th>
<th>To prepare detailed plan for railway network linking to national grid and to important locations in and around Bagan</th>
</tr>
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<tbody>
<tr>
<td><strong>8</strong></td>
<td><strong>Railway linkage has great potential but is presently not functioning properly</strong></td>
</tr>
<tr>
<td>(C)</td>
<td>(M)</td>
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<table>
<thead>
<tr>
<th></th>
<th>Plan out highway connections and network for better accessibility of Bagan as well as connection to surrounding areas.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9</strong></td>
<td><strong>Highway linkages not sufficient</strong></td>
</tr>
<tr>
<td>(A)/(B)/(C)</td>
<td>(M)</td>
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<thead>
<tr>
<th></th>
<th>To establish a plan for river transportation and build jetties at critical positions linked to regional planning and proposed development</th>
</tr>
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<tbody>
<tr>
<td><strong>10</strong></td>
<td><strong>Jetties not developed</strong></td>
</tr>
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<td>(A)/(B)/(C)</td>
<td>(M)</td>
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</tr>
<tr>
<td>1</td>
<td>Large busses and trucks are impacting the heritage property</td>
</tr>
<tr>
<td>2</td>
<td>The means of transportation is not regulated nor planned within the heritage property</td>
</tr>
<tr>
<td>3</td>
<td>Transportation within the buffer zone and surrounding areas not planned</td>
</tr>
<tr>
<td>4</td>
<td>Lack of options in transportation around cultural heritage property</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Heavy vehicles need to be banned from the all areas that might cause damage to the monuments and sub-surface archaeology. A detailed transportation plan with vehicle categories is to be prepared for the area within the cultural heritage property and buffer zone. A comprehensive transportation plan is required for the buffer zone and surrounding area to release pressure from the heritage property. Providing non-intrusive transportation system.
3.2.3 Tourism Management

*Short introduction to Issues and Actions in reference to section 2.1.3:*

This section provides an overview of actions addressing issues related to the *tourism management*. An overview of the issues has been provided under section 2.1.3.

This section on the *tourism management* includes the following subheadings:

A. Tourism Activities  
B. Tourism Infrastructure  
C. Tourism Accommodations  
D. Tourism Contributions

The overarching issues for this cluster are liked to tourism and its impact on the cultural heritage property. This would be in connection with general activities of the tourist along with the infrastructure and accommodations required by them. It is necessary to differentiate between local visitors, pilgrims and foreign visitors, since they would all have different priorities as well as requirements; however there are certain aspects that overlap. The main question that arises is the degree of impact that the various categories of visitors have and how they could contribute back to help safeguard the cultural heritage property.

The actions provided in the following section will be addressing all these issues.
### A. Tourism Activities

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Priority</th>
<th>Location</th>
<th>Incident</th>
<th>Action</th>
<th>Time</th>
<th>Lead Agency</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tourists visit only few of the most important sites and lack dispersal (A)/(B)/(C)</td>
<td>High</td>
<td>(O)</td>
<td>(1)</td>
<td>(T1)</td>
<td>2018</td>
<td>2022</td>
<td>DANM / MOHT</td>
</tr>
<tr>
<td>2</td>
<td>To many visitors in monuments will impact mural paintings (A)/(B)</td>
<td>Medium</td>
<td>(M)</td>
<td>(2)</td>
<td>(T1)</td>
<td></td>
<td></td>
<td>DANM / MOHT</td>
</tr>
<tr>
<td>3</td>
<td>Tourist attractions have become sunset on monuments or new viewing mounds (A)/(B)</td>
<td>Medium</td>
<td>(M)</td>
<td>(3)</td>
<td>(T1)</td>
<td></td>
<td></td>
<td>DANM / MOHT</td>
</tr>
</tbody>
</table>

#### Action Plan

1. **Tourists visit only few of the most important sites and lack dispersal**
   - Plan out how tourists can be dispersed throughout the cultural heritage property and into the surrounding areas
   - By 2022
   - By 2022
   - Local expert with external support and resources

2. **To many visitors in monuments will impact mural paintings**
   - Visitor to monuments with mural paintings must be controlled to acceptable numbers
   - Ongoing
   - Continuous
   - DANM / MOHT staff with local support and resources

3. **Tourist attractions have become sunset on monuments or new viewing mounds**
   - The marketing of sunset views must change to more appropriate activities that don’t impact monuments and the landscape
   - Ongoing
   - Continuous
   - DANM / MOHT staff with local support and resources
<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>B. TOURISM INFRASTRUCTURE</strong></td>
</tr>
<tr>
<td>1</td>
<td>Viewing mounds are being built for tourists which are intrusive</td>
<td>The viewing mounds are to be assessed for impact and rectified accordingly</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2)</td>
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<td></td>
<td></td>
<td>(RA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2018 continued</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DANM / DOHT Regional Govt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>2</td>
<td>Viewing tower, gold course, palace reconstruction and other attractions were built in the past</td>
<td>The existing tourism infrastructure from the past must be assessed for impact and rectified accordingly</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
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<td>(2)</td>
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<td></td>
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<td>(RA)</td>
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<td></td>
<td></td>
<td>2018 continued</td>
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<td></td>
<td></td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>3</td>
<td>Various forms of ballooning facilities have been established or are planned</td>
<td>The various existing and planned ballooning facilities must be assessed for impact and controls but in place</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
</tr>
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<td></td>
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<td>(RA)</td>
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<td></td>
<td>2018 continued</td>
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<td></td>
<td></td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>4</td>
<td>Tourist ships for river cruises are docked along riverside</td>
<td>Tourist ships must be regulated, particularly in respect to where they are docked</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2)</td>
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<tr>
<td></td>
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<td>(RA)</td>
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<tr>
<td></td>
<td></td>
<td>2018 continued</td>
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<tr>
<td></td>
<td></td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>5</td>
<td>All forms of transportation infrastructure planning without coordination with cultural heritage property</td>
<td>Proper comprehensive and coordinated planning is required for all transportation infrastructure development (Refer Issue cluster 1A)</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
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<td>(2)</td>
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<td></td>
<td></td>
<td>(TI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2018 continued</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DANM / DOHT line ministry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>local experts with local support and resources</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td><strong>C. TOURISM ACCOMMODATIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hotels constructed within the cultural heritage property has impacted the heritage attributes</td>
<td>All hotels built outside the settlement areas within the cultural heritage property will be phased out</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(M)</td>
</tr>
<tr>
<td></td>
<td>(RA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ongoing</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>by 2033</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>2</td>
<td>Hotels built in the town areas have been built without following regulations</td>
<td>All hotel built in the town areas will be assessed for impact on heritage and rectified where necessary</td>
</tr>
<tr>
<td></td>
<td>(B)</td>
<td>(M)</td>
</tr>
<tr>
<td></td>
<td>(RA)</td>
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</tr>
<tr>
<td></td>
<td>ongoing</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>by 2022</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>3</td>
<td>Previous hotel zones were randomly created and hotels / resorts built on archaeology</td>
<td>Cancel all hotel zones from within the Cultural Heritage property and begin phasing out these hotels</td>
</tr>
<tr>
<td></td>
<td>(A)</td>
<td>(M)</td>
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<td></td>
<td>(RA)</td>
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</tr>
<tr>
<td></td>
<td>ongoing</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>by 2033</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>4</td>
<td>It is illegal to have home stay in the villages based on old laws</td>
<td>Laws must be amended to allow for local people to develop home-stay options for tourists</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
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<td></td>
<td>(TI)</td>
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</tr>
<tr>
<td></td>
<td>2018</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>continued</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>5</td>
<td>Haphazard hotel construction is going on in the surrounding areas</td>
<td>Regional planning to control land-use and hotel development in surrounding areas</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
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<tr>
<td></td>
<td>(TI/RA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>continued</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>6</td>
<td>Potential areas not considered for long-term tourism development such as in Magway Region</td>
<td>Potential tourism areas in Magway Region to be planned and developed together with Regional Government</td>
</tr>
<tr>
<td></td>
<td>(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td>(TI)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>DANM / DOHT</td>
</tr>
<tr>
<td></td>
<td>continued</td>
<td>Magway Regional Govt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>staff with local support and resources</td>
</tr>
</tbody>
</table>
## D. TOURISM CONTRIBUTIONS

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tourist visit Bagan but don’t contribute to improving the livelihood of local community</td>
<td>Develop mechanisms to ensure tourism sector has direct impact on improving livelihood of local community</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
<td>(TI)</td>
<td>ongoing by 2018</td>
<td>DOHT / DANM</td>
<td>experts with external support and resources</td>
</tr>
</tbody>
</table>

| 2 | Tourists offend local community by not respecting the local customs | Provide tourist awareness programmes at entrance to the site to ensure they are aware of the local customs |

<table>
<thead>
<tr>
<th></th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
<td>(TI)</td>
<td>ongoing by 2018</td>
<td>DOHT / DANM</td>
<td>staff with local support and resources</td>
</tr>
</tbody>
</table>

| 3 | Tourism has not contributed to post earthquake rehabilitation | Tourism must be promoted in Bagan linked directly with post earthquake rehabilitation allowing observation or even participation |

<table>
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<tr>
<th></th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
<td>(TI)</td>
<td>ongoing by 2018</td>
<td>DOHT / DANM</td>
<td>respective authorities</td>
</tr>
</tbody>
</table>

| 4 | Only a very small part of the tourism entrance fees are put back into conserving Bagan | The government must provide at least 10% of the tourism entrance fees directly to conserving the heritage without complicated procedures |

<table>
<thead>
<tr>
<th></th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
<td>(TI)</td>
<td>ongoing by 2018</td>
<td>DANM / MoRAC</td>
<td>respective authorities</td>
</tr>
</tbody>
</table>

| 5 | Farmers are having a difficult time working the fields contributing the maintaining the landscape | The tourist sector must provide support in some form to the farmers who are maintaining the landscape of the cultural heritage property |

<table>
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<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
<td>(TI)</td>
<td>ongoing by 2018</td>
<td>DANM</td>
<td>staff with external support and resources</td>
</tr>
</tbody>
</table>

| 6 | | | | | | | |
3.2.4 Environment and Pollution

*Short introduction to Issues and Actions in reference to section 2.1.4:*

This section provides an overview of actions addressing issues related to the environment and pollution. An overview of the issues has been provided under section 2.1.4.

This section on the environment and pollution includes the following subheadings:

A. Flora and Forestry
B. Fauna and Wildlife Protection
C. Water Management
D. Waste Management

The overarching issues for this cluster are the flora and related forestry, the fauna and related wildlife protection as well as management of water and waste. The landscape around Bagan has a unique character defined by the dry climate. Most of the landscape is covered with agriculture but some original shrub and forested land is still found. The impact of plantations on the monuments and sub-surface archaeology is critical. Bagan has a unique ecosystem and the Ayeyawady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA). There are numerous endemic species of animals found in the area. Water is important for habitation and agriculture, which requires managing precipitation and the perennial streams including the Ayeyawady River. A sustainable waste management system is required for Bagan. This was identified as a critical issue that needs to be brought under control for the sustainable development of Bagan.

The actions provided in the following section will be addressing all these issues.
<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. FLORA AND FORESTRY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Little indigenous scrub and forest land exist and plantations use alien species</td>
<td>To study indigenous flora and develop appropriate plantation plans</td>
</tr>
<tr>
<td>(A)/(B)/(C)</td>
<td>(0)</td>
<td>(3)</td>
</tr>
<tr>
<td>2</td>
<td>Plantations have impacted sub-surface archaeology</td>
<td>Plantation to be carried out as per plan ensuring use of Archaeological Risk Maps</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>3</td>
<td>Plantations have impacted monuments through changing microclimate</td>
<td>Study impact of plantations on microclimate and thereby impact on monuments to develop regulations for plantation locations and density</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>4</td>
<td>The dry zone climate along with difficult soil consistency</td>
<td>Research and consider water management, soil improvement and needs of the community linked to plantations</td>
</tr>
<tr>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
<td>(3)</td>
</tr>
<tr>
<td>5</td>
<td>The vegetation has obscured the view of many monuments</td>
<td>ensure provisions for trimming trees considering views particularly of monuments</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>6</td>
<td>Lack of understanding on environment and environment conservation</td>
<td>educational talks and awareness on environment and ensure continued research on the link between environmental conservation</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>B. FAUNA AND WILDLIFE PROTECTION</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lack of knowledge and awareness on endemic species</td>
<td>Carry out research to ensure better awareness on endemic species</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Lack of consideration for endemic species in planning and development projects</td>
<td>ensure appropriate consideration for endemic and endangered species of animal including key species in planning</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>Loss of habitat of endemic species as threatened their existing in the area</td>
<td>safeguard or recreate original habitat of endemic species by carry out plantation works in designated locations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Lack of understanding for bird habitat and international designation of the area</td>
<td>take into account that the Ayeyawady River Region in Bagan is designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA)</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
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<tr>
<td>6</td>
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</tbody>
</table>
## C. WATER MANAGEMENT

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rain has been the main source of water for Bagan over the centuries is not sufficient.</td>
<td>Consider other sources of water are ground water and the perennial streams and rivers, most notably the Ayeyawady River</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
</tr>
<tr>
<td>2</td>
<td>Ground water not a sustainable source though often deep wells are dug</td>
<td>Any water that is pumped up from the ground must be linked to a plan to recharge the aquifers</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
</tr>
<tr>
<td>3</td>
<td>The collection and storage of rainwater was done during Bagan Period, but not continued</td>
<td>Develop systems for collection of rain water using traditional ponds and conduits</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td>4</td>
<td>Distribution of water is a problem due to infrastructure as well as evaporation (when open)</td>
<td>Develop system of water distribution that does not impact heritage while ensuring water is not lost to evaporation</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td>5</td>
<td>Tendency towards irrigation for the fields could impact heritage</td>
<td>To develop means of irrigation that will minimize use of water and control impact particularly on sub-surface archaeology.</td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
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<tr>
<td>---</td>
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<td>---</td>
</tr>
</tbody>
</table>
| 1 | Lack of waste management planning | prepare a sustainable waste plan for Bagan which would include pollution of land, water and air.  
(A)/(B)/(C)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
| 2 | Potential of using waste as a resource has not been understood | waste shall be understood to be a resource and the provisions for benefiting from this resource.  
(A)/(B)/(C)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
| 3 | No understanding for sustainable waste management | study and introduce sustainable waste management which would include innovative management, participation and appropriate technology.  
(A)/(B)/(C)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
| 4 | Community is not aware of the implications of pollution caused by waste | undertake awareness campaigns to ensure that the community gets involved in sustainable waste management possible control at source.  
(A)/(B)/(C)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
| 5 | Waste reduction and disposal not yet considered an issue | while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure  
(A)/(B)/(C)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
| 6 | Sewage treatment a major issue to impact on subsurface archaeology | develop sustainable sewage treatment plants for town areas takes into account possible resources such as manure and bio-gas.  
(A)/(B)  
(2)  
(TI)  
2018  
continuous  
DA / DANM  
Line Ministry  
Researchers with external support and resources |
3.2.5 Natural Hazards and Human Threats

Short introduction to Issues and Actions in reference to section 2.1.5:

This section provides an overview of actions addressing issues related to the natural hazards and human threats. An overview of the issues has been provided under section 2.1.5.

This section on the natural hazards and human threats includes the following subheadings:

A. Earthquake
B. Flooding and heavy Rainfall
C. Other natural Hazards
D. Human Threats

The overarching issues for this cluster are the natural hazards and human threats that need to be addressed. The key natural hazards that need to be considered are earthquakes and extreme weather which leads to drought and flooding. The complexity of dealing with these issues makes it necessary to develop a separate "Disaster Risk Management Strategy". This will lead to a more comprehensive Disaster Risk management Plan which will ensure coordination between all required authorities, experts and stakeholders. Response systems and preparedness for cultural heritage sites shall be ensured for all critical types of natural hazards such as earthquakes and extreme weather (floods, storms and excessive rain) as well as taking into consideration the risk of fire. Preparedness particularly to earthquakes has become a critical issue every since the 2016 Chauk Earthquake. Furthermore there is regular flooding in various part of Bagan. Extreme weather needs to be monitored keeping in mind the impacts of global climate change. Another major impact on monuments is due to vandalism and development pressures.

The actions provided in the following section will be addressing all these issues.
### ISSUES AND ACTION CHART

#### 5. NATURAL HAZARDS AND HUMAN THREATS

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>LOCATION</strong></td>
</tr>
<tr>
<td>1</td>
<td>The response to the 2015 earthquake took time to get organized due to lack of preparedness</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>2</td>
<td>The structural stability of monuments, particularly those with previous damage is uncertain</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>3</td>
<td>Some monuments have not been stabilized after being damaged during the 2015 earthquake</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>4</td>
<td>Rehabilitation of 389 monuments still ongoing</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>5</td>
<td>Coordination difficult with monuments being restored by bilateral assistance</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>6</td>
<td>Earthquakes are not regular occurrences in Myanmar and so awareness lacking</td>
<td>NA</td>
</tr>
</tbody>
</table>
## A. EARTHQUAKES

<table>
<thead>
<tr>
<th></th>
<th>Previous interventions for earthquake stabilization of monuments were only partially successful</th>
<th>To carry out detailed studies on previous interventions and their performance during the 2016 earthquake</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>(A)/(B) (M) (1) (ER) ongoing by 2022</td>
<td>DANM / MES with UNESCO Local and external experts and resources</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Lack of communication with heritage sites with similar problems in the region</th>
<th>To learn and collaborate with other heritage sites in the region that have experience with earthquake preparedness, response and rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>(A)/(B) (M) (1) (ER) ongoing by 2022</td>
<td>DANM / MES with UNESCO Local and external experts and resources</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Lack of overall coordination system to prepare, respond to and recovery from earthquakes</th>
<th>Establishing a coordination system for responding to earthquakes for cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>(A)/(B) (M) (1) (RA) ongoing by 2022</td>
<td>DANM / MoRAC Union Govt staff with local support and resources</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Lack of expertise in earthquake response</th>
<th>Training for authorities and community on earthquake response for securing, salvaging and stabilizing cultural heritage sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>(A)/(B) (M) (1) (ER) ongoing by 2022</td>
<td>DANM / MES with UNESCO Local and external experts and resources</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
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</tbody>
</table>

<p>| | | | |</p>
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<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>LOCATION</td>
<td>INCIDENT</td>
<td>PRIORITY</td>
<td>ACTION</td>
</tr>
<tr>
<td>1</td>
<td>Lack of understanding of extreme weather in Bagan area</td>
<td>Extreme weather shall be constantly monitored and response shall be planned for the cultural heritage sites</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>2</td>
<td>Lack of knowledge of impact of flooding and heavy rainfall on heritage sites</td>
<td>Study and document types of impacts caused by flooding and heavy rainfall and establish methods of protecting and repairing monuments</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>3</td>
<td>Lack of drainage and old drainage system not functional</td>
<td>Improve drainage system and rehabilitation ancient system to ensure flooding is controlled</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>4</td>
<td>Lack of information on drought and its impact</td>
<td>Monitor drought and closely linked to use of water resources and local agriculture</td>
<td>(A)/(B)</td>
</tr>
<tr>
<td>5</td>
<td>Regular flooding of Ayeyawady River causing much damage</td>
<td>Improve understanding of flooding and develop long term strategy to mitigate and respond to flooding</td>
<td>NA</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Location</td>
<td>Incident</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Priority</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Lead Agency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>No information on multiple hazards that might affect Bagan</td>
<td>Study multiple hazards that might affect Bagan which would include the slow impact of climate change, change in human activities, etc.</td>
<td>DA / Related authorities</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
<td>(3)</td>
</tr>
<tr>
<td>2</td>
<td>Most disasters are caused by fire (65.9%) though with less damage</td>
<td>Response system to fire damage must be reviewed and improved where necessary considering high occurrence</td>
<td>DA</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>3</td>
<td>Disaster response teams are unaware of how to deal with heritage sites</td>
<td>national disaster training for developing awareness sensitive to cultural heritage sites</td>
<td>DA</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>4</td>
<td>Authorities not prepared for response to multiple hazards</td>
<td>To improve coordination and establish procedures and training for all authorities dealing with disasters, particularly in disaster response</td>
<td>DA / Related authorities</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
<td>(3)</td>
</tr>
<tr>
<td>5</td>
<td>Lack of understanding of individual and multiple hazard risks</td>
<td>Prepare risk maps for individual and multiple hazards</td>
<td>DA / Related authorities</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. OTHER NATURAL HAZARDS
<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There are many cases of vandalism, mainly linked to writing and scratching into the plaster</td>
<td>Develop means of controlling vandalism through awareness, monitoring and response</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Too many visitors can impact mural paintings due to change in micro-climate</td>
<td>Control visitor numbers to monuments with mural paintings</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Visitor activates such as climbing monuments has a direct impact on monuments</td>
<td>Control visitor climbing on monuments and stop marketing sunset views from the monuments</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Change to local economy and employment due to tourism development</td>
<td>Ensure tourism supports local economy and traditional activities to ensure continuation of traditional livelihood</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Changing farming habits could impact monuments and sub-surface archaeology</td>
<td>Ensure that traditional farming activities are supported while introducing changes that do not impact the heritage (linked to section 3.2.6)</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Development brings pollutions which is both visible and chemical threat</td>
<td>Control pollutions through a comprehensive waste management system particularly solid and liquid waste (linked to section 3.2.4)</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2.6 Agriculture and Landscape

Short introduction to Issues and Actions in reference to section 2.1.6:

This section provides an overview of actions addressing issues related to the agriculture and landscape. An overview of the issues has been provided under section 2.1.6.

This section on the agriculture and landscape includes the following subheadings:

A. The Visual Landscape
B. Landscape and Heritage Conservation
C. Agricultural Practice
D. Non-agricultural Landscapes

The site is located on the bend of the Ayeyawady River between the two hill ranges of Tantkyi-taung and Tuyin-taung. One of the most unique features of Bagan is the expanse of cultivated fields interspersed with ancient brick monuments. The cultivated fields create the setting for the monuments. There are however numerous factors which are impacting the agriculture which includes natural phenomena as well as changing human activities. There is a close relationship between the cultural heritage property and its natural setting. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business.

The actions provided in the following section will be addressing all these issues.
### Issues and Action Chart

#### 6. Agriculture and Landscape

<table>
<thead>
<tr>
<th>#</th>
<th>Issue</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual landscape around monuments not maintained</td>
<td>To ensure visual landscape is maintained around monuments by regular monitoring</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M) (1) (RA)</td>
</tr>
<tr>
<td>2</td>
<td>Visual integrity along Ayeyawady River threatened by various development and projects</td>
<td>To ensure visual integrity is maintained along Ayeyawady River and development works and projects are controlled</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M) (1) (RA)</td>
</tr>
<tr>
<td>3</td>
<td>Visual integrity of prominent locations such as hills areas threatened</td>
<td>To ensure visual integrity is maintained on prominent locations such as the two main hill ranges</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M) (1) (RA)</td>
</tr>
<tr>
<td>4</td>
<td>Visual integrity is changing due to plantations</td>
<td>To control plantations that are changing the visual landscape</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M) (1) (RA)</td>
</tr>
</tbody>
</table>
### B. LANDSCAPE AND HERITAGE CONSERVATION

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The landscape defined by archaeology is threatened by development</td>
<td>To monitor development and ensure the landscape defined by archaeological is safeguarded</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>2</td>
<td>The ownership patterns are changing impacting the landscape</td>
<td>To ensure that ownership of land in the landscape is maintained to safeguard the landscape</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>3</td>
<td>Tourist activities and required infrastructure and services are impacting the landscape</td>
<td>To control tourism activities as well as development of tourism infrastructure and services are appropriate</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>4</td>
<td>Change in micro-climate due to changing global climate and activities impacting landscape</td>
<td>The impact due to changing micro-climate to be studied in detail and remedies sought</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>5</td>
<td>Impact of changing functions and usage impacting landscape</td>
<td>Land use and functions to be controlled and monitored to ensure landscape is maintained</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(M)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# C. AGRICULTURAL PRACTICE

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agricultural land is being neglected and this area is overgrown with bushes</td>
<td>To find means of ensuring that farmers continue cultivating the land using various means of support and awareness</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
<td>(RA)</td>
<td>continuous</td>
<td>DA / DANM Community</td>
</tr>
<tr>
<td>2</td>
<td>Threat of changing crops which could have impact on landscape, monuments and archaeology</td>
<td>Fine appropriate crops to improve livelihood but ensure landscape, monument and archaeology are safeguarded</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous</td>
<td>DA / DANM Community</td>
</tr>
<tr>
<td>3</td>
<td>Threat of irrigation which could have impact on landscape, monuments and archaeology</td>
<td>Fine appropriate means of irrigation to improve crops while ensuring landscape, monument and archaeology are safeguarded</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous</td>
<td>DA / DANM Community</td>
</tr>
<tr>
<td>4</td>
<td>Threat of mechanization which could have impact on landscape, monuments and archaeology</td>
<td>Fine appropriate crops to mechanize ploughing and other activities while ensuring landscape, monument and archaeology are safeguarded</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous</td>
<td>DA / DANM Community</td>
</tr>
<tr>
<td>5</td>
<td>Threat of fertilizer use and change in soil consistence which could impact heritage</td>
<td>Fine appropriate means of improving soil to improve crops while ensuring landscape, monument and archaeology are safeguarded</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous</td>
<td>DA / DANM Community</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lack of maintenance of hilly areas</td>
<td>The hilly areas including Tantkyi-taung and Tuyin-taung must be maintained with vegetation to ensure soil stability.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM / Forestry Community</td>
<td>staff and research experts</td>
<td>external/local resources</td>
</tr>
<tr>
<td>2</td>
<td>Very little forested areas remain and these are not maintained sufficiently</td>
<td>Remaining forested areas must be defined and protected including indigenous vegetation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM / Forestry Community</td>
<td>staff and research experts</td>
<td>external/local resources</td>
</tr>
<tr>
<td>3</td>
<td>River areas are threatened by development</td>
<td>River areas particularly along the banks need to be protected from development as well as from erosion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM Relevant authorities</td>
<td>staff and research experts</td>
<td>external/local resources</td>
</tr>
<tr>
<td>4</td>
<td>Landscape in and around settlement areas are not being maintained</td>
<td>Landscape and environment around settlements must be maintained to ensure appropriate and well maintained areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM Community</td>
<td>staff and research experts</td>
<td>external/local resources</td>
</tr>
</tbody>
</table>
3.2.7 Community: Socio-economy and Livelihood

Short introduction to Issues and Actions in reference to section 2.1.7:

This section provides an overview of actions addressing issues related to the community: socio-economy and livelihood. An overview of the issues has been provided under section 2.1.6.

This section on the community: socio-economy and livelihood includes the following subheadings:

A. Livelihood from Agriculture
B. Livelihood from Traditional Activities
C. Community Empowerment and Local Governance
D. Livelihood from Tourism and New Activities

The overarching issues for this cluster are linked to community livelihood and appropriate activities within the heritage property. The landscape is dependent on the care provided by the local farmers. Agriculture is still one of the main community livelihoods. Marketing strategy for Bagan products, strategy for appropriate community livelihood and promotion of traditional skills are so closely related that it would be best to look at them as a single endeavour of livelihood linked to the traditional skills and the production of local products. Even though there is a close link between community activities and the cultural heritage site, there is a lack of acceptance or acknowledgement of their contributions. The tourism sector will become the major employment provider which will impact local economic activities. We can already see the new generation embrace activities linked to the tourism sector, particularly in working in hotels, restaurants and as tour guides.

The actions provided in the following section will be addressing all these issues.
## A. LIVELIHOOD FROM AGRICULTURE

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Traditional products are not being produced or sold</td>
<td>Traditional agricultural products need to be supported and prioritized to ensure continuity in agricultural heritage</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM Community</td>
<td>staff and research experts</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>external/local resources</td>
</tr>
<tr>
<td>2</td>
<td>New appropriate crops not being considered for farmers due to old regulations</td>
<td>To carry out research on new crops that would be acceptable to grow within the property but or in buffer zone and help farmers diversify</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>UN / DA / DANM Community</td>
<td>staff and research experts</td>
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<td></td>
<td>external/local resources</td>
</tr>
<tr>
<td>3</td>
<td>Product are sold cheap in bulk and wholesale not allowing improved income</td>
<td>To provide means of processing and packaging to add value to the agricultural products</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>UN / DA / DANM Community</td>
<td>staff and experts with</td>
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<td>external/local resources</td>
</tr>
<tr>
<td>4</td>
<td>Marketing not being done for Bagan products to allow better sales</td>
<td>To establish a marketing strategy for agricultural products which would include quality control, location and branding</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>UN / DA / DANM Community</td>
<td>staff and experts with</td>
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<td>external/local resources</td>
</tr>
<tr>
<td>5</td>
<td>Farmers have a hard time with local conditions and if possible would stop farming</td>
<td>To provide support, subsidies and other forms of compensation to try to convince farmers to continue cultivating their field</td>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(2)</td>
<td>(TI/RA)</td>
<td>continuous by 2022</td>
<td>DA / DANM Community</td>
<td>staff and experts with</td>
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<td>external/local resources</td>
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<td></td>
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</tr>
<tr>
<td>1</td>
<td>Promotion, support and training in production of handicrafts is lacking</td>
<td>To ensure that traditional crafts and required training and support is provided to the community</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Location: NA</td>
<td>Incident: (O)</td>
<td>Priority: (2)</td>
<td>Time: (TI)</td>
<td>Lead Agency: DANM / crafts experts</td>
<td>Resource: Community / staff and experts with local resources</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Traditional building crafts are not promoted and are lacking even for restoration works</td>
<td>Traditional building crafts must be promoted, restored, improved and a sufficient network of artisans developed for conservation works</td>
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<tr>
<td></td>
<td>Location: NA</td>
<td>Incident: (O)</td>
<td>Priority: (2)</td>
<td>Time: (TI)</td>
<td>Lead Agency: DANM / crafts experts</td>
<td>Resource: Community / staff and experts with local resources</td>
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<tr>
<td>3</td>
<td>Traditional activities and products are not linked to any market</td>
<td>Markets must be found for the traditional services and products, such as linked to the tourism industry</td>
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<tr>
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<td>Location: NA</td>
<td>Incident: (O)</td>
<td>Priority: (2)</td>
<td>Time: (TI)</td>
<td>Lead Agency: DANM / crafts experts</td>
<td>Resource: Community / staff and experts with local resources</td>
<td></td>
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<tr>
<td>4</td>
<td>Traditional performances and entertainment not supported</td>
<td>Traditional performances and entertainment need to be supported such as pagoda festivals or puppet shows</td>
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<td></td>
<td>Location: NA</td>
<td>Incident: (O)</td>
<td>Priority: (2)</td>
<td>Time: (TI)</td>
<td>Lead Agency: DANM / crafts experts</td>
<td>Resource: Community / staff and experts with local resources</td>
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</tbody>
</table>
| 1 | There is a lack of awareness of rights and responsibilities with the local community | Awareness programmes need to be established to empower local communities and ensure proper local governance is developed

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>INCIDENT</th>
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<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
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<tbody>
<tr>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
<td>DA / DANM Community</td>
<td>Staff and local experts with local resources</td>
</tr>
</tbody>
</table>
| 2 | Community members are often not included in the decision making process | Community members must participate in the decision making process, particularly when it impact their livelihood

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
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<tbody>
<tr>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
<td>DA / DANM Community</td>
<td>Staff and local experts with local resources</td>
</tr>
</tbody>
</table>
| 3 | Community often does not profit from the activities carried out within the heritage property | All activities within the heritage property must consider how the local community can profit

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>INCIDENT</th>
<th>PRIORITY</th>
<th>ACTION</th>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
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<tbody>
<tr>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
<td>DA / DANM Community</td>
<td>Staff and local experts with local resources</td>
</tr>
</tbody>
</table>
| 4 | Development works are haphazard and not sustainable | All development works must be assessed for their appropriateness, whether they are sustainable and possibly linked to the SDGs

<table>
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<tr>
<th>LOCATION</th>
<th>INCIDENT</th>
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<tr>
<td>NA</td>
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<td>(RA)</td>
<td>regular</td>
<td>DA / DANM Community</td>
<td>Staff and local experts with local resources</td>
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</tr>
<tr>
<td>1</td>
<td>Local community is often not employed in tourism sector or only for certain tasks</td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
</tr>
<tr>
<td>2</td>
<td>Tourism sector does not always support local products</td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
</tr>
<tr>
<td>3</td>
<td>Hardly any funds from the tourism sector flows back into local community development</td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
</tr>
<tr>
<td>4</td>
<td>Tourism brings with it numerous new activities and influences change</td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
</tr>
<tr>
<td>5</td>
<td>Local communities are not diversifying beyond traditional activities and the tourism sector</td>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
<td>(RA)</td>
<td>regular</td>
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</table>

D. LIVELIHOOD FROM TOURISM AND NEW ACTIVITIES

1. Local community is often not employed in tourism sector or only for certain tasks
   - Local community members must be given priority in tourism sector employment

2. Tourism sector does not always support local products
   - Tourism sector must develop market for local products to ensure local community profits directly

3. Hardly any funds from the tourism sector flows back into local community development
   - Tourism sector must support traditional activities and community development which includes traditional agriculture and crafts

4. Tourism brings with it numerous new activities and influences change
   - The change caused by the tourism sector must be clearly monitored and impacts controlled

5. Local communities are not diversifying beyond traditional activities and the tourism sector
   - Appropriate diversification in employment possibilities for local community must be carefully investigated and developed
3.2.8 Intangible Heritage

Short introduction to Issues and Actions in reference to section 2.1.8:

This section provides an overview of actions addressing issues related to the intangible heritage. An overview of the issues has been provided under section 2.1.8.

Bagan is associated with a rich panoply of intangible cultural heritage (ICH), with some evolving from historical antecedents dating to the Bagan kingdom and earlier, which contribute to the significance of the site. Within the domains defined by the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, which Myanmar has ratified, the intangible cultural heritage of Bagan includes the following:

(a) oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; 
(b) performing arts; 
(c) social practices, rituals and festive events; 
(d) knowledge and practices concerning nature and the universe; 
(e) traditional craftsmanship.

Many of these living traditions continue to be vibrant and in widespread popular practice. However, some forms of ICH are increasingly under pressure or even falling into disuse. As the long-term sustainability of Bagan rests not only on the protection of its material heritage, but also in the immaterial heritage that is closely associated with the site, safeguarding intangible cultural heritage is identified as one of the priorities in the overall management of the site.

The actions provided in the following section will address the following issues:

1. Safeguarding ICH within the framework of the 2003 Convention
2. Linking ICH with sustainable local development
### ISSUES AND ACTION CHART

#### 8. INTANGIBLE HERITAGE

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The full range of ICH elements associated with Bagan is still not well-identified</td>
<td>Collaborate with the communities to identify and prioritize ICH elements for safeguarding within the framework of the 2003 Convention, with an effort to reflect the diversity of various communities and their traditions.</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>2</td>
<td>Limited efforts to safeguard ICH.</td>
<td>Undertake consultation with the communities to develop and implement safeguarding measures for prioritized ICH elements, based on a deeper understanding of the threats facing each element. This should include further research, inventory and documentation.</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>3</td>
<td>Certain traditions are gravely endangered, or disappearing, or under urgent threats</td>
<td>Give special attention to such endangered traditions for urgent safeguarding measures</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>4</td>
<td>Young people lack awareness about ICH and other significant aspects of Bagan</td>
<td>Promote more awareness raising in schools among young people about ICH elements, as well as the history and significance of the sites</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
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<td>---</td>
</tr>
<tr>
<td>2.LINKING ICH WITH SUSTAINABLE LOCAL DEVELOPMENT</td>
<td>1</td>
<td>Existing handicrafts still have potential for further development</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>2</td>
<td>Many handicrafts that are known to have existed have been lost and forgotten</td>
<td>Such lost handicrafts might be revived as a means of local income generation or to support conservation activities</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(O)</td>
<td>(1)</td>
</tr>
<tr>
<td>3</td>
<td>Local agricultural practices are under threat</td>
<td>Local agricultural practices should be supported, including through improving productivity and adding value to agricultural products, as a means of improving the livelihood of farmers and also to help maintain the landscape of the site</td>
</tr>
<tr>
<td>NA</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>4</td>
<td>Traditional building practices are fading away</td>
<td>Promote traditional building practices, including through training the younger generation of builders, as a means of ensuring the conservation of monuments and to create more jobs</td>
</tr>
<tr>
<td>NA</td>
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3.2.9 Management tools

Short introduction to Issues and Actions in reference to section 2.1.9:

This section provides an overview of actions addressing issues related to the intangible heritage. An overview of the issues has been provided under section 2.1.9.

This section on the intangible heritage includes the following subheadings:

A. “One Map” Coordination
B. Heritage Impact Assessments (HIA)
C. Data Management System
D. Other Management Tools and Programmes

The overarching issues for this cluster are the lack of some critical management tools. Numerous workshops were carried out to discuss management tools which particularly include “One Map”; Establishment of Heritage Impact Assessment (HIA); Archaeological Risk Maps (ARM); Data management system; Inventories; Capacity building and training programmes; Review the overall management system. These tools will be necessary to ensure efficient and effective management of Bagan.

The actions provided in the following section will be addressing all these issues.
### ISSUES AND ACTION CHART
#### 9. MANAGEMENT TOOLS

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Base map being prepared</td>
<td>Base map needs to be prepared for a larger area than just the cultural heritage property, particularly taking into account the Magway side. (A)/(B)</td>
</tr>
<tr>
<td>2</td>
<td>All mapping information is separately kept by the individual authorities</td>
<td>Collect mapping information from all the relevant authorities particularly the survey department. (A)/(B)</td>
</tr>
<tr>
<td>3</td>
<td>Little coordination or collaboration exists between the authorities.</td>
<td>Establish system of coordination and collaboration between all relevant authorities. (A)/(B)</td>
</tr>
<tr>
<td>4</td>
<td>Maps will be changed by individual authorities</td>
<td>Regular updating of the One Map will be done in collaboration with all the relevant authorities. (A)/(B)</td>
</tr>
</tbody>
</table>

---

**A. "ONE MAP" AND MANAGEMENT COORDINATION**

1. **Base map being prepared**
   - Base map needs to be prepared for a larger area than just the cultural heritage property, particularly taking into account the Magway side.
   - **Action**: Ongoing by 2018
   - **Lead Agency**: UNESCO / DANM Survey Department
   - **Resource**: Staff with local and external experts and resources

2. **All mapping information is separately kept by the individual authorities**
   - Collect mapping information from all the relevant authorities particularly the survey department.
   - **Action**: Regular
   - **Lead Agency**: UNESCO / DANM Survey Department
   - **Resource**: Staff with local experts, support and resources

3. **Little coordination or collaboration exists between the authorities.**
   - Establish system of coordination and collaboration between all relevant authorities.
   - **Action**: Regular
   - **Lead Agency**: UNESCO / DANM Relevant authorities
   - **Resource**: Staff with local experts, support and resources

4. **Maps will be changed by individual authorities**
   - Regular updating of the One Map will be done in collaboration with all the relevant authorities.
   - **Action**: Regular
   - **Lead Agency**: UNESCO / DANM Relevant authorities
   - **Resource**: Staff with local experts, support and resources
<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>No local Heritage Impact Assessment system has been established</td>
<td>To establish local Heritage Impact Assessment system including legislation.</td>
</tr>
<tr>
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<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td>2</td>
<td>No local Heritage Impact Assessment procedures have been established</td>
<td>Establish local Heritage Impact Assessment procedures closely linked to legislation and local expertise.</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td>3</td>
<td>Lack of expertise and knowledge in carrying out Heritage Impact Assessment</td>
<td>To carry out training programmes for the implementation of local Heritage Impact Assessment.</td>
</tr>
<tr>
<td></td>
<td>(A)/(B)</td>
<td>(O)</td>
</tr>
<tr>
<td>4</td>
<td>Many issues at site still need to be assessed for their appropriateness</td>
<td>To carry out regular local Heritage Impact Assessments on issues that are known and have newly arisen on site.</td>
</tr>
<tr>
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<td>(A)/(B)</td>
<td>(O)</td>
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</tr>
<tr>
<td>1</td>
<td>Lack of understanding of existing date and need for data management system</td>
<td>To study the need for data management system, type of date and what systems are available</td>
</tr>
<tr>
<td></td>
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<td>ongoing by 2018</td>
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<td>UNESCO / DANM</td>
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<tr>
<td></td>
<td></td>
<td>staff with local and external experts and resources</td>
</tr>
<tr>
<td>2</td>
<td>Lack of data management system</td>
<td>To determine the best data management system</td>
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<td>ongoing by 2018</td>
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<td></td>
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<td>UNESCO / DANM</td>
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<tr>
<td></td>
<td></td>
<td>staff with local and external experts and resources</td>
</tr>
<tr>
<td>3</td>
<td>Data management system not established</td>
<td>To establish the best data management system that has been determined along with the required software / hardware</td>
</tr>
<tr>
<td></td>
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<td>ongoing by 2020</td>
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<td>UNESCO / DANM</td>
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<td></td>
<td></td>
<td>staff with local and external experts and resources</td>
</tr>
<tr>
<td>4</td>
<td>Lack of understanding of running a data management system</td>
<td>To arrange for regular training for those required to use the data management system</td>
</tr>
<tr>
<td></td>
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<td>regular</td>
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<td></td>
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<td>UNESCO / DANM</td>
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<tr>
<td></td>
<td></td>
<td>staff with local and external experts and resources</td>
</tr>
<tr>
<td>5</td>
<td>Data management system not integrated into management system</td>
<td>Data management system will need to be used for management and need to therefore be simple and user friendly as well as low maintenance</td>
</tr>
<tr>
<td></td>
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<td>regular</td>
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<td>staff with local and external experts and resources</td>
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</tr>
<tr>
<td>1</td>
<td>Sub-surface Archaeology is at risk and no tools exist to ensure that it is safeguarded</td>
<td>Archaeological Risk Maps (ARM) need to be prepared showing locations of potential archaeology to vet and timeline future projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ongoing by 2022</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNESCO / DANM staff with local and external experts and resources</td>
</tr>
<tr>
<td>2</td>
<td>Lack of expertise particularly in respect to management</td>
<td>Regular management training needs to be carried out for all members of the site management specific to their responsibilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNESCO / DANM MoRAC staff with local and external experts and resources</td>
</tr>
<tr>
<td>3</td>
<td>The Integrated Plan of Action is a working document and needs to be updated regularly</td>
<td>The Integrated Plan of Action needs to be regularly updated to ensure that new issues that arise are identified and actions are formulated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DANM MoRAC staff with local experts, support and resources</td>
</tr>
<tr>
<td>4</td>
<td>Annual budgets determine much of the work that will be carried out by the site managers</td>
<td>Annual Action Plans must be prepared based on the Integrated Plan of Action and the relevant budget and work plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>annual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DANM MoRAC staff with local experts, support and resources</td>
</tr>
</tbody>
</table>
3.3 Formulating Annual Action Plans

The Annual Action Plan is prepared to correspond to the Fiscal Year. The Annual Action Plan formulates all the activities that have been planned out for the heritage site during the respective 12 month period in detail.

**Preparation:**

The preparation of the Annual Action Plan must begin 3 months before the beginning of the following fiscal year to allow for enough time for discuss the issues and plan out the actions of the following year.

The Annual Action Plan will be prepared by the Site Managers coordinated by the Department of Archaeology. The Annual Action Plan will be discussed with the representatives of the stakeholders of the various parts of the Heritage property.

During these three months, the progress of the previous Annual Action Plan must be assessed, the Plan of Action reviewed and the next Annual Action Plan prepared.

**Content:**

The individual actions that are prioritized for the following Annual Action Plan would be based on the revised Plan of Action, which provides a holistic view of all the required actions to achieve the key objectives of the Integrated Management Plan.

The Integrated Plan of Action is comprised of a compilation of issues and key objectives for the Integrated Management of the Heritage Site. Based on the key objectives, an overall Plan of Action considering short, medium and long-term activities has been formulated. This document would need to be reviewed and revised annually and should be the basis for strategic planning for the integrated management of the overall World Heritage Site.

The prioritized actions must then be detailed out to determine their financing and implementing agency. The actions for which financing is available, are then included in the Annual Action Plan. All projects that are planned within the Monument Zones must be included in the Annual Action Plan, whether they are funded by the Department of Archaeology, the District Administration or other funding sources.

The Annual Action Plan may also include actions that have been placed under high priority, as critical actions, for which financing has not yet been arranged. For these actions, a strategy must be prepared for fund raising through potential partners.

The Annual Action Plan must also provide for emergency actions, which would only be determined during the course of the year.

**The Actions:**

Each of the Actions must be clearly defined in respect to:

- the reason for prioritization;
- the implementation process;
- the projected outcome;
• the financial resources;
• the timeframe;
• the implementing agency;

The Planning Tool:

The Annual Action Plan must be seen as a planning tool and not merely as an annual financial proposal. The progress assessment of the ongoing Annual Action Plan and the preparation of the next Annual Action Plan must be carried out keeping in mind the overall long term planning of the individual Monument Zones and the Kathmandu Valley World Heritage Site as a whole.

The Annual Action Plan must take into account the primary objective of the Integrated Management System; to protect the Outstanding Universal Value of the World Heritage property as well as the locally recognized heritage values, while considering the standard of living, safety and economic viability of the community living within the World Heritage property.
Nomination Dossier for
Inscription on the
World Heritage List

BAGAN

Conceptual Regional Plan

Based on conceptual planning:
Ministry of Religious Affairs and Culture
AMA- Association of Myanmar Architects
Bagan Heritage Zone: Urban and Regional Plan of the Environs November 2017

Including excerpts from:
Japan International Cooperation Agency (JICA)
Koei Research & Consulting Inc./ Nippon Koei Co., Ltd. / JTB Corporate Sales Inc.
Project Report for Establishment of the Pilot Model for Regional Tourism Development
in the Republic of the Union of Myanmar
December 2017
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## Glossary of key terms and acronyms

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<th>Term</th>
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<tr>
<td>Bagan Cultural Heritage Property</td>
<td>The area of Bagan that has been demarcated as containing most of the cultural heritage attributes</td>
</tr>
<tr>
<td>Bagan Cultural Heritage Site</td>
<td>The overall area of Bagan that includes both the cultural heritage property as well as the buffer zone</td>
</tr>
<tr>
<td>Buffer Zone</td>
<td>An area demarcated around the cultural heritage property that provides an added layer of protection with similar management and legal provisions.</td>
</tr>
<tr>
<td>Protective Planning Area</td>
<td>An area demarcated approximately 30 kilometres beyond the Buffer Zone spanning from Chauk to Pakokku towns as basis for regional planning</td>
</tr>
<tr>
<td>MOC</td>
<td>Ministry of Construction</td>
</tr>
<tr>
<td>MONREC</td>
<td>Ministry of Natural Resources and Environmental Conservation</td>
</tr>
<tr>
<td>MOHT</td>
<td>Ministry of Hotels and Tourism</td>
</tr>
<tr>
<td>MORAC</td>
<td>Ministry of Religious Affairs and Culture</td>
</tr>
<tr>
<td>DANM</td>
<td>Department of Archaeology and National Museum</td>
</tr>
<tr>
<td>DA</td>
<td>District Administration</td>
</tr>
<tr>
<td>MNCCC</td>
<td>Myanmar National Culture Central Committee is a high level coordination committee under the Vice President</td>
</tr>
<tr>
<td>BAGANCOM</td>
<td>Bagan Committee for the management of the cultural heritage property and buffer zone</td>
</tr>
<tr>
<td>AMA</td>
<td>Association of Myanmar Architects</td>
</tr>
<tr>
<td>MTF</td>
<td>Myanmar Tourism Federation</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>OUV</td>
<td>Outstanding Universal Value</td>
</tr>
<tr>
<td>SOUV</td>
<td>Statement of Outstanding Universal Value</td>
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Preamble

Bagan Cultural Heritage Site spans across a bend in the Ayeyarwady River between the hills of Tantkyi-taung and Tuyin-taung. The site is located in Nyaung U District of Mandalay Region and Pakokku District of Magway Region. The property covers some 50 square kilometres with an additional 180 square kilometres of buffer zone. The impressive landscape encompasses over three thousand monuments along with 2 towns and over 40 villages. The ancient capital city of Myanmar went through a major building spree during the 11th to 13th centuries CE of which nearly three thousand monuments remain. Though the focus is on the Bagan Period, there are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the 18th and 19th centuries.

The site also boasts elaborate living cultural heritage continuing from the ancient times. The strong Theravada Buddhist culture pervades the daily lives of the local community and the visiting pilgrims. This is overlaid by a deep reverence to the spirits or Nats which are particularly dominant in Bagan, with their main centre being nearby Mount Popa. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production.

The communities living in the towns and villages are in a period of transition. Most locals are still farmers who depend on the meagre rainfall to cultivate their traditional crops such as groundnuts, sesame and flat beans on plots hemmed in by toddy palms. The ground is still ploughed using bullocks and bullock carts are still used transportation. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business. Tourism is also the caused for increased traffic, construction of infrastructure and buildings as well as physical wear and tear of the monuments.

Much of this golden period of Bagan is still hidden below the surface of the parched land. The urbanization and the expansion of the monument ensembles are not clearly understood. Development pressure mainly driven by tourism is ready to swamp the regulations put in place to conserve the monuments. To defuse these pressures while ensuring a livelihood for the local community requires a comprehensive planning approach. The consideration of a wide range of issues will allow for a realistic and effective management system to be put in place that ensures sustainable development while safeguarding the attributes and elements of Bagan that express its exceptional values.
The Integrated Management System for Bagan has been established consisting of adopted management frameworks, established processes and actions along with various sector plans. The process of developing and adopting the Integrated Management System for Bagan was begun in 2013. With regular consultation with government authorities, local representatives and community, it has been possible to come to an overall understanding of how Bagan needs to be managed to ensure that heritage is safeguarded while enabling the local communities to improve their livelihood. Close relationship has also been developed with related sectors such as local administration, tourism, agriculture, disaster risk management and environment protection. The management of Bagan will however depend on overall government policies and local governance. This requires regular review and amendments to the Integrated Management System to adapt to changing circumstances, however the overarching objective must be retained: “to protect the attributes expressing outstanding universal value of the World Heritage property as well as the locally recognised heritage values, while taking into account sustainable development including the standard of living, safety and economic viability of the community living within the World Heritage property.”

The Integrated Management System is defined by two main documents. The Integrated Management Framework document has been officially adopted by the State Party. The Integrated Plan of Actions document defined is a working document requiring ongoing amendments and changes to be carried out and would be the basis for establishing annual action plans. Additionally there are three further sector plans or strategies. The Conceptual Regional Plan provides an overview of the required planning in respect to land-use, settlements, infrastructure and environment. This has been prepared with inputs from various government agencies as well as the Association of Myanmar Architects (AMA). This is closely linked to the Sustainable Tourism Strategy which has been prepared in close collaboration with the Ministry of Hotels and Tourism, the Myanmar Tourism Federation and with support from JICA. Furthermore the Disaster Risk Management Strategy has been prepared with support from the World Bank.

The Conceptual Regional Plan is a document that provides a framework for guiding development in the Protective Planning Area stretching from Pakokku to Chauk and Mount Popa. The planning of this large area covering about 100 by 100 kilometres takes into account the long-term needs of Bagan. The development issues that are putting great pressure on Bagan Cultural Heritage Property can be defused by spreading out infrastructure, services as well as tourism activities throughout this region. This is purely a conceptual plan providing direction but not details for implementation which would need to be prepared in close collaboration with relevant authorities, experts and local stakeholders and community.
The Bagan Conceptual Regional Plan has defined the guidance required to address two main concerns, the influence of the region on the heritage site and the diffusion of development pressures from the heritage site out to the surrounding region. The main components of the Bagan Conceptual Regional Plan have been provided in this summary, however it must be understood within the more detailed description provided within the report.

The Concept (UNESCO/DANM)

1. The Bagan Conceptual Regional Plan is an integral part of the Integrated Management System for Bagan Cultural Heritage Site and must be seen in conjunction with the entire set of documents which also include particularly the Integrated Management Framework, Integrated Plan of Actions, Bagan Sustainable Tourism Strategy and the Bagan Disaster Risk Management Strategy.

2. The Bagan Conceptual Regional Plan has been prepared through collaboration between the UNESCO consultant facilitating the establishment of the Bagan Integrated Management System, JICA consultants working on the Tourism Development Project as well as the AMA team working on the Urban and Regional Planning for Bagan.

3. The Bagan Conceptual Regional Plan provides the planning framework for the Protective Planning Region which comprises of an area of about one hundred by one hundred kilometres stretching across the Ayeyarwady River encompassing areas in both Mandalay and Magway Regions with Bagan Cultural Heritage property in the centre.

4. The government of Myanmar, particularly the Ministry of Religious Affairs and Culture (MORAC) and the Ministry of Hotels and Tourism (MOHT) along with the Regional Governments of Mandalay and Magway Regions will further develop the Comprehensive Regional Plan for the Bagan Protective Planning Region based on the framework provided in this documents.

5. The Regional Plan will ensure close collaboration with the management of Bagan Cultural Heritage Site as defined in the Integrated Management Framework and Integrated Plan of Actions, while it takes further steps to incorporating surrounding cultural heritage sites within the planning region into safeguarding and the promotion of Bagan.

6. The Regional Plan will ensure sustainable tourism development as defined in the Bagan Sustainable Tourism Strategy while ensuring tourism is expanded across the Bagan Protective Planning Region reducing development pressure within the Bagan Cultural Heritage Property.

7. The Regional Plan will take into account the specific environment in and around Bagan, providing relevant protection particularly in respect to human activity while also protecting humans and cultural heritage from natural hazards as defined in the Bagan Disaster Risk Management Strategy.
General Situation Analysis (AMA)

8. The regions around Bagan, belonged to the poorest areas in the country before the policy changes of the Government in 1988. The climate is semi-arid; consequently the region was an out-migrating region owing to scarcity of employment facilities. The policy change of the country after 1988 stemmed to considerable increase in hotel and tourism sector, accompanied with employment from direct and associated activities of this sector.

9. Presently the cultural heritage site of Bagan with 80 hotels, receiving around 0.4 million international tourists and local pilgrimages yearly has an economically interactive Influence Zone (roughly corresponding to the Protective Planning Region). This zone consists of around 11 townships with a population of around 2 million, 5 townships are in Magway Division and 6 townships including Nyaung U (Bagan) are in Mandalay Division.

10. The total labour force generated by, direct, induced and in related trades with tourism amounts to nearly 15% of total work force in the 11 townships of the zone. The forecast of the Ministry of Hotels and Tourism is that the international visitors will increase from the 0.3 million in 2015 to 1.07 million by 2030. This increase of tourism will also be reflected in the increased requirements for supporting facilities in the cultural heritage site of Bagan.

11. Since the Bagan Influence Zone is around approximately 9000 km2 (3500 square miles), reachable by car within one hour, it is recommended that the areas for cottage industries, handicrafts and other tourist activities be distributed in several townships in the Influence Zone. For the whole Influence Zone as to function as one harmonious and integrated area, it is required to improve the road network and the infrastructure, especially to start with water supply and the waste management systems.
Proposal for Land-Use Planning (UNESCO/DANM)

12. The existing land-use in the Protective Planning Region will need to be determined in respect to the understanding changing trends. Settlement and agricultural areas are slowly transforming to cater to other service sector functions particularly to tourism. Settlement boundaries are shifting as the surrounding land is encroached upon. Agricultural land is sold off to build tourist facilities. To get a grasp of this situation these changing trends need to be understood and areas that are critical threatened need to be identified.

13. Land-use categories will to be determined to map out the existing situation and determine how to guide change through land-use controls. Each of the land-use sub-zone, point and linear attributes and potential elements would be linked to guidelines to control changes.

14. Protection of areas of natural significance such as forests and riverine landscapes will be strictly enforced. This also includes important agricultural areas, particularly in the flood plains of the Ayeyarwady River and within the Bagan Cultural Heritage properly.

15. The particularly complex category of land-use is the settlements zone. The settlement areas will be clearly demarcated under the categories of towns and villages with clearly define building bylaws and development guidelines.

16. There are certain areas, particularly towards the area where industrial development and mining has taken place. Such developments will be controlled in respect to their impact to the environment and the surrounding landscape.
Proposal for New Settlements (AMA)

17. The natural and migrated population increase in the Influence Zone for the next 4 decades is forecasted to around 300,000. This population should be distributed in the existing townships in the Influence Zone and in planned Growth Poles. Two settlements and a new area are identified to develop as potential growth settlements. Each of these settlements will need detailed planning to be carried out.

18. Pakhangyi in Magway Division has been identified as a growth settlement. It is about 53 km (33 miles) northeast of Nyaung U (Bagan) and 27 km (17 miles) away from its district town Pakokku. According to the 2014 census, Pagangyi is part of Yesagyo township and is not categorized as urban. In order to avoid losing agricultural land around Pagangyi, the extension area for Pagangyi is selected at 11 km (6.8 miles) south of the existing settlement.

19. Ngathayauk a sub-township in Mandalay Division have been identified as additional growth settlement. Ngathayauk is 22 km (14 miles) southeast from Nyaung U. According to the 2014 census, Ngathayauk is categorized as sub-township with the population of around 6000.

20. For the requirement of areas due to population increase and other additional functions in the immediate surroundings of Bagan Cultural Heritage property, a separate extension area is foreseen. This area is 6.5 km (4 miles) southeast of Nyaung U in the direction of Ngathayauk.
Proposal for Accessibility and Circulation (UNESCO/DANM/JICA/AMA)

21. The road network will be improved within the Protective Planning Region / Influence Area and connecting to other main access routes.
   a. Access roads from Mandalay, Magway and Meitila will be improved.
   b. Roads to potential growth settlements shall be improved.
   c. A circular route will be developed from Nyaung U over the Pakokku Bridge along the western banks of the Ayeyarwady River to Seikphyu and back across the bridge to Chauk and on the Bagan-Myothit.
   d. An improved road connection will be developed joining Bagan-Myothit to Chauk road and Nyaung U to Kyaukpadaung road which entirely by passes the Bagan Cultural Heritage property.

22. The railway network will be improved within the Protective Planning Region / Influence Area and connecting to other main access routes.
   a. Access connections to main line.
   b. The railway line will be developed from Nyaung U over the Pakokku Bridge along the western banks of the Ayeyarwady River to Seikphyu. Further planning will be done to check the possibility of connections from Seikphyu across the bridge to Chauk and on to the buffer zone south of Bagan-Myothit.
   c. The railway connection from Nyaung U to any new airport location, such as the proposed one in Pakokku will be developed.
23. There are no proper jetties around Bagan which makes river transportation for visitors difficult for ships. The construction of jetties will be planned strategically along the stretch of the Ayeyarwady River that lies within the Protective Planning Region / Influence Area in line with the planned extension settlements, tourist facilities and activity nodes, but keeping in mind the impact on the cultural heritage property.

24. Main access to Bagan for international visitors is by air landing at Nyaung U airport which already has 20 take-offs and landings per day. The forecasted increase in visitor numbers will make it necessary to plan air traffic to Bagan.
   a. Planning is required to determine for how long the Nyaung U airport can cater to the needs without any expansion or extensions. Assessment of the impact of increased flights needs to be carried out while also considering noise disturbance and the disrepute flyover of monuments particularly around Kyauk-ku-umin.
   b. An alternative airport will need to be considered and the existing airport in Pakokku is being proposed. The airport only needs refurbishing. With improved connectivity by road or possibly by rail, the journey from Pakokku Airport to Bagan, a 38 kilometre journey, would take less than half an hour.
25. Within the Bagan Cultural Heritage property, **traffic planning** will be carried out that will ensure appropriate protection of the cultural heritage as well as the delicate environment.

a. Within the Bagan Cultural Heritage property all areas will be made free of motor vehicles except for the circular route created by the Nyaung U to Kyaukpadaung road to the east, Bagan-Myothit to Airport road to the south, Bagan-Myothit to Old Bagan road to the west and the Anawrahta road to the North will be made free of all motor traffic. This circular route will be improved for buses, trucks and all other motorized vehicles. Exactly alignments will need to be further planned particularly when it comes to settlement areas.

b. To avoid traffic through Tharaba gate on the old Bagan-Nyaung U road, there shall be a diversion road in the northeast of Htilominlo, along the stream close to Shinbome monastery; this shall also protect Shinbome monastery being flooded in the rainy seasons.

c. There shall be bus and motor vehicle stops with public conveniences along the main roads bordering motor traffic free zone.

d. In the traffic free zone, there will be paths and ways for non-motorised vehicles and public conveniences.
Proposal for development of services (JICA/AMA)

26. A comprehensive **solid waste management system** will be established which includes separation, composting, recycling and reuse, collection and augmented with sanitary landfills.

27. A **sewage and waste water collection and disposal system** will be planned and implemented for settlements areas taking into account the need to protect subsurface archaeology ensuring treatment as per standards before any discharge is made into public water systems.

28. A **comprehensive water management system** will be established including sourcing and distribution for household use as well as agricultural requirements.
   a. The traditional water supply system will be conserved where possible.
   b. Augmented water supply systems for the settlements will be planned and implemented ensuring that monuments and subsurface archaeology is not impacted.
   c. Water for irrigation will be planned in a manner closely related to appropriate agricultural development particularly for the Cultural Heritage property.

29. **Electricity** distribution system will be planned taking into account the need to protect the visual integrity of the landscape, particularly within the Cultural Heritage Property and buffer zone. In certain places underground cabling will be considered, however ensuring alignments with the raised road embankments to ensure that subsurface archaeology is safeguarded.

30. **Telecommunication** facilities will be developed throughout the region however taking into account the need to protect the visual integrity of the landscape, particularly within the Cultural Heritage Property and buffer zone. Innovative methods and designs for providing mobile phone connections will be studied and implemented.

Proposal for protection environment, landscape and socio-economic development (UNESCO/DANM/AMA)

31. The regional planning will take into account **protection of flora** particularly the forest areas along with regulations for plantations considering indigenous species and the protection of the character of the landscape.

32. There is also the need to **safeguarding indigenous fauna** using key species, particularly considering the Ayeyarwady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA).

33. The regional planning will take into account the **threats of natural hazards** and ensure that planning is carried out considering disaster risk management particularly in respect to earthquakes, flooding, heavy rain and storms.

34. The regional planning will **promote agriculture** particularly in respect to local crops, traditional methods of farming which includes processing, packaging and marketing of such products. This will be closely linked to the land-use planning and defining appropriate landscape characteristics. This will be particularly important within the Cultural Heritage property.

35. The regional planning will take particular care to ensure that development is guided in a manner inductive to improving the livelihood of the local communities while ensuring their participation in the overall decision-making and local governance.
PART ONE
Introduction
1.1 Regional Planning and Bagan Cultural Heritage Property

Bagan is one of the most important cultural heritage sites in Myanmar. Bagan is a place of pilgrimage, a tourism destination as well as home to local inhabitants. The complexity of the site requires a comprehensive analysis of the critical issues to be determined which are addressed by the management system. An effective management system of a World Heritage property ensures that particularly the attributes expressing outstanding universal value (OUV) are safeguarded. To ensure this regional planning is essential which encompasses the surrounding area defined as the “Bagan Protective Planning Region”, an area of about hundred by hundred kilometres.

Regional Planning for the region around Bagan needs to take into account two main concerns. The first concern is to ensure that the development around Bagan is guided to ensure that it doesn’t have any significant negative impact on the cultural heritage site. The second concern is to provide means of reducing development pressures within the cultural heritage site by spreading out development over a larger area. Both these concerns, the influence of the region on the heritage site and the diffusion of development pressures from the heritage site out to the surrounding region define the guidance for regional planning.

The Conceptual Regional Plan provides the basic concerns or issues that will be considered in detailed planning that will be carried out by the government. The planning concept takes into consideration the required protection of Bagan, as mentioned, from external impact as well as internal expansion requirements. This is closely linked to improving the livelihood of the local communities who need to have direct access to the sources of income and opportunities that arise from development linked to Bagan attracting international tourism and national prioritized resource allocation. This will lead to growth and change to settlements and related infrastructure and service requirements, which will be guided to control their impact on the cultural and natural setting.

The regional planning of the Bagan Protective Planning Region will be done based on the principles of sustainable development. This is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own need.” (Brundtland Commission)
To achieve this goal various overall parameters have been set within this Conceptual Regional Plan which has taken into account the “Integrated Management System” of the Bagan Cultural Heritage Site, the document “Bagan Heritage Zone: Urban and Regional Plan of the Environs” prepared by the Association of Myanmar Architects (AMA) in November 2017 and the report “Project Report for Establishment of the Pilot Model for Regional Tourism Development in the Republic of the Union of Myanmar” prepared by Japan International Cooperation Agency (JICA) through their JV consultants: Koei Research & Consulting Inc., Nippon Koei Co., Ltd. and JTB Corporate Sales Inc. (copied sections have been duly acknowledged). Each of these sections will require further elaboration in close consultation with the relevant authorities ideally with the consultants who have already worked on the relevant issues.

The preparation of the Bagan Regional Plan will require high level commitment since it deals with a heritage site of national importance and the planning area spans across Mandalay and Magway Regions and involves most union and regional ministries and departments. The coordination between the two regional governments will be paramount. The close collaboration between the Ministry for Religious Affairs and Culture (MORAC) and the Ministry of Hotels and Tourism (MOHT) is also critical, since the greatest impact will possibly be from the proposed development of the tourism sector.

The area that has been roughly demarcated as the “Bagan Protective Planning Region” (BPPR) spans over an early of around one hundred by one hundred square kilometres. The BPPR is indicated in the map below.
The “Bagan Protective Planning Region” (BPPR) includes an area which is closely linked to the development of Bagan, ensuring long-term expansion requirements. The planning region encompasses the areas around the towns of Chauk and Pakokku as well as Kyaupadaung and the important cultural and natural site of Mt. Popa. This area will take into account the required needs for the increase in population as well as tourism development. The Bagan Conceptual Regional Plan focuses on guided land-use, settlement development, infrastructure and services as well as the protection of environment and cultural heritage.

Reference to the Integrated Management Framework (IMF) Document

The planning of Bagan will extend far beyond the boundaries of the cultural heritage area. The surrounding areas could develop to become threats but if planned properly would provide the means of solving many of the issues facing the cultural heritage site. To provide the basis for regional planning to be carried out a further Protective Planning Region has been defined which extends approximately 30 kilometres beyond the buffer zone. This area encompasses the surrounding towns of Chauk and Pakokku as well as important cultural site of Mount Popa and Sa-lay.

The Conceptual Regional Plan (refer IMF Section 4.2.1) has been prepared considering requirements of appropriate and sustainable development within a larger region around Bagan. Taking into account projections of several million visitors within the next few decades, the required infrastructure, services and activities for these visitors will be provided dispersed over the Protective Planning Region. The planning will also ascertain that activities that could affect Bagan Cultural Heritage Site would be mitigated, particularly those creating any form of pollution, be it air, water, soil, noise or visual.

The Key Management Objectives (Section 2.5.2) for Bagan are based on the assessment of issues, the required actions and activities to address these issues. These include the following objectives that are to be addressed partially or wholly through regional planning.

Regional planning and transportation (objectives 13, 14, 15)

A key management objective is to develop and implement physical planning, zoning and regulations for zones and subzones within the property, the buffer zone and the larger protected area, to ensure appropriate development in settlement, infrastructure, land-use, economy and protection of cultural heritage and environment. A key management objective is also the planning of transportation and transportation infrastructure considering the requirements for visitor access as well as circulation within the property, the buffer zone and the larger protected area, while taking into account the needs of the local communities. There is also the need to develop regional plans that ensure appropriate and sustainable development in the surrounding region, particularly in respect to land-use, settlements, infrastructure and environment;

Tourism management and infrastructure (objectives 16 – 18)

A key management objective is to develop a visitor accommodation strategy for Bagan which ensures rectification of previous in appropriate development, promoting appropriate involvement of local entrepreneurs in towns and villages and providing solutions in a wider regional plan. A key management objective is also to develop tourism in a sustainable manner defusing the pressures for infrastructure and services as well as not exceeding the bearing capacity of the heritage site by extending planning to a region encompassing Pakokku and Chauk. There is also the need to
develop means for tourism to partake in safeguarding cultural heritage, maintaining the landscape and supporting the livelihoods of the local communities;

**Environment and pollution (objectives 19 – 22)**

A key management objective is to establish and implement an appropriate comprehensive water management strategy taking into account water sources, distribution, as well as usage for personal, commercial and agricultural use. A key management objective is also to safeguard indigenous flora while introducing regulations for plantations, particularly taking into account the impact on important attributes of the cultural heritage property and the character of the landscape. There is also the need to safeguarding indigenous fauna using key species such as the Star Tortoise, Burmese Roofed Turtle, Golden Deer, White Throated Babbler and the Laggar Falcon. Furthermore there is a need to establish and implement a comprehensive waste management and pollution control strategy to protect the environment: water, air and land, as well as other forms of pollution such as light and sound;

**Natural hazards and human threats (objectives 23 – 26)**

A key management objective is to establish a disaster risk management plan which includes preparedness, response and recovery closely linked to the site management, local authorities as well as related national level management structures. A key management objective is also to ensure lessons are learned from the 2016 Chauk Earthquake as well as from the interventions carried out after the 1975 earthquake in Bagan. There is also the need to study the causes and impact of extreme climatic events such as flooding, heavy rain and storms and find means of response as well as long-term mitigation measure. Furthermore there is a need to develop means for monitoring the heritage site and monuments to minimize the change for human induced disasters to take place.

**Agriculture and landscape (objectives 27 – 29)**

A key management objective is to develop and implement an approach to appropriate agriculture which takes into account the needs of the local communities, also ensures the landscape is maintained and provides means of improved productivity without further harming cultural attributes of the property. A key management objective is also to develop and enforce strategy for maintaining the landscape which includes agriculture but would also need to take into account plantations, changing usage as well as environmental factors. There is also the need to ensure the visual integrity of the unique landscape of Bagan is maintained by regulating tall and obtrusive structures to be erected in and around the heritage site.

**Community – socio-economy and livelihood (objectives 30 – 33)**

A key management objective is to develop and implement a strategy for appropriate community livelihood linked to a comprehensive approach to sustainable development. A key management objective is also to develop marketing strategy and ensuring added value for Bagan products as a sustainable means of livelihood for local community. There is also the need to promote traditional skills as a means of livelihood, but also to ensure continuity for maintenance of the monuments and artefacts. Furthermore there is a need to ensure that local communities are not displaced whether due to economic, political or technical reasons. Then there is the need to ensure empowerment of the local communities to allow them to partake in decision-making and local governance.
To ensure that these objectives are met, regional planning has been defined through sector planning (IMF Section 4.2.1). The outline sector plan for Regional Development defined within the Integrated Management Framework document is the basis for this document.

Considering the scale of the Bagan Cultural Heritage Site, regional planning is required. To guide development, a Bagan Conceptual Regional Plan has been prepared as a basis for further detailed planning. The Bagan Conceptual Regional Plan deals with the efficient placement of land-use activities, infrastructure, and settlement growth across a larger region surrounding the cultural heritage site of Bagan. The planning takes into account a primary region stretching from Pakokku to Chauk and further to Mount Popa. This area will however be seen within the larger associated region stretching from Mandalay to Magway and including Meiktila.

The development and implementation of the Bagan Conceptual Regional Plan requires the cooperation of all key government authorities and line agencies. Any planning done within the primary region will be coordinated within the overall regional plan. The regional planning will also be dependent on the related legislation. It is also critical that the Bagan Conceptual Regional Plan is understood within the overall Integrated Management System for Bagan Cultural Heritage Site and in conjunction with the strategies for disaster risk management, tourism and agriculture.

**Bagan Conceptual Regional Plan is the framework for guiding development.** The core of the regional planning is the Bagan Cultural Heritage Site which brings with it various challenges and opportunities. The economic and physical development of Bagan is undergoing rapid change which if not guided could lead to the total misuse and destruction of the area. This could affect the cultural heritage, the environment and the livelihood and customs of the local community.

The guided development would consider the unique opportunities of the primary region stretching from Pakokku to Chauk and further to Mount Popa. It is also paramount to consider both sides of the Ayeyarwady River in this guided development Plan. The framework for the guided development will address land-use, transportation and circulation, infrastructure and services, settlement and environment. All these would be directly related to the overall objective of safeguarding the cultural heritage site.

**Regional Planning: Land-use and settlements**

The existing land-use in the Protective Planning Region will need to be determined in respect to the understanding changing trends. Settlement and agricultural areas are slowly transforming to cater to other service sector functions particularly to tourism. Settlement boundaries are shifting as the surrounding land is encroached upon. Agricultural land is sold off to build tourist facilities. There are certain areas, particularly towards the Tantkyi-taung area where industrial development and mining has taken place. To get a grasp of this situation these changing trends need to be understood and areas that are critical threatened need to be identified. **Land-use categories** need to be determined to map out the existing situation and determine how to guide change through **land-use controls**. Each of the land-use sub-zone, point and linear attributes and potential elements would be linked to
guidelines to control changes. The particularly complex category of land-use is the settlements zone. The settlement areas can be categorized under Towns and Villages.

Regional Planning: Transportation, circulation and tourist accommodations

With the development of Bagan as an important heritage property which is a site of pilgrimage as well as a major tourism destination, transportation planning has become critical for sustainable development. Transportation is critical for accessibility as well as movement around the enormous site. Planning of transportation and transportation infrastructure will provide an overall strategy for improved accessibility of Bagan. This will have four components: linkage by air, by road, by rail and by river. Each of these components will consist of an assessment of the overall national strategy and how it relates to Bagan. Based on the national level strategy, a detailed local level strategy will be established as the basis for detailed planning. A feasibility studies is needed in respect to requirement, possible number of visitors and their profiles, and how each of the components could contribute to the need for accessibility. This will then be followed by the detailed plan for infrastructure improvement requirements for each of the components.

Detailed transportation and transportation infrastructure plan for the Heritage Zones of Bagan will be prepared. The roads and paths will be categorized based on the allowed form of transportation which would be differentiated based on degree of possible impact on heritage, i.e. size, weight and form of motorization. The number of visitors to Bagan is increasing steadily and increasingly more people are looking for accommodations in Bagan. Visitor accommodations have become one of the greatest threats to the Heritage Zones. The basic strategy for visitor accommodation will be developed as per the outcome of studies on present visitor profiles and extrapolation scenarios. Considerations will be made on allowing tourist accommodations in town areas and possibly in the villages in a controlled manner. Improved transportation within the Protective Planning Region will allow for tourist accommodations to be spread out to a larger area, particularly along both sides of the Ayeyarwady River outside the Bagan Cultural Heritage property.

Regional Planning: Environment, pollution and sustainable services

Many of the issues linked to environmental planning lie far beyond the scope of managing the Cultural Heritage Site of Bagan. The effect of climate change is a critical issue for the delicate environment of Bagan which lies in the central dry zone of Myanmar. The pollution as well as the seasonal flooding of the Ayeyarwady River is due to activities upstream from Bagan. The lack of watershed management, particularly the deforestation and lack of control of waste disposal are issues that will need to be tackled at national or even international levels. There are however some specific issues that can be addressed within the Protective Planning Region. These consist of local waste management, water management and the protection of flora and fauna. Pollution control can be achieved if a sustainable waste management system is established for Bagan which will deal with solid waste (littering), sewage, as well as other forms of air, water and land pollution. Concern has also been raised in respect to noise pollution. The various causes might be additional activates linked to tourist attractions, but also various religious and community practices that are using larger and louder equipment. A further form of pollution that has been mentioned is light pollution.
The water management entails the establishment of a clear approach to the collection, storage, distribution and use of water as a finite resource that is essential for the livelihood of the people and the continued existence of the ecology. Rain has been the main source of water for Bagan over the centuries. Other sources of water are ground water and the perennial streams and rivers, most notably the Ayeyarwady River. The collection and storage of rainwater was carried out even during the Bagan Period, with the construction of a huge reservoir on the western side of Twin Hill. The main focus on water supply has been the Ayeyarwady River. The distribution of irrigation water has been through irrigation channels which allows for large amounts of water to evaporate. The main requirement for water is for private use in the towns and villages and for agriculture.

The landscape around Bagan has a unique character defined by the dry climate. Though a large part has been converted into agricultural land, there are still areas of forest and shrub. Vegetation can have extremely detrimental impact on heritage structures. The regulations that are established will be based on a certain definition of the significance of the landscape. Bagan has a unique ecosystem and the Ayeyarwady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA). Safeguarding the indigenous flora will require a comprehensive and integrated approach including all the various stakeholders involved in Bagan. An interesting approach to this project would be to put environmental conservation within the context of Buddhist philosophy of not harming nature.

Regional Planning and Tourism

A particular concern for the development of Bagan is the expected rise in tourism numbers over the next decades. Comparisons have been made to Angkor Wat where in 2016 2.2 million visitors were recorded. Further comparisons have been made by the JICA team (JICA, 2017, p.1-9)
Based on such studies there are indications that Bagan would potentially have tourism numbers that would easily increase to one million by 2030. If not planned immediately this would have increase the need for facilities and infrastructure requirements and greatly impact the local economy, culture and environment. The “Sustainable Tourism Strategy”, part of the overall Integrated Management System for Bagan, has addressed such issues, however many issues can only be dealt with through a more comprehensive regional plan.

The comparison to Angkor Wat must however be done with some care considering that the property was inscribed under extreme political duress which necessitated an international management system. Additionally, the site is largely an archaeological park with little community participation as a living site. This difference to Bagan must be kept in mind, since Bagan is a living site with many monuments still be revered, community living and working with the heritage site and being governed through locally elected government.

The comparison however can be made in respect to the extent of the property which is shown in the following maps. The extent of the Angkor Wat site would roughly extend from Chauk to Pakokku.

*Map (1) showing Angkor Wat with overlay of entire Buffer Zone area of Bagan Cultural Heritage and Map (2) showing the Bagan Protective Planning Region with overlay of a plan of Angkor Wat*
1.2 Regional Planning Framework (Refer AMA Report Section 2.1)

Legal Framework for Monuments Preservation (refer AMA 1.1)

Myanmar has long-standing tradition in exercising ancient monuments preservation and also has relevant laws, procedures and the institutional framework. The laws and acts applied formerly were:

1. Treasure Trove Act of 1879
2. Ancient Monuments Preservation Act of 1904
3. Antiquities Act of Burma 1957
4. Antiquities Act of Burma Amended 1962

With these acts and laws, the country has been exercising the monuments preservation and protection activities since the end of 19th century. These acts and laws had validity in covering monuments protection, antiques trading and transferring as well as rights to control the archaeological excavations. The laws mentioned above however did not adequately cover the subjects associated with the preservation of heritage zones or regions as the whole. With respect to this, Myanmar promulgated new laws in the recent years, which assume the full validity in controlling rights of antique properties, preservation of ancient buildings together with entire compounds and zones and the planning of monumental zones and regions. The laws recently enacted in Myanmar concerning the preservation of cultural monuments and the heritage zones are:

1. The Protection and Preservation of Cultural Heritage Regions Law, enacted in 1998
2. The Law Amending the Protection and Preservation of Cultural Heritage Regions Law, 2009
4. The Protection and Preservation of Antique objects Law, 2015

Associated with the protection, preservation of heritage monuments and zones, the followings are the relevant points:

1. 1998 Law, Chapter III, paragraph 4: The Ministry of Culture may, with the approval of the Government issue the notification demarcating any or more than one of the following kinds of zones as a cultural heritage region:

   (a) Ancient monumental zone
   (b) Ancient site zone
   (c) Protected and preserved zone
2. 1993 Law, Chapter III, paragraph 5: The Ministry of Culture may carry out the acquisition of any land within the cultural regions, if necessary:

(a) If the land is under the administration of any government department or government organization

(b) If it is the land in which there is right of cultivation, right of possession, right of utilization, beneficial right, right of succession or right of transfer, coordinating in advance with the relevant Ministry in accordance with the existing laws.

3. 1993 Law, Chapter IV, paragraph 6: The Ministry of Culture may cause to be dismantled a building which is not an ancient monument and which obstructs the view of an ancient monument or surrounding natural landscape within the cultural heritage region.

4. 1993 Law, Chapter IV, paragraph 7: The Ministry of Culture may direct the relevant Trust who are taking care of the ancient monument to do so without altering the original ancient form and structure and the original ancient workmanship.

5. 1993 Law, Chapter IV, paragraph 8: The Ministry of Culture may determine region-wise the conditions to be observed in the construction of buildings within the cultural heritage region.

6. 1993 Law, Chapter IV, paragraph 9: The Department shall carry out works of protection and preservation of the ancient monuments and ancient sites situated in the cultural heritage region.

7. 1993 Law, Chapter IV, paragraph 10: The Department may prohibit any person from ploughing and cultivating within the boundary of the ancient monument or ancient site or from carrying out any activity that may cause damage to the cultural heritage in the cultural heritage region.

8. 1993 Law, Chapter IV, paragraph 11: The Department shall, with the approval of the Ministry of Culture, carry out the following in the cultural heritage region:

(a) Determining the prescient of an ancient monument

(b) Prescribing the conditions to be abided by the shops opened within the prescient determined under sub-section

These chapters in the two laws for the Protection and Preservation of Cultural Heritage indicate that the Ministry of Religious Affairs and Culture and “Department of Archaeology and National Museum” are entrusted and delegated legally to exercise the following functions:

1. Inscribing one or a group of buildings as heritage properties

2. To control the renovation and restoration methods at heritage properties

3. To control the activities in the precincts of the heritage properties

4. Declaring heritage zones and heritage regions
5. Acquisition of land belonging to other Government Agencies and to other individuals according to the existing laws

6. Dismantling buildings in the ancient monument zones if necessary in view of heritage preservation

7. Determining the conditions to be observed in the construction of buildings within the cultural heritage region

On the other hand, there is the 2008 Constitution of the Republic of the Union of Myanmar, where paragraph 188, table II, states that the local Governments also have rights in the housing and urban planning sector. The laws on Protection and Preservation of Cultural Heritage to be excised by the Ministry on one side, the rights and responsibilities of local Governments on the other, indicate the requirement for cooperation between the Ministry of Religious Affairs and Culture and the concerned Divisional Governments.

The Institutional Framework (refer AMA 3.1)

Parallel to the country’s long traditions of exercising monuments preservation, the institutional framework was also established since the beginning of last century. “Burma Epigraphy Office” was founded in 1902 and this office commenced collecting and registering antiquities throughout the country. In the subsequent years of country’s independence in 1948, Burma Epigraphy Office was reorganized and enlarged as “The Department of Archaeology” in 1957 under the Ministry of Culture.

Relating to the activities on public education of cultural heritage preservation, the “Department of Cultural Institute” was established together with the “National Library, the National Museum and Art Institute” in 1954 under the Ministry of Culture. Furthermore, The Ministry of Culture formed the Cultural Council in the same year, which established the Libraries and Museums in all the States and Divisions. The Cultural Council was abolished in 1963 and the functions of maintaining and establishing libraries and museums were taken over by The Department of Cultural Institute. In 2007, Department of Archaeology and the Department of National Museum and Libraries were amalgamated and renamed as “The Department of Archaeology and National Museum” is to take charge of all affairs on cultural heritage preservation including tangible and intangible culture, comprising museums in the states and divisions of the Union. The official sanctioned strength of the department is around 1700 staff, out of which around 500 staff are assigned only for Bagan heritage zone management.

The functions of “The Department of Archaeology and National Museum” are:

1. Research and excavations on the prehistoric cultural assets
2. Research on historic ancient sites
3. Excavation and research on ancient culture
4. Supervision and registration of the cultural properties and antiques, the control over illicit trafficking, transfer, exports and imports of antiques
5. Recording and inventory of the cultural heritage monuments and sites

6. Preserving the Myanmar cultural heritage monuments, the mural painting, stucco carvings with scientific methods

7. Collecting, deciphering and carrying out research on ancient stone inscription, ink inscription and bell inscriptions

8. Publishing the research papers, books and periodical public education

9. Maintaining and managing ancient cultural heritage sites

10. Establishing and maintaining the National Museums, Archaeological Museums, State and Divisional Cultural Museums and collecting the Myanmar cultural heritage properties, preservation and exhibitions of these.

11. Displaying the collected materials in the Museums in order to keep abreast with the time

12. Undertaking research and explore the history of collected cultural heritage materials

13. Compiling and publishing the Museum Guidebooks and pamphlets continuously

**Regional Settings and the Influenced Areas (refer AMA 4.1)**

**Outstanding Universal Value**

As mentioned in the portion of Outstanding Universal Value”, Bagan, being the capital of a kingdom from the 2nd century AD until the end of 14th century AD, one exceptional and unique characteristic of the heritage site is the “3699 historic monuments”, concentrated in an area of around 60 km2 (around 23 sq. miles), and this historical fact has led to the presence of heritage sites in the environ of Bagan also with monuments of the same period.

The heritage sites and tourist attractions in the vicinity of Bagan are:

1. **Salay**, 45 km (28 miles) in the south with 81 registered historic monuments from 11th to 13th centuries and a famous timber monastery from the 19th century.

2. **Mount Popa** 48 km (30 miles) to the southeast of Bagan, an extinguished volcano, the main edifice is 1518 metres (4981 feet) above sea level and Taung Kalat, the main volcanic plug and with historic monuments of various periods

3. The “Popa Mountain National Park” surrounds the volcano, occupies an area of 129 square kilometres (49 sq. miles)

4. **Pakhangyi**, 56 km (35 miles) to the north of Bagan with 260 historic monuments from Bagan period.

Since most international and national tourists to Bagan also visit these sites during their stay, the areas around Bagan have become economically interactive “Hinterland” of the main heritage site Bagan / Nyaung U. A sample survey carried out by the Association of Myanmar Architects shows:

1. 60% of the workforce directly involved in the hotelier business is from the neighbouring townships, 20 % from Bagan-Nyaung U and the rest 20% from other regions
2. 60% of textiles sold in Bagan / Nyaung U areas are produced in these surrounding townships

3. 60% of international tourists, 70% of local pilgrimages spend 1 or 2 days to visit the sites in the vicinity of Bagan

The above data on employment and location of domestic industries indicate that the Bagan/ Nyaung U heritage area with 80 hotels, receiving around 0.4 million tourists and local pilgrimages yearly has economically interactive Influence Zone. This zone consists of around 11 townships with a population of around 2 million, an area covering approximately 9000 km² (3500 square miles). This is an important point to be considered for regional planning; especially Bagan / Nyaung U monument zones would have zoning regulations associated with building heights, densities and boundary extensions from heritage preservation aspects. Additionally, Pakokku, the town on the west bank of Ayeyarwady River should also have similar regulations to maintain the historic skyline of the environs of Bagan should be inscribed as a World Heritage. In view of these considerations it is necessary to identify areas and for settlements to absorb the growing population and various activities projected to increase in future.

In this Influence Zone of around 9000 km² (3500 square miles), 5 townships are in Magway Division and 6 townships including Bagan / Nyaung U are in Mandalay Division, while Bagan/ Nyaung U being located as the core at the central place. This situation calls for coordination between the Ministry of Religious Affairs and Culture, Magway Regional Government and Mandalay Regional Government for the future development of the region.
1.3 Environment and Infrastructure in Cultural Heritage Site  
(Refer JICA 3.2)

Tourism brings has both positive and negative impacts at the same time to cultural heritage sites. The positive impact includes purchase of locally produced goods and services such as accommodation, food and beverage, car rental and tourist guides etc. mainly by foreign tourists. It gives a boost to the regional economy while obtaining foreign exchange.

On the other hand, negative impact to the heritage environment is mainly caused by the increase in tourism demand and private investment. For example, physical impact by exceeding the carrying capacity due to the concentration of tourists to specific heritage sites, physical influence on surrounding environment due to the hotel construction in the cultural heritage area, and degradation of atmosphere due to the installation of outdoor advertisement, and so on.

In addition, since the infrastructure has not been developed yet to support cultural heritage site tourism, social and transportation infrastructure which are the living foundation of the local communities are both vulnerable.

JICA 3.2.1 Environment in Cultural Heritage Site

(1) Property Zone and Buffer Zone / Zoning for World Heritage Nomination

To preserve Buddhism temples and stupas in Bagan, MORAC established three zones according to the law enacted in 1998: namely, MZ, AZ and PZ. In application to the UNESCO World Heritage Site in 2018, MORAC supported by UNESCO reviewed these three zones and replaced them with two zones: Property Zone and Buffer Zone. The major differences from previous zoning are as follows: 1) Reducing the number of zones from three to two, 2) designating Tantkyi-taung Hill, the opposite side of the Ayeyarwady River and Tuyin Hills in the southeast of Bagan as Property Zone, and their surrounding area as Buffer Zone, 3) Settlement area including urban and village area where citizen lives are excluded from these zones. The boundary line of zoning is not yet finalized as of October 2017. However, it will be finalized after consultation and consent with the communities. This zoning will be a guideline for preservation of heritage and its surrounding environment to future generation, and it should also be referred to for preparing various development plans such as infrastructure development.

(Issues)

In Cultural Heritage Site of Bagan, the heritage is scattered inside and outside settlement area such as urban area and village where people live, and even in cultivated area too. Therefore, it is difficult to manage the site as an independent fenced-in area like in Borobudur World Heritage Site in Indonesia. It is important to conserve heritage remains and sites while maintaining activities in settlement area and its surroundings. The issue is how to achieve coexistence between local activities and heritage preservation.

The conservation area will be clarified by MORAC by establishing zones of Property Zone and Buffer Zone. However, the potential of finding new buried relics that have not appeared on the ground yet has been pointed out, and UNESCO recommend MORAC to create...
“Heritage Risk Map” that records remains above and under the ground. This map will serve a base map for the preservation heritage in the future. In addition, it will also be used to conform whether or not there is an impact on heritage remains in advance for the future infrastructure development. It is important to be able to clarify the process of regulation and development in order to minimize the influence of various developments on heritage in the future.

(2) Concentration of Tourists / Saturation of Carrying Capacity

Shwesantaw Pagoda located in the Cultural Heritage Site is the most popular attraction for tourists as a place to view the sunset. According to the field survey conducted by JICA Expert Team in February 2017, the number of the tourists climbing the pagoda reached 882 people during the sunset time, and the “carrying capacity” is saturated was revealed. As tourists visiting the cultural heritage area concentrate on specific heritage sites, the upper terraces of the pagoda get extremely crowded and accident risks such as falling are a concern as shown in below. In addition, heritage is in danger of deterioration due to damage and graffiti caused by visitors. When the State Counsellor visited Bagan on January 24, 2017, she announced that “the act of climbing up the pagodas should be reviewed for long-term heritage preservation”, and she called for the measures to manage the heritage for the next generation.

(Issues)

From the viewpoint of heritage conservation, ways to disperse the concentration of tourists to other destinations is an urgent issue. In the short term, it can be done for a specific heritage by entry restriction or regulation, and by opening-up other viewing points and providing information on guide map to them. In middle and long term, it is also necessary to promote substitute viewing points considering the historical landscape, based on the possibility to prohibit the access to the temples and pagodas in the cultural heritage site area. It is important to balance between tourism demand and heritage protection.

Note: Mandalay Regional Government implemented three viewing mounds in cultural heritage area in 2017 which have 6 m height. They are located at the lakeside of Ko Mauk Kan, Nyaung Latta Pat Kan and Sulamani Kan. Although they were implemented without following the advice from UNESCO, it is expected to encourage the tourists to disperse in the Cultural Heritage Site and to provide as an alternative viewing point.

(3) Historical Landscape and Visual Obstruction Factors

The central elements that constitute historical landscape of Bagan are the temples and pagodas, and natural and cultural landscape around them. These combined elements create the attractive landscape of Bagan. However, due to the inflow of local and foreign private capital in recent years, the landscape of Bagan is on the verge of crisis. The outdoor advertisement of domestic and overseas companies is chaotic at intersections, and flyers such as sales advertisements are affixed to roadside trees, and retailers in the heritage area are wrapped in colourful corporate advertisements. Degradation of the landscape is evident to everyone. In addition, some of the social infrastructure that supports the local community greatly reduces the value of the historical landscape as tourism resources. Electrical power distribution takes the shortest routes through the heritage area, and due to the insufficient
waste management, residential waste reaches to the heritage area. Thus, the atmosphere of the historical landscape is being spoiled.

(Issues)
In order to preserve the value as a heritage tourist destination for the country, it is essential to form a good visual environment. Outdoor advertisements should be eliminated, and underground wiring as a part of infrastructure development is also necessary. Efforts taking into consideration to the landscape environment are strongly required. In order to form and maintain a favourable landscape environment suitable for the World Heritage site, it is necessary to establish a mechanism that allows landscape conservation and infrastructure development to coexist but strictly according to regulations and guidelines.
Bagan World Heritage Nomination
PART TWO
LAND USE AND SETTLEMENT
Landscape and Socio-economy
2.1 Land-use and settlements (refer IMF4.2.1)

The *existing land-use* in the Protective Planning Region will need to be determined in respect to the understanding of *changing trends*. Settlement and agricultural areas are slowly transforming to cater to other service sector functions particularly to tourism. Settlement boundaries are shifting as the surrounding land is encroached upon. Agricultural land is sold off to build tourist facilities. There are certain areas, particularly towards the Tantkyi-taung area where industrial development and mining has taken place. To get a grasp of this situation these changing trends need to be understood and areas that are critical threatened need to be identified.

The *land use categories* in and around the Protective Planning Region can be classified under various headings. The main headings for *land-use zones* would be (1) settlement, (2) agriculture, (3) new developments and (4) natural. Each of these zones will have sub-zones which specify more in detail the characteristics of each function. For example under settlements there will be towns and villages. Under agriculture there would be traditional and irrigated. Under new developments there would be tourist facilities and industries. Under natural there would be forests and rivers. There will further overlays of (A) cultural attributes and (B) infrastructure which are *point or linear elements*. There are also overlays such as the Archaeological Risk Maps which determine the location of potential sub-surface archaeology below the above land-use or elements.

The *land-use controls* need to be determined particularly for the Bagan Cultural Heritage Site and its buffer zone. Here the controls on changing land-use trends need to be dealt with pro-actively. This means that particularly within the cultural heritage site land-use must not be allowed to change to ensure that the landscape is maintained. This has been addressed by the legal framework under development guidelines. Furthermore changes to land-use in the buffer zone must also be controlled, even if certain flexibility will be allowed considering proximity to monuments and sub-surface archaeology. The land-use in the Protective Planning Region would be part of the overall regional planning strategy rather than linked to the direct impact on cultural heritage attributes.

Each of the land-use sub-zone, point and linear attributes and potential elements would be linked to *guidelines* to control changes. The overlays of all these components will determine the conflict points which will then be addressed. This would need to be linked to special plans for the monument areas, potential archaeological areas, agricultural areas and areas of important natural features. Activities in each of these areas would need to be regulated.

The particularly complex category of land-use is the *settlements zone*. The settlement areas can be categorized under Towns and Villages. There are six villages within the boundaries of Bagan Cultural Heritage site. There are two towns within the buffer zone, which are Nyaung U and Myo-thit (New Bagan) and a further 35 villages (refer Map on following page). Some of these are only seasonal since they are located within the river flood plains and need to be regularly abandoned. Each of these settlements has clearly demarcated boundaries. The governance of these areas is coordinated by the District Administration together with the township and village representatives. The DANM is only responsible for the settlements within the boundaries of the cultural heritage property.
These are areas where people live, building their homes which adapt to the requirements of the families. These areas would be constantly changing for example to respond to growing families or when the inhabitants earn more and expect to improve their standard of living. These, especially the towns, are the areas where external investors come in to establish businesses such as hotels, offices and shops. They also speculate on cheap land in the surrounding areas which are restricted to development, but it is presumed that over time the regulations can be overturned or that the law can be blatantly disregarded. A practical and realistic strategy needs to be developed to take into account the needs of the community, but also to respond to the risks of uncontrolled growth and speculation on the safety of the cultural heritage and its surrounding context.

The development areas of the towns are slowly creeping into the surrounding landscape without a clear understanding of its impact. The villages, such Taung-bi and Myin-ka-ba which have not yet been incorporated into the towns, are bursting in their seams and transforming rapidly. There is a lack of understanding of the dramatic changes that are taking place within these settlements. Research is required on understanding the mechanisms of change taking place in each of the towns and villages. This would include the changes in demography, economy and requirements of physical infrastructure and services.

The boundaries of the settlements need to be fixed and regulations put in place to ensure that they are not changed incrementally. The changes within these boundaries need to be regulated while allowing for expansion in dedicated areas outside the heritage zones. This requires a regional plan to be put in place that caters to the additional needs of the heritage zones particularly in respect to settlements areas for the growing local communities.
Regional Settings and the Influence Areas (AMA report section 4.1)

Bagan, being the capital of a kingdom from the 2nd century AD until the end of 14th century AD, one exceptional and unique characteristic of the heritage site is the “3699 historic monuments”, concentrated in an area of around 60 km2 (around 23 sq. miles), and this historical fact has led to the presence of heritage sites in the environ of Bagan also with monuments of the same period.

The heritage sites and tourist attractions in the vicinity of Bagan are:
1. Salay, 45 km (28 miles) in the south with 81 registered historic monuments from 11th to 13th centuries and a famous timber monastery from the 19th century.
2. Mount Popa 48 km (30 miles) to the southeast of Bagan, an extinguished volcano, the main edifice is 1518 metres (4981 feet) above sea level and Taung Kalat, the main volcanic plug and with historic monuments of various periods
3. The “Popa Mountain National Park” surrounds the volcano, occupies an area of 129 square kilometres (49 sq. miles)
4. Paghangyi, 56 km (35 miles) to the north of Bagan with 260 historic monuments from Bagan period.

Since most international and national tourists to Bagan also visit these sites during their stay, the areas around Bagan have become economically interactive “Hinterland” of the main heritage site Bagan / Nyaung U. A sample survey carried out by the Association of Myanmar Architects shows:
1. 60% of the workforce directly involved in the hotelier business are from the neighbouring townships, 20 % from Bagan-Nyaung U and the rest 20% from other regions
2. 60% of textiles sold in Bagan / Nyaung U areas are produced in these surrounding townships
3. 60% of international tourists, 70% of local pilgrimages spend 1 or 2 days to visit the sites in the vicinity of Bagan

The above data on employment and location of domestic industries indicate that the Bagan/ Nyaung U heritage area with 80 hotels, receiving around 0.4 million tourists and local pilgrimages yearly has economically interactive Influence Zone. This zone consists of around 11 townships with a population of around 2 million, an area covering approximately 9000 km2 (3500 square miles). This is an important point to be considered for regional planning; especially Bagan/ Nyaung U monument zones would have zoning regulations associated with building heights, densities and boundary extensions from heritage preservation aspects. Additionally, Pakokku, the town on the west bank of Ayeyarwady River should also have similar regulations to maintain the historic skyline of the environs if Bagan should be inscribed as a World Heritage. In view of these considerations it is necessary to identify areas and for settlements to absorb the growing population and various activities projected to increase in future.

In this Influence Zone of around 9000 km2 (3500 square miles), 5 townships are in Magway Division and 6 townships including Bagan / Nyaung U are in Mandalay Division, while Bagan/ Nyaung U being located as the core at the central place. This situation calls for coordination between the Ministry of Religious Affairs and Culture, Magway Regional Government and Mandalay Regional Government for the future development of the region.
The Regional Plan (AMA report section 6.1)

The expected increase of international visitors and the anticipated growth of handicrafts and cottage industries and other associated issues for the future call for a comprehensive Regional Plan covering 11 townships in the Influence Zone of Bagan. The regional plan should address the following important challenges to confront in the next 3 or 4 decades:

1. The additional population growth of at least 300,000 in the next decades, associated with this is the need of around 60,000 housing units.
2. The selection and development of new areas to locate and distribute this population increase.
3. Necessary facilities such as hotel rooms, transportation systems, educational and entertainment facilities and other associated programs for international and local visitors anticipated to increase from the present 0.4 million to over 2.8 million during the next 3 or 4 decades.
4. Job facilities for the additional labour force of around 200,000 expected to increase in the next 3 or 4 decades.
5. Location of cottage industries and handicrafts, to plan in coordination with the tourism activities as well as from the heritage conservation aspects.

These requirements should be planned in the Influence Zone of 11 townships, 5 in Magway and 6 in Mandalay Division. In implementation of these programs, the maintenance of Myanmar dry zone landscape character should also be taken into consideration together with the aspects of heritage conservation. The character and the rank size population distribution of this region are:

1. The smaller towns of population sizes in the range of 6000 to 40,000, encircled by their respective rural hinterland.
2. These settlements, though identified as urban, however practically these are the centres of rural communities, where the urban percentage in these townships is around 10%.
3. The larger urban settlements, like Pakokku and Myingyan with population size of around 90,000, surrounded by their own rural areas, these are again bounded by the smaller townships.
4. The rural areas are remarkably characterized by the agricultural fields, toddy palm and other orchards; valuable and increasingly scarce in Myanmar as well as in the whole of Southeast Asian region.

This character and the rank size population distribution have several advantages and background reasons. The basic infrastructure such as water supply, waste disposal system, and the like can be established with simple and appropriate technologies and therefore more economical, subsequently leading to the clean environment. The basic plan concepts adopted in this regional plan are:

1. The preservation of Myanmar’s dry-zone character, (the toddy palm, tamarind or other orchards and the agricultural land)
2. The maintenance of settlement pattern of small towns with respective rural hinterland connected with roads.
3. The regulation of population size, densities and building heights of Nyaung U and Pakokkku, the two towns which are close to Bagan heritage zone.
The character and the rank size population distribution of Anya region:

The smaller towns of population sizes in the range of 6000 to 40 000, encircled by their respective rural hinterland

The larger urban settlements, like Pakokku and Myingyan with population size of around 90,000, surrounded by their own rural areas, these are again bounded by the smaller townships.
The reason to limit the area, densities and building heights of Nyaung U and Pakokku is to maintain the historical visual character and charm of Bagan heritage zone. Bagan, already in the time of Anawrahta in the 11th century has been planned to have 4 dominant landmarks at cardinal points, Shwe-Zigon in the north, Tuyin-taung in the east, Loka-Nanda in the south and Tantkyi-taung in the west. These landmarks together with numerous pagodas, monasteries and the palace around them form a balanced and proportionate silhouette of Bagan.

It is conceived in this regional plan to maintain this unique and inimitable skyline historically created by the ensemble of visually harmonious buildings as one of the urban design achievements of Bagan dynasty. Based on this principle, it is recommended to maintain the population size and the boundaries of Bagan / Nyaung U and Pakokku, which are in close vicinity to the heritage zone. Moreover, these towns in the close vicinity of the heritage zone shall have zoning regulations concerning building heights, densities, and other requirements. Based on these ideas the followings are the recommendations in the Regional Plan.

1. The 2 settlements Pakhangyi in Magway Division and Ngathayauk a sub-township in Mandalay Division are defined as additional growth settlements. Pakhangyi is about 53 km (33 miles) northeast of Bagan / Nyaung U, 27 km (17 miles) away from its district town Pakokku. Ngathayauk is 22 km (14 miles) southeast from Nyaung U. According to 2014 census, Pagangyi is a part of Yesagyo Township, is not categorized as urban, whereas Ngathayauk is categorized as sub-township with the population of around 6000.

2. In order to avoid losing agricultural land around Pagangyi, the extension area for Pakhangyi is selected at 11 km (6.8 miles) south of the existing settlement.

3. For the requirement of areas due to population increase and other additional functions in the immediate surroundings of Bagan and Nyaung U heritage zone, a separate extension area is foreseen. This area is 6.5 km (4 miles) southeast of Nyaung U in the direction of Ngathayauk, the potential growth settlement.

4. The natural and migrated population increase in the Influence Zone of around 300 000 should be distributed in the existing townships in the Influence Zone and in the above mentioned growth poles.

5. Since the Bagan Influence Zone with around 11 townships has an area of approximately 9000 km2 (3500 sq. miles), reachable by car within one hour, it is recommended that the areas for cottage industries, handicrafts and other tourist activities be distributed in several townships in the influenced.

6. For the whole Influence Zone to function as one harmonious and integrated area, it is required to improve the road network and the infrastructure. This concept of growth distribution in several townships is more economical from aspects of environmental management and infrastructural development, where appropriate and local technologies can be applied. Moreover, this development of dispersion is also favourable from the tourism aspects, since most visitors prefer to have contacts with the local communities and not being segregated in the hotel zones. From the infrastructural development, water supply and waste disposal systems should be the priority.
Regional planning concept of Bagan Influence Zone
The location of new town and growth pole Ngathayauk

Proposed plan of new town, 4 miles (6.4 km) from Nyaung U airport
Agricultural fields, toddy palm and other orchards are avoided in the new plan
Present situation of Ngathayauk

Priliminary Concept Plan for Nga ThaYauk

Proposed extension plan of Ngathayauk: Agricultural fields, toddy palm and other orchards are avoided for occupation
The agricultural land around Pakhangy

Proposed location of new town south of Pakhangyi
2.2 Regional planning and transportation (refer IPA 2.1.2)

The planning of Bagan must extend far beyond the boundaries of the Heritage Zones. These areas could develop to become threats but if planned properly would provide the means of solving many of the issues facing the Heritage Zones. Development controls will be required for an area extending at least fifteen kilometres beyond the heritage boundaries in all directions. The planning would also be linked to the main infrastructure and service lines, Ayeyarwady River, Mount Poppa as well as the towns of Pakokku, Ngathayauk and Chauk.

Considering the impact of developments at a greater distance, such as from areas that might experience development of polluting industries or structures that might have visual impact on the heritage, a broader zone around the entire heritage site needs to be defined. This greater monitored area would require basic controls on visual impacts and polluting activities. This area could be a zone that extends for example 15 kilometres in all directions from the edge of the finalized heritage site boundary. This area would extend up to the Pakokku Bridge to the west, Singu to the south and a similar distance to the west and north across the river.

The planning will be carried out by national experts such as the team proposed by the Association of Myanmar Architects (AMA) under the direction of the High Level Cooperation Committee. The Conceptual Regional Plan has been prepared in close cooperation with the local government authorities and taking into account a realistic approach to improving the existing circumstances. The Master Plan will also take into account all other ongoing planning projects such as the activities of JICA and UNESCO, particularly the preparation of the Integrated Management System.

The physical planning, zoning and regulations would be the basis for managing development and change in and around the heritage zones. This would be the basis for the heritage site managers and the local authorities to manage the site in respect to development controls. This would also be the basis for cooperation between all the various authorities that have activities in and around the Bagan that could impact the heritage site.

Considering that the population of the towns will grow, provisions are required for town extensions; however these need to be separate zones outside the heritage area. In addition to the detailed planning according to requirements of the new settlements, these new planning areas must also adhere to basic guidelines and bylaws to ensure that they don’t have any unacceptable negative impact on the heritage site.

The town areas Nyaung U and New Bagan (Myo-thit) which are related to Bagan Cultural Heritage Property are placed in the buffer zone but are closely related to the activities and functions within the property boundaries. There are however six villages that are within the boundaries which are Taung-bi, Myin-ka-ba, Bwa-saw, East Bwa-saw, Min-nan-thu and Thu-the-kan. Furthermore there are numerous villages in the buffer zone. These settlement areas have clearly demarcated boundaries. The governance of these areas, especially in respect to the zoning regulations of the Department of Archaeology is unclear. The cooperation between the local administration and the Department of Archaeology is insufficient.

Nyaung U is located on an old village site developing into a town during the colonial period. The documentation and analysis of Nyaung U town and its historical buildings, especially
from the colonial period would be essential as a basis for further conservation and planning of the town. New Bagan was established in 1990 when the people living within old Bagan were resettled. The tragedy was that this impacted both the heritage around old Bagan as well as the archaeology in the area of the new settlement. The impact of this resettlement on the community as well as on the heritage – monuments, archaeology and the setting- needs to be studied.

Several critical issues have already been raised in respect to controlling the rapid development of the town areas which has led to encroachments into the surrounding areas. The socio-economy of the towns would also be closely linked to the changes that are taking place in respect to the standard of living of the people.

These are areas where people live, building their homes which adapt to the requirements of the families. These areas would be constantly changing for example to respond to growing families or when the inhabitants earn more and expect to improve their standard of living. These, especially the towns, are the areas where external investors come in to establish businesses such as hotels, offices and shops. They also speculate on cheap land in the surrounding areas which are restricted to development, but it is presumed that over time the regulations can be overtaken or that the law can be blatantly disregarded. A practical and realistic strategy needs to be developed to take into account the needs of the community, but also to respond to the risks of uncontrolled growth and speculation on the safety of the heritage.

The development areas of the towns are slowly creeping into the surrounding landscape without a clear understanding of its impact. The villages, such Taung-bi and Myin-ka-ba which have not yet been incorporated into the towns, are bursting in their seams and transforming rapidly. There is a lack of understanding of the dramatic changes that are taking place within these settlement areas. Research is required on understanding the mechanisms of change taking place in each of the towns and villages. This would include the changes in demography, economy and requirements of physical infrastructure and services.

The boundaries of the settlements need to be fixed and regulations put in place to ensure that they are not changed incrementally. The changes within these boundaries need to be regulated while allowing for expansion in dedicated areas outside the heritage zones. This requires a regional plan to be put in place that caters to the additional needs of the heritage zones: a service zone with controlled development.

The town areas require specific planning tools to be put in place to ensure that development is guided. Planning should consider visions of what the town should look like and how it should function after ten and maybe twenty years. Strategies need to be developed to safeguard the specific characteristics of the towns. This could include the maintenance of green spaces and streetscapes. Detailed zoning is required with respective bylaws for new building designs as well as guidelines for the conservation of existing buildings, for infrastructure and for services. The regulations would also address function and usage of buildings and public areas.
Regional planning and transportation - Issues and actions (refer IPA 3.2.2)

The overarching issues for this cluster are the need for regional planning which encompasses the settlements, land-use and infrastructure development and transportation management. There are six settlements within the heritage property. Furthermore there are two main towns in the buffer zone closely linked to the heritage property and numerous villages. Development controls are required. Though there would be strict land-use regulations within the heritage area and to some degree within the buffer zone, planning is required in the surrounding area to deal with the development requirements of Bagan. These would include infrastructure such for services as well as transportation. Furthermore transportation management would be critical for access to the property and the circulation within the heritage property.

The actions provided in the following section will be addressing all these issues.

A. Settlement Planning

1. There are settlements within the heritage area that need clear development controls
   Prepare development controls for the settlements in cultural heritage property taking into account community requirements and enforce controls

2. There are towns and villages within the buffer zone that require clear development controls
   Prepare development controls for towns and villages in buffer zone taking into account the community requirements and enforce controls

3. Lack of understanding of settlement characteristics and local requirements
   To study characteristics of local settlements and their architecture to link with planning development controls considering local requirements

4. Colonial heritage of Nyaung U not taken seriously and not documented
   To study the colonial heritage of Nyaung U to develop means of safeguarding

5. No procedures for boundaries of settlements to be amended
   Establish legal provisions and procedures to amend settlement boundaries with clear parameters

B. Land Use Planning

1. The land-use within the heritage property is changing
   To freeze land-use within the heritage property with restricted change based on strict procedures

2. The land use planning and changes within the buffer zone and surrounding areas not regulated
   Land use planning within the buffer zone and surrounding areas needs to be planned along with development guidelines

3. The land use in the surrounding area is not regulated potentially allowing threats
   Land use within the Protective Planning Region to be controlled particularly activities that can negatively impact the heritage property
C. Infrastructure Planning

1. Water supply system is not adequate for the settlements
   To improve water supply system including distribution lines while ensuring that heritage is not damaged, particularly sub-surface archaeology

2. No systematic sewage system has been developed
   To improve sewage system including disposal while ensuring that heritage is not damaged, particularly sub-surface archaeology

3. Solid waste management is a major problem throughout the area
   To establish solid waste management system linking software and hardware and related regulations

4. Electricity distribution lines are visually impacting the heritage property
   To develop Master Plan for electricity distribution linked to road network with non-intrusive and appropriate designs

5. Telecom towers are visually impacting the heritage property
   To find appropriate solutions for telecom providers that ensures visual impact is minimal and acceptable

6. Haphazard road widening and black-topping taking place
   To develop Master Plan for road development linked to transportation planning

7. Existing airport at Nyaung U will soon not be sufficient
   Plans for airport links to Bagan without enlarging Nyaung u to be planned keeping in mind option of Pakokku Airport as an option

8. Railway linkage has great potential but is presently not
   To carry out immediate non-intrusive survey of sub-surface archaeology in areas considered to be under threat of development

9. Highway linkages
   Establish protocols for rescue archaeology and watching brief and implement when necessary

10. Jetty
    To establish partnerships with similar Buddhist sites carrying out archaeological investigations of high quality

D. Transportation Planning

1. Large busses and trucks are impacting the heritage property
   Heavy vehicles need to be banned from the all areas that might cause damage to the monuments and sub-surface archaeology

2. The means of transportation is not regulated nor planned within the heritage property
   A detailed transportation plan with vehicle categories is to be prepared for the area within the cultural heritage property and buffer zone.

3. Transportation within the buffer zone and surrounding areas not planned
A comprehensive transportation plan is required for the buffer zone and surrounding area to release pressure from the heritage property

4 Lack of options in transportation around cultural heritage property
Providing non-intrusive transportation system
2.3 Agriculture and landscape (refer IPA 2.1.6)

One of the most unique features of Bagan is the expanse of cultivated fields interspersed with ancient brick monuments. The cultivated fields create the setting for the monuments. There are however numerous factors which are impacting the agriculture which includes natural phenomena as well as changing human activities. It is mainly due to the lack of funds that the local community has not been able to cultivate more profitable crops and use machines, irrigation systems and modern technology.

The significance of the agricultural fields in respect to the overall value of the heritage site must first be determined. Accordingly, means of conserving this landscape need to be devised. The challenge is of course that this landscape depends on the farming community continuing their traditional means of farming.

These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business.

The Visual Landscape

The scale and beauty of Bagan is striking. The persistence or continuity must be considered of the landscape as well as the community and their activities. There is a close relationship between the cultural heritage property and its natural setting. The site is located on the bend of the Ayeyarwady River between the two hill ranges of Tantkyi-taung and Tuyin-taung.

The significance of Bagan is greatly influenced by the magnificent landscape. The unique landscape needs to be considered as the setting of the cultural heritage property, particularly taking into account the potential archaeology that lies under the surface. Such considerations would have major implications on the management system which would need to safeguard the attributes that qualify significance.

In the future the change in activities could impact the landscape. Change through neglect is something that will probably become more prominent over time. The existing landscape might be a new phenomenon – as an agricultural landscape – however even this could be considered a significant setting. To retain this, the form and methods of cultivation would also need to be retained.

As a setting, the visual integrity of the landscape plays a critical role in safeguarding the cultural heritage property. This means that two aspects have to be considered. There is the slow “internal” changing of the present landscape due to weather and traditional human activity. The present form of landscape is dependent on the local farmers continuing their activities. There activities are controlled by allowing farming only within a certain distance from the monuments.

There is however also the more dramatic change caused by “external” influences which could generally be taken as construction works. These could be towers, tall buildings and infrastructure works. Building heights are also controlled. There is however continued
pressure to provide services to the communities and tourist without sufficient consideration for the landscape.

**Landscape and Heritage Conservation**

The agricultural landscape of Bagan is special. It provides the setting for the magnificent temples. The agricultural landscape is the interface between the contemporary living cultural heritage of the villagers and the ancient historic site. This interface between the monuments and community activity is an important testimony to the continuity in the cultural heritage of Bagan. The challenge will be to continue retaining this landscape by ensuring the continued agricultural activities that would be considered appropriate for the heritage zone.

Two levels of research would be required on the landscape, the historic one and the contemporary one. These are of course very closely linked but a better understanding is required not only on what the landscape looked like physically in the past, but also how it functioned as an ecosystem. This would then need to be understood as it moved through time. What has changed and what has remained the same over the centuries since the Bagan period? To be able to retain the landscape, the planning would need to address the detailed mechanisms of ownership and usage as well as the trend of change being inflicted by tourism, the introduction of new technologies and agricultural methods and possibly even climate change.

Certain means of ensuring the continuation of the traditional agricultural practices would require external influences to be controlled. This could be done through legal measures linked to land use (dealt with by the land registration office) and zoning regulations (dealt with by the DAMN in close cooperation with the District Administration). The purchase of agricultural land within the heritage zone should only be allowed for local villagers.

The planning of the landscape would be part of the physical planning that need to be carried out for Bagan. This would be closely linked to the mapping and determining the ownership while controlling the sales of agricultural land within the heritage zone. The planners will need to work closely together with the land registration office, the District Administration and the Department of Archaeology. The methods used to plan out the conservation of such a landscape would require the expertise of agronomists as well as anthropologists and ecologists.

The methodology that is derived from the research and planning would need to be converted to management tools. These tools would then be included in the Integrated Management System for Bagan. The complexity of this however would require interventions at various levels and the establishment of support mechanisms that might need to be considered even beyond the Integrated Management System such as the farmers association and the establishment of the Bagan Heritage Brand.

**Agricultural Practice**

Agriculture is the most important means of livelihood for the local inhabitants in Bagan. Even though this area is considered to be the dry zone of Myanmar, people have been farming throughout history. Due to the fragile landscape and harsh climate not much has changed in
the means of agriculture and farmers have been very conservative. This has allowed for the landscape to be retained possibly as it was during the Bagan period.

There is no comprehensive understanding of what agriculture was like during the Bagan period. This could be studied through archaeological research or trying to study earlier sources of images and inscriptions. The question would be also whether there were changes in agricultural practices over the centuries which might have been linked to cultural but also climatic considerations. The research would need to look into what adaptations would still be considered appropriate for the heritage site of Bagan.

The planning would allow for a better understanding of the options for ensuring the continuation of traditional farming methods while allowing certain adaptations to take place that would still be considered appropriate. Mechanisms for guiding such developments could be put in place.

To carry out the studies various projects would need to be initiated with multi-disciplinary team of experts working closely with the farming community, the local government authorities and the DANM. Such research could be carried out in close collaboration with the various planning projects that have been suggested. Agronomists would also need to study the traditional methods of farming along with the trend to adaptations while considering its impact on the heritage, the landscape on the local economy.

The safe-guarding and promotion of the traditional farming methods will need to be part of the management framework. This would be a consideration that is put as compulsory for any planning project being carried out in Bagan. The agricultural practices will change over time, however the management system will need to set broad guidelines or mandatory considerations for any change that takes place with the farming methods to ensure that these changes can be considered appropriate for the site.

Non-agricultural Landscapes

There are certain areas in and around the cultural heritage property which is not farmed. These are particularly along the hill ranges of Tantkyi-taung and Tuyin-taung which are covered with shrub. Various strips of land along the Ayeyarwady River are also not farmed, though one must note that many of the flood areas particularly on the islands are seasonally cultivated. There are also areas around temples and in village and town areas which are not cultivated and are usually used for community or commercial purposes.

There are certain areas which are not being cultivated despite the fact that they are agricultural plots. There are various causes for the owners to stop plantation, which could be due to family reasons. However a big impact was when the community from Old Bagan were shifted to New Bagan. This is said to have caused not only a major burden on the individuals but also created chaos in the traditional community activities. Many families left farming to engage in other income generation such as tourism.

Development pressure has become one of the major causes for change in landscapes. There has been a tendency for plots to be sold to speculators and developers who plan on using this land for commercial purposes. Usually the plan is to build resorts. These plots are fenced in and are not cultivated which then changes the landscape entirely.
Agriculture and Landscape - Issues and actions (refer IPA 3.2.6)

The site is located on the bend of the Ayeyarwady River between the two hill ranges of Tantkyi-taung and Tuyin-taung. One of the most unique features of Bagan is the expanse of cultivated fields interspersed with ancient brick monuments. The cultivated fields create the setting for the monuments. There are however numerous factors which are impacting the agriculture which includes natural phenomena as well as changing human activities. There is a close relationship between the cultural heritage property and its natural setting. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business.

The actions provided in the following section will be addressing all these issues.

A. The Visual Landscape

1. Visual landscape around monuments not maintained
   To ensure visual landscape is maintained around monuments by regular monitoring

2. Visual integrity along Ayeyarwady River threatened by various development and projects
   To ensure visual integrity is maintained along Ayeyarwady River and development works and projects are controlled

3. Visual integrity of prominent locations such as hills areas threatened
   To ensure visual integrity is maintained on prominent locations such as the two main hill ranges

4. Visual integrity is changing due to plantations
   To control plantations that could changing the visual landscape

B. Landscape and Heritage Conservation

1. The landscape defined by archaeology is threatened by development
   To monitor development and ensure the landscape defined by archaeological is safeguarded

2. The ownership patterns are changing impacting the landscape
   To ensure that ownership of land in the landscape is maintained to safeguard the landscape

3. Tourist activities and required infrastructure and services are impacting the landscape
   To control tourism activities as well as development of tourism infrastructure and services are appropriate

4. Change in micro-climate due to changing global climate and activities impacting landscape
   The impact due to changing micro-climate to be studied in detail and remedies sought

5. Impact of changing functions and usage impacting landscape
   Land use and functions to be controlled and monitored to ensure landscape is maintained
C. Agricultural Practice

1. Agricultural land is being neglected and this area is overgrown with bushes
   To find means of ensuring that farmers continue cultivating the land using various
   means of support and awareness

2. Threat of changing crops which could have impact on landscape, monuments and
   archaeology
   Fine appropriate crops to improve livelihood but ensure landscape, monument and
   archaeology are safeguarded

3. Threat of irrigation which could have impact on landscape, monuments and
   archaeology
   Fine appropriate means of irrigation to improve crops while ensuring landscape,
   monument and archaeology are safeguarded

4. Threat of mechanization which could have impact on landscape, monuments and
   archaeology
   Fine appropriate crops to mechanize ploughing and other activities while ensuring
   landscape, monument and archaeology are safeguarded

5. Threat of fertilizer use and change in soil consistence which could impact heritage
   Fine appropriate means of improving soil to improve crops while ensuring landscape,
   monument and archaeology are safeguarded

D. Non-agricultural Landscapes

1. Lack of maintenance of hilly areas
   The hilly areas including Tantkyi-taung and Tuyin-taung must be maintained with
   vegetation to ensure soil stability

2. Very little forested areas remain and these are not maintained sufficiently
   Remaining forested areas must be defined and protected including indigenous
   vegetation

3. River areas are threatened by development
   River areas particularly along the banks need to be protected from development as
   well as from erosion

4. Landscape in and around settlement areas are not being maintained
   Landscape and environment around settlements must be maintained to ensure
   appropriate and well maintained areas
### 2.4 Community – socio-economy and livelihood (refer IPA 2.1.7)

The communities living in the towns and villages must be considered as stakeholders and potential caretakers of the heritage site. The vast extent of the site does not make it practical for dedicated site managers to constantly monitor and guard the entire site. It would therefore require the partnership of the local inhabitant. The landscape itself is dependent on the care provided by the local farmers. In the case of intangible heritage, it is the local community that ensures its continued sustenance.

The community in Bagan is however changing, especially when considering the new investors moving to Bagan and the locals having to move out due to lack of income and rising prices. The change in the community will have direct impact on the heritage site, in respect to the landscape, setting and the activities that are an intrinsic part of the heritage site. Change is clearly inevitable, however a balance must be sought to retain the character of the site and ensure sustainable development.

This would require detailed discussions and studies that would lead to a better understanding of the community in Bagan. It is necessary to understand how they contribute to the value, participate in safeguarding the heritage and what possibilities there would be to ensure their continued participation in conserving Bagan.

**Livelihood from Agriculture**

Agriculture is still one of the main community livelihoods, even though only about six to seven months can be considered as farming season. The remainder of the time the people would probably need to get involved in other activities. It is interesting to note that the main tourist season only overlaps the farming season by maximum two months. If it would be possible to coordinate the two, it might just be a means of ensuring that the locals continue their farming during the rainy season and are then involved in tourism during the dry season. Many farmers are already involved in other trades such are carpentry. In any case, the community livelihood depends on additional sources of income beyond agriculture, which could be a boon but also a threat. This balance must be studied to ensure that the local economy and standard of living improves while conserving the farming heritage of Bagan.

Detailed research would need to be carried out on the present agricultural practices and how these are linked to the livelihood of the local community. The linkage of agricultural practice to traditions, the landscape and the impact on heritage would need to be studied in detail. A system for supporting the farmers must be established. This would need to be both in respect to finance and technical support that would be appropriate for the heritage site. Support could begin with setting up a farmers association. The adding value, processing, packaging, marketing and branding of products could be looked into under the farmers association.

The planning outcome would be an organized farming community that has better options for ensuring feasibility of continuing with traditional farming practices. The hardship of continuing with traditional farming would need to be compensated with a certain system of assurance for the farmers that even if the harvest is destroyed, they have a support system to fall back on. Should it be possible to support their farming activities while promoting secondary sources of income during the dry period, it could become a means of ensuring improved incomes, raised...
standard of living and a contentment to be part of the effort in conserving the unique heritage site which clearly also has religious significance.

The farming community itself would need to get organized. For this the question would be whether this could be achieved by the local farmers themselves or whether some external facilitators would be required. Agricultural experts would however be required for the entire product processing, packaging and marketing. The establishment of a Bagan Heritage Brand would need to be studied in detail; especially how this branding can ensure the farmers profit and the quality is guaranteed.

The means of ensuring improved income, livelihood and standard of living while conserving the traditional agriculture and the agricultural landscape will be one of the most important objectives of the Integrated Management System. This means that the challenge would be to determine how the management system can contribute to this complex endeavour.

Livelihood from Traditional Activities

Marketing strategy for Bagan products, strategy for appropriate community livelihood and promotion of traditional skills are so closely related that it would be best to look at them as a single endeavour of livelihood linked to the traditional skills and the production of local products. These products would need to be marketed. One of the most important aspects of local heritage is the production of various crafts. These are usually sold in the local markets and sometimes to the walk in tourists or on stalls by the temple and pagodas. The crafts products such as lacquer ware, sand painting, as well as special agricultural products are quite unique for Bagan and would need means of marketing that allows them to profit from being produced in a place like Bagan. Such added value would help the local community profit from being in a heritage site while being proud of their heritage.

The products produced in Bagan which are unique, of high quality and an expression of the local culture would need to be identified. The market possibilities for these products would then need to be studied along with production methods. The markets would need to be studied, whether local, tourist or for export. A study would need to be conducted on the traditional crafts of Bagan and whether these are still exiting and being practices. This is closely related to the conservation requirements for the monuments and artefacts and in certain cases if not being practiced might even need to be revived.

The outcome would be a clear understanding of the feasibility of producing and marketing the products that are typical for Bagan. The linkages of the production to conservation practices, craftsmanship and the agricultural landscape would also need to be determined for planning purposes. The planning outcome would also need to target the need for crafts-persons for conservation works on the site.

The studies on handicraft, their production and the market feasibility would need to be studied by a team comprising of anthropologists with knowledge of product manufacturing and economists who understand the market for handicraft and local products. This information would need to be discussed and shared with the tourism sector as well as the Department of Archaeology and National Museum, especially the newly proposed section on
research and training (or they could be the ones carrying out this research in close collaboration with the museum).

The promotion of local crafts and agricultural products would need to become a key consideration in the strategy of managing the site. The crafts would be required to improve the livelihood of the local community while ensuring that they are available when conservation work needs to be carried out. The agricultural products would support the farmers who are a key partner in maintaining the landscape around Bagan. These aspects of local livelihood, local crafts and the marketing of these products will become part of the management framework and strategy to ensure that there is continued community involvement in the heritage site of Bagan.

**Community Empowerment and Local Governance**

Communities have not been involved in decision-making in respect to the future of their own livelihoods and habitat. Even though there is a close link between community activities and the cultural heritage site, there is a lack of acceptance or acknowledgement of their contributions. The local communities will need to become caretakers of the cultural heritage property and only then will it be possible for such a large area to be monitored and maintained. This would however require the local community to earn sufficiently to be able to improve their standard of living.

The empowerment of the community and their direct and active participation in the making decisions that affect their activities within the cultural heritage property is a critical part of the democratic process. Within the management framework and vision of this Integrated Management System, the local communities would be able to continue their customary practices. Not only this, but the system would need to support the traditional activities which are closely linked to defining the traditional landscape.

The involvement of the local community in the governance of the area would ensure their cooperation in monitoring and maintaining of the cultural heritage property. The devolution of certain powers to the local level has been a critical step in ensuring efficient, effective and realistic management. This would be the basis to ensure development along the lines defined by the Sustainable Development Goals (SDGs) while ensuring that the needs of the communities are taken into account.

**Livelihood from Tourism and New Activities**

The tourism sector will become the major employment provider which will impact local economic activities. We can already see the new generation embrace activities linked to the tourism sector, particularly in working in hotels, restaurants and as tour guides. This is obviously work that seems to fit better into the contemporary image for those who have had basic education. This is also linked to the fact that more locals are getting exposure to what is going on in the cities and beyond the national borders.

A balance must be sought between traditional activities and newly introduced activities such as those linked to the tourism sector. Traditional activities that are linked to maintaining crafts and skills must be supported. The manufacturing of local products whether handicrafts or agricultural products must be prioritized by the tourism sector. Should the local community
give up on their local activities and totally embrace only new professions, it would be rather disastrous for Bagan.

**Community: Socio-economy and Livelihood - Issues and actions (refer IPA 3.2.2)**

The overarching issues for this cluster are linked to community livelihood and appropriate activities within the heritage property. The landscape is dependent on the care provided by the local farmers. Agriculture is still one of the main community livelihoods. Marketing strategy for Bagan products, strategy for appropriate community livelihood and promotion of traditional skills are so closely related that it would be best to look at them as a single endeavour of livelihood linked to the traditional skills and the production of local products. Even though there is a close link between community activities and the cultural heritage site, there is a lack of acceptance or acknowledgement of their contributions. The tourism sector will become the major employment provider which will impact local economic activities. We can already see the new generation embrace activities linked to the tourism sector, particularly in working in hotels, restaurants and as tour guides.

The actions provided in the following section will be addressing all these issues.

**A. Livelihood from Agriculture**

1. Traditional products are not being produced or sold
   Traditional agricultural products need to be supported and prioritized to ensure continuity in agricultural heritage

2. New appropriate crops not being considered for farmers due to old regulations
   To carry out research on new crops that would be acceptable to grow within the property but or in buffer zone and help farmers diversify

3. Products are sold cheap in bulk and wholesale not allowing improved income
   To provide means of processing and packaging to add value to the agricultural products

4. Marketing not being done for Bagan products to allow better sales
   To establish a marketing strategy for agricultural products which would include quality control, location and branding

5. Farmers have a hard time with local conditions and if possible would stop farming
   To provide support, subsidies and other forms of compensation to try to convince farmers to continue cultivating their field

**B. Livelihood from Traditional Activities**

1. Promotion, support and training in production of handicrafts is lacking
   To ensure that traditional crafts and required training and support is provided to the community

2. Traditional building crafts are not promoted and are lacking even for restoration works
   Traditional building crafts must be promoted, restored, improved and a sufficient network of artisans developed for conservation works

3. Traditional activities and products are not linked to any market
Markets must be found for the traditional services and products, such as linked to the tourism industry

4 Traditional performances and entertainment not supported
   Traditional performances and entertainment need to be supported such as pagoda festivals or puppet shows

C. Community Empowerment and Local Governance

1 There is a lack of awareness of rights and responsibilities with the local community
   Awareness programmes need to be established to empower local communities and ensure proper local governance is developed

2 Community members are often not included in the decision making process
   Community members must participate in the decision making process, particularly when it impact their livelihood

3 Community often does not profit from the activities carried out within the heritage property
   All activities within the heritage property must consider how the local community can profit

4 Development works are haphazard and not sustainable
   All development works must be assessed for their appropriateness, whether they are sustainable and possibly linked to the SDGs

D. Livelihood from Tourism and New Activities

1 Local community is often not employed in tourism sector or only for certain tasks
   Local community members must be given priority in tourism sector employment

2 Tourism sector does not always support local products
   Tourism sector must develop market for local products to ensure local community profits directly

3 Hardly any funds from the tourism sector flows back into local community development
   Tourism sector must support traditional activities and community development which includes traditional agriculture and crafts

4 Tourism brings with it numerous new activities and influences change
   The change caused by the tourism sector must be clearly monitored and impacts controlled

5 Local communities are not diversifying beyond traditional activities and the tourism sector
   Appropriate diversification in employment possibilities for local community must be carefully investigated and developed
PART THREE
INFRASTRUCTURE, CIRCULATION AND
TOURIST ACCOMMODATIONS
3.1 Accessibility of Bagan

(Refer IMF 4.2.1)

With the development of Bagan as an important heritage property which is a site of pilgrimage as well as a major tourism destination, transportation planning has become critical for sustainable development. Transportation is critical for accessibility as well as movement around the enormous site.

Planning of transportation and transportation infrastructure will provide an overall strategy for improved accessibility of Bagan. This will have four components: linkage by air, by road, by rail and by river. Each of these components will consist of an assessment of the overall national strategy and how it relates to Bagan. Based on the national level strategy, a detailed local level strategy will be established as the basis for detailed planning. A feasibility studies is needed in respect to requirement, possible number of visitors and their profiles, and how each of the components could contribute to the need for accessibility. This will then be followed by the detailed plan for infrastructure improvement requirements for each of the components.

The long-term planning of the airport facilities is a primary concern. Considering its proximity to the cultural heritage site, the existing airport at Nyaung U cannot be enlarged, flight frequency should not be increased and no larger planes should be allowed to land. This means an alternative solution would need to be considered. One option would be to use the Pakokku airport which needs to be renovated and equipped.

The highway connection links from Mandalay in the northeast and from the main Yangon to Mandalay highway near Meiktila to the southeast. Road connections will be improved between Nyaung U and the airport at Pakokku, to Mount Popa and south the Chauk. A further connection is needed between the highway and the Chauk to Myo-thit (New Bagan) road to ensure a bypass around the Heritage Zones. The railway system has great potential for the future. The upgrading of the entire railway network would improve connections to Bagan. A train link from Nyaung U to Pakokku airport will be an immediate requirement should the airport be developed there. This local network could then be extended to Chauk and Mount Popa.

Transportation along the Ayeyarwady is a national issue, however must consider the impact on Bagan. This means that traffic would need to be controlled in respect to quantity, loading as well as impact (pollution, noise). Any work on engineering the river to divert flows or carry out dredging to improve river navigation must go through stringent impact assessments. The river is however a means of accessing Bagan which provides visitors with a wonderful experience. The number and size of tourist vessels must be controlled as well as where they dock and for how long. Clearly there should not be any moored to the river banks being used as tourist accommodations.

(Refer Regional planning and transportation IPA 2.1.2)

Transportation to Bagan needs to be strategically planned. Increased air traffic to Bagan will require appropriate planning for the airport. Increased traffic on the river and access to Bagan
would need to be considered, in respect to both tourist traffic as well as the more heavy transportation of goods. Developing the railway would need to be considered as a sustainable option for the future. The introduction of the steam engine for tourist is a commendable first step in improving the tourist experience in Bagan. The road network to Bagan needs to be strategically planning in close collaboration with the extension plans and transportation planning within Bagan.

How does Myanmar want to develop its domestic airline network? Where does Myanmar want to have its airports with international connections? In respect to Bagan, the discussion arises on the capacity of the existing airport and its impact on the heritage property. Any need for expansion would raise the question on the possibilities of shifting the airport, such as to Pakokku. The road and railway link between Pakokku to Bagan would then need to be upgraded. By crossing the Ayeyarwady River, this trip between Pakokku and Bagan in itself is a worthwhile experience when efficient transportation service is established.

(Refer Tourism management and infrastructure IPA 2.1.3)

The accessibility to Bagan must be improved considering rising visitor numbers while taking into account its impact on the heritage site. Nyaung U Airport must not be extended and flight frequency must be restricted. Should access to Bagan require larger flights and higher flight frequency, the option of moving the airport to other sites such as using the partially built one in Pakokku needs to be considered. Bagan must become a no-fly zone. Railway transportation must be prioritized for tourism development. This could become especially important when the airport is relocated. Special trains with steam engines could become a major tourist attraction. Road networks must link to the heritage sites with the main connections being outside the heritage area. Travel along the river shall be promoted. Infrastructure development along the river banks shall be restricted. No major development of jetties and piers shall be carried out within the heritage area. Floating hotels shall not be allowed within the heritage area, can however be promoted further upstream or downstream.

(Refer Regional planning and transportation IPA 3.2.2)

[7] Existing airport at Nyaung U will soon not be sufficient
Plans for airport links to Bagan without enlarging Nyaung U to be planned keeping in mind option of Pakokku Airport as an option

[8] Railway linkage has great potential but is presently not functioning properly
To prepare detailed plan for railway network linking to national grid and to important locations in and around Bagan

[9] Highway linkages not sufficient
Plan out highway connections and network for better accessibility of Bagan as well as connection to surrounding areas

[10] Jetties not developed
To establish a plan for river transportation and build jetties at critical positions linked to regional planning and proposed development
Connection by Air

\textit{Airport planning (Refer AMA 7.6)}

Presently, about 90 percent of the international visitors come to Bagan/Nyaung U by air, the Nyaung U airport has around 20 take-offs and landings daily during the tourist peak season of months between November and March. As forecasted by the Ministry of Hotel and Tourism, the international tourist shall reach 7.49 million in 2020, and there shall be continued increase of international visitors to Myanmar as presented in this report. In proportionate to the increase of tourism, the number of daily take-offs and landings at Nyaung U airport shall also escalate, causing more vibrations and also more air pollution to the heritage zone. As forecasted above, the yearly visitors shall reach more than 2 million after about 3 decades, in proportion to this, the number of landings and take-offs per day shall increase to 100, implying there shall be about one flight in about every 7 minutes, the frequency of a normally busy airport by international standards. From this, an issue emerged for consideration of moving the airport to the other side of the river, which can also be accomplished with reasonable means since there is already an existing airport in Pakokku that only needs to be refurbished. In Pakokku, just 25 km (15 miles), 20 minutes' drive from Nyaung U, the airport in Pakokku is of the same size, unused in the past decades. It is recommended that this issue should be discussed between the relevant ministries and the local governments eventually plan to shift the entrance to heritage zone by air from Pakokku airport instead of from Nyaung U.

\textit{Airport (Refer JICA)}

Nyaung U Airport is the only airport in Bagan, located in the eastern part of Nyaung U Town. Opened in 1972, the terminal building was renovated in 2004. Airport facilities are managed by Myanmar National Airway. Domestic companies operate only domestic flights by eight companies, there is no international flight. The flights departing to Bagan are mainly Yangon, Heho and Mandalay. Main operation hours are morning and evening, and about 15 to 35 flights per day arrive and depart. There are 700 passengers / day in the peak season of tourism and 150 passengers / day in low season.
Connection by River

**Jetties and waterways (Refer AMA 7.5)**

Presently, 90% of all international visitors, come to Bagan / Nyaung U via air, this is not the desirable choice for all. The another alternative, though river transport is pleasant as well as less expensive, however there are many obstacles, the river ships cannot navigate during rainy season, and there are no properly constructed jetties for all weather. It is therefore to construct new and proper jetties.

**Port (refer JICA 3.2.3 Social and Transportation Infrastructure)**

There are two jetties in Bagan area. One is in Nyaung U river port located in the north-eastern part of Nyaung U Town, and the other is Z Jetty located north of Old Bagan. According to the Department of Inland Water Transport (DOIWT), while Nyaung U River Port is used throughout the year, Z Jetty is mainly used during high season from October to April. The shipping vessels are comprised of one governmental company and six private companies.

A ship from Mandalay, located 220 km from Bagan, is operating at Nyaung U River Port, 10 hours from Mandalay to Bagan and 12 hours from Bagan to Mandalay. The route to the river port of Nyaung U River Port will be on the north side of the Ayeyarwady River in the dry season and in the rainy season it will operate a shallow route on the south side. Since the operation hours are during the day, there is no route signpost in the river. Besides, cruise ships travelling around Bagan sail at the southern route from 16:30 to 20:00.

As current environment, a width about of 230 m is secured as a range where passengers get in and out and unloading of baggage is possible at Nyaung U River Port. There are three simple wooden scaffolds for loading / unloading. The way of entering the river port is only one place on the west side. There are no modern port facilities. According to the DOIWT, the highest water level ever recorded in August 2016. As of the end of January 2017, the difference between the highest water level and the lowest water level was measured to be around 12 m. It is desirable to develop a port facility that can respond to this difference in water level throughout the year. In developing the Nyaung U River Port, no serious environmental impact is expected, but environmental impact assessment is required before the project implementation.

Connection by Rail

**Railway (Refer JICA)**

Bagan Station is on the route between Yangon and Mandalay. The train by Myanmar Railways operates daily with a night-train between Yangon and Bagan in 17.5 hours (1 train / day) and between Mandalay and Bagan 7.5 hours (2 trains / day). Due to the improvement of grade of intercity roads and large buses, railway has not been able to become a major mode of transportation in recent years despite cheap fares. The average number of passengers per train is about 30 to 100 on Yangon route and Mandalay route are about 70 to 200 passengers. Foreign passengers are about 200 people per month, and local users are occupied mostly.
Presently, 90% of all international visitors come to Bagan / Nyaung U via air, this is not the desirable choice for all. The alternative, though river transport is pleasant as well as less expensive, however, there are many obstacles, the river ships cannot navigate during the rainy season, and there are no properly constructed jetties for all weather. It is therefore to construct new and proper jetties.

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**Long Distance Bus (Refer JICA)**

In April 2015, a new bus terminal dedicated to long distance buses (Bagan Shwe Pyi Highway Bus Terminal) was newly established at a location 5 km south of Nyaung U from Kyaukpadaung. There are 50 bus companies in the site of about 5 hectares, 6 buildings for restaurants, 30 stores, 60 rooms’ hotel, refuelling stations and toilet buildings. 28 long-distance bus operators and 12 minibus operators are using the terminal. Major destinations of long-distance buses departing from this bus terminal are major cities of Yangon, Mandalay, Naypyitaw, Taunggyi, Lashio, Pakokku, Myingyan, Chauk and other cities. The majority of passengers are local, especially Yangon route has few foreigners. Passengers changing from long-distance buses to short-distance buses will use private transportation means such as taxis and light trucks.
3.2 Circulation Planning within Bagan

(Refer IMF 4.2.1)

Detailed transportation and transportation infrastructure plan for the Heritage Zones of Bagan will be prepared. Guidelines will determine the design of the categories of roads and paths, which would include surface material, drainage, lighting, plantations, signage and integration of service lines. Special provisions will be made for parking and availability of public transportation for visitors. The transportation within the Heritage Zones will be planned in detail with all roads and paths being designated to specific categories of vehicles.

The roads and paths will be categorized based on the allowed form of transportation which would be differentiated based on degree of possible impact on heritage, i.e. size, weight and form of motorization. The categories are (1) busses and trucks, (2) vans and cars, (3) motorized three and two wheelers, (4) Non-motorized vehicles and (5) pedestrian areas. Special consideration might be given to electric vehicles. The transportation network within the Heritage Zones will be planned according to these categories of vehicles and the potential impact on heritage and environment. Each category would also have guidelines in respect to infrastructure design including surface finish.

(Refer Regional planning and transportation IPA 2.1.2)

Transportation within Bagan heritage site must be planned in detail to ensure efficiency for the local population, but also considering the tourist experience along with ensuring that it doesn’t have any major negative impact on the heritage. Considering the many examples of the negative impact of motorized vehicles on monuments, traffic zoning along with the categorizing of size/weight of vehicles to specific routes is required, whereby certain areas can only be accessed by light, non-motorized vehicles.

The transportation within the Heritage Zones will be planned in detail with all roads and paths being designated to specific categories of vehicles. The categories could be defined by weight, number of passengers and means of motorization. Special consideration might be given to electric vehicles. Each category would also have guidelines in respect to infrastructure design including surface finish.

The development of these different forms of transportation will also need to be planned in connection with the overall national strategy. These would be considerations in respect to the airport, railway station, river jetties, and road accessibility and parking. Any further town and tourist accommodation developments would be linked to transportation access.

Transportation planning would be an essential part of ensuring the protection of the heritage site by channelling the visitors to specific areas; ensuring vehicular traffic does not damage monuments. Transportation is however also essential for the smooth functioning of the heritage site and allowing good accessibility from other parts of the country.

The railway system has great potential for the future. The upgrading of the entire railway network would improve connections to Bagan. A train link from Nyaung U to Pakokku airport will be an immediate requirement should the airport be developed there. This local network could then be extended to Chauk and Mount Poppa.
(Refer Tourism management and infrastructure IPA 2.1.3)

Tourist activities must ensure that they do not impact the heritage which includes the monuments, the subsurface archaeology as well as the cultural sentiments of the community. This would need to be based on detailed studies and discussions with community members. All activities must be planned taking into account the number of tourist that will be visiting the site over the next years and considering the carrying capacity of each of the monuments and sites. In certain cases, such as monuments with mural paints, might require controlling the number of tourist at any one time and overall daily restrictions, possibly by charging extra fees to cover direct management expenses.

Transportation within the heritage site will be a critical issue in ensuring heritage is protected. The distribution of visitors throughout the site in sustainable numbers needs to be targeted. A hierarchical plan for transportation within the heritage site shall be established. This means that a detailed plan of vehicular movement must be prepared, agreed upon and adopted before any further infrastructure is developed. The plan shall allow general access to cycles and electric scooters with greatest restrictions to big busses. Accordingly parking facilities shall be provided with a hierarchical system of transportation.

Road Network and Communication Systems (Refer AMA 7.3)

As mentioned, the whole zone of Nyaung U, Bagan old city areas, Bagan Myothit and the villages in between, amounting roughly to 25 km², (10 sq. miles) must be considered as one entity from the road and traffic planning aspects. The traffic count survey carried out in January 2015 shows that there are 1600 heavy vehicles over 3 tons, 5500 small cars and 3400 motor bikes are communicating in and out between 6:00 and 19:00 hours daily into this heritage zone of around 45 km², (17 sq. miles). From that traffic, the buses and the heavy trucks can be harmful to the ancient monuments in the longer perspectives. The attached figure shows the traffic flow from Nyaung U –Kyaukpadaung road is about 20% more, however this traffic is less harmful since it is directed towards Nyaung U without bypassing areas with higher density monuments. The more serious traffic flow is from Bagan-Chauk road, where around 50% of the heavy vehicles pass through the areas around walled city before turning into Anawrahta road.

Another serious point is the old Bagan-Nyaung U road in the north. There is historically important Tharaba gate, the only surviving ancient city gate of the period. The study of Myanmar Engineers Association showed vibrations caused by traffic have negative results on the old brick structure, constructed of scientific vaults, on which Bagan architecture takes pride. In general, the vibrations from vehicle traffic can have negative structural effects on the ancient monuments; for that reason, measures should be adopted to minimise the traffic in the zone with most monuments.

The followings are the concepts of future road network for the heritage city: -

1. A new road should be constructed joining Bagan-Chauk road and Nyaung U-Kyaukpadaung road at about 2 km south of Bagan-Myothit, (the length around 12 km or 7.5 miles) In reality this road exists partially, it needs to be improved for heavy traffic.

2. The zone bordering Airport road in the south, Anawrahta road in the north and Bagan-Chauk road in the west and Nyaung U- Kyaukpadaung road, an approximate area of 23 sq. km (9 square miles) in the northeast should be made free of all motor traffic. This would mean only horse carts, electric cars and other non-motorised vehicles would be allowed in this zone.
3. The roads bordering motor traffic free zone, (Airport road in the south, Anawrahta road in the north and Bagan-Chauk road in the west, Nyaung U-Kyaukpadaung road in the northeast) are improved for buses, trucks and all other motorized vehicles.

4. The above mentioned road improvement would require a new short road of length 1.6 km (1 mile) in the north of Bagan Myothit to join to the Airport at about 2 km north of Bagan-Myothit.

5. Here shall be bus and motor vehicle stops with public conveniences along the main roads bordering motor traffic free zone. In the traffic free zone, there shall be paths and ways for non-motorised vehicles and public conveniences.

6. To avoid traffic through Tharaba gate on the old Bagan-Nyaung U road, there shall be a diversion road in the northeast of Htilominlo, along the stream close to Shinbome monastery; this shall also protect Shinbome monastery being flooded in the rainy seasons.

Motor traffic free zone, the bypass road to avoid traffic through Tharaba gate and positions of bus stops.
3. The roads bordering motor traffic free zone, (Airport road in the south, Anawrahta road in the north and Bagan-Chauk road in the west, Nyaung U-Kyaukpadaung road in the northeast) are improved for buses, trucks and all other motorized vehicles.

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Number and kind of vehicles commuting daily into the Bagan heritage zone:

A new road should be constructed joining Bagan-Chauk road and Nyaung U-Kyaukpadaung road. It needs to be improved for heavy traffic.
Road Network (refer JICA 3.2.3 Social and Transportation Infrastructure)

The roads in the Bagan are defined as 1) intercity roads, 2) urban roads, 3) inner roads, 4) village roads, and 5) others, depending on the positioning of the routes and the road surface conditions. Jurisdiction of roads for the maintenance and management are Ministry of Construction (MOC), Township Development Committee (TDC), and BOT by private enterprise. The road in the cultural heritage area is the jurisdiction of Department of Archaeology and National Museum (DANM).

In general, intercity roads and urban roads are asphalt / tar simplified pavement. The condition of the road surface is good in the section where the construction is new, but the old section has many pot holes and cracks. Most of the roads of the other divisions are unpaved. The road managed by TDC is 30 sections (total extension 17.3 km), and only about 5 km is paved. Despite being an only road that accesses the monument in the cultural heritage area, the road condition is unpaved and there are no drainage lines and it is not generally good. In the dry season, dust on the road obstructs the visibility, and in the rainy season, water stays in a specific section, causing troubles in traffic due to muddy and water puddles. In addition, at the intersection of dry river and the road, most of the road structures have water flowing on the road surface, there are few drainage facilities under the road surface. As a result, at the time of flooding, there will be traffic stoppages ranging from several hours to several days on inter-city roads and urban roads as well as intra-regional roads. Street lighting is only installed in a part of the urban road, and after sunset, on many roads it is dark and the visibility is bad. Especially it is in a dangerous situation for tourists returning by E-bikes after watching sunset.
3.3 Visitor Accommodations and Infrastructure

(Refer IMF 4.2.1)

The number of visitors to Bagan is increasing steadily and increasingly more people are looking for accommodations in Bagan. The visitor profiles cover a wide range from the high-paying luxury tourists, to backpackers and national visitors and pilgrims. This requires various typologies and standards of accommodation. Inversely, the type of accommodations and their marketing can also influence the tourist profile. A detailed study is required of present visitor numbers and profiles over the year, linked to the national tourism strategy and extrapolation scenarios for visitors to Bagan over the next decades.

The basic strategy for visitor accommodation will be developed as per the outcome of studies on present visitor profiles and extrapolation scenarios. The main focus and support will be given on developing tourist accommodations outside the cultural heritage site. An example can already be found in Hotel Zone 4. These areas will however be developed to ensure appropriate local characteristics while providing the necessary services and entertainment for the tourists and allowing the local population to profit from this.

Considerations will be made on allowing tourist accommodations in town areas and possibly in the villages in a controlled manner. This will possibly mean the introduction of upgraded residential buildings and accommodations in heritage buildings that are restored and maintained. This will be a motivation for conserving historical and local buildings (and vernacular architecture in general). The construction of new buildings for such purposes will be dissuaded.

These should be incentives for conserving historical buildings and providing village style accommodations. The wonderful colonial period buildings in Nyaung U must be conserved, possibly through change in usage. Even the wooden framed buildings that provide the town with a distinct character must be conserved. In Myo-thit (New Bagan) the situation is different, since this is a town that was established only in 1990. Similar incentives could be used to conserve the wooden monasteries around Bagan. Certain monasteries which have been recently lost could be re-established to provide pilgrims with simple accommodations. The income source would be a great support for the monasteries, keeping in mind that the monasteries cannot request for support themselves.

Visitor accommodations have become one of the greatest threats to the Heritage Zones. The existing hotels and guest houses within the heritage site, including Hotel Zones 1, 2 and 3 will be assessed as individual cases to ensure that they do not impact the heritage. Resort complexes have been built in critical areas of the Monument Zone, such as in Old Bagan and along the banks of the Ayeyarwady River. The designations of Hotel Zones (which are Hotel Zone 1, 2 and 3) have been removed. Necessary measures will be taken and over the next 15 years these hotels and resorts will be phased out.
Visitor accommodations have become one of the greatest threats to the Heritage Zones. Resort complexes have been built in critical areas of the Monument Zone, such as in Old Bagan and along the banks of the Ayeyarwady River. Many of these reports encompass listed monuments and construction has taken place over archaeology. This trend must stop. The designation of Hotel Zones that have been carved out of the Monument Zone (which are Hotel Zone 1, 2 and 3) must be removed. These Hotel Zones undermine the authority of the Protection and Preservation of Cultural Heritage Regions Law of 1998.

The Hotel Zone 4 however provides the basis for an appropriate tourist accommodation strategy. More such Hotel Zones outside the Heritage Zones (MZ, AZ and PZ) will need to be identified, with however better planning. The Hotel Zones must be developed with sufficient commercial facilities and activities that they become sustainable entities. This must link to the activities of the local communities, supporting their livelihood.

There are possibly over a hundred hotels and guest houses within the town and village areas of the Heritage Zones. These are not always appropriate and in many cases are illegal. Guidelines are needed for visitor accommodations within the town and village areas. These should be incentives for conserving historical buildings and providing village style accommodations. The wonderful colonial period buildings in Nyaung U must be conserved, possibly through change in usage. Even the wooden framed buildings that provide the town with a distinct character must be conserved. In New Bagan the situation is of course different, since this is a town that was established only in 1990.

Similar incentives could be used to conserve the wooden monasteries around Bagan. Certain monasteries which have been recently lost could be re-established to provide pilgrims with simple accommodations. The income source would be a great support for the monasteries, keeping in mind that the monasteries cannot request for support themselves.

The main focus and support needs to be given on developing tourist accommodations outside the heritage areas. An example can already be found in Hotel Zone 4. These areas must however be developed to ensure certain characteristics while providing the necessary services and entertainment for the tourists and allowing the local population to profit.

Tourism Activities

1. Tourists visit only few of the most important sites and lack dispersal
   Plan out how tourists can be dispersed throughout the cultural heritage property and into the surrounding areas

2. To many visitors in monuments will impact mural paintings
   Visitor to monuments with mural paintings must be controlled to acceptable numbers

3. Tourist attractions have become sunset on monuments or now viewing mounds
   The marketing of sunset views must change to more appropriate activities that don’t impact monuments and the landscape
Tourism Infrastructure

1. Viewing mounds are being built for tourists which are intrusive
   The viewing mounds are to be assessed for impact and rectified accordingly

2. Viewing tower, gold course, palace reconstruction and other attractions were built in the past
   The existing tourism infrastructure from the past must be assessed for impact and rectified accordingly

3. Various forms of ballooning facilities have been established or are planned
   The various existing and planned ballooning facilities must be assessed for impact and controls but in place

4. Tourist ships for river cruises are docked along riverside
   Tourist ships must be regulated, particularly in respect to where they are docked

5. All forms of transportation infrastructure planning without coordination with cultural heritage property
   Proper comprehensive and coordinated planning is required for all transportation infrastructure development (Refer Issue cluster 1A)

Tourism Infrastructure (Refer JICA 3.2.2)

Tourism infrastructure is an infrastructure that contributes to sightseeing, development of tourist facilities, tourist routes, visitor management, etc. Despite being a candidate for a World Heritage Site, these improvements have not been done sufficiently and it is not suitable situation for a tourist destination that represents the country.

(1) Tourist Facilities

1) Bagan Archaeological Museum

   The Bagan Archaeological Museum located in Old Bagan opened in 1998 and has 10 exhibition rooms. Exhibits range from Buddhist statues, stone monuments, art objects, old folk crafts, traditional costumes and dioramas of dynasty era. Despite most of the exhibit have high value as a cultural asset; there is lack of consideration to foreign visitors such as no explanation plate in English. The facilities such as lighting, air conditioning and lifts are not sufficiently equipped, and then the quality as an exhibition space is low. In addition, the size of the building is very large compared with the surrounding environment, and there is also an opinion to oppose to the building scale in the heritage area.

   (Issues)

   Improvement of exhibition including English notation and upgrade of facilities are required.

2) Information Centre
There are three information centres in Bagan, 1) TIC attached to the Bagan branch of MOHT in New Bagan, 2) TIC in front of Nyaung U Market, and 3) The information counter inside Nyaung U Airport terminal building. Each has problems in terms of inappropriate location, lack of staffs, and lack of information. As current situation, it cannot be said that these are useful values for tourists.

(Issues)

It is necessary to develop a facility that is located at a location near the tourist destination as a representative ruins tourist destination of the country and capable of transmitting useful information.

3) Rest Spaces

Since the monuments, which are tourism destinations, are scattered in a wide range of the area, it is desirable for tourists to have a rest space not only hotels and restaurants, but also heritage tourism destinations. Currently, public toilets are installed in the vicinity of the relatively large-scale temples, such as the Shwesantaw Stupa, the Thabyinnyu Temple and the Htilominlo Temple.

(Issues)

Appropriate location and facility development with appropriate wastewater treatment are necessary.

(2) Access Road in Cultural Heritage Area

The main tourist destinations of Bagan are temples and pagodas. Many of them are scattered in the heritage area, and most of the access roads are unpaved. In the dry season, the dust on the road obstructs the visibility, and in the rainy season the water stays and it becomes muddy and water puddle, and the safety and comfort of the passage are not secured.

(Issues)

To upgrade the unpaved road is indispensable in order to secure the safety and to provide comfortable mobile environment.

(3) Visitor Management

In order to go around the scattered monuments, tourists rely on the map and the directional signage to reach the destination. However, in Bagan, there is no unified signature plan as a heritage tourism site. The language used in the signage is sometimes only in Myanmar, which is unfriendly for tourists.

Meanwhile, the means of travel for tourists is mainly one of buses, rent-a-cars or E-bikes, but parking lots are not prepared around the monuments, as a result, vehicles and motorbikes are placed in disorder, and chaotic situations. In particular, the congestion situation in a particular pagoda at sunset time is extraordinary.

(Issues)
It is a matter whether improving the surrounding environment of monuments as heritage tourism sites, and whether it can be a rich heritage tourism destination.

**Develop tourism infrastructure in the cultural heritage area that respond to the needs of tourists (Refer JICA 5.2.2 Strategy 2-2)**

Tourism infrastructure development in the cultural heritage area should be provided to satisfy the basic needs of tourists, and to allow tourists to enjoy sightseeing comfortably. Approaches for tourism infrastructure development are as follows.

**Strengthen access to tourism site**

Tourism sites in Bagan are Buddhism temples and pagodas, and they are located mainly in the cultural heritage area. However, most access is on unpaved roads. With the goal to ensure safe driving by E-bikes and vehicles used by tourists to reduce accidents and to give comfortable driving environment, it is necessary to strengthen access to tourism sites. Hence, the following actions are necessary.

- Upgrade the road in a way that matches to the cultural landscape. Also improve the road function to provide safe and comfortable driving environment.
- Install street lighting. In order to ensure safe movement of tourists after sun-set, it is necessary to install the lighting along the main roads.
- Restrict vehicle traffic in the cultural heritage area. Encourage the use of E-bike, bicycles, horse-carts, and pedestrian walking because they have less impact on the heritage environment. In addition, it is needed to set up park-and-ride system to change from large vehicle to small feeders, and improve the routes.

**Strengthen tourism facilities**

When developing tourist facilities in cultural heritage area, it is required to implement a “reversible” structure in order to allow for the possibility for the change in the future. Also, when upgrading the existing facilities, it is necessary to create an attractive environment for tourist. Regarding facilities for strengthen tourism in Bagan, the following actions are needed.

- Improve the information center. It was developed as a part of the pilot projects. In the future, it is needs to become a core facility in the tourism sector while strengthening the contents of its activities.
- Improve rest areas within the cultural heritage area. Regarding facilities supporting movement over scattered heritage sites in the cultural heritage area, it is necessary to develop facilities that do not have negative impact on the surrounding environment.
- Upgrade Bagan Archaeological Museum. The existing facility is not foreign visitor friendly. It is desirable to improve the exhibition as well as to add equipment to make it a more attractive and informative facility.

**Strengthen visitor management**
In order to move around the cultural heritage area, installation of appropriate signage is essential over the whole region. Development of the surrounding environment including parking lots is also indispensable. These environmental improvements are extremely important not only to facilitate the movement of the tourists, but also to preserve the surrounding landscape. In order to strengthen visitor management, the following actions are necessary.

• Upgrade various signage boards to the monuments in the cultural heritage area. The boards should use material harmonizing with the cultural landscape with bilingual notation in English and Myanmar. It is desirable to continue to install them after the pilot project.

• Develop parking lots around heritage sites. In addition to facilitation of the movement of tourists by setting up parking lots, creation of new viewing points is required to improve the value of more heritage sites. Regarding the parking lots, it is desirable to develop them in a stepwise manner referring to the future traffic plan.

Services and Infrastructure Development
(Refer Regional planning and transportation IPA 2.1.2)

The infrastructures and service lines in the Heritage Zones detailed regulations and standardization. These would be lined to transportation and tourism infrastructure plans. The alignment of service lines might need to be planned together with the alignments of roads and paths. This would be linked to network planning for electricity, water (drinking / irrigation / drainage), sewage as well as telecom and solid waste management.

(Refer Tourism management and infrastructure IPA 2.1.3)

Tourism infrastructure development has not shown sufficient respect for cultural heritage. The development of facilities and infrastructure for tourists within the heritage site will ensure visitor satisfaction in respect to basic needs, experience as well as information. These will however be restricted to facilities that are non-intrusive, reversible and appropriate to the location and follow the legal framework being developed for Bagan.

Tourist facilities constructed within the heritage property have not shown sufficient care for the heritage. Within the heritage site any facilities that need to be built will adhere to the legal framework particularly to the building bylaws regarding temporary structures. Special care shall be taken with service lines for supply of electricity and water and disposal of sewage, waste water and solid waste.

The development of infrastructure linked to tourism activities will closely adhere to the legal framework, in particular the development guidelines. The development of infrastructure shall only be carried out once an overall appropriate infrastructure development plan has been prepared, agreed upon and adopted by the government. All government departments shall then follow these plans. This is particularly important for circulation (roads, paths, parking areas, and bus stops), airports extensions, railway lines and stations, jetties and piers for river traffic, as well as viewing mounts, decks and special access to temples and archaeological sites.

Infrastructure has been developed without following laws. Any development projects that are not temporary or easily removable must first have a Heritage Impact Assessment (HIA) carried out along with detailed sub-surface archaeological surveys linked to Archaeological Risk Maps.
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*(Refer Regional planning and transportation IPA 3.2.2)*

1. Water supply system is not adequate for the settlements
   To improve water supply system including distribution lines while ensuring that heritage is not damaged, particularly sub-surface archaeology

2. No systematic sewage system has been developed
   To improve sewage system including disposal while ensuring that heritage is not damaged, particularly sub-surface archaeology

3. Solid waste management is a major problem throughout the area
   To establish solid waste management system linking software and hardware and related regulations

4. Electricity distribution lines are visually impacting the heritage property
   To develop Master Plan for electricity distribution linked to road network with non-intrusive and appropriate designs

5. Telecom towers are visually impacting the heritage property
   To find appropriate solutions for telecom providers that ensures visual impact is minimal and acceptable

6. Haphazard road widening and black-topping taking place
   To develop Master Plan for road development linked to transportation planning
PART FOUR
ENVIRONMENT, POLLUTION AND SUSTAINABLE SERVICES
4.1 Water management

Water management (Refer IMF 4.2.1)

The water management entails the establishment of a clear approach to the collection, storage, distribution and use of water as a finite resource that is essential for the livelihood of the people and the continued existence of the ecology. Water is important for habitation and agriculture, which requires managing precipitation and the perennial streams including the Ayeyarwady River. What are the issues that need to be considered in managing of water in Bagan?

Rain has been the main source of water for Bagan over the centuries. Bagan lies in the central plains of Myanmar which is a “dry zone”, for the Rakhine Yoma mountain range shelters this area from the humid monsoon sweeping in from the Bay of Bengal. The data provided by the Department of Hydrology and Meteorology shows that maximum rainfall is slightly over 100 millimetres in September and October. Throughout history, agriculture in Bagan has been dependent on the rains. The Department of Hydrology and Meteorology is responsible for monitoring the weather and providing daily forecasts as well as warnings of extreme conditions. They are also responsible for monitoring droughts. There was a long period of drought from 2013 to 2014. The concerning is that with climate change such situations would become even more commonplace requiring alternative water sources to be considered.

Other sources of water are ground water and the perennial streams and rivers, most notably the Ayeyarwady River. The use of ground water has been regulated this could impact the archaeology as well as the monuments by leading to changes in the ground water table. The decision to use ground water should be based on extensive understanding on its implications and the effects on the environment and the cultural heritage. Any water that is pumped up from the ground must be linked to a plan to recharge the aquifers. Even the water of the mighty Ayeyarwady River must be considered to be finite. There are plans to further exploit the Ayeyarwady as a source of water. This is taking place not only around Bagan but along the entire river which calls for a sustainable national level plan for the use of water from the Ayeyarwady River.

The collection and storage of rainwater was carried out even during the Bagan Period, with the construction of a huge reservoir on the western side of Twin Hill. In ancient times rainwater was also collected at the village level, for every village has a reservoir. The collection of water at household level is of course not clear since hardly any research has been undertaken on the ancient dwellings of Bagan. This ancient system provides us with a model which needs to be reviewed as a possible means of collecting and storing water during the rainy seasons. How a similar system would be adapted to the present circumstances and needs will need to be studied and adapted to the regulations to safeguard the monuments and archaeology.

The main focus on water supply has been the Ayeyarwady River. A pumping station can be found in Nyaung U, which pumps water to supply the Nyaung U town. More detailed assessment of this system is required. A second source has been created where a branch of the river about ten miles long along the western side of Bagan (Loka Nanda) has been closed.
off to function as a reservoir during the dry season (as shown in the map provided by the 
Directorate of Water Resources and Improvement of River Systems). The level of the water 
here would be 4 to 5 feet higher than in the main channel, allowing for storage of water to a 
depth of at least 2 meters. Water is then pumped from this seasonal reservoir from the Loka-
nanda Pumping Station. The rather controversial “Bagan River Multipurpose Beautification 
Project” proposes to create a second channel to exploit the ten meter level difference 
between high and low water. (This project must be critically reviewed since it intends on 
changing the entire river-scape, even proposing to use the river area for tourism 
infrastructure).

The **distribution of irrigation water** has been through irrigation channels which allows for 
large amounts of water to evaporate. This has not been allowed within the Monument Zone 
and Archaeological Zone, is however being done in the Protected Zone. The question that 
arises is whether farming requiring irrigation should be encouraged in this area at all. The 
distribution must be based on the need, which in itself requires strategic planning.

The distribution of water is more efficient with a well designed network of piping, as long as 
these are maintained properly. The question that arises in respect to piping is the impact on 
archeology. The piping network would require detailed scrutiny in respect to archaeological 
impact and should anyway only be planned for areas the need for piped water is critical.

The **main requirement for water** is for private use in the towns and villages and for 
agriculture. These are two very different requirements and would need to be considered 
under different strategies. The water required for habitation, which means for consumption 
and for hygiene, is a basic necessity which must be guaranteed to all the citizens. This 
means that water must be provided to all the villages and towns. How this is done will be a 
critical part of the planning exercise, since water is scarce and the storage, distribution and 
use of water within the heritage areas could impact monuments and archaeology. This 
requires careful planning. The use of water for agriculture is a very different planning 
process. This needs to be integrated into the planning for a strategic approach to agriculture 
in Bagan. The need for irrigated water would first have to be clarified, since the agricultural 
processes in a “dry zone” would best correspond to its climatic condition. There are clearly 
means of engineering the environment to use it to grow different types of crops; however the 
basic question arises whether this would be the correct approach for Bagan.

The strategic planning required for water management will require the involvement of 
authorities at various levels. At the national level a water management policy is required 
which ensures efficient and sustainable utilization of water. At the provincial and local level, 
the distribution and usage of water needs to be regulated. Since the use of water is a 
crosscutting theme touching upon various sectors, a coordination system needs to be 
established. For Bagan these discussions will need to take into account the safeguarding of 
the heritage sites. A Strategic Plan on Water Management for Bagan is required. This will be 
linked to national level policies while taking into account the specific circumstances of Bagan 
as a heritage site.
Water Management (Refer IPA 2.1.4)

The planning outcome will be a Strategic Plan on Water Management for Bagan. This will be linked to national level policies while taking into account the specific circumstances of Bagan as a heritage site. The water management would entail the establishment of a clear approach to the collection, storage, distribution and use of water as a finite resource that is essential for the livelihood of the people and the continued existence of the ecology.

The management of water has always been an important issue in Bagan. For the sustainable development of Bagan and its surroundings, the management of water is critical. The issue of water will take a prominent role in the Bagan, both as an essential resource, but also as a potential threat to the heritage. The use of water and the related infrastructure will therefore need to be closely monitored to ensure that there is no major negative impact on heritage. Critical aspects are construction of infrastructure and service lines in sensitive areas, the uncontrolled use of ground water, the seepage of access water into foundations of monuments and subterranean archaeology. The management system will provide water management policies, including regulations to prevent negative impact on heritage and the environment. The management system will also provide the monitoring mechanism to ensure compliance.

Water Management (Refer IPA 3.2.4)

Issues and actions in response

1. Rain has been the main source of water for Bagan over the centuries is not sufficient. Consider other sources of water are ground water and the perennial streams and rivers, most notably the Ayeyarwady River.

2. Ground water not a sustainable source though often deep wells are dug. Any water that is pumped up from the ground must be linked to a plan to recharge the aquifers.

3. The collection and storage of rainwater was done during Bagan Period, but not continued. Develop systems for collection of rain water using traditional ponds and conduits.

4. Distribution of water is a problem due to infrastructure as well as evaporation (when open). Develop system of water distribution that does not impact heritage while ensuring water is not lost to evaporation.

5. Tendency towards irrigation for the fields could impact heritage. To develop means of irrigation that will minimize use of water and control impact particularly on sub-surface archaeology.
Infrastructure and Environmental Improvement (Refer AMA 7.4)

In view of the presented facts that Bagan/ Nyaung U heritage zone would have over 2 million visitors annually in the next few decades, it would also be necessary to install proper and hygienic water supply and waste water management systems. Presently, the whole zone of Nyaung U, Bagan old city and Bagan Myothit altogether, though practically functioning as one entity, have various systems in water supply and also in waste disposal systems. Most hotels use underground water, urban areas in Nyaung U and Bagan Myothit have open wells or individual tube wells.

Concerning water supply, which should be the first action for environmental improvement, the best way is to adopt the system of Mandalay water supply, which was implemented with ADB assistance some 2 decades ago. In cased of Mandalay, the water was taken out from layer below river basin, that kind of underground water extraction was proved to be feasible, since the recharging capacity surpasses the discharging the water amount because the point of withdrawal is under the river. In case of Bagan /Nyaung U, as it is the same condition as in Mandalay, the same solution should be applicable. If it proves to be feasible, the extracted water from underground of the river can be pumped up to Tuyin-Taung and the settlements underneath can be supplied with gravity flow.

The Concept of water supply system: If it should be feasible that the extracted water from under from the river basin is less than the recharging capacity, the extracted water can be pumped up to Tuyin-taung and the settlements underneath can be supplied with gravity flow.
Water Supply and Sewage (refer JICA 3.2.3 (1) Social and Transportation Infrastructure)

Water service in Nyaung U and New Bagan Town is provided by TDC. There are two water supply facilities in Nyaung U Town, and they supply water to six administrative districts. One of the facilities is a water distribution facility with a simple treatment facility, another has no treatment facility and after river water is stored, pumping is carried out with a pump. Water purification plant is installed in New Bagan Town, however due to problems of operation method and facility capacity, most of time for the water supply is direct water supply of river water by intake pump. In addition, the water intake point of the New Bagan Water Treatment Plant is away from the mainstream of the river, and the water level of the New Bagan is lowered during the dry season and it is withdrawn only from the limited amount of water.

As mentioned above, untreated river water is directly supplied to the users. Since the turbidity of the river water is high, the user performs sedimentation treatment etc. by himself before use. In addition, TDC supplies the amount of water equivalent to the daily water demand within the limited time of daytime, the operation of the facility is stopped at night, and 24 hours water supply is not being implemented. As of October 2016, the number of each water connection in Nyaung U and New Bagan Town is 2,400 connections, 361 connections, the rate remains at 38% and 23%.

On the other hand, sewage treatment facilities are not being developed in the urban areas of both towns. Urine excreted from private enterprises such as hotels and restaurants is being processed by a septic tank installed in each facility, but ordinary households are not equipped with storage facilities and are directly discharged to the soil. Miscellaneous wastewater is drained directly into soil or withered rivers and valleys, untreated.
4.2 Waste Management and Pollution control

Pollution control (Refer IMF 4.2.1)

A sustainable waste management system is required for Bagan which will deal with solid waste (littering), sewage, as well as other forms of air, water and land pollution. This entails the possible control at source or user, while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure. **Solid waste** is dumped mainly in the areas surrounding the towns and villages but also around monuments. Studies will be carried out to identify the sources and composition of the litter. This will allow for solutions in respect to appropriate collection and disposal. A campaign was started by the District administrator which will be streamlined, supported and augmented. Different forms of waste will be separated at source. Biodegradable waste will be composted and used as manure. Other waste such as glass, metals, paper and most types of plastics will be recycled. For this the necessary systems will be established which includes awareness, collection and processing. Some forms of waste such as hazardous industrial waste, waste from hospitals and even used oil will be collected separately and disposed off in a sustainable manner. It is only rubble that needs to be dumped, but even this can be used for developing infrastructure and for landfills outside the heritage site.

Drainage both natural and constructed, lead into the Ayeyarwady River. This means that all the pollutants that are collected on the way end up in the river. This will need to be controlled, since the drainage will distribute pollutants within the heritage area as well as contribute to polluting the river. **Sewage** is mainly collected in septic tanks. There is no real system for sewage disposal. This will become a major issue as further development takes place. The additional problem with sewage is that it requires infrastructure that is placed underground which can be a threat to archaeology. The digging of septic tanks or the laying of sewage pipes could disturb the archaeology. Additional value of sewage, such as the possibility of creating bio-gas or converting the sludge into manure must also be considered. The discussions of using more complicated technology verses natural means of sewage disposal will also need to be clarified considering that such methods as reed bed treatment requires large areas of wetlands, not necessarily suited for Bagan.

Another critical form of pollution that has been identified is **air pollution**. Till today the contribution of air pollution due to traffic and industry is still considered to be negligible, however these need to be considered future threats and controlled. The main cause of air pollutions at present seems to be due to the burning of refuse, which might solve the problem of littering, but leads to another problem of air pollution. In this respect, the disposal of solid waste must be managed in a sustainable manner.

Concern has also been raised in respect to **noise pollution**. The various causes might be additional activates linked to tourist attractions, but also various religious and community practices that are using larger and louder equipment. The noise pollution can also potentially be caused if airplanes, means of transportation (motorized vehicles on land and river) as well as construction and industrial activities. Provisions will need to be made to control possible noise pollution in the future keeping in mind the sanctity and character of the heritage zones.
A further form of pollution that has been mentioned is **light pollution**. The development of evening activities, the increasing electrification of the towns and villages and especially the lighting up of monuments are issues that need to be considered. This form of pollution would need to be studied specifically in respect to its impact. For example the impact of lighting up monuments will impact the animals living in and around the monuments such as the Laggar Falcon on Sulamani Temple. Specific solutions are required. Light pollutions must also be seen in respect to the impact on heritage by means of lighting in the temples where there are mural paintings. The lighting of heritage objects will need to be studied in detail and appropriate solutions identified.

The responsible **authorities** dealing with the various forms of environmental issues will be coordinated at union, regional and district level. Their respective legislation will be used to ensure that an effective and efficient system of managing the environment in the Protective Planning Region is established. The District Administration (Nyaung U and Pakokku) would have pivotal roles to play. They would have to work closely with the Department for Development Affairs (DDA) and Department of Environmental Conservation (DEC). This would be linked to the Development Committees Law (1993) and the Environmental Conservation Law (2012) respectively.

**Waste management (Refer IPA 2.1.4)**

The cities of Yangon, Mandalay and Naypyitaw have City Development Committees that are responsible for waste management. However beyond these, the responsibility for waste management would fall under the Department for Development Affairs (DDA), Ministry of Progress of Border Area Development and National Races and Development Affairs. The official responsibilities in Bagan would need to be clarified, probably with the District Administration. Closely linked to the responsible authorities for waste management would be the authorities responsible for environmental conservation, the Department of Environmental Conservation in the Ministry of Environmental Conservation and Forestry. The preparation of a sustainable waste management plan for Bagan will however require an expert consultant who can coordinate among the numerous involved authorities as well as provide innovative and appropriate solutions. This would be done in close collaboration with DANM to ensure that impact on heritage becomes a key consideration.

The outcome of the planning exercise will be a sustainable waste management plan for Bagan. The plan would include immediate steps required to control pollution of the environment of Bagan which would include pollution of land, water and air. Waste will be understood to be a resource and the provisions for benefiting from this resource will be determined and introduced. Sustainable means of managing waste which would include innovative management, participation as well as appropriate technology. The entire cycle that the “waste” goes through will be considered in the plan so that there are no remains dumped anywhere near or within the heritage site. The basic approach would include undertaking awareness campaigns to ensure that the community gets involved in sustainable waste management. This entails the possible control at source or user, while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure. The planning would need to be based on legal provisions that can be transferred to the site management plan. The Development Committees Law (1993) and the
Environmental Conservation Law (2012) would need to be consulted. Any further legal provisions required for Bagan would need to be identified and formulated in draft form.

The management of waste will be an issue that becomes part of the overall management system for Bagan. This critical issue will be closely linked to the safeguarding of the environment, conserving the landscape as well as ensuring the sustainable development of Bagan. The procedures devised for appropriate collection, processing and disposal of waste products will become part of the procedures of the management system.

The understanding that waste is a resource when properly handled will need to become the central concept which would align with the overall approach of managing Bagan in a sustainable manner.

**Waste Management (Refer IPA 3.2.4)**

Issues and actions in response

1. Lack of waste management planning
   - prepare a sustainable waste plan for Bagan which would include pollution of land, water and air

2. Potential of using waste as a resource has not been understood
   - waste shall be understood to be a resource and the provisions for benefiting from this resource

3. No understanding for sustainable waste management
   - study and introduce sustainable waste management which would include innovative management, participation and appropriate technology

4. Community is not aware of the implications of pollution caused by waste
   - undertake awareness campaigns to ensure that the community gets involved in sustainable waste management possible control at source

5. Waste reduction and disposal not yet considered an issue
   - while putting in place appropriate methods of reuse, recycling and reduction of waste as well as composting and production of manure

6. Sewage treatment a major issue to impact on sub-surface archaeology
   - develop sustainable sewage treatment plants for town areas takes into account possible resources such as manure and bio-gas
Infrastructure and Environmental Improvement (Refer AMA 7.4)

Waste water disposal, there are no proper drainage systems, large hotels have septic tanks, however the effluence from these septic tanks are eventually discharged into the river without having adequate BOD and COD conditions. It is therefore necessary to start planning for proper drainage systems, at least for the storm water and to adopt environmental standards. There should be enforcement procedures that waste water must be treated to some prescribed standards (like BOD and SSP standards) before discharging into public waters.

As for the solid waste, present collecting system should be improved and augmented with sanitary landfills. All these actions for environmental development would take time and financial resources; however it is time to start planning these systems with the concept to be implemented gradually in the next decades.

Diagrammatic presentation of sanitary landfill

Waste Management (refer JICA 3.2.3 (3) Social and Transportation Infrastructure)

Waste in Bagan is not well managed as a heritage tourism destination. The waste collection service area is only two urban areas, Nyaung U Town and New Bagan Town, and it does not cover areas with heritage area and village areas. In addition, the existing waste disposal site (open dumping site) is located within the heritage conservation area, and garbage is scattered where visitors can see directly. It is a factor of damaging the image as a representative tourism destination in Myanmar.

For waste collection, the TDC collects about 20 tons of waste in two urban areas daily and transports them to the final disposal site for disposal. However, garbage of 40 to 50 tons per day is uncollected, discarded on road sides and rivers. The management of the waste is not sufficient.

The issues related to waste management are: 1) the waste in the conservation area is not collected; and 2) the existing open dumping site is located in the conservation area.
4.3 Environmental conservation

Indigenous flora and plantation regulations (Refer IMF 4.2.1)

The landscape around Bagan has a unique character defined by the dry climate. Though a large part has been converted into agricultural land, there are still areas of forest and shrub. The only designated forestry areas within the township is the Loka Nanda Sanctuary. The area is about 104 acre focusing on the protection of the ecological system and specifically for the endangered species of Golden Deer and the Star Turtle. Twin Hill is not yet designated but application has been submitted. Another proposal which has been considered is in the Kyauk-ku-umin area east of Nyaung U town. The area around the Tuyin-taung range (Magway Region) is designated a reserve forest.

There are already numerous studies that have been carried out on the indigenous flora of the Bagan area. The various indigenous species will need to be listed in a manner which allows for this information to be used for planning and developing regulations. An additional aspect that would provide interesting insights would be to study the plant species that existed in the ancient landscape. This will require research in Palaeoethnobotany.

In 1997 a famous environmentalist began greening the area around Mt. Popa. The area which only has 20 inches of rain is of course not good for trees. However the initial green project was successful. This lead to the Dry Zone Greening Department being established and the first project in 1998 was carried out with support from KOICA. The project in the archaeological zone which was carried out by KOICA is over and the individual plantation work is being done locally. There have been numerous forestation projects under the slogan of greening the dry zones of Myanmar. A forest area is planned in the southern part of the township outside the heritage area. The Dry Zone Greening Department is responsible for the plantation of trees within the heritage area as shade for the tourists and visitors. Every year about thousand trees are planted, with the locations being chosen by the temple trustees.

The decision on what trees to plant are recommended by the Forest Research Institute in Naypyitaw. The decision is based on usage that within three years the local community can use the timber (this however contradicts the regulations on cutting and trimming the trees). Trees that are usually planted are Eucalyptus, Neem, Kokko, Acacia and Cassia. Further research on social and climatic impact of these trees is required. Further interesting topics of research would be the link of the vegetation with the building materials used during the various phases of construction in Bagan.

Vegetation can have extremely detrimental impact on heritage structures. The various ways that vegetation impact heritage needs to be studied. This can be the actual physical destruction of heritage through plants growing on monuments or over archaeology. The threat of plantations to archaeology has not been taken seriously in Bagan, also because very little in know in respect to potential archaeological sites. The impact of vegetation could also be created through indirect influences such as the change in ground water or the increase in humidity. Certain trees can affect the ground water level. Trees can also cause shading and allow greater evaporation which increases humidity. These different means of
impacting heritage will be studied to allow for respective legal controls to be put in place while providing alternative solutions.

The regulations that are established will be based on a certain definition of the significance of the landscape. This will be linked to the outcome of studies on the original landscape and the lists of indigenous plant species. The regulations will determine the species of trees that can be used for reforestation taking into account the impact on water management, soil improvement and needs of the community. The impact of vegetation, particularly trees, on monuments and archaeology will be controlled. This will require clear regulations on plantations to ensure that the impact of the trees on monuments is mitigated (regulations on type, distance, etc.). The impact of trees on archaeology will be mitigated by preparing and enforcing archaeological risk maps.

Ministry of Environmental Conservation and Forestry would take on a pivotal role in determining the indigenous flora and working on plantation regulations within the heritage zone. This would require close collaboration of the Forestry Department with the Dry Zone Greening Department and the Forest Research Institute in Naypyitaw. The assessment on the impact of plantations on heritage would require close collaboration with the DANM. The district administration would also be involved to ensure monitoring of activities within the heritage zones. The legislation on forestry is comprised of Myanmar Forest Policy 1995, Forest Law 1992, The Protection of Wildlife and Protected Areas Law 1994 and the Community Forestry Instructions 1995. There are basically two categories of forests: Protected Public Forest which is protected and not for use and Reserve Forest which can be used for timber and non-timber forestry products. Additionally there are areas designated as a Sanctuary for the protection of the ecology and specific species of flora and fauna.

**Safeguarding indigenous fauna**

The murals and stucco carvings show many species of birds and animals. Though some might be of legendary design, there seem to be many that represent actual animals found in Bagan during the historical times. This would make an interesting study which can be used in awareness building and promoting the safeguarding of the indigenous flora of Bagan.

Bagan has a unique ecosystem and the Ayeyarwady River Region in Bagan is internationally designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA). There are numerous endemic species of animals found in the area. The categorization of animals is done based on the degree of threat they are facing. These categories are: extinct, extinct in the wild, critically endangered, endangered, vulnerable, lower risk and conservation dependent. The species can be registered on IUCN’s Red List. The animals can also be categorized under the level of threat: threatened (T) near threatened (NT) least concern (LC) data deficient (DD) not evaluated (NE). For example we find the Laggar Falcon in Bagan which is a threatened species. This threatened species used to nest on the Sulamani temple, raising questions in respect to how to consider this monument as a habitat of a threatened bird species. After the damaged caused by the earthquake, it is not clear what has become of these Laggar Falcon. There are numerous endemic as well as endangered species of animals found in the Bagan area including the Star Tortoise, Burmese Roofed Turtle, Golden Deer, White Throated Babbler and the Laggar Falcon. The endemic species of Myanmar
include four species of mammal, fifty-one species of reptile and numerous birds. The existence of these endemic species in Bagan must be identified and studied.

**Safeguarding the indigenous flora** will require a comprehensive and integrated approach including all the various stakeholders involved in Bagan. This means the various departments of the Ministry of Environmental Conservation and Forestry, including the Department of Environmental Conservation. The Loka Nanda Sanctuary is an important location for various endemic species and would become the centre for conservation and research. The government can institutions can be supported by such organizations as the Myanmar Bird and Nature Society (MBNS). Since awareness and education is an important part of this process, links need to be made to schools, educational institutions and community organizations that can disseminate the required messages.

An interesting approach to this project would be to put environmental conservation within the context of Buddhist philosophy of not harming nature. The management system will also include provisions for awareness raising and education on safeguarding endemic and threatened species. This would go hand in hand with developing an overall philosophy of safeguarding living being which needs to be understood as not only by stopping poaching but also by providing the basic requirements for the species to survive. A further dimension would be to link this to the historical images of the natural surroundings found in the ancient mural painting. These considerations will need to be converted into specific actions, policies, regulations and general considerations for overall planning in Bagan.

**Flora and plantations (Refer IPA 2.1.4)**

The only designated forestry areas within the township is the Loka Nanda Sanctuary. The area is about 104 acre focusing on the protection of the ecological system and specifically for the endangered species of Golden Deer and the Star Turtle. Twin Hill is not yet designated but application has been submitted. Another proposal which has been considered is in the Kyauk-ku-umin area east of Nyaung U town; however this is possibly not realistic. There are already numerous studies that have been carried out on the indigenous flora of the Bagan area. The various indigenous species will need to be listed in a manner which allows for this information to be used for planning and developing regulations. An additional aspect that would provide interesting insights would be to study the plant species that existed in the ancient landscape. This will require research in Palaeoethnobotany.

The legislation on forestry is comprised of Myanmar Forest Policy 1995, Forest Law 1992, The Protection of Wildlife and Protected Areas Law 1994 and the Community Forestry Instructions 1995. There are basically two categories of forests: Protected Public Forest which is protected and not for use and Reserve Forest which can be used for timber and non-timber forestry products. Additionally there are areas designated as a Sanctuary for the protection of the ecology and specific species of flora and fauna. Additionally the authorities, it might be necessary to get experts dealing with Palaeoethnobotany who can determine plant species of the ancient landscape.

The outcome of this project will determine the indigenous plant species and document these. If possible this will include the vegetation looking back over the centuries requiring respective archaeological research. The project will study the direct and indirect impact of plantations on heritage. This means determining how the trees can physically impact monuments and
especially subterranean archaeology. The trees can also indirectly impact heritage by changing the micro-climate, which again would need to be studied in detail. Simultaneously, the project will need to determine other considerations, especially in respect to how plantations might impact other aspects of the environment as well as how possibly be beneficial to the community and visitors. Based on this detail understanding of indigenous flora and the impact of plantations on heritage, a set of regulations will be formulated along with a system of implementation, enforcement and monitoring.

The management system will be required to control any changes that might take place within the landscape of which plantations would be an important aspect. The definition of the significance of the landscape will be defined in the management documents which would be linked to the lists of indigenous plants. The plantation regulations will be integrated into the legal provisions. This would also be closely linked to monitoring provisions.

Fauna

The murals and stucco carvings show many species of birds and animals. Though some might be of legendary design, there seem to be many that represent actual animals found in Bagan during the historical times. This would make an interesting study which can be used in awareness building and promoting the safeguarding of the indigenous flora of Bagan.

The project would need to be led by a prominent expert on environmental conservation who can coordinate between the government authorities, the research institutions and community base organizations.

The outcome of this plan will be to identify the endemic and threatened species of animals found in and around Bagan. The requirements for safeguarding these species will be determined, whether it is in respect to their habitat or ensuring that there is no poaching.

The fauna of Bagan is an important consideration for the overall management of Bagan. Specific procedures need to be put into place to safeguard the endemic and threatened species, including their natural habitat. National legislation will be converted into local level implementation and monitoring. The management system will also include provisions for awareness raising and education on safeguarding endemic and threatened species. This would go hand in hand with developing an overall philosophy of safeguarding living being which needs to be understood as not only by stopping poaching but also by providing the basic requirements for the species to survive.
Environment and Pollution (Refer IPA 3.2.4)

Issues and actions in response

FLORA AND FORESTRY

1. Little indigenous scrub and forest land exist and plantations use alien species
   To study indigenous flora and develop appropriate plantation plans

2. Plantations have impacted sub-surface archaeology
   Plantation to be carried out as per plan ensuring use of Archaeological Risk Maps

3. Plantations have impacted monuments through changing microclimate
   Study impact of plantations on microclimate and thereby impact on monuments to develop regulations for plantation locations and density

4. The dry zone climate along with difficult soil consistency
   Research and consider water management, soil improvement and needs of the community linked to plantations

5. The vegetation has obscured the view of many monuments
   Ensure provisions for trimming trees considering views particularly of monuments

6. Lack of understanding on environment and environment conservation
   Educational talks and awareness on environment and ensure continued research on the link between

FAUNA AND WILDLIFE PROTECTION

1. Lack of knowledge and awareness on endemic species
   Carry out research to ensure better awareness on endemic species

2. Lack of consideration for endemic species in planning and development projects
   Ensure appropriate consideration for endemic and endangered species of animal including key species in planning

3. Loss of habitat of endemic species as threatened their existing in the area
   Safeguard or recreate original habitat of endemic species by carry out plantation works in designated locations

4. Lack of understanding for bird habitat and international designation of the area
   Take into account that the Ayeyarwady River Region in Bagan is designated as “Important Bird Area” (IBA) and “Key Biodiversity Area” (KBA)
4.4 Natural hazards and human threats
(Refer IPA 2.1.4)

The key natural hazards that need to be considered are earthquakes and extreme weather which leads to drought and flooding. The complexity of dealing with these issues makes it necessary to develop a separate "Disaster Risk Management Strategy". This will lead to a more comprehensive Disaster Risk management Plan which will ensure coordination between all required authorities, experts and stakeholders.

Earthquakes

The last major earthquake struck in 1975. This means that the memory of this incident still exists, allowing for further research on how the earthquake impacted the heritage property. The response at the time would also need to be documented, since many of the interventions might need to be monitored and possibly improved. The technology used at the time might not stand the test of time, such as the concrete ring beams that were introduced and hidden inside the structures.

Considering the possibility of further earthquakes striking the area and impacting Bagan, Preparedness is essential. Some very definite activities that can be carried out would be by first establishing a coordination system for responding to earthquakes for cultural heritage. Furthermore it would be possible to prepare and update of inventories of all prioritized heritage for proactive response and lists of community level heritage for support on request. This would go hand in hand with guidelines for consideration by search and rescue teams to be prepared and translated into Myanmar. Procedures for security to heritage sites in case of earthquakes need to be defined and training carried out with the armed forces. This would be further linked to establishing and providing training on methods and procedures for assessment, salvaging and safeguarding artefacts and components of collapsed historic structures, supporting and propping of damaged structures as well as covering against rain. Principles and guidelines for rehabilitation of historical structures would need to be prepared and adopted.

Flooding and heavy Rainfall

Extreme weather needs to be monitored keeping in mind the impacts of global climate change. Types of impacts caused by extreme weather, flooding and landslides and the methods used to repair and stabilize monuments need to be studied and documented. This goes hand in hand with securing unstable slopes, monitoring erosion on river banks and ensuring sufficient drainage in areas which are known for inundations. These measures will be linked to safeguarding heritage in all its forms which includes the monuments, the archaeology but also the intangible culture.

Extreme weather can also be considered in respect to lack of rain. This has devastating effect on the landscape, especially the farmland. The monitoring of drought shall be closely linked to the appropriate use of water resources and the local agriculture within the Bagan area. This can have an indirect affect on the entire heritage site by making people abandon farming which would change the entire landscape or then by pumping water whereby changing the entire hydrology. Further research would also be needed on the wetland
ecosystem along the entire Ayeyarwady River. Any projects that are planned within these areas must undergo stringent impact assessments. For example the projects such as Bagan River Multipurpose Beautification Project, the Integrated Water Resource management and the Navigation Enhancement between Nyaung U and Mandalay will need to consider how this would increase vulnerability and threaten the heritage as well as the environment.

**Other Natural Hazards**

Response systems and preparedness for cultural heritage sites shall be ensured for all critical types of natural hazards such as earthquakes and extreme weather (floods, storms and excessive rain) as well as taking into consideration the risk of fire. Since most registered disasters are caused by fire (65.9%), provisions will need to be made to ensure that fires hazards are considered in the disaster risk management plans. However landslides and river erosion must also be considered as critical natural hazards in Bagan

Coordination shall be ensured between all authorises to prepare and respond to natural disasters, especially between the Ministry of Home Affairs, the Ministry of Social Welfare, Relief and Resettlement, the Ministry of Religious Affairs and the Ministry of Culture. Cultural heritage sensitivity shall be ensured in the National Disaster Preparedness Central Committee as well as the working committees and the armed forces. The national disaster training shall be invited to Bagan to carry out awareness that is sensitive to cultural heritage sites

**Human Threats**

One of the major impacts on monuments is also due to vandalism and development pressures. Animals are herded around the monuments and cause damage. There are cases of vandalism and graffiti. Development pressure also impacts the sites. This is the case with electrical poles, cables including wiring and lighting inside the monuments. Other examples of infrastructure impacting the site are telephone towers. In many areas along the road and in the town areas advertising boards are being set up.

The development pressure also has caused major problems with garbage which is dumped all over the site. This has also been an issue with other visitor related activities such as the movement and parking of vehicles near monuments. Tourists enjoy climbing on the monuments to view the surroundings and the viewing the sunset has become a major event. There are souvenir shops around many of the monuments. Efforts have been made to control the behaviour of tourists and local visitor using signboards and having guards and specially trained guides for local culture. There is an increase in artificial landscapes often linked to tourism sites as well as along the main roads. The management of traffic and maintenance of roads has become an important issue to be addressed.

The developments along the river for tourist facilities such as hotels, guest house and restaurants are becoming a major issue, since it changes the entire river banks. The local agriculture is also changing with farmers growing modern cash crops which change the cultural landscape around the monuments. The use of tube wells for hotels, restaurants, agriculture and the public can cause problems to the monuments. During festivals many people come and set up temporary shelters around monuments which impact the structures. Encroachment can be seen around the town areas, especially New Bagan and Nyaung U.
Natural Hazards and Human Threats (Refer IPA 3.2.5)

Issues and actions in response

A. EARTHQUAKES

1. The response to the 2015 earthquake took time to get organized due to lack of preparedness
   Lessons learned from 2015 must be used to establish response and rehabilitation systems

2. The structural stability of monuments, particularly those with previous damage is uncertain
   Carry out detailed studies on more complex monuments to better understand structural stability and impact of previous interventions

3. Some monuments have not been stabilized after being damaged during the 2015 earthquake
   Stabilize all damaged monuments to whatever degree possible using local and international expertise and develop norms for stabilizing structures

4. Rehabilitation of 389 monuments still ongoing
   Overall rehabilitation of 389 damaged monuments is to be carried out along with monitoring and audit of finalized projects

5. Coordination difficult with monuments being restored by bilateral assistance
   To ensure that all projects are carried out within a single coordination system and all parties follow rehabilitation guidelines and standards

6. Earthquakes are not regular occurrences in Myanmar and so awareness lacking
   To carry out awareness and training with local authorities and communities on earthquake awareness

7. Previous interventions for earthquake stabilization of monuments were only partially successful
   To carry out detailed studies on previous interventions and their performance during the 2016 earthquake

8. Lack of communication with heritage sites with similar problems in the region
   To learn and collaborate with other heritage sites in the region that has experience with earthquake preparedness, response and rehabilitation

9. Lack of overall coordination system to prepare, respond to and recovery from earthquakes
   Establishing a coordination system for responding to earthquakes for cultural heritage

10. Lack of expertise in earthquake response
    Training for authorities and community on earthquake response for securing, salvaging and stabilizing cultural heritage sites
B. FLOODING AND HEAVY RAINFALL

1. Lack of understanding of extreme weather in Bagan area
   Extreme weather shall be constantly monitored and response shall be planned for the cultural heritage sites

2. Lack of knowledge of impact of flooding and heavy rainfall on heritage sites
   Study and document types of impacts caused by flooding and heavy rainfall and establish methods of protecting and repairing monuments

3. Lack of drainage and old drainage system not functional
   Improve drainage system and rehabilitation ancient system to ensure flooding is controlled

4. Lack of information on drought and its impact
   Monitor drought and closely linked to use of water resources and local agriculture

5. Regular flooding of Ayeyarwady River causing much damage
   Improve understanding of flooding and develop long term strategy to mitigate and respond to flooding

C. OTHER NATURAL HAZARDS

1. No information on multiple hazards that might affect Bagan
   Study multiple hazards that might affect Bagan which would include the slow impact of climate change, change in human activities, etc.

2. Most disasters are caused by fire (65.9%) though with less damage
   Response system to fire damage must be reviewed and improved where necessary considering high occurrence

3. Disaster response teams are unaware of how to deal with heritage sites
   National disaster training for developing awareness sensitive to cultural heritage sites

4. Authorities not prepared for response to multiple hazards
   To improve coordination and establish procedures and training for all authorities dealing with disasters, particularly in disaster response

5. Lack of understanding of individual and multiple hazard risks
   Prepare risk maps for individual and multiple hazards
ANNEX

BAGAN CULTURAL HERITAGE PROPERTY

CONCEPTUAL REGIONAL PLAN

B. FLOODING AND HEAVY RAINFALL

1. Lack of understanding of extreme weather in Bagan area. Extreme weather shall be constantly monitored and response shall be planned for the cultural heritage sites.

2. Lack of knowledge of impact of flooding and heavy rainfall on heritage sites. Study and document types of impacts caused by flooding and heavy rainfall and establish methods of protecting and repairing monuments.

3. Lack of drainage and old drainage system not functional. Improve drainage system and rehabilitate ancient system to ensure flooding is controlled.

4. Lack of information on drought and its impact. Monitor drought and closely linked to use of water resources and local agriculture.

5. Regular flooding of Ayeyarwady River causing much damage. Improve understanding of flooding and develop long-term strategy to mitigate and respond to flooding.

C. OTHER NATURAL HAZARDS

1. No information on multiple hazards that might affect Bagan. Study multiple hazards that might affect Bagan which would include the slow impact of climate change, change in human activities, etc.

2. Most disasters are caused by fire (65.9%) though with less damage. Response system to fire damage must be reviewed and improved where necessary considering high occurrence.

3. Disaster response teams are unaware of how to deal with heritage sites. National disaster training for developing awareness sensitive to cultural heritage sites.

4. Authorities not prepared for response to multiple hazards. To improve coordination and establish procedures and training for all authorities dealing with disasters, particularly in disaster response.

5. Lack of understanding of individual and multiple hazard risks. Prepare risk maps for individual and multiple hazards.
CENSUS DATA (compiled by AMA – Section 5 of Report)

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<th>Sr. No.</th>
<th>States/Divisions</th>
<th>2014 population (Mill.)</th>
<th>% Urban</th>
<th>Annual Growth Rates 1983-2014 (%)</th>
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Table 1 Total population, urban population, percentage of urban population and annual growth rates of States and Divisions (The data are processed from 1983 and 2014 census)
### Continued ANNEX: CENSUS DATA (compiled by AMA)

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<td>Total of 11 Townships</td>
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**Table 2** Total population, urban population and urban percentage in 11 townships of the Influence Zone. The data are from 2014 census combined with data from the Department of Immigration and Population of Nyaung-U Township. (In 2015, Bagan was separated out as a town with 14 000 populations which was formerly from urban population of Nyaung-U).
Continued ANNEX: CENSUS DATA (compiled by AMA)

Fig.1 The Influence Zone (Hinterland) of Bagan/ Nyaung-U with 11 townships; the eastern 5 townships belong to Magway Division and the western 6 townships to Mandalay Division
Continued ANNEX: CENSUS DATA (compiled by AMA)

Fig. 2  Labour force engaged in hotelier business and their residences in percentage.
Continued ANNEX: CENSUS DATA (compiled by AMA)

1. The Socio-Economic Study

The regions around Bagan/ Nyaung U, belonged to the poorest areas in the country before the policy changes of the Government in 1988. The climate is semi-arid, non-rice growing agricultural lands mostly and limited only to a few crops such as maize, barley and the like. Consequently, Mandalay and Magway regions were an out-migrating regions owing to scarcity of employment facilities. The tourism sector in those days was also underdeveloped as a result of restrictions, there was one state owned hotel in old Bagan with around 100 rooms and a few guest houses in Nyaung U. The policy change of the country after 1988 stemmed to considerable increase in hotel and tourism sector supplemented with direct and related activities in this sector. This sector started to increase gradually after about 1990s and presently it is one of the country’s important sectors, which enlarged and supported the employment facilities through direct and induced activities of this sector.

2. Demography and Housing Sector

The population data of Myanmar are available from censuses of 1973, 1883 and 2014. Magway and Mandalay Divisions, where the 11 townships surrounding Bagan are located, have combined population around 10 million in 2014, which is about 20% of the population of the Union. Both Divisions are in the semi-arid climatic zone (normally referred to as dry zone) where the conditions for livelihood are poor. This resulted to outmigration in both divisions during last decades; the population growth rates were lower than the Union average of 1.1 % per year; Mandalay Division having 0.95% and Magway having 0.61 % annually between the census years of 1983 and 2014. Assuming the trends previous decades would persist, the population of Mandalay Division would increase from 6.15 million in 2014 to around 10.75 million and Magway from 3.91 to around 5.02 million after the next 4 decades in the year 2054.

On the other hand, the 11 townships in the Influence Zone of Bagan, having better economic prospects because of the tourism industry, it is evident that the population shall increase with higher rates in the future. This is an important point in the regional planning, to plan ahead and select locations for new settlements for the reason that some of the settlements close to the Bagan heritage zone shall not be able to expand in view of the heritage conservation. These 11 townships have slightly over 2 million populations with urban percentage of 20% in 2014, with the growth rates experienced between the last census years, this present zonal population of 2014 shall grow to about 2.3 million in about 2054. This figure should be taken as minimum, since the higher economic growth can enhance the population growth as a general rule, in this case higher increase is more likely. The additional population increase of around 0.3 million or more within 4 decades would require around 60 000 housing units. If this challenge in the housing sector should be tackled for the coming 40 years, around 1500 housing units should be constructed yearly, which is approximately in the magnitude of Mandalay city with 1.2 million populations. It is here to mention that these figures are calculated by using the lower scenarios and it is more likely that the population growth rates can be higher due to the better employment facilities in the Influence Zone of Bagan as a World Heritage site. If the environmental conditions in the environs of Bagan should be maintained as a world’s heritage site, the measures for planning and approval of new areas should follow as soon as possible, which involves cooperation with all concerned government agencies.
Continued ANNEX: CENSUS DATA (compiled by AMA)

**Fig. 3** Population Forecast for Mandalay and Magway Divisions (Calculated based on trends between censuses data of 1983 and 2014)
Continued ANNEX: CENSUS DATA (compiled by AMA)

Fig. 4  Population & Urban Population Forecast for Bagan Influence Zone of 11 townships (Calculated based on trends between censuses data of 1983 and 2014)
Fig. 5  Population Forecast for Bagan Influence Zone, separating the populations in Magway and in Mandalay Divisions (Calculated based on trends between 1983 and 2014) of 11 townships.
3. Hotel and Tourism

The data on international tourist arrival stated in “Statistical Yearbook 2015” is 3.44 million in 2014-2015, whereas “Myanmar Tourism Statistics” published by the “Ministry of Hotels and Tourism” is 4.68 million in 2015. The Tourism Master Plan published from the Ministry of Hotel and Tourism estimates that the tourist arrival would reach 7.49 million in 2020, if calculated based on that, the rate of increase is 5% yearly in exponential progression. Compared with the tourism data in the neighbouring countries, the ministry’s forecast with 5% annual increase in exponential progression is possible and realistic. Among the ASEAN countries, Myanmar and Laos, in the range of 4 million per year, are at the lowest rank of receiving international tourists. It is here to notice that Laos has population of about 7 million, Myanmar over 50 million in 2014; in terms of areas, Laos has 236 800 km² (91428 Miles²) while Myanmar with 676770 sq km (261 300 sq. miles) around 3 times larger. Assuming this rate of increase adopted by the Ministry, Myanmar would have close to 20 million international visitors by 2040, roughly 20 years from the present.

From the aspects of macro-economy, Mandalay and Magway Divisions are not economically strong regions in Myanmar. The relevant economic indicator “per capita GDP” shows both regions are in the range of 0.6 and 0.7 million Kyats per person in 2012, both regions are about in the middle compared with other states and divisions of the country whereas the strong regions like Yangon has per capita GDP of 1.2 million Kyats. From the micro-economic aspects however, the areas around Mandalay and Bagan / Nyaung U have profited economically after 1988, associated with tourism sector. In 2015, Bagan/ Nyaung U zone has 80 hotels with around 2200 rooms, international tourist amounts to 0.3 million, counting together the local pilgrimage, total visitors to the heritage site is close to 0.4 million per year. With the increase of international tourists in the Union as forecasted by the Ministry of Hotel and Tourism, tourist arrivals in Bagan/ Nyaung U area are expected to increase proportionately. According to the data from the Ministry of Hotel and Tourism, around 15 % of international tourists visit Bagan/ Nyaung U area. With the growth rate of 5% annually as adopted by the Ministry of Hotel and Tourism and accepting 15% of the international visitors come to Bagan / Nyaung U, there shall be around 2.8 million foreign tourists by 2050, roughly 30 years from the present. This is an increase of around 7 folds, which calls for advance planning various facilities, most important of all, the hotels. With the present occupancy rates, also with the present stay duration of 3 nights, occupying 1.5 persons per room, Bagan/ Nyaung U heritage zone shall require approximately 12 000 hotel rooms, an additional of about 10 000 rooms in around 2050. This expected increase would need planning the locations for the additional hotels, infrastructure and other facilities for the future. These require a Regional Plan, to be accepted and approved by various authorities, such as Mandalay and Magway Regional Governments, other ministries such as Ministry of Hotel and Tourism, Ministry of Construction, and local elected bodies and the local communities.
Continued ANNEX: CENSUS DATA (compiled by AMA)

<table>
<thead>
<tr>
<th>ASEAN Countries</th>
<th>International Arrivals (mill in 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>32.6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>26.8</td>
</tr>
<tr>
<td>Singapore</td>
<td>12.9</td>
</tr>
<tr>
<td>Indonesia</td>
<td>12.0</td>
</tr>
<tr>
<td>Vietnam</td>
<td>10.0</td>
</tr>
<tr>
<td>Cambodia</td>
<td>5.0</td>
</tr>
<tr>
<td>Philippines</td>
<td>5.4</td>
</tr>
<tr>
<td>Laos</td>
<td>4.7</td>
</tr>
<tr>
<td>Myanmar</td>
<td>3.4</td>
</tr>
<tr>
<td>Brunei</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Table 5** Tourism received among the ASEAN countries. (Processed from respective countries’ data)
Continued ANNEX: CENSUS DATA (compiled by AMA)

Tourism Forecast for Myanmar
(The data up to 2015 are actual, the data after 2020 are targets from Hotel & Tourist Ministry, which is 5% Yearly Growth Rate)

Fig.6 Tourism forecast for Myanmar. Calculated based on ministry’s master plan (2013-2020), tourist arrivals are estimated to hit 7.49 million in 2020.
Continued ANNEX: CENSUS DATA (compiled by AMA)

International Visitors at Important Destinations

Fig. 7  Distribution of international visitors at various tourist spots of Myanmar (Source: Tourism Master Plan, Table 5: Domestic and International Visitors at Selected Destinations, 2012)
Continued ANNEX: CENSUS DATA (compiled by AMA)

Arrival forecast in Bagan Nyaung U area

Calculated based on changes in tourism, the based data are  
(a) 15% of international tourist come to  
Bagan  (b) local guest are 30% of the international

Fig. 8 Arrival forecast in Bagan / Nyaung U heritage region. (The ministry’s master plan 2013-2020, international tourist arrivals are estimated to hit 1.07 million in 2030)
*Continued ANNEX: CENSUS DATA (compiled by AMA)*

**Fig. 10** GDP per capita of states and divisions of Myanmar for the year 2012 (Source: Publication, Ministry of Planning)
Forecast for required rooms in Bagan / Nyaung-U area, based on average 3 nights stay, 1.5 persons/room and 60% occupancy rates, 30% of local tourist stay in hotels.

**Fig. 9** Hotel Room Requirement Forecast for Bagan / Nyaung U area (Calculated based on Visitor-Arrivals, the present occupancy rate of 60%, the present stay duration of 3 nights per visitor, and 1.5 persons per room)
Continued ANNEX: CENSUS DATA (compiled by AMA)

The Employment Sector

Bagan/ Nyaung U zone with 80 hotels, about 2,200 rooms, receiving local and international tourist close to 0.4 million per year, these facts have substantial impacts on the economy of Bagan / Nyaung U zone predominantly in the employment sector. The labour force of 11 townships in Bagan Influence Zone as given in 2014 census is around 930,000. A socio economic survey from AMA shows:

1. The direct employment facilities due to hotel and tourism is around 25,000, which amounts to approximately 2.7% of total employment in 11 townships of Bagan / Nyaung U Influence Zone
2. The induced employment in addition to the direct employment from tourism related industries (restaurants, entertainment, transportation, etc.) is around 50,000, which is about 5.5% of the zonal employment
3. The employment in tourism-related industries, (handicrafts, textiles, etc.) is around 60,000, which is additional 6.6% of the zonal employment

Counting together, the total labour force generated by, direct, induced and in the trades related to tourism amounts to 135,000. Accepting the labour force in the 11 townships of Bagan Influence Zone is around 900,000; which implies that nearly 15% of total employment in the 11 townships of the zone is in the tourism related industries. Taking the ratio, of “room and generated employment”, the result is 1:61, which exceeds the national average ratio of 1:23, as mentioned in the “Tourism Master Plan” published by the Ministry of Hotel and Tourism.

The percentage of labour force to population of 5 townships in Bagan Influence Zone belonging Magway Division is 43%, and of 6 townships in to Mandalay Division and 47% as given in the National Census of 2014. The 11 townships in the Bagan/ Nyaung U Influence Zone, has around 2 million populations, labour force of around 900,000; as presented in the previous chapters, the zonal population shall grow to 2.3 million in 2054, proportionate to this, the labour force shall also grow to around 1.1 million in about 40 years from the present, requiring additional jobs of around 200,000.

One positive character of this region is to have cottage industries that are producing items typical for the region, these include famous Bagan lacquer-ware, Pakokku textiles, Bagan bean paste, and the like. There are around 4200 cottage industries and handicraft workshops, rendering around 8600 jobs.

Together with planning for new settlements and extension areas for future population increase, places for valuable traditional handicrafts and cottage industries should also be taken into consideration. These issues of location for future cottage industries, residential zones, the required infrastructure and the energy and the like would require a comprehensive regional plan, which should also be accepted and approved by the concerned Ministries and authorities, such as the Mandalay and Magway Regional Governments and the elected local bodies and the local communities.
### Continued ANNEX: CENSUS DATA (compiled by AMA)

<table>
<thead>
<tr>
<th>Townships</th>
<th>Population (000)</th>
<th>Population above 10 years (000)</th>
<th>Employed (government) (000)</th>
<th>Employed (private sector) (000)</th>
<th>Own-account worker (000)</th>
<th>Unpaid family worker (000)</th>
<th>Sought work (000)</th>
<th>Labour Force (Age 10 years &amp; above working or seeking for work) (000)</th>
<th>People not in labour force &amp; above 10 years (students, pensioners, dependents, invalids, etc.)</th>
<th>Labour Force Participation Rate</th>
<th>% Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakokku</td>
<td>290.14</td>
<td>240.49</td>
<td>13.48</td>
<td>48.35</td>
<td>6.11</td>
<td>44.77</td>
<td>19.18</td>
<td>5.68</td>
<td>137.57</td>
<td>102.93</td>
<td>47%</td>
</tr>
<tr>
<td>Myaing</td>
<td>225.77</td>
<td>183.24</td>
<td>3.35</td>
<td>24.70</td>
<td>1.73</td>
<td>40.38</td>
<td>19.49</td>
<td>6.20</td>
<td>95.84</td>
<td>87.40</td>
<td>42%</td>
</tr>
<tr>
<td>Yesagyo</td>
<td>215.85</td>
<td>176.77</td>
<td>3.81</td>
<td>23.28</td>
<td>3.47</td>
<td>47.20</td>
<td>27.35</td>
<td>3.79</td>
<td>108.91</td>
<td>67.86</td>
<td>51%</td>
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<tr>
<td>Chaik</td>
<td>185.19</td>
<td>153.99</td>
<td>6.26</td>
<td>22.02</td>
<td>3.39</td>
<td>28.44</td>
<td>11.82</td>
<td>4.16</td>
<td>76.69</td>
<td>77.90</td>
<td>41%</td>
</tr>
<tr>
<td>Seikphyu</td>
<td>102.77</td>
<td>82.03</td>
<td>4.14</td>
<td>7.98</td>
<td>0.99</td>
<td>16.66</td>
<td>10.00</td>
<td>2.07</td>
<td>41.84</td>
<td>40.19</td>
<td>41%</td>
</tr>
<tr>
<td>Total in Magway Division</td>
<td>1019.22</td>
<td>836.53</td>
<td>31.04</td>
<td>126.33</td>
<td>15.69</td>
<td>177.45</td>
<td>87.83</td>
<td>21.91</td>
<td>460.25</td>
<td>376.28</td>
<td>45%</td>
</tr>
<tr>
<td>Mingyan</td>
<td>276.10</td>
<td>233.48</td>
<td>5.42</td>
<td>51.69</td>
<td>7.85</td>
<td>50.02</td>
<td>24.78</td>
<td>5.11</td>
<td>144.88</td>
<td>88.60</td>
<td>52%</td>
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<tr>
<td>Kyaukpadaung</td>
<td>265.91</td>
<td>215.47</td>
<td>5.23</td>
<td>29.19</td>
<td>3.34</td>
<td>51.14</td>
<td>34.72</td>
<td>3.62</td>
<td>127.23</td>
<td>88.24</td>
<td>49%</td>
</tr>
<tr>
<td>Taungtha</td>
<td>216.64</td>
<td>178.29</td>
<td>4.78</td>
<td>24.55</td>
<td>2.57</td>
<td>39.87</td>
<td>16.89</td>
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<td>93.08</td>
<td>85.21</td>
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<tr>
<td>Nyaung-Oo / Bagan</td>
<td>198.19</td>
<td>166.95</td>
<td>4.63</td>
<td>34.82</td>
<td>2.41</td>
<td>35.55</td>
<td>15.22</td>
<td>2.96</td>
<td>95.59</td>
<td>71.36</td>
<td>48%</td>
</tr>
<tr>
<td>Ngathaya (Sub-Tsp)</td>
<td>41.76</td>
<td>34.56</td>
<td>0.56</td>
<td>4.09</td>
<td>0.42</td>
<td>7.72</td>
<td>5.65</td>
<td>0.53</td>
<td>18.97</td>
<td>15.60</td>
<td>45%</td>
</tr>
<tr>
<td>Total in Mandalay Division</td>
<td>994.59</td>
<td>828.75</td>
<td>20.62</td>
<td>144.34</td>
<td>16.59</td>
<td>184.30</td>
<td>97.25</td>
<td>16.64</td>
<td>479.74</td>
<td>349.01</td>
<td>48%</td>
</tr>
<tr>
<td>Total 10 Townships in Influenced zone</td>
<td>2015.81</td>
<td>1665.28</td>
<td>51.66</td>
<td>270.66</td>
<td>32.28</td>
<td>361.75</td>
<td>185.09</td>
<td>38.55</td>
<td>939.99</td>
<td>725.29</td>
<td>47%</td>
</tr>
</tbody>
</table>

**Table 6** Population, labour force and unemployment in townships around Bagan (Source: Extracted and processed from 2014 Census)
### Table 7

Table showing labour force, cottage industries and employed staff in the respective 11 townships of Bagan Influence Zone (Data received from the Department of Archaeology and National Museum)

<table>
<thead>
<tr>
<th>Townships</th>
<th>Labour Force (Age 10 years &amp; Above working or seeking for work)</th>
<th>Cottage industries</th>
<th>Staff Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chauk</td>
<td>76,092</td>
<td>161</td>
<td>610</td>
</tr>
<tr>
<td>Pakokku</td>
<td>137,565</td>
<td>490</td>
<td>1539</td>
</tr>
<tr>
<td>Yesagyo</td>
<td>108,912</td>
<td>65</td>
<td>217</td>
</tr>
<tr>
<td>Myaing</td>
<td>95,839</td>
<td>1587</td>
<td>1807</td>
</tr>
<tr>
<td>Seikphyu</td>
<td>41,843</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total in Magway Division</strong></td>
<td><strong>460,251</strong></td>
<td><strong>2306</strong></td>
<td><strong>4176</strong></td>
</tr>
<tr>
<td>Myingyan</td>
<td>144,878</td>
<td>217</td>
<td>1387</td>
</tr>
<tr>
<td>Taungtha</td>
<td>93,077</td>
<td>1274</td>
<td>1482</td>
</tr>
<tr>
<td>Kyaukpadaung</td>
<td>127,231</td>
<td>329</td>
<td>658</td>
</tr>
<tr>
<td>Nyaung U / Bagan</td>
<td>95,586</td>
<td>121</td>
<td>808</td>
</tr>
<tr>
<td>Ngathayauk(Sub-Tsp)</td>
<td>18,965</td>
<td>32</td>
<td>74</td>
</tr>
<tr>
<td><strong>Total in Mandalay Division</strong></td>
<td><strong>479,737</strong></td>
<td><strong>1973</strong></td>
<td><strong>4409</strong></td>
</tr>
<tr>
<td><strong>Total 10 townships in Influence Zone</strong></td>
<td><strong>939,988</strong></td>
<td><strong>4279</strong></td>
<td><strong>8585</strong></td>
</tr>
</tbody>
</table>
Continued ANNEX: CENSUS DATA (compiled by AMA)

![Labour force forecast in the 10 townships of Bagan influenced zone](image)

**Fig.11** Forecast of population and labour force in the townships of Bagan Influence Zone (Calculated based on trends between census data of 1983 and 2014)
Labour force forecast for Bagan influenced zone

Fig.12 Forecast of labour force in the Influence Zone of Bagan, separating the data for Magway and Mandalay Divisions (Calculated based on trends between census data of 1983 and 2014)
Continued ANNEX: CENSUS DATA (compiled by AMA)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pakokku (Dist Down)</td>
<td>290,139</td>
<td>90,842</td>
<td>31%</td>
</tr>
<tr>
<td>2</td>
<td>Myaing</td>
<td>225,771</td>
<td>7,706</td>
<td>3%</td>
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<tr>
<td>3</td>
<td>Yesagyo</td>
<td>215,352</td>
<td>23,329</td>
<td>11%</td>
</tr>
<tr>
<td>4</td>
<td>Chauk</td>
<td>185,189</td>
<td>45,076</td>
<td>24%</td>
</tr>
<tr>
<td>5</td>
<td>Seikphyu</td>
<td>102,769</td>
<td>9,081</td>
<td>9%</td>
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<table>
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<th>1,019,220</th>
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<th>17%</th>
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<tbody>
<tr>
<td>1</td>
<td>Myingyan (Dist.Town)</td>
<td>276,096</td>
<td>87,708</td>
</tr>
<tr>
<td>2</td>
<td>Kyaukparaung</td>
<td>261,908</td>
<td>42,817</td>
</tr>
<tr>
<td>3</td>
<td>Taungtha</td>
<td>216,642</td>
<td>17,528</td>
</tr>
<tr>
<td>4</td>
<td>Nyaung U (Dist. Town)</td>
<td>184,150</td>
<td>34,493</td>
</tr>
<tr>
<td>5</td>
<td>Bagan</td>
<td>14,035</td>
<td>14,000</td>
</tr>
<tr>
<td>6</td>
<td>Ngathayauck(ST)</td>
<td>41,762</td>
<td>5,815</td>
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<table>
<thead>
<tr>
<th>Zonal Population of</th>
<th>994,593</th>
<th>202,361</th>
<th>20%</th>
</tr>
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<tbody>
<tr>
<td>Total of 11 Townships</td>
<td>2,013,813</td>
<td>378,395</td>
<td>19%</td>
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</table>
Nomination Dossier for
Inscription on the
World Heritage List

BAGAN

Sustainable Tourism Strategy

Ministry of Religious Affairs and Culture
and
Japan International Cooperation Agency (JICA)
Koei Research & Consulting Inc./Nippon Koei Co., Ltd./JTB Corporate Sales Inc.
Project Report for Establishment of the Pilot Model for Regional Tourism Development
in the Republic of the Union of Myanmar
December 2017
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<th>Page</th>
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<tr>
<td>3.2.1 Environment in Cultural Heritage Site</td>
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<tr>
<td>3.2.2 Tourism Infrastructure</td>
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<tr>
<td>3.2.3 Social and Transportation Infrastructure</td>
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<tr>
<td>3.3 Tourism Human Resources Development and Local Community</td>
<td>437</td>
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<tr>
<td>3.3.1 Tourism Human Resources Development</td>
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</tr>
<tr>
<td>3.3.2 Stakeholders and Local Community</td>
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<td>3.4 Tourism Demand</td>
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<tr>
<td>3.4.1 Present Number of Foreign Visitors to Myanmar</td>
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<tr>
<td>3.4.2 Comparison of Foreign Visitors Projection by Myanmar Tourism</td>
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<tr>
<td>Master Plan and Actual Foreign Visitors to Myanmar</td>
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<td>3.4.3 Projection of Tourism Demand of Bagan in 2020</td>
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Glossary of key terms and acronyms

Bagan Cultural Heritage Property  The area of Bagan that has been demarcated as containing most of the cultural heritage attributes

Bagan Cultural Heritage Site  The overall area of Bagan that includes both the cultural heritage property as well as the buffer zone

Buffer Zone  An area demarcated around the cultural heritage property that provides an added layer of protection with similar management and legal provisions.

Protective Planning Area  An area demarcated approximately 30 kilometres beyond the Buffer Zone spanning from Chauk to Pakokku towns as basis for regional planning

MOC  Ministry of Construction

MOE  Ministry of Natural Resources and Environmental Conservation

MOHT  Ministry of Hotel and Tourism

MORAC  Ministry of Religious Affairs and Culture

DANM  Department of Archaeology and National Museum

DA  District Administration

HHCC  High Level Coordination Committee for the management of Bagan Cultural Heritage Property and buffer zone

BAGANCOM  Bagan Committee for the management of the cultural heritage property and buffer zone

AMA  Association of Myanmar Architects

MTF  Myanmar Tourism Federation

JICA  Japan International Cooperation Agency

UNESCO  United Nations Educational, Scientific and Cultural Organization

OUV  Outstanding Universal Value

SOUV  Statement of Outstanding Universal Value
Preamble

Bagan Cultural Heritage Site spans across a bend in the Ayeyawady River between the hills of Tankgyi-taung and Tuyin-taung. The site is located in Nyaung U District of Mandalay Region and Pakokku District of Magway Region. The property covers some 50 square kilometres with an additional 180 square kilometres of buffer zone. The impressive landscape encompasses over three thousand monuments along with 2 towns and over 40 villages. The ancient capital city of Myanmar went through a major building spree during the eleventh to thirteenth centuries CE of which nearly three thousand monuments remain. Though the focus is on the Bagan Period, there are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the eighteenth and nineteenth centuries. The site also boasts elaborate living cultural heritage continuing from the ancient times. The strong Theravada Buddhist culture pervades the daily lives of the local community and the visiting pilgrims. This is overlaid by a deep reverence to the spirits or Nats which are particularly dominant in Bagan, with their main centre being nearby Mount Popa. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production.

The communities living in the towns and villages are in a period of transition. Most locals are still farmers who depend on the meagre rainfall to cultivate their traditional crops such as groundnuts, sesame and flat beans on plots hemmed in by toddy palms. The ground is still ploughed using bullocks and bullock carts are still used transportation. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business. Tourism is also the caused for increased traffic, construction of infrastructure and buildings as well as physical wear and tear of the monuments.

Much of this golden period of Bagan is still hidden below the surface of the parched land. The urbanization and the expansion of the monument ensembles are not clearly understood. Development pressure mainly driven by tourism is ready to swamp the regulations put in place to conserve the monuments. To defuse these pressures while ensuring a livelihood for the local community requires a comprehensive planning approach. The consideration of a wide range of issues will allow for a realistic and effective management system to be put in place that ensures sustainable development while safeguarding the attributes and elements of Bagan that express its exceptional values.

The Integrated Management System for Bagan has been established consisting of adopted management frameworks, established processes and actions along with various sector plans. The process of developing and adopting the Integrated Management System for Bagan was begun in 2013. With regular consultation with government authorities, local representatives and community, it has been possible to come to an overall understanding of how Bagan needs to be managed to ensure that heritage is safeguarded while enabling the local communities to improve their livelihood. Close relationship has also been developed with related sectors such as local administration, tourism, agriculture, disaster risk
management and environment protection. The management of Bagan will however depend on overall government policies and local governance. This requires regular review and amendments to the Integrated Management System to adapt to changing circumstances, however the overarching objective must be retained: "to protect the attributes expressing outstanding universal value of the World Heritage property as well as the locally recognised heritage values, while taking into account sustainable development including the standard of living, safety and economic viability of the community living within the World Heritage property."

The Integrated Management System is defined by two main documents. The Integrated Management Framework document has been officially adopted by the State Party. The Integrated Plan of Actions document defined is a working document requiring ongoing amendments and changes to be carried out and would be the basis for establishing annual action plans. Additionally there are three further sector plans or strategies. The Conceptual Regional Plan provides an overview of the required planning in respect to land-use, settlements, infrastructure and environment. This has been prepared with inputs from various government agencies as well as the Association of Myanmar Architects (AMA). This is closely linked to the Sustainable Tourism Strategy which has been prepared in close collaboration with the Ministry of Hotels and Tourism, the Myanmar Tourism Federation and with support from JICA. Furthermore the Disaster Risk Management Strategy has been prepared with support from the World Bank.

The Sustainable Tourism Strategy has been developed through the collaboration of the Ministry of Hotels and Tourism and the Ministry of Religious Affairs and Culture. Sections 2, 3 and 4 were prepared by the Japan International Cooperation Agency (JICA) through their consultants: Koei Research & Consulting Inc., Nippon Koei Co., Ltd. and JTB Corporate Sales Inc. They worked closely with the Ministry of Hotel and Tourism and the Federation of Myanmar Tourism. Sections 1 and 5 were prepared by UNESCO in close collaboration with the Ministry of Religious Affairs and Culture, particularly with the Department of Archaeology and National Museums.

The introduction provides an overview of required considerations in respect to developing tourism within a cultural heritage site. This is followed by a section providing an overview of the cultural heritage as tourism assets in Bagan. These don’t only include the monuments, but also the intangible heritage and the activities of the local community. The third section is on assessment of tourism in Bagan particularly the tourism trends and the existing services and infrastructure in Bagan. This section ends with a SWOT analysis of the situation. The fourth section provides an overview of the strategic planning for tourism in Bagan including an action plan developed by the JICA consultants. The fifth and last section focuses on sustainable tourism and integrated management specifically defining the requirements for Bagan as an important cultural heritage site. This section also provides a list of activities specifically focusing on issues related to the close coordination between heritage and tourism management.
1. **Introduction to the Sustainable Tourism Strategy**

Tourism is a critical part of managing World Heritage properties. During the second cycle of periodic reporting on the implementation of the World Heritage Convention in Asia and the Pacific, site managers were asked to comment on factors affecting their heritage. One of the most prominent factors considered to have both negative and a positive impact on World Heritage was tourism and the related infrastructure development, accommodations, including interpretation and visitor facilities. The positive factors are the income and prestige which comes with promoting and sustaining the heritage sites. On the other hand, many activities can cause physical damage, loss of ambience, spoil the environment and the surrounding context and even alienate the local community.

**Strategy points**

The following strategy document has been established and adopted to ensure that tourism development is carried out in a sustainable and appropriate manner in and around the heritage site of Bagan. All activities, particularly those dealing with tourism in and around Bagan shall follow the provisions provided below:

*Concerning overall approach for tourism in Bagan and sustainability:*

1. Bagan is a heritage site, a sacred site, a place where communities live and work, and only then a tourist destination;
2. Tourism shall support the safeguarding of the heritage site;
3. Only activities that do not negatively impacted heritage shall be carried out;
4. Activities that enhance the protection of heritage shall be promoted;
5. Wherever possible the local community shall be prioritized to profit from tourism activities;
6. Long-term planning shall be carried out to ensure focus is not only on immediate gains;
7. The heritage site as a tourism product must ensure that there is a clear balance between the requirements and visions of the tourism sector and the need to safeguard the cultural heritage, the environment and the integrity of the local community;

*Concerning tourism accommodations*

8. Tourist accommodations within the town areas and home-stay in the villages shall be allowed as per the new legal framework being developed for Bagan. This will however be strictly controlled to ensure appropriate scale and compliance to the building bylaws while ensuring minimum impact on monuments and subsurface archaeology.

9. Large hotels and resorts shall be allowed only outside the heritage area. Planning provisions shall be made for good accessibility of the main heritage site from the peripheral areas where hotels might develop such as on either side of the Ayeyawady River upstream towards Pakokku and downstream towards Chauk.
10. All hotels and resorts located within the site, excluding those in towns that conform to the legal provisions, must be phased out by 2030. All further work on such resorts must stop. The hotels shall be entirely removed and the area shall be rehabilitated to become an archaeological area again. Procedures need to be clarified with the respective owners.

Concerning tourism infrastructure

11. The development of facilities and infrastructure for tourists within the heritage site shall visitor satisfaction in respect to basic needs, experience as well as information. These shall however be restricted to facilities that are non-intrusive, reversible and appropriate to the location and follow the legal framework being developed for Bagan.

12. Within the heritage site any facilities that need to be built shall adhere to the legal framework particularly to the building bylaws regarding temporary structures. Special care shall be taken with service lines for supply of electricity and water and disposal of sewage, waste water and solid waste.

13. The development of infrastructure linked to tourism activities shall closely adhere to the legal framework, in particular the development guidelines. The development of infrastructure shall only be carried out once an overall appropriate infrastructure development plan has been prepared, agreed upon and adopted by the government. All government departments shall then follow these plans. This is particularly important for circulation (roads, paths, parking areas, bus stops), airports extensions, railway lines and stations, jetties and piers for river traffic, as well as viewing mounts, decks and special access to temples and archaeological sites.

14. Any development projects that are not temporary or easily removable shall first have a Heritage Impact Assessment (HIA) carried out along with detailed sub-surface archaeological surveys linked to Archaeological Risk Maps (ARM). The project shall be developed taking into account the outcome of the assessment and survey.

Concerning tourism transportation and accessibility

15. Transportation within the heritage site will be a critical issue in ensuring heritage is protected. The distribution of visitors throughout the site in sustainable numbers needs to be targeted.

16. A hierarchical plan for transportation within the heritage site shall be established. This means that a detailed plan of vehicular movement must be prepared, agreed upon and adopted before any further infrastructure is developed. The plan shall allow general access to cycles and electric scooters with greatest restrictions to big busses. Accordingly parking facilities shall be provided with a hierarchical system of transportation.

17. The accessibility to Bagan shall be improved considering rising visitor numbers while taking into account its impact on the heritage site.
18. Nyaung U Airport shall not be extended and flight frequency shall be restricted. Should access to Bagan require larger flights and higher flight frequency, the option of moving the airport to other sites such as using the partially built one in Pakokku needs to be considered. Bagan shall become a no-fly zone.

19. Railway transportation shall be prioritized for tourism development. This could become especially important when the airport is relocated. Special trains with steam engines could become a major tourist attraction.

20. Road networks must link to the heritage sites with the main connections being outside the heritage area.

21. Travel along the river shall be promoted. Infrastructure development along the river banks shall be restricted. No major development of jetties and piers shall be carried out within the heritage area. Floating hotels shall not be allowed within the heritage area, can however be promoted further upstream or downstream.

Concerning tourist activities

22. Tourist activities shall ensure that they do not impact the heritage which includes the monuments, the subsurface archaeology as well as the cultural sentiments of the community. This would need to be based on detailed studied and discussions with community members.

23. All activities shall be planned taking into account of the number of tourist that will be visiting the site over the next years and considering the carrying capacity of each of the monuments and sites. In certain cases, such as monuments with mural paints, might require controlling the number of tourist at any one time and overall daily restrictions, possibly by charging extra fees to cover direct management expenses.

Concerning involvement of local community and ensuring their

24. Tourism shall be promoted while ensuring that it supports the livelihood of the local community. Great care shall however be taken to ensure that the lives of the local community members are not unduly disrupted.

25. Tourism activities shall consider the sentiments and values of the local community.

26. Tourism shall support local activities such as production of handicrafts and local agricultural products.

Concerning tourist during post-disaster rehabilitation

27. Tourism shall be promoted during the post-disaster rehabilitation phase to ensure continued support to the livelihood of the community. Tourists shall be encouraged to contribute to the rehabilitation efforts.

28. Provisions shall be made to allow visitors to observe the rehabilitation of Bagan. This would include possible means of observing ongoing restoration work but also by being provided information on the rehabilitation process.
29. Visitor management during the rehabilitation phase must be specially managed to allow for the experience however ensuring safety for heritage and visitors. Signage concerning possible threats must be clearly provided.
2. Cultural Heritage as Tourism Asset in Bagan

2.1 Historical Landscape

2.2 Buddhism Temples and Stupas

2.3 Mural Painting and Ornaments

2.4 Heritage under Repair

2.5 Traditional and Religious Festivals

2.6 Donation Culture

2.7 Traditional Entertainment

2.8 Traditional Crafts

2.9 Cultural Landscape

2.10 Traditional Village

2.11 Natural Landscape and Bird Watching

2.12 Heritages in the Suburbs
2. Cultural Heritage as Tourism Asset in Bagan

After Pyu era prospered in the 8th and 9th centuries, the first united dynasty Bagan was born in 1044 by the ancestry of King Anawrahta (1044-77). On the east bank of the Ayeyawady River, Buddhism temples and pagodas were constructed from 11th to 13th centuries of dynasty era, and the number of them exceeds 3,000. For Myanmar people, occupied 90% by Buddhists, these temples and stupas are still objects of living faith and Bagan is a sacred place.

In Bagan the historic landscape consisting of over 3000 temples and pagodas is a treasure and a major tourism resource. The temples and pagodas made of brick and plaster have different styles depending on the period, and inside and outside of the structure were decorated with delicate stucco ornaments. With a passage of time, there are few things that perfectly preserved. However, people can glimpse the appearance of ancient times.

In addition to the historical landscape by temples and pagodas, Bagan has diverse and attractive cultural and natural resources such as traditional farming, villages where people supporting agriculture live, traditional crafts produced by people living in the village, and religious ceremonies and traditional festivals that have continued from the ancient times. Once reaching to surroundings, people can encounter a group of wooden Buddhist monuments known as a prototype of the royal palace in Bagan, a sacred place where indigenous religion is enshrined that lies on the unique rock form surrounded by a lush green park with moist climate.

Regardless of tangible and intangible assets, from the cultural heritage to the natural heritage, Bagan's attractiveness can be seen in its diversity. They are a worthy heritage to be transmitted to the next generation.
2.1 Historical Landscape

Bagan is enshrouded in the ancient history of Myanmar. According to an inscription, the number of the temples and pagodas scattered in the Bagan’s plain exceeded 5,000 in the past. The landscape consisting of temples and pagodas with various sizes and styles has a fantastic appearance with changing expression in the morning, day and sunset. Historical landscape is one of the most attractive and valuable resources in Bagan.

2.2 Buddhism Temples and Stupas

Cultural background of the temples and pagodas come from diverse eras: some from Pyu era, others from India or from Sri Lanka. Materials are also not only brickwork, but also plaster finishing or gilded ones. As with the historical landscape, its expressions vary depending on the period, and you can see this diversity of heritage.

2.3 Mural Painting and Ornaments

The exterior of temples is decorated with plaster and ceramic reliefs, and the interior with frescoes paintings. You can see the prosperity of the dynasty era from the remaining fragments. However, they are exposed to deterioration due to earthquakes and aging, and it is urgent to restore and preserve them.

2.4 Heritage under Repair

On August 24, 2016, an earthquake with a magnitude of 6.8 occurred with a Chauk located 30 km south of Bagan. Since the 400 ancient heritages were damaged in various scales, some of the temples which are the largest tourist resources were forced to close for some months due to safety considerations. For Bagan, the heritage temples and pagodas are indispensable, and its conservation activity supports tourism there. Relationship and balance between heritage conservation and tourism promotion is considered.

2.5 Traditional and Religious Festivals

Bagan has religious ceremonies that have been inherited over the long history of the region, and festivals derived based on the lunar calendar. In the morning of full-moon at the beginning of January, you can see monks from young to elderly gathering at places throughout the country to celebrate the Ananda Festival with hundreds of shops are crowded around a temple for about a month. In the full moon of November, Thadinkyut Full Moon Festival (Lantern Festival) celebrating the end of Buddhist Lent Day, pagodas and temples are lighted with candles and the compounds are surrounded in a sacred atmosphere. In addition to these festivals, temples of Alopyae, Loka Nanda, Shwezigon, Ma Nu Ha hold their own pagoda festival every year for a period of 2 days to 1 month and each has unique flavour. They are culture closely related to the seasonal circulation, religious ceremonies and are rooted in the community.
2.6 Donation Culture

Theravada Buddhism, which was transferred from Sri Lanka around the 12th century during the Bagan dynasty, is a culture that is based on accumulating merit. Donation is an important act for Buddhists for better the afterlife. The scenery of donation can be seen early in the morning near the monastery, the young monks wearing deep-red robes walk in a row. This is religious culture that is still practiced in this area.

2.7 Traditional Entertainment

The puppet show and traditional dance, performed together with the traditional music played by the orchestra using traditional musical instruments, tells various stories with themes of Bagan's history and people's lifestyle. These are entertainment for you to understand the culture of Bagan. The puppet theatre which was originally born in the 15th century and developed in the 18th century is still a precious traditional art entertaining at hotels and restaurants.

2.8 Traditional Crafts

Major traditional crafts in the area are lacquer-ware and wood carvings. The lacquer-ware, materials procured from neighbouring areas, is produced in villages in Bagan. Currently, lacquer-ware workshops there are more than 10 in New Bagan, 12 in West Pwasaw village and 70 in Minkaba village. It is a major traditional industry in the region. Wood carving using teakwood is also popular craft here. By highly skilled techniques, various crafts such as furniture, sculpture, puppets, etc. have been produced. Cotton fabrics used for ethnic costumes, bamboo works such as baskets or colanders, and sand painting has passed on techniques till now as regional traditional industries.

Traditional Lacquer-ware / Wooden Curving Craft / Umbrella / Sand Painting / Cotton Fabric for Traditional Dress

2.9 Cultural Landscape

The scenery of agriculture that supports the livelihood of the area is called a “cultural landscape”. Agricultural land is spreading tangible and intangible cultural heritage, creating unique landscapes together with temples and pagodas. Landscapes that change with the seasons, such as harvest seasons, are living landscapes that are delightful to see.

2.10 Traditional Village

Bagan’s heritage includes village activities that support the culture. In the vicinity of the village, there are farmers who engage in traditional farming for this dry climate and produce sesame and peanuts, craftsmen who produce traditional crafts such as lacquer-ware and cotton fabrics in villages. The traditional living styles are still seen in some villages.
2.11 Natural Landscape and Bird Watching

Bagan heritage is surrounded by agricultural lands and green zones. People can see many types of birds flying around several green zones and ponds. These areas are attractive places for bird watching. This is natural heritage within the cultural heritage district.

2.12 Heritages in the Suburbs

There are also several cultural and natural heritage sites in the surroundings of Bagan. The Tantkyi-taung Temple on the other side of the Ayeyawady River, the Salay wooden monastery building group in the southern part of Bagan, the Taung Kalat which are objects of the southwest faith, and the Mt. Popa. You can see landscape different from Bagan.

Project for Establishment of the Pilot Model for Regional Tourism Development

(1) Salay Wooden Monasteries

Salay, located 50 km south of Bagan, has some wooden monastery buildings. The façade of the monastery building is covered by wooden sculptures reminiscent of Bagan dynasty architecture.

(2) Poppa Mountain

Mt. Poppa, located 50 km southeast of Bagan, is designated as natural reserved zone (mountain park). Compared to Bagan, it has a moderate climate and lots of greenery, so people can enjoy nature including trekking and bird watching.

(3) Taung Kalat

Taung Kalat is the head temple of the spiritual belief “Nat Faith” above a rock hill located at the foot of Mt. Popa. From the top of the temple, people can view the panoramic landscape of Bagan Plain.

(4) Tantkyi-taung Temple

Tantkyi Taung Temple, located at the summit of the opposite shore of the Ayeyawady River, shows you a view over the heritage area of Bagan.
3. Assessment of Tourism in Bagan

3.1 Tourism Management and Promotion
   3.1.1 Tourism Administration in Public Sector
   3.1.2 Tourist Trends
   3.1.3 Tourism Management and Tourism Promotion
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3.2 Environment and Infrastructure in Cultural Heritage Site
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3.4 Tourism Demand
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3.5 SWOT Analysis
3. Assessment of Tourism in Bagan

3.1 Tourism Management and Promotion

Ministry of Hotels and Tourism (MOHT) is a responsible governmental organization for tourism sector in Myanmar. The main roles of MOHT are as follows.

- Implement the systematic development of Myanmar’s tourism industry
- Encourage national and international investment in the tourism industry
- Develop opportunities for wide participation of private entrepreneurs in tourism
- Promote Myanmar as a world-renowned tourist destination
- Determine hotel and tourism zones
- Coordinate with relevant government departments and organizations to form and define the functions of tourism and hotel supervisory bodies in states, regions, districts and towns
- Upgrade the quality, standards and technical skills of the tourism industry
- Create jobs and raise standards of living through tourism development
- Cooperate with ASEAN and other countries in tourism

In March 2016, a new Union Minister of MOHT was appointed and the organizational structure of MOHT was reorganized after the new government was established in Myanmar. The organization of MOHT consists of Union Minister Office, Directorate of Hotels and Tourism and Regional Offices. The organizational structure of MOHT is shown in the figure below.

Union Minister Office is responsible for policy-making, laws and regulation, planning, statistics, auditing, finance, and public relations. In the Union Minister Office, there are Permanent Secretary and Deputy Permanent Secretary under the Union Minister. 6 departments headed by Assistant Secretary/Director are under the supervision of these secretaries.

Directorate of Hotels and Tourism is responsible for planning, training, tourism promotion, regional cooperation and regulation. In Directorate of Hotels and Tourism, there are Director General, 3 Deputy Director Generals and 6 departments and 44 regional offices. The regional office is responsible for management and operation of
tourist sites and tourist facilities, collection of tourism statistical data, report on tourism statistical data to MOHT in Nay Pyi Taw, preparation and implementation of local tourism related events, and consultation and supporting application procedures for various tourism business licenses.

2) Mandalay Regional Office, MOHT

Tourism development and promotion for Mandalay Region is responsible by MOHT Director Office in Mandalay. Tourism related infrastructure and basic infrastructure are responsible by the relevant departments in Mandalay Region Government in coordination with Township Development Committees at each Township.

Bagan Management Committee is responsible for supporting conservation and development of Bagan. It was established in September 2016. The Committee is chaired by Chief Minister of the Government of Mandalay Region. Members of the Committee are 16 consisting of representatives from relevant departments at the government of Mandalay Region, Department of Archaeology (MORAC), MOHT Bagan branch office, General Administration Office of Nyaung U District (GAD), Township Development Committee in Nyaung U Township (TDC), and relevant governmental organizations. The committee meeting is held by monthly in Mandalay.

3) MOHT Bagan Branch Office

MOHT Bagan branch office has an office with a tourist information centre (TIC) in New Bagan. The Organization chart of MOHT Bagan branch office is shown in Figure 3-2. The branch office has following four sections, Administration and Finance, Information, Hotel & Transport Supervision and Guide & Tour Supervision with a total of 24 management officers and staff including Deputy Director, Assistant Director and 22 staff as shown below. The branch office is a regional office of MOHT, and the main responsibility of the office as described in the regional office.

(2) Tourism Services and Tourism Management in Bagan

1) Dissemination and Management of Tourism Information

MOHT Bagan branch office collects, manages and updates information about tourism resources, tourist facilities, accommodation facilities, tour programs, tourism transportation, tourist guides, and tourism related services. This information is also
shared with MOHT in Nay Pyi Taw. However, MOHT Bagan branch office does not adequately manage various information such as tourism resources and tourist facilities using the database system.

MOHT Bagan branch office operates and manages three tourist information centres (TICs) in Bagan as a facility to provide tourist information and support for tourists visiting Bagan. Current conditions and issues of TICs are described in the section (1) Tourist Facilities, 3.2.2 Tourism Infrastructure.

2) Tourist Police

In Bagan, there is police under the jurisdiction of the Ministry of Home Affairs (MOHA) and tourism police under the jurisdiction of MOHA in cooperation with the Ministry of Hotels and Tourism. The police is mainly responsible for accidents and incidents occurred in the local area, traffic regulation, and control and crackdown of crime, while the tourist police is responsible for support tourists such as safety management of tourists, prevention of crime, arrangement of transportation to hospital in case of accident occurred, provision of basic tourism information, and battery charge support for E-bike.

Regarding the tourist police station, there are four tourist police stations, located in Old Bagan, New Bagan, Nyaung U, and Mount Popa. The total of 42 tourist police officers are assigned to 3 areas excluding Mount Popa. The police officer wears a uniform with attached the name of "Tourist Police".

In Bagan, tourist police are placed at airport, bus terminal, railway station, Bagan Heritage area zone fee collection stations, major temples and tourist facilities, and places that tourists mainly use mainly use. There are number of police stalls along the streets for guard and maintain security on a 24-hour basis. In addition, a hotline system is established in Bagan that tourists can contact the tourist police station directly in case of emergency.

3) Application for Licensing, Registration, Supervision of Tourism Business

Business operation licensing for tourism business such as hotels, tourist guides, travel agents, tourism transportation (taxis, buses) in Myanmar are responsible to MOHT. Regarding hotels, guesthouses and restaurants for Burmese people, Township Development Committee (TDC) in the regional government is in charge.

Hotels and Guesthouses

Regarding hotels, there are laws and regulations for operation licensing, registration, construction and rating in Myanmar. Hotel and Tourism Supervision Department in Directorate of Hotels and Tourism, MOHT is responsible for registration, authorization and supervision for hotel industry. There are two kinds of procedures in the licensing system for the hotels and guesthouses in Myanmar. One is MOHT issues license, which permits foreigners to stay in them. The other is TDC issues license, which permits only Myanmar to stay there. MOHT Bagan branch office is responsible to support for applying for business licenses of hotels and guesthouses in Bagan.
• Order Relation to Licensing of Hotel and Lodging-House Business (2011)
• Rule & Regulation for Hotel Construction (2010)
• Rule & Regulation for Star Selection of Hotel (2011)
• Myanmar Tourism Business Law (2016)

Tourist Guide, Travel Agency, Tourism Transport Business

Regarding tourist guide, travel agency and tourism transport business, the following laws define license and business operation for respective business.

Regarding to the tourist guide license, there are two types of tourist guide license. One is national licensed tourist guide for the whole county. The other is regional tourist guide for the Bagan area. MOHT is responsible for training for the national licensed tourist guide and issue of license. MOHT Bagan branch is responsible for training of the regional guide and issue of license. Lectures for training of the regional guide is dispatched from Tourist Guide Association, Myanmar Hotelier Association, Myanmar Restaurant Association, MORAC and University. Both national and regional licensed tourist guides are registered with MOHT Bagan branch office. The national licensed tourist guide is obliged to register at Bagan Tourist Guide Association.

Hotel and Tourism Supervision Department in Directorate of Hotels and Tourism, MOHT is responsible for registration, authorization and supervision for travel agency.

Regarding tourism transportation, MOHT is responsible for approval, issue of business license and supervision of business operation for tourism transportation used by foreigners. Supervision of operation is responsible by Ministry of Transportation. There is regulation on license of vehicle transportation. Vehicles for tourism transportation used by foreigners is required to attach a blue license plate. Vehicles for Myanmar people is required to attach a red license plate.

• Order Relation to Licensing of Tourist Transport Business (2011)
• Order Relation to Licensing of Tour Guide Business (2011)
• Order Relation to Licensing of Tour Operation Enterprise (2011)

Electric-Bike Rental Shop, Horse-cart

Regarding electric-bike (E-bike) and horse-cart, TDC is responsible for issue and registration of operation license for E-bike and horse-cart. License is valid for only one year.

4) Tourism Statistics

Tourism statistics are an important and the basis of information for policy-making and planning by MOHT. Tourism statistics are gathered and compiled by both Planning & Statistic Dept. of MOHT and MOHT Bagan branch office. The Bagan branch office takes care of statistics on foreign visitors, domestic visitors and accommodation in Bagan. However, these statistics only provide the number of tourists (guest those who stayed at accommodation), and unfortunately the behaviour of tourist in Bagan is ignored, which is necessary for planning and monitoring of tourism administration and management of tourist destination.
Regarding the statistics of foreign guests in Bagan, the Bagan branch office counts the number of foreign guests only top ten nationalities and guests from other nationalities are counted as “others”. Guest data is not collected and compiled by all nationalities of guests. For the time being, the Planning and Statistics Department of the MOHT carries out sampling interview surveys on foreign tourists once a year at the airport. This survey covers various aspects of tourists including travel patterns, country of origin, sex and age. However, collected data includes many incomplete answers. Also, collected and compiled data is not sufficiently analyzed.

5) **Heritage Conservation**

Heritage conservation in Bagan is under the responsibility of the Department of Archaeology (DOA), National Museum and Library and the MORAC. The department implements heritage conservation depending on the 5 national laws and the 5 special laws for Bagan as shown in Table 3-3. As an exceptional case, some heritage temples and sites are managed by “Gopaka” which is an organization of Buddhist believers. The Gopaka carry out repair and maintenance of their heritage temples and sites. The temples managed by the Gopaka are under the responsibility of MORAC.

6) **Landscape and Development Control**

Landscape and development in Bagan are strictly controlled by the “Township Law Restoration Council for Pagan-Nyaung U Township (1994).” This law stipulates land use regulation and building regulation such as height, set-back for Bagan. Based on this law, new development projects must get approval mainly from the DOA, Nyaung U Township Development Committee and the General Affairs Department of Nyaung U District.

Regarding development projects in Bagan, it is described in Sec “3.1.5, Laws and Regulations concerning tourism development of Bagan”. For details of landscape, outdoor advertisement, development regulations, See "3.2.1 Environmental Conservation of Cultural Heritage".

3.1.2 **Tourist Trends**

(1) **Visitors to Bagan**

1) **Foreign Visitors to Bagan**

The number of foreign visitors to Bagan increase from 2008 to 2016 with an average annual increase of 25% in accordance with the trends of foreign visitors to Myanmar. In 2016, the number of foreign visitors is 283,877 and the growth rate of visitor is 15% compared with the previous year.
2) Foreign Visitors to Bagan by Nationality

According to the number of foreign visitors to Bagan by nationality in 2016, top 10 nationalities are shown in Figure 3-4. The largest number of foreign visitors is from America, 16,007 with the share of 5.6%. The second largest number was from UK, 13,756. Among the top 10 nationalities, five nationalities, Japan, China, Thailand, India, Malaysia are from Asian counties.

3) Domestic Visitors to Bagan

Regarding domestic visitors to Bagan, there is no official statistic for domestic visitors. The domestic visitors went to Bagan during the long holiday time in March, October and December. Most domestic visitors to Bagan stay at small hotels, guest houses
and temples. According to interviews from MOHT Bagan, more than half of domestic visitors stay at temples in Bagan. The number of domestic visitors to Bagan is estimated at 306,000 in 2016 based on collected information on domestic visitors to Bagan by JICA Expert Team. Compared to the number of foreign visitor to Bagan in 2016, the number of domestic visitors to Bagan in 2016 is more than foreign visitors.

4) **Foreign Visitors to Bagan by Month**

Bagan has seasonality of tourism due to monthly fluctuation of foreign visitors. Foreign visitors come to Bagan mainly during the dry season in Bagan from October to March as tourist season. November receives the highest number of visitors to Bagan with 41,522 visitors in 2016. The lowest number of visitors is June with 7,964 visitors. The total number of foreign visitors to Bagan during the tourist season (from October to March) accounts for 75% (211,686) of the total visitors in the whole year.

![Number of Foreign Tourists to Bagan by Month in 2016](image)

**Figure 3.5 Number of Foreign Tourists to Bagan by Month in 2016**

5) **Foreign Visitors to Bagan by Mode of Transport**

According to the foreign visitors to Bagan by mode of transport in 2015, shares of foreign visitors arrive to Bagan by mode of transportation are 46% by flight, 35% by car/bus and 19% by boat. Nyaung U Airport has schedule flight connected to Yangon, Mandalay, Heho, Thandwe, Tachileik and Myitkyina. Most foreign visitors to Bagan by car/bus were coming from Mandalay. Foreign visitors also came to Bagan by cruise boat from Mandalay.
3.1.3 Tourism Management and Tourism Promotion

(1) Current Situation

As mentioned in the Chapter 2, Bagan has many attractive tourism resources. It is clear that Bagan is recognized as a tourist destination that attract tourists with continuously increasing the number of tourists to Bagan, despite the damages and influences caused by the earthquake which struck the region in August 2016 as mentioned above.

MOHT is responsible governmental agency for tourism marketing and promotion in Myanmar. Bagan is a major tourist destination in Myanmar along with Yangon, Mandalay and Inle Lake in domestic and international tourism markets. MOHT promotes Bagan as cultural heritage tourism destination with other tourist destinations in cooperation with Myanmar Tourism Federation (MTF) and private sector related to tourism industry in Yangon and Bagan.

Current condition of major activities for tourism marketing and promotion under public sector such as MOHT and MTF is as follows.

1) Tourism Information Materials

Various kinds of tourism materials have distributed at Tourism Information Centers in Bagan as well as in some hotels and restaurants. Materials are brochures on tours, hotels and restaurants, tourist sites and tourism transportations, and maps. Some of the materials, such as maps are useful enough as information tool for foreign tourists. On the other hand, some of them are not sufficient to provide for tourists, in respect to both contents and qualities, the materials are filled with advertisements rather than information that meet tourists needs. In terms of the quality of paper, durability is important especially for maps, since tourists fold and unfold maps frequently. Various brochures and tourist destination guidebooks were developed and printed by MOHT in Nay Pyi Taw. Most of brochures are in English. Brochures and maps should be
developed in other languages based on promotion targets and needs of tourism market.

2) Website and Facebook

Both MOHT and MTF have websites to provide tourism information about Myanmar. The website of MOHT provides various kinds of tourism information in Myanmar and English. However, most of the contents in news related to MOHT are still Myanmar only so that it is necessary to provide the information in English and other major languages.

3) Major issues

Aggressive marketing and promotion activities in both public and private sectors in Bagan are quite limited as national trend in Myanmar although MOHT, MTF and other stakeholders related to tourism in Bagan have tackled their activities with the limited capacity such as human resources and budget.

Major issues for tourism marketing and promotion are as follows.

a) Organization

- Establishment of a tourism marketing and promotion body in Bagan which conducts integrated regional marketing and promotion under the public-private partnership involving local communities
- Establishment of a collection and compilation system of tourist information and tourism resources, and preparation of tourist information databases

b) Human Resources

- Arrangement of a staff, who is in charge of tourism marketing and promotion, in MOHT Bagan branch
- Capacity building of tourism marketing and promotion for local stakeholders related to tourism industry in both public and private sector

c) Tourism Information

- Strengthening of marketing and promotion materials for tourists, tourism business operators and media
- Preparation and dissemination of comprehensive tourist information materials such as brochure and map for tourists
- Preparation of tourism information such as brochures and maps in multiple languages
- Establishment of website and/or Facebook created in Bagan for dissemination of latest tourist information

d) Tourism Product

- Diversification of variation of tour programs and activities
- Extension of tourists stay in Bagan with increase of tourist’ spending
• Development and promotion of optional tours such as CBT, village tours and ecotours to diversify tour programs in Bagan for attracting more foreign tourists
• Improvement of local tourism products such as handicrafts and souvenirs in terms of quality and design for attracting more foreign tourist
• Utilization of local tourism resources for creating attractive tourism products such as farming, fishing, local food and handcraft making at villages.

3.1.4 Tourism related to Private Sector

(1) Tourism related Private Organization

Myanmar Tourism Federation (MTF) is the private tourism organization consisting of 11 private associations related with tourism. MTF Bagan branch was established as a regional branch in 2015.

Among the member associations related to tourism industry in MTF, following five associations have branch in Bagan.

• Myanmar Hotelier Association (Bagan)
• Myanmar Restaurant Association (Bagan)
• Myanmar Tourist Guide Association (Bagan)
• Tourism Transportation Association
• Souvenir Entrepreneurs Association

There are three local tourism transport business associations in Bagan.

• E-Bike Association
• Taxi Driver Association
• Horse Cart Association

MORAC entrusted MTF Bagan branch to collect Bagan Zone Fee from foreign tourists at Nyaung U Airport and other designated places in Bagan.

(2) Tourism Business

1) Hotel and Guesthouse

In Bagan, the number of hotels, motels and guest houses in 2016 are 78 with 2,565 rooms in total as shown in the table below. These accommodation facilities can be broken down into five categories ranging from 1-star to up to 4-star and unrated. 15% of these facilities are 3 or 4-star, 15% are 2 or 1-star, and the remaining 70% are unrated.

<table>
<thead>
<tr>
<th>Table 3.1</th>
<th>Number of Accommodations and Rooms in Bagan (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>Number of Accommodation</td>
</tr>
<tr>
<td>Hotel</td>
<td>47</td>
</tr>
<tr>
<td>Motel and Guest house</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
</tr>
</tbody>
</table>

Source: MOHT Bagan
2) Food and Beverage (Restaurant and Café)

A total of 182 restaurants are registered in Bagan. Restaurant consists of 80 large restaurants, 57 small meal shops and 45 cafes. Currently, 71 restaurants are members of Myanmar Restaurant Association (MRA) in Bagan. MRA in Bagan was established in 2011. Some restaurants put on puppet shows or traditional dance performances.

3) Travel Agent and Tour Operator

Only 3 travel agents are registered in Bagan. Besides these travel agents, 21 travel agents operate in Bagan, which are branch offices of travel agents registered in Yangon or Mandalay. Tour operators in Bagan accept group tours and free independent tourist (FIT) from Yangon and Mandalay instructed by the main office. Most tour operators offer local tours in and around Bagan, guides and vehicles and sell airline and cruise tickets.

4) Tourist Guide

According to the Myanmar Tourist Guide Association in Bagan (MTGA Bagan), currently 265 tourist guides are registered as members of MTGA Bagan. There are about 231 licensed regional tourist guides and 311 national licensed guides in Bagan.

Most group tours in Bagan are accompanied by a nationally licensed “through guide” from Yangon. The “station guide” in Bagan is usually employed at the request of FIT at the front counter or concierge desk at hotels. In some cases, station guides are appointed by travel agencies in Yangon for attending on group tours without the use of other guides.

5) Handicraft and Souvenir Shop

Currently, various kinds of handicrafts and souvenirs are sold in Bagan. Typical items include lacquer wares, umbrellas, sand pictures, woodcarving, lungi, Thanaka, sand picture, and jade. Lacquer ware is the most common souvenir in Bagan. The quality and price varies depending on the products, mode of distribution, and retail outlets. Many souvenir shops deal in local products, while some large-scale shops have partnerships with travel agencies. In recent years, boutique shops sell luxury goods. Large scale lacquer ware shops are concentrated in New Bagan. They are handling not only their own manufactured products but also ones produced in villages in Bagan.

Table 3.2 Accommodations in Bagan by Area (2016)

<table>
<thead>
<tr>
<th>Accommodation Type</th>
<th>Nyaung U</th>
<th>Old Bagan</th>
<th>New Bagan</th>
<th>Hotel Zone (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>Number</td>
<td>Room</td>
<td>Number</td>
<td>Room</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>419</td>
<td>27</td>
<td>437</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>529</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motel &amp; Guest House</th>
<th>Number</th>
<th>Room</th>
<th>Number</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27</td>
<td>437</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: MOHT Bagan
Many craft producers have their own workshops in the shop. Customers can observe the workshop with explanation of the manufacturing process by shop staff. Visiting the craft shop is one of tourist attractions for foreign tourists. Some handicraft manufacturers already succeed in branding. On the other hand, a lot of lacquer ware or sandpapers are sold at stall stands around the historical monuments in Bagan. The quality and price depends on the product, mode of distribution, and retail stores.

Regarding local food products, peanuts, palm wine, palm sugar, and tamarind and sesame processed products are produced and sold in Bagan.

6) Tourism Transportation

Bus and Taxi

Sedans and vans are used as taxi for tourists in Bagan operated by local transport business operators. Taxi can be hired from Nyaung U Airport, Nyaung U Bus Terminal, travel agents and hotels. In fact, there is no taxi company officially registered in Bagan. Long-distance bus is operated on routes between Bagan and other major cities. Long-distance bus arrives and departs at Nyaung U Bus Terminal near Nyaung U Airport. Private transport companies have offices at the Bus Terminals for selling tickets.

Electric-Bike and Bicycle Rental Shop

In recent years, the number of rental shops for electric bicycles (E-bikes) and bicycles has been rapidly increasing in Bagan. E-bike can move freely in Bagan and are inexpensive for tourists. Demand of E-Bike and bicycle is very high for FIT. The registered number of E-bikes in Bagan exceeds 10,000.

At present, there is no regulation or rule for operation of a rental shop. Only a few rental shops lending helmets and providing guidance on rule of riding on the road, countermeasures in case of breakdowns and emergency, etc for users. In the future, it is indispensable to secure safety for the increasing number of e-bike users in Bagan, MOHT Bagan branch office needs to discuss and consider preparation of rental guideline including rules covering rental, safety, countermeasures for breakdown, and emergency for E-bike as well as necessary instruction on appropriate operation of the rental business to the shop operators in E-Bike Association.

Horse-cart

The most traditional and rustic transportation in Bagan is the horse-cart. Horse-carts can go through narrow roads and monument areas. Especially impressive and romantic is riding horse-cart going though pagodas while listening to the sound of hooves between pagodas; this makes it popular tourist transportation. The price is negotiable basis, so some efforts to improve transparency of the price may be needed. For the tourist to use the horse-cart smoothly, MOHT Bagan branch office of MOHT needs to discuss the issues on pricing, service and hospitality for tourists with Horse-cart Association, and provides necessary guidance to horse-cart drivers.
River Cruise Ship and Small Boat

Passenger cruise ships are operated between Bagan and Mandalay along with Ayeyawady River. There is one public and 6 private ferry operators. Most of cruise ships call at Nyaung U Jetty. Most of the customers on the river cruise tour are foreign tourists. Small boats for sunset viewing and crossing the Ayeyawady River, are operated by local boat owners. There is no fixed rate for renting the small boat so that tourist need to directly negotiate the price with the boat operator.

3.1.5 Laws and Regulations related to Tourism Development in Bagan

Laws and regulations concerning the tourism development in Bagan are shown in Table 3-3. Laws and regulations concerning tourism development also include laws and regulations established by other central ministries. “Myanmar Hotel and Tourism Law (1993)” which stipulates their duties and the business activities related to tourism development were established by MOHT. This law was revised and drafted a new law, “Myanmar Tourism Business Law” was enacted in 2016, which is still waiting for the approval by the cabinet of the Myanmar government.

Development activities such as tourism infrastructure development in Bagan Heritage Protected area are controlled by the zoning designated by MORAC and must comply with related regulations. “The Enforcement Regulations in accordance with the Protection and Preservation of Cultural Heritage Regions Law” states details on protection of cultural heritage areas, preliminary application for permission, review, authorization, public notice on protection and zoning, and necessary document to be submitted by business operator to DOA for acquiring permission of construction project in the zone.

“Instruction Order-No.2/2014” and “Instruction Order-No.3/2014” by MORAC correspond to the by-laws of the above law and specify restrictions on construction activities. New construction of commercial and industrial facilities such as hotels and restaurants is not allowed in urban area of New Bagan and Nyaung U, but in the villages, quarters and towns. In addition, extension of the existing industrial facilities is not allowed in Monument Zone (MZ), Ancient Zone (AZ) and Protected and Preserved Zone (PZ). Only renovation of existing industrial facilities can be implemented with permission of DOA.

After obtaining the agreement of MORAC, implementing body can start the procedure for construction permission.

In the byelaw of Nyaung U Township Development Committee (TDC), there are some categories of building types and it recommends the usage of nonflammable materials such as brick building, half brick- half timber building, timber house and combined building, in the quarters of Nyaung U Township Development Committee boundary. According to the byelaw, the owner shall submit the application to TDC for permission to construct new building, renovate or extend existing building.
Tourism brings has both positive and negative impacts at the same time to cultural heritage sites. The positive impact includes purchase of locally produced goods and services such as accommodation, food and beverage, car rental and tourist guides etc. mainly by foreign tourists. It gives a boost to the regional economy while obtaining foreign exchange.

On the other hand, negative impact to the heritage environment is mainly caused by the increase in tourism demand and private investment. For example, physical impact
by exceeding the carrying capacity due to the concentration of tourists to specific heritage sites, physical influence on surrounding environment due to the hotel construction in the cultural heritage area, and degradation of atmosphere due to the installation of outdoor advertisement, and so on.

In addition, since the infrastructure has not been developed yet to support cultural heritage site tourism, social and transportation infrastructure which are the living foundation of the local communities are both vulnerable.

3.2.1 Environment in Cultural Heritage Site

(1) Property Zone and Buffer Zone / Zoning for World Heritage Nomination

To preserve Buddhism temples and stupas in Bagan, MORAC established three zones according to the law enacted in 1998: namely, MZ, AZ and PZ. In application to the UNESCO World Heritage Site in 2018, MORAC supported by UNESCO reviewed these three zones and replaced them with two zones: Property Zone and Buffer Zone. The major differences from previous zoning are as follows: 1) Reducing the number of zones from three to two, 2) designating Tankyi-taung Hill, the opposite side of the Ayeyawady River and Tuyin Hills in the southeast of Bagan as Property Zone, and their surrounding area as Buffer Zone, 3) Settlement area including urban and village area where citizen lives are excluded from these zones. The boundary line of zoning is not yet finalized as of October 2017. However, it will be finalized after consultation and consent with the communities. This zoning will be a guideline for preservation of heritage and its surrounding environment to future generation, and it should also be referred to for preparing various development plans such as infrastructure development.

![Figure 3.7 Property Zone and Buffer Zone (As of October 2017)](image)
(Issues)

In Cultural Heritage Site of Bagan, the heritage is scattered inside and outside settlement area such as urban area and village where people live, and even in cultivated area too. Therefore, it is difficult to manage the site as an independent fenced-in area like in Borobudur World Heritage Site in Indonesia. It is important to conserve heritage remains and sites while maintaining activities in settlement area and its surroundings. The issue is how to achieve coexistence between local activities and heritage preservation.

The conservation area will be clarified by MORAC by establishing zones of Property Zone and Buffer Zone. However, the potential of finding new buried relics that have not appeared on the ground yet has been pointed out, and UNESCO recommend MORAC to create “Heritage Risk Map” that records remains above and under the ground. This map will serve a base map for the preservation heritage in the future. In addition, it will also be used to conform whether or not there is an impact on heritage remains in advance for the future infrastructure development. It is important to be able to clarify the process of regulation and development in order to minimize the influence of various developments on heritage in the future.

(2) Concentration of Tourists / Saturation of Carrying Capacity

Shwesantaw Pagoda located in the Cultural Heritage Site is the most popular attraction for tourists as a place to view the sunset. According to the field survey conducted by JICA Expert Team in February 2017, the number of the tourists climbing the pagoda reached 882 people during the sunset time, and the “carrying capacity” is saturated was revealed. As tourists visiting the cultural heritage area concentrate on specific heritage sites, the upper terraces of the pagoda get extremely crowded and accident risks such as falling are a concern as shown in below. In addition, heritage is in danger of deterioration due to damage and graffiti caused by visitors. When the State Councillor visited Bagan on January 24, 2017, she announced that “the act of climbing up the pagodas should be reviewed for long-term heritage preservation”, and she called for the measures to manage the heritage for the next generation.
(Issues)

From the viewpoint of heritage conservation, ways to disperse the concentration of tourists to other destinations is an urgent issue. In the short term, it can be done for a specific heritage by entry restriction or regulation, and by opening-up other viewing points and providing information on guide map to them. In middle and long term, it is also necessary to promote substitute viewing points considering the historical landscape, based on the possibility to prohibit the access to the temples and pagodas in the cultural heritage site area. It is important to balance between tourism demand and heritage protection.

Note: Mandalay Regional Government implemented three viewing mounds in cultural heritage area in 2017 which have 6 m height. They are located at the lakeside of Ko Mauk Kan, Nyaung Latta Pat Kan and Sulamani Kan. Although they were implemented without following the advice from UNESCO, it is expected to encourage the tourists to disperse in the Cultural Heritage Site and to provide as an alternative viewing point.

(3) Historical Landscape and Visual Obstruction Factors

The central elements that constitute historical landscape of Bagan are the temples and pagodas, and natural and cultural landscape around them. These combined elements create the attractive landscape of Bagan. However, due to the inflow of local and foreign private capital in recent years, the landscape of Bagan is on the verge of crisis. The outdoor advertisement of domestic and overseas companies is chaotic at intersections, and flyers such as sales advertisements are affixed to roadside trees, and retailers in the heritage area are wrapped in colorful corporate advertisements. Degradation of the landscape is evident to everyone. In addition, some of the social infrastructure that supports the local community greatly reduces the value of the historical landscape as tourism resources. Electrical power distribution takes the shortest routes through the heritage area, and due to the insufficient waste management, residential waste reaches to the heritage area. Thus, the atmosphere of the historical landscape is being spoiled.

![Figure 3.9 Elements that degrade the Historical Landscape](image)

Source: JICA Expert Team
In order to preserve the value as a heritage tourist destination for the country, it is essential to form a good visual environment. Outdoor advertisements should be eliminated, and underground wiring as a part of infrastructure development is also necessary. Efforts taking into consideration to the landscape environment are strongly required. In order to form and maintain a favourable landscape environment suitable for the World Heritage site, it is necessary to establish a mechanism that allows landscape conservation and infrastructure development to coexist but strictly according to regulations and guidelines.

3.2.2 Tourism Infrastructure

Tourism infrastructure is an infrastructure that contributes to sightseeing, development of tourist facilities, tourist routes, visitor management, etc. Despite being a candidate for a World Heritage Site, these improvements have not been done sufficiently and it is not suitable situation for a tourist destination that represents the country.

(1) Tourist Facilities

1) Bagan Archaeological Museum

The National Museum located in Old Bagan opened in 1998 and has 10 exhibition rooms. Exhibits range from Buddhist statues, stone monuments, art objects, old folk crafts, traditional costumes and dioramas of dynasty era. Despite most of the exhibit have high value as a cultural asset, there are lack of consideration to foreign visitors such as no explanation plate in English. The facilities such as lighting, air conditioning and lifts are not sufficiently equipped, then the quality as an exhibition space is low. In addition, the size of the building is very large compared with the surrounding environment, and there is also an opinion to oppose to the building scale in the heritage area.

(Issues)

Improvement of exhibition including English notation and upgrade of facilities are required.

2) Information Center

There are three information centers in Bagan, 1) TIC attached to the Bagan branch of MOHT in New Bagan, 2) TIC in front of Nyaung U Market, and 3) The information counter inside Nyaung U Airport terminal building. Each has problems in terms of inappropriate location, lack of staffs, and lack of information. As current situation, it cannot be said that these are useful values for tourists.

(Issues)

It is necessary to develop a facility that is located at a location near the tourist destination as a representative ruins tourist destination of the country and capable of transmitting useful information.
3) **Rest Spaces**

Since the monuments, which are tourism destinations, are scattered in a wide range of the area, it is desirable for tourists to have a rest space not only hotels and restaurants, but also heritage tourism destinations. Currently, public toilets are installed in the vicinity of the relatively large-scale temples, such as the Shwesantaw Stupa, the Thabyinnyu Temple and the Htilominlo Temple.

![Figure 3.10 Tourism Facility in Bagan / Bagan Archaeological Museum](source: JICA Expert Team)

**(Issues)**

Appropriate location and facility development with appropriate wastewater treatment are necessary.

(2) **Access Road in Cultural Heritage Area**

The main tourist destinations of Bagan are temples and pagodas. Many of them are scattered in the heritage area, and most of the access roads are unpaved. In the dry season, the dust on the road obstructs the visibility, and in the rainy season the water stays and it becomes muddy and water puddle, and the safety and comfort of the passage are not secured.

![Figure 3.11 Road Condition in Cultural Heritage Area](source: JICA Expert Team)
To upgrade the unpaved road is indispensable in order to secure the safety and to provide comfortable mobile environment.

(3) Visitor Management

In order to go around the scattered monuments, tourists rely on the map and the directional signage to reach the destination. However, in Bagan, there is no unified signature plan as a heritage tourism site. The language used in the signage is sometimes only in Myanmar, which makes tourism unfriendly for tourists.

Meanwhile, the means of travel for tourists is mainly one of buses, rent-a-cars or E-bikes, but parking lots are not prepared around the monuments, as a result, vehicles and motorbikes are placed in disorder, and chaotic situations. In particular, the congestion situation in a particular pagoda at sunset time is extraordinary.

It is a matter whether improving the surrounding environment of monuments as heritage tourism sites, and whether it can be a rich heritage tourism destination.

3.2.3 Social and Transportation Infrastructure

While Bagan is a cultural heritage site, areas such as urban areas and villages where people live are also spread to the area. The infrastructure which is the foundation of the citizen in the heritage site has not been sufficiently improved so far, and what has been developed is becoming obsolete or damaged, so improvement is essential. Improper development of infrastructure that does not consider cultural landscape was also found, and it is urgent issues to implement proper improvement as a cultural heritage site. Current situations and issues of social and transportation infrastructure are as follows. The infrastructure plan based on the field survey is described in the pre-FS report as an Appendix.

(1) Road Network

The roads in the Bagan are defined as 1) intercity roads, 2) urban roads, 3) inner roads, 4) village roads, and 5) others, depending on the positioning of the routes and the road surface conditions. Jurisdiction of roads for the maintenance and management are Ministry of Construction (MOC), Township Development Committee (TDC), and BOT by private enterprise. The road in the cultural heritage area is the jurisdiction of Department of Archaeology (DOA).
In general, intercity roads and urban roads are asphalt / tar simplified pavement. The condition of the road surface is good in the section where the construction is new, but the old section has many pot holes and cracks. Most of the roads of the other divisions are unpaved. The road managed by TDC is 30 sections (total extension 17.3 km), and only about 5 km is paved. Despite being an only road that accesses the monument in the cultural heritage area, the road condition is unpaved and there are no drainage lines and it is not generally good. In the dry season, dust on the road obstructs the visibility, and in the rainy season, water stays in a specific section, causing troubles in traffic due to muddy and water puddles. In addition, at the intersection of dry river and the road, most of the road structures have water flowing on the road surface, there are few drainage facilities under the road surface. As a result, at the time of flooding, there will be traffic stoppages ranging from several hours to several days on inter-city roads and urban roads as well as intra-regional roads. Street lighting is only installed in a part of the urban road, and after sunset, on many roads it is dark and the visibility is bad. Especially it is in a dangerous situation for tourists returning by E-bikes after watching sunset.

(1) Water Supply and Sewage

Water service in Nyaung U Town and New Bagan Town is provided by TDC. There are two water supply facilities in Nyaung U Town, and they supply water to six administrative districts. One of the facilities is a water distribution facility with a simple treatment facility, another has no treatment facility and after river water is stored, pumping is carried out with a pump. Water purification plant is installed in New Bagan Town, however due to problems of operation method and facility capacity, most of the time for the water supply is direct water supply of river water by intake pump. In addition, the water intake point of the New Bagan Water Treatment Plant is away from the mainstream of the river, and the water level of the New Bagan is lowered during the dry season and it is withdrawn only from the limited amount of water.

As mentioned above, untreated river water is directly supplied to the users. Since the turbidity of the river water is high, the user performs sedimentation treatment etc. by himself before use. In addition, TDC supplies the amount of water equivalent to the daily water demand within the limited time of daytime, the operation of the facility is stopped at night, and 24 hours water supply is not being implemented. As of October 2016, the number of each water connection in Nyaung U Town and in New Bagan Town is 2,400 connections, 361 connections, the rate remains at 38% and 23%.

On the other hand, sewage treatment facilities are not being developed in the urban areas of both towns. Urine excreted from private enterprises such as hotels and restaurants is being processed by a septic tank installed in each facility, but ordinary households are not equipped with storage facilities and are directly discharged to the soil. Miscellaneous wastewater is drained directly into soil or withered rivers and valleys, untreated.

(2) Electricity and Telecommunication

Overhead lines within the cultural heritage area consist of power lines and communication lines. Each line passes through the road, along the road, the heritage
conservation area, and the cultivated land. Current situations and issues of electric services and communication services are as follows.

Regarding electric services, in Bagan area, four substations, Nyaung U, New Bagan, Bagan sub-station and Chauk substation 30 km south, and are installed and supply electricity to the target area. The 11 kV distribution line from the 4 substation is connected to the same area from multiple substations, and the distribution circuit crosses and parallels. This is because power distribution lines were appropriately laid out from substations with sufficient electric power as the demand for electricity increased in residential areas. As a result, there are problems such as the supply substation and the distribution area being not necessarily distributed from the electrical rationality, maintenance becomes complicated, power loss, voltage drop increases, and so on.

On the other hand, with regard to communication services, the development of the communication industry in Myanmar has been remarkable in recent years, and the communication network is influenced by its development. The communication line within the preservation area is managed by Nyaung U MPT, and it is used by MPT, other two communication companies, cable TV station and an internet provider. The communication line of MPT consists of microwave, optical cable, and it relays Pakokku, Nyaung U and Kyaukpadaung. In the area, about 5-10 optical / metal communication cables are passed and distributed. Communication routes are laid mainly at 10 - 30 m from the road.

Many of the overhead lines and utility poles are installed close to the monument group, and they are detracting from the aesthetic appearance of the cultural landscape. In the underground work of the power line, not only the power line burial work but also the review of the power distribution circuit and the construction of the substation are required.

(3) Waste Management

Waste in Bagan is not well managed as a heritage tourism destination. The waste collection service area is only two urban areas, Nyaung U Town and New Bagan Town, and it does not cover areas with heritage area and village areas. In addition, the existing waste disposal site (open dumping site) is located within the heritage conservation area, and garbage is scattered where visitors can see directly. It is a factor of damaging the image as a representative tourism destination in Myanmar.

For waste collection, the TDC collects about 20 tons of waste in two urban areas daily and transports them to the final disposal site for disposal. However, garbage of 40 to 50 tons per day is uncollected, discarded on road sides and rivers. The management of the waste is not sufficient.

The issues related to waste management are: 1) the waste in the conservation area is not collected; and 2) the existing open dumping site is located in the conservation area.
(4) Port

There are two jetties in Bagan area. One is in Nyaung U river port located in the northeastern part of Nyaung U Town, and the other is Z Jetty located north of Old Bagan. According to the Department of Inland Water Transport (DOIWT), while Nyaung U River Port is used throughout the year, Z Jetty is mainly used during high season from October to April. The shipping vessels are comprised of one governmental company and six private companies.

A ship from Mandalay, located 220 km from Bagan, is operating at Nyaung U River Port, 10 hours from Mandalay to Bagan and 12 hours from Bagan to Mandalay. The route to the river port of Nyaung U River Port will be on the north side of the Ayeyawady River in the dry season and in the rainy season it will operate a shallow route on the south side. Since the operation hours is during the day, there is no route signpost in the river. Besides, cruise ships travelling around Bagan sail at the southern route from 16:30 to 20:00.

As current environment, a width about 230 m is secured as a range where passengers get in and out of passengers and unloading of baggage are possible at Nyaung U River Port. There are three simple wooden scaffolds for loading / unloading. The way of entering the river port is only one place on the west side. There are no modern port facilities. According to the DOIWT, the highest water level ever recorded in August 2016. As of the end of January 2017, the difference between the highest water level and the lowest water level was measured to be around 12 m. It is desirable to develop a port facility that can respond to this difference in water level throughout the year.

In developing the Nyaung U River Port, no serious environmental impact is expected, but environmental impact assessment is required before the project implementation.

(5) Other Public Transportation

• Airport

Nyaung U Airport is the only airport in Bagan, located in the eastern part of Nyaung U Town. Opened in 1972, the terminal building was renovated in 2004. Airport facilities are managed by Myanmar National Airway. Domestic companies operate only domestic flights by eight companies, there is no international flight. The flights departing to Bagan are mainly Yangon, Heho and Mandalay. Main operation hours are morning and evening, and about 15 to 35 flights per day arrive and depart. There are 700 passengers / day in the peak season of tourism and 150 passengers / day in low season.

• Long Distance Bus

In April 2015, a new bus terminal dedicated to long distance buses (Shwe Pyi Highway Bus Terminal) was newly established at a location 5 km south of Nyaung U from Kyaukpadaung. There are 50 bus companies in the site of about 5 hectares, 6 buildings for restaurants, 30 stores, 60 rooms’ hotel, refuelling stations and toilet buildings. 28 long-distance bus operators and 12 minibus operators are using the
terminal. Major destinations of long-distance buses departing from this bus terminal are major cities of Yangon, Mandalay, NayPyiTaw, Taunggyi, Lashio, Pakokku, Myingyan, Chauk and other cities. The majority of passengers are local, especially Yangon route has few foreigners. Passengers changing from long-distance buses to short-distance buses will use private transportation means such as taxis and light trucks.

- **Railway**

Bagan Station is on the route between Yangon and Mandalay. The train by Myanmar Railways operates daily with a night-train between Yangon and Bagan in 17.5 hours (1 train / day) and between Mandalay and Bagan 7.5 hours (2 trains / day). Due to the improvement of grade of intercity roads and large buses, railway has not been able to become a major mode of transportation in recent years despite cheap fares. The average number of passengers per train is about 30 to 100 on Yangon route and Mandalay route are about 70 to 200 passengers. Foreign passengers are about 200 people per month, and local users are occupied mostly.
3.3 Tourism Human Resources Development and Local Community

3.3.1 Tourism Human Resources Development

(1) HRD in Tourism Administration and Tourism Related Sectors

1) MOHT Bagan Branch Office

MOHT Bagan branch is responsible for development and promotion of tourism as a governmental organization in Bagan. MOHT Bagan branch has limited institutional capacity as well as skill and knowledge on tourism administration and management and human resources development. There is no human resources development (HRD) section in MOHT Bagan branch. The staff members lack opportunities for improvement of their technical skill and knowledge at MOHT Bagan.

MOHT Bagan branch conducts training programs for hotel staff (basic level) and tourist guides with support of relevant associations and tourism school in every year as shown below. Some lectures for the hotel training (basic level) participated HRD training programs conducted as pilot project of HRD in the Project.

Table 3.4 Training Programs organized by MOHT Bagan Branch

<table>
<thead>
<tr>
<th>Type of Tourism Business</th>
<th>Target Participant /Level</th>
<th>Number of Participant</th>
<th>Length of Training</th>
<th>Support Organization and Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td>Front office (FO), housekeeping (HK), food and beverage (FB), food production (Basic level)</td>
<td>200 training 1,600 (totals in the past)</td>
<td>4 weeks</td>
<td>Myanmar Hotelier Association (MHA)</td>
</tr>
<tr>
<td></td>
<td>Accounting (Basic level)</td>
<td>2 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FO, FB, HK (Intermediate)</td>
<td>To be consider</td>
<td>To be consider</td>
<td>Kandawgyi Hotel and Tourism Training Center (Yangon), hotels</td>
</tr>
<tr>
<td></td>
<td>Under consideration by MOHT Bagan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourist Guide</td>
<td>Regional guide license</td>
<td>100 training 123 (totals in the past)</td>
<td>4 weeks</td>
<td>Myanmar Tour Guide Association, MOHT, MORAC, Pakokku and other universities</td>
</tr>
</tbody>
</table>

At present, there are no schools specializing in tourism human resources development in Bagan; therefore, students who wish to major in courses related to tourism have to enter tourism institutions in Yangon and Mandalay. In the past, short-term workshops on human resource development have been held by the Myanmar Hotelier Association (MHA), Myanmar Restaurant Association (MRA), and Myanmar Tourist Guide Association (MTGA), but continuous education system is not yet organized. The Lacquer ware College is the only state-run educational institution relating to tourism industry, aiming at the improvement of lacquer-ware workers’ skill in the region.

With increasing demand for training of tourism human resources in Bagan, MOHT plans to establish a tourism school in Bagan in the near future.
2) Lacquer-ware Technology College in Bagan

Lacquer-ware Technology College in Bagan is the only government educational institute to offer a course of lacquer-ware under the jurisdiction of Ministry of Cooperatives. From 2017 Lacquer-ware Technology College was changed under the jurisdiction of Ministry of Agriculture, Livestock and Irrigation (MOALI). The College provides three courses for middle school completed students, high school graduates and university graduates with offering Diploma in Lacquer-ware Technology. Course for middle school completed students has been established and started since December 2015. As of October, 2017 there are about 300 students and 90 staff including 47 lecturers in the College. Cooperative University in Yangon and Sagaing are operated and managed under MOALI. Graduates from the Lacquer-ware Technology College are able to transfer to the third year of either one of universities. These universities offer Bachelor Degree in Business Science. However, most of graduates from the College tend to look for jobs in Mandalay and Yangon and do not work for the lacquer ware business in Bagan.

### Table 3.5 Courses at Lacquerware Technology College in Bagan

<table>
<thead>
<tr>
<th>Course</th>
<th>No. of Students</th>
<th>Length of Course</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle school completed (9th grade finished)</td>
<td>20</td>
<td>2 years</td>
<td>College provides financial support of 30,000 Kyats per year</td>
</tr>
<tr>
<td>High School graduate (11th grade finished)</td>
<td>120</td>
<td>2 years</td>
<td></td>
</tr>
<tr>
<td>University graduate</td>
<td>9</td>
<td>1 year</td>
<td></td>
</tr>
</tbody>
</table>

Source: Lacquerware Technology College

3) Accommodation

Accommodation in Myanmar is two types, star ranked hotels (from 1-star to 5-star) and non-star accommodation such as small hotel, motel and guest house. The number of employees for accommodation industry is estimates about 3,200 based on the number of rooms for accommodation received from MOHT Bagan branch office. According to interviews with managers and owners of hotels in Bagan, in 4-star and 3-star hotels almost all employees including supervisors are employed from Bagan and its surrounding areas except manager level staff. Since no hotel and tourism school has been established in Bagan, most of them are graduates from high schools. After introductory in-house training and certain probationary period, they are appointed as regular employees. During that period, On-the-Job-Training (OJT) and monitoring-evaluation are repeated by the supervisors. Some hotels organize in-house training sessions during the low seasons between May and September. However, out-sourcing training to hotel and tourism schools is uncommon and is only done in a few hotels in Yangon or Mandalay. In general, as the hotel grade decreases, training opportunity and frequency also decrease. In unrated hotels, mostly those family run, training opportunity is only limited to OJT.

For both locally based and foreign branch hotels in Bagan, most hotel managers are dispatched from Yangon and other cities based on experience and capacity, while foreign staff are dispatched and employed at some hotels.
4) Restaurant

Except for large restaurants and restaurants in the hotels, most of restaurants are regarded as small and medium enterprise (SME)'s run by family members. Training for staff working for small restaurants is mainly OJT at their own restaurants. Myanmar Restaurant Association sets up a fund and organizes training programs for restaurants in Bagan.

5) Travel Agencies and Tour Operators

There is no training program for travel agencies and tour operators in Bagan offered by MOHT and other institutions. Most of tour operators are branch offices of travel agents in Yangon or Mandalay. Staff training for tour operators will be either participation of training program organized by Union of Myanmar Travel Association (UMTA) or training by their own companies. Tour operators in Bagan needs to improve not only HRD for staff but also operation and management.

6) Tourist Guide

As mentioned training programs provided by MOHT Bagan branch, training for the regional licensed tourist guides is conducted for 2 months (6 hours per day) by MOHT Bagan in every year in cooperation with MTGA, MOHT, DOA (MORAC) and lecturers of Pakokku University and professors from other universities.

Tourist guides read books and get various information to improve their knowledge on tour guiding during the off season. However, by nature of the job, a tour guide is a freelance job and occasion for learning from other guides' practice is very limited.

In Bagan, there are many experienced national licensed tourist guides. It is also an important role of MTGA to provide opportunities for tourist guides with less experience to learn skills and knowledge from senior or experienced tourist guides.

To be an English-speaking guide, it is required to have lectures and materials for training in English for both the national and regional guides. For those who want to become other language guides, they need to fully master the language that they want to speak in. As there is no language school other than English in Bagan, they must go to Mandalay or Yangon to study or find private language lessons in Bagan.

7) Tourism Transport Operators

Neither MOHT nor other agencies provide training for tourism transport operators.

8) Tourism Related Associations

Due to the increasing demand of human resources development and capacity building for in tourism business sector in Bagan, Myanmar Hotelier Association (MHA Bagan), Myanmar Restaurant Association (MRA Bagan), and Myanmar Tourist Guide Association (MTGA Bagan) are working on human resources development in their respective fields in cooperation with MOHT Bagan branch.
However, their trainings do not meet actual needs of human resources development in terms of contents of training, target trainees and training period.

On the other hand, international donors such as ILO, Swiss contact, etc., have been supporting human resource development and capacity building in the tourism sector at various areas including Bagan since 2014.

(2) Tourism Training Institute, Curriculum and Materials used for Tourism HRD

1) Tourism Training Schools and Tourism Higher Education Institutes

Most of the employees involved in the tourism service sector are trained by Hotel and Tourism Training Centres in Yangon and Mandalay. Most of hotels recruit their staff from towns and rural areas in and around Bagan, and not so many recruited staff have certificate from tourism related school. Therefore, most hotels in Bagan train employees at their own hotels.

Bagan has not established tourism HRD institutions, though in Myanmar there are three tourism higher education institutions (Yangon University, Mandalay University, and National Management College in Yangon) and there are two professional tourism schools in Yangon and Mandalay (Kandawgy Hotel and Tourism Training School in Yangon, Mandalay Hotel and Tourism Training Center).

Kandawgyi Hotel and Tourism Training Center

Kandawgyi Hotel and Tourism Training Center is one of the oldest hotels and tourism training schools in Myanmar, established by UNDP in 1982. The hotel was privatized but the school still maintains close relations with MOHT.

Kandawgyi Hotel and Tourism Training Centre is a vocational training centre, offering short training programs 5 times annually. The short training programs include 8-week training in the centre and 4-week internship training outside. The internship training periods differ depending on the courses.

The Hotel section includes 3 levels. Level-1 is composed of 7 courses including front office, housekeeping, foods and beverages (F&B), food production (western and Asian), hospitality English, etc. Level-2 is comprised of 3 courses which including; accounting, room division and food and beverage. Level-3 is consists of only a hotel management course.

In addition, Kandawgyi Hotel and Tourism Training Centre has a tourism program. This is made up of 2 courses which includes; tour consulting and tour operating, both of which are level-1. The training period for the tourism section is different from that of the hotel section since internship training outside has not been established yet. The number of training staff is 40, among whom 35 are trainers and demonstrators. In addition, the centre has 7 part-time trainers, who are mostly retired MOHT staff.
Mandalay Hotel and Tourism Training Centre

Mandalay Hotel and Tourism Training Centre, annexed to Zegyo Hotel was established as a prominent hotel training centre in Mandalay in 2006 in cooperation with MOHT and MHA.

The training centre provides 4 basic courses ("Front Office", "Housekeeping", "F&B" and "Food Production") as well as an intermediate course. An advanced course has not been established yet.

The training period is 10 weeks (2.5 months) for each course. Four sessions are organized annually. The trainees are from within and around Mandalay including Monywa and Mingun. However, the trainees from Bagan have been very few. Almost 90% of graduates found jobs. Various hotels in Mandalay make job offers to the centre. The centre has 10 permanent trainers and 4 part-time trainers. The latter are retired MOHT officials. One of the permanent trainers is also a former MOHT official.

2) Curriculum and Materials for Tourism HRD

A British university professor created the curriculum of Hotel and Tourism Training Centre during the socialist government era. During that time, all hotels were operated by the state-owned enterprise.

To guarantee the quality of tourist service, ASEAN Common Competency Standard for Tourism Professionals (ACCSTP) regulates the minimum competency standard that all the hotelier and tour companies in ASEAN member states need to abide by.

In ACCSTP, for hotels, common competencies are divided into 4 divisions of labour: front office, housekeepers, food and beverage service, and food production. For tour companies, 2 divisions of labour are included: travel agency and tour operator. Competency standards are defined according to 32 job titles in ACCSTP. ASEAN Mutual Recognition Arrangement (MRA) is an agreement among ASEAN member states for assuring free flow of tourism professionals in the 6 divisions of labour defined in ACCSTP. Myanmar is a member country of ASEAN, and the Ministry of Hotels and Tourism promotes to introduce ACCSTP for human resource development in the tourism sector. For the applicable condition of MRA, it is obligatory to utilize a Common ASEAN Tourism Curriculum (CATA).

A Common ASEAN Tourism Curriculum (CATC) was created by support of Austrian government and approved by the ASEAN tourism ministers. CATA consists of fundamental courses and educational systems similar to British and Australian curriculum and has 242 toolboxes (curriculum) based on MRA. CATA is recognized worldwide as the most effective means of delivering vocational training based on the approach of CBT (Competency Based Training) (CBT is training that provides trainees with skills, knowledge and attitudes necessary to demonstrate competence against prescribed and endorsed Industry Competency Standards. This concept is especially applicable to tourism where ‘attitude’ is an extremely vital element of all customer-contact and service situations. Source: 3.3 Rationale for CATA, pp.22, ASEAN Mutual Recognition Arrangement on Tourism Professionals (MRA) Handbook, ASEAN Secretariat). CATC has not been introduced yet in human
resources development for tourism industry in Bagan. In recent years, CATC was introduced to tourism higher education institutions, and hotel and tourism training school in Myanmar as a tourism training curriculum.

3.3.2 Stakeholders and Local Community

(1) Relationship between Sustainable Heritage Site, Stakeholders and Local Community in Bagan

Regarding tourism development, tourism promotion, heritage conservation in Bagan, various stakeholders are involved and supported through the project activities, as described in sections 3.1.1, 3.1.2 and 3.1.3. In Bagan, in addition to stakeholders of tourism related public and private sector, local communities are directly and indirectly involved in tourism activities because there are urban areas and villages in Bagan. People in local communities have many employment opportunities in tourism industry. Traditional village life in local communities is one of the tourism resources for Bagan so that local community is also very important for Bagan as a heritage tourist destination.

Tourism development and tourism promotion in Bagan is under the responsibility of the Bagan branch of MOHT, conservation and management of archaeological sites such as temples, pagodas, monasteries. Operation and management of cultural facilities such as museum is under responsibility of DOA of the MORAC. Acceptingly, tourists in Bagan are mainly served by hotels, restaurants, tour operators, tourist guides, taxi operators and handicraft and souvenir shops.

In the future, to develop and manage Bagan as a sustainable tourist destination in medium to long term according to Bagan Tourism Development Plan, it is indispensable for cooperation and involvement of stakeholders such as MOHT, MORAC, tourism related local governmental agencies, tourism industry, local community organizations, NGOs, donors and international agencies providing technical and financial support for tourism development and heritage conservation, and local community. (See Figure 3-13)
The following table shows stakeholders and regional communities concerning Bagan tourism development and tourism management.

### Table 3.6 List of Stakeholders and Local Community concerning Tourism Development and Tourism Management for Bagan

<table>
<thead>
<tr>
<th>Category</th>
<th>Organization / Type of business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government</td>
<td>Ministry of Hotels and Tourism (MOHT), Ministry of Religions Affairs and Culture (MORAC)</td>
</tr>
<tr>
<td>Public Local government</td>
<td>Mandalay Regional Government (MRG), Bagan branch office of MOHT, Department of Archaeology (DOA) of MORAC, General Administration Dept. of Nyaung U District (GAD), Nyaung U Township Development Committee (TDC) Nyaung U Airport, Nyaung U Railway Station, Tourist Police</td>
</tr>
<tr>
<td>Public Tourist service</td>
<td>Hospital, Clinic, Police station, Fire station</td>
</tr>
<tr>
<td>Educational institution</td>
<td>Lacquerware Technology College in Bagan, schools</td>
</tr>
<tr>
<td>Private Tourism related organization</td>
<td>Myanmar Tourism Federation (MTF), Myanmar Hotelier Association (MHA) (Bagan), Myanmar Restaurant Association (MRA) (Bagan) Bagan Tourist Guide Association (BTGA), Bagan Hospitality Association (BHA) Tourism Transportation Association, Souvenir Entrepreneurs Association, E-Bike Association, Taxi Driver Association, Horse Cart Association</td>
</tr>
<tr>
<td>Private Tourism industry</td>
<td>Hotel, restaurant, travel agent, tourism transportation, souvenir shop, craftsman</td>
</tr>
<tr>
<td>Local organization, NGO</td>
<td>Gopaka, Pagoda Trustees, Action Aid, Myanmar Responsible Tourism Institute (MRTI)</td>
</tr>
<tr>
<td>Donor, International agency</td>
<td>UNESCO, ILO, ADB, Swisscontact, Lux-Dev, GIZ, JICA, Hans Seidel Foundation</td>
</tr>
<tr>
<td>Local community</td>
<td>Local community (47 villages), farmers, shop owners</td>
</tr>
<tr>
<td>Others</td>
<td>Foreign and domestic tourists</td>
</tr>
</tbody>
</table>

Source: JICA Expert Team

Remark: Underlined governmental agencies and tourism organizations participated activities in Bagan Tourism Development Project as Working Group members.
(2) Roles of Stakeholders and Local Communities in the Project

In the formulation of Bagan Tourism Development Plan in the Project, three Working Groups (Tourism administration and management, Tourism infrastructure, Tourism human resources) in public and private partnership at local level were set up to conduct the following works, strategies in three areas, tourism administration and management, preparation of implementation plans, from selection, implementation to verification of pilot projects with JICA Expert Team. In the Project, in addition to the members of Joint Coordination Committee (JCC), JICA Expert Team provided technology transfer on know-how such as planning, implementation of activities, method of verification and knowledge on tourism development to members of Working Groups as main stakeholders through planning and implementation of the project activities.

WG members are representatives of important stakeholders in the implementation and management of proposed various action plans in the Bagan Tourism Development Plan and they will participate and support for implementation and management of the action plans as members of “Bagan Tourism Promotion Platform (BTPP)”, which will be established after the completion of the Project.

The institutional and human resource development capacity the MOHT, MORAC and local governments are described in the latter section Tourism, Ministry of Religious Culture and Local Government, local municipalities, the capacity of human resources and human resource development are described in Sec. "3.3.2 Tourism Human Resources Development". Government agencies are insufficient for coordination, collaboration and cooperation between organizations. Current administration system in Myanmar, various authorizations are still under the control the central government. For the efficient and smooth implementation of tourism development and tourism promotion of Bagan at the local level, it is necessary to have a system for decision making and implementation at the local level. MOHT Bagan branch office is a main tourism administration in Bagan and needs to coordinate and collaborate with related organization and private sector. However, MOHT Bagan branch office has many constraints in aspects of organization, human resource and financial capacities.

On the other hand, there are various associations for the private tourism sector in Bagan such as MTF, MHA (Bagan), MRA (Bagan), and BTGA as shown in the Table 3-6. These associations actively participate and support tourism events and activities which are mainly hosted by the MOHT.

Many residents living in urban areas of Nyaung U and New Town, and rural villages in and around Bagan are engaged in commerce, agriculture and tourism related business. In the villages of Bagan, tourists can see traditional village life. Villages such as Minn Nan Thu and West Pwa Saw are known as village tour site as well as CBT site and receive foreign tourists in cooperation with tour operators and tourist guides. In addition to these villages, Bagan has many potential villages of CBT.

Besides CBT, festivals held at temples and pagodas, events (boat race) and religious ceremonies are tourism resource and tourist attractions for foreign tourists in Bagan,
which residents are directly involved in. Mendicant is seen in Bagan is religious culture which is fascinated by foreign tourists.

(3) Issues related to Local Community in Bagan

Bagan is currently preparing for nomination as a UNESCO's World Heritage site. However, tourist facilities and service to receive tourists and protect the environment in Bagan are insufficient for the World Heritage tourist destination. In Bagan, garbage issue is critical for local community as well as tourist site, such as illegal dumping of garbage in and around monument sites and along the road in Bagan, and scattered garbage in and around the village. Such practices are degrading the environment of the heritage tourist destination. These factors adversely affect the landscape of Bagan and damage the image of Bagan so that it is necessary to improve and solve these issues in terms of conservation of environment and management of heritage tourist destination. The garbage issue is caused by insufficient garbage collection of local government and the low concern of the local community for the environment.

It is necessary to consider countermeasures to reduce the amount of garbage by separation and recycling of garbage by village.

Accumulated and scattered garbage at Taung Bi Village near Old Bagan
Illegally dumped garbage within Monument Protection Zone

Source: JICA Expert Team

Figure 3.14 Scattered and Illegally Dumped Garbage within Monument Protection Zone

It is often seen that local young girls and children are asking to sell picture postcards and souvenirs to foreign tourists near the entrance of temples and pagodas and around restaurants. Such behaviour is a nuisance for foreign tourists and trouble may occur between sellers and foreign tourists. It is indispensable to prohibit and control these behaviours by local people in terms of an appropriate operation and management of heritage tourist destination.
As mentioned above, garbage and inappropriate behavior toward foreign tourists by local people are critical issues not only for tourist destination but also for local people, and these issues need to be improved. These issues are mainly caused from that local people including elementary, junior high and high school students do not have sufficient knowledge and awareness about the importance of cultural heritage, protection of environment, beautification and manner to receive foreign tourists. In order to solve and improve these issues, it is necessary to hold public awareness seminars and workshops on environmental improvement, conservation of heritage, and appropriate manner for receiving foreign tourists at Bagan heritage tourist destination for targeting wide range of local community people.
3.4 Tourism Demand

3.4.1 Present Number of Foreign Visitors to Myanmar

The number of foreign visitors into Myanmar is rapidly increasing every year as described in the Chapter 1, Introduction. The main factors for the rapid increase of foreign visitors to Myanmar are the increase of visitors at entry points of Yangon and border gateway at neighbouring countries in addition to the increase of visitors entered at Yangon. Foreign visitors for tourism purpose as well as business purpose are increasing as shown in Figure 3-17.

![Figure 3.16 Number of Foreign Visitors by Entry Point](image)

![Figure 3.17 Number of Foreign Visitors by Purpose in Yangon Entry Point](image)

3.4.2 Comparison of Foreign Visitors Projection by Myanmar Tourism Master Plan and Actual Foreign Visitors to Myanmar

In Myanmar Tourism Master Plan (MTMP, formulated in 2013), the future projection for the number of foreign visitors to Myanmar was conducted. However, the actual number in 2015 was already higher than the projection of the mid-growth case of the TMP as shown in Figure 3-18. Therefore the tourism demand projection was reconsidered in the project.
3.4.3 Projection of Tourism Demand of Bagan in 2020

(1) Projection by Regression Formula

Foreign tourist demand of 470,000 in 2020 is projected for Bagan by regression formula of annual trend as shown in Figure 3-19 in view of high regression coefficient of 0.98.

(2) Projection on Nationwide Basis

Projection of Foreign Visitor Arrivals in Myanmar

The number of foreign visitor arrivals is projected on the basis of actual demand in 2015 with applying same projection method of MTMP (annual increasing rate of 13% (conservative scenario), 15% (mid-growth scenario), and 20% (high-growth scenario)).
Projection of Foreign Visitor Demand in Myanmar

In Myanmar, number of business/commercial/public purpose visitors are increasing rapidly more than increasing of tourism purpose visitors as shown in Figure 3-21. This trend will continue in short term period and portion of tourism purpose visitors will be decreased. 25% in 2020 is assumed from 30% in 2015 for the number of tourism purpose visitors, to project future tourist demand.

(3) Projection of Foreign Tourist Demand in Bagan (2020, 2030)

Future foreign tourist demand is projected by assuming that current 18% of Bagan against nationwide tourist demand will continue. Foreign tourist demand in Bagan will be 390,000 – 520,000 in 2020 (420,000 for mid-growth scenario). The number of foreign tourist in Bagan will increase from 60% to 110% (140,000 to 270,000 visitors) compared to 250,000 visitors in 2015.
Projection by annual trend is unreliable due to long term period of 15 years future, therefore tourist demand projection for 2030 was made by applying method of MTMP. Same projection steps as 2020 year was applied as described below;
1) Projection of foreign visitor arrivals to Myanmar,
2) Projection of foreign tourist demand of Myanmar, and
3) Distribution of foreign tourist demand to Bagan.

For the projection of foreign visitors to Myanmar, it is assumed that that growth rate of foreign visitor arrival gradually decreases after 2020 and decreases by half in 2030. The result of projection of foreign visitors to Bagan in 2020 and 2030 is shown in Figure 3-22. Foreign tourist demand in Bagan will be from 800,000 to 1,600,000 in 2030 (approximately 1,000,000 by mid-growth scenario).

![Figure 3.22 Projection of Foreign Visitors to Bagan in 2020 and 2030](image)

The tourist demand Projection of Bagan in 2020 and 2030 is summarized in Table 3-7. Total tourist demand in 2020 will be from 850,000 to 1,000,000. Foreign visitor demand in 2030 is projected to be approximately 1 million. This number accounts for half of current tourist demand of 2.4 million in Angkor in Cambodia, or same level of current visitor demand of 1 million in Borobudur of Indonesia. (Future demand in Angkor in Cambodia is said to be 3.7 million – 4 million in 2020.)

Total tourist demand in Bagan including domestic tourist which will be from 1.5 million to 2.0 million in 2030.

<table>
<thead>
<tr>
<th>Table 3.7 Conclusion of Tourist Demand Projection in Bagan (2020, 2030)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Tourist Demand</td>
</tr>
<tr>
<td>Trend projection</td>
</tr>
<tr>
<td>Projection based on Nationwide growth of MTMP</td>
</tr>
<tr>
<td>Conclusion (mean of trend projection and mid-growth scenario of MTMP projection)</td>
</tr>
<tr>
<td>Domestic Tourist Demand*1</td>
</tr>
<tr>
<td>Total Tourist Demand</td>
</tr>
<tr>
<td>Note:</td>
</tr>
</tbody>
</table>

Source: Tourist data in 2016 is from MOHT. Projected tourist demand data of 2020 is projection by JICA Expert Team.
3.4.4 Demand for Accommodation

Number of accommodations such as hotel, guesthouse will increase in line with increase of tourist demand as shown in Table 3-8. Accommodations in Bagan with 2,565 rooms in 78 hotels/guest houses in 2015 will increase to be 4,500 rooms and 8,000 rooms in 2020 and 2030 respectively. This projection means that construction of 400 rooms per year will take place to cover demand. By comparing rooms in recent years from 2013 to 2015, the number of room increased at the rate of only 82 rooms per year. The construction of accommodation rooms will need to increase 4 times more than the previous year until 2030.

<table>
<thead>
<tr>
<th>Table 3.8 Estimated Demand of Accommodation Rooms in Bagan</th>
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</thead>
<tbody>
<tr>
<td><strong>International tourist (1,000)</strong></td>
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<tr>
<td><strong>Domestic tourist (1,000)</strong></td>
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<tr>
<td><strong>Tourist total (1,000)</strong></td>
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<tr>
<td><strong>Tourist for hotel staying (1,000)/1</strong></td>
</tr>
<tr>
<td><strong>Number. of tourist per room/2</strong></td>
</tr>
<tr>
<td><strong>Number. of hotel rooms in Bagan/3</strong></td>
</tr>
</tbody>
</table>

Source: Hotelier Association Member list Bagan for 2013 and 2015. “Pilot Model Formulation Project for Regional Tourism Development in Myanmar, 2014, JICA” for 2020. JICA Team estimation for 2030 by calculation of “tourist for hotel staying X num. of tourists per room”

Remark: /1 20% - 25% is assumed as hotel/guest house staying rate of domestic tourist, while 100% for international tourist.

/2 Tourist per room is assumed to increase due to improvement of operation rate in future.

/3 Necessary hotel rooms at peak season.
Presently accommodation facilities concentrated in Nyaung U Town and New Bagan Town as shown in Figure 3-19. However, MORAC issued instruction orders to prohibit the new construction of accommodation in Bagan Heritage Site and only smaller tourist accommodations will be allowed with in the town areas and villages. (Figure 3-19) (Construction works of approximately 46 accommodation facilities are stopped more than a couple of years by suspicious offence to instruction order-No.2 or No.3/2014 of Ministry of Construction in Nyaung U Town or New Bagan Town. This is equivalent to 1,500 rooms by assuming 30 rooms per an accommodation facility). Therefore, larger hotels and resorts must be developed outside Bagan Heritage Site.

According to Future land use plan of Nyaung U Township, hotel zones and new town sites are designed to be developed in neighbouring areas but outside the Heritage Site in order to preserve Bagan Heritage Site. Additionally, relocation of existing Nyaung U airport to Pakokku new airport and upgrading of connecting access road to the new airport is being considered. (Pakokku airport with 2,600 m length and 30 m width runway is currently under unused. Renovation of terminal building and related facility is necessary for relocation of Nyaung U airport.) Moreover, an access road to new hotel zone planned in the southern edge of Heritage Site is proposed to make tourism car transport bypass the heritage site. Based on the land use concept mentioned above, future hotel distribution in Bagan is estimated as shown in Table 3-9.

<table>
<thead>
<tr>
<th>Table 3.9 Future Hotel Distribution in Bagan</th>
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<tbody>
<tr>
<td>Nyaung U Town</td>
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<tr>
<td>Old Bagan</td>
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<tr>
<td>New Bagan Town</td>
</tr>
<tr>
<td>Hotel zone (4)</td>
</tr>
<tr>
<td>Other area (Outside Bagan Heritage Site)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Source: Accommodation data in 2015 (MOHT Bagan branch) , Projected data (JICA Expert Team)
3.5 SWOT Analysis

SWOT analysis is a planning tool for developing the vision and strategies by evaluating the strength, weaknesses, opportunities, and threats in the target area. SWOT analysis was conducted based on the result of current situation analysis in the Project. The results of SWOT analysis are shown below.

(1) Strengths

- Bagan is a heritage tourist destination where more than 3,000 temples and pagodas remain, prospered as the Bagan dynasty from 11th century to the 13th century, and one of the most important Buddhist heritage site in the Southeast Asia.
- Bagan is considered as one of eight major tourist destinations in Myanmar. Magnificent landscape with scattered temples and pagodas over the vast land in Bagan provides very attractive tourist attractions for both domestic and foreign tourists.
- Bagan is blessed with tourism resources, and is always included in package tours. The number of foreign tourists to Bagan is increasing year by year.
- Local villages located in the Bagan Heritage Region such as Min Nan Thu and West Pwa Saw are known for community-based tourism (CBT), where tourists can experience local village life such as handicrafts making (lacquer-ware, woven cotton textile) and farming.
- CBT is a popular tourism product for foreign tourists. Other attractive tourism products in Bagan are river cruises along the Ayeyawady River and hot air balloons.
- Bagan belongs to the central arid region where it is possible to enjoy sightseeing throughout the year because the rainfall is less in the rainy season compared with other areas.
- In addition, good security and safe environment, friendliness and hospitality of local people in Bagan are great advantages for tourism promotion and accepting tourists.

(2) Weaknesses

- Bagan is known and promoted as a tourist destination culture and heritage tourist destination so that the length of stay for foreign tourist is about two days, but this is a relatively short stay.
- The employment environment for tourism industry in Bagan is unstable due to seasonal fluctuation in the dry season and rainy seasons.
- In the tourism high season (from October to March), temples where tourist can see the sunrise and sunset are congested with tourists and tourist vehicles.
- As the number of tourists who climb up to the temple increases, negative factors such as damage and deterioration of temple by tourists are anticipated.
- Flooding occurs by heavy rain in lower ground areas facing the Ayeyawady River which affects traffic and tourism activity as well as daily activities of local people.
- Development of tourism infrastructure such as intra-regional roads, street lights, access routes to tourist sites, parking lots and tourist information boards in Bagan is insufficient.
- Public transport services from Nyaung U Airport to the urban area of Bagan and other areas haven’t been developed so that Tourists have to depend on local transport...
arranged by travel agents or hotels for visiting in and around the heritage sites in Bagan.

- Tourism development and tourism promotion in Bagan lack collaboration and cooperation system among various stakeholders such as administrative agencies including MOHT, local governments, the private sector and local residents.
- Exiting tourist information centres in Bagan are not provided with the requirements for foreign tourists in terms of the function, service and management of facilities.
- There is no system developed for dissemination of tourist information related to Bagan or implementation of tourism promotion activities to meet the needs of tourists. In addition, website for disseminating tourist information of Bagan, multilingual tourist information brochures, maps, and tourism promotion materials are not developed.
- Collection and update of tourist information, collection method and analysis of tourism statistical data by MOHT Bagan branch are not sufficient.
- Bagan does not have educational and training facilities for tourism sector or tourist school so that there are limited opportunities to participate in training and seminars to improve capacity and knowledge, and develop tourism human resources such as training tourism personnel, expertise, training to improve capacity, seminars etc.
- Increases of garbage such as plastic bags and trash scattered along the streets and within the heritage sites due to inadequate garbage collection and management by the local government as well as the lack of awareness of the local people on garbage issues, gives negative impact to environment of heritage tourism destination and its landscape

(3) Opportunities

- Since the country’s transition toward democratic reform in 2011, support for economic development and private investment for the tourism sector to Myanmar from overseas is rapidly increasing and the development of tourist destinations in Myanmar is proceeding.
- Myanmar is attracting attention as a new tourism destination in Asia in the international tourism market.
- In overseas travel markets, the need for tour packages visiting cultural heritage sites including World Heritage sites is high in neighbouring countries. New tour packages combining Bagan and other cultural heritage tourist destinations are expected to be created.
- Cooperation on tourism development and promotion between two heritage cities, Siem Reap in Cambodia and Bagan were discussed and agreed by Cambodian and Myanmar governments. In the future, tour package visiting two heritage sites, Angkor and Bagan will be created.
- The tourism sector is considered as an important sector for Myanmar and financial and economic development support from international agencies and donors is expected in the future.
- Bagan has various existing and potential tourism resources in and around the area required to be developed as new tourism products for diversification of Bagan tourism.
(4) Threats

- The occurrence of unpredictable natural disasters such as climate change, earthquakes, typhoons, floods, etc. will affect the environment of local people, tourism business, and monuments in Bagan.

- Public and private investment in the tourism sector of Myanmar is increasing rapidly, while the development of tourist destinations is a work in progress. There is concern that there will be negative impact on cultural heritage, natural environment. Traditional culture, life, customs of local community may be lost.

- Furthermore, there is concern about the claims and dissatisfaction, and occurrence of backlash from local people and external NGOs toward government-led tourism activities, issue on development and control at tourist sites.
### Table: Summary of SWOT Analysis

<table>
<thead>
<tr>
<th>Positive Factors</th>
<th>Negative Factors</th>
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<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• Historical and cultural heritage of the ancient Bagan dynasty</td>
<td>• Limited length of stay in Bagan due to mainly promoted heritage tourism</td>
</tr>
<tr>
<td>• One of the most important Buddhist heritage sites in Southeast Asia</td>
<td>• Unstable employment environment for tourism industry caused by seasonal fluctuation of tourism</td>
</tr>
<tr>
<td>• Tourist destination with abundant tourism resources</td>
<td>• Congested and concentrated tourists and tourism vehicles at specific sites and time during the sunrise and sunset time</td>
</tr>
<tr>
<td>• Magnificent landscape of temples, pagodas with traditional farming and nature</td>
<td>• Negative impact to monuments by increase of tourists and vehicles</td>
</tr>
<tr>
<td>• Traditional local industry such as lacquerware</td>
<td>• Affect to tourism activities and life of local people by flooding in rainy season</td>
</tr>
<tr>
<td>• One of major tourist destinations in Myanmar</td>
<td>• Insufficient development of tourism infrastructure (roads, transportation, parking, street lights)</td>
</tr>
<tr>
<td>• Growth of tourism revenue by the increase of tourists to Bagan</td>
<td>• Limited collaboration and coordination between public, private sector and various stakeholders</td>
</tr>
<tr>
<td>• Less rainfall compared with other regions even in the rainy season</td>
<td>• Insufficient operation and management of existing tourist service facilities such as tourist information centers</td>
</tr>
<tr>
<td>• Ensured security</td>
<td>• Undeveloped system for dissemination of tourist information and promotion</td>
</tr>
<tr>
<td>• Hospitality by local people</td>
<td>• Insufficient data collection and management of tourism information and statistics</td>
</tr>
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<table>
<thead>
<tr>
<th>Internal Environment</th>
<th>Opportunities</th>
<th>Threats</th>
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<tbody>
<tr>
<td><strong>Internal Environment</strong></td>
<td><strong>Opportunities</strong></td>
<td><strong>Threats</strong></td>
</tr>
<tr>
<td></td>
<td>• Liberalization and democratization of the country, and rapid economic growth</td>
<td>• Impact on tourism industry and monuments by unpredictable natural disaster and climate change</td>
</tr>
<tr>
<td></td>
<td>• Myanmar emerging as a new tourist destination in the international tourism market</td>
<td>• Rapid tourism development by public and private investment and impact to tourist sites (heritage site and nature areas)</td>
</tr>
<tr>
<td></td>
<td>• Increasing private investment for tourism sector</td>
<td>• Complaints and opposition to tourism development by local communities and external stakeholders</td>
</tr>
<tr>
<td></td>
<td>• Demand of tour package visiting cultural heritage sites and World Heritage sites in Asian countries at the international tourism market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cooperation with other heritage destinations in neighboring countries (Siem Reap-Bagan)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Financial and technical support by international agencies and donors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Existing potential tourism resources in and around Bagan for development of new tourism products</td>
<td></td>
</tr>
</tbody>
</table>

Source: JICA Expert Team
4. Strategic Plan for Sustainable Tourism

4.1 Vision

4.2 Strategies

4.2.1 Tourism Management and Promotion

4.2.2 Environmental Conservation of Cultural Heritage and Infrastructure Development

4.2.3 Tourism Human Resources and Local Community

4.3 Development Scenarios

4.4 Action Plans

4.4.1 Tourism Management and Promotion

4.4.2 Environmental Conservation of Cultural Heritage and Infrastructure Development

4.4.3 Tourism Human Resources and Local Community

4.5 Implementation Plan
4. STRATEGIC PLAN FOR SUSTAINABLE TOURISM

4.1 Vision

The vision for the sustainable development of Bagan area targeting 2030 is as follows:

To create a comprehensive and sustainable heritage tourist destination benefit for local community with utilizing tangible and intangible cultural properties in Bagan

The vision should be applied to three areas of policy in Bagan: heritage conservation, tourism management, and community involvement. In order to continue sustainable development of Bagan, all these policy areas are indispensable and interrelated as shown the figure below. The central overlapping portion is where these three policy areas need to be harmonized in order to produce synergy and sustainable development.

Source: JICA Expert Team

Areas to be Harmonized to Produce Synergy and Sustainable Development

To achieve the vision by 2030, which is the target year for the long term, it is necessary to strengthen capacity of local administration, improve the environment and develop local economy for sustainable tourism development of Bagan. This should be done through implementation of projects based on the framework of tourism management and promotion, heritage conservation, regional development, human resources development and community participation.

Tourism is important for economic growth, comprehensive development and creation of sustainable environment. Tourism can have a positive economic effect as the result of tourism promotion. On the other hand, it has the potential for negative impact on the environment due to an increase in tourism use of resources.

To achieve the vision, it is strongly recommended to implement each project described in the action plan in the Bagan Tourism Master Plan to minimize negative impacts and maximize positive aspects, and repeat the cycle of PDCA (planning, implementation, checking and adjustment) during the period the Bagan Tourism Master Plan.
4.2 Strategies

Based on the vision and its objectives mentioned above, the following three policies are set for preparing the Strategic Plan for Sustainable Tourism in Bagan: “Tourism management and promotion”, “Environmental conservation of cultural heritage and infrastructure development”, and “Tourism human resources and local community”.

4.2.1 Tourism Management and Promotion

A wide variety of local stakeholders will be involved to promote and manage tourism in Bagan. MOHT is expected to provide the leadership as the responsible authority of tourism promotion and management, and to coordinate with the local stakeholders related to tourism. MOHT, related governmental agencies, the private sector, local stakeholders have to promote and strengthen tourism management and tourism promotion in view of the heritage conservation and community involvement included in the following strategies.

Strategy 1-1: Establish and Strengthen Tourism Administration and Management in Cooperation with Public, Private and Local Community

MOHT, especially the MOHT Bagan branch, is responsible for administrative management in tourism sector in cooperation with MORAC, but has not provided enough management due to limited responsibilities, leadership and human resources for tourism promotion, heritage conservation and local participation. Thus, tourism in Bagan is not managed comprehensively yet.

MOHT Bagan branch with strong support of MOHT Naypyidaw should provide leadership to strengthen tourism management in cooperation with local stakeholders including private sector and local communities as well as the public sector. In particular, an appropriate tourism management needs to be planned and implemented with leadership of MOHT Bagan branch in cooperation with local stakeholders related to tourism sector in order to realize harmonizing among tourism promotion, heritage conservation and regional development in Bagan as mentioned in the vision.

Strategy 1-2: Develop Tourism Products based on Local Needs with Consideration of Heritage Conservation

The main tourism products in Bagan are sightseeing tour programs and visiting temples and pagodas in group tours and FIT. Optional tour programs are limited such as visiting local villages, river cruising along the Ayeyawady river and air balloon tour.

Local stakeholders related to tourism sector in Bagan need to improve existing tourism products and to develop new tourism products for making tour programs more attractive for group tours and FIT in harmony with local needs as well as in consideration of heritage conservation.
In particular, it is expected for local communities to improve and develop tourism products such as community based tourism (CBT: handicraft, traditional culture and cooking tour, etc.), local market tours in Nyaung U Town, meditation experience in monasteries, and eco-tourism (bird watching). These will contribute to income generation in the rural area of Bagan.

Strategy 1-3: Strengthen Tourism Marketing and Promotion in Cooperation with Public and Private Partnership

MOHT, especially the MOHT Bagan branch, is responsible for tourism promotion in the public sector, but has not implemented these activities effectively due to the limited human resources and budget in Bagan. On the other hand, private tourism sector such as hotels, restaurants and travel agencies in Bagan conduct tourism promotion on their own. Local communities have limited capacity for tourism promotion. Thus, integrated countermeasures for tourism promotion are still not implemented yet in Bagan.

MOHT Bagan branch with strong support of MOHT in Naypyidaw should provide leadership to enhance tourism marketing and promotion in cooperation with local stakeholders including private sector and local communities.

Furthermore, a tourism promotion body, which should conduct integrated activities for tourism promotion in Bagan, needs to be established with local participation of public sector, private sector and local communities.
4.2.2 Environmental Conservation of Cultural Heritage and Infrastructure Development

The majority of the Bagan area is a heritage conservation area under the jurisdiction of ORAC. On the other hand, local stakeholders related to tourism sector such as MOHT, the private sector and local communities are trying to strengthen tourism promotion. According to the following strategies, MOHT, MORAC, and the local stakeholders should coordinate to develop and preserve tourism environment as heritage conservation area.

**Strategy2-1: Preserve the heritage environment in cultural landscape in the cultural heritage area.**

In order to conserve the environment with heritage of Bagan, it is required to properly manage the preservation of the cultural landscape including the surrounding environment while preserving heritage as the foremost requirement. Approaches for conservation are as follows.

**Conserve heritage environment / Dispersion of tourists**

Thousands of ancient Buddhist temples and stupas are the core of Bagan tourism. However, in some heritage sites, damage to the monuments occur due to the large number of tourists rushing into them, and the environment around is deteriorated by the concentration of vehicles. As a result, there is negative impact to the monuments and surrounding environment. In order to protect heritage from physical damage in terms of its carrying capacity and in order to improve the surrounding environment, the following actions are necessary.

- **Restrict access to heritage sites.** Since the current situation exceeds the carrying capacity, it is necessary to restrict excessive access from the viewpoint of protecting the heritage sites.

- **Regarding vehicle traffic,** it is necessary to eliminate the through-traffic, and improve the bypass road outside the cultural heritage area. Also to reduce the impact to the heritage site and reduce the impact of transportation, it is necessary to introduce Park-and-ride parking area outside the area.

- **Develop new viewing points.** The problems of concentration of the tourists at certain heritage sites cannot be solved without expanding the number of viewing points. Implementation to minimize the environmental impact is required.

- **To disperse tourists to viewing points** that embody Bagan’s diverse attractions other than Buddhist heritages. At the same time, produce a promotional guide map to inform about Bagan’s wide range of attractions.

- **Regarding development around the heritage site,** implementation of landscape development together with visitor management is required. Vehicles in the heritage site are negative but necessary. Therefore, it is necessary to require them to coexist in an appropriate way.

- **In the mid to long term,** it is necessary to eliminate through traffic and to control access to heritage sites by private cars and others.
As a part of the dispersion of tourism in Bagan, make opportunities to touch the heritage through special openings to the upper platform of large temples and pagodas. It is necessary to find a way to give tourists unique experiences in Bagan.

Conserve cultural landscape / Conservation of visual environment
The cultural landscape of Bagan, one of the most valuable in the world, is the biggest tourism resource and it must be preserved. In order to regain a really attractive landscape, it is necessary to reduce visual elements that disturb it. The following actions are necessary.

In the Property Zone, installation of outdoor advertisements and private signboards should be prohibited, in principle.

In the Buffer Zone, installation of signboards can be permitted within limited areas such as urban area.

Distribution of electric power and telecom cables should be relocated to underground or rerouted in order to reduce their presence in the cultural landscape.

Strategy 2-2: Develop tourism infrastructure in the cultural heritage area that respond to the needs of tourists.

Tourism infrastructure development in the cultural heritage area should be provided to satisfy the basic needs of tourists, and to allow tourists to enjoy sightseeing comfortably. Approaches for tourism infrastructure development are as follows.

Strengthen access to tourism site
Tourism sites in Bagan are Buddhism temples and pagodas, and they are located mainly in the cultural heritage area. However, most access is on unpaved roads. With the goal to ensure safe driving by E-bikes and vehicles used by tourists to reduce accidents and to give comfortable driving environment, it is necessary to strengthen access to tourism sites. Hence, the following actions are necessary.

Upgrade the road in a way that matches to the cultural landscape. Also improve the road function to provide safe and comfortable driving environment.

Install street lighting. In order to ensure safe movement of tourists after sun-set, it is necessary to install the lighting along the main roads.

Restrict vehicle traffic in the cultural heritage area. Encourage the use of E-bike, bicycles, horse-carts, and pedestrian walking because they have less impacts on the heritage environment. In addition, it is needed to set up park-and-ride system to change from large vehicle to small feeders, and improve the routes.

Strengthen tourism facilities
When developing tourist facilities in cultural heritage area, it is required to implement a “reversible” structure in order to allow for the possibility for the change in the future. Also, when upgrading the existing facilities, it is necessary to create an attractive environment for tourist. Regarding facilities for strengthen tourism in Bagan, the following actions are needed.

Improve the information centre. It was developed as a part of the pilot projects. In the future, it is needs to become a core facility in the tourism sector while strengthening the contents of its activities.
Improve rest areas within the cultural heritage area. Regarding facilities supporting movement over scattered heritage sites in the cultural heritage area, it is necessary to develop facilities that do not have negative impact on the surrounding environment.

Upgrade Bagan Archaeological Museum. The existing facility is not foreign visitor friendly. It is desirable to improve the exhibition as well as to add equipment to make it a more attractive and informative facility.

**Strengthen visitor management**

In order to move around the cultural heritage area, installation of appropriate signage is essential over the whole region. Development of the surrounding environment including parking lots are also indispensable. These environmental improvements are extremely important not only to facilitate the movement of the tourists, but also to preserve the surrounding landscape. In order to strengthen visitor management, the following actions are necessary.

Upgrade various signage boards to the monuments in the cultural heritage area. The boards should use material harmonizing with the cultural landscape with bilingual notation in English and Myanmar. It is desirable to continue to install them after the pilot project.

Develop parking lots around heritage sites. In addition to facilitation of the movement of tourists by setting up parking lots, creation of new viewing points is required to improve the value of more heritage sites. Regarding the parking lots, it is desirable to develop them in a stepwise manner referring to the future traffic plan.

**Strategy 2-3: Develop social and transportation infrastructure that contributes to sustainable development in Bagan**

The development of social and transportation infrastructure should comply with the legal framework and development guidelines. For the infrastructure development, all the ministries and related agencies should implement them after the formulation of comprehensive infrastructure plan agreed upon by relevant ministries. In addition, implementation of Heritage Impact Assessments (HIA) is indispensable for the structure that is not temporary. By considering the above evaluations, it is expected to minimize negative impacts by infrastructure development, and maximize their benefits Approaches to social and transportation infrastructure development are described below.

**Strengthen and promote social infrastructure**

While promoting sustainable development as a tourist destination, it is essential to develop infrastructure that contributes to local communities. Although the target population is relatively small, about 50,000 people, it is necessary to implement the infrastructure that satisfies the basic needs of communities in this area.

Develop water supply facilities. By installing a water purification plant and distribution pipelines, continuous purified water supply 24/7 will be archived.

Develop waste facilities. It is indispensable to review the waste collection system and to improve sanitation waste facilities. After the implementation of the new facilities, the existing dumping sites in the cultural heritage area should be closed.
Relocate the electric power and telecom lines underground in cultural heritage area. To improve the landscape as heritage tourism destination, electric power and telecom lines that are an eyesore in the landscape should be moved underground or rerouted outside the area.

**Strengthen and promote transportation infrastructure**

Strengthen and promote transportation infrastructure on land, air and water which are used by tourists and also by local residents. Upgrading transportation infrastructure is expected to contribute to the improvement of the local community and also by supporting the traffic demand management (TDM), reduction of the volume of the vehicles in the cultural heritage area can be expected.

Regarding roads, in addition to the development of a bypass route to reduce the through-traffic in the cultural heritage area, improvement of parking lots inside and outside the area together with feeder plan is required. Through this implementation, reduction of factors that impact the area and environmental are expected.

By improvement of the restroom and tourism information facilities combined with the improvement of the parking lot outside the cultural heritage area, and by improvement of the terminal of alternative transport feeders into the area, convenience for tourists will improve and also revitalization of the area is expected.

For the air transport, Bagan is scheduled to cooperate with Siem Reap, Cambodia as a sister city. So, it is essential to develop CIQ (customs, immigration control, quarantine) facilities in Nyaung U Airport to accept international flights. Through this implementation, direct flights from World Heritage sites in ASEAN countries will be possible. In addition, the formulation of the new direct heritage tours not via Yangon nor Mandalay is expected.

Regarding waterways, accessibility of tourists through the year around can be expected by improving floating bridges and terminal facilities of Nyaung U river port along the Ayeyawady River.

In addition to strengthening and improving the above-mentioned wide-area transport infrastructure, by improving existing roads and by-pass route, it is expected that the flow of people and goods with other areas will be stabilized and smoother exchange will be promoted.
4.2.3 Tourism Human Resources and Local Community

Under the current situation of the annual growth in the number of tourists to Bagan, securing sufficient and competent local human resources and strengthening capacity of human resources in the tourism industry is an urgent task. MOHT, relevant tourism associations and tourism business operators are expected to collaborate in securing tourism human resources and strengthening the capabilities of tourism human resources to provide appropriate services that will contribute to the World Heritage tourist destination.

**Strategy 3-1: Strengthen System of Tourism Human Resources Development based on Development of Tourism Industry for Bagan and Its Needs**

With continuous annual increase of tourists to Bagan and development of tourist facilities such as hotels and restaurants together with required securing sufficient number of tourism human resources (HR) in response to demand and quality improvement of service for Bagan, the number of qualified trainers for tourism HR and programs for HR development are required. However, the current systems for the training are insufficient and no schools or facilities are yet developed in Bagan.

For secure sustainable growth as a tourist destination, it is indispensable to train instructors for HR development and strengthening capacity of training for tourism sector. Regarding tourism HR development in Bagan, it is necessary to develop the HR system so that HR always possesses the knowledge and experience of the tourism business needed by people who are the core of tourism business in Bagan.

Bagan Information Center (BIC) opened and operated by MOHT Bagan branch Office since October 2017 has functioned as a tourist information center and additionally as a training facility. Various types of HR training including hospitality training can use space in BIC. In terms of smooth implementation of HR training for tourism at BIC, Tourism HR Development and Training Committee or section needs to be established as part of BIC. Business manners and hospitality training for hotels, restaurants and tourist guide Businesses, and training program for travel agency business will also be provided at BIC in cooperation and collaboration with MOHT, Myanmar Tourism Federation (MTF) and Tourism Association.

In particular, the Bagan Tourism Institute (BTI) (tentative) is recommended to be established in BIC as a tourism educational institution to foster leaders to promote tourism in Bagan. It is necessary to create a Bagan-style tourism HRD system through introduction of certified BOR (Bagan Omotenashi-hospitality Representative), TOT (Training of Trainer) program to certify Master BOR and promotion of BOR activities in BTI with support of Bagan Hospitality Association (BHA).

In the medium to long term, a tourist school needs to be established in Bagan to promote diversified tourism education and training as local tourism HR. This is necessary to enhance human resources diversely in Bagan.
Strategy 3-2: Strengthen Capacity of Tourism Administrative Human Resources for Effective and Appropriate Operation and Management as a Cultural Heritage Tourism Destination

MOHT Bagan branch office is the local tourism administrative body in Bagan. However, most staff at the Bagan branch office lack knowledge and experience on tourism promotion, tourism management and tourism development. The MOHT Bagan branch office needs to improve the capacity building of management officers as well as staff members for receiving a large increase in the number of domestic and foreign tourists to Bagan. They will need to manage tourist destinations, and maintain close communication and cooperation with relevant government agencies such as MORAC and the private tourism sector.

Since Bagan will be registered as a World Heritage Site in the future, it is urgent that MOHT take responsibility to strengthen the institutional capacity for an appropriate operation and management of tourism administration in Bagan and staff allocation at the Bagan branch office.

In addition to MOHT Bagan branch, Nyaung U Airport, railway, tourist police and hospitals are important tourism related public services to serve tourists in Bagan. To respond the growing needs of tourist services and improve level of service in the tourism related public sector, the capacity development of people is indispensable at each service agency or organization.

Various human resources and capacity building training for regional tourism administration including the Bagan branch office is being implemented with the support of donors on the basis of the Myanmar Tourism Human Resources Development Strategy and Action Plan (formulated in 2016). However for Bagan, it is necessary to develop and carry out training programs to train human resources and capacity development according to the needs of staff at the Bagan branch office. Additionally, HR training program for tourism related public services needs to be conducted for improved receiving of tourists in cooperation with relevant governmental agencies and associations. focusing on public tourism related service organizations. They should also conduct human resources training with the view to improve tourism acceptance services.

In particular, the "Omotenashi-hospitality" certification system should be established under the responsibility of the MOHT Bagan branch office. It is necessary to create a certified system that the Executive Committee consisting of members from BHA and relevant associations belong to MTF so that it is possible to supervise the certification system and support operation and management of the training course on "Omotenashi-hospitality" on the premise it will have certification.

Strategy 3-3: Strengthen Capacity and Tourism Human Resources Development for Private Tourism Sector with Meet Demand and Needs of Local Tourism Industry

The number of people employed in the entire tourism industry in Bagan is about 6,300 in 2015, 70 of which are from hotels and restaurants. In the future, as tourists increase, it is indispensable to secure human resources, train human resources, and strengthen capacity HR development for the tourism industry as an international heritage tourist destination.
In Bagan, there is currently no school to train people for tourism industry and there are limited opportunities for participation in training programs in Bagan, except of large hotels. Training and capacity development of staff conducted at hotels and restaurants in Bagan are normally handled by on-the-job training (OJT) so that methods and contents of staff training differ for each hotel and restaurant depending on training policy by the capabilities, knowledge and experience of owners and managers of hotels and restaurants. In Bagan, training program for staff working at small hotels and guest houses will be necessary, but the first priority is for owners and managers to strengthen capacity development of the hotel and restaurant sector.

Regarding tourist guides, in the future the need for the licensed regional guides in Bagan will increase due to increasing the number of foreign tourists going to Bagan. Currently Bagan is preparing for nomination as UNESCO World Heritage Site so that both licensed regional guides and national guides should be trained appropriately for improvement of knowledge and guiding skills as well as hospitality. To acquire such guide skills regarding cultural heritage, history, architecture, local culture, and preservation of traditional culture and heritage for national and regional guides, should be planned and implemented. Such training as tourist guide should include lectures introducing Cultural Heritage Special Guide Training and Certification Program for UNESCO World Heritage Sites, prepared by UNESCO, site training and language training in cooperation with MORAC and UNESCO.

Tour packages for traveling to Bagan will be developed and controlled by major travel agencies in Yangon and overseas that overcome obstacles to the development of tourism in Bagan. Thus, it is necessary to promote the establishment of travel agency in Bagan that can develop and operate tour programs locally, and expand the operation and services of work for travel agencies for meeting the needs of tourists.

The training for human resources development related to the above will be conducted at BIC and fully utilize its features. In the middle to long term, it is necessary to strengthen HR development and capacity development according to the needs of various tourism businesses by establishment of tourism schools or related tourism educational training institutions in Bagan.

**Strategy 3-4: Promote Local Community Involvement on Tourism with Enhancement of Awareness on Tourism and Conservation of Heritage**

The local economy in Bagan is largely supported by tourism. However, many local residents are not fully aware of the importance of tourism industry, the value of cultural heritage, the economic benefits of tourism, and the role of local community living in tourist destination. Major issues such as illegal waste dumping around heritage sites and roadside and inadequate manners for foreign tourists which are required to improve receiving foreign tourists appropriately in Bagan.

As a heritage tourist destination, it is necessary to conduct public awareness seminars, workshops and beautification campaigns for encouragement of tourism business operators and local residents so they can understand the importance of tourism industry and conservation of heritage.
Various festivals and events are held in Bagan, and local residents are important stakeholders of festivals and events in addition to tourism business operators. Active involvement and support of local residents is indispensable for enhancing local tourism-related events. MOHT is responsible to encourage local residents to participate in those events and activities in cooperation with private tourism sector.

In Bagan and surrounding areas, Community-based Tourism (CBT) tours making use of the characteristics of villages have been developed and offered to foreign tourists as optional tours. CBT is a tourism business model that provides opportunity for employment and getting revenue directly from tourists which contributes to improve livelihood for people in the villages. In Bagan there are villages with high potential for development of CBT. MOHT will support to develop and promote a CBT model that enables the villagers to benefit from CBT, and can be operated and managed sustainably by villagers in cooperation with travel agents and tourist guides.
4.3 Development Scenarios

In the Bagan Tourism Development Plan, the period from 2017 to the target year of 2030 is divided into three development stages and set tourism development scenarios for each stage based on Bagan's UNESCO World Heritage registration, tourism projection and infrastructure demand in Bagan. The development scenarios need to be consistent with the "Bagan Management Plan" prepared by MORAC for the registration of Bagan as World Heritage site in 2019.

The outline of tourism development scenarios in Bagan are as follows.

**Table.1 Tourism Development Scenarios of Bagan by Stage**

<table>
<thead>
<tr>
<th>Development Scenarios</th>
<th>Short-Term (Priority: A)</th>
<th>Middle-Term (B)</th>
<th>Long-Term (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017-2019</td>
<td>2020-2024</td>
<td>2025-2030</td>
</tr>
<tr>
<td>• Build-up the base for the tourism management, environment and human resources suitable for International Tourism Destination</td>
<td>• Develop the tourism system in accordance with Bagan Management Plan under the World Heritage Nomination.</td>
<td>• Establish sustainable tourism in harmony with tourism management and promotion, heritage conservation and regional development</td>
<td></td>
</tr>
</tbody>
</table>

Source: JICA Expert Team
4.4 Action Plans

In accordance with development strategies and development scenarios mentioned above, action plans, which are composed of project lists and priority projects, are proposed below. The target period of project lists is from 2017 to 2030 the same as from the short-term to long-term in the development scenarios. The target period of priority projects is from 2017 to 2019 the same as short-term development scenario.

4.4.1 Tourism Management and Promotion

To achieve sustainable tourism development in the Bagan Cultural Heritage area, short-term (high priority), middle-term and long-term projects are proposed for strengthen tourism management and promotion.

Project List

Projects for Tourism Management and Promotion are listed below.

Table 2 Projects for Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Period</th>
<th>Short-Term (Priority: A) 2017-2019</th>
<th>Middle-Term (B) 2020-2024</th>
<th>Long-Term (C) 2025-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5. Strengthening of Tourism Administration Office in Local Gov.</td>
<td>1-7. Strengthening of Tourism Fairs</td>
<td>1-7. Strengthening of Tourism Fairs</td>
<td></td>
</tr>
<tr>
<td>1-8. Development of FAM Tours</td>
<td>1-10. Development of Tourism Corridors in Cooperation with Other Tourist Destinations in Myanmar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: JICA Expert Team

Priority Projects

The following priority projects are proposed to be implemented as urgent.

1-01 Formulation of Local Platform for Bagan Tourism Development
1-02 Enhancement of Promotion
### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-01</td>
<td>Formulation of Local Platform for Bagan Tourism Development</td>
<td>A</td>
</tr>
</tbody>
</table>

**Project Site / Location**

Bagan (Bagan Information and Training Center)

**Target Beneficiaries**

Local stakeholders related to tourism in Bagan

**Implementation Organization**

MOHT

**Assumed Fund**

MOHT, MTF

**Estimated Cost**

10,000 USD

**Sector: Tourism Management and Promotion**

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-02</td>
<td>Enhancement of Promotion</td>
<td>A</td>
</tr>
</tbody>
</table>

**Project Site / Location**

The whole Bagan area

**Target Beneficiaries**

Local tourism sector, Local community, Tourists

**Implementation Organization**

MOHT-Bagan  Nyaung U GAD

**Assumed Fund**

MOHT/Donors

**Estimated Cost**

30,000 USD

**Sector: Tourism Management and Promotion**

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-03</td>
<td>Strengthening of Local Platform for Bagan Tourism Development</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**

Local stakeholders related to tourism in Bagan

**Target Beneficiaries**

Local stakeholders related to tourism in Bagan

**Implementation Organization**

MOHT

**Assumed Fund**

MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Sector: Tourism Management and Promotion**

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-04</td>
<td>Strengthening of Tourism Administration Office for Bagan in Central Government</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**

MOHT in Nay Pyi Taw / Bagan area

**Target Beneficiaries**

MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**

MOHT

**Assumed Fund**

MOHT/Donor

**Sector: Tourism Management and Promotion**

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
</table>

**Project Site / Location**

MOHT

**Target Beneficiaries**

Tourism related associations in Bagan
### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-05</td>
<td>Strengthening of Tourism Administration Office in Local Government</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan area

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
MOHT Bagan branch

Tourism related associations in Bagan

### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-06</td>
<td>Development of Tourism Corridors in greater Bagan</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Areas around Bagan

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
MOHT Bagan branch

Tourism related associations in Bagan

### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-07</td>
<td>Strengthening of Tourism Fairs</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan area and places holding tourism fairs

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
Tourism private sector

Tourism related associations in Bagan

### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-08</td>
<td>Development of FAM Tours</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Areas around Bagan

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
Tourism private sector

Tourism related associations in Bagan
### Project List

#### Projects for Heritage Environmental Conservation and Infrastructure Development

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-09</td>
<td>Arrangement of Laws, Regulations and Rules for Tourism Management in/around Bagan</td>
<td>C</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan area

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
Tourism private sector

<table>
<thead>
<tr>
<th>Period</th>
<th>Short-Term (Priority: A)</th>
<th>Middle-Term (B)</th>
<th>Long-Term (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017-2019</td>
<td>2020-2024</td>
<td>2025-2030</td>
</tr>
</tbody>
</table>

### Sector: Tourism Management and Promotion

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>Development of Tourism Corridors in Cooperation with Other Tourist Destinations in Myanmar</td>
<td>C</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan and the whole are of Myanmar

**Target Beneficiaries**
MOHT, relevant tourism stakeholders (Government, private sector, local community)

**Implementation Organization**
MOHT

**Relevant Organization**
Tourism private sector

<table>
<thead>
<tr>
<th>Period</th>
<th>Short-Term (Priority: A)</th>
<th>Middle-Term (B)</th>
<th>Long-Term (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017-2019</td>
<td>2020-2024</td>
<td>2025-2030</td>
</tr>
</tbody>
</table>
4.4.2 Environmental Conservation of Cultural Heritage and Infrastructure Development

To achieve sustainable tourism development in the Bagan Cultural Heritage area, short-term (high priority), middle-term and long-term projects are proposed for promoting environmental conservation of cultural heritage and infrastructure development.

**Project List**

Projects for Heritage Environmental Conservation and Infrastructure Development are listed below.

**Table.3 Projects for Heritage Environmental Conservation and Infrastructure Development**

<table>
<thead>
<tr>
<th>Period</th>
<th>Short-Term (Priority: A) 2017-2019</th>
<th>Middle-Term (B) 2020-2024</th>
<th>Long-Term (C) 2025-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-1.</td>
<td>Establishment of Guideline for Outdoor Advertisement</td>
<td>2-10. Development of Viewing Points</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-11. Electric Line Underground*</td>
<td></td>
</tr>
<tr>
<td>2-3.</td>
<td>Improvement of Tourist Routes</td>
<td>2-14. Street Lights in Cultural Heritage Area</td>
<td></td>
</tr>
<tr>
<td>2-4.</td>
<td>Establishment of Public Sign System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-5.</td>
<td>Development of Visitor Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-6.</td>
<td>Water Supply System*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-7.</td>
<td>Development of Sewage and Drainage System*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-8.</td>
<td>Improvement of Garbage Collection Services*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-9.</td>
<td>Development of Final Waste Disposal Site*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-15.</td>
<td>Parking in Culture Heritage Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-16.</td>
<td>Development of By-pass Route*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-17.</td>
<td>Drainage Facility for Flood*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-18.</td>
<td>Nyaung U Jetty Improvement*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-19.</td>
<td>Improvement of Nyaung U Airport</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(* Target of Pre Feasibility Study)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: JICA Expert Team

**Priority Projects**

The following priority projects are proposed to be implemented as urgent.

**Sector:** Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-01</td>
<td>Establishment of Outdoor Advertisement Control</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

**Project Site / Location:** Bagan Cultural Heritage Area

**Target Beneficiaries:** To be determined

**Implementation Organization:** GAD of Nyaung U / Nyaung U TDC / Bagan Management Committee

**Implementation Cost:** 36,000 USD

**Relevant Organization:** DOA of MORAC
### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-02</td>
<td>Development of Information Center</td>
<td>A</td>
</tr>
</tbody>
</table>

#### Project Site / Location
- Old Bagan in Bagan Cultural Heritage Area

#### Target Beneficiaries
- Tourists, Local Community

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOHT</td>
<td>GAD of Nyaung U / DOA of MORAC</td>
</tr>
</tbody>
</table>

#### Project Site / Location
- To be determined

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD of Nyaung U / Township Development Committee</td>
<td>DOA of MORAC</td>
</tr>
</tbody>
</table>

### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-03</td>
<td>Improvement of Tourist Routes</td>
<td>A</td>
</tr>
</tbody>
</table>

#### Project Site / Location
- Bagan Cultural Heritage Area

#### Target Beneficiaries
- Tourists, Local Community

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD of Nyaung U / Township Development Committee</td>
<td>DOA of MORAC</td>
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</table>

### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-04</td>
<td>Establishment of Public Sign System</td>
<td>A</td>
</tr>
</tbody>
</table>

#### Project Site / Location
- Bagan Cultural Heritage Area

#### Target Beneficiaries
- Tourists, Local Community

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOA of MORAC</td>
<td>GAD of Nyaung U</td>
</tr>
</tbody>
</table>

### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-05</td>
<td>Improvement of Visitors’ Management</td>
<td>A</td>
</tr>
</tbody>
</table>

#### Project Site / Location
- Around the Main Heritage Sites

#### Target Beneficiaries
- Tourists, Local Community / Tourism Business / Pagoda Trustee

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAD of Nyaung U</td>
<td>DOA of MORAC</td>
</tr>
</tbody>
</table>
### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-06</td>
<td>Development of Water Supply System</td>
<td>A</td>
</tr>
<tr>
<td>Project Site / Location</td>
<td>Nyaung U Town, New Bagan Town, Villages</td>
<td>Assumed Fund</td>
</tr>
<tr>
<td>Target Beneficiaries</td>
<td>Local Community / Tourism Business</td>
<td>To be determined</td>
</tr>
<tr>
<td>Implementation Organization</td>
<td>GAD of Nyaung U / Township Development Committee</td>
<td>DOA of MORAC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector: Tourism Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Number.</td>
</tr>
<tr>
<td>2-07</td>
</tr>
<tr>
<td>Project Site / Location</td>
</tr>
<tr>
<td>Target Beneficiaries</td>
</tr>
<tr>
<td>Implementation Organization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector: Tourism Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Number.</td>
</tr>
<tr>
<td>2-08</td>
</tr>
<tr>
<td>Project Site / Location</td>
</tr>
<tr>
<td>Target Beneficiaries</td>
</tr>
<tr>
<td>Implementation Organization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sector: Tourism Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Number.</td>
</tr>
<tr>
<td>2-09</td>
</tr>
<tr>
<td>Project Site / Location</td>
</tr>
<tr>
<td>Target Beneficiaries</td>
</tr>
<tr>
<td>Implementation Organization</td>
</tr>
</tbody>
</table>
### Mid- to Long-Term Projects

**Sector:** Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-10</td>
<td>Development of Viewing Points</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td><strong>Project Site / Location</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bagan Cultural Heritage Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Target Beneficiaries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tourists</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mandalay Regional Government / GAD of Nyaung U / Bagan Management Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Assumed Fund</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To be determined</td>
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<tr>
<td></td>
<td><strong>Estimated Cost</strong></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Implementation Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mandalay Regional Government / GAD of Nyaung U / Bagan Management Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Relevant Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOA of MORAC</td>
<td></td>
</tr>
</tbody>
</table>

**Sector:** Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-11</td>
<td>Electric Line Underground</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td><strong>Project Site / Location</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bagan Cultural Heritage Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Target Beneficiaries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tourists, Local Community</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Estimated Cost</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12,250,000 USD</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MOTC / Bagan Management Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Relevant Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOA of MORAC</td>
<td></td>
</tr>
</tbody>
</table>

**Sector:** Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-12</td>
<td>Improvement of Archaeology Museum</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td><strong>Project Site / Location</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Old Bagan</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Target Beneficiaries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tourists</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOA of MORAC / Bagan Management Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Relevant Organization</strong></td>
<td></td>
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<td></td>
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</table>

**Sector:** Tourism Infrastructure

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<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-13</td>
<td>Development of Rest Spaces in Heritage Area</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td><strong>Project Site / Location</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bagan Cultural Heritage Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Target Beneficiaries</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local Community, Tourists</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DOA of MORAC / Bagan Management Committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Relevant Organization</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAD of Nyaung U</td>
<td></td>
</tr>
</tbody>
</table>
### Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
<th>Project Site / Location</th>
<th>Target Beneficiaries</th>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-14</td>
<td>Street Lights in Cultural Heritage Area</td>
<td>B</td>
<td>Bagan Cultural Heritage Area</td>
<td>Local Community, Tourists</td>
<td>Mandalay Regional Government / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
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<tr>
<td>2-15</td>
<td>Parking in Cultural Heritage Area</td>
<td>B</td>
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<td>Local Community, Tourists</td>
<td>Mandalay Regional Government / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
</tr>
<tr>
<td>2-16</td>
<td>Development of By-pass Route</td>
<td>B</td>
<td>Bagan Cultural Heritage Area</td>
<td>Local Community, Tourists</td>
<td>Ministry of Construction / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
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<tr>
<td>2-17</td>
<td>Drainage Facility for Flood</td>
<td>B</td>
<td>Bagan Cultural Heritage Area</td>
<td>Local Community, Tourists</td>
<td>GAD of Nyaung U / Township Development Committee</td>
<td>DOA of MORAC</td>
</tr>
<tr>
<td>2-18</td>
<td>Nyaung U Jetty Improvement</td>
<td>B</td>
<td>Bagan Cultural Heritage Area</td>
<td>Local Community, Tourists</td>
<td>MOTC / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
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</table>
Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-19</td>
<td>Improvement of Nyaung U Airport</td>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Site / Location</th>
<th>Assumed Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nyaung U Airport</td>
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<table>
<thead>
<tr>
<th>Target Beneficiaries</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourists</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Civil Aviation, MOTC</td>
<td>DOA of MORAC</td>
</tr>
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Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-20</td>
<td>Development of ICT System</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Site / Location</th>
<th>Assumed Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagan Cultural Heritage Area</td>
<td>To be determined</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Beneficiaries</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Community, Tourists</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTC / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
</tr>
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</table>

Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-21</td>
<td>Development of Inter-City Road</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Site / Location</th>
<th>Assumed Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagan Cultural Heritage Area</td>
<td>To be determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Beneficiaries</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Community, Tourists</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Construction / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
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</tbody>
</table>

Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-22</td>
<td>Development of Railway</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Site / Location</th>
<th>Assumed Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagan Cultural Heritage Area</td>
<td>To be determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Beneficiaries</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Community, Tourists</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTC / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
</tr>
</tbody>
</table>

Sector: Tourism Infrastructure

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-23</td>
<td>Development of Park and Ride System</td>
<td>C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Site / Location</th>
<th>Assumed Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagan Cultural Heritage Area</td>
<td>To be determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Beneficiaries</th>
<th>Estimated Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Community, Tourists</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Organization</th>
<th>Relevant Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandalay Regional Government / GAD of Nyaung U</td>
<td>DOA of MORAC</td>
</tr>
</tbody>
</table>

---

4.4.3 Tourism Human Resources and Local Community

To achieve sustainable tourism development in the Bagan Cultural Heritage area, short-term (high priority), middle-term and long-term projects are proposed for strengthen tourism human resources development and involvement of local community.

Table.4 Projects for Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project</th>
<th>Priority Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-01</td>
<td>Bagan Tourism Institute</td>
</tr>
<tr>
<td>3-02</td>
<td>Capacity Development for Human Resources in Tourism Administration</td>
</tr>
<tr>
<td>3-03</td>
<td>Capacity Development for Local Tourism Business</td>
</tr>
<tr>
<td>3-04</td>
<td>Training Program for Cultural Heritage Site Guide</td>
</tr>
<tr>
<td>3-05</td>
<td>Public Awareness Campaign</td>
</tr>
<tr>
<td>3-06</td>
<td>Strengthen of Entrepreneurship for CBT</td>
</tr>
</tbody>
</table>

* This project is recommended to plan and implement within the framework of "Myanmar Tourism Human Resources Development Strategy & Action Plan (2016)". It needs to be discussed with MOHT. Therefore, this project is not included as a project sheet below.

<table>
<thead>
<tr>
<th>Period</th>
<th>Short-Term (Priority)</th>
<th>Middle-Term</th>
<th>Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2019</td>
<td></td>
<td>2020-2024</td>
<td>2025-2030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project</th>
<th>Establishment of Hotel and Tourism School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establishment of Traditional Crafts Support Center</td>
</tr>
<tr>
<td></td>
<td>Joint Garbage Collection Operation</td>
</tr>
<tr>
<td></td>
<td>Community Development based on CBT Promotion including Basic Infrastructure Development</td>
</tr>
</tbody>
</table>

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484
4.4.3 Tourism Human Resources and Local Community

To achieve sustainable tourism development in the Bagan Cultural Heritage area, short-term (high priority), middle-term and long-term projects are proposed for strengthen tourism human resources development and involvement of local community.

**Project List**
Projects for Tourism Human Resources and Local Community is listed below.

**Table.4 Projects for Tourism Human Resources and Local Community**

<table>
<thead>
<tr>
<th>Project</th>
<th>Short-Term (Priority) 2017-2019</th>
<th>Middle-Term 2020-2024</th>
<th>Long-Term 2025-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1. Bagan Tourism Institute</td>
<td>3-7. Establishment of Hotel and Tourism School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2. Capacity development for Human Resources in Tourism Administration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-3. Capacity development for Local Tourism Business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4. Training Program for Cultural Heritage Site Guide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3-10. Establishment of Traditional Crafts Support Center</td>
</tr>
<tr>
<td>3-5. Public Awareness Campaign</td>
<td>3-9. Joint Garbage Collection Operation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6. Strengthen of Entrepreneurship for CBT</td>
<td>(including strengthening of local products such as handicraft and food/beverage) (including development of optional tours such as eco tour)</td>
<td></td>
<td>3-11. Community Development based on CBT Promotion including Basic Infrastructure Development</td>
</tr>
</tbody>
</table>

Source: JICA Expert Team

**Priority Projects**
The following priority projects are proposed to be implemented as urgent.

3-01 Bagan Tourism Institute
3-02 Capacity Development for Human Resources in Tourism Administration *
3-03 Capacity Development for Local Tourism Business
3-04 Training Program for Cultural Heritage Site Guide
3-05 Public Awareness Campaign
3-06 Strengthen of Entrepreneurship for CBT

* This project is recommended to plan and implement within the framework of “Myanmar Tourism Human Resources Development Strategy & Action Plan (2016)”. It needs to be discussed with MOHT. Therefore, this project is not included as a project sheet below.
### Sector: Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-01</td>
<td>Bagan Tourism Institute</td>
<td>A</td>
</tr>
<tr>
<td>Project Site / Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bagan Area</td>
<td>Assumed Fund</td>
<td></td>
</tr>
<tr>
<td>Target Beneficiaries</td>
<td>Tourists to Bagan, Bagan Local Residents</td>
<td></td>
</tr>
<tr>
<td>Implementation Organization</td>
<td>MOHT, GAD, Nyaung U District</td>
<td></td>
</tr>
<tr>
<td>Relevant Agency</td>
<td>Bagan Hospitality Association, relevant tourism Associations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-03</td>
<td>Capacity Development for Local Tourism Business</td>
<td>A</td>
</tr>
<tr>
<td>Project Site / Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bagan</td>
<td>Assumed Fund</td>
<td></td>
</tr>
<tr>
<td>Target Beneficiaries</td>
<td>Tourism business in Bagan</td>
<td></td>
</tr>
<tr>
<td>Implementation Organization</td>
<td>MOHT, MOHT Bagan branch</td>
<td></td>
</tr>
<tr>
<td>Relevant Agency</td>
<td>MORAC, Hotel and Tourism Training Schools, tourism associations (MTF, MHA, MRA, BHA, BTGA) in Bagan</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-0</td>
<td>Training Program for Cultural Heritage Site Guide</td>
<td>A</td>
</tr>
<tr>
<td>Project Site / Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bagan</td>
<td>Assumed Fund</td>
<td></td>
</tr>
<tr>
<td>Target Beneficiaries</td>
<td>Tourist guides, tour operators in Bagan</td>
<td></td>
</tr>
<tr>
<td>Implementation Organization</td>
<td>MORAC</td>
<td></td>
</tr>
<tr>
<td>Relevant Agency</td>
<td>UNESCO, MOHT, Bagan Tourist Guide Association</td>
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</table>

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-05</td>
<td>Public Awareness Campaign</td>
<td>A</td>
</tr>
<tr>
<td>Project Site / Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nyaung U Town, New Bagan, Old Bagan, villages in Nyaung U Township</td>
<td>Assumed Fund</td>
<td></td>
</tr>
<tr>
<td>Target Beneficiaries</td>
<td>Local residents, students</td>
<td></td>
</tr>
<tr>
<td>Implementation Organization</td>
<td>MOHT Bagan branch</td>
<td></td>
</tr>
<tr>
<td>Relevant Agency</td>
<td>MORAC, MOEducation, GAD, Nyaung U District, tourism associations in Bagan</td>
<td></td>
</tr>
</tbody>
</table>
**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-06</td>
<td>Strengthen of Entrepreneurship for CBT</td>
<td>A</td>
</tr>
</tbody>
</table>

**Project Site / Location:** The whole Bagan area

**Target Beneficiaries:** Local community, Travel agencies

**Implementation Organization:** MOHT

**Relevant Agency:** MOHT-Bagan

**Estimated Cost:** 30,000 USD

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**Mid- to Long-Term Projects**

**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-07</td>
<td>Establishment of Hotel and Tourism School</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location:** Bagan

**Target Beneficiaries:** MOHT, tourism business operators, local residents

**Implementation Organization:** MOHT

**Relevant Agency:** MOHT Bagan branch

**Estimated Cost:** -

---

**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-08</td>
<td>Training and Strengthening of Local Craftsman</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location:** Bagan area

**Target Beneficiaries:** Craftsman, local residents, tourism business operators

**Implementation Organization:** MOALI

**Relevant Agency:** MORAC

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**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-09</td>
<td>Joint Garbage Collection Operation</td>
<td>B</td>
</tr>
</tbody>
</table>

**Project Site / Location:** Bagan Cultural Heritage Region

**Target Beneficiaries:** Local community, tourists

**Implementation Organization:** GAD

**Relevant Agency:** TDC, MORAC

**Estimated Cost:** 60,000 USD
**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-10</td>
<td>Establishment of Traditional Crafts Support Center</td>
<td>C</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan area

**Target Beneficiaries**
Craftsmen, traditional dancers, traditional artists, tourists

**Implementation Organization**
MOALI

<table>
<thead>
<tr>
<th>Relevant Agency</th>
<th>Relevant tourism associations in Bagan</th>
</tr>
</thead>
</table>

**Sector:** Tourism Human Resources and Local Community

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Name</th>
<th>Project Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-11</td>
<td>Community Development based on CBT Promotion including Basic Infrastructure Development</td>
<td>C</td>
</tr>
</tbody>
</table>

**Project Site / Location**
Bagan area

**Target Beneficiaries**
Local community

**Implementation Organization**
Relevant departments in Myanmar Government

<table>
<thead>
<tr>
<th>Relevant Agency</th>
<th>Relevant agencies in Bagan</th>
</tr>
</thead>
</table>
4.5 Implementation Plan

In accordance with the Bagan Management Plan prepared by MORAC toward the UNESCO World Heritage nomination, an implementation plan is prepared for the proposed projects and programs for the Strategic Plan for Sustainable Tourism in Bagan Cultural Heritage Site in cooperation with MOHT, local stakeholders related to tourism and local communities in Bagan.
5. Sustainable Tourism and Integrated Management

5.1 Tourism management and infrastructure

5.1.1 Tourism Activities

5.1.2 Tourism Infrastructure

5.1.3 Tourism Accommodations

5.1.4 Tourism Contributions

5.2 Tourism Management Issues and Actions

5.2.1 Tourism Activities

5.2.2 Tourism Infrastructure

5.2.3 Tourism Accommodations

5.2.4 Tourism Contributions
Bagan World Heritage Nomination
5. Sustainable Tourism and Integrated Management

5.1 Tourism management and infrastructure

Tourism is a critical part of managing World Heritage properties. During the second cycle of periodic reporting on the implementation of the World Heritage Convention in Asia and the Pacific, site managers were asked to comment on factors affecting their heritage. One of the most prominent factors considered to have both negative and a positive impact on World Heritage was tourism and the related infrastructure development, accommodations, including interpretation and visitor facilities. The positive factors are the income and prestige which comes with promoting and sustaining the heritage sites. On the other hand, many activities can cause physical damage, loss of ambience, spoil the environment and the surrounding context and even alienate the local community.

A Sustainable Tourism Strategy document has been prepared and adopted to ensure that tourism development is carried out in a sustainable and appropriate manner in and around the heritage site of Bagan. All activities, particularly those dealing with tourism in and around Bagan must follow the provisions provided within the Sustainable Tourism Strategy document. This link between the tourism sector and the cultural heritage sector is critical for the sustainable development of Bagan along with the safeguarding of the cultural heritage attributes.

5.1.1 Tourism Activities

Tourist activities must ensure that they do not impact the heritage which includes the monuments, the subsurface archaeology as well as the cultural sentiments of the community. This would need to be based on detailed studies and discussions with community members. All activities must be planned taking into account the number of tourist that will be visiting the site over the next years and considering the carrying capacity of each of the monuments and sites. In certain cases, such as monuments with mural paints, might require controlling the number of tourist at any one time and overall daily restrictions, possibly by charging extra fees to cover direct management expenses.

Transportation within the heritage site will be a critical issue in ensuring heritage is protected. The distribution of visitors throughout the site in sustainable numbers needs to be targeted. A hierarchical plan for transportation within the heritage site shall be established. This means that a detailed plan of vehicular movement must be prepared, agreed upon and adopted before any further infrastructure is developed. The plan shall allow general access to cycles and electric scooters with greatest restrictions to big busses. Accordingly parking facilities shall be provided with a hierarchical system of transportation.

The accessibility to Bagan must be improved considering rising visitor numbers while taking into account its impact on the heritage site. Nyaung U Airport must not be extended and flight frequency must be restricted. Should access to Bagan require larger flights and higher flight frequency, the option of moving the airport to other sites such as using the partially built one in Pakokku needs to be considered. Bagan must become a no-fly zone. Railway transportation must be prioritized for tourism development. This could become especially important when the airport is relocated. Special trains with steam engines could become a major tourist attraction. Road networks must link to the heritage sites with the main connections being outside the heritage area. Travel along the river shall be promoted. Infrastructure development along the river banks shall be restricted. No major development of jetties and piers shall be carried out within the heritage area. Floating hotels shall not be allowed within the heritage area, can however be promoted further upstream or downstream.
5.1.2 Tourism Infrastructure

Tourism infrastructure development has not shown sufficient respect for cultural heritage. The development of facilities and infrastructure for tourists within the heritage site will ensure visitor satisfaction in respect to basic needs, experience as well as information. These will however be restricted to facilities that are non-intrusive, reversible and appropriate to the location and follow the legal framework being developed for Bagan.

Tourist facilities constructed within the heritage property have not shown sufficient care for the heritage. Within the heritage site any facilities that need to be built will adhere to the legal framework particularly to the building bylaws regarding temporary structures. Special care shall be taken with service lines for supply of electricity and water and disposal of sewage, waste water and solid waste.

The development of infrastructure linked to tourism activities will closely adhere to the legal framework, in particular the development guidelines. The development of infrastructure shall only be carried out once an overall appropriate infrastructure development plan has been prepared, agreed upon and adopted by the government. All government departments shall then follow these plans. This is particularly important for circulation (roads, paths, parking areas, and bus stops), airports extensions, railway lines and stations, jetties and piers for river traffic, as well as viewing mounts, decks and special access to temples and archaeological sites.

Infrastructure has been developed without following laws. Any development projects that are not temporary or easily removable must first have a Heritage Impact Assessment (HIA) carried out along with detailed sub-surface archaeological surveys linked to Archaeological Risk Maps (ARM). The project must be developed taking into account the outcome of the assessment and survey.

5.1.3 Tourism Accommodations

The number of visitors to Bagan is increasing steadily. This means that there are increasingly more people looking for accommodations in Bagan. The visitor profiles cover a wide range from the high-paying luxury tourists, to backpackers and national visitors and pilgrims. This requires various typologies and standards of accommodation. Inversely, the type of accommodations and their marketing can also influence the tourist profile. A detailed study is required of present visitor numbers and profiles over the year. This needs to be linked to the national tourism strategy and extrapolation scenarios for visitors to Bagan over the next decades. The establishment of visitor accommodations must be guided according to the results of these studies.

Visitor accommodations have become one of the greatest threats to the Heritage Zones. Resort complexes have been built in critical areas of the Monument Zone, such as in Old Bagan and along the banks of the Ayeyawady River. Many of these reports encompass listed monuments and construction has taken place over archaeology. This trend must stop. The designation of Hotel Zones that have been carved out of the Monument Zone (which are Hotel Zone 1, 2 and 3) must be removed. These Hotel Zones undermine the authority of the Protection and Preservation of Cultural Heritage Regions Law of 1998.

The Hotel Zone 4 however provides the basis for an appropriate tourist accommodation strategy. More such Hotel Zones outside the Heritage Zones (MZ, AZ and PZ) will need to be
identified, with however better planning. The Hotel Zones must be developed with sufficient commercial facilities and activities that they become sustainable entities. This must link to the activities of the local communities, supporting their livelihood.

There are possibly over a hundred hotels and guest houses within the town and village areas of the Heritage Zones. These are not always appropriate and in many cases are illegal. Guidelines are needed for visitor accommodations within the town and village areas. These should be incentives for conserving historical buildings and providing village style accommodations. The wonderful colonial period buildings in Nyaung U must be conserved, possibly through change in usage. Even the wooden framed buildings that provide the town with a distinct character must be conserved. In New Bagan the situation is of course different, since this is a town that was established only in 1990.

Similar incentives could be used to conserve the wooden monasteries around Bagan. Certain monasteries which have been recently lost could be re-established to provide pilgrims with simple accommodations. The income source would be a great support for the monasteries, keeping in mind that the monasteries cannot request for support themselves.

The main focus and support needs to be given on developing tourist accommodations outside the heritage areas. An example can already be found in Hotel Zone 4. These areas must however be developed to ensure certain characteristics while providing the necessary services and entertainment for the tourists and allowing the local population to profit from this.

Considerations might be made on allowing tourist accommodations in town areas and possibly in the villages in a controlled manner. This would possibly mean the introduction of home stay and accommodations in heritage buildings that are restored and maintained. This should be a motivation for conserving historical and local buildings. The construction of new buildings for such purposes would need to be dissuaded.

The existing hotels and guest houses within the heritage site, including Hotel Zones 1, 2 and 3 would need to be assessed as individual cases to ensure that they do not impact the heritage. Necessary measures would need to be taken and in the long run these will be phased out.

5.1.4 Tourism Contributions

The negative impact of tourism will need to be controlled while the positive impact promoted. This will be an essential balance which if not achieved will surely destroy the cultural heritage property. Various point need to be considered in respect to the overall approach of tourism in Bagan and sustainability. Bagan is a heritage site, a sacred site, a place where communities live and work, and only then a tourist destination.

Tourism must support the safeguarding of the heritage site. Only activities that do not negatively impacted heritage must be carried out. Activities that enhance the protection of heritage need to be promoted. Wherever possible the local community will be prioritized to profit from tourism activities. Long-term planning will be carried out to ensure focus is not only on immediate gains.
The heritage site as a tourism product must ensure that there is a clear balance between the requirements and visions of the tourism sector and the need to safeguard the cultural heritage, the environment and the integrity of the local community. Tourism will be promoted while ensuring that it supports the livelihood of the local community. Great care will however be taken to ensure that the lives of the local community members are not unduly disrupted. Tourism activities must consider the sentiments and values of the local community. Tourism must support local activities such as production of handicrafts and local agricultural products.

Tourism must also support the post-disaster rehabilitation. Therefore tourism must be promoted during the post-disaster rehabilitation phase to ensure continued support to the livelihood of the community. Tourists shall be encouraged to contribute to the rehabilitation efforts. Provisions need to be made to allow visitors to observe the rehabilitation of Bagan. This would include possible means of observing ongoing restoration work but also by being provided information on the rehabilitation process. Visitor management during the rehabilitation phase must be specially managed to allow for the experience however ensuring safety for heritage and visitors. Signage concerning possible threats must be clearly provided.

Busses parked in front of Dhamma-yan-gyi Temple (#771)
The actions provided in the following section will be addressing all these issues:

- Help safeguard the cultural heritage property.
- Ensure that the various categories of visitors have and how they could contribute back to certain aspects that overlap. The main question here is the degree of impact they would all have different priorities as well as requirements. However, there are necessary to differentiate between local visitors, pilgrims, and foreign visitors, since tourists align with the infrastructure and accommodations required by them. It is tourists who contribute back to help safeguard the cultural heritage property. This would be in connection with general activities of the cultural heritage property. This would be in connection with general activities of the cultural heritage property.

4. Tourism Contributions
3. Tourism Accommodations
2. Tourism Infrastructure
1. Tourism Activities

This section on the tourism management includes the following subheadings:

- 3.1 Tourism management provides an overview of the issues that have been provided under section 2.1.
- 5.2 Tourism Management Issues and Actions
### 3. TOURISM MANAGEMENT

**5.2.1 TOURISM ACTIVITIES**

<table>
<thead>
<tr>
<th>#</th>
<th>ISSUE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tourists visit only few of the most important sites and lack dispersal</td>
<td>Plan out how tourists can be dispersed throughout the cultural heritage property and into the surrounding areas</td>
</tr>
<tr>
<td>(A)/(B)/(C)</td>
<td>(O)</td>
<td>(2)</td>
</tr>
<tr>
<td>2</td>
<td>To many visitors in monuments will impact mural paintings</td>
<td>Visitor to monuments with mural paintings must be controlled to acceptable numbers</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
</tr>
<tr>
<td>3</td>
<td>Tourist attractions have become sunset on monuments or now viewing mounds</td>
<td>The marketing of sunset views must change to more appropriate activities that don't impact monuments and the landscape</td>
</tr>
<tr>
<td>(A)/(B)</td>
<td>(M)</td>
<td>(1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>LEAD AGENCY</th>
<th>RESOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>DOA / MOHT</td>
<td>local expert with external support and resources</td>
</tr>
<tr>
<td>By 2022</td>
<td>DOA / MOHT</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>ongoing continuous</td>
<td>DOA / MOHT</td>
<td>staff with local support and resources</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Viewing mounds are being built for tourists which are intrusive</td>
<td>The viewing mounds are to be assessed for impact and rectified accordingly</td>
</tr>
<tr>
<td>2</td>
<td>Viewing tower, gold course, palace reconstruction and other attractions were built in the past</td>
<td>The existing tourism infrastructure from the past must be assessed for impact and rectified accordingly</td>
</tr>
<tr>
<td>3</td>
<td>Various forms of ballooning facilities have been established or are planned</td>
<td>The various existing and planned ballooning facilities must be assessed for impact and controls but in place</td>
</tr>
<tr>
<td>4</td>
<td>Tourist ships for river cruises are docked along riverside</td>
<td>Tourist ships must be regulated, particularly in respect to where they are docked</td>
</tr>
<tr>
<td>5</td>
<td>All forms of transportation infrastructure planning without coordination with cultural heritage property</td>
<td>Proper comprehensive and coordinated planning is required for all transportation infrastructure development (Refer Issue cluster 1A)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>5.2.3 TOURISM ACCOMMODATIONS</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hotels constructed within the cultural heritage property has impacted the heritage attributes</td>
<td>All hotels built outside the settlement areas within the cultural heritage property will be phased out</td>
</tr>
<tr>
<td></td>
<td>(A) LOCATION: ongoing by 2033</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>2</td>
<td>Hotels built in the town areas have been built without following regulations</td>
<td>All hotels built in the town areas will be assessed for impact on heritage and rectified where necessary</td>
</tr>
<tr>
<td></td>
<td>(B) LOCATION: ongoing by 2022</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>3</td>
<td>Previous hotel zones were randomly created and hotels / resorts built on archaeology</td>
<td>Cancel all hotel zones from within the Cultural Heritage property and begin phasing out these hotels</td>
</tr>
<tr>
<td></td>
<td>(A) LOCATION: ongoing by 2033</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>4</td>
<td>It is illegal to have home stay in the villages based on old laws</td>
<td>Laws must be amended to allow for local people to develop home-stay options for tourists</td>
</tr>
<tr>
<td></td>
<td>(A)/(B) LOCATION: 2018 continued</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>5</td>
<td>Haphazard hotel construction is going on in the surrounding areas</td>
<td>Regional planning to control land-use and hotel development in surrounding areas</td>
</tr>
<tr>
<td></td>
<td>(B)/(C) LOCATION: 2018 continued</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>6</td>
<td>Potential areas not considered for long-term tourism development such as in Magway Region</td>
<td>Potential tourism areas in Magway Region to be planned and developed together with Regional Government</td>
</tr>
<tr>
<td></td>
<td>(B)/(C) LOCATION: 2018 continued</td>
<td>DOA / DOHT</td>
</tr>
<tr>
<td>#</td>
<td>ISSUE</td>
<td>ACTION</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1</td>
<td>Tourist visit Bagan but don’t contribute to improving the livelihood of local community</td>
<td>Develop mechanisms to ensure tourism sector has direct impact on improving livelihood of local community by 2018 by DOHT / DOA experts with external support and resources.</td>
</tr>
<tr>
<td>2</td>
<td>Tourists offend local community by not respecting the local customs</td>
<td>Provide tourist awareness programmes at entrance to the site to ensure they are aware of the local customs by 2018 by DOHT / DOA staff with local support and resources.</td>
</tr>
<tr>
<td>3</td>
<td>Tourism has not contributed to post earthquake rehabilitation</td>
<td>Tourism must be promoted in Bagan linked directly with post earthquake rehabilitation allowing observation or even participation by 2018 by DOHT / DOA respective authorities.</td>
</tr>
<tr>
<td>4</td>
<td>Only a very small part of the tourism entrance fees are put back into conserving Bagan</td>
<td>The government must provide at least 10% of the tourism entrance fees directly to conserving the heritage without complicated procedures by 2018 by DOA / MoRAC respective authorities.</td>
</tr>
<tr>
<td>5</td>
<td>Farmers are having a difficult time working the fields contributing the maintaining the landscape</td>
<td>The tourist sector must provide support in some form to the farmers who are maintaining the landscape of the cultural heritage property by 2018 by DOA staff with external support and resources.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Nomination Dossier for Inscription on the World Heritage List

BAGAN

Disaster Risk Management Strategy

World Bank
31 December 2017
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<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bagan Cultural Heritage Property</td>
<td>The area of Bagan that has been demarcated as containing most of the cultural heritage attributes</td>
</tr>
<tr>
<td>Bagan Cultural Heritage Site</td>
<td>The overall area of Bagan that includes both the cultural heritage property as well as the buffer zone</td>
</tr>
<tr>
<td>Buffer Zone</td>
<td>An area demarcated around the cultural heritage property that provides an added layer of protection with similar management and legal provisions.</td>
</tr>
<tr>
<td>Protective Planning Area</td>
<td>An area demarcated approximately 30 kilometres beyond the Buffer Zone spanning from Chauk to Pakokku towns as basis for regional planning</td>
</tr>
<tr>
<td>MOC</td>
<td>Ministry of Construction</td>
</tr>
<tr>
<td>MONREC</td>
<td>Ministry of Natural Resources and Environmental Conservation</td>
</tr>
<tr>
<td>MOHT</td>
<td>Ministry of Hotels and Tourism</td>
</tr>
<tr>
<td>MORAC</td>
<td>Ministry of Religious Affairs and Culture</td>
</tr>
<tr>
<td>DANM</td>
<td>Department of Archaeology and National Museum</td>
</tr>
<tr>
<td>DA</td>
<td>District Administration</td>
</tr>
<tr>
<td>MNCCC</td>
<td>Myanmar National Culture Central Committee is a high level coordination committee under the Vice President</td>
</tr>
<tr>
<td>BAGANCOM</td>
<td>Bagan Committee for the management of the cultural heritage property and buffer zone</td>
</tr>
<tr>
<td>AMA</td>
<td>Association of Myanmar Architects</td>
</tr>
<tr>
<td>MTF</td>
<td>Myanmar Tourism Federation</td>
</tr>
<tr>
<td>JICA</td>
<td>Japan International Cooperation Agency</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>OUV</td>
<td>Outstanding Universal Value</td>
</tr>
<tr>
<td>SOUV</td>
<td>Statement of Outstanding Universal Value</td>
</tr>
</tbody>
</table>
Preamble

Bagan Cultural Heritage Site spans across a bend in the Ayeyawady River between the hills of Tantkyi-taung and Tuyin-taung. The site is located in Nyaung U District of Mandalay Region and Pakokku District of Magway Region. The property covers some 50 square kilometres with an additional 180 square kilometres of buffer zone. The impressive landscape encompasses over three thousand monuments along with 2 towns and over 40 villages. The ancient capital city of Myanmar went through a major building spree during the eleventh to thirteenth centuries CE of which nearly three thousand monuments remain. Though the focus is on the Bagan Period, there are even earlier remains from the Neolithic and Pyu Periods and wonderful temples and mural paintings from the eighteenth and nineteenth centuries.

The site also boasts elaborate living cultural heritage continuing from the ancient times. The strong Theravada Buddhist culture pervades the daily lives of the local community and the visiting pilgrims. This is overlaid by a deep reverence to the spirits or Nats which are particularly dominant in Bagan, with their main centre being nearby Mount Popa. The festivals linked to the pagodas and Buddhist holidays are widely celebrated. Pilgrims visit the various temples and pagodas for private prayers and offering. There are traditional crafts that have survived such as lacquer ware production.

The communities living in the towns and villages are in a period of transition. Most locals are still farmers who depend on the meagre rainfall to cultivate their traditional crops such as groundnuts, sesame and flat beans on plots hemmed in by toddy palms. The ground is still ploughed using bullocks and bullock carts are still used transportation. These fields between the clusters of monuments create an idyllic landscape which has attracted ever increasing numbers of tourists to Bagan. It is however the tourist industry itself that is the main threat to this landscape. Many locals would rather join the less strenuous and more lucrative tourism business. Tourism is also the caused for increased traffic, construction of infrastructure and buildings as well as physical wear and tear of the monuments.

Much of this golden period of Bagan is still hidden below the surface of the parched land. The urbanization and the expansion of the monument ensembles are not clearly understood. Development pressure mainly driven by tourism is ready to swamp the regulations put in place to conserve the monuments. To defuse these pressures while ensuring a livelihood for the local community requires a comprehensive planning approach. The consideration of a wide range of issues will allow for a realistic and effective management system to be put in place that ensures sustainable development while safeguarding the attributes and elements of Bagan that express its exceptional values.
The Integrated Management System for Bagan has been established consisting of adopted management frameworks, established processes and actions along with various sector plans. The process of developing and adopting the Integrated Management System for Bagan was begun in 2013. With regular consultation with government authorities, local representatives and community, it has been possible to come to an overall understanding of how Bagan needs to be managed to ensure that heritage in safeguarded while enabling the local communities to improve their livelihood. Close relationship has also been developed with related sectors such as local administration, tourism, agriculture, disaster risk management and environment protection. The management of Bagan will however depend on overall government policies and local governance. This requires regular review and amendments to the Integrated Management System to adapt to changing circumstances, however the overarching objective must be retained: “to protect the attributes expressing outstanding universal value of the World Heritage property as well as the locally recognised heritage values, while taking into account sustainable development including the standard of living, safety and economic viability of the community living within the World Heritage property.”

The Integrated Management System is defined by two main documents. The Integrated Management Framework document has been officially adopted by the State Party. The Integrated Plan of Actions document defined is a working document requiring ongoing amendments and changes to be carried out and would be the basis for establishing annual action plans. Additionally there are three further sector plans or strategies. The Conceptual Regional Plan provides an overview of the required planning in respect to land-use, settlements, infrastructure and environment. This has been prepared with inputs from various government agencies as well as the Association of Myanmar Architects (AMA). This is closely linked to the Sustainable Tourism Strategy which has been prepared in close collaboration with the Ministry of Hotels and Tourism, the Myanmar Tourism Federation and with support from JICA. Furthermore the Disaster Risk Management Strategy has been prepared with support from the World Bank.

**The Integrated Management Framework Document** consists of four main sections. The first section consists of defining the cultural heritage property including the statement of outstanding universal value (SOUV), the property boundaries and the buffer zone. The conservation approach and integration of sustainable development are also presented. The second section then provides the vision, approach and objectives of the management system. The third section defines the institutional, legal and resources frameworks as the basis for management. The last section provides the basis for implementation. Here the process of institutionalization, sector wise coordination and monitoring frameworks are provided.
Section I – Introduction

The Bagan Disaster Risk Management Plan (Bagan DRMP) is an initiative of the Government of Myanmar (GOM) to:

- understand the risks facing the Bagan Cultural Heritage Site, especially in terms of the heritage attributes, visitors, and residents;
- clarify relevant management frameworks;
- capture the current measures pursued by Bagan’s many stakeholders to manage and reduce those risks; and
- set out an Action Plan to enhance DRM at Bagan.

In recognition of the many features that make Bagan a complex cultural ecosystem, the Bagan DRMP seeks an integrated approach to manage risk in terms of:

(i) Risk to physical monuments and the integrity of the site;
(ii) Risk to the cultural and economic activity in and around the site; and
(iii) Risk to the well-being of local people and communities in and around Bagan.

Throughout, GOM seeks to protect the Outstanding Unique Value (OUV) of the Bagan Cultural Heritage Site.

1. Site Summary

The Bagan Cultural Heritage Site covers 180 km² (incl. the Bagan Cultural Heritage Property of 45 km²) in the alluvial flat plain of Myanmar’s central dry zone between the hills of Tantkyi-taung and Tuyin-taung and spans across the Irrawaddy River. Tectonically, Myanmar is located on the eastern edge of the boundary between the India Plate and Burma Plate in what is believed to be a subduction zone. It is home to 2 townships and 41 villages, with a total population of 81,505. Due to its geographical location Bagan is affected by geological, hydrological and meteorological conditions, as well as human-induced hazards, which significantly threaten the site.

2. Cultural Significance

Bagan was the heart of the largest Buddhist Empire of the medieval world, and emerged as the capital of this empire as of the 9th century CE. The site possesses 3,595 surviving tangible cultural assets, including stupas, temples, monasteries, ordination halls, a palace site and fortifications, associated inscriptions, sculptures, murals and cloth paintings, archaeological deposits and water management features. It is a testimony to cultural traditions (merit making) and expressions (intangible assets). The majority of the structures date from the peak of the empire (11th to the 13th Centuries CE) known as the Bagan Period. As a site of Outstanding Universal Value (OUV), Bagan meets the World Heritage Centre’s criteria (iii), (iv) and (vi) for inclusion in the World Heritage List.

---

1 Area of nominated property: 4,987.88 ha; Buffer zone: 17,821.97 ha; Total: 22,809.85 ha (Nomination dossier, Vol.1, p.21).
3 Bagan township profile information (GAD, 2016)
4 Bagan Heritage Site Survey (DANM, 2016)
3. Earthquake of August 24, 2016

On August 24, 2016, an earthquake of magnitude 6.8 struck near Chauk, Myanmar (20.923°N 94.569°E) at a depth of 82.0 km. In response, GOM, engaging support from UNESCO, the World Bank, and other partners, ensured assessment of the site and recommendations for improvements and follow-up actions to structurally stabilize damaged monuments – both at the monument-by-monument and overall site level. Key findings and recommendations from these reports included:

1. The site had more than 350 damaged monuments, which were classified by damage level and priority.  
2. Bagan should prepare for much larger earthquakes: “The earthquake of 24 August 2016; with its relatively low intensity (VI degree MCS scale) and acceleration (less than 0.1 g) should be compared with possible expected earthquake of intensity between VIII and IX degree and peak ground accelerations (pga) of 0.3-0.4 g.” (Gavrilovic et al., pg. 71)  
3. The 2016 earthquake provides insights on current structural vulnerability: “(i) Seismic strengthened monuments after the 1975 earthquake withstood the 2016 earthquake without or with minimal damage; (ii) Heavy damage and partial collapse occurred on monuments where inappropriate interventions have been done and on partially rebuild monuments (748 Sulamani Temple). (iii) Damage occurred on monuments strengthened within appropriate methods and materials, for example with metal frames (1239 Nan-hpayat temple) and buttresses (1587 Pitak-taik temple), (iv) Damage also occurred in monuments with masonry repair without strengthening and maintenance.” (pg. 71)  
4. The damage and response of the 2016 earthquake also suggests several institutional and wider measures to enhance risk management of the Bagan site: (i) increase number and capacity of DANM and related agency staff to ensure ability to implement DRM measures, (ii) establish and empower committee structure to take advantage of domestic expertise and institutional framework of Myanmar, and (iii) increase detailed understanding of seismic and other risks in Bagan to better inform future action.

These assessments and recommendations have been considered and integrated into this Bagan DRMP.

4. Bagan’s Disaster Risk Management Approach

The threats to Bagan require action to safeguard its unique heritage of world significance. The Bagan DRMP provides a path to mitigate and manage risks by preventing and reducing negative impacts. It understands risks as a product of hazards, exposure, and vulnerabilities, which are addressed from a multi-stakeholder perspective to increase the resilience of the tangible and intangible assets, while protecting visitors, and residents and their livelihoods.

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7 The assessment results classified and identified as 50 monuments as “red” for severely damaged, 96 as “yellow” for moderately damaged, and 124 as “green” for lightly damaged. (Gavrilovic et al., p. 13)
In line with the UNESCO DRM cycle\(^8\) that sets out DRM in cyclical time-based phases (i.e., before, during, and after), this DRMP captures current measures and proposes new action along: (i) risk identification, (ii) risk reduction and mitigation, (iii) preparedness and response, and (iv) recovery and rehabilitation.

**Figure 1 Disaster Risk Management Cycle for Cultural Heritage (UNESCO)**

5. **Alignment with National and International Frameworks**

Myanmar and the Bagan DRMP are aligned with national and international frameworks for cultural heritage and DRM.

In May 2014, Myanmar ratified the 2003 UNESCO “Convention for the Safeguarding of Intangible Cultural Heritage”.

GOM has developed the nationwide *Myanmar Action Plan on Disaster Risk Reduction, 2017* (MAPDRR), which includes 4 pillars:

- **Pillar 1.** Assessing disaster risk including extreme weather events and creating public awareness on DRR;
- **Pillar 2.** Strengthening disaster risk governance to reduce and manage risk;
- **Pillar 3.** Mainstreaming disaster risk reduction for resilient development; and
- **Pillar 4.** Enhancing disaster preparedness for effective response and reconstruction.

Under MAPDRR Pillar 4, GOM recognizes the importance of cultural heritage by committing to Priority Action 9: *Disaster and climate risk management of historical monuments and archaeological heritage in Myanmar*, led by the Ministry of Religious Affairs and Culture. Under MAPDRR Target 3 (T3) to *Reduce direct disaster economic loss in relation to GDP of Myanmar by 2030*, GOM aims to reduce the damage and destruction to cultural heritage (T3.5).

The MAPDRR provides a pathway to achieving targets under the 2015-2030 Sendai Framework for Disaster Risk Reduction, which articulates the need for improved understanding of disaster risk in all its dimensions of exposure, vulnerability and hazard characteristics; and focuses on preventing new risk, reducing existing risk and strengthening resilience for cultural heritage\(^9\).

\(^8\) “Managing Disaster Risks for World Heritage”, p.13 (UNESCO, 2010)

Section II – Risk Identification in Bagan

Bagan is a multi-hazard risk area subject to many hazards and threats, with stakeholders and assets facing varying levels of exposure and vulnerability to these threats.

Working through a variety of ministries, stakeholders, and local and international partners, GOM understands the risks to Bagan through (i) collection of relevant data and information on hazards, exposure, and vulnerability, (ii) current targeted use of risk assessment, and (iii) consultations to capture stakeholders’ understanding and experience of risk at the site. Section IV of the Bagan DRMP lists current measures to manage risk, including risk identification initiatives, and Section V lists measures planned or under consideration by GOM.

Figure 2. Boundaries of Nominated Property and Buffer Zone Boundaries of Bagan

1. Exposure and Vulnerability

**Exposure** is the state or condition of being unprotected and open to damage, loss, or disruption. Measuring exposure entails capturing the assets, activities, and other elements of value that are subject to this state.

**Vulnerability** is the sum of the physical, social, economic and environmental factors or processes that increase the likelihood of an individual, a community, assets or systems of suffering damages after a disaster occurs.

Below, exposure and vulnerability are analyzed for (i) monuments and the integrity of the site; (ii) the cultural and economic activity in and around the site; and (iii) the well-being of local people and communities in and around Bagan. This approach applies a

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10 Boundaries of Nominated Property and Buffer Zone Boundaries of Bagan, as produced by DANM GIS team and approved by Mandalay Region Government (DANM, 2017)
comprehensive lens that considers the site as a whole, including tangible and intangible cultural heritage, communities’ well-being, and their livelihoods.

2.1 Exposure and Vulnerability of the Monuments and Integrity of the Site

The Ministry of Religious Affairs and Culture’s Department of Archaeology and National Museum (DANM) manages an inventory of Bagan’s tangible assets. An analysis of Bagan’s OUV heritage assets against WHC’s criteria has been conducted (see Annex).

In addition to the tangible assets of Bagan, the Buddhist tradition of merit making - a powerful force of creation in Bagan - and patronage still infuses the daily life of local communities. Merit making belief states that good deeds and positive actions will determine a better quality of the next life. The traditional merit making includes festivals, celebrations and rituals as well as contributions made to the maintenance and repair of monuments. In Bagan, the close relationship between the communities and the tangible heritage through the culture of Merit Making is unique to this site. Bagan is a stunning and harmonious combination of buildings, traditions, landscape, and communities.

2.2 Exposure and Vulnerability of the cultural and economic activity of the site

Hazards can cause direct damages to buildings and monuments but can also indirectly impact economic activities and cultural traditions. Most of the economic activities in the area are related to tourism (Hotels, restaurants, shops, tour operators...), therefore, if that sector is affected people might lose their major source of income.

2.3 Exposure and Vulnerability of well-being of local people and communities

The Bagan Cultural Heritage Site has a population of 81,500 inhabitants of which 10,900 in the Property zone (6 villages) and 70,500 in the Buffer zone (2 towns and 35 villages). Hazards can cause direct losses to these communities, both in terms of lives and damages caused to residential buildings.

2. Hazards

Hazards are defined as dangers than can cause loss or damage to human life, activities, and property (e.g., cultural and physical). Hazards occur with different levels of frequency and severity.

2.1 Threats from Natural Hazards

Bagan is subject to threats from natural hazards. Earthquakes present the likely most catastrophic threat to Bagan’s cultural heritage and surrounding communities. Hazards from weather and climate also disrupt and damage Bagan, and are likely to increase due to climate change.

Geological and Seismic. Bagan is located in Zone IV (“Severe Zone”) with expected intensity of earthquake between VIII and IX on the Mescali-Modified Scale (MMS) and expected ground accelerations of 0.30-0.40g. Many shallow earthquakes occur within the region, because of both strike-slip and reverse faults. It has been found that the two main faults that affect Myanmar are the active Sunda "mega thrust" fault

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in the Indian Ocean and the strike-slip Sagaing fault that cuts through the
country. Furthermore, the Ancient City of Bagan is located at the convergence of the
Bangal subduction zone (to the west) and the Sagaing Fault - which runs through
Bagan City - (to the east); while the site is lodged is between two major active faults,
Chauk-Yenanchaung Thrust Fault and Gwe-cho Thrust Fault.

Earthquakes have and will cause loss or damage to human life, activities, and the
site itself.

Figure 3. Seismic Zone Map of Myanmar and Mandalay Region

Figure 4. Sulamani Temple Damaged in 2016 earthquake

12 “Predictions for the maximum earthquake magnitude to occur along the mega thrust have varied to be
between Mw 8.5-8.8 with a recurrence interval ranging from 190-1000 years. Wang et al has attempted
to refine these predictions for the maximum magnitude that could occur along all active faults and the
mega thrust based on fault lengths and historic magnitudes using empirical global relationships. Each
active fault can generate events that are greater than Mw 7.0, with the mega thrust and the Sagaing fault
having the ability to generate an earthquake of Mw 8.5 or greater every few hundred years.” ("Regional

13 The earliest records date (various inscriptions) from 729 CE with the years 1286, 1298, 1380, 1644,
1768, 1774, 1775, and 1848. Bagan suffered from more than 400 earthquakes between 1904 and
1975. (U Thawbita “Chronology: Earthquakes of Burma,” Journal of the Burma Research Society,
December 1976)

14 Myanmar Earthquake Committee (2005), “Hazard profile of Myanmar” (DMH, July 2009)
**Hydrological and Meteorological.** The site’s proximity to the Irrawaddy River and its tributaries subjects it to flooding and riverbank erosion. Flooding on tributaries occurs usually three or more times during the monsoon season (May-October), affecting housing and livelihoods of low-lying communities, as well as transportation through Bagan.

Heavy rain disrupts normal functionality of the site, transportation, and cultural and economic activities.

River bank erosion and general slope stability issues threaten several monuments, such as Thet Kya Muni, where continued erosion could undermine the foundation of the monument.

A high-intensity seismic event that occurs during monsoon season could greatly complicate site evacuation and delay recovery. An earthquake could also exacerbate site vulnerabilities to slope instability and erosion.

**Figure 5. Shwe Nan Yin Taw Monastery during 2014 flooding (2014)**

Droughts and Fires. Bagan is located in a dry zone. Likely connected to climate change, a progressive desertification is taking place in the area, causing an average of five wildfires per year.\(^{15}\) Urban and forest fires are major threats in dry season (approximately November to May) for Bagan; and fires have caused nearly 70% of registered disaster events. These could pose substantial health threats to residents and visitors and directly damage sites.

**2.2 Threats from Human-Induced Hazards**

Human presence and activities are necessary and desirable for maintaining Bagan as a "living" cultural site, but tourism activities, spatial development, and agricultural practices can create threats to Bagan.

\(^{15}\) Information from Nyaung U District Fire Department (December 2017)
Visitors. The Myanmar Tourism Master Plan 2013-2020 has set a target of 7.5 million visitors by 2020 – an increase of more than seven-fold from 2012. Bagan is the largest tourist destination in the domestic and international visitors’ market (27.5%, totaling nearly 500,000 in 2015), and will draw a large portion of the targeted increase in arrivals.

The flow of visitors puts stress on Bagan’s physical monuments, as well as on infrastructure and services (e.g., roads, solid waste, etc.). In the past, visitors have frequently climbed atop monuments, with limited supervision or management, causing damage to the monuments themselves and increasing the occurrence and likelihood of accidents. This practice is being prohibited at many monuments, with GOM and local management. Due to Bagan’s physical extent and difficulty to monitor, there has also been theft and vandalism -artifacts and objects, mural paintings, glaze plaques, and sculptures have been stolen or damaged.

Figure 8. Tourists climbing on a monument to watch sunset

Local Management and Development Pressures. Bagan’s stakeholders are aiming to preserve cultural heritage, while boosting development and economic growth. MOC estimates population growth of 1.5% per annum over at least the next 10 years. The extent of development pressures will need to be studied and monitored in relation to the growth of tourism and development planning. Threats to the viewshed and site attractiveness from development should be considered. Stakeholders should consider issues related to waste management, which affect the physical site, visitors’ engagement with it, and residents’ and local stakeholders’ well-being.

Restoration and Building Practices. After previous disasters and rehabilitation campaigns, there has been varying levels of use of concrete, which has been judged by experts, including the 2016 post-earthquake assessment report, to be detrimental to structural strength. The current Conservation Guidelines for Monuments and Historic Buildings (2017) and the Rectification / Intervention Guidelines (2017) have explicitly addressed this issue. In terms of new vernacular constructions, the use of concrete is not necessarily synonymous to resistance and, when well designed, structures edified with local, lighter materials can be more resilient and cost effective.

16 Myanmar Tourism Master Plan 2013-2020, Final-Draft Report, June 2013; executive summary; p.4 (Table 1) and p.9.
17 This data is based on the people who stay in hotel and guest house in Bagan and Nyaung Oo Area.
18 The main problem of the use of concrete following the 1975 post earthquake recovery was that its mechanical and chemical properties are different and incompatible with local brick masonry. With the concrete additions, the weight (masses) and structural response of the different parts caused more damage than could have occurred without those retrofitted parts, which were the first to collapse, that fell on the underlying masonry structures and destroyed them.
The Building Bylaws and the Development Guidelines provide very specific inputs on the topic.

**Agricultural and Husbandry Practices.** The intensive use of agricultural land and mechanical ploughing may put the landscape and the archaeological subsurface at risk. Larger animals, such as cows and goats, graze near the monuments and can also damage archaeological ruins.

**Figure 9 and 10. Traditional vs. tractor plowing in the land around Bagan**

**Flora and Fauna.** Plants and trees are growing on and near several monuments. When roots penetrate masonry, cracks can diminish the mechanical strength of the structure. Animals can also affect monuments and the archaeological area (e.g., paintings, stuccos and plasters.)

**Figure 11 and 12. Examples of vegetation growing on monuments.**

**Figure 13 and 14. Animals grazing around the monuments**
3. Preliminary Risk Summary

An overall preliminary risk summary for Bagan is produced below, based on hazard, exposure, and vulnerability. Frequency represents the average recurrence interval of an event of the same intensity. The Bagan DRMP classifies frequency as low (10 years or more between events), medium (2 years up to 10 years between events), and high (Less than 2 years between events). Severity is the extent to which a hazard event is expected to cause loss or damage. The Bagan DRMP classifies three levels of severity as low, medium, and high. \(^{19}\)

Combining frequency and severity, the Bagan DRMP sets thresholds for **low**, **medium**, and **high risk levels**, as per the figure below. For example, the Bagan DRMP would classify high-severity low-frequency hazards (e.g., earthquakes) as high risk – the same risk level as medium-severity high-intensity hazards (e.g., floods).

<table>
<thead>
<tr>
<th>Frequency (1 / Return Period)</th>
<th>High (Less than 2 years between events)</th>
<th>Medium Risk</th>
<th>High Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium (2 to 10 years between events)</td>
<td>Low Risk</td>
<td>Medium Risk</td>
<td>High Risk</td>
<td></td>
</tr>
<tr>
<td>Low (10 years or more between events)</td>
<td>Low Risk</td>
<td>Medium Risk</td>
<td>High Risk</td>
<td></td>
</tr>
<tr>
<td>Low Severity</td>
<td>Medium Severity</td>
<td>High Severity</td>
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</tbody>
</table>

The Bagan DRMP approaches the threats from the risk levels, as follows:

- **High Risk**: Stakeholders should be particularly aware of potentially severe damage from such hazards and prioritize actions to reduce and manage these risks. If no measures to mitigate the hazard and risk are taken, high levels of damage and loss from this threat can be expected to occur in Bagan during our lifetime.
- **Medium Risk**: Stakeholders should prioritize measures to reduce and manage the hazard and risk, particularly where exposure and vulnerability may be highest.
- **Low Risk**: Stakeholders should consider measures to reduce and manage the hazard and risk at critical locations, where exposure and vulnerability may be highest.

\(^{19}\) Because detailed intensity-frequency hazard curves and loss and damage data are not currently available, the severity levels used in the Bagan DRMP have been developed through interviews and workshops on December 7 and 29, 2017.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Natural Threats</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Monument / site physical integrity</td>
<td>High</td>
<td>High (M earthquake)</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>DMH, DHU, DANM, Comm, DAMN</td>
</tr>
<tr>
<td>2. Cultural / economic activity</td>
<td>Medium</td>
<td>High (13 times/year)</td>
<td>Low</td>
<td>High [progressive]</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>DMH, DHU, DANM, DANM, site management, DANN, site management, DMU, MOCT</td>
</tr>
<tr>
<td>3. Well-being / local people / communities</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>DMH, DHU, DANM, site management, DMU, MOCT</td>
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<tr>
<td>Human-Induced Threats</td>
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<tr>
<td>Fire</td>
<td>High</td>
<td>High (continuous)</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Danm, site management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Pollution</td>
<td>Medium</td>
<td>Continuous</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
<td></td>
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<tr>
<td>Building development</td>
<td>Medium</td>
<td>Continuous</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
<td></td>
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<tr>
<td>Encroachment</td>
<td>Medium</td>
<td>Continuous</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
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<tr>
<td>Population Increase</td>
<td>Medium</td>
<td>Continuous</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
<td></td>
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<tr>
<td>Animal Grazing</td>
<td>Medium</td>
<td>Continuous</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetation</td>
<td>Medium</td>
<td>Continuous</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Danm, site management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tourists</td>
<td>Medium</td>
<td>Continuous</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Danm, site management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theft/Vandal</td>
<td>Medium</td>
<td>Continuous</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Danm, site management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibrations</td>
<td>Medium</td>
<td>Continuous</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Danm, site management</td>
<td></td>
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</tbody>
</table>

**Notes:**

- Data set availability to be provided.
- Perceived frequency as described by DMH and DANM at consultation workshop (December 2017).
Section III– Management Frameworks

Managing risk in Bagan relies on partnership and communication between stakeholders, operating under the legal and institutional frameworks.

1. Legal Framework

Heritage Law. From a legal perspective, the safeguarding and protection of Bagan - designated as a Cultural Heritage Region - is ensured by the Protection and Preservation of Cultural Heritage Regions Law 1998 (amended in 2009) and the 2015 Protection and Preservation of Ancient Monuments Law (Law No. 51, 2015). It renders responsibility to the Ministry of Religious Affairs and Culture of the Union Government, with a provision to delegate the DANM to carry out the functions and duties in respect of protection, preservation, return and acceptance of an ancient monument (Chapter IV, Article 9). For the purposes of the Bagan DRMP, it is interesting to note that Article 6 (a) of Chapter IV states that the Ministry may for the perpetuation of any ancient monument, carry out as follows: protection and preservation of ancient monuments in coordination with the Union of Ministries concerned, Region or State Government and regional administrative bodies, and if necessary, local and international government and non-government organizations. Lastly, Article 20 of Chapter VIII prohibits several activities that may cause damages to the ancient monuments such as vibrations (b), gas emissions (d), chemical and other waste (f) without written prior permission. In practical terms the DANM is the agency officially responsible for the implementation of Rules and Regulations of the Cultural Heritage Region Law announced in 2011.

The Protection and Preservation of Antique Objects Law (Law No. 43/2015) essentially protects movable heritage from theft, vandalism and looting. It also elaborates on permit processing for excavations and broadly defines the procedures in case of chance finds.

Natural Disaster Management Law. The legal framework of Myanmar also comprises a Natural Disaster Management Law (Law No. 21, 2013); and whereas cultural assets are not mentioned specifically, the law foresees the same management process as this framework i.e., preventive measures, emergency response and rehabilitation. In fact, the prioritized application of this law to humanitarian needs is further demonstrated by the fact that the National Disaster Management Committee (NMDC) does not include cultural stakeholders among its 12 working committees be it at a national or regional level. Thus despite the fact that the Government of Myanmar has been pro-active in addressing disaster risk reduction as witnessed by the MAPDRR 2017 that recognizes the importance of cultural heritage by including disaster and climate risk management of historical monuments and archaeological heritage in Myanmar (Priority Action 9) as part of its enhancing disaster preparedness for effective response and resilient rehabilitation and reconstruction (Pillar 4) and that the MAPDRR states that the lead agency in charge

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22 The law defines natural disaster as the destructions to life and property, livelihood, infrastructures, safety education and health of the public or to the environment due to natural or man-made accidents or negligence... (Chapter I, Article 2)
of the above will be the Ministry of Religious Affairs and Culture; none of its representatives are included in the Working Committee of the NMDC.

**The Myanmar National Building Code** (2016) produced by the Myanmar Earthquake Commission, with the support of UN Habitat, elaborates on rules and regulations to be promulgated under Urban and Regional Planning Law and respective City Development Committee Laws. The provisions of the code are intended for *application to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures*. The code is expansive and detailed and many of its provisions could apply to the Bagan DRMP. However, it mostly addresses vernacular and utilitarian architecture and there are no specific provisions for monuments of culture, which restoration requires very specific skills and approaches. This is best evidenced by the fact that the zoning classification does not include monuments *per se*\(^{23}\). The “utilities zones” does provide guidance for vehicular parking, which has been identified as a threat to the site and its assets.

**Environmental Conservation Law.** The stated objective of Law No. 9/2012is to carry out the Myanmar national environmental policies and other environmental policies for conservation and enhancement of environment with the approval of the Union Government. It also provides a general mandate the Ministry of Environmental Conservation and Forestry, to prescribe environmental quality standards, hazardous waste and waste management and pollution control, produce an Environmental Assessment System The 2012 Conservation Law also gives it the mandate to protect cultural resources. The EIA rules and procedures were approved in December 29th, 2015.

Whereas the responsibility to ensure that the law is enforced lies with the Ministry of Environmental Conservation and Forestry, it delegates the implementation of work programs to relevant government departments depending on the context\(^{24}\). Among the Basic Principles: *To permit freedom of crop selection and adoption of cultivation technologies in a way that will not negatively affect the environment*\(^{25}\) is of relevance to the BAGAN DRMP.

**The Republic of the Union of Myanmar National Land-Use Policy (2016).** One of the objectives of the National Land Use Policy is *to promote sustainable land use management and protection of cultural heritage areas, environment, and natural resources for the interest of all people in the country*. The law addresses land information management, zoning and land acquisitions with a focus on tenure and

\(^{23}\) For example, Zone classification IV - Public, Educational and Social Use Zones includes: Galleries and Museums, places of religious worship (pagodas, temples, churches, etc.) only.

\(^{24}\) The entities include inter alia: Government departments, Government organizations, Nay Pyi Taw Council, Region or State Government, Self-administered Division or Self-administered Region, District General Administrator of the General Administration Department or Township General Administrator of the General Administration Department, Ward or Village-tract Administrator, Private organization and the Public. [Chapter III; Rule 15 of the Rules [-Notification 50/2014].

\(^{25}\) Chapter III Basic Principles (I).
resettlement. The National Land Use Council in charge of monitoring effective land use management, land allocation and quality control of land use planning processes, implementation.

2. Institutional Framework

At the national level, to ensure coordinated implementation of the provisions of the applicable laws, there are two committees: the Myanmar National Culture Central Committee headed by the Vice President, and the Myanmar National Committee for World Heritage headed by the Minister of Culture. Furthermore, a Bagan Committee for the Management of the Cultural Heritage Property and Buffer Zone (BAGANNCOM) has been established (order No. 1/2016, letter No. ga/4-3/culture (2577) to ensure the coordinated protection and management of Bagan comprising the nominated property, as well as to integrate the property’s management vision and objectives into local development planning at the national level. Such responsibilities at the regional level are delegated to the Bagan Regional Committees (Mandalay region and Magway region); while district level coordination is the responsibility of the Bagan Coordination Committees (Mandalay region and Magway region).

Due to the extensive nature of the Bagan Cultural Heritage Site that covers a vast area weaving cultural, natural, and socio-economic features and creates an indivisible whole; to ensure that the BAGAN DRMP addresses all the key features needed to protect the authenticity and integrity of the site in case of disaster, as well as to minimize residual risks, numerous stakeholders have been taken into account. The table below lists the key relevant stakeholders.

<table>
<thead>
<tr>
<th>National Government</th>
<th>Department / Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRAC</td>
<td>DANM Dept. of Archaeology and National Museum</td>
</tr>
<tr>
<td>MOTC</td>
<td>DMH Dept. of Meteorology &amp; Hydrology</td>
</tr>
<tr>
<td>MOTC</td>
<td>DWIR Dept. of Inland Water Resources</td>
</tr>
<tr>
<td>MOC</td>
<td>DHUD Department of Housing and Urban Development</td>
</tr>
<tr>
<td>MSWRR</td>
<td>RRD Department of Relief and Resettlement, The Myanmar National Disaster Preparedness Agency(MDPA)</td>
</tr>
<tr>
<td>MENREC</td>
<td>General Environmental Conservation Department Department of Forestry26</td>
</tr>
<tr>
<td>CDC</td>
<td>City Development Committee</td>
</tr>
<tr>
<td>MOHT</td>
<td></td>
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<td>MOI</td>
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</tbody>
</table>

26 DoF project in districts of the Mandalay and Magwe regions to promote greening within the arid Dry Zone of the middle reaches of the Ayeyawady River.
Despite the institutional complexity and wide range of stakeholders, DANM is making efforts to institutionalize a more collaborative planning system among different stakeholders, including public officials, conservation professionals, members of the community and the media. In fact, it has supported BAGANNCOM to conduct regular meetings with political, religious and other government authorities to inform them the WHS nomination. Thus, the main challenge of the Bagan DRMP Action Plan consists in ensuring proper communication, cooperation and coordination with all the relevant authorities, organizations, institutions and communities. This will not only require engagement and a shared vision, but also procedures for implementation and decision-making.
Section IV – Current Measures to Manage Risks in Bagan

Addressing the risks identified and operating under the Management Framework, GOM has many disaster risk management measures in place and ongoing to help safeguard Bagan and its cultural heritage attributes.

Each measure in Table 3 on Current Measures is described in terms of DRM Cycle Phase, Measure, Detail, Status, Stakeholder Agencies, Lead, Expected Result, and Expected Timeline.

DRM Cycle Phase: This denotes the key function of this measure toward different phases of DRM.

i. Risk Identification. Measures to increase understanding and communication of risk.
ii. Risk Reduction. Measures aimed at mitigating and reducing risk and creation of risk in the area.
iii. Preparedness and Response. Measures to increase the ability of site managers, government, residents, industries, and communities to prepare for the risks they face and respond to actual hazard events.
iv. Recovery and Rehabilitation. Measures to target a faster and more effective recovery, both of tangible and intangible heritage.

Measure and Detail describe the overall measure pursued by GOM to enhance DRM and provide additional detail and context.

Status describes whether the measure is complete or ongoing. In most cases, additional efforts are being pursued or are considered in Section V – Action Plan.

Stakeholder Agencies and Lead denote key implementers of the measures. As noted in Section III, managing risk in Bagan relies on partnership and communication between stakeholders. DANM’s role in managing and overseeing cultural heritage attributes in Myanmar is fundamental and must engage additional technical and line ministries to complete key tasks for DRM, such as detailed risk assessment or preparedness and evacuation planning. Therefore, a list of key stakeholder agencies is provided for each task, as well as main lead agencies for the task and its implementation for the Bagan Cultural Heritage Site.

Expected Result provides a description of key outputs and outcomes to be achieved upon implementation of the measure.

Expected Timeline provides an indicative target for completion.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Detail</th>
<th>Status</th>
<th>Stakeholder Agencies</th>
<th>Expected Timeline</th>
<th>Expected Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk Identification</strong></td>
<td>Develop Site inventory</td>
<td>Complete</td>
<td>DANM</td>
<td>Complete</td>
<td>Site inventory has already been conducted and will be critical for further DRM efforts.</td>
</tr>
<tr>
<td><strong>Risk Identification</strong></td>
<td>Develop Bagan risk assessment</td>
<td>Complete</td>
<td>DMH, MEC, DANM, MOC, RRD, CDC</td>
<td>Complete</td>
<td>This analysis will be part of overall site risk assessment, including potential economic losses.</td>
</tr>
<tr>
<td><strong>Risk Identification</strong></td>
<td>DANM has conducted detailed inventory of the cultural objects and monuments</td>
<td>Complete</td>
<td>DANM</td>
<td>Complete</td>
<td>DANM has conducted detailed inventory of the cultural objects and monuments.</td>
</tr>
<tr>
<td><strong>Risk Identification</strong></td>
<td>DMH is capturing pluvial and fluvial flood information</td>
<td>Ongoing</td>
<td>DMH</td>
<td>Ongoing</td>
<td>DMH is capturing pluvial and fluvial flood information.</td>
</tr>
<tr>
<td><strong>Risk Identification</strong></td>
<td>Improve earthquake monitoring</td>
<td>Ongoing</td>
<td>MEC</td>
<td>Ongoing</td>
<td>MEC is conducting a seismic assessment project and dataset for probabilistic earthquake hazard maps.</td>
</tr>
<tr>
<td><strong>Risk Identification</strong></td>
<td>Improve earthquake project and dataset for probabilistic earthquake hazard maps</td>
<td>Complete</td>
<td>DMH, MEC, MOC, MOTC</td>
<td>Complete</td>
<td>DMH, MEC, MOC, MOTC</td>
</tr>
<tr>
<td><strong>Risk Reduction</strong></td>
<td>Develop building/retrofit guidance and methodology</td>
<td>Complete</td>
<td>DANM, DHUD</td>
<td>Complete</td>
<td>DANM issued guidelines for conservation and retrofitting of cultural monuments.</td>
</tr>
<tr>
<td><strong>Risk Reduction</strong></td>
<td>Develop detailed plan addressing the zones of urban expansion</td>
<td>Complete</td>
<td>DMH, MEC, MOTC, DANM, DHUD</td>
<td>Complete</td>
<td>DHUD prepared a detailed plan addressing the zones of urban expansion.</td>
</tr>
</tbody>
</table>

Note: Table 3. Current Measures

The set of legal provisions for Bagan Cultural Heritage Site, consisting of the Conservation Guidelines (for monuments and other important attributes), the Building Bylaws (for new construction), the Development Guidelines (for public and semipublic spaces within towns, villages, and landscapes), and the Rectification Guidelines (for previous inappropriate developments) specify and how new constructions will be allowed.
<table>
<thead>
<tr>
<th>Stakeholder Agencies</th>
<th>Status</th>
<th>Detail</th>
<th>Expected Result</th>
<th>Expected Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>heritage buffer and hazard-prone area.</td>
<td>DRM Cycle Phase</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>better coordination toward GOM and DANM's vision for the site.</td>
<td>Measure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>monuments and visitors will be better managed and protected.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>visitors to have information about the hazards faced and relevant guidance on how to respond.</td>
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<td></td>
<td></td>
<td></td>
<td>Communities will know how to respond to various hazards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>stakeholders to have risk info. for decision making. Further benefit from (i) integration with 3D models (ii) extension to whole site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>stakeholder to have risk info. for decision making.</td>
<td></td>
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<td></td>
<td>3-4 years, pending expansion of efforts</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>fire dept organizing drills / trainings; hotel operators conducting drills privately</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>communities will know how to respond to various hazards</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ongoing</td>
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<td>ongoing</td>
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<td></td>
<td></td>
<td></td>
<td>ongoing</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- Currently, a team of 59 members, of which 28 are guards, 3 DANM staff members are seconded to other departments for security, and there are further 10 private security guards in charge of the protection of the site, but this number will be increased and a visitors' management plan that would protect both visitors and the cultural assets will be elaborated and implemented. (Risk Preparedness Strategy, Risk Assessment and Mitigation Bagan Ancient Cities World Heritage. DANM (section 3.1.6 Security, Theft, looting and vandalism)
<table>
<thead>
<tr>
<th>Measure</th>
<th>Recovery and Rehabilitation</th>
<th>Stakeholder Agencies</th>
<th>Status</th>
<th>Expected Result</th>
<th>Lead</th>
<th>Expected Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery funds</td>
<td>Individual private donors in Myanmar have provided substantial funds. Gov. has disbursed nearly 30% of funds towards rehabilitation of 224 monuments.</td>
<td>GAD, DANM</td>
<td>Ongoing</td>
<td>Funds provide needed support to complete improvements to site and rehabilitate monuments to guideline standards.</td>
<td>GAD</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

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**DRM Cycle Phase:** Recovery and Rehabilitation

**Detail:**

Individual private donors in Myanmar have provided substantial funds. Gov. has disbursed nearly 30% of funds towards rehabilitation of 224 monuments.
Section V – Action Plan for New and Enhanced Measures to Manage Risk in Bagan

GOM has identified measures to strengthen disaster risk management in Bagan.

Each measure in Table 4 is described in terms of **DRM Cycle Phase**, **Measure**, **Detail**, **Priority**, **Stakeholder Agencies**, **Lead**, **Expected Result**, and **Expected Timeline**.

**DRM Cycle Phase**: This denotes the key function of this measure toward different phases of DRM.

i. Risk Identification. Measures to increase understanding and communication of risk.

ii. Risk Reduction. Measures aimed at mitigating and reducing risk and creation of risk in the area.

iii. Preparedness and Response. Measures to increase the ability of site managers, government, residents, industries, and communities to prepare for the risks they face and respond to actual hazard events.

iv. Recovery and Rehabilitation. Measures to target a faster and more effective recovery, both of tangible and intangible heritage.

**Measure** and **Detail** describe the overall measure to be pursued by GOM to enhance DRM and provide additional detail and context.

**Priority** describes GOM’s prioritization of each measure.

**Stakeholder Agencies** and **Lead** denote key implementers of the measures. As noted in Section III, managing risk in Bagan relies on partnership and communication between stakeholders. DANM’s role in managing and overseeing cultural heritage attributes in Myanmar is fundamental and must engage additional technical and line ministries to complete key tasks for DRM, such as detailed risk assessment or preparedness and evacuation planning. Therefore, a list of key stakeholder agencies is provided for each task, as well as main lead agencies for the task and its implementation for the Bagan Cultural Heritage Site.

**Expected Result** provides a description of key outputs and outcomes to be achieved upon implementation of the measure. **Expected Timeline** provides an indicative target for completion.
<table>
<thead>
<tr>
<th>DRM Cycle Phase</th>
<th>Measure</th>
<th>Detail</th>
<th>Stakeholder Agencies</th>
<th>Leads</th>
<th>Expected Result</th>
<th>Expected Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Identification</td>
<td>Design and develop a targeted risk assessment process for Bagan’s needs</td>
<td>There are multiple needs and efforts to improve risk information in Bagan. GOM will design and implement a process to complete and share assessments. Needs include: heritage vulnerability, seismic/hydromet, exposure, tourism impact, etc.</td>
<td>GAD, DMH &amp; DWIR (MOTC), MEC, DANM, MOC, RRD, MES, CDC, MOALI, MRCS, MOHA, Police, DOEC, MOI</td>
<td>DMH and DANM</td>
<td>Stakeholders have understanding and access to timely and practical risk information for decision-making and investment.</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Risk Identification</td>
<td>Develop and activate risk information sharing platform and protocols</td>
<td>Low-cost open platforms (e.g., GeoNode, InaSAFE, etc.) allow rapid sharing and use of risk information. GOM will plan and implement (i) relevant platform(s) and (ii) information sharing protocols (e.g., monument inventory, etc.).</td>
<td>DMH (MOTC), GAD, MEC, DANM, MOC, RRD, MES, CDC, MOI</td>
<td>RRD and DANM</td>
<td>Relevant agencies will have needed capacity for risk identification.</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Risk Identification</td>
<td>Develop a targeted training for risk identification</td>
<td>Agencies request increased DRM capacity training to enhance understanding and competencies. Topics: exposure (e.g., GIS), hazard (e.g., hydromet, seismic), vulnerability (e.g., structural, CH-specific, social)</td>
<td>DMH (MOTC), MEC, DANM, MOC, RRD, MES, CDC</td>
<td>DANM, RRD, MES, CDC, MOTC</td>
<td>Among others</td>
<td>2-3 years</td>
</tr>
<tr>
<td>DRM Cycle Phase</td>
<td>Measure</td>
<td>Detail</td>
<td>Priority</td>
<td>Stakeholder Agencies</td>
<td>Leads</td>
<td>Expected Result</td>
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</tr>
<tr>
<td>Risk Identification</td>
<td>Implement a disaster and cultural heritage risk awareness raising campaign</td>
<td>GOM will work to enhance the general awareness and understanding of communities, industries, and site managers to the risks to cultural heritage assets from disasters and other hazards through campaigns, workshops, social media, etc.</td>
<td>3</td>
<td>DMH (MOTC), MEC, DANM, MOC, RRD, MES, CDC</td>
<td>RRD and DANM</td>
<td>Increased public awareness of risks to cultural heritage attributes from disasters and other hazards</td>
</tr>
<tr>
<td>Risk Identification and Reduction</td>
<td>Develop Bagan Heritage Safeguarding and Retrofitting Applied Research Program</td>
<td>GOM to develop a targeted research/analysis program to guide appropriate safeguarding and retrofitting measures (e.g., testing and application lab/site, local, and sustainable building materials, etc.)</td>
<td>2</td>
<td>DANM, MEC, MOC, MES, CDC</td>
<td>DANM</td>
<td>Produce relevant outputs to guide appropriate safeguarding and retrofitting measures for heritage structures</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>Improve and implement the rehabilitation/retrofit guidance and methodology</td>
<td>Building on research measures and international best practices (e.g., ICCROM), GOM will enhance personnel and resource allocation to improve guideline implementation.</td>
<td>1</td>
<td>DANM, MOC, GAD, site managers</td>
<td>DANM</td>
<td>Improve strength of sites, and reduce risk of some conservation efforts increasing site vulnerabilities</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>Enhance Maintenance Practices of Site Management</td>
<td>GOM to increase focus on maintenance of overall sites (e.g., view-shed, waste management, cleaning, etc.)</td>
<td>1</td>
<td>DANM, MOC, GAD, site managers</td>
<td>DANM</td>
<td>Reduce vulnerability of sites to fire, pollution, and other hazards and increase attractiveness and integrity of site</td>
</tr>
<tr>
<td>Measure</td>
<td>Detail</td>
<td>Priority</td>
<td>Stakeholder Agencies</td>
<td>leads</td>
<td>Expected Result</td>
<td>Expected Timeline</td>
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</tr>
<tr>
<td>Risk Reduction</td>
<td>Ensure integration of Heritage Impact Assessment in Development Planning</td>
<td>1-3 years</td>
<td>DANM, MOC, GAD, DHUD</td>
<td>DHUD and DANM</td>
<td>Urban planning will guide development away from vulnerable cultural heritage attributes.</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>Enhance capacity and authority of Bagan Heritage Management Committee (BAGANCOM)</td>
<td>To be determined</td>
<td>DANM, MOC, GAD</td>
<td>To be determined</td>
<td>Enhanced BAGANCOM able to mobilize financial / human resources for management, and risk reduction</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>GOM to enhance the ability of BAGANCOM or new committee / authority to take action on DRM and overall integrity and management of Bagan.</td>
<td>Medium</td>
<td>MOTC, CDC, GAD, DANM</td>
<td>DHUD, MOTC</td>
<td>Increased capacity of GOM to manage flood and drainage risks in Bagan.</td>
<td>Medium</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>Review Bagan’s drainage system and interaction with river system for possible improvements to manage and reduce risk to cultural heritage, communities, and DRM preparedness.</td>
<td>Medium</td>
<td>MOTC, CDC, GAD, DANM, MES</td>
<td>MOTC, CDC, GAD, DANM</td>
<td>Individual sites will develop and drill site preparedness and evacuation plans for visitors &amp; heritage assets.</td>
<td>Medium</td>
</tr>
<tr>
<td>Preparedness and Response</td>
<td>Develop and implement Heritage Site-Level Preparedness Plans and Drills</td>
<td>Longer-Term</td>
<td>MOTC, CDC, GAD, DANM, MES, MEC</td>
<td>MOTC, CDC, GAD, DANM</td>
<td>Increased capacity of GOM to manage flood and drainage risks in Bagan.</td>
<td>Longer-Term</td>
</tr>
<tr>
<td>Preparedness and Response</td>
<td>Prepare Heritage Site-Level Preparedness Plans and Drills</td>
<td>Immediate</td>
<td>RRD, GAD, MPF, FD, MEC, MOSWR, MOAI, MOI, MOHT, MOTC</td>
<td>DANM, RRD, and DANM</td>
<td>Individual sites will develop and drill site preparedness and evacuation plans for visitors &amp; heritage assets.</td>
<td>Immediate</td>
</tr>
<tr>
<td>DRM Cycle Phase</td>
<td>Measure</td>
<td>Detail</td>
<td>Priority</td>
<td>Stakeholder Agencies</td>
<td>Leads</td>
<td>Expected Result</td>
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<tr>
<td></td>
<td></td>
<td>Identify and prepare Evacuation Sites for identified needs and away from risk-prone areas</td>
<td>2. Medium</td>
<td>RRD, DHUD, GAD</td>
<td>Effective evacuation sites will be identified and ready in case of emergency.</td>
<td>1-2 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identify and prepare roads and other infrastructure for evacuation and other preparedness measures</td>
<td>3. Longer-Term</td>
<td>RRD, MOTC, GAD</td>
<td>Roads and other infrastructure will be marked and ready in case of emergency.</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Preparedness and Response</td>
<td>Improve Site Signage to indicate locations and hazards to visitors</td>
<td>GOM to continue campaign of integrated signage across Bagan, providing information on location, overall site, management and maintenance rules, hazards. Signage to be updated regularly and include evacuation information, as relevant.</td>
<td>2. Medium</td>
<td>GAD, MPF, FD, MEC, MOSWR, MOAI, MOI, media, IFRC, DANM, RRD, GAD</td>
<td>Visitors will be aware of risks and guidelines for visiting monuments and have basic information to respond to emergencies.</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Priority</td>
<td>Measure</td>
<td>Detail</td>
<td>Stakeholder Agencies</td>
<td>Leads</td>
<td>Expected Result</td>
<td>Expected Timeline</td>
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<tr>
<td>3. Long-term</td>
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<tr>
<td>2. Immediate</td>
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<tr>
<td>1. Immediate</td>
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</tbody>
</table>

**DRM Cycle**: Preparedness and Response

**Phase**:]

- **Enhance current collaboration of DANM and emergency agencies through (i) Joint Training/Preparedness Drills of CH managers and emergency responders, including at Emergency Operations Center (EOC), (ii) enhanced Early Warning (EWS) and real-time information dissemination for residents and visitors (e.g., text messages), Viber/WhatsApp groups, and community social media.**

- **Expected Result**: DANM and related staff will be able to capture and maintain intact cultural heritage protection.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, MEC, MOAI, MOC, Media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, DHUD

- **Priority**: 1. Immediate

- **Detail**: Joint training and projects will enhance coordination in case of hazard event and sensitization site managers to risks and responders to special nature of cultural heritage protection.

- **Expected Result**: DANM and related staff will be able to capture and maintain protection, and maintain information on site integrity and heritage attributes.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, GAD, MPF, FD, GOM, Regional Gov, MHD, MOI, MOSWR, media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, MES, RRD, GAD

- **Priority**: 2. Immediate

- **Detail**: Joint training and projects will enhance coordination, ensure definition of responsibility in case of hazard event, and sensitization site managers to risks and responders to special nature of cultural heritage protection.

- **Expected Result**: DANM and related staff will be able to capture and maintain protection, and maintain information on site integrity and heritage attributes.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, MEC, MOAI, MOI, Media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, DHUD

- **Priority**: 3. Long-term

- **Detail**: Joint training and projects will enhance coordination, ensure definition of responsibility in case of hazard event, and sensitization site managers to risks and responders to special nature of cultural heritage protection.

- **Expected Result**: DANM and related staff will be able to capture and maintain protection, and maintain information on site integrity and heritage attributes.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, GAD, MPF, FD, GOM, Regional Gov, MHD, MOI, MOSWR, media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, RRD, GAD

- **Priority**: 1. Immediate

- **Detail**: Joint training and projects will enhance coordination, ensure definition of responsibility in case of hazard event, and sensitization site managers to risks and responders to special nature of cultural heritage protection.

- **Expected Result**: DANM and related staff will be able to capture and maintain protection, and maintain information on site integrity and heritage attributes.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, MEC, MOAI, MOI, Media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, DHUD

- **Priority**: 2. Immediate

- **Detail**: Joint training and projects will enhance coordination, ensure definition of responsibility in case of hazard event, and sensitization site managers to risks and responders to special nature of cultural heritage protection.

- **Expected Result**: DANM and related staff will be able to capture and maintain protection, and maintain information on site integrity and heritage attributes.

- **Expected Timeline**: 1-2 years

- **Stakeholder Agencies**: DANM, RRD, GAD, MPF, FD, GOM, Regional Gov, MHD, MOI, MOSWR, media, IFRC, Pagoda Trust

- **Leads**: DANM, MOC, MEC, RRD, GAD
<table>
<thead>
<tr>
<th>DRM Cycle</th>
<th>Measure</th>
<th>Detail</th>
<th>Priority</th>
<th>Stakeholder Agencies</th>
<th>Leads</th>
<th>Expected Result</th>
<th>Expected Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery and Rehabilitation</td>
<td>Review Bagan Heritage Recovery Fund for options to speed disbursement and increase impact</td>
<td>Determine possible improvements for existing Heritage Recovery Fund and other revenue lines (e.g., zone fees) to reduce barriers to disbursement and increase impact for safeguarding Bagan’s heritage attributes</td>
<td>Immediate</td>
<td>DANM, GAD, RRD, MPF</td>
<td>GAD, DANM</td>
<td>Funding available for post-disaster needs will be less fragmented, faster-disbursing, and more targeted for increasing disaster resilience and preserving/enhancing heritage attributes.</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Recovery and Rehabilitation</td>
<td>Conduct disaster risk financing assessment for recovery and rehabilitation at Bagan</td>
<td>Conduct disaster risk financing assessment to understand current flow of funds for recovery and implement reforms / new mechanisms (e.g., emergency standby fund, specific ministry needs, etc.) with a focus on ensuring prioritization of safeguarding and rehabilitating Bagan’s heritage attributes</td>
<td>Medium</td>
<td>DANM, GAD, RRD, MPF</td>
<td>MPF, DANM</td>
<td></td>
<td>1-2 years</td>
</tr>
<tr>
<td>Recovery and Rehabilitation</td>
<td>Develop practices for engaging local communities in recovery planning</td>
<td>Local communities will be trained how to engage in future recovery efforts (e.g., community-based techniques, rehabilitation and building techniques, preparedness, and economic activities)</td>
<td>Long-Term</td>
<td>RRD, GAD, DANM</td>
<td>RRD, DANM</td>
<td>Communities will be engaged in heritage recovery processes.</td>
<td>1-2 years</td>
</tr>
<tr>
<td>DRM Cycle Phase</td>
<td>Measure</td>
<td>Detail</td>
<td>Priority</td>
<td>Stakeholder Agencies</td>
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<td>Expected Result</td>
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<td>Consider options to develop financial protection mechanisms for Bagan’s residents, industries (e.g., hotels, etc.), and site managers from direct losses or disruptions to tourism-related economic activity</td>
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<td>MPF, RRD, DANM</td>
<td>Communities and related industries will be better protected from shocks to their livelihoods and better able to recover.</td>
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Section VI – References

The following provides a preliminary list of resources consulted and cited:


Annexes:

2. Annex – Analysis of Outstanding Universal Value (OUV) assets and vulnerability to World Heritage Centre Criteria
3. Annex – Sample Risk Assessment Field Investigation Form
4. Annex – Participants at Bagan DRMP Workshops (December 7 and 29, 2017)

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### 2. Annex – Analysis of Outstanding Universal Value (OUV) assets and vulnerability to World Heritage Center Criteria

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### 3. Annex –Sample Risk Assessment Field Investigation Form

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<td>Investigator(s) names and institutions:</td>
<td>Investigation Date:</td>
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<td>Typology of the Attribute:(to be developed)</td>
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<td>Location (e.g. directions to Site or notes on accuracy of Site boundary):</td>
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#### GPS Coordinates:

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**Administrative Jurisdiction**

(Region, District, Township, Village)

| Office Responsible for Protection and Management of Site: |

**Ownership** (may include multiple)

- DANM
- Acquisition in Progress
- Government (other)
- Private
- Unknown

#### 2. Significance and Values

Describe Significance of the Site

Describe the Value of the Site (such as scientific, historical, aesthetic, social, spiritual value):

#### 3. Previous Interventions

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<th>By Whom?</th>
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<tr>
<td>Transformation</td>
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</table>

**Overall Condition Rating (Choose one)**

- □ Good
- □ Fair
- □ Poor
- □ Very Bad
- □ Destroyed
5. Risk Assessment

The assessment forms the basis for writing the Risk Statement for each threat/hazard identified below, which should be prepared as the next step.

<table>
<thead>
<tr>
<th>#</th>
<th>Potential Threats/Hazards</th>
<th>Exposure</th>
<th>Related Vulnerability factors</th>
<th>Risk/Potential Impact</th>
<th>Probability (likelihood)</th>
<th>Severity of Impact</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Such as:</td>
<td>Describe aspect/part of the site/object is exposed</td>
<td>Such as:</td>
<td>Describe the kind of impact that may occur on the site/object due to hazards and vulnerability factors</td>
<td>(High / Medium / Low)</td>
<td>Based on:</td>
<td>(Very High/ High / Medium / Low / Very Low)</td>
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<tr>
<td></td>
<td>Earthquake (Dam break; Land Settlement; Fire);</td>
<td></td>
<td>Inherent material characteristics; inherent structural characteristics; past interventions; location; surroundings; lack of management etc.</td>
<td>Frequency of incidents Rate of change in deterioration process after the event Rate of change in the cumulative deterioration process Existence or prevalence of extremities in severity of the hazard Level of impact on the specific values of the site/object</td>
<td></td>
<td>Probability x Severity of Impact = Risk Level</td>
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<tr>
<td></td>
<td>Flood (Rainfall; Dam Break; Vibration);</td>
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<td>Based on:</td>
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<td>Risk Level = High</td>
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<td></td>
<td>Fire (Wild Fire; Farming Practice; Arson; Electricity Short Circuit; Gas Pipeline Explosion);</td>
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<td>Extent of damage to part or the whole of the site/object due to hazards and vulnerability factors</td>
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<td>H x H = VH</td>
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<td></td>
<td>Vegetation (specify);</td>
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<td></td>
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<tr>
<td></td>
<td>Theft and looting;</td>
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<td></td>
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<td>M x H = H</td>
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<td>Vandalism;</td>
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<td></td>
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<td>M x M = M</td>
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<td></td>
<td>Unreported Accidental finds;</td>
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<td>L x M = L</td>
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<td></td>
<td>Excavation Practices;</td>
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<td>Animal Impact;</td>
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<td></td>
<td>Pollution (Ground Water; Soil; Air);</td>
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<td></td>
<td>Urban Development (including new constructions, infrastructure like roads etc.);</td>
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<td>Possible violations of Antiquities Law;</td>
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<tr>
<td></td>
<td>Hazards connected with objects:</td>
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<tr>
<td></td>
<td>Disintegration; Light (artificial); Light (natural); Incorrect Temperature; Incorrect Humidity; People; Pollutants; Dust; Pests; Vibration</td>
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<td></td>
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Some of these threats may not be seen today but risks have to be assessed for future possibilities of these threats.
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<th>Medium</th>
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Add rows as needed
### 4. Annex – Participants at Bagan DRMP Workshops (December 7 and 29, 2017)

**Participants at the Consultation Workshop on December 7, 2017 (Thande Hotel, Bagan)**

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<th>Sr. No</th>
<th>Name</th>
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<th>Department</th>
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<tr>
<td>1</td>
<td>Zaw Min Aung</td>
<td>Staff officer</td>
<td>Department Of Archaeology</td>
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<td>2</td>
<td>U Kyaw Khaing</td>
<td>Principal</td>
<td>Department of Archaeology</td>
</tr>
<tr>
<td>3</td>
<td>U Naing Win</td>
<td>Assistant Director</td>
<td>Department of Archaeology</td>
</tr>
<tr>
<td>4</td>
<td>U Lin Tun Kyi</td>
<td>Staff Officer</td>
<td>Department of Archaeology</td>
</tr>
<tr>
<td>5</td>
<td>U Than Zaw Oo</td>
<td>Director</td>
<td>Department of Archaeology</td>
</tr>
<tr>
<td>6</td>
<td>U Win Kyaing</td>
<td>Principal</td>
<td>Department of Archaeology</td>
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<tr>
<td>7</td>
<td>U Saw Naing Oo</td>
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<tr>
<td>8</td>
<td>U Arkar Aye</td>
<td>Deputy Administrator</td>
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<td>9</td>
<td>U Ko Ko</td>
<td>Assistant Director</td>
<td>Department of Agriculture, Land Management</td>
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<td>U Soe Soe Lin</td>
<td>Deputy Director</td>
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<tr>
<td>11</td>
<td>Daw May Phyu Soe</td>
<td>Assistant Director</td>
<td>Relief and Resettlement Department</td>
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<td>U Aung Aung Kyaw</td>
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<td>GIS Specialist</td>
<td>Consultant</td>
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</tr>
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<td>Dr. Myint Thein</td>
<td>Director of District General Hospital</td>
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<td>25</td>
<td>Kyaw Min Oo</td>
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<td>U Kyaw Toe</td>
<td>MP</td>
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<td>Dr. M. M. M. Htwe</td>
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<td>34</td>
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<td>35</td>
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<td>U Myo Hla Lin</td>
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<td>Zaw Win Cho</td>
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<td>U That Khone</td>
<td>Director</td>
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<tr>
<td>39</td>
<td>U Maung Maung</td>
<td>President</td>
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<td>Head of the District Administration</td>
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## Participants at the Consultation Workshop on December 29, 2017 (Bagan River View Hotel)

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<th>Title/Position</th>
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<tbody>
<tr>
<td>1</td>
<td>Kyaw Swe</td>
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<tr>
<td>2</td>
<td>Naing Tun</td>
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<td>Deputy Director</td>
<td>Department of Archaeology</td>
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</tbody>
</table>

Note: The table above lists the participants along with their titles and positions at the Consultation Workshop held on December 29, 2017, at the Bagan River View Hotel.
<table>
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Nomination Dossier for 
Inscription on the World Heritage List

BAGAN

Volume III : Annex R
The Integrated 
Management Framework
(Management Plan)