



TSODILO

CORE AREA

MANAGEMENT PLAN

2010-2015



BOTSWANA NATIONAL MUSEUM,
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PREAMBLE

The preparation for the Tsodilo Core Area Management Plan follows the 2005 Tsodilo Integrated Management Plan (amended in 2007), the Tsodilo scheme of implementation (Campbell 1994), the draft Management Plan for the Core Area (2004) and many other reference materials on the management of the site. In designing this Tsodilo Core Area Management Plan, Botswana National Museum realised the immediate need to protect or preserve in perpetuity the outstanding features and values of the site because of their universal significance, unique representational, quality and spiritual value for the local communities..

The finalisation of the Tsodilo Core Area Management Plan was undertaken following a fourteen day workshop held at Tsodilo World Site. As part of the workshop two days were set aside for the management planning process and sharing experiences with colleagues from the region managing similar properties. A week was devoted to field surveys and stakeholder consultations in Tsodilo, Shakawe and Maun. The remaining five days of workshop focussed identifying key management issues, developing objectives and strategies, monitoring, evaluation and review tools. Five thematic teams dealt with the key management areas; rock art and archaeology; GIS and mapping, Community issues and intangible resources, Public programmes and presentation, Botanical and Ecological aspects. Another team also focused on Manpower, Site Administration and General Compliance with policy. All the teams made extensive reference to 2005 TIMP, the Tsodilo scheme of implementation (Campbell 1994), the draft Management Plan for the Core Area (2004) and many other reference materials on the site.

The Tsodilo Core Area Management Plan ensures the sustainable management and development of the core area of the World Heritage Site in relation to the buffer zone. For the latter, the management framework is already provided for in the 2005 TIMP (with subsequent amendments of 2007). The Management Plan for the Core Area will therefore be integrated into the already existing 2005 TIMP to ensure an integrated and holistic management of the Outstanding Universal Value of Tsodilo World Heritage Site. The Tsodilo Core Area Management Plan, therefore, provides the management framework for protecting and promoting the sustainable development of the Outstanding Universal Value of Tsodilo World Heritage Site.

Botswana National Museum would like to thank the African World Heritage Fund (AWHF) for funding the Tsodilo Core Area Management Plan, which also enabled the participation of experts from Mozambique, South Africa, Tanzania and Zimbabwe,

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1.0 SITE LOCATION

Tsodilo, a World Heritage cultural landscape, is situated in the Ngamiland District in the northwest corner of Botswana. The site is about 400 kilometres west of the town of Maun and 50 kilometres south of the Okavango river panhandle. The Tsodilo hills are an impressive natural quartzite structures that rise majestically from ancient sand dunes to the east and a dry fossil lake bed to the west, resulting in them being called 'inselbergs'.

Tsodilo is the highest peak in Botswana with an elevation of 1395 meters above sea level. Female has several peaks, the highest about 300 meters above the plains, but has an overall area of almost three times that of Male. Child, 40 meters high, lies 1.7 kilometres away from Female and is much smaller than Male and Female in area, the sand dunes to the west rise up on the rocks partially covering the lower strata. The fourth, Grandchild, is located 2.1 kilometres northwest of Child. It is very small in comparison to the others. Three of the inselbergs at Tsodilo form a cluster covering a rectangular area of approximately 3 kilometres by 10 kilometres. The fourth and smallest inselberg lies to the northwest of the cluster. Inspired by their variations in height and shape, and their relationship with one another, the local people have named them Male, Female, Child and Grandchild hills. Male hill has conical shape rising to about 400 meters above the surrounding sand dunes (Brook et al. 1992).

The Aha Hills, more than 100 kilometres away, are the nearest other feature that breaks the relatively flat topography of the region.

Plate 1: Map of Botswana showing the location of Tsodilo



Plate2: Map of Tsodilo World Heritage Site showing the zonation of core and buffer areas.

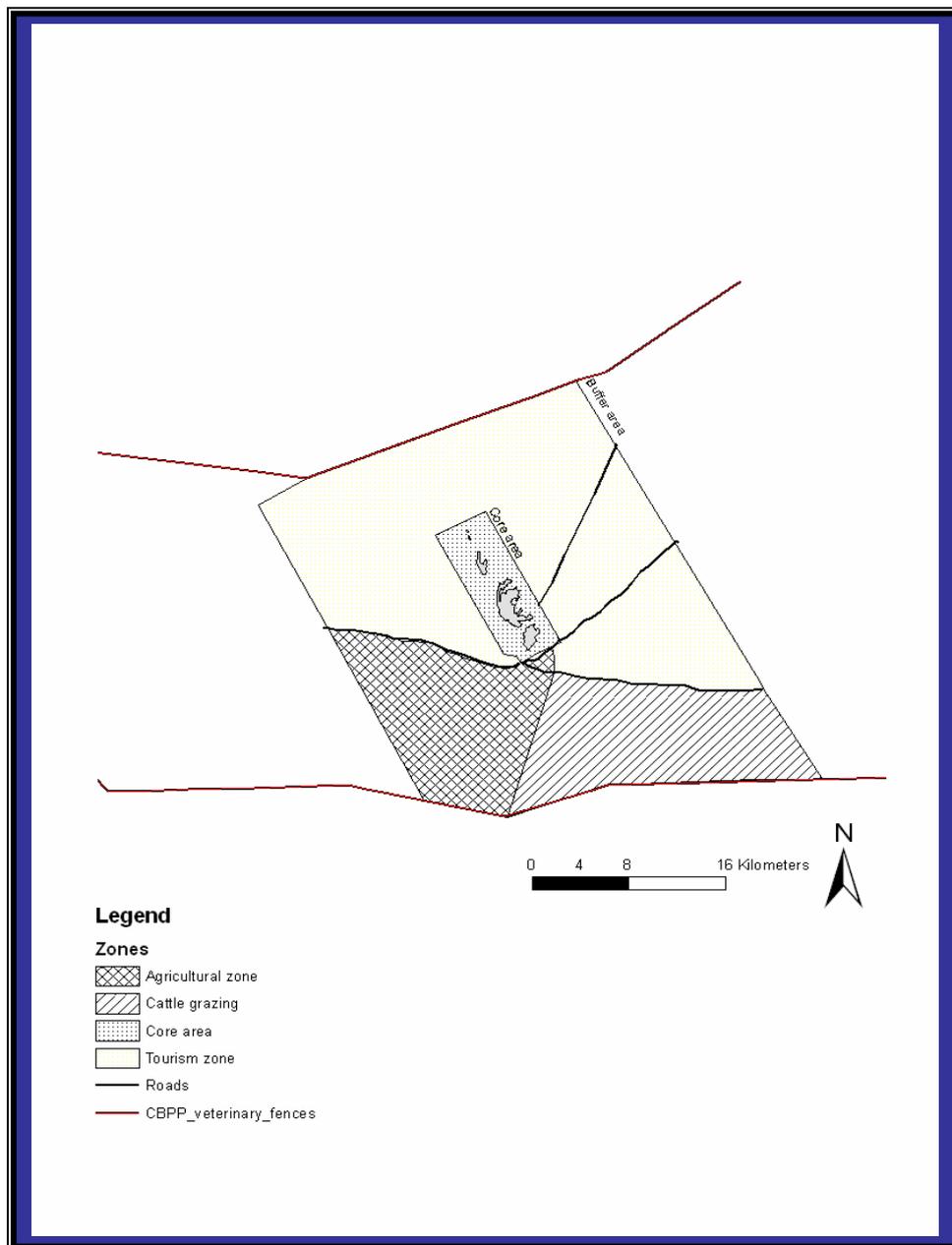


Plate 3: Map of Tsodilo World Heritage Site showing location of facilities and trails

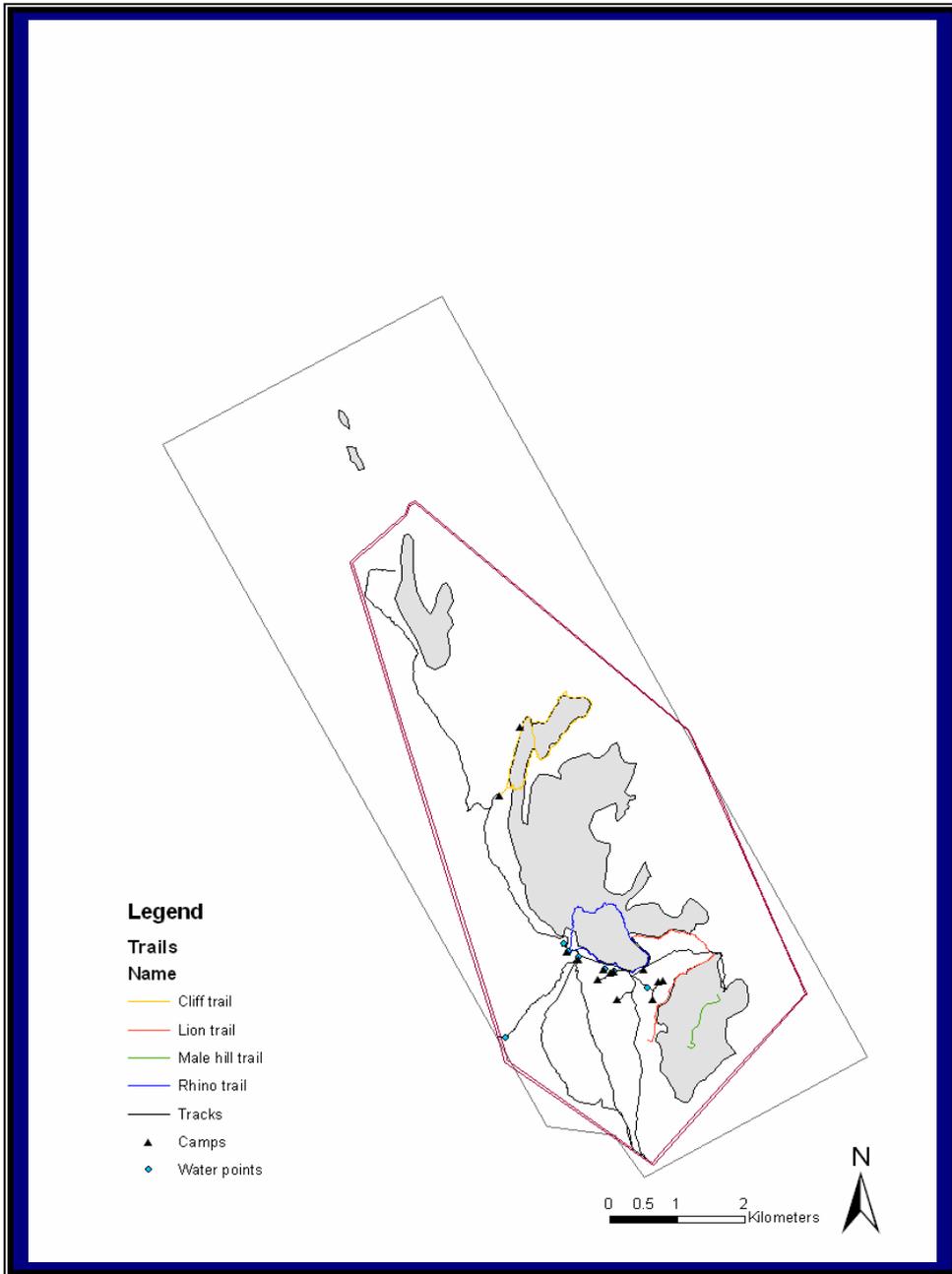
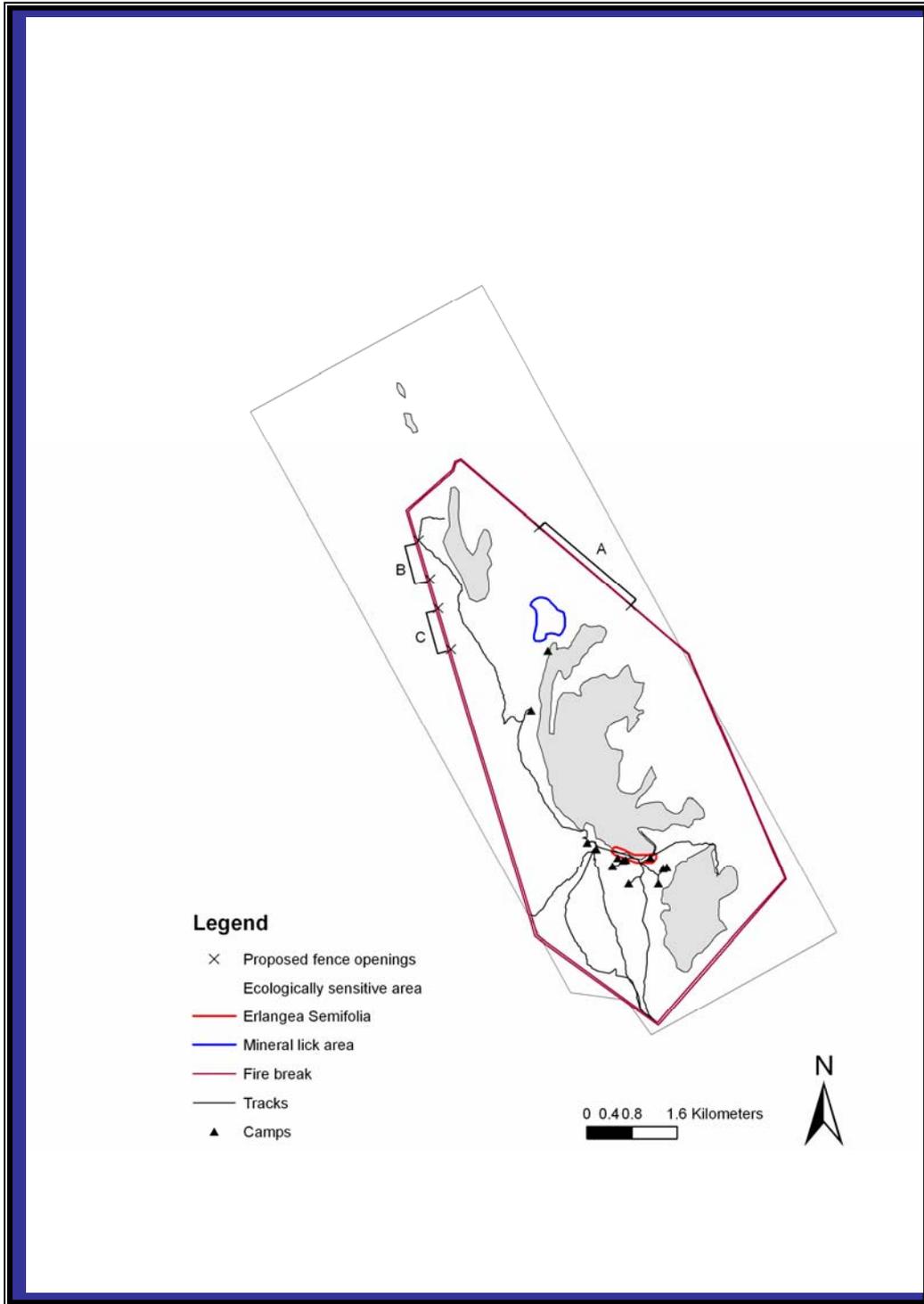


Plate 4: Map of Tsodilo World Heritage Site showing Ecologically Sensitive Areas of the core area



1.1 Geology of Tsodilo Hills

The Hills stand as prominent inselbergs within the expanse of Kalahari sand, breaking the monotony of the otherwise flat landscape of the northern Kalahari Desert. The area is occupied by the rocks of the Tsodilo Hills Group outcropping as four distinct hills known as the Male, Female, Child and Grandchild. The geology of the area comprises an association of metaquartzite, metaconglomerate and quartz-mica shists which is part of the regional Neoproterozoic succession deformed during the Pan-African orogenesis (Wendorff and Lasarwe, 2005). This deformation is reflected in the Tsodilo Rocks as faults, shear zones and thrust deformation of the strata. Some beds of meta-quartzites are enriched in iron. Tsodilo Hills rocks are covered by the younger succession of the Kalahari Beds which occur as thick sand burying the north-eastern succession of the Hills while the western foothills characterized by steep slopes and cliffs are occupied predominantly by calcrete deposits within a paleolake depression. The steep slopes and cliffs of the erosion resistant quartzites of Tsodilo Hills stand today as prominent features of outstanding beauty. These cliffs are the major displays for the world distinguished rock art painted some thousands of years ago. The rocks of Tsodilo have provided the past inhabitants of Tsodilo with different resources ranging from iron ore, stone tools and water.

In terms of hydrogeology, Tsodilo has adequate underground water resource. Although the quartzites of Tsodilo exhibit no intrinsic porosity to facilitate groundwater movement and storage, fracturing which is well developed has enhanced these parameters (Geological Survey report, 2002). Currently, there are three water supply boreholes in the area supplying Tsodilo Museum Complex staff and visitor ablutions while there are two boreholes (engine driven and hand driven pumps) supply the communities of Basarwa and Hambukushu.

2.0 SITE DESCRIPTION

2.1 Archaeological Heritage of Tsodilo

Archaeological excavations have uncovered evidence that Tsodilo has the most complete sequence of human occupation than anywhere else in Botswana, spanning a period of approximately 100,000 years. Middle Stone Age people inhabited Tsodilo approximately 70,000 years ago, succeeded by Late Stone Age people approximately 35,000 years ago. The Early Iron Age inhabitants introduced a settled lifestyle to the area between 500 and 800 AD; they instigated mining and domestic herding. This lifestyle was introduced by the Bantu peoples, as opposed to the Khwe Bushmen, who are thought to have been the original inhabitants, and who survived mainly as hunter-gatherers. These were amongst the first Bantu-speaking people to arrive in the region. The evidence points to ongoing contact between the Late Stone Age foragers and the Early Iron Age agropastoralists, illustrated by the inclusion of cattle in some of the rock paintings.

2.1.1 Stone Age

Tsodilo with its numerous rock shelters is exceptional in Botswana and the Kalahari in providing easier access to cultural material deposits. These provide an important window into a recreation of past settlement, culture, subsistence and technology as well as environmental conditions. The caves and rock overhangs, which provided the only permanent natural shelters in a vast area of the north-western Kalahari sandveld, are therefore an invaluable record of antiquity and human activities. In most cases, the excavated rock shelters and caves of Tsodilo provide evidence of repeated use over an extensive period of time.

So far, no deposits belonging to the Early Stone Age (ESA) have been discovered at Tsodilo, suggesting that the first occupants may well have been MSA peoples. While skeletal remains of MSA peoples have not yet been found in Botswana, evidence from related South African sites indicates that MSA peoples were among the earliest anatomically modern humans, *Homo sapiens*, known. Meanwhile, ongoing research at the Rhino Cave associates Tsodilo with some of the earliest known rituals some 70 000 years back (Coulson 2007).

Excavations and dating of levels at the White Paintings Shelter shows that people were collecting ostrich eggs for food and making beads and other items from the shells around BP 33 000 (Robins et al 1989). The method of making such beads continues to be the same today in the Kalahari and in the area of Tsodilo. This constitutes one of the longest records of these traditional techniques and usages.

2.1.2 Iron Age

The Iron Age at Tsodilo is important universally because it provides unique evidence of past socio-political structures. The diversity of Iron Age materials found at the first millennium sites of Divuyu and Nqoma is testimony to significant stages in Tsodilo's archaeological record of human prehistory. These two sites have large refuse middens and indications of substantial structures in the form of house foundations, thereby highlighting settled domestic herding and a settled lifestyle as early as the 7th and 8th centuries AD.

The Iron Age at Tsodilo is characterised by a settlement layout that shows more symmetry between agnatic and matrilineal social relations in northern Botswana than is characteristic of the

region today. This shows that social relations were not as strongly overlain by patrilineal hegemony as appears to have been the case at 'cattle complex' settlements elsewhere in southern Africa. This is clearly evidenced by lack of central cattle kraals and the fact that the dead, both men and women, were buried together in middens located outside the village proper. The central cattle pattern of sites further east ordains that patriarchs be buried in the cattle enclosure whereas others are buried in or near the domestic domain.

Archaeological research has also shown that Tsodilo was extensively mined for specularite between AD 800 - 1 000, the same time that the Nqoma site was occupied by farmers and traders. More than 20 mines have been located at Tsodilo. Further research related to the mines will undoubtedly furnish many insights into early methods of mining and long distant trading in the region.

2.2 Living Traditions – Spiritual

Today there are two communities living close to the Hills. The Ju/hoansi (San Bushmen) came to this area around 1860, replacing the former inhabitants, the Ncae (Khwe Bushmen) who moved closer to the Okavango. The Ju/hoansi were traditional hunter-gatherers, living in the dunes and fossil valleys to the west and visiting the hills in tune with the ripening of fruits and the presence of other veldt treats, until 1970. At this time they were made to settle at Tsodilo by the Government, and a few years ago were made to move their village from what is now the Core Zone into the Buffer Zone, in preparation for the inscribing of Tsodilo as a World Heritage Site. The Hambukushu moved permanently to their present village within the last fifty years. Traditionally they are agriculturalists and agro-pastoralists, having always lived a fairly settled life with more permanent homes than the Bushmen (Campbell 1994).

As the total population of the two settlements lies below 500 people, they cannot be classified as 'villages' under Botswana law. The ramifications of this are harsh for these Remote Area Dwellers (RADs): there are no schools, no clinics, essentially no facilities and services at all, except two nearby boreholes that are hand pumped and occasionally break, installed as part of the Ju/hoansi relocation initiative. This alongside the withdrawal of their nomadic existence and hunting rights has led among the Ju/hoansi to social deterioration, extreme poverty, loss of pride and the imminent prospect of environmental deterioration through overuse of veld products in close proximity to the now permanent settlements. The Hambukushu are likewise affected by restrictions to their former grazing rights and water access in the Core area of Tsodilo.

Tsodilo's sacredness spreads far. The two local communities, Hambukushu and !Kung, have strong traditional beliefs and connections that involve respect for Tsodilo as a place of worship and ancestral spirits. This strong religious connection with Tsodilo for both communities are based on creation myths associated with Tsodilo. In addition both communities have economic dependence on Tsodilo which has for a long time provided them with edible plants, water and a variety of game animals. There are grooves on Rhino trail boulders that look remarkably like hoof prints. Hambukushu legend has it that these were made by the first cattle to descend from the sky when "the rocks of the earth were still soft." According to a similar !Kung tradition, the marks were made by eland. Depictions of both animals can be found in the rock art at Tsodilo.

Another site of spiritual significance is the water hole on the Female hill. Local people and some church groups believe that the water found there can cleanse away bad spirits or solve witchcraft problems. Even today local churches and traditional doctors travel to Tsodilo for prayers or meditation. Records at Tsodilo indicate that many Batswana go to Tsodilo for religious purposes. Tsodilo is therefore testimony to long

established traditions and an importance is attached to spiritual values in the lives of the people up to this day.

2.3 Description of Biota & Natural Communities

2.3.1 Description of Vegetation

The Tsodilo area is surrounded by stabilised sand dunes that have a tree cover on the upper slopes and dune tops, whilst in the dips between dunes grass land occurs. The base of the Tsodilo hills themselves are characterised by forests of *Burkea africana*, *Acacia nigresens* and also notably tall and thin baobabs and large cork woods (especially *Commiphora cerulea*). The hill slope areas and the hill tops have shrubby trees including figs, *Combretums*, *Condylocarpon*

Many of the plants found at Tsodilo are endemic to the larger region of Ngamiland with the exception of mokose, *Bauhinia petersania*, and mokwa, *Pterocarpus angolensis*. Most trees, especially the acacias and baobabs shed their leaves during winter and new ones start to grow when spring begins. Large acacia trees are found mainly at the foot of the inselbergs on the fossil lake bed but are scarce on the sand dunes. The baobabs are relatively widespread on and around the inselbergs but the Tsodilo baobabs tend to differ from baobabs that occur in other parts of the country in that the former do not have the thick trunks and stout morphology of the typical baobabs but are rather slender and tall. Other trees include figs, which grow on rock crevices with roots hanging down the cliff faces.

2.3.2 Medicinal plants for humans and Livestock:

The Tsodilo area, being a micro climate and unique hill environment provides several traditionally used human and livestock medicinal plants. These include *Moethimodiso*, *Cotyledon orbiculata*, *Sengaparile*, *Arpagophytum prcumbens* and *Moologa*, *Croton gratissimus* which area used for varied human ailments while others such as Sekaname, *Urgenia sanguinea*. *Mogonono*, *Terminella sericea* and Moroka, *Commiphora mossambicensis* are used as medicinal plants for livestock ailments. Besides these there are at least 14 edible plant species and this number will easily be increased with more research. Others of these such as the Mongongo, *Ricinodendron rautaneii* are known to have been used way back into the archaeological past, some 7000 years BP (Yellen and Lee 1976).

2.3.2 Description of Animals Present

The profile of game in the area has been altered in the last 50 years through land use changes, hunting and other human disturbances. Animal distribution and density of animals at Tsodilo is heavily dependant on seasonality and the availability of water.

2.3.3.1 Reptiles

Reptiles are well represented at Tsodilo and include monitor lizards, tortoises, frogs, toads, snakes, such as the black mambas, spitting and yellow cobras, puff adders and boomslangs. There are more than 20 species (8 families) (Auerbach 1987) and these include the endemic Tsodilo rock gecko, *Pachydactylus Tsodiloensis*, (Haacke 1966). This gecko is not known to occur anywhere else and only one species of its closest relatives *P. Bibroni* share the Tsodilo habitat. Unlike the Tsodilo rock gecko, *P. Bibroni* is more

widespread throughout southern Africa. The Inselbergs might therefore be a place where *P. Tsodiloensis* evolved or is the only place that provided adequate refuge for this small lizard when forces of extinction wiped it out from the rest of southern Africa.

2.3.3.2 Mammals

Tsodilo is home to more than 10 families of mammals, most of which are relatively widespread throughout the Ngamiland district. There is however, a species of bat, *Rhinolophus denti*, which has only been recorded in two other localities apart from Tsodilo (Smithers 1971). Fruit eating bats pollinate plants including the baobab. From the rock paintings it can be assumed that mammals played a vital role in the lives of the Tsodilo inhabitants. Since most mammals have a wide habitat range and free water to survive, the mammal diversity is low during the dry season. Species like the African elephant, *Loxodonta africana*, are occasional visitors. Leopards also inhabit the rocky areas where they lie in the caves during the day. They are rarely seen and their presence is established mostly by spoor (Smithers 1971). Leopards prey on other vertebrates and these include game birds, rodents (porcupines, spring hares), monkeys and antelopes (duiker, steenbok, kudu, etc.), all of which have been recorded in the area. Other predators include the endangered African wild dog, *Lycaon pictus*. It is reported that there are less than 3000 left in southern Africa (Stuart 1996:34) and Botswana's estimate is between 600 and 700 (Holt-Biddle 1997).

Some animals can still be found around Tsodilo and their numbers and types depend partly on whether it is the wet or dry season. These include wildebeest, gemsbok, zebra, elephant, warthog, spring hare, pangolin, leopard, wild dog and tree squirrels. Wild dogs and leopards often kill and eat livestock and elephants are known to raid planted fields.

2.3.3.3 Insects

Insects form an important part of the Tsodilo ecosystem as they are part of the diet of most birds and reptiles. They are also important in the pollination of plants since some cannot self-pollinate and are totally dependent on insects for pollination. Wasps, bees, beetles and moths are abundant in Tsodilo and pollinate a variety of plant species. Sphingid moths such as *Agrius convolvulus* are known to exploit different plants for nectar, and this makes the species very efficient pollinators.

2.3.3.4 Birds

Numerous bird species can still be found at Tsodilo. These include eagles, hawks, falcons, owls, guinea fowls, doves, quails, parrots, francolin, bustards and ostriches. Ostriches are particularly important to the Tsodilo community who use their feathers and emptied eggs for decorative purposes. They make shell beads to decorate leather shirts and necklaces to sell to tourists.

3.0 SIGNIFICANCE OF TSODILO

Tsodilo is a cultural site of outstanding universal value because preserved within its archaeological record is a chronological account of human activities and environmental changes that span a period of at least 100 000 years. Encapsulated in the many archaeological sites at Tsodilo is a superbly preserved record of the Middle Stone Age (MSA), the Late Stone Age (LSA), the Iron Age, and traditional societies, thus demonstrating a considerable antiquity and continuity of great diversity. The sites are found in the many caves, rock shelters, seasonal camps, and settlements at Tsodilo.

In addition, there is much information pertaining to the paleo-environment within the site's sediments. This diverse and lengthy chronicle of African cultural heritage and climatic changes provides insights into past human ways of life and how people have interacted with their environment both through time and space. The over 4 500 rock art paintings and numerous carvings provide a vivid insight into how earlier people perceived their surroundings and artistically expressed their way of life.

In 2001 the World Heritage Committee inscribed Tsodilo on the World Heritage List under cultural criteria (i) (iii) and (vi) in light of the above significance and the justification being:

- i. **Artistic achievement:** the rock art of Tsodilo represent the largest concentration of such heritage in Botswana. With a density of about 40km sites per square kilometre, Tsodilo has one of the highest concentrations of rock art in the world. There is a higher proportion of geometric designs than either human figures or depictions of animals where as in the other regional countries human figures tend to be important numerically.
- ii. **Archaeological significance:** Archaeological research has uncovered an abundance of cultural material within the buried levels of several rock shelters and caves at Tsodilo. Tsodilo has been occupied for at least 100 000 years. The site has evidence of early settlements, culture, subsistence, and technology and exchange patterns. Excavations have also shown that Tsodilo was extensively mined for specularite between AD800-1000, the same time Nqoma was occupied by farmers and traders.
- iii. **Living traditions:** Tsodilo is a sacred cultural landscape, of which the Hambukushu and Basarwa communities have strong traditional beliefs that involve respect for Tsodilo as a place of worship and ancestral spirits. There are many legends told by the communities to explain the supernatural origin many features around the hills. One prominent feature, which is a manifestation of their beliefs, is the water hole on the female hill where two large pythons live. Some churches, for example the Zion Christian Church, believe that the water found there can cleanse away bad spirits of solve witchcraft problems. Even traditional doctors travel to Tsodilo to collect this water for spiritual use or for meditation
- iv. **Natural property:** the symbiotic relationship between the nature and culture of Tsodilo is important. The natural environment of Tsodilo, and its diversity, influences the evolution of the cultural values and attributes of Tsodilo hill.

4.0 LEGAL CONTEXT

4.1 Legal Context of Tsodilo World Heritage Site

4.1.1 Monuments and Relics Act of 2001; Tsodilo World Heritage Site and National Monument falls under the management of the National Museum in terms of the Monuments and Relics Act of 2001. The Act provides for the preservation and protection of ancient monuments, ancient relics and other objects of aesthetic, archaeological, historical or scientific value, or interest and other matters connected therewith. This Act is administered by the Botswana National Museum whose mission is *"... to protect, preserve and promote Botswana's cultural and natural heritage for sustainable utilisation thereof by collecting, researching, conserving and exhibiting for public education and appreciation."*

The Act gives the State Party, through the Ministry of Environment, Wildlife and Tourism, the mandate to take any necessary steps to protect a monument or relic. This includes the right to buy the monument or the land on which it stands. It also includes the right to secure public access to the site. On state land the Monument belongs to the State, while on Tribal Land the Land Board is the relevant authority. There is specific restriction on any development within a 1 km radius of the monument. The Act also clearly states that an Environmental Impact Assessment (including an Archaeological Impact Assessment) is required before any project that is likely to disturb the surface of the earth is given a development permit by the Commissioner of Monuments. Together with the Environmental Impact Assessment Act No. 6 of 2005, the two Acts are the most effective legal instruments to guide development in the Tsodilo area.

4.2 Other Legal Instruments

4.2.1 The Anthropological Research Act of 1967: Makes it illegal to invade the privacy and dignity of people being researched.

4.2.2 The Wildlife Conservation and National Parks Act No 28 of 1992: provides for the protection of Botswana's wildlife resources and seeks to prevent species from becoming extinct. The Act sets out how wild animals can be used in all areas of Botswana. For the purpose of wildlife management the country has been divided into 163 Controlled Hunting Areas (CHAs) and the management of each CHA will vary given whether it is a commercial (private) operated area or a community area, a multipurpose area (hunting and photography) or only a photography area (non consumptive uses) or Inside or outside a Wildlife Management Area (WMA) and on State land or Tribal Land. In particular, Tsodilo falls within the NG 6, a Controlled Hunting area.

4.2.3 Tribal Act of Cap 32:02; Under this act Land Boards can grant land under Customary Law or under Common Law. Under Customary Law only user rights can be given. In addition this can only be for customary purposes such as residency, agriculture and to a certain extent grazing. Section 20 of the Act clearly states that land will not be granted under customary law for any business or commercial purposes. All the Natural Resources Management leases with Community Based Organisations are given under Common Law.

4.2.4 Wildlife Conservation Policy (No 1 of 1986); this policy provides for rural development and citizen participation in wildlife utilization.

4.3 Policies

- 4.3.1 Rural Development Policy of 2002;** the revised Rural Development Policy of 2002 provides the framework to enhance the transitional path from the past and the future quality of life of all people who live in the rural areas. It balances the vision of how rural Botswana should look in 2016 with recognition of the steps involved in getting there.
- 4.3.2 Community Based Strategy for Rural Development (February 1997);** The Ministry of Finance and Development Planning produced the Community Based Strategy in 1997 to expand rural economic activities and reduce poverty by substantially increasing the role of community participation, community leadership structure in identifying their own economic needs and aspirations and formulating their own plans.
- 4.3.3 National Policy on Agricultural Development (No 1 of 1991);** this revised agricultural policy arose out of a perceived need to increase productivity from the agricultural sector. Forestry and range ecology are important aspects of this policy. On fencing the policy recommends that Tribal Grazing land should be fenced, thus giving de facto ownership of portions of land to individuals rather than the community as a whole.
- 4.3.4 National Policy on the Use and Management of Natural Resources (draft of February 1999);** this draft policy was developed to support and coordinate existing Acts in its administration and create enabling environment to support Community Based Natural Resources Management, as well as increase opportunities for individuals through community organisations to derive economic benefits from the sustainable use of natural resources, rights of tenure including natural resource management, use, access and exclusionary rights.
- 4.3.5 Tourism Policy (No 2 of 1990);** The objective is to obtain the greatest possible social and economic benefit from tourism resources and especially to promote rural development and raise income in rural areas.
- 4.3.6 Ecotourism Strategy of 2002;** On a national level the Department of Tourism has recently completed the national strategy for the development of ecotourism in Botswana focusing on development of other attractions and thereby promoting diversification.

5.0 MANAGEMENT HISTORY

5.1 Introduction

When Tsodilo was inscribed on the World heritage List in December 2001, UNESCO recommended that the 1994 plan should be reviewed. The process to review the 1994 plan was started in 2002 by Botswana National Museum. The varied and multiple stakeholders of Tsodilo ranging from the community, community based organisations, non governmental organizations, and government departments were consulted. When the review process was nearing completion in late 2004, formulation of the Core Area Management Plan was halted at draft stage by the Botswana National Museum following community development plans that had far reaching implications and required consideration for implementation in the buffer area. As a result, the Tsodilo Integrated Management Plan (TIMP) was formulated in 2005 and accepted by the Botswana Cabinet in 2007. The TIMP, while respecting the local, national and Outstanding Universal Values of Tsodilo, provides specific zonation of the buffer area only to cater for recommended developments in the area.

The halted 1994 Management Plan was, in fact, a scheme of implementation that proposed numerous developments that would be carried out in and around Tsodilo, and many changes have taken place since then. The developments include the relocation of community members from the core area; the building of a site Museum, a gate house and staff housing completed in 1999; the appointment of a site manager and a supportive team (currently comprising of 13 staff members). Most significantly, in December 2001 The World Heritage Committee sitting at Helsinki, Finland, inscribed Tsodilo a World Heritage Site on cultural landscapes Criteria I, III and VI. Moreover, the graveling of the Tsodilo Nxamasere road in 2002 has improved access to the Tsodilo. These developments have radically altered annual visitor statistics from under 4 000 visitors (prior to the year 2001) to the level of over 11 000.

5.2 The 2005 Tsodilo Integrated Management Plan

The 2005 Tsodilo Integrated Management Plan (TIMP) was a stakeholder driven planning process. The TIMP provides for the management of both the core and buffer zone of the site. The main objectives of the 2005 TIMP are; (i) to ensure that the community becomes integral in the management of the area as custodians of intangible heritage and by becoming part of the decision making process, (ii) develop internationally recognised, comprehensive and quality visitor experience through provision of archaeological, cultural and wildlife components, (iii) protect the biodiversity resources of the core area and manage the buffer area in a sustainable manner, and, (iv) ensure that all the development and management within the core area is in accordance with relevant international legislations and conventions ratified by the government of Botswana. The TIMP provided the institutional framework for the implementing agency; Tsodilo Management Authority (TMA), being a management authority representing key stakeholders/institutions that have interest in the area and would be able to make appropriate decisions on the site. The 2005 TIMP, however, makes it very clear that Botswana National Museum will maintain the overall responsibility of the core and buffer areas. In specific terms Botswana National Museum will be responsible for the management of the core area of the World Heritage site. The TIMP also empowered the Tsodilo Management Authority to raise funds through donor contributions. Currently the TMA is implementing the 2005 TIMP (with amendments in 2007) and has since raised a substantial amount to ensure the implementation of the set objectives for the buffer area.

It is in this context that in 2004, Botswana National Museum developed the draft Tsodilo Core Area Management Plan between 2002 and 2004. Due to the dynamic trends in the management of World Heritage Properties, coupled with the increased realisation on the need to protect and maintain the Outstanding Universal Value of Tsodilo as a World Heritage Site, Botswana National Museum decided to finalise the draft plan and produce the current Tsodilo Core Area Management Plan. At implementation level the Tsodilo Core Area Management Plan will be integrated with the 2005 TIMP (as amended in 2007) to ensure an integrated and holistic management of the core and buffer areas of Tsodilo World Heritage Site.

5.3 Planning Process for the Tsodilo Core Area Management

The 2004 Tsodilo Core Area draft management plan was drawn from three years of consultative process that benefited from reports in the areas of Rock Art conservation, water surveys and community initiatives. The process also entailed meetings by the Tsodilo Reference Committee, community involvement through the village *Kgotla* meetings as well as strategic sessions with key stakeholders such as the craft makers, community guides and the Tsodilo Trust Steering committee.

During the fourteen day workshop held at Tsodilo World Heritage Site in June 2009, the rock art, archaeology and conservation team undertook a condition assessment of all the rock art panels and archaeological sites on the major trails. The community and intangible heritage team conducted interviews with different sections of the local community at Tsodilo including the village headman, the Jun/huasi elder, community elders, youth, traditional doctors, community guides and craft makers. The management plan team held a round-the-fire meeting with key community stakeholders including the Headman's representative, Village Development Committee, Tsodilo Community Trust Committee and Community guides and craft makers. The team dealing with the public programmes and presentation undertook several visits to the site, made reviews of the existing public programs, trails and routes. The botanical aspects of the plan benefited from a lecture and contribution by a botanist. The principles for wildlife management are spelt out in detail in the Tsodilo Integrated Management Plan (2005). Also, the current review drew recommendations from other consultancies on various ecological aspects of Tsodilo.

The standard process of management plan formulation; review of existing literature, re-evaluation of site significance and values, identification of key issues, designing management objectives and strategies, management vision and principles, as well as designing the monitoring, evaluation and review tools was followed. Stakeholders were also consulted during the various stages of this planning process. In summary the approach was to appraise the findings of the 2004 Draft plan that through field surveys and consultations as elaborated before.

6.0 MANAGEMENT FRAMEWORK (including zonation of the site).

6.1 Management Approach

Botswana National Museum manages all national monuments including Tsodilo World Heritage Site. It is responsible for the core area and chairs the Tsodilo Management Authority that oversees community developments and initiatives in the buffer zone of the World Heritage Site as provided in the 2005 TIMP. In both areas the Botswana National Museums will work closely with the Tsodilo Community Trust.

6.2 ZONATION: Core Zone and Buffer Area

Tsodilo World Heritage Site is comprised of a core area and buffer zone. The land area surrounding the site is leased to the National Museum by the Tswana Land Board. Of that leased land the core zone area covers 4km x 12 km (48km²) or 4800 hectares. The buffer zone surrounding the core area is a rectangular piece of land that extends from the centre of the site 22 km east / west and 32 km north / south encompassing 70 400 hectares. In consonance with the Nomination dossier and the slight practical amendments to the buffer zone by 2005 Tsodilo Integrated Management Plan and the Nomination dossier, the following coordinates apply to the buffer and core areas;

	Latitude	Longitude
Core Area		
Northeast corner	S18 40' 11	E21 40' 07
Northwest corner	S18 41' 25	E21 40' 45
Southeast corner	S18 46' 25	E21 46' 44
Southwest corner	S18 47' 40	E21 44' 25
Buffer zone		
Northeast corner	S18 33' 10	E21 44' 46
Northwest corner	S18 39' 55	E21 32' 24
Southeast corner	S18 51' 06	E21 54' 35
Southwest corner	S18 57' 49	E21 42' 21

However, the 2005 TIMP made recommendations for reviewing of the eastern boundary to into consideration the Cultural Heritage Boundary.

6.3 Management Systems for Core Area

- The Director of Botswana National Museum, through the Monuments Division, will coordinate management of the site and implementation of the Tsodilo Core Area Management Plan and any other development programme.

- The National Committee on World Heritage will be an advisory body to ensure the aims and objectives for the site are achieved in accordance with the World Heritage Committee Operational Guidelines.

6.4 Management of the Buffer Area

As per the lease from Tawana Land Board, no development of any description will occur in the buffer area without consultation and agreement from Botswana National Museum. The Tsodilo Management Authority and the Tsodilo Community Trust will play a pivotal role in the implementation of the 2005 TIMP on behalf of the Botswana National Museum. Their roles are as follows;

6.4.1 Tsodilo Community Trust

This Trust was formally registered in 2006 and is a fully community owned entity administered by community members. The Trust focuses on community interests and projects. It has 2 permanent 'representation' seats in the Tsodilo Management Authority. The Tsodilo Community Trust supervises Tsodilo guides, craft makers and operates community run campsites. It also works in unison with the Tsodilo Village Development Committee. It also ensures that all the Tsodilo tangible and intangible resources are protected and utilized for community benefit and integrity.

6.4.2 Tsodilo Management Authority (TMA)

This Authority was registered in 2008. The Tsodilo Management Authority (TMA) Board, through a buffer area manager and his staff will implement the 2005 Tsodilo Integrated Management Plan (with the 2007 amendments). The TMA has a mandate to raise funds for implementing sustainable community developments in the buffer area as provided in the 2005 TIMP and the current Tsodilo Core Area Management Plan. It comprises of two founding entities; Botswana National Museum (Chair) and Tsodilo Community Trust (with 2 permanent seats). Other members include 3 representatives from the Tsodilo Reference Group which is a selection of government departments, district administration, non-governmental organisations, research Institutions and community based organisations with a stake in the Tsodilo development process. .

7.0 MANAGEMENT PLAN VISION AND PRINCIPLES

7.1 Overall Vision:

To protect, preserve and promote the significance of the cultural and natural heritage of Tsodilo World Heritage Site, its integrity and authenticity, for purposes of education, entertainment and research for contemporary and future generations.

7.2 Management Principles for Tsodilo World Heritage Site

Towards the fulfilment of the above vision for Tsodilo World Heritage Site, the plan will adhere to the following management principles;

1. Provide and promote access to the cultural and natural heritage while safeguarding its important values.
2. Conserve intangible heritage and the environment of Tsodilo world heritage site for present and future generation.
3. Encourage and emphasise community participation to restore interest in traditional culture and increase the benefits that communities can draw from the landscape.
4. Build capacity for implementing proper resource management for Tsodilo World Heritage Site.
5. Market and raise awareness on the significance of the natural and cultural values of Tsodilo World Heritage Site for tourism, leisure, and education.
6. Promote research on the natural and cultural values of Tsodilo World Heritage Site.
7. Manage the site according to internationally accepted standards and guidelines

7.3 Management Objectives

In line with the vision and management principles, the management plan is guided by the following overall objectives that are aimed at protecting and managing the Outstanding Universal Values of Tsodilo World Heritage Site;

- i. Protect and Maintain the Outstanding Universal Values of Tsodilo World Heritage Cultural Landscape as described by category (i), (iii) and (vi); the tangible, intangible and natural resources of Tsodilo.
- ii. To an extent consistent with the forgoing, to ensure maintenance of the long term access and natural resource use rights for the local community in both the core and buffer areas.
- iii. Promote awareness of the significance and values of Tsodilo World Heritage Site at Local, National and international levels
- iv. To an extent consistent with the forgoing, to create opportunities for research, education and interpretation to the public.
- v. To develop manpower to effectively identify, document, present and manage the values and attributes of Tsodilo World Heritage Site.
- vi. To establish and retain close links with relevant specialists in national and international institutions, and with local communities.

7.4 Management Philosophy and Principles

The Management of the site will be applied in an unobtrusive manner, at minimal but effective levels, in order to achieve the overall and specific visions for the site. Protection of the rock art, archaeological artefacts, intangible values, and the natural attributes of the site and its sense of place will receive management priority. This will include maintaining its authenticity and integrity as a cultural landscape of Outstanding Universal Values..

8.0 MANAGEMENT ISSUES

8.1 Introduction

This section presents key management issues emanating from the consultations, research and evaluation of existing literature on the management of Tsodilo World Heritage Site. The management issues presented are; Rock Art and Archaeology, Local Community and Intangible heritage, Public Presentation and Visitor Management, Protection of Vegetation and Wildlife, and Human Resources and Site Administration.

8.2 ROCK ART AND ARCHAEOLOGY MANAGEMENT

8.2.1 Documentation of the cultural heritage resources of Tsodilo (including rock art)

The analysis on the documentation status of Tsodilo showed that most of the colonial and post-colonial records are stored in Gaborone and these are at varying levels of completeness. Other records by researchers are also known to be at the Rock Art Research Institute in South Africa. There is need to analyze the existing records to ascertain their completeness and effectiveness in the conservation of the cultural heritage resources at Tsodilo. Also notable is that Botswana National Museum only has manual database of the records relating to Tsodilo and other cultural sites around the country.

8.2.1.1 Baseline documentation for Rock Art and archaeological sites: It has been established that archiving of Tsodilo Rock Art records is haphazard and uncoordinated. Most of the existing documentation is in Gaborone. Therefore, any previous records on Tsodilo that include old forms, still and slide photos should be assessed to ascertain any gaps on the documentation of the rock art of Tsodilo. The absence of such basic information on the site negatively impacts on the management of rock art sites. Any documentation gaps should therefore be filled in order to have a complete baseline documentation of the site.

Also, the current documentation of the sites in Tsodilo World Heritage Site covers only the rock art sites on the trails open to the public. These sites are, however, not properly documented. There is a need to include and update the graphic archives of all the archaeological sites within the core area. There is lack of information on the previous recording exercises done in Tsodilo, which affects the current monitoring of the paintings along the trails open to the public. On the other hand, and for research purposes, there is need to revisit the previous recordings and document all the sites including those that are not along the existing trails. From the previous work done by other scholars in documenting the rock art of Tsodilo, there is need to check consistency in the numbering and documented attributes of the site. Therefore, there is need to create a complete database of the Tsodilo World Heritage Site.

8.2.1.3 Documentation guidelines for Tsodilo Rock Art Sites: During the field surveys, it was discovered that sites which are on different elevations and far apart were clustered as one site, although they should be recognized as different sites. This proved very difficult in undertaking baseline documentation using a single form, which has no provisions for multiple site recording. This actually leads to the underestimation of the total number of sites within the Tsodilo World Heritage Site. Therefore, it is important to provide guidelines that follow the international standards. In the specific case of Tsodilo where most of the rock art sites are in close proximity, it is important to come up with a criterion of defining what constitutes a site.

As a result, there is need to update the existing manual database and create a digital one for Tsodilo World Heritage Site. This will create a complete and informative database which will enhance the management of cultural heritage resources. In addition, basic training on rock art documentation is required for the staff of Tsodilo to ensure speedy implementation of the same.

8.2.2 Conservation of Rock Art and Archaeological Sites

A condition assessment of selected Rock Art sites along the Rhino, Cliff and off the trails was carried out. It was noted that the rock art is affected by both human and natural factors. The following threats were identified;

8.2.2.1 Natural threats: natural threats that are highly visible include water, salts, flaking, dust and plants. Water seepage, which results in deposition of salts, was identified to be the most dominant natural threat on rock paintings. Other natural threats of significant magnitude include encrustation of lichens on rock paintings, which become even more problematic when they are mixed with mineral salts. Some sites are exposed to direct sunlight, which can contribute to accelerated fading of the paintings. Several rock art panels were assessed and recommended for intervention.

8.2.2.2 Human threats: human induced threats, though minimal, include pecking, dust, graffiti, and abrasion as a result of pressure at some of the smaller sites. Some sites are over exposed to potential threats associated with access roads for four wheel drive vehicles. These threats include increased and uncontrolled access to site, dust, and destruction of vegetation cover around the site and along such roads as part of routine maintenance. In addition, some trees were cut around some sites thereby altering the micro-environment of those particular sites and exposing the rock art panels to natural threats.

8.2.2.3 Condition survey by Alec Campbell: in 2003/4 Alec Campbell conducted a condition assessment of the rock art sites in Tsodilo. A report and slide pictures are in the archives of the Botswana National Museum. Unfortunately, no review has been done on this important conservation effort. This data should be reviewed as essential baseline information for monitoring rock art sites before 2014 (according to Alec Campbell's recommendation), as soon as possible in order to contribute to current monitoring efforts.

If all these natural and human threats are not adequately dealt with, they will ultimately lead to the destruction of the rock paintings, thereby negatively impacting on the main aspects of the Outstanding Universal Value of Tsodilo as a World Heritage Site.

8.2.3 Interpretation of the cultural heritage resources of Tsodilo World Heritage Site

Interpretation plays a very important role in disseminating or creating awareness on the significance of Tsodilo World Heritage Site. An analysis of the operational interpretation programme was undertaken and the following issues were identified;

8.2.3.1 Interpretation of rock art sites: Tsodilo offers tour guiding services to all visitors, but as assessed during various field excursions and trail tours, the information being disseminated by tour guides relating to the rock art, archaeological, and natural values of the site remains very skeletal and inadequate. This impacts on how visitors understand and appreciate the significance and attributes of Tsodilo World Heritage Site. In addition, visitors are not given basic information that contributes to the general conservation of the site. Basically, the tour guides lack in-depth information on the diversity and richness of the cultural heritage resources of Tsodilo.

8.2.3.2 Archaeological and interdisciplinary research: Tsodilo World Heritage Site is rich in cultural heritage resources which require further research to enhance our understanding of same. Understandably, research has been undertaken in the past, but research being a dynamic discipline and with new research tools emerging, more information can be generated and glaring gaps in the chronology of the site can also be filled. Research conducted so far in Botswana revealed that, for instance, the Stone Age period is poorly understood. Thus, rock shelters and the open air sites in Tsodilo can offer an important window to the understanding of the Stone Age and Iron Age sequence of the area. The University of Botswana in collaboration with the BNM can encourage Masters and PhD projects for Botswana students. This will also help to build capacity and create more information about the site, stimulate academic interest in the various aspects of archaeological research and enhance interpretation programmes.

In terms of Interdisciplinary research, Tsodilo is recognized for its uniqueness as a cultural landscape. Other disciplines apart from archaeology, such as geology, botany, zoology, chemistry, art and anthropology can play an important role to get a better understanding of the Tsodilo cultural and natural diversity, as well as the contestations. In this case interdisciplinary research could be a major input in acquiring relevant information for dissemination to the public at local and international levels.

8.2.4 Visitor Management Policy

Visitor management policies are known to provide a localized framework for interpreting and promoting best practices in handling visitors but at the same time promoting the conservation of the cultural resources we are marketing. Tsodilo as a World Heritage site does not have a visitor management policy which should advise on the site carrying capacity, site access options, ethics of presentation, tour guide conduct, management of trails, the number of visitors a guide can take on one trip, litter disposal policy, dos' and donts' at site (site etiquette), among many others. Currently, Tsodilo does not follow the minimal visitor management requirements for a World Heritage Site. This will ultimately contribute to the degradation and continual threat of the rich cultural and natural resources of the core area.

8.2.5 Research Policy /copy right laws

Tsodilo has been researched by many distinguished scholars over the years, but regrettably most of the resultant information is not with the Botswana National Museum as reference material (either in electronic or hard copy format). This information is critical to the interpretation and conservation of the cultural and natural resources of Tsodilo World Heritage Site. This has been caused by lack of adherence to research permit requirements by most of the researchers. Resulting from this scenario, is lack of basic information on the site through time, and where it's available, Botswana National Museum is now being charged for accessing this information. In other instances, this information is now being commercially sold in various formats to the public. Therefore, there is need to enforce requirements of research permits, and where possible retract copies of such research results.

8.2.6 Environmental Impact Assessment/ Archaeological Impact Assessment policies.

During field surveys it was discovered that when most of the basic developments in the Core Area took place, cultural material was identified during construction phases. This, therefore, implies that cultural material could possibly be lost if not recorded. It is very important that all developments either within or outside the core area of the World Heritage Site be subjected to environmental

impact assessment to avoid loss of information that may enhance the understanding of the archaeological sequence and biodiversity of the area.

8.2.7 Management of Access roads in the Core Area

As part of the visitor experience at the site, access roads have been opened up as trails on the various hills of Tsodilo. On the other hills roads for four wheel drive vehicles have also been opened up, and in some instances very close to rock art sites (especially along the Rhino trail). This, however, has severe long term impacts on the conservation of the associated rock art sites given increased access, dust generated by both vehicles and people, destruction of vegetation as part of routine maintenance, disturbance of animal corridors, and to a certain point uncontrolled access to the sites. Therefore, in the long term some of these roads should cease to be operational to allow minimal impact on the environment and the cultural resources of the site.

8.2.8 Environmental Pollution on the serenity and tranquillity of the Tsodilo World Heritage Site

Resulting from the basic developments inside the core area for purposes of managing the site, some of the existing structures or facilities are negatively impacting on the serenity and tranquillity of the cultural landscape of Tsodilo. The engines used to generate electricity throughout the core area produce noise that can be heard from the Rhino trail on the female hill and in the camps around the core area. This noise affects the peace of the hills and to a certain extent the biodiversity of the hills as the locals believe this is affecting the spirituality of the hills. Also, the water tanks serving the staff at Tsodilo and the camps have imposed themselves on the landscape, (due to their location and colours), to the extent that visitors cannot avoid noticing their visibility. In addition, the old campsites dotted around the core area have not been rehabilitated; these are eyesores on the landscape. Worth noting, is the fact that along the trails there is no evidence of littering normally caused by the visitors, and this should be maintained.

8.2.9 Firebreak for the Core Area

Tsodilo World Heritage Site is prone to veldt fires, and in October 2008 there was one such fire. Close to 35% of the vegetation was destroyed as the area was dry, and the biomass on the ground

further fuelled the fires. Therefore, fire remains a threat to both the core and buffer areas of the World Heritage site. In early 2009, a firebreak was constructed to minimize the massive damage likely to be caused by future endemic fires. However, from an aesthetic point of view, the 30 metre wide fire break appears as a big scar thereby negatively impacting on the integrity of the landscape. There is need to create a stakeholder driven fire management strategy for both the core and buffer areas of the site. This interferes with the authenticity and integrity associated with the wilderness experience of Tsodilo.

8.3 LOCAL COMMUNITY and INTANGIBLE HERITAGE

8.3.1 Introduction

Interviews were conducted between the 3rd and 5th of June 2009 with local community (both the Basarwa and Hambukushu) of Tsodilo. About 35 people were interviewed (men and women). These included members of the Village Development Committee (VDC), Community Trust, youths, traditional healers, members of different churches and elders. Also, a stakeholders meeting was held at Tsodilo with community members from the adjacent villages. From the interviews, the communities raised the following management issues;

8.3.2 Provision of Water to Local Community and Livestock in the buffer area of the World Heritage Site

During the interviews, the local community raised the issue of water shortage for both people and livestock in the settlements. Despite government efforts over the years to provide water, the existing borehole is not working. This compels them to use the borehole in the core area of the World Heritage Site. As of now the local community is waiting for the 2005 TIMP recommendations on water provision to be implemented. This will reduce pressure on the current and increased water abstraction in the core area of the site.

8.3.3 Administration of the Tsodilo Craft Shop

The local community acknowledges that the 2005 TIMP made provisions for the establishment of a craft shop for the community. This was implemented and operated for some time by the

community. The craft shop ceased operating because of mis-management. The community strongly feels that this venture should be resuscitated with proper administration. In addition, the relations among the two main groups of the local community involved in this venture require some mending to ensure the restoration of transparency, credibility and trustworthiness.

8.3.4 Management of Intangible heritage in Tsodilo World Heritage Site

The local community (both the Hambukushu and the Basarwa) are lamenting their traditional role as indigenous custodians of the diverse intangible heritage of Tsodilo. The local community prefer that custodians and guides for visits to intangible heritage sites should come from members selected by the elders of the community. Such sites include; the water hole and the holy rock of the Basarwa which is known as "Dama-meaning a child". The local community feels that the accommodation facilities in the Core Area should be relocated to the buffer zone in order to maintain the serenity and wilderness of Tsodilo World Heritage Site.

Apart from their desire to contribute to management of sacred sites, the local communities are worried by the over exploitation or commercial abstraction of the "water hole/site" by visitors, as a result of the increasing spiritual pilgrims from within and beyond the borders of Botswana. Also, the noise from the visitors and generators is not good for the spiritual sanctity and supernatural beings within the site. This disturbs the tranquillity that used to prevail in the hills of Tsodilo. To this end, the local community said that security lacks at the site for both night and day patrols, including the main entrance to thoroughly monitor the movements of all visitors. The issue of transport for patrolling the perimeters of the core area is also of concern to the local communities. Absence of security has witnessed the increasing number of illegal 'religious' visitors. These illegal visitors may eventually lead to the desecration of sacred sites and destruction of rock art resources in the hills. Therefore, there is need for a readily available vehicle to carry out patrol checks along the fence and any other spot checks in the core area.

The local community also lamented the absence of orientation lectures on rules and guidelines relating to the intangible values of the site before the beginning of tours. Local communities also called for increased control of school and large groups to allow for close monitoring and prevention of possible vandalism of sites.

8.3.5 Relations between communities and other stakeholders

The interviews noted that there is poor communication among all the stakeholders involved in the Tsodilo World Heritage Site. This issue of community relations generally affects the spirit and framework within which the management of the heritage site is undertaken. However, this is a very complex issue because some of the problems involve other stakeholders and outside players; (i.e. other government and non governmental departments), who are beyond the control of either the Botswana National Museum or Tsodilo Management Authority.

8.3.6 Cultural Centre and Craft Shop project

The local community acknowledges that the 2005 TIMP made provisions for setting up of a cultural centre and craft shop in the buffer zone of the site. This was in a way a platform for allowing the local communities to showcase their own culture to the tourists. The cultural villages were supposed to be sited at mutually agreed locations, but this has never been implemented. However, the two local communities desire separate areas for their respective cultural centres. This needs to be addressed as it may have social implications and other impacts on the core area of the site.

8.4 PUBLIC PRESENTATION and VISITOR MANAGEMENT.

8.4.1 Tour Guides and related services

8.4.1.1 Interpretation services by Tour guides: There are currently six (6) community tour guides taking visitors on tours around the site. Four (4) museum officers assist in guiding when need arise, and especially with official tours and school groups. These community guides were last trained in 2006 and from current assessments they are not passing adequate information on the significance of the cultural and natural resources of the site to visitors. Another observation was that the information given to tourists varies from one guide to the other, and is mostly biased towards rock art at the expense of other values of the site. This can lead to the customers losing interest on the site and not enjoying the experience, as well as failing to understand the significance of Tsodilo. It is important that these tour guides are trained and given frequent refresher courses to keep them abreast

with the evolving information on the significance of the site. The training should also include visitor management techniques and skills.

8.4.1.2 Uniforms for tour guides: The tour guides do not have any uniform that can distinguish them from all other staff members and visitors. The uniform will give them respect and authority they need as guides.

8.4.1.3 Number of visitors per each guide: Currently each guide takes a lot of visitors (up to 30) per tour, and this is worse with school groups. This is not good for the conservation of the sites. Also it may lead to the desecration and destruction of sites due to lack of control within and off-the site. This situation can also lead to visitors not benefiting fully from the guide's information about the various resources. With a very big group, some visitors may take advantage of the fact that the guide cannot see them from upfront.

8.4.1.4 Self guided tours: Despite the fact that current regulation is that all visitors must be guided to the various sites around the core area, there are some visitors who insist on self guided tours. This poses a serious threat to the conservation of the sites as such visitors are not controlled. They may be tempted to vandalise the rock art sites which in the end negatively impact on the values of the site. This should be discouraged and addressed through a visitor management policy.

8.4.2 Signage within and outside the Core Area of Tsodilo

8.4.2.1 Buffer zone (road side signage): Tsodilo World Heritage Site has roadside signage which gives directions to the site from other areas such as Maun and Shakawe. However, it has been observed that the signage is not visible both during the day and night as it is sited far off from the road and is also too small. At times it is obscured behind other road traffic signs and advertising boards. This is not good for the site since potential visitors can find it difficult to get to the site. The other problem with the signage outside the core area is that it is governed by policies from other organisations like the transport department who have to be engaged to find a long lasting solution.

8.4.2.2 Core Area road signage: The core area has road signage that blends very well with the environment, and keeps in tandem with the integrity of the World Heritage site. However, the signage frames are small hence the signage is obscured behind the vegetation which makes it difficult for visitors to find certain resources and facilities within the core area. Also, some of the signage is just arrows without information as to which facility one will in the pointed direction. The other issue with the signage is its maintenance and durability through time given that it's predominantly wood.

8.4.2.3 Maintenance of the Signage: The monitoring of the signage is poor since some signage has been down for a long time, especially outside the core area.

8.4.2.4 Tourist map for Tsodilo: There is no map of Tsodilo facilities to guide visitors around the site. For example, once the visitors are inside the core area, there is nothing to help them find facilities easily, e.g. museum, curio shop, reception, toilets, etc. This can lead to visitors going into the wrong places. It is important to have proper orientation literature and tools at the site.

8.4.3 Educational Programmes

8.4.3.1 Heritage Education Programmes: Several heritage educational programmes were planned for Tsodilo but these were never implemented. These include; The Tsodilo Story (for upper primary and secondary schools), Student quizzes, Monuments, the Heritage of Botswana, picture exhibitions, as well as video and slide shows on Tsodilo. Currently, there are no heritage education programmes being run for Tsodilo World Heritage Site except for the guided tours. School children, as future managers of the heritage, have to be aware of the significance and values of the site. In addition, schedule of visiting school groups should be maintained to control their movements around the site. The absence of an education officer at Tsodilo could have also contributed to the current situation, and this should be considered under manpower requirements for the site.

The local communities and the general public also need to be educated and made aware of the significance and value of Tsodilo as well as its conservation. Existing programmes such as 'Adopt a Monument' can be extended to Tsodilo.

8.4.3.2 Literature available on Tsodilo: The literature about the site which is available to the public is outdated. There is need to revise the books, booklets, pamphlets, brochures, and posters. Most of these have since run out of print. The lack of such literature denies the visitors information they deserve and need as they prepare for visiting and touring the sites. There is evidence that information given out varies from one officer to the other depending on the literature read. This is a critical area that needs to be dealt with to ensure that all visitors get adequate information on the significance of the site thereby contributing to its preservation.

8.4.4 Visitor control/monitoring

8.4.4.1 Control of visitors in the core area: There is a visitor check in point (reception) where all visitors should register as they enter and exit the site. However, it is evident that some visitors enter and exit the site without going through the reception area (especially those visiting for spiritual reasons as they have been exempted from normal registration). This is exacerbated by the absence security guards to control or monitor their movements at the main entry gate neither does Botswana National Museum carry out night and day perimeter patrols and spot checks. This has negative impact on the site as some visitors access the site from several and uncontrolled points, and their behaviour on the site is not controlled.

8.4.5 Access roads and trails

There is an access road to the site but it is very rough and dusty. This leaves the visitors with no choice but only to use four wheel drive vehicles. The road is also very dusty posing a danger to the current camp sites, and in other cases such roads are in areas with trails which are not safe to traverse and may lead to the destruction of rock art sites and vegetation around the sites.

8.4.6 Marketing Strategy

Tsodilo as a World Heritage Site is an international destination marketed by civic and private players in the tourism industry. Currently, Botswana Tourism Board markets the site. As of now,

there is no specific marketing strategy for Tsodilo by the Botswana National Museum. For a place of Tsodilo's status, there is need to have a marketing strategy driven by the corporate vision and branding of Botswana National Museum and that of the Ministry of Environment, Wildlife and Tourism. Outside driven marketing is a threat to the site as most private initiatives may not promote the conservation of the site. As part of marketing Tsodilo World Heritage Site, a World Heritage emblem is required at the main gate for branding purposes. This entails developing patents for the site and all services. Such branding will give Tsodilo a clear cut corporate image in line with other competitors in the tourism industry. This branding should transcend from staff uniforms, protective clothing, to products and services offered on and off-the-site. There is also need to protect the use of the site name "Tsodilo" by other organisations without due copyright permission from Botswana National Museum. Wherever necessary, retrospective compensation for using the name should be sought and ploughed back into the conservation of the site. Tsodilo needs to have copy right power over all its products and services.

8.4.7 Campsites in the Core Area of the World Heritage Site

Tsodilo has operational and abandoned campsites within the core area of the site. The abandoned camp sites have not been rehabilitated. The operational camps will be relocated to the buffer area to reduce pressure on the core area. In line with the 2005 TIMP of as a World Heritage Site, the core area camps will be utilised as day visit picnic spots.

8.4.8 Museum Exhibitions

The Tsodilo Site Museum exhibition is old and requires updating. There is need for a comprehensive review of the current exhibition to address the identified inadequacies and also include new information generated over the years on the significance of Tsodilo. The Site Museum also lacks an audiovisual orientation facility for visitors.

8.5 MANPOWER and SITE ADMINISTRATION

8.5.1 Manpower; capacity building at Tsodilo World Heritage Site

The staff of Tsodilo currently stands at fourteen people. Botswana National Museum has already employed an Assistant Conservator for rock art and a Fence erector among many others. However, there is need to increase the establishment from the existing fourteen to twenty (20) to ensure the effective management of Tsodilo core area. The Site Manager requires training in administration management and support from the office of the Regional Principal Curator (Maun). Such training will enhance the office of the site manager in handling financial, personnel (leave, benefits, promotions, etc) and other staff issues at the site. There is a dire need for security details for the night and day patrols at the site. At least three rotating Security Guards and two night watchmen to control the entry and exit points and the movement of people and animals within the core area of the site would be ideal. A second vehicle and driver (either a BNM staff at Tsodilo certified by Central Transport Organisation or a new driver if resources permit) is imperative so that he or she could alternate with the existing one on short and long errands. Also, Tsodilo needs to have constant access to a database officer or GIS expert (even if stationed in Gaborone for the whole organization) to enhance both digital and manual recording of baseline data on the site. The same applies for an education officer to spearhead all the heritage education programmes. In line with existing Government Policy, gender equity is to be considered across board in expanding the establishment and in work relations as well handling of customers at the site.

8.5.2 Skills Training and Development

Apart from the other specialized conservation skills, training and development needs presented under the rock art and archaeology, the public presentation and community sections, there are other basic training needs that are required at Tsodilo. Staff members require training in Occupational Health and Safety (SHE) and FIRST AID so that they can be ready for any disaster and minor accidents on site. Currently, no one at the site has been previously trained in this area. An initial training course and subsequent refresher courses are recommended for the staff. Issues of hygiene and waste management should be included as part of the training to ensure that the integrity of Tsodilo is maintained through time.

8.5.3 Staff Accommodation & Office space

Tsodilo World Heritage Site provides on-site accommodation to staff in the core area at the base of the female hill. However, 80% of the staff of Tsodilo resides in the village located on the buffer zone of the site; about seven kilometres away from Tsodilo site. The remaining 20% are living in the core area where they are occupying two houses. For those living in the village they face serious transport challenges, and most of the time report for work late and exhausted. It gets worse when weather conditions are not conducive. Alternative internal administrative arrangements should be put in place to resolve the transport problem.

Although there is on-site accommodation for 20% of the staff, it is still inadequate for the current occupants who are sharing. TIMP has recommended that staff accommodation and any other form of lodging be sited in the buffer zone of the site. Therefore, it is important that this recommendation be implemented in order to maintain the integrity of Tsodilo World Heritage Site. Such course of action should, however, ensure that the Site Manager remains in the core area with one house being converted into a site documentation and conservation office. The 2005 TIMP recommendation was based on the notion that the site must remain peaceful and serene.

8.5.4 Equipment

Apart from the specific conservation equipment required as outlined in other sections of this chapter, the Site requires a face lift on baseline office equipment such as shelving, computers, colour printers, office furniture, projectors for group orientations and presentations, scanners, as well as archiving facilities.

8.5.5 Systems for implementing services at the site

Tsodilo as a World Heritage Site attracts large volumes of visitors and as such many services are offered on site. Some of these services are provided free, but as a government policy on cost recovery strategies, Botswana National Museum is expected to introduce minimal fees for most of the services available to visitors at Tsodilo. These services and products have to be competitively priced to maintain them at an affordable level for both local and international tourists. Therefore,

auditable transaction processing systems, which are currently not available to run the bookings, entrance fees and general exchanges for other services between the site and its clientele, must be implemented. This will introduce efficiency, accountability and excellent customer services that contribute towards the management of the Tsodilo World Heritage Site.

8.5.6 Communication systems for Tsodilo World Heritage Site

Given the location of Tsodilo, far away from major towns; where there are modern telecommunication facilities, communication within the core and buffer zones remains important. Even when tours are taken on the various trails, should an accident happen, means of communication with site office and any possible external help is compromised to the risk of those affected. Therefore, communication on the site needs to be improved by considering the introduction of two or four way radio communication systems at the site. Contrary to the wilderness spirit of Tsodilo, the telecommunication tower at the foot of the Male hill has not been removed as it provides communication linkages of Tsodilo with the rest of the world.

8.5.7 Security Monitoring and Control within Core Area of the World Heritage Site

Given the size of the site, and the significance enclosed therein, security is of paramount importance. There are recorded cases of illegal entry into the core area; potentially a risk to the values of the site as evidenced by theft or loss of equipment on site and the increasing commercial abstraction of water from the sacred water hole. All these issues are likely to affect the integrity and authenticity of Tsodilo Cultural Landscape. Therefore, security of the core area is an issue that requires consideration; development of such appropriate security systems, their implementation and consistent monitoring of their effectiveness.

8.6 BIODIVERSITY (FAUNA AND FLORA) ISSUES

8.6.1 Fencing the Core Area and Game Management.

The presence of a fence around the core area is of concern when it comes to the management of game at Tsodilo. As of now, the fence is a barrier to game movement which is not consistent with common game management practices. Understandably, the fence was erected to deal with

movement of livestock in the core area and in particular, in the vicinity of the museum building / campsites and certain accessible rock art sites. Overgrazing and trampling of sensitive soils and vegetation, dust (during the dry season), physical damage to the camp ablution block and water reticulation system, as well as negative aesthetic impacts (affecting visitors perceptions), are all key issues that resulted in the erection of a fence around the core area of the site. However, this fence, though required as a management tool to deal with the above issues, has created other game management problems that require due consideration;

8.6.1.1 Potential visual and aesthetic impact: As an internationally acclaimed world heritage site, valued for its unspoiled natural wilderness setting, it is vital to ensure that the area be maintained as such. This is also important in terms of meeting the expectations of visitors. A visible fence-line scar, for that matter a straight line, as viewed by visitors standing at higher elevations, generates a negative perception about the ecological management of the area. Also the creation of the large firebreak along the fence further enhanced this negative ecological impact of this fence. The importance of maintaining the aesthetic integrity of Tsodilo World Heritage Site is important.

8.6.1.2 Potential ecological impact: Fences have the ability to trap, injure and kill both wildlife and livestock. Animals move around the core area in order to access grazing, browse, lick minerals and drink water. The impact of the fence in terms of blocking such natural movements, and the impact on the future rehabilitation of wildlife populations in the core and buffer zones, is another important management issues. Currently, game cannot access the natural mineral lick area hence they are subjected to mineral and nutritional deficiencies leading to further declines in population numbers or out-ward migration of locally resident wildlife. Some game will be confined inside the fence placing them also at risk of malnutrition, while the fence can cause fence induced injury and mortality, as well as exclusion of wildlife from current foraging areas. Indeed, the significance of Tsodilo is hinged on both cultural and natural resources, hence the need to protect and conserve the natural wildlife ecosystem of Tsodilo World Heritage Site.

8.6.1.3 Potential socio-economic impact: The impact in terms of restriction of access to natural resources that are important to the Tsodilo communities must also be mitigated for.

The current fence structure must be redesigned to deal with all the above ecological and game management issues which are critical to the sustenance, growth and movement of the wildlife of Tsodilo World Heritage Site. The fence should thus be subjected to appropriate modifications or re-alignments in order to create conducive ecological conditions for the management of game in the core area and the buffer zone of the site. Notwithstanding the need to urgently address this issue, it should be understood that fencing will continue to be a highly contentious issue where the potential negative impacts on wildlife are significant and may not be fully mitigated.

8.6.2 Vegetation of Tsodilo World Heritage Site (biota and natural communities)

Tsodilo World Heritage Site offer unique habitats in the Kalahari and because of its isolation some reptiles, mammals and plants found are likely to have a gene pool that is different from other areas. Alec Campbell (1994) points out that most research in Tsodilo has been archaeological with practically no natural history research. If any research has taken place it has been very limited. With regards to baseline data on plant species, the November 2008 botanical survey lists only 52 plant species along transects marked for firebreak construction (Sithole *et al.* 2008) yet national herbarium records put the figure at 93. Therefore, there is need for baseline studies on plant species at Tsodilo. For example hills always offer a variety from the surrounding landscape and are repository of high diversity. Vegetation analysis of Tsodilo is likely to yield a number of vegetation communities, especially if studies could cover all seasons. In addition, there is need to ascertain the linkages of fauna resources to environment, human society & economy. Other issues include the use of local names for plants (and these were written by non residents) which presents a challenge, uncontrolled livestock grazing and browsing as locals are letting their livestock into the core area through the gate to access water. Also, uncontrolled veldt fires, camping by visitors who illegally enter the World Heritage Site, uncontrolled firewood collection by overnight campers, and the potential introduction of alien invasive species are key management issues relating to the biota of Tsodilo. Movement of livestock within the core area is currently under control as a fence already exists, while access to water is going to be implemented by the Tsodilo Management Authority.

9.0 MANAGEMENT OBJECTIVES AND STRATEGIES

9.1 Introduction

This section provides the objectives and strategies for dealing with the identified key management issues identified for Tsodilo World Heritage Site. The management issues are; Rock Art and Archaeology, local community and intangible heritage, public presentation and visitor management, protection of vegetation and animals, human resources and site administration.

9.2 Objectives and Strategies

For each above mentioned management issue objective (s) and specific strategies are recommended, including the general monitoring and review tools.

9.2.1 ROCK ART AND ARCHAEOLOGY

9.2.1.1 Documentation of Rock Art of Tsodilo

The main objectives and strategies for updating the baseline and complete documentation of Tsodilo rock art and archaeological sites, development of operational documentation guidelines, conservation and interpretation of rock art and archaeological sites are as follows;

Objective: 1

To have an updated baseline documentation of Tsodilo Rock Art Sites by 31st March 2012

Strategies:

1. Assess previously documented Tsodilo rock art records archived at the Botswana National Museum and the Rock Art Research Institute (RARI) by 31st December 2010
2. Revise the Site Record Form for rock art recording by the December 2010.
3. Reconcile the archived records with those currently at Tsodilo World heritage Site by 31st December 2010.
4. Undertake fieldwork to fill in the missing information by December 2011.
5. Update baseline database of Tsodilo at both the headquarters and Tsodilo Site by 31st March 2012

Monitoring and Review

- *Assessment reports, Record Form etc,*
- *Adherence to international recording standards, updated database.*
- *Adherence to collections and records access policies.*
- *Adherence to research ethic and related code of ethics.*

Objective: 2

To have operational rock art documentation guidelines by 31st March 2011

Strategies:

1. Assess previous site classification relating to rock art sites and ensure conformity to international standards on numbering and panels by 31st March 2011
2. Produce a manual on Rock Art Documentation guidelines by 31st March 2011.

Monitoring and Review

- *Adherence to international documentation standards.*

Objective: 3

To have fully documented the Rock Art sites on the visitor trails of Tsodilo by 31st March 2015

Strategies:

1. Conduct a refresher course on Rock Art Documentation for Tsodilo Staff and selected specialists by 30 September 2010.
2. Produce a consolidated documentation schedule for the site by 30 October 2010.
3. Document all sites and panels on the visitor trails [tracing the sites, mapping:-site elevation and site plans, 3D scanning, and photography] by 31st March 2015.
4. Create a digital database of the rock art of Tsodilo (including scanning of old slide photos) by March 2015.
5. Create a GIS database for all the archaeological sites (including rock art) of Tsodilo hills by March 2014.

Monitoring and Review

- *Adherence to international documentation standards,*
- *Training manuals, documentation schedules, site database, field records.*

9.2.1.2 INTERPRETATION AND VISITOR EXPERIENCE

The main objectives and strategies for promoting the interpretation of the rock art of Tsodilo, archaeological and interdisciplinary research towards building interpretive material are as follows;

Objectives:

1. To provide site interpretation in order to entertain and educate all visitors about the significance of the site by 31st March 2015.
2. To establish a visitor management policy by 30th September 2013.

Strategies

1. Compile of information on the cultural and natural heritage resources of Tsodilo by 30th April 2010.
2. Conduct an Interpretation workshop/course for Tour Guides by 31st June 2010.
3. Monitor Tour Guides and take remedial action where necessary by 31st June 2010
4. Produce site interpretative material (including conservation etiquette) for visitors by September 2010.
5. Produce Visitor Management Policy for the site by 31st December 2013.

Monitoring and Review

- *Adherence to national and international interpretation standards,*
- *Adherence to indigenous knowledge systems guidelines.*
- *Training manuals, management policy in place.*
- *Adherence to visitor management policies.*

9.2.1.3 ARCHAEOLOGICAL AND INTERDISCIPLINARY RESEARCH

The main objectives and strategies to create conducive environment for further research on the rock art and archaeological resources of Tsodilo are as follows;

Objectives:

1. To encourage further research on all rock art and the archaeological sites at Tsodilo by 31st March 2015.
2. To promote interdisciplinary research to get better understanding of Tsodilo's natural and cultural diversity by 31st March 2015

Strategies

1. Establish a reference library at Tsodilo in collaboration with other institutions by 31st March 2013
2. Create a conducive environment for research on cultural and natural heritage resources of Tsodilo by the 31st December 2015. [monitoring tools will include issuance of permits, access to research facilities, access to site records, provision of on-site accommodation etc]
3. Networking with other institutions on research issues of Tsodilo through exchange of information by 31st March 2015.
4. To maintain one picnic spot as a campsite for researchers by 31st March 2013.

Monitoring and Review

- *Operational reference Library, increase research on Tsodilo and active networking with other institutions.*
 - *Adherence to library and information access policies.*
- Adherence to national research policies and regulations.*

9.2.1.4 CONSERVATION OF ROCK ART AND ARCHAEOLOGICAL RESOURCES

The main objectives and strategies for undertaking rock art preventive and interventive (physical) conservation measures, including conservation of archaeological sites, implementation of

environmental impact assessments and maintenance of landscape integrity towards maintaining the Outstanding Universal Value of the site are as follows;

Overall Objective

To maintain and conserve the Outstanding Universal Value of Tsodilo World Heritage Site by March 2015.

Specific Objectives

Objective: 1

Undertake preventive and interventive rock art conservation measures for all sites along the trails by March 2015

Strategies

1. Conduct basic training on preventive and interventive conservation measures for staff at Tsodilo by March 2011.
2. Carry out condition assessment of all rock art sites on the trails by December 2011.
3. Review the 1993/4 Alec Campbell condition assessments reports by March 2014
4. Carry out Geo-chemical analysis of the rock formations and salts at Tsodilo by March 2012.
5. Implement interventive conservation strategies by March 2015
6. Produce routine site inspection reports for selected rock art sites in Tsodilo by March 2015.
7. Establish a conservation laboratory/archive for Tsodilo World Heritage Site by March 2012.

Monitoring and Review

- *Adherence to international conservation standards.*

Training manuals, conservation schedules, inspection site reports.

Objective: 2

To conserve and protect all the Archaeological sites in the World Heritage Site by March 2015.

Strategies

1. Identify all the archaeological sites in Tsodilo by March 2011.
2. Create a digital and manual database for all the sites by March 2012.
3. Produce condition assessment reports for selected sites (including those on trails) by March 2012.
4. Implement preventive and interventive measures at identified archaeological sites by March 2015.

Monitoring and Review

- *Adherence to international assessment standards, digital and manual databases, intervention measures reports.*
- *Periodic condition reports, digital and electronic databases.*

Objective: 3

To implement the environmental management tools at Tsodilo World Heritage Site by March 2015

Strategies

1. Conduct pre-development Environmental Impact Assessments (including archaeological) for all developmental projects within the boundaries of the World Heritage Site by March 2015.
2. Raise awareness among potential developers on the significance of Tsodilo and the need to undertake Environmental Impact Assessments by May 2010.
3. Implement a moratorium on all new developments in the core until March 2015. [except for the on-going visitor orientation shelter near the museum]

Monitoring and Review

- *Adherence to international Environmental Impact Assessments standards, records for awareness meetings.*
- *Environmental Impact Assessment Reports.*

Objective: 4

To maintain the wilderness and integrity of the Tsodilo World Heritage Site by March 2015

Strategies

1. Repaint the water tanks with environment friendly colours by March 2010.
2. Implement an alternative source of energy at Tsodilo by March 2012.
3. Rehabilitate old camp sites using indigenous plant species around the core area by March 2011.
4. Review and rehabilitate where necessary the fire break to reduce its visibility on the landscape by December 2010.
5. Review and implement litter disposal strategies at Tsodilo by March 2015.

Monitoring and Review

- *Repainted tanks, silent generator, old campsites and fire break rehabilitated, maintenance of litter strategy.*
- *Adherence to environmental policies*
- *Adherence to Waste Disposal policies and regulations*

9.2.2 PROTECTION OF VEGETATION AND WILDLIFE

9.2.2.1 Protection of wildlife

The main objectives and strategies to deal with all the ecological and game management issues which are critical to the sustenance, growth and movement of the wildlife of Tsodilo hills are as follows;

Objective: 1

To provide conducive ecological conditions for game management within the core area and buffer zone of Tsodilo hills by January 2011

Strategies

1. Undertake wildlife baseline assessments to ascertain the impact of the current fence on animal populations in the core area by June 2010
2. Undertake appropriate modifications or re-alignments of the existing fence in order to create game corridors in the core area by Dec 2010.
3. Re-design the layout of the fence around the core area to improve the aesthetics of the landscape by Dec 2010.
4. Re-design the firebreak around the fence to improve the aesthetics of the landscape by Dec 2010

Monitoring and review

- *Baseline assessment reports on animal populations; Modification feasibility reports; modification plans; actual modifications; project implementation reports; monitoring reports on impact.*

9.2.2.2 PROTECTION AND MANAGEMENT OF VEGETATION

The main objectives and strategies to deal with protection and management of vegetation in core area of the Tsodilo hills are as follows;

Objectives: 2

- To retain the integrity of the site by conserving the indigenous plant communities on site through appropriate management by March 2015.
- To conserve indigenous plant species valued by the local communities for medicinal, spiritual or amenity purposes and to ensure only sustainable levels of harvesting such plants by March 2015
- Develop and implement fire management strategies to protect the vegetation by March 2015.
- To enhance control against the presence of livestock within the core area by March 2015.

Strategies

1. Undertake baseline studies on the vegetation of Tsodilo by Dec 2015
2. Undertake research in identifying the link between vegetation and local communities by Dec 2013.
3. Provide controlled access to water in the core for domestic livestock whilst TMA provides a permanent solution to the water issue by Dec 2010.
4. Implement stakeholder driven Wild fire management strategies for both the core and buffer areas by Dec 2015.
5. Control of camping and associated activities in the core area of the World Heritage Site.

Monitoring & Review

- *Regular vegetation mapping and the comparison of previous maps to indicate trends in change.*
- *Monitoring of key representative area and key plant species to indicate trends in change.*

9.2.3 LOCAL COMMUNITY AND INTANGIBLE HERITAGE

The main objectives and strategies to provide water to communities and their livestock in the buffer zone, administration of the Tsodilo community curio shop, management of the intangible heritage of Tsodilo hills, promoting further research on the intangible values of the site, and improving relations between the communities and other stakeholders are as follows;

Objective: 1

Provide water to communities and livestock in the buffer zone as per the 2005 TIMP by March 2011.

Strategies:

1. Tsodilo Management Authority to sink borehole and related equipment by March 2011.

Monitoring and review:

- *Adherence to water abstraction policies and regulations.*

Objective: 2

Provide visitors with curios from the local communities by January 2010.

Strategy:

1. TMA shall resuscitate of the curio shop by January 2010.

Monitoring and review:

- *Curio shop opens to visitors.*
- *Adherence to local polices regulating curio shops.*

Objective: 3

To protect and maintain the intangible heritage values of Tsodilo World Heritage Site by June 2015

Strategies:

1. To document all the intangible values of Tsodilo hill by March 2015
2. To provide guidelines on the conservation and use of the intangible heritage by June 2010
3. To control access to intangible heritage sites in the core area by February 2010.
4. To encourage research on intangible heritage at Tsodilo hill by March 2013.
5. Promote intangible heritage festival days on an annual basis by March 2015.

Monitoring and review:

- *Guidelines and documentation reports.*
- *Visitors to sacred place will be accompanied local guides from selected elderly members of the community*
- *Adherence to conservation principles and guidelines*

Objective: 4

To maintain a harmonious relationship with the local community by March 2015

Strategies:

1. To hold a consultative meetings with communities quarterly by March 2015
2. To keep proper record of all proceedings and agreements by March 2015.
3. To organise cultural festivals for the local community by 2015

Monitoring and review:

- *Availability of minutes/record of all proceedings.*
- *Hold cultural festival once a year*

Objective: 5

To display and share the culture of the local communities by 2015

Strategies:

1. TMA to implement the Cultural Centre and Craft shop concept by March 2015 as per 2005 TAMP.

Monitoring and review:

- Cultural centre and craft shop in place.

9.2.4 PUBLIC PRESENTATION AND VISITOR MANAGEMENT

The main objectives and strategies for improving material available for visitors, training of tour guides, branding of Tsodilo marketing materials and services, improving access to the site, promoting the site as an educational resource, raise awareness on the significance of Tsodilo hills and visitor management in the core area of the World Heritage Sites are as follows;

Overall Objective:

To create an effective site presentation and visitor management system for Tsodilo World Heritage Site for purposes of appreciation, leisure and education by the year 2015.

Specific objectives;

- To have updated and informative materials for the visitors by March 2011.
- To have adequately trained guides by May 2010.
- To improve access to the site by March 2012.
- To promote the site as an educational resource by March 2015.
- To increase awareness on the significance of Tsodilo World Heritage Site by March 2015.
- To effectively monitor visitor movement in the core area by December 2015.

Objective: 1

Provide updated and informative materials for visitors by March 2015.

Strategies

1. To develop a map of the Tsodilo Facilities by June 2010
2. To update the existing print materials for the site by June 2010
3. To review the museum exhibition by March 2012
4. To hold live shows on the culture of local communities by March 2015

Monitoring and Review

- *Map of Tsodilo facilities*
- *Brochures, pamphlets, banners, booklets, guide-lets*
- *Revamped exhibition*
- *Live shows*
- *Adherence to Interpretation policies*

Objective: 2

To train tour guides by March 2015.

Strategies

1. To update literature on the cultural and natural resources of Tsodilo by June 2010
2. To conduct an interpretation course for tour guides June 2010
3. To provide uniform for all guides by June 2010.
4. To review and monitoring of guides performance by 2015

Monitoring and Review

- *Updated literature*
- *Training Manual and Evaluation Report*
- *Uniform*
- *Evaluation forms and Reports*

Objective: 3

Improve access to the sites for all visitors by March 2015.

Strategies

1. Review the existing signage within and outside the World Heritage Site boundary by June 2010
2. Conduct regular monitoring and maintenance of signage within the core area by March 2015.
3. Assess and rehabilitate existing roads and trails for controlled and ease of movement within the site by March 2015.

Monitoring and Review

- *Policies on signage*
- *routine monitoring, routine condition assessments, reports*

Objective: 4

To promote the site as an educational resource by March 2015

Strategies

1. Compile relevant educational information on Tsodilo by March 2011
2. Develop new outreach/education programmes for consideration by March 2012.
3. Review and implement existing educational programmes by March 2015
4. Create synergies with other institutions offering educational programmes by March 2015
5. Construct a visitor orientation facility at Tsodilo by December 2010

Monitoring and Review

- *Teacher's manual, Teacher's guide, student's workbook*
- *New educational outreach programmes*
- *Reviewed educational programmes, implementation reports*
- *Collaborations, exchange programmes*
- *Adherence to national educational policies and regulations*

Objective: 5

To raise awareness on the significance of Tsodilo World Heritage Site by March 2015.

Strategies

1. Produce branded materials for the site by June 2010.
2. Promote the site through the media (print and electronic) and the website by March 2015.
3. Collaborate with Botswana Tourism Board annually in promoting the site by March 2015.

Monitoring and Review

- *World heritage emblem incorporation, brand manual, souvenirs*
- *Website, TV and Radio promotions, print advertising*
- *Collaboration, Promotions*
- *Adherence to national promotional and advertising policies.*

Objective: 6

To monitor visitor movement in the core area by December 2015.

Strategies

1. Develop a visitor management policy by June 2010.
2. Employ security guards (24hrs) on shifts by June 2010.
3. Develop a booking system for the site by June 2010.
4. Have alternating routes of the site to allow for maintenance of the site by March 2015.

Monitoring and Review

- *Visitor Management Policy document*
- *Routine security check reports*
- *Adherence to booking systems, audited financial reports*
- *Routine monitoring, routine condition assessment, reports*
- *Adherence to visitor management policies.*

9.2.5 HUMAN RESOURCES AND SITE ADMINISTRATION

The main objectives and strategies for human resources- capacity build and skills development for the implementation of this management plan, provision of accommodation and office space to the core staff, preparedness for disaster management (including occupational health and safety), and auditable systems to improve service delivery, as well as improve communication within the core area of the World Heritage site are as follows;

9.2.5.1 Human Resources; capacity building at Tsodilo World Heritage Site

Objective 1

To have sufficient manpower to execute the administration, conservation and presentation of Tsodilo World Heritage Site by 31st March 2015.

Strategies

1. To design and implement a contractual agreement for Tour Guides with Tsodilo Community Development Trust by 31st March 2010
2. To consider securing and purchasing a second vehicle for site patrol, fence and firebreak maintenance and general management by 31st December 2010.
3. To employ an Education Officer for Tsodilo by March 2011.
4. To train the site manager in administration management by March 2011.
5. To employ five security personnel (3 security guards and 2 night watchmen) for manning the entrance of Tsodilo and the Administration block respectively by March 2011.

Objective 2

To build capacity and develop skills for Tsodilo staff by 31st March 2015

Strategies

1. To have a frequently audited capacity plan for Tsodilo by 31st December 2015
2. To offer a Guiding course to the Staff and Community Guides of Tsodilo by 31st December 2010
3. To undertake a Rock Art Conservation and Monitoring Course by 31st December 2010
4. To train one officer in GIS and database management by 31st December 2011

Objective 3

To relocate staff housing to the Tsodilo buffer zone as per 2005 TIMP recommendation by 31st March 2015.

Strategies

1. To build a maximum of five new staff houses using local architectural material by 31st December 2015.

Objective 4

To ensure adherence to best practice in environmental management in accordance with ISO standards towards the integrity of the landscape by 31st March 2015

Strategies

1. To design and implement a monitoring program for organic and inorganic waste by 31st December 2010
2. To monitor levels of contamination of underground water by 31st December 2010
3. To conduct a course on Safety and Wellness to Tsodilo staff by 31st December 2011
4. To find and develop an alternative source of electricity to reduce noise pollution by 31st December 2010

Objective 5

To increase accountability, efficiency and service delivery at Tsodilo by 31st March 2015

Strategies

1. To start revenue collection at Tsodilo World Heritage Site by 30th April 2010
2. To implement auditable transaction processing systems such as booking systems and cash movements by 31st March 2011

Objective 6

To enhance communication between various units operating on Site by 31st December 2012

Strategies

1. To provide two or four way radio communication systems to Tsodilo staff by 31st December 2010

Objective 7

To improve security on Site by 31st December 2015

Strategies

1. To have twenty four hour security at the Site by 31st December 2012.

10.0 IMPLEMENTATION, MONITORING AND REVIEW

This section provides the implementation and monitoring framework for implementing the Tsodilo Core Area Management Plan.

10.1 Implementation

- The Botswana National Museum is responsible for the implementation of the Tsodilo Core Management Plan. This will be done through the services of Tsodilo World Heritage Site Manager and the North West Regional office, while the 2005 TAMP will be implemented by the Tsodilo Management Authority.
- The Site Manager of Tsodilo World Heritage Site, through directions from Botswana National Museum, will be responsible for implementing the specific action plans emanating from the plan.
- Other partners in the implementation of the Tsodilo Core Area Management Plan will be identified and engaged by Botswana National Museum, and in line with existing national policy on such partnerships.
- Funding for the Implementation of the Tsodilo Core Area Management Plan will primarily be provided by the Republic of Botswana through the Ministry of Environment, Wildlife and Tourism; however strategic partners will be identified and engaged in line with prevailing government policy.

10.2 Monitoring and Review

- The continuous monitoring of the implementation process will be done by the Botswana National Museum, through a mid term review in 2012, followed by the final review in 2015. The review process will involve all stakeholders for Tsodilo World Heritage Site.
- Botswana National Museum will carry out internal annual progress checks on the implementation of the plan to identify and address bottlenecks in the implementation of the plan.
- Botswana, as a State Party to UNESCO, and through Botswana National Museum, will submit progress reports in line with World Heritage Committee schedules, and of significance is the 2nd Cycle of African Periodic Reporting expected to be submitted by 2012.

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11. Annexes

Annexure 1: Gant Chart showing Implementation Schedule for Objectives and Strategies

NB; print and insert excel document (

Annexure 2: Tsodilo Management Plan in Photos





Annexure: 3

TSODILO CORE AREA MANAGEMENT PLAN

CONSULTATIVE MEETING WITH STAKEHOLDERS

Meeting 1: WORKSHOP PARTICIPANTS; TSODILO CORE AREA MANAGEMENT PLAN FORMULATION

DATE: 2nd June 2009

VENUE: SHAKAWE POLICE BOARDROOM

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10. Winani Kgwatalala	Botswana National Museum – Ethnology	winanikgwatalala@yahoo.uk
11. Mohutsiwa Gabadirwe	Botswana National Museum - Natural History	mogabadirwe@yahoo.com
12. Benjamin Smith	Rock Art Research Institute Wits University	bws@rockart.wits.ac.za
13. Agisanyang Makgatle	University of Botswana, Archaeology Unit	kediuv@yahoo.co.uk
14. Stefania Merlo	University of Botswana, Archaeology Unit	merbs@mopipi.ub.bw
15. Decio Jose D. Muianga	Eduardo Mondlane University, Mozambique	Decio.jose@uem.ml
16. Kgosi V. Mokobi	Botswana National Museum – Archaeology	Kgosi_chief@yahoo.com
17. Kaelo Mokomo	KURU/LETLOA	Kaelo@kuru.co.bw
18. Phillip Segadika	Botswana National Museum – Archaeology	psegadika@yahoo.co.uk

19. Pascall Taruvinga	National Museum and Monuments of Zimbabwe, Zimbabwe	pastar@143@yahoo.com
20. Gertrude M. Matswiri	Botswana National Museum – Archaeology	getrudematswiri@yahoo.com
21. Lorraine Gombalume	Art & Culture	logombs@gmail.com
22. Darkie Kamunduuu	Tsodilo World Heritage Site-BNM	kamunduuou@yahoo.com

Meeting 2: Consultations with Local Community

DATE: 9th June 2009

VENUE: Main Campsite, Tsodilo World Heritage Site

- | | |
|-------------------------|--|
| 1. Sewelo Fane | Site Manager, Tsodilo World Heritage Site, Botswana National Museum |
| 2. Phillip Segadika | Botswana National Museum (BNM) |
| 3. Pascall Taruvinga | National Museums and Monuments of Zimbabwe, Zimbabwe |
| 4. Winani Kgwatalala | Botswana National Museum |
| 5. Gertrude Matswiri | Botswana National Museum |
| 6. Kedibonye Phorake | Tsodilo Community Development Trust |
| 7. Phorake Katunda | Tsodilo Community Development Trust |
| 8. Kabelo Veku | Department of Civil Aviation |
| 8. Olebile Randle | Local Tour Guide |
| 9. Sehenyi Tlotlego | Trust for the Okavango Development and Community Initiatives, (TOCADI) |
| 10. Sekora James | Local Tour Guide |
| 11. Tsetsana Xixae | Local Tour Guide |
| 12. Decio Jose | Eduardo Mondlane University Mozambique |
| 13. Mohutsiwa Gabadirwe | Botswana National Museum |
| 14. Emmanuel Bwasiri | Kondoa World Heritage Site, Tanzania |
| 15. Tendayi Phineas | Botswana National Museum |
| 16. Lorraine Gombalume | Arts & Culture |
| 17. Tebogo Segadika | Tsodilo World Heritage Site, Botswana National Museum |
| 18. Agisanyang Makgatle | Archaeology Unit University of Botswana |
| 19. Lebonetse L. Mathe | Assistant Curator, Tsodilo World Heritage Site, Botswana National Museum |
| 20. Kabo Kelebetse | Museum Assistant Tsodilo World Heritage Site, Botswana National Museum |
| 21. Darkie Kamunduuu | Tsodilo World Heritage Site, Botswana National Museum |
| 22. Edson S. Chaba | Meteorological Services Okavango |
| 23. Lewis Mokowe | Department of Wildlife and National Parks |
| 24. Phillimon Letswee | Department of Forestry and Range Resources, Shakawe |

Meeting 3: CONSULTATIVE MEETING WITH TSODILO COMMUNITY DEVELOPMENT TRUST BOARD (TCDT) AND OTHER COMMUNITY REPRESENTATIVES

DATE: 4th June 2009

VENUE: MAIN CAMPSITE, TSODILO WORLD HERITAGE SITE

ATTENDANCE REGISTER

1. Gertrude M. Matswiri	Botswana National Museum
2. Sewelo Fane	Tsodilo World Heritage Site, Botswana National Museum
3. Samochau Mokate	Village Development Committee; Deputy Chairperson
4. Phorake Katunda	Tsodilo Community Development Trust Chair
5. Kelebetse Keashetla	Representative- Chief
6. Kebigile Mokgosi	Tsodilo Community Development Trust- Member
7. Kedibonye Phorake	Tsodilo Community Development Trust - Vice Secretary
8. Olopeng Mothaba	Tsodilo Community Development Trust - Member
9. M. Mokolobetsi	Tsodilo Community Development Trust - Member
10. Kapaletswe Mototegi	Tsodilo Community Development Trust Tsodilo Community Development Trust - Secretary
11. Kesentseng Mothaba	Local Tour Guide, Tsodilo Management Authority- Member
12. Ketletseeng Kakona	Local Tour Guide
13. Sekora James	Local Tour Guide
14. Nxao Xh	Field Assistant Tsodilo World Heritage Site, BNM
15. Keemekae Shine Kelebetse	Field Assistant Tsodilo World Heritage Sites, BNM
16. Gaboganwe Baemedi	Fence Erector Tsodilo World Heritage Site, BNM
17. Kabo Kelebetse	Museum Assistant Tsodilo World Heritage Site, BNM
18. Stefania Merlo	Archaeology Unit, University of Botswana
19. Tebogo F. Segadika	Tsodilo World Heritage Site, BNM
20. Agisanyang Makgatle	Archaeology Unit, University of Botswana
21. Winani Kgwatalala	Botswana National Museum- Principal Curator- Ethnology
22. Pascal Taruvinga	National Museums & Monuments of Zimbabwe, Zimbabwe
23. Lorraine Gombalume	Department of Arts & Culture
24. Emmanuel Bwasiri	Site Manager, Kondoa World Heritage Site, Tanzania
25. Tendayi Phineas	Botswana National Museum- Curator- Education
26. Phillip Segadika	Botswana National Museum
27. Mohutsiwa Gabadirwe	Botswana National Museum

Meeting 4: WORKSHOP PARTICIPANTS: PRESENTATION OF TSODILO CORE AREA MANAGEMENT PLAN

CONSULTATIVE MEETING WITH TIMP 2005 REFERENCE TEAM

DATE: 11th June 2009

VENUE: MAUN LODGE

NAME	DEPT/INSTITUTION	CONTACTS
1. Dikgang Otsile	Department of Environmental Affairs	flavizz@yahoo.co.uk
2. Ramogaupi Gaborekwe	Department of Environmental Affairs	rgaborekwe@gov.bw
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5. Theresa S. Molefe	Department of Forestry and Range Resources	6862455
6. Orapeleng Modimooopelo	District Administration	omodimooopelo@yahoo.com 6874023
7. Matlhodi Segokgo	Botswana National Museum	3922313
8. John P. Fella	Nhabe Museum	museum@botsnet.bw 6861346
9. Sehenyi Tlotlego	TOCaDI	sehenyi@yahoo.co.uk
10. Emmanuel Bwasiri	Antiquities Department, Kondoia WHS, Tanzania	bwasiri@yahoo.com
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12. Joseph W.B.Barati	Tawana Land board	jbarati@gov.bw 6860292
13. Decio Jose Muianga	Eduardo Mondlane University, Mozambique	decio.jose@uem.ml
14. Pascall Taruvinga	National Museums & Monuments of Zimbabwe, Zimbabwe	pastar143@yahoo.com
15. Lorraine Gombalume	Department of Arts & Culture	logombs@gmail.com
16. Phillip Segadika	Botswana National Museum	psegadika@yahoo.co.uk
17. Gertrude M. Matswiri	Botswana National Museum	getrudematswiri@yahoo.com
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19. Mohutsiwa Gabadirwe	Botswana National Museum	moqabadirwe@yahoo.com

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TSODILO CORE AREA MANAGEMENT PLAN FORMULATION TEAM

23. Lebonetse L. Mathe	Tsodilo World Heritage Site, BNM	Rock Art, Archaeology Conservation	B.A Archaeology	Formatted: Centered Formatted: Left Formatted Table
24. Tebogo Segadika	Tsodilo World Heritage Site, BNM	Public Programs and presentation	Certificate, Museum Studies	
25. Tendayi Phineas	Botswana National Museum – Education	Public Programs and presentation	Post Graduate in Education, B.A Humanities	
26. Emmanuel J. Bwasiri	Kondoa World Heritage Site Tanzania	Intangible Heritage and Community Developments	B.A Archaeology, M.A Archaeology	
27. Sewelo Fane	Tsodilo World Heritage Site	Human Resources and Administration	Bsc Chemistry, Post Graduate Diploma Education	
28. Winani Kgwatalala	Botswana National Museum – Ethnology	Intangible Heritage and Community Developments	BA History	
29. Mohutsiwa Gabadirwe	Botswana National Museum - Natural History	Rock Art, Archaeology Conservation	Bsc Geology, MA Geomorphology and Palaeontology	Deleted: Archaeology
30. Benjamin Smith	Rock Art Research Institute Wits University	rock art Presentation and Conservation Consultant	PhD Archaeology	
31. Agisanyang Makgatle	University of Botswana, Archaeology Unit	GIS and mapping,	4 th Year Archaeology Student	Formatted: Left Formatted: Superscript
32. Stefania Merlo	University of Botswana, Archaeology Unit	GIS and Mapping	<u>M.A, GIS, PhD Candidate</u>	Formatted: Underline Formatted: Left
33. Decio Jose D. Muianga	Eduardo Mondlane University, Mozambique	Rock Art, Archaeology Conservation	BA Hons History, B.A Hons Rock Art	Formatted: Left
34. Phillip Segadika	Botswana National Museum – Archaeology	Co-ordination and General Compliance	BA Archaeology Post Graduate Diploma Education MA Landscape Archaeology	
35. Pascall Taruvinga	National Museum and Monuments of Zimbabwe, Zimbabwe	Co-ordination and General Compliance	B.A Archaeology M.A Archaeology	
36. Gertrude M. Matswiri	Botswana National Museum – Archaeology	Public Programs and presentation	B.A Archaeology Post Graduate Diploma Education	
37. Lorraine Gombalume	Art & Culture	Public Programs and presentation, Design	BsC Hons Design	
38. Darkie Kamunduo	Tsodilo World Heritage Site-BNM	Rock Art, Archaeology Conservation	Certificate in Museum Studies	Deleted: Archaeology

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