

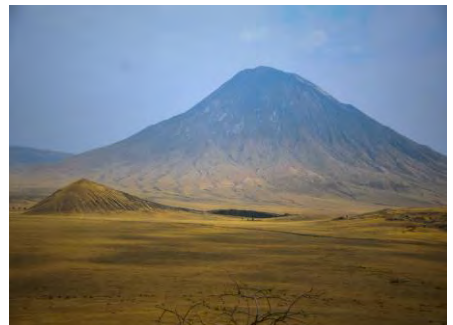


NGORONGORO CONSERVATION AREA AUTHORITY

DEPARTMENT OF CULTURAL HERITAGE

CULTURAL AND GEOLOGICAL HERITAGE MANAGEMENT PLAN

2021-2028



APPROVAL PAGE

This Ngorongoro Conservation Area Heritage Management Plan (NCA-HMP) has been approved for implementation by the Board of Directors of the Ngorongoro Conservation Area Authority (NCAA).

Chairperson,
Board of Directors (NCAA).
Date

Conservation Commissioner
NCAA
Date.....

Foreword.

On behalf of Ngorongoro Conservation Area (NCA), I am very pleased that this new Cultural and Geological Heritage Management Plan, is finalized.

The new plan is an opportune for managing our heritage as a common responsibility to safeguard for future generations. People are becoming more and more conscious of the human cultures and values, regarding ancient cultural and geological sites as a common heritage. This management plan not only express our duty to preserve our heritage for future generations, but also makes clear that this is an obligation for all of people to play their part.

By decreeing NCA as a UNESCO (Hu) Man and Biosphere Reserve, a UNESCO World Heritage Site, Ngorongoro Lengai UNESCO Global Geo- Park and voted as the 7th Natural Wonders of Africa in 2013, UNESCO was not only acknowledging the outstanding significance of NCA but its exemplary current state of heritage conservation and preservation. This award would of course not have been possible without the tremendous dedication of the Ministry of Natural Resources and Tourism and the efforts of the NCA to manage it. However, the elaboration of this plan did not come without its occasional problems. Through this heritage Management Plan, the Department has developed a viable programme in which both conservation and a sustainable future development of the Heritage Sites are equally taken into account and harmonised.

I would like to extend my warmest appreciation to all of those who have contributed to the preparation of this Management Plan. I am truly looking forward to a co-operative effort aimed at tackling the numerous measures and to the continual development and updating of the Management Plan, in dialogue with the participants and other interested parties.

Conservation Commissioner
NCAA

EXECUTIVE SUMMARY

This Cultural and Geological Heritage Management Plan (CGHMP) has been produced according to the NCA General Management Plan, with some addition of heritage sites so as to make the plan more relevant to the day-to-day management needs of the Cultural Heritage Department.

The plan is intended to guide and facilitate the management, conservation, preservation, infrastructure development and sustainable uses permitted within the framework of the global world heritage management standard. An important underpinning of the CGHMP is the establishment of long-term strategies and management objectives for addressing heritage management problems and issues and for achieving a desired future. These objectives in turn provide the framework for determining what activities need to be implemented, when to undertake them, human resource and other requirements needed to implemented.

The two famous sites (Olduvai and Laetoli) among others were inscribed on the World Heritage List. The proposed heritage management plan will remain a dynamic plan with the required flexibility and responsiveness to changing NCA general management needs and priorities. It will also help ensure strong linkages between the Management Actions prescribed by the general management plan and the Annual Operations Plans developed by NCA management. However, through this heritage management plan, it is anticipated that the conservation, preservation, infrastructure development and definition of the boundaries is realized. It is therefore, through the efforts of the NCAA and other stakeholders to enhance the heritage sites within and outside NCAA to be the heart of tourism as a destination and ensure sustainable use for future generation.

To complement these innovations, the heritage management plan is designed to be flexible to incorporate future additions, such as the site operational manual, action plan as required. This adaptability will help keep the CGHMP up-to-date and better able to guide heritage management activities.

LIST OF ABBREVIATIONS

NCAA	Ngorongoro Conservation Area Authority
GMP	General Management Plan
MNRT	Ministry of Natural Resources and Tourism
WHC	World Heritage Centre
DoA	Department of Antiquities
NCA	Ngorongoro Conservation Area
UNESCO	United Nations Educational, Scientific and Cultural Organization
COSTECH	Tanzania Commission for Science and Technology
CGHMP	Cultural and Geological Heritage Management Plan
CHIA	Cultural heritage impact assessment
EARV's	East Africa Rift valley system
FGD	Focus Group Discussion
SENAPA	Serengeti National Park
TANAPA	Tanzania National Parks
NMT	National Museum of Tanzania
UDSM	University of Dar es Salaam
OUV	Outstanding Universal Value
BYA	Billion years ago
CHD	Cultural Heritage Department
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ICOMOS	International Council of Monuments and Sites
INTERPOL	International Police

IUCN	International Union for the Conversation of Nature
MYA	Million Years Ago
NEMC	National Environment Management Council
NHFR	Northern Highland Forest Reserve
NPC	Ngorongoro Pastoral Council
NVH	Northern Volcanic Highlands
PCR	Physical Cultural Resources
PN	Pastoral Neolithic
TAWIRI	Tanzania Wildlife Research Institution
TAWISA	Tanzania Wildlife Safari

CONTENTS

Approval	2
Foreword.....	3
Executive Summary.....	4
List of Abbreviations.....	5

CHAPTER ONE: INTRODUCTION

1.1 Background Information.....	9
1.2 Guiding principle.....	10
1.3 Achievements.....	11
1.4 Challenges.....	11
1.6 List of the Heritage sites.....	12

CHAPTER TWO: DESCRIPTION OF THE NCA HERITAGE ASSETS

2.1 General Information.....	16
2.2 Olduvai Gorge site.....	16
2.3 Laetoli Site.....	17
2.4 Shifting Sand.....	18
2.5 Nasera Rock.....	18
2.6 Engaruka Irrigation System Ruins.....	20
2.7 Mumba Rock Shelter.....	21
2.8 Amboni Caves	23
2.9 Kimondo Site.....	24
2.10 Empakai Crater	25
2.11 Olkarien Gorge.....	26
2.12 Engare-Sero Footprints.....	27
2.13 Rock Art Sites.....	28
2.14 Ngorongoro Burial Mounds.....	29
2.15 Maasai Sacred Tree Sites.....	31
2.16 Lake Ndutu.....	31
2.17 Museums and Information Centres.....	32

CHAPTER THREE: ASSESSMENT OF HERITAGE SIGNIFICANCE

3.1 General Description of NCA Heritage Assets.....	34
3.2 Authenticity and Integrity	34
3.3 General Statement of Significance.....	34
3.4 Assessments of Heritage Attributes/Values.....	35
3.5 Potential Vulnerability of NCA Heritage Assets.....	36
3.6 Policy Statement.....	37

CHAPTER 4. IDENTIFICATION AND ANALYSIS OF KEY MANAGEMENT ISSUES

4.1 Overview.....	38
4.2 Significant Issues for Management Planning.....	39
4.3 Analysis of Identified Key Management Issues.....	40
4.4 Management system, Community participation and Policy framework.....	45
4.5 Management, Planning and Development Issues.....	45
4.6 Conservation, Research and Training.....	45

CHAPTER 5: PROTECTION OF HERITAGE SITES –THE INSTRUMENTS

5.1 Overview.....	46
5.2 National Legislation and Policies.....	47
5.3 International Conventions and Treaties.....	49
5.4 Other fundamentals.....	52

CHAPTER 6: MANAGEMENT OBJECTIVES AND MEASURES- GUIDELINE FOR ACTION

6.1 Management Objectives and Measures.....	53
---	----

CHAPTER 7: MANAGEMENT SYSTEM

7.1 Structural Organization.....	60
7.2 Responsibilities.....	61

CHAPTER 8. IMPLEMENTATION AND MONITORING

8.1 Areas of focus.....	63
8.2 Controlling the Implementation of the Heritage Management Plan.....	63
8.3 Monitoring program.....	64
8.4 Indicators.....	64
8.5 Implementation.....	65

CHAPTER 1

INTRODUCTION

1.1 Background Information

The Ngorongoro Conservation Area (NCA) was established in 1959 by Ordinance No. 413 as amended by the Game Parks Law of Tanzania (Miscellaneous Amendments) Act No. 14 of 1975. The present Heritage Management Plan (CGHMP) has been developed by NCAA after attaining the custodianship of cultural heritage sites within and outside the Conservation Area in 2013 and 2019 respectively, from the Department of Antiquities in the Ministry of Natural Resources and Tourism (MNRT). NCA is a UNESCO (Hu) Man and Biosphere Reserve, a UNESCO World Heritage Site, Ngorongoro Lengai UNESCO Global Geo- Park and voted as the 7th Natural Wonders of Africa in 2013. Although NCA has a General Management Plan (GMP) in place, this CGHMP is an integrative plan that focuses on all cultural and geological heritage assets within and outside NCA including those with OUV such as Olduvai Gorge and Laetoli sites.

The plan documents and describes the abundant cultural and geological heritage assets within and outside NCA and their values/significances. Furthermore, the plan documents the challenges in terms of management, use, administration and presentation of these heritage assets to the public. Furthermore, it develops objectives, strategies and activities that can be implemented to address the challenges. It sums up with an action plan that specifies activities to be conducted at a given time and budget. Finally, it suggests monitoring and evaluation programs in consideration of the environmental management concerns, preparedness and as per UNESCO and WHC guidelines. The process of developing this CGHMP involved several stages such as meeting of task groups to establish basic issues on how to develop and implement Plan; critical review of relevant literature, research reports, consultations with different stakeholders as well as in-depth discussions with indigenous people within NCA and adjacent areas and thorough analysis of information collected.

This Plan has been developed through participatory processes involving the following stages:

- Identification of relevant stakeholders and conduct Stakeholders' meetings
- Identification and visiting of archaeological, geological, cultural and historical features within and outside NCA
- Assessment of values and significances of cultural and geological heritage assets
- Identification of planning issues and public concerns
- Clarification of management objectives

Furthermore, the description of archaeological, geological, historical and cultural assets within NCA World Heritage Site involved documentation of features of cultural and geologic heritage assets. Part of such

information was extracted from the already available reports, the previous and current NCA-GMP. Further information was obtained through stakeholders' consultation. The values and significances of cultural and geological heritage assets were assessed through a participatory process with great attention to stakeholder's perceptions and interests. Such information was collected through assessment of community perceptions on values of these assets from a local perspective. Assessment was also made in attempt to understand how such areas/assets were situated for tourism promotion and associated social-economic implications to the livelihoods of indigenous communities.

1.2 The guiding principles

1.2 Principle

The guiding principle of this Cultural and Geological Heritage Management Plan to improve the state of conservation and management of the World Heritage Sites and other cultural and geological heritage assets within NCA in such a way as to equally ensure the preservation, commercial viability and development of the sites and provide a roadmap for improvement of local communities' livelihoods and transform the Ngorongoro Conservation Area (NCA) to a sustainably protected, preserved and promoted World Heritage Site. With its integrated concept, the Cultural Heritage Department under NCA is pursuing the following specific aims;

- Ensure proper conservation, protection and management of the World heritage and other heritage assets
- Promoting awareness and appreciation of the extraordinary value of the World Heritage and other heritage asset,
- Conservation of the multifunctional quality and attractiveness of the World Heritage zone for Tanzanian and the world at large,
- Resolving and finding solutions for conflicts of interest and utilisation,
- Utilisation of the World Heritage sites for a comprehensive development strategy.
- Manage and develop archaeological and geological sites, landscapes, cultural practices and stories that reflect shared histories/heritage within and outside NCA,

This Heritage management Plan is also designed to provide information concerning the protection and future perspectives for the heritage aspects.

1.3 Achievements.

Since its establishment in 2014, The Cultural Heritage Department in NCA has been executing its obligations according to the existing laws and regulations. To date, department has expanded to include nine (9) cultural heritage sites and four (4) museums/information centres occurring in four (4) Tanzania mainland regions, namely Arusha (7), Mbeya (1) and Tanga region (1). Furthermore, the responsibility for conservation, management and development of cultural and geological heritage sites and resources within NCA and beyond the area where NCAA exercises jurisdiction were taken seriously into account and harmonized.

1.4 Constraints /Challenges

In spite of this impressive record of achievements, there are various socio-economic, cultural, legal and policy challenges as follows;

- Indigenous economic interest as a threat to the management of cultural and geological heritage assets
- Conflicts between tourism, conservation activities and socio-cultural values
- Conflicts between conservation of cultural and geological heritage assets and land use
- Lack of community participation in the management of the assets
- Conflicting sectoral policies and institutional limitations associated with the management of cultural and geological heritage assets.

Therefore, the development of this Management Plan is to ensure safeguarding, conservation, community participation and management of the heritage assets.

1.5 Cultural and Geological heritage sites Covered by this CGHMP

This Plan covers all known cultural and geological heritage sites as well as all museums and information centres under the Cultural Heritage Department inside and outside NCA that may be impacted, either directly or indirectly, by development activities. The Plan will be implemented in all issues related to tangible and intangible heritage aspects within NCAA's jurisdiction. It spans vast expanses of all NCA protected area, which lies between longitude 35°30'E and latitude 3°15'S covering an area of 8,292 km² and other areas entrusted to NCA. The cultural and geological heritage sites as well as museums and information centres covered by this CGHMP are listed in **table 1**.

Table 1.0 Heritage Sites and Museums/Information Centers under NCAA

S/N	Heritage Type	Site Name	Location	Conservation status	Development Status	Short Description
1	Archaeological and Paleontological sites	Olduvai Gorge	-2.99618 S 35.35220 E	Good	Developed	It is the site that holds evidence of the existence of the human ancestors dating from 2mya to the present
		Laetoli	-3.22826 S 35.19312 E	Good	Moderate	It is famous for its hominid footprints preserved in volcanic ash and the remains of the hominin fossils dating from 3.6Mya.
2	Archaeological sites	Nasera Rock-shelter	Gol Mountain 2.74013, S 35.35898 E	Good	NO	This is a Stone Age site excavated by Leakey and Michael Mehlman from 1930s-1970s
		Mumba Rock shelter	3° - 174° 7" E 3° - 32° 26" S,	Good	NO	It is a rich Archaeological site with a clear transition between the Middle Stone Age and Later Stone Age
		Lake Ndutu	3.02243,34.98959	Good	NO	This is a seasonal soda lake in the Serengeti, adjacent to lake Masek and the Main Gorge at Olduvai. It was excavated by the late A.A. Mturi in 1973 where amount of lithics and faunal in association with Ndutu cranium was found.
		Engaruka Ruins	2°58'58.80"S 35°57'0.00"E and <u>2°58'58.80"S</u> <u>35°57'0.00"E</u>	Good	Moderate	The site is unique for the remains of terraced irrigated fields, stone/lined irrigation furrows, houses, stone circles and graves. The first archaeological investigation of the area was in 1900s.

3	Graves and Burial mounds	Crater burial mounds	Crater floor 3.21156,35.50077	Good	NO	It is believed that the graves belong to Datoga tribe. The site has a great historical importance for nomadic pastoralists (Datoga) as it highlights the relationship between pastoralists and Ngorongoro wildlife in the last century.
4	Ritual sites	Oreteti tree (<i>Ficus thorningii</i>)	Esirwa	Good	NO	These are the sites involving the traditions of a specific community. The activities performed here is more appealing to their supernatural being. Natural conservation of these sites has been an integral part of the community.
		Datoga burial mounds	Crater floor	Good	NO	
		Shifting sand	Olduvai -2.94502,35.31339	Good	NO	
		Eseketeti mountain	Kakesio	Good	NO	
		Oreteti tree (<i>Ficus thorningii</i>)	Kakesio	Good	NO	
5.	Rock Art sites	Mumba rock shelter	Eyasi- 3.53735,35.29973	Good	NO	These are the sites with the representation of the human-made markings placed on natural rock. The sites with Maasai Olpul continue to be of importance to indigenous people.
		Nasera Rock shelter	Gol Mountain	Good	NO	
		Kiloki Maasai Olpul	TAWISA	Good	NO	
		Noekeny Maasai Olpul	Kakesio	Good	NO	

		Engiteng Olpul	Kakesio	Good	NO	
		Nooltiyog Maasai Olpul	Kakesio	Good	NO	
6.	Geo sites/ Landscape and Natural features	Ngorongoro Crater	Ngorongoro	Good	Tourists' services and seasonal roads has been developed	It is the largest unbroken and un flooded caldera in the world. It is well known as the home to a diverse array of wild animals.
		Empakai Crater	Naiyobi 2.91054, 35.86311	Good	NO	These are unique geological sites formed during the Jurassic age about 150 million years ago
		Olmoti Crater	Nainokanoka	Good	NO	
		Malanja Depression	Malanja	Good	No	
		Shifting sand	Olduvai	Good	NO	These are magnetized fine ashes rolled in black sand dunes, which are believed to be blown from Oldonyo Lengai. It is also the most respected place by the Masai community as a worship place.
		Olkarien Gorge	Gol Mountain	Good	NO	These are unique geological sites formed during the Jurassic age about 150 million years ago
		Breathing holes	Olbalbal	Good	NO	
		Amboni Cave	Tanga:5004's 39003'E	Good	Moderate	
7.	Historical monuments	Germany house foundation	Munge river	Good	No	This is the historical building during the German colonial period. It is an important for the historic architecture.

8.	Museums/information centres	Olduvai Museum	Olduvai Gorge	Good	developed	These are public centers where research results are presented to the public through exhibitions.
		Leakey Living Museum	Olduvai Gorge 2.98672, 35.34429	Good	Developed	
		Laetoli Museum	Laetoli	Average	NO	
		Kimondo Museum	Songwe	Good	Renovations are on progress	

CHAPTER 2

DESCRIPTION OF THE NCA HERITAGE ASSETS

2.1 General Information

The present Management Plan aims at developing heritage assets within and outside NCA jurisdiction. The two famous sites (Olduvai and Laetoli) among others were inscribed on the World Heritage List. The information of each heritage sites was obtained through research as well stakeholder's consultations.

2.2 OLDUVAI GORGE SITE

The famous steep-sided ravine, delivered its Maa name from a wild sisal plant "*Oldupai*". The Olduvai Gorge site has been awarded World Heritage Status by UNESCO, has a quite special significant both scientifically and culturally which extend beyond the National borders. The site is located at the western flank of the Ngorongoro Volcanic Highlands in the Ngorongoro Conservation Area (NCA), on the plains of the Serengeti ecosystem. It is one of the most famous prehistoric sites in the world, and the closest we have to a time machine to take us back over the past 2 million years to document the biological and technological evolution of the human lineage. One can literally walk-through deep prehistory here, with layer upon layer of ancient sediments documenting an unparalleled sequence of ancient environments, animal communities, stone technologies, and prehistoric hominins during earlier (and later) periods of the Stone Age.

This impressive gorge was first described by the entomologist Wilhelm Kattwinkel, who was chasing butterflies across the Serengeti in 1911 when, in pursuit of an especially interesting specimen, he nearly fell into it. The German prehistorian Hans Reck led expeditions here beginning in 1913, and from their many years of fieldwork at Olduvai (the type-site of the Oldowan industry, meaning that it is considered definitively characteristic of that particular culture), Louis and Mary Leakey gained an international reputation in palaeoanthropology and a level of celebrity. The Leakey's were able to establish a prehistoric sequence with chronological control that began about 1.85 million years ago in the lowest level, Bed I, with Oldowan sites and hominin fossils, which included the type specimens of *Homo habilis* and *Paranthropus boisei* (originally called *Zinjanthropus*).

2.3 LAETOLI SITE

It is one of the important paleontological and paleoanthropological sites in Africa and has been awarded World Heritage Status by UNESCO, has a quite special significant both scientifically and culturally which extend beyond the National borders. Laetoli is located 36-km south of Olduvai Gorge in a rolling, open plains setting of the Serengeti ecosystem. This site may be viewed as contiguous with Olduvai Gorge. Laetoli is famous for two remarkable sets of discoveries by the late M. D. Leakey. First are the fossil remains including fragments of postcranial bones, jaws, and teeth of an ape-like human ancestor known as *Australopithecus afarensis* (White, 1977, White, 1980). Second, the site is unique for the discovery of remarkable well preserved several trails of footprints of *Australopithecus afarensis* about 3.8 million bp (Hay and Leakey, 1982, Leakey and Harris, 1987)

The footprints were imprinted on a fine-grained volcanic ash, as a result of volcanic eruption from Lemagrut and Sadiman Mountains and they are the world's only undisputed evidence for the origin of *habitual* bipedal locomotion in the human lineage (Leakey, 1987, Robbins, 1987, Tuttle, 1987). In addition, Early and Middle Stone Age artifacts and a wide range of faunal remains have been recovered. Moreover the Upper Ndolanya Beds (2.66 Ma) have produced the only specimen of *Paranthropus aethiopicus* definitively known from outside of the Turkana Basin in northern Kenya and southern Ethiopia (Harrison, 2011).

The Laetoli hominid footprints trails have remained buried since its discovery until recently when the 4th President of United Republic of Tanzania, Hon. Jakaya Mrisho Kikwete directed scientists in the country in collaboration with scientists from abroad to open the closure for the public. Closure by then was necessary because of the fragmentary nature of the hominid footprints. The partial closure was re-opened however; it was re-buried again with the aim of reopening following the construction of on-site museum. It expected the museum would serve as an exhibition and research center for study, enjoyment, and appreciation by people from all over the world. Some distance away from the preserved human footprints there are also conspicuous animal footprints of elephant, giraffe, lion, small gazelles, birds and insects on the volcanic ashes. The same action of volcanic eruption of the Sadiman Mountain releasing diagenesis calcite, Fe-nontronite, and philipsite causing very rapid cementation is suggested as the cause of the preservation of these delicate prints.

2.4 SHIFTING SAND

This is a remarkable single dune composed of the magnetized fine ashes rolled into black sand dunes located near the northern rim of the main gorge. The source of shifting sand is believed to be blown from Oldoinyo Lengai eruptions. The dune with a crescent-like structure moves slowly, about 10 meters every year, to the west across the landscape due to the prevailing easterly winds. The Maasai people also worship and offer sacrifices at the shifting sands, as they believe that it originated from their most holy of places – Oldoinyo Lengai or “Mountain of God.”



Plate 1. Ngorongoro Shifting Sand

2.5 NASERA / APIS ROCK

This is the uplifted metamorphic gneiss inselberg a monolith that is fully exposed above the plain in the shadow of crater Mountain-Oldonyo Lengai. It is located at 2°44'13.00"S and 35°21'29.00"E and about 30 km northeast of Olduvai Gorge at the edge of the Gol Mountains. The Nasera might be one of the known biggest fully exposed complete inselbergs in the region. The rock is composed of gneiss, bands of pinkish feldspathic pegmatites and sheared biotite schist. The site has been internationally known for decades through its archaeological resources that have been excavated since 1930s. Most of the findings at Nasera consist of stone artifacts high in quartz, but low frequencies of chert and obsidian occur throughout the sequence. Also bone fragments and sherds

of pottery had been uncovered. The cultural materials of Nasera include a typical MSA industry characterized by discoid, radial, Levallois and part-peripheral cores in the lower levels and LSA industry in the upper levels and have absolutely dated to about 30,000 BP. The shelter has some traces of paintings of Bantu Speaking art tradition and Maasai *Olpul* tradition of simple shields in red-and-white paints is clearly visible on the shelter's wall. In Maa language, the word “nasera”, means “painting.



Plate 2. Nasera Rock

2.6 ENGARUKA IRRIGATION SYSTEM RUINS

This a complex late Iron Age farming settlement covering an area of about 25 Km² (Robertshaw, 1986). The ruins are located at 2°58'58.80"S 35°57'0.00"E and 2°58'58.80"S 35°57'0.00"E in Monduli district at Arusha region. Remains of terraced irrigated fields, stone/lined irrigation furrows, houses, stone circles and probably graves are found at the site, which are unique in size and preservation. The first archaeological investigation of the area started in 1900s. Nonetheless Engaruka ancient village has extensively researched by Sutton (1974, Sutton, 1978, Sutton, 1986, Sutton, 2000) and others. Recent surveys of the habitation platforms indicate that what was thought to be seven villages might in fact have been one continuous settlement, broken only by obstacles such as rivers and gullies. Reconstructions based on settlements indicate that the past population was much greater than the 7,000-12,000 people (Laulumaa, 2006).

Ancient Engaruka consists of an extensive pattern of terraces, stone-lined fields, cairns, stone circles and irrigation furrows. These were constructed using soil, reinforced with cores of stones and boulders. Given the size and elaborated nature of the arable land, it is clear that agriculture was the dominant activity. Regarding crops that were cultivated, only sorghum has been confirmed, and it is likely that this was the dominant crop, supplemented with a wide variety of other such as food crops. Some stone circles have been interpreted by John Sutton as cattle pens, and it is highly probable that livestock, being of immense cultural and economic value, was an important, supplementary asset. In addition to agriculture, the people inhabiting may, also have been involved in both long-distance and local trades. Based on C-14 dates together with oral history and historical accounts, Engaruka is believed to have been settled by Iron Age farmers from about 1500 CE and was probably abandoned ca. 1750. Similar Iron Age irrigation furrows, stone-lined fields and stone circles are found in Endamaghay and Olpiro areas at the foot of Oldean Mountain.

Researches have indicated that the formerly irrigated and now abandoned fields are located on and below alluvial fans deposited where five rivers from Mt. Lolmalasin flow over the escarpment. Today, only Engaruka river is permanent, while the other rivers carry water only during heavy rains. However, the extent and configuration of terraces and canals indicate that all rivers once were used for irrigation and it is thus evidencing that the water flow in the now dry rivers was greater some- time in the past. Features built during wetter periods may, of

course, have been used also during drier periods, but it is unlikely that much effort would have been invested if the water supply were not more reliable than at present.



Plate 3. Engaruka Irrigation system

2.7 MUMBA ROCK SHELTER

Mumba rock shelter is located at between 3° - 174° 7" E and Latitude 3° - 32° 26" S, approximately 1050 m above mean sea level on the southeastern side of Lake Eyasi in northern Tanzania, and 62 km south of Olduvai Gorge. The Lake Eyasi basin is situated near the southwestern terminus of the Crater Highlands volcanic area, but volcanic debris is found only in the northernmost portion of the lake and does not reach the rock shelter. The basin is of Pleistocene age and is now filled mostly with sediment. When dry, the lakebed is subject to severe aeolian deflation by strong northerly winds, but the lake level has been high enough at times to submerge Mumba rock shelter (Prendergast *et al.*, 2007).

The archaeological deposits at Mumba rock shelter have been excavated for more than 70 years, starting with Margit and Ludwig Köhl-Larsen in the 1930s. The assemblages of Middle Stone Age (MSA) and Later Stone Age (LSA) artifacts collected from this site constitute the type sequences for these cultural phases in East Africa. The best-known and most notable feature is the presence of geometric microlithic stone artifacts and ostrich MSA eggshell (OES) beads found throughout a large portion of the sequence. Microlithic technologies and the manufacture

of personal ornaments play a central role in deliberations about the origins of modern human behaviour, the dispersals of modern humans within and out of Africa, and their responses to factors such as climate change. The abundant occurrence of microlithics and personal ornaments in the archaeological record is often used to differentiate between the LSA and MSA in Africa. Also, Iron Age and biological evidence for the emergence of our own subspecies, *Homo sapiens sapiens* have been uncovered in Mumba. Three hominid molars of anatomically modern *Homo sapiens* were recovered from the Mumba Bed VI-B dated to ca. 130,000 bp (Mehlman, 1989).

However, the shelter is estimated to be more than 20 m long 15 m wide and 20 m high. The slope of painted surface is steep to about 40-90°. The painted surface is horizontally and vertically not so quite flat and smooth. The size of painted area can reach to about 18-25 m². A quick field interpretation has shown that these paintings belong into two-rock art traditions. These are Hunter-Foragers, Red-Geometric (H-F, RG) Art tradition and Bantu Language Speaker Art tradition. Although most of the paintings have faded, but H-F, RG are characterized by animals, “stick” human figures painted in monochrome dusky red. Bantu Language Speaker Art are characterized by animals (possibly domesticated animals), human figures etc. These are crudely painted in monochrome dirty-white colour. Painting analysis of this shelter has not been conducted.



Plate 4. Mumba Rockshelter

2.8 AMBONI CAVES HERITAGE SITE

An Amboni cave is a geological and cultural heritage complex located between the Mkulumuzi and Sigi Rivers in Tanga district; the estimated geographical coordinates are 5004's 39003'E. Amboni is the name of the village in which the caves are located. The complex is located about 10 kilometres from Tanga city and 5 kilometres left from the junction by the Tanga Mombasa road (Peter 2013). The caves were formed about 150 million years ago during the Jurassic age. Amboni limestone caves complex is an important heritage resource with archaeological, scientific, historical and geological value. Despite these values, the limestone caves are still poorly recognized and managed; for long time these limestone caves complex has been recognized as a place of mystery. Prehistoric people used them for shelter, to hide and they have evidence of the earliest work of arts (Baldwin, 2004).

The caves are thought to have formed during the Bathonian period 176-169 million years ago when the sea levels were much higher than they are now, leading to inland limestone deposit. The caves complex covers an area of approximately 57kilometeres making them most extensive known cave complex in East Africa and contain at least ten networks of caves and passage ways one or two of which can be visited. Amboni caves have different characteristics exactly light but dim light, take a few minutes of your eyes to adjust the obscurity, there are presence of many bats inside and outside the cave (Mturi, 1975).

The limestone caves are formed by special nature of erosion. There are theories, which explain the formation of Amboni caves. The first theory is known as the vedose process, according to this theory rain absorbs carbon dioxide in the atmosphere and form a weak carbonic acid, which is capable of dissolving calcium carbonate minerals of which limestone, is formed. When this acidulated rainwater seeps through the limestone it dissolves and cavities and caves are formed. The second theory is that of phreatic origin, according to this theory, the caves are formed by erosion from the sub water table. The rainwater with carbonic Acid rapidly seeps through the limestone and reaches the water table before being saturated into solution of calcium bicarbonate. The third theory is that of the sea wave action this is based on based on the assumption that the area in question at a particular time was a long shoreline and therefore subject to wave action. The waves gradually eroded the limestone forming caves afterwards the falls in the sea level left the caves dry (smith 1975). Due to their unique nature and social-cultural role to the people around, the caves complex was declared a protected monument in 1937 under the monument's preservation ordinance.



Plate 5. Amboni Cave

2.9 KIMONDO HERITAGE SITE

Kimondo meteorite is an iron meteorite and one of the world's largest meteorites (*eight in the world list*) and one of the only two in Africa, located in Tanzania. Besides providing a clue on the quest of origin of the solar system, formation of planets and asteroids and their impact on history of the planet Earth. Kimondo is currently one of the iconic tourism attractions found Songwe region and in the southern part of Tanzania. The area covers about 16 acres within Ndolezi Village, in Mbozi District. The site is located in the East of Vwawa town about 27 kilometres drive at the estimated geographical coordinates, $9^{\circ} 07''\text{S}$, $33^{\circ} 04''\text{E}$. The site is named after a meteorite, which was discovered in the 1930s. In 1967 it was officially gazetted under Government Notes No. 90 of 1967 hitherto, became under control of the Mbozi district council.

It was discovered in October 1930 by Mr W.H. Nott, a land surveyor of Johannesburg who was erecting a triangulation beacon nearby. He ordered a native assistant to go near the post, but the native refused, explaining that there was a sacred stone, which is not to be approached. On making a search himself, Mr Nott found the Mass iron. He promptly pegged the area as a base metal claim and it was with his permission that sample were taken by Dr E.O Teale, director

of the geological survey of Tanganyika territory and sent to the British Museum for polishing, etching and further examination.



Plate 6 Kimondo Meteorite

2.10 EMPAKAI CRATER GEOSITE

The Empakai Crater is about 6 km wide and a lake covers nearly half of its floor. The lake is about 85 m deep which make it unusually and unique deep compared to many soda lakes in East Africa. The waters being alkaline the lake attracts flamingos as in the case of Manyara and Natron lakes. The walls of the crater are steep, clothed in the forest and rise in some places to almost 300 m above the floor. The views along the trail downwards are spectacular at every point. All along one can enjoy the changing views of Empakai itself. In addition to that, from the northern and eastern side you can have dramatic cone view of the still active volcano the Oldonyo Lengai Mountain. If the sky is clearer, you can look beyond Lengai to the Great Rift Valley and Lake Natron as well as snows of Kilimanjaro Mountain far on the eastern side of the Valley. On the trail to the crater floor, you might see buffaloes or bushbucks, blue monkeys, many birds (like sunbirds and turacos). At the shore of the lake are often waterbucks and elands.



Plate 7. Empakai Crater

2.11 OLKARIEN GORGE

The gorge is located in the east of the Gol Mountains. The gorge is situated under the huge mountains, slicing canyon and spectacular rock that beautifies the area. It is extremely deep and narrow gorge cutting through high fault Mountains. The gorge could have been formed by tectonic faults that opened the Mountains forming a river through the core of the Mountains. The river course is nearly flat with very gentle slopes. The peak of these raised Mountains could approach a kilometer. The gorge extends up to 8 km long. The walls of these Mountains are vertical 90-100°. It's unique gorge of its kind in the entire Rift Valley Escarpment. On top of the Mountains, there are primary nesting sites of the ruppell's griffon vultures.



Plate 8. Olkarien Gorge

2.12 Engare-Sero Footprints

The Engare-Sero human footprint site is located northeast of NCA, on the southern shore of Lake Natron near the village of Engare-Sero. The trackway site was originally discovered in 2006 (Liutkus-Pierce et al, 2016) and geologic field surveys and excavations occurred during summer field seasons in 2009, 2010, 2011, 2012, and 2017. The majority of the tracks at the site were uncovered during the 2010 field season.

Over 400 human footprints, as well as tracks of zebra and bovid, are preserved in a series of volcanoclastic deposits, scattered over an area of several km² (Liutkus-Pierce et al, 2016). The surface that hosts the human tracks is about 250 m², NE-SW trending exposure of volcanoclastic deposits that sits in an ephemeral channel of the Engare-Sero River. To the south, the river channel has eroded most of the foot-printed surface. However, to the north, sand dunes composed primarily of olivine and hornblende eroded from nearby volcanic centres cover the site. The human footprint trackways begin approximately 20m south of the dune line and continue northeast up to and beneath the dunes. Several fossil zebra and buffalo trackways are located approximately 30 m SW of the human footprint site toward the ephemeral Engare-Sero River channel, and several other sites containing animal footprints are greater than 1 km to the northwest (Liutkus-Pierce et al, 2016). The 400 Engare-Sero human footprints belong to *Homo sapiens* and have been dated by 40Ar/39Ar and 14C dating methods to between 19,100 ($\pm 3,100$) and 5,760 (± 30) to ybp (Liutkus-Pierce et al, 2016). Engare-Sero footprints represent the most abundant and best-preserved footprint site of anatomically modern *Homo sapiens* currently known in Africa.



Plate 9. Engaresero Footprints

2.13 ROCK ART

NCA is also endowed with rock art sites. Both rock paintings (pictoglyphs) and engravings (petroglyphs) occur in the area. Eight (8) rock paintings sites and two (2) rock engravings have been documented so far. Five (5) rock paintings were documented in 2003 by one of us (AM) and three (3) were documented during archaeological survey while collecting data for this HMP. These rock painting sites include Noloaponi cave (03°29'47.5" S and 034°59'03.0" E), Nekishomi rock shelter, Ereko overhang 1, Ereko overhang 2, Noekenyi rock shelter (03°13'54.9" S and 035°18'36.8" E), Noeltiyogi cave (03°28'7.71" S and 035°02'14.3" E), Engiteng rockshelter (03°28'7.82" S and 035°02'56.0" E) and Kelogi rockshelter (03°02'27.9" S and 035°16'43.3" E). Seven (7) of these rock painting sites occur in Kakesio ward in the Eyasi rift escarpments, while Kelogi rock shelter occurs in the Olduvai Gorge area. The paintings are mostly executed in red, orange, white and black colors. The subject matter includes, humans, domesticated animals, wild animals, tools and weapons such as spears and shields. Also painted are geometric designs such as concentric circles and squares. Cattle are the only domesticated animals painted. At many of the sites, large humped bulls dominate. Humans are painted holding sticks or spears and sometimes with hands holding on their waists and in association with domesticated and wild animals. At Nekishomi rock shelter, a human figure is painted holding a shield and spear and fighting a charging male lion. The painted wild animals include male lions, elephants, giraffes, eland and rhinoceros.

According to our informant, Mr. Simon Kateyo Mataro aged about 61 years old, this rock art tradition is associated with the Maasai meat-feasting ceremony, known as *olpul*. Traditionally, a group of Maasai warriors (*moranis*) and few *layonis* (un-circumcised boys –who does most of the work in the bush camp) go into the bush and slaughter cows and feast for the meat and herbal soup. If the *olpul* takes place during the rainy season, the *olpul* camps are usually established in rock shelters or caves. According to our informant, lines of bull fats were smeared across the shelter's ceiling on the dripline to prevent drops of rainwater to seep into the shelter's floors. In this way, the warriors, their equipment and meat remained dry. According to Mr. Mataro, the smeared bull fats could also have worked as a substrate to smoothen the rock surfaces and to bind the paintings. Painting was done by the *moranis* during or after the *olpul* ceremony. They painted on the shelter's walls and ceilings the animals they eat and encountered and the symbols of animals they eat, weapons and humans. This rock art tradition belongs to the Maasai *Olpul* Art. Nonetheless, at Kelogi rock shelter, there is also

paintings of Hunter-Forager Art tradition. Three giraffes and a zebra painted in red colors with fine line brushes evidence this.

Two rock engraving or petroglyph sites have been found in the crater floor and near the shifting sand in Olduvai Gorge. These occur in the form of small-aligned cupules locally referred to in Kiswahili as *bao* because of the similarities in alignment between cupules and the holes on a traditional *bao* game. This is believed to be an ancient traditional mancala game engraved on small rocks.



Plate 10. Mumba Rock Paintings

2.14 NGORONGORO BURIAL MOUNDS/CAIRNS

About 41 burial mounds/cairns have been excavated in the crater floor, 30 in the Munge River and 11 on Rumbe hill. Burial mounds/cairns were first discovered in the crater floor during German colonial period when two brothers, Adolph and Fredrick Siedentopf settled in the crater floor. Adolph settled in the north, near the Munge river and Frederick settled in the south near the Lerai river. During construction of his house, Adolf foraged for stones nearby, and without knowledge he took stones from a number of stone-built burial mounds. In the process, about 6-7 burial mounds were destroyed until when in 1908, human remains and “vessels” were dug up from one of the mounds. Adolph’s assistant, Rothe made an inventory of the findings and his report was published in German in 1923. Following Rothe’s report, geologists Drs. Hans Reck and Arning visited the Ngorongoro crater to observe the burial mounds. In 1915, Dr. Arning visited Ngorongoro and from August to September he excavated a burial mound. In March 1916, Dr. Hans Reck excavated another burial mound, but was forced

to abandon the excavation following German evacuation. All materials excavated by Rothe, Arning and Reck cannot be relocated.

In 1941, Drs. Mary D. Leakey and J. C. Trevor excavated a burial mound in the northern portion of the crater in the vicinity of Adolph's farm. H. Sassoon in the 1960s and Amin Mturi in 1973 did further excavations of burial mounds in the crater. These burial mounds indicate multiple interments. The multiple interments indicate continued use as a burial site over an extended period of time, rather than mass burial. The skeletal remains are invariably associated with deposit stained by red ochre and a remarkable variety of grave goods. These include stone bowls, bored stone balls, pestle rubbers, grindstones, ornaments (shell, stone and ivory pendants; shell, bone and stone beads; perforated cowrie shells) together with chert, quartz and obsidian stone artifacts. In East Africa, the occurrence of stone bowls in the archaeological record has been attributed to the "Stone Bowl Culture". Stone bowls and other associated materials also occur in Pastoral Neolithic (PN) sites together with evidence of either cow, goat or sheep bone remains. These burial mounds/cairns have been dated by C14 to about 2,260 +/- 180 years before present (bp).

The other type of burial mound that has been excavated in the Ngorongoro crater floor contains the remains of a single individual, buried in a crouched, sitting position, facing east. This type of burial is only associated with potsherds and flaked stone artifacts in the grave fill. This type of burial mound has been dated by C14 to 270 + 120 years bp. In 2018, Mabulla excavated one grave of this type near a water spring in Esere village, about 100 m from the Esere-Kakesio road. The excavation was conducted as a rescue operation after a human skull was partially exposed by water erosion. The burial contained the remains of an aged male, situated in contracted, sitting position and was facing northeast. Only one stone flake was found in the grave fill.

Traditionally, the Datoga pastoralists honour their dead elders by placing wrapping the body in a fresh skin of slaughtered bull. Then the body is buried in a sitting position, facing north or northeast, a place where their ancestors came from. Over a period of nine months, a mound of stones, poles and mud is built on top of the grave to about 4m high. The structure and the ceremony that follows is called a *bung'ed*. According to "mzee" Gidabath Gidamzungu, Datoga pastoralists lived in the Ngorongoro Highlands and Serengeti in the early 19th century until when they were fought by the Maasai. This assertion is supported by the Esere grave and other three burial mounds in the Ngorongoro crater floor. The first, is a burial mound of

possibly a Datoga spiritual leader with magic power that is located at 03°12'6.70"S and 035°30'0.34"E at the fig tree in the Lerai Forest area. Depending on events in their communities, Datoga come to this burial mound (*bung'ed*) to pray and worship. The second occurs at 03°11'5.83"S and E035°30'7.31"E in the north of Lerai forest in "Miti tisa" area. The last area contains several scattered burial mounds near "Miti tisa" at 03°11'7.00"S and 035°30'7.26"E and near Lake Makati. Also, there are several scattered burial cairns in the Olpiro area.

2.15 MAASAI SACRED TREE SITES

During the course of Anthropological surveys, one "oreteti" tree, scientifically known as *Ficus thorningii* was documented along the road to Endulen. The tree is located at 03°13'.55" S and 35°18'.37" E and near Endulen village. This *Ficus thorningii* is of great spiritual significance to Maasai people. The "oreteti" tree is a place where Maasai women, especially, older women go to pray for either healing or for remedying other misfortunes in the society. Usually, the women carry offerings with them, especially, metal, copper or beaded bracelet to support their prayers. These items are left at the "oreteti" tree that slowly becomes part of the tree. Often Maasai passer-by, men and women, take a small handful of grass, place it at the base of "oreteti" tree, and sit quietly for a while as sign of respect and meditation.

2.16 LAKE NDUTU

Lake Ndutu site occurs along the western shore of Lake Ndutu along the border between NCAA and Serengeti National Park (SENAPA) at 3°O'S, 35°O'E. Lake Ndutu is a seasonal soda lake at the western end of Olduvai's main gorge. During dry seasons, the western margins of the lake are littered with early stone artifacts and fossil fragments. It was in order to locate the stratigraphic origin of this material that Amini A. Mturi, Director of Antiquities excavated the site in 1973. He observed two archaeological horizons within a greenish sandy clay unit that ranged in thickness from 15 to 45 cm. Mturi recovered a hominin cranium (Ndutu skull) together with fauna remains that were resting on a silty clay sub-unit within the higher horizon. The Ndutu cranium has been attributed to "archaic" *Homo sapiens* (Mturi, 1976; Clark, 1976; Rightmire, 1983). However, the lithic artifacts found in association with it have hardly been described (Mturi, 1976), but given their stratigraphic position and description, they could belong either to a Late Acheulian industry or an Early Middle Stone Age industry, similar to those found along the Lake Eyasi shore and Laetoli's upper Ngaloba Beds. Nonetheless, there

neither clear chronology for the site, paleo-climatic information, the temporal dynamics of the lake, nor how the site's findings correlate with the regional geology. Generally, it is assumed that the Ndotu cranium and its associated artifacts and fauna might date between 400,000 and 200,000 ya (Leakey & Hay, 1982).

2.17 MUSEUMS AND INFORMATION CENTRES

The establishment of museums within NCA started in **1972**, when Dr Louis Leakey built a small museum to facilitate visitors' interests about the Olduvai gorge Paleontological findings. Thereafter, in 1978, the Department of Antiquities expanded the existed museum by building a single room dedicated for the Laetoli footprints. However, in 2014 and 2019 the Ministry of Natural Resources and Tourism officially handed some heritage sites to Ngorongoro Conservation Area Authority. The construction of new Olduvai Museum started in 2015 and opened to the public in October 2017. Thereafter, Mary Leakey Camp was renovated and renamed "Mary Leakey Living Museum. So far, there are four museums/ information centre under NCAA. These include, Olduvai Gorge Museum, Mary Leakey Living Museum, Laetoli museum and Kimondo Museum.

The definition of Museum according to The International Council of Museums (ICOM), which has been revised several times since it was first introduced in the 1940s, reads: *A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment.*

The NCAA museums and information centres are intended to;

- Contribute to the development of a knowledge to the society by making information available through educational programmes and various media groups
- Promote the national reconciliation, unity and the development of a national identity by creating conditions for mutual understanding of diverse societies
- Contribute to the economy and job creation through heritage tourism and the creative industries
- Allow community members access to express themselves through programs.

The museums in NCAA are open to the public. The museums core functions are mainly; to acquire, conserve, research, communicates and exhibits for the purposes of education, study, amusement and enjoyment.

The objectives of the CGHMP are to provide a framework for the museums and information centres to contribute effectively to the socio-economic objectives of the country with special emphasis on the governance, management and responsibilities of nationally aided museums with the following specific objectives include;

- (i) Safe keep all museum objects
- (ii) Promote museum exhibitions
- (iii) Strengthen museum education programmes
- (iv) Promote adherence to ethical considerations in research, conservation, exhibition and acquisition of collection

CHAPTER 3

ASSESSMENT OF HERITAGE SIGNIFICANCE

3.1 General Description of NCA Heritage Assets

The Ngorongoro Conservation is an area that hosts diverse cultural and geological heritage assets with unparalleled contributions to human origins, occupations and adaptations to variable ecological settings and cultural development. These assets can broadly be categorized into paleontological and archaeological sites including Olduvai Gorge, Laetoli, Mumba and Nasera rockshelter; irrigation and settlements ruins systems including Engaruka and Olpiro; geologic features and Landscapes such as craters, depressions, breathing holes, mountains etc.; sociocultural Systems including ritual sites, shifting sand among others and subsistence Strategies and socioeconomic adaptations that include tribal Maasai, Hadza and Datog subsistence systems and ecological adaptations.

3.2 Authenticity and Integrity

The paleontological and archaeological sites of Olduvai Gorge, Laetoli, Mumba and Nasera rock shelters have retained the highest degree of authenticity. The geological and archaeological contexts, material composition of the lithic technologies and other relics of these sites are quite unique and present an excellent example of first class paleontological and archaeological records in eastern Africa and the World. The irrigation and settlements ruins systems at Engaruka and Olpiro have not been altered over the past 700 years, and they still maintain most of their original fabric and aesthetic. The tribal Maasai, Hadza and Datog within NCA have maintained a unique example of traditional subsistence and adaptation strategies. Unique systems of cultural expression attested by consistent ritual practices conducted on mountains, trees and rivers inform of unprecedented mastery and use of the landscape for sociocultural achievement.

3.3 General Statement of Significance

The Ngorongoro Conservation Area is a unique protected area in Africa, a multiple land use with natural and cultural endowment. UNESCO inscribed the area as World Heritage Site in 1979, a Biosphere Reserve in 1981 and a mixed WHS in 2010. Ngorongoro Conservation Area, Mount Kilimanjaro - the highest in Africa, and Serengeti National Park are listed in Africa's Seven Natural wonders since 2013. Ngorongoro is a part of the UNESCO large geographical area in Northern Tanzania recognized as UNESCO Global Geopark, a single, unified geographical area where sites and

landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development.

3.4 Assessments of Heritage Attributes/Values

Preparation of this plan involved critical assessment of heritage assets significance to identify associated attributes/values, vulnerable issues, authenticity and integrity of the assets with the view to determine conservation and management requirements. The attributes and values of NCA heritage assets stem from assessment of the assets physical condition, literature and other evidences as well as information collected from the local community who conduct cultural practices in the area. Specific attributes of the heritage assets are summarized below;

Subject	Heritage asset/sites	Attribute/values	Description of Significance
Paleontological and Archaeological sites	1. Laetoli 2. Olduvai Gorge 3. Mumba 4. Nasera 5. Lake Ndutu	<ul style="list-style-type: none"> • Scientific • Educational • Geological • Cultural • Economic 	The sites enhance broader perspectives into investigation of human origins, development, occupations and adaptations in eastern Africa and the world.
Irrigation and Settlements Ruins Systems	1. Engaruka and Olpiro Irrigation Ruins	<ul style="list-style-type: none"> • Scientific • Educational • Cultural • Historic • Aesthetic • Economic 	The sites attest to fundamental achievements in agricultural engineering and human settlements in the Rift Valley floor during the mid-Holocene
Geological features and Landscapes	1. Empakai Crater 2. Oldonyo Lengai 3. Breathing Holes 4. Depressions and Gorges 5. Kimondo 6. Amboni Caves 7. Shifting Sand	<ul style="list-style-type: none"> • Scientific • Ecological • Educational • Sociocultural • Economic 	The stunning features provide opportunity for broader interests in geoscience, ecology, ecotourism and geotourism.
Cultural Systems	1. Olpul Sites 2. Ritual Sites	<ul style="list-style-type: none"> • Spiritual • Sociocultural • Aesthetic 	These sites provide outstanding significance in human settlements and beliefs and attest to sociocultural

			systems of land use in Eastern Africa and the world
Hunting and foraging systems	1. The Hadza	<ul style="list-style-type: none"> • Cultural • Aesthetic • Historic • Economic • Education 	These present-day tribal Maasai, the Hadza and Datog coupled with their subsistence strategies is an outstanding example of cultural expression, human settlement and ecological adaptations in eastern Africa.
Pastoralists	1. Maasai and Datog	<ul style="list-style-type: none"> • Sociocultural • Education • Aesthetic • Economic 	
Rock art	1. Mumba 2. Nasera 3. Kilogi	<ul style="list-style-type: none"> • Scientific • Sociocultural • Education • Aesthetic • Economic 	These are the sites with the representation of the human-made markings placed on natural rock.

3.5 Potential Vulnerability of NCA Heritage Assets

The assessment of heritage assets resulted in identification of vulnerable issues that are likely to impact the future and wellbeing of the cultural heritage assets unless otherwise mitigated. These issues include community encroachment into heritage sites, potential conflicts, natural disasters, increased population, inadequate human resource, limited financial resources, inadequate community awareness etc. as summarized below.

- Increase of population and land use
- Potential conflicts between NCAA and the local community
- Community encroachment to heritage sites
- Natural disasters
- Development projects
- Low community awareness on heritage assets
- Shortage of skilled manpower
- Politically motivated decisions
- Loss of heritage authenticity and integrity
- Globalization
- Inadequate financial resources
- Lack of site management plans

3.6 Policy Statement

- Review of the multiple land use model
- Initiating community health and awareness programs
- Improve involvement of other ministerial sectors to address conflicting legislation
- Creation of natural disasters preparedness plan
- Employ more staff and increase capacity building and training programs
- Working closely with different levels of authorities and the local community
- Increase application of science and technology in conservation endeavors
- Develop and implement sites presentation and interpretation trails
- Increase budget allocation in conservation endeavors

CHAPTER 4

IDENTIFICATION AND ANALYSIS OF KEY MANAGEMENT ISSUES

4.1 Overview

The preparation of this Management Plan involved among other issues community participation where people gave their views, perceptions and concerns that are considered here. The data collected from consultative meetings, personal interviews, literature reviews, and current reports about the NCA have been useful in identifying key issues and concerns related to implementation of this Management Plan. Some of the key issues identified and need to be addressed include absence of site interpretation, inadequate local community engagement, low community understanding of cultural and geological heritage assets and their values, lack of clear site boundaries, inadequate site visitations, and limited and scarce infrastructure; absence of disaster and sustainable tourism management plans, conflicts of interest between NCA, local government authorities, and the indigenous community. Other issues of concern include inadequate staff, overreliance on heritage sites for community livestock shepherding, community encroachment into cultural and geological heritage sites, and limited assessment of cultural and geological heritage values and significances. These challenges, issues and concerns are summarized in the table below;

Table 4.1 summary of issues, concerns and challenges

1.	Absence of site interpretation to facilitate site understanding and visitor satisfaction in most of the cultural and geological heritage sites
2.	Inadequate local community engagement where most of activities pertaining management of cultural and geological heritage resources do not involve local people
3.	Low community awareness and understanding of cultural and geological heritage assets and their values to foster proper and informed conservation management
4.	Absence of clear site boundaries in some of the sites which contribute to unending conflicts between NCAA and communities
5.	Inadequate touristic facilities, infrastructures and other social amenities in heritage destinations including transport
6.	Absence of opportunities for private sector engagement
7.	Absence of disaster and sustainable development management plan

8.	Conflicts of interest between NCAA, local authorities and the local community on management and control of heritage resources
9.	Inadequate staff to facilitate effective management and conservation of heritage management
10.	Inadequate documentation of information related to conservation of cultural and geological heritage assets
11.	Inadequate financial resources allocation
12.	Lack of storage, archives, inventories and exhibition of cultural and geological materials
13.	Limited promotion and advertisement of cultural and geological heritage resources
14.	Inadequate guards and guides for cultural and geological heritage sites

4.2 Significant Issues for Management Planning

During the consultative meetings with stakeholders, and management assessment, several issues, concerns and comments were identified. The most important issues and concerns that threaten the Cultural and Geological heritage assets in NCA. Such issues were filtered and analyzed.

Table 4.3 Significant Issues and suggestion for Management Planning

1.	The need for General Cultural and Geological Heritage Management Plan
2.	Need for site management plans
2.	Need for resolving cultural and geological heritage sites boundary conflicts
3.	Need to regulate and control human interference in cultural and geological heritage sites
4.	Effective and implementable legislation including regulations, guidelines and recommendations
5.	Effective conservation of cultural and geological heritage assets
6.	Need for maintenance of Universal Outstanding values and site integrity
7.	Involvement of community stakeholders, researchers, government authorities in the overall management of the cultural and geological heritage assets
8.	Need to have visitors/tourist management plan
9.	Need to have public-private partnership strategic development to enhance the economic and social life of the NCA local community

10.	Need for risk management plan for the World Heritage Sites
11.	Need for an awareness creation and appreciation of the importance of cultural and geological heritage assets
12.	Need for heritage interactive education program development for local people and school children
14.	Need to implement all measures recommended by the World Heritage Committee
15.	Need for effective management and care for NCA environment
16.	The need for improvement and promotion of Cultural and Geo- tourism in NCA
17.	Need for proper identification and documentation and acknowledgement of intangible cultural heritage
18	The need for community engagement in activities related to research, conservation and management of cultural and geological heritage assets
19	Presence of other economic activities within cultural and geological heritage site's premises
20	The need to construct more information centers especially in Engaruka irrigation systems ruins, Engaresero and Mumba rock shelters

4.3 Analysis of Identified Key Management Issues

Identification of significant key management issues formed the basis for developing this plan. Therefore, the issues identified were analyzed by using strength, weakness, opportunities and threats (SWOT) approach. Analysis was done to facilitate addressing the key issues and bring about the desired state of cultural and geological heritage conservation in NCA.

Table 4.4 SWOT Analysis of Key Management Issues

	Key Issues	Strength	Weaknesses	Opportunities	Threats
1	Conservation and Management	The NCAA is mandated and capable to protect, conserve and manage CGH assets	<ul style="list-style-type: none"> - Unsatisfactory state of conservation - Inadequate financial resources - Inadequate community awareness on CGH assets 	<ul style="list-style-type: none"> - Higher learning institutions offering cultural heritage management and tour guidance courses - Local government willingness to support 	<ul style="list-style-type: none"> - Politically motivated decisions - Site encroachment - Lack of clear assessment and documentation of cultural and geological heritage values

			<ul style="list-style-type: none"> - Inadequate infrastructure - Shortage of professional staff. 	<ul style="list-style-type: none"> conservation initiatives - Availability of local guides to support touristic activities - Willingness to conserve from local community and other stakeholders 	<ul style="list-style-type: none"> - Lack of site management and tourism plans
2	Legislation	<ul style="list-style-type: none"> - Existence of Antiquities Act no, 10 of 1964 and amendments Act No. 22 of 1979 - Existence of international guidelines on protection and conservation of World Heritage Property - Available potential and cultural and geological heritage assets 	<ul style="list-style-type: none"> - The Antiquities Act does not cover intangible cultural heritage - Lack of laws governing geological heritage assets - Contradiction between village/district council and antiquities laws - Existence of boundary conflicts 	<ul style="list-style-type: none"> - Review of the governing laws - The use of state party membership rights to the international conventions 	<ul style="list-style-type: none"> - Absence of political will - Conflicting laws
3	Sites presentation and Interpretation	<ul style="list-style-type: none"> - Available international interpretive framework - Potential for signposts and signboards - Available natural flow of tourists to visit NCA 	<ul style="list-style-type: none"> - Lack of inventory and documentation of cultural and geological heritage assets - Inadequate number of staffs 	<ul style="list-style-type: none"> - Presence of media that could be used to raise awareness - Access to donor for funding - Available funds to train tour guides 	<ul style="list-style-type: none"> - Sites are so scattered to visit at once - Donors policy for funding may change

			<ul style="list-style-type: none"> - Absence of archive for preservation of documentaries 	<ul style="list-style-type: none"> - Opportunity to involve local school children - Opportunities to partner with universities, museums etc. 	
4	Marketing and Publicity	<ul style="list-style-type: none"> - Presence of several media channels 	<ul style="list-style-type: none"> - Lack of promotion skills - Inadequate marketing strategies and plans - Inadequate funding - Lack of skilled personnel 	<ul style="list-style-type: none"> - Presence of the National Tourism Board - Available media for spread of information 	<ul style="list-style-type: none"> - Fierce competition with other touristic attractions
5	Transport and communications	<ul style="list-style-type: none"> - Presence of telecommunication infrastructure - Reliable road network - Reliable air transport 	<ul style="list-style-type: none"> - Lack of communication facilities between the sites - Lack of transport within the sites 	<ul style="list-style-type: none"> - Presence of partners and stakeholders - Available international airport nearby - Available cyber networks within NCA 	<ul style="list-style-type: none"> - Unreliable funding - Politically motivated decisions on road maintenance
6	Economic potential	<ul style="list-style-type: none"> - Potentiality of cultural and geo-heritage for tourism - Existence of complimentary cultural/geo-tourism attractions 	<ul style="list-style-type: none"> - Inadequate tourism facilities - Lack of link with other resources - Undeveloped cultural/geo-heritage assets 	<ul style="list-style-type: none"> - Conducive economic climate and the available potential for other touristic attractions - Willingness of government and stakeholders to promote sites 	<ul style="list-style-type: none"> - Ineffective coordination of activities
7	Policy framework	<ul style="list-style-type: none"> - Availability of cultural, heritage policies 	<ul style="list-style-type: none"> - Lack of policy enforcement at local level 	<ul style="list-style-type: none"> - NCAA workings on environmental management 	<ul style="list-style-type: none"> - Increased population within NCA sites

		<ul style="list-style-type: none"> - Existence of NGOs and CBOs dealing with awareness raising on environmental issues 		<ul style="list-style-type: none"> - Presence of other institutions dealing with environmental awareness issues 	<ul style="list-style-type: none"> - Politically motivated decisions
8	Stakeholders' participation and awareness	<ul style="list-style-type: none"> - Community involvement and willingness to participate - NCAA oversees people's welfare - Available local people with various traditional skills 	<ul style="list-style-type: none"> - Inadequate income generating activities - High level of illiteracy - High level of poverty - Conflicting interests 	<ul style="list-style-type: none"> - NCAA's willingness to support various activities - Willingness and support from UNESCO, WHC 	<ul style="list-style-type: none"> - Unreliable funding from government - Change of institutional management structure
9	Cultural Tourism	<ul style="list-style-type: none"> - Presence of attractive cultural and geo heritage sites - Easily accessible by tourists - Sites are found within a renowned World Heritage Site 	<ul style="list-style-type: none"> - Inadequate tourism amenities - Low visitation in some sites - Cultural and geo-tourism not well known among people 	<ul style="list-style-type: none"> - Available space for facility development - Tourists are interested to visit NCA and cultural/geo-heritage sites 	<ul style="list-style-type: none"> - Deterioration and damage of physical attractions - Unregulated development activities within NCA
10	Personnel	Availability of NCAA staff	<ul style="list-style-type: none"> - Inadequate professional staff on cultural and geological heritage - Lack of clear duties and responsibilities 	<ul style="list-style-type: none"> - Possibility to employ more staff - Possibility to outsource personnel - Possibility to train young personnel from the local community 	<ul style="list-style-type: none"> - Delay of activities execution - Possibility of some staff to leave
11	Sustainability of funding	<ul style="list-style-type: none"> - The URT government ensures 	<ul style="list-style-type: none"> - Inadequate funding 	<ul style="list-style-type: none"> - Government and donors funding availability 	<ul style="list-style-type: none"> - Change in political climate

		<p>salaries are paid to staff</p> <ul style="list-style-type: none"> - Existence of budgetary allocations for the sites 		<ul style="list-style-type: none"> - Generation of income from tourism activities within the sites 	<ul style="list-style-type: none"> - Unpredictable donor funding policies
12	Risk management	<p>Available people with traditional knowledge of the environment</p>	<ul style="list-style-type: none"> - Lack of risk management plan - Absence of trained staff for risk operations - Inadequate funds for risk management 	<ul style="list-style-type: none"> - Availability of rescue institutions - NCAA's willingness to fund risk management operations 	<ul style="list-style-type: none"> - Negligence and sabotage - Uncontrolled natural disasters
13	Training and Research	<p>Potential sites for multidisciplinary research</p> <p>Undisturbed archaeological layers and materials</p> <p>Existence of different research data</p>	<ul style="list-style-type: none"> - Negligence of research guidelines - Poor feedback mechanism from researchers - Language use barrier - Inadequate promotion of sites 	<ul style="list-style-type: none"> - Available multidisciplinary research interests - Existence of field schools during summer seasons - Local Universities have interests in paleontological sites - Available donor research funding 	<ul style="list-style-type: none"> - Eruption of lethal pandemics - Encroachment of development activities within sites
14	Implementation of WHC Recommendations.	<p>Available WHC frameworks and guidelines</p>	<ul style="list-style-type: none"> - Lack of archive for documents - Inadequate interest by working staff 	<ul style="list-style-type: none"> - Available workshop and trainings - Existence of WHS - WHC guidelines for management of World Heritage Sites 	<ul style="list-style-type: none"> - Politically motivated interventions - Lack of clear division of responsibilities

15	Identification and documentation of Intangible heritage assets	Presence of unique cultural identities in NCA	<ul style="list-style-type: none"> - Inadequate cooperation from the local people - Most of the assets are not known - Lack of documentation 	<ul style="list-style-type: none"> - Existence of researchers and higher learning students - Available platforms for promotion of intangible heritage 	<ul style="list-style-type: none"> - Modernism and globalization - Increased social interactions
----	--	---	---	---	--

4.4 A Summary of SWOT Analysis

4.4.1 Management system, Community participation and Policy framework

Management of cultural and geological heritage resources within NCA is a crosscutting issue that should involve the central and local government authorities, such as district, ward, and village authorities on the one hand and NCA, the local community and other stakeholders on the other. For effective management of cultural and geological heritage resources, the interplay between government authorities, NCA, and the local community should firmly be established on proper policies that provide for effective and coordinated administrative machinery that not only guarantee sustainable conservation management but also one that ensures mutual benefit and equal stakeholders' participation.

4.4.2 Management, Planning and Development Issues

Management of the NCA's cultural and geological heritage resources shall involve, planning, organizing, controlling, and directing various activities intended to develop and protect cultural and geological heritage assets from various adverse physical and anthropogenic factors. The direction and coordination of these activities shall be done in liaison between different levels of departments and the Authority.

4.4.3 Conservation, Research and Training

Issues related to conservation, research and training shall involve training of staff to capacitate them conduct sustainable conservation and preservation of cultural and geological heritage assets. Conservation shall ensure that all cultural and geological heritage assets are safeguarded and accessed by the present and future generations.

CHAPTER 5

PROTECTION OF HERITAGE SITES –THE INSTRUMENTS

5.1 Overview

The protection and conservation of the World Heritage sites is ensured by way of legal norms and conventions at international, national and local level. At the international level, this is implemented by way of conventions and charters. At the national level, the Antiquities and environmental protection laws play a significant safeguarding role. However, the legal instruments and policies form the base of any cultural and geological heritage management plan. Legislations and policies play important roles in identifying, protecting, conserving and managing the cultural heritage assets of a Nation.

This Management Plan will be incomplete without considering the relevant National and International legislative and policy instruments governing the protection and management of cultural and geological heritage of Tanzania. In addition, the Plan considers other National legislations and policies and those specific to NCA as these may have a bearing on the criteria for assessing cultural and geological heritage values.

In Tanzania, the protection, conservation and management of cultural and geological heritage assets take place within legal and administrative frameworks established by the Government. All activities concerning with cultural heritage is vested in two Ministries: The Ministry of Information, Culture, Arts, Sports and The Ministry of Natural Resources, and Tourism. The Ministry of Information, Culture, Arts and Sports deals with the intangible aspects of cultural heritage while the Ministry of Natural Resources and Tourism (MNRT) deals with the tangible aspects of cultural and geological heritage. Administratively, the protection, conservation and management of immovable tangible cultural heritage assets are undertaken by the Department of Antiquities (DoA). On the other hand, the National Museum of Tanzania (NMT) is responsible for the protection, conservation and management of movable tangible cultural heritage assets. Both DoA and NMT are under MNRT. Other laws are also relevant with regard to land use, wildlife management and the general environmental wellbeing.

The following national and international legislations, policies, conventions, recommendations and declaration are considered relevant to this CGHMP.

5.2 National Legislation and Policies

Reference	Citation
Ngorongoro Conservation Act [CAP 284 R.E. 2002]	The Ngorongoro Conservation Area Act is the main law controlling entry into and residence within the Ngorongoro Crater Highland Area, and for making provisions for the conservation of natural resources within the area. The Ngorongoro Conservation Area (NCA) was created in 1959 and designated as a “multiple land use area. The term “multiple land use” implies the co-existence of the Maasai pastoralists and Wildlife. Implementation of the concept of multiple land use makes Ngorongoro Conservation Area a unique Protected Area; it integrates the conservation of soils, vegetation, wildlife and watersheds in tandem with the development of Pastoralists and the tourist industry. Ngorongoro Conservation Area (NCA) is also particularly important worldwide, it is home to the famous archaeological and paleontological sites, Laetoli and Olduvai George, a depository of fossil evidence of the earliest beginnings of the human race. The importance of these sites has driven NCA to develop CHMP to enhance proper management and conservation of these world heritage sites.
Antiquities Act No.10 of 1964	The legal protection of Tanzania cultural heritage resources is affected through the antiquities (Act of 1964, act no 10 of 1964 or cap 333 ref 2002), this is principal legislation and the antiquities (amendment) Act of 1979 (Act No.22 of 1979) as well as rules and regulations of 1981, 1991, 1995 and 2002. The 1964 Act, offers general protection to objects or structures, which are of archaeological, paleontological, historic, architectural, artistic, ethnological or scientific interest
Ngorongoro Conservation Area Act No.43 of 1975	Part II section 4, establishes the Authority known as Ngorongoro Conservation Area Authority; and suggests that the Authority shall be a body corporate with perpetual succession and a common seal and shall be capable in law of suing and being sued in its corporate name, purchasing, holding, alienating, managing and disposing of any property, whether movable or immovable; and whether by the way of investment or otherwise and of entering into any contract and other transaction which may be necessary or expedient for the performance of its function under this Act or any other written law. Therefore, the Authority among other functions it is responsible to manage, monitor and protect both natural and cultural heritage, which have been entrusted under the Authority. The NCAA-HMP is developed based on this mandate.
The Land Act [CAP 113 R.E 2002]	The Ngorongoro Conservation Area Authority, having all the rights to own, manage, control and conduct sustainable development, owns the land where the HMP project will be developed. Development of the Cultural Heritage Management Plan will follow all aspects stipulated in the land legislation in order to conserve natural environmental resources

Land Use Planning Act No. 6 of 2007	The Act provides for the procedures for the preparation, administration and enforcement of land use plans; to repeal the National Land Use Planning Commissioning Act and to provide for related matters. The Act regulate and organize the use of land by citing which land areas should be used for which purpose to facilitate among others proper management of land use to promote sustainable land use for present and future generation. The land where HMP is intended is located for Antiquities activities such as archaeological research and related activities e.g. museum. The Plan will establish framework for proper use and management of land for the present and future generations.
The National Museum of Tanzania Act No. 7 of 1980	This Act provides for establishment of an institution responsible for collection of management of cultural heritage resources and relics of national interest. Therefore, NCAA under this law develops a framework upon which cultural heritage resources will be managed
Environmental Management Act 2004	This is law provides legal and institutional framework for sustainable management of environment and natural resources in the country; this legal framework influences different institutions in managing and promoting both natural and environmental resources. To manage cultural resources within NCA, the Authority develops the HMP that will together with other strategies, guarantee environmental wellbeing
Tourism Act No. 29 of 2008	This provides legal guidance on the overall development of the sector with regard to institutional framework, administration regulation, registration and licensing of tourism facility and activities. Since cultural heritage sites have tourism potential, NCAA abides by this law for developing a HMP that will guarantee legal and informed operation of tourism services within its sites
The Wildlife Conservation Act of 2013	The Act, among others, focuses on the establishment and management of game-controlled areas, wetlands and reserves areas, the Act protects wild animals and vegetation in game reserve and wetlands area. The Act prohibits hunting, burning, capture, killing, or molestation of animal or fish in any game reserve, game-controlled area or wetland reserve. NCA cultural heritage sites conserve wildlife as well. The CHMP is therefore developed in line with this Act to enhance conservation and management of wildlife within cultural heritage sites
National Policies	
Reference	Citation
National Tourism Policy of 1999	This policy encourages the development of sustainable and responsible tourism that is culturally, socially and nationally acceptable by the relevant institution, also tourism that is economical viable, ecological friendly and environmentally sustainable, thus institutions are encouraged to develop plans, which aim at conserving the environment. NCAA is among stakeholders of tourism in Tanzania, to develop the HMP the Authority abides by this policy also.
Natural Environmental Policy of 1997	The Policy provides framework for making fundamental changes that are needed to mainstream environmental consideration in decision making in Tanzania; also, the policy influences relevant sectorial policies with bearing in environmental management, which include policy like tourism policy of 1999, natural land policy of 2002. All these policies aim at protecting and managing the environment with reference to environmental policy of 2002, which identifies environment as both natural and cultural

	heritage, which should be maintained. NCAA develops the HMP to harmonize themes delineated in these policies
National Antiquity Policy of 2008	<p>It shows roles and responsibilities of different actors and stakeholders of cultural heritage resources. The important feature of this policy includes elaborations of roles of the public, individuals, corporate and institutions in managing cultural heritage resources; analyse ways in which cultural heritage activities will be managed and administered; clearly clarify measures through which cultural and geological heritage resources shall be protected, managed, preserved, conserved and developed; and analyse the best practices for conducting research and conservation of cultural and geological heritage resources.</p> <p>In addition, all management and use of tangible cultural heritage resources are controlled and authorized by the director of antiquities. The act forbids activities, which might disfigure or destroy cultural heritage resources and imposes sanctions and punishment for offenders in the form of fines, imprisonment or both. The NCAA-HMP will align with this policy to ensure cultural and geological heritage resources within NCAA jurisdiction are well preserved and properly managed for national interest.</p>
Wildlife Policy, 1998	The policy emphases on the conservation and developing wildlife areas, mitigating challenges and stressing maintenance and developing of Park Area network in order to enhance biological diversity of the wildlife areas. Preparation of HMP will serve to solve challenges facing wildlife development that include access, reliable water supply, power and social services and security. The Plan further will give out mitigation measures for the challenges
National Antiquities Policy, 2008	The Policy clarifies the roles and responsibilities of different actors and stakeholders of cultural heritage resources. The policy further elaborates roles of the public, individuals, corporate and institutions in managing cultural heritage resources; analyses ways in which cultural heritage activities will be managed and administered; clearly clarifies measures through which cultural heritage resources shall be protected, managed, preserved, conserved and developed. The HMP points out NCAA roles, responsibilities for managing, preserving and conserving cultural and archaeological heritages, including roles and responsibilities for managing social and environmental aspects to ensure benefits of the project are enhanced and adverse effects mitigated.

5.3 International Conventions and Treaties

Cultural heritage management is an important public policy issue both at the national and international levels. At the international levels, UNESCO, ICOMOS and World Bank have been the leading agencies in preparing and adopting guidelines in management of natural and cultural heritage (Serageldin *et al.*, 1994). At national level, also, various laws and acts have been put forward to ensure the protection and management of cultural heritage.

Table 5.2 International Conventions and Treaties

International Conventions and Treaties	
References	Citation
Operational Guidelines for the Implementation of The World Heritage Convention 2017.	The Guidelines emphasize the implementation of the World Heritage Conventions, which aim to provide standards on how to manage both cultural and natural cultural heritage. There should be measures like the inscription of properties list, the protection, and conservation, the granting of international assistance fund and the mobilization of national and international support. In addition, the guidelines suggest different institution both governmental and non-governmental institution to participate in cultural management. Those institutions, which are responsible for cultural heritage management, must ensure that their Outstanding Universal Values including integrity and authenticity are managed and conserved (Article 96). Moreover, there should be exchange of information among stakeholders and different institutions on state of cultural heritage properties and status of management (Article 169). NCAA-HMP will be developed in harmony with these regulations.
Convention for the Safeguarding of the Intangible Cultural Heritage 2003	Traditional or living expression inherited from our ancestors and passed on to our descendants such as oral traditions, social practice, rituals, festive events, knowledge and practices concerning nature and universe, and traditional craftsmanship knowledge and techniques, NCAA-HMP implementation will value and adhere to the Convention requirements. Tanzania ratified the Convention in 1977
UNESCO Convention for the protection of the World Cultural and Natural of 1972 Heritage	The convention establishing an effective system of collective protection of the cultural and natural heritage of outstanding universal value, organized on a permanent basis and in accordance with modern scientific methods, NCAA-HMP will value and adhere to the Convention requirements
The UNESCO Convention on the means of prohibiting and preventing the illicit import, export and transfer of ownership of cultural property	The Convention requires its States to take preventive measures which includes inventories, export certificates, monitoring trade, imposition of penal or administrative sanction, educational campaign, etc., The convention further requires State parts to undertake restitution provisions, this stresses to take appropriate steps to recover and return any such cultural property imported after the entry into force of the Convention in both States concerned, and it notified that the requesting state shall pay just compensation to an innocent purchaser or to a person who has valid title to that property. The Convention also stresses strengthening cooperation among and between States parties. NCAA-HMP will ensure objects acquired for the site museums are obtained through legal procedures to adhere to the requirements of the Convention to prohibit and prevent the illicit import, export and transfer of ownership of fossils. Tanzania ratified the convention in 1977
Convention on The Means of Prohibiting and Prevent the Illicit Import, Export	There should be encouragement to ensure the protection of their cultural property against illicit, export and transfer of ownership. Establish and keep up to date on the basis of national inventory of protected property, establishment of scientific and technical institution and organizing the supervision of archaeological excavations and protecting certain area

and Transfer of ownership of Cultural Property 1970.	reserved for future archaeological research (Article 5). Also, necessary measures should be taken with National legislation in order to prevent museum and similar institution within their territory from acquiring cultural property which have been illegally acquired (Article 7). In order to avoid illicit transport of cultural materials each state party should provide national services responsible for protection of its heritage with adequate budget and if necessary, set up some fund (Article 14)
World Bank OP 4:11 of 2006 (Revised 2013)- Physical Cultural Resources	<p>World Bank Operational Policy 4:11 assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances. The policy defines physical cultural resources as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. These may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.</p> <p>WB requires the borrower to address the impacts on physical cultural resources (Cultural Heritage Impact Assessment-CHIA) in projects proposed for Bank financing, as an integral part of the Environmental and Social Impact Assessment (ESIA) process. The borrower identifies physical cultural resources likely to be affected by the project and assesses the project's potential impacts on these resources as an integral part of the ESIA process, in accordance with the Bank's ESIA requirements. When the project is likely to have adverse impacts on physical cultural resources, the borrower identifies appropriate measures for avoiding or mitigating these impacts as part of the ESIA process. These measures may range from full site protection to selective mitigation, including salvage and documentation, in cases where a portion or all of the physical cultural resources may be lost.</p> <p>Furthermore, borrower is required to develop a physical cultural resources management plan that includes measures for avoiding or mitigating any adverse impacts on physical cultural resources, provisions for managing chance finds, any necessary measures for strengthening institutional capacity, and a monitoring system to track the progress of these activities. NCAA is a World Heritage Site and has receives global attention due to sensitive nature of its cultural site; the HMP being developed will align with this Convention for the protection and management of cultural heritage sites within NCAA jurisdiction.</p>
UNIDROIT 1995 Convention on Stolen or Illegally Exported Cultural Objects	This an international treaty on the subject of cultural property protection attempting to strengthen the main weaknesses of the UNESCO 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. The UNIDROIT 1995 Convention seeks to fight the illicit trafficking of cultural property by modifying the buyer's behaviour, obliging him/her to check the legitimacy of their purchase. The Convention states that if a cultural property was stolen it must be returned (Chapter II, Art. 3.1). Any

	<p>possessor deprived of his/her property will be compensated only if he/she can prove due diligence at the time of the purchase (Chapter II, Art. 4.1). The criteria for due diligence are listed under Article 4.4. of the Convention.</p> <p>To assess the legitimacy of the object's origin, art market players can use international and national databases dedicated to cultural property protection, for instance, the INTERPOL Stolen Works of Art Database collects information about stolen cultural property and issues identification numbers to cultural objects. Whereas Chapter II of the Convention deals with stolen cultural objects, Chapter III contemplates the export of cultural property in violation of national export restrictions. A State Party can request the competent Court of another Contracting State to order the return of a cultural object illegally exported from its territory if the removal of the object caused detriment in one of the ways listed under Article 5.3. Again, the burden of proof is on the possessor to demonstrate that he/she "neither knew nor ought reasonably to have known at the time of acquisition that the object had been illegally exported" (Art. 6.1). These rules apply equally to cultural objects inherited or received as gifts. Either an heir or a beneficiary has the same responsibility as a buyer. Therefore, museums and other public institutions must carry out checks over the origin of donated objects..</p>
--	--

5.4 Other fundamentals

5.4.1 Operational Guidelines for the Implementation of the World Heritage Convention

The Operational Guidelines for the Implementation of the World Heritage Convention aim to facilitate the implementation of the Convention concerning the Protection of the World Cultural and Natural Heritage. They set procedures for the inscription of properties onto the World Heritage List and the List of World Heritage in Danger (red list). They also describe procedures for the protection and conservation of World Heritage properties. The operational guidelines also define and regulate the granting of International Assistance under the World Heritage Fund and the mobilization of National and International support favoring of the Convention.

5.4.2 Guidance on Heritage Impact Assessments for Cultural World Heritage Properties

Large-scale construction of planned projects, infrastructure projects, high-rises, bridges, etc., can have a negative impact on the outstanding universal value of the World Heritage aspect of the World Heritage area. ICOMOS therefore developed these guidelines which assess the impact on the outstanding universal value by such large-scale projects. The guidelines therefore offer assistance in the systematic evaluation of interference with cultural heritage sites and the preparation of Heritage Impact Assessments.

CHAPTER 6

MANAGEMENT OBJECTIVES AND MEASURES- GUIDELINE FOR ACTION

According to UNESCO, the most important point is the conditions and development of the outstanding universal value, authenticity and integrity of the heritage assets. During preparation of this plan, some issues that are of central importance for the ultimate development of OUV, authenticity and integrity of NCA heritage assets were identified. During the course of the development of the Cultural and Geological Heritage Management Plan, eight (8) issues were specified and defined as central fields of action.

1. Conservation and Management
2. Sites Presentation and Interpretation
3. Culture and Tourism
4. Stakeholders' Participation and Awareness
5. Awareness raising and Research
6. Economic Development
7. Implementation of WHC Requirements
8. Legal and Policy Frameworks

Measures and objectives were formulated for all eight fields of action to be beneficial for both the World Heritage and the needs of the citizens. In the first stage the question arose what precisely can the fields of action contribute? And how and to what extent can each field of action contribute to the safeguarding and conservation of the Heritage assets, the usage and development of the World Heritage area? The actual outcome: guidelines, objectives and measures for each field of action were defined and co-ordinated among each other. In the following sections, we describe the single fields of action with their principles, objectives and measures. The sequence and numbering of the key measures does not in any way indicate the priority among each other. Along the key measures, further measures were proposed to support the objectives. These are not pursued as priorities for the Management Plan. But they should be implemented, depending on the capacity and financial situation.

Table 6:1 A summary of management objectives and measures

Field of Action: 1. Conservation and Management		
Objectives	Measures	Comment
<p><i>Conduct assessment, documentation and inventory of heritage assets,</i></p> <p>Current and potential heritage assets should be well documented and inventoried</p>	<p>1. Conduct archaeological/ethnographical survey</p> <p>1. Develop digital database for heritage assets</p>	<ul style="list-style-type: none"> • Heighten compliance with ethical standards
<p><i>Protecting heritage assets from interference of human activities</i></p> <p>Site managers will ensure heritage assets are protected from daily interference of human activities including regulating bee farms, grazing.</p>	<p>1. Install warning signs in heritage sites</p> <p>2. Establish range posts</p> <p>3. Deploy rangers</p> <p>4. Increase site patrols</p>	<ul style="list-style-type: none"> • Stress on implementation of budget • Involve local communities where necessary
<p><i>Installing site pedestals and define boundaries</i></p> <p>Site pedestals and boundaries are aimed at maintaining authenticity and integrity of heritage assets. site management will ensure sites boundaries are clearly defined and pedestals are installed</p>	<p>1. Initiate programs for defining boundaries and install site pedestals.</p>	<ul style="list-style-type: none"> • Involve local community in defining heritage areas • Abide by local community rules and procedures • Give priority
<p><i>Establish museums and information centres</i></p> <p>Museums are meant to exhibit material collections/information from research, bequeath or borrowing. NCA will establish museum/information centres at heritage sites to enhance community appreciation and enjoyment of heritage assets.</p>	<p>1. Installation of museums/information centers at strategic heritage sites.</p>	<ul style="list-style-type: none"> • Heighten priority for museums/info centers • Gather credible information/collections for museums info centers.
<p><i>Conduct community awareness programs on sustainable conservation</i></p>	<p>1. Develop community engagement programs</p>	<ul style="list-style-type: none"> • Outreach programs, seminars and workshops

The local community need to be aware of importance and benefits of conserving heritage assets		
Field of Action: 2. Sites Presentation and Interpretation		
Objective	Measure	Comment
<p>Developing public engagement plan</p> <p>Presentation and interpretation of heritage assets need to engage the local community to express their desire, experience and make them aware of the resulting benefits.</p>	<ol style="list-style-type: none"> 1. Identify and analyze local community's concerns and contributions 2. Identify other stakeholders with vested interest in heritage assets 	<ul style="list-style-type: none"> • Engage the local community from primary levels of decision-making • Develop appropriate principles of evaluation
<p>Developing interpretive themes</p> <p>Interpretation trails are guided by well-delineated themes that are based on scientific research and credible sources. Heritage officers will be responsible for developing appropriate themes for interpretation</p>	<ol style="list-style-type: none"> 1. Gather correct information involving literature reviews. 	<ul style="list-style-type: none"> • Information should comply with the available features of a heritage asset • Involve professionals where necessary
<p>Developing interpretative media</p> <p>The media used for interpretation is central to site presentation and publicity. NCA will use electronic media e.g. use of media platforms, printed media: leaflets, brochures, and interpretation panels</p>	<ol style="list-style-type: none"> 1. Understanding of potential audience and the appropriate media of communication 	<ul style="list-style-type: none"> • Consideration of the local community and visitor experience objectives. • Consideration of interpretive trails and time factor.
Field of Action: 3. Culture and Tourism		
Objectives	Measures	Comment
<p>Expansion of cultural activities</p> <p>Cultural activities are aimed at citizens and visitors. They will be augmented by the integration of the World</p>	<ol style="list-style-type: none"> 1. Preparation of cultural development plan 2. Improve and develop heritage assets 	<ul style="list-style-type: none"> • Increase of cultural and artistic activities • Initiate activities related to World Heritage

Heritage aspect. Additional events will be developed, particularly for children and young people.	3. Improve and increase museums and information centers	
<i>Art and culture in Heritage sites</i> Artistic, social and cultural events at heritage sites and public spaces will be promoted. This will take place, particular regarding the interests of local community.	1. Preparation of a concept for art and culture events at heritage sites	<ul style="list-style-type: none"> • Determine where cultural events are desirable and feasible • Implementation in partnership with local regional and national artists
<i>Increasing visitors' duration of stay</i> The duration of stay and the number of overnight stays will be extended by enhancing the touristic attractiveness of heritage sites and the feel-good factor for guests. Taking local community and customers' interests into account there will be an improvement in <ul style="list-style-type: none"> - Tourist infrastructure and available offer, - Seasonal imbalance, - Service quality and - Development of brand and image. 	1. Preparing a tourist concept 2. Installation of museums/information centers 3. Maintenance of roads	<ul style="list-style-type: none"> • Installation of public toilets • Subject-based measures Internationality, visitor management and equalisation visitor-flow
<i>Consideration of international requirements</i> In relation to cultural and touristic services, the international aspects will be better accommodated and observed.	1. Implementation of the NCA – GMP and compliance standards	<ul style="list-style-type: none"> • Workshops on intercultural interaction skills for service providers • Adaptation of the offer to align with international requirements • Adoption of international standards of service provision
Field of Action: 4. Stakeholders' Participation and Awareness		
Objective	Measures	Comment

<p><i>Increase local and international stakeholders' participation in heritage endeavours</i></p> <p>NCA will strengthen ties with local and international participation in management and conservation endeavours</p>	<p>1. Implement NCAA core values</p>	<ul style="list-style-type: none"> • Workshops on implementing core values • Heighten accountability and transparency
<p><i>Information about benefits</i></p> <p>Local community and other stakeholders will be informed, in specific groups; of the benefits, heritage assets and how the NCA World Heritage ensemble contribute to local, national and international development</p>	<p>1. Prepare leaflets, banners and brochures for NCA heritage assets</p>	
<p>Field of Action: 5. Raising awareness and Research</p>		
Objectives	Measures	Comments
<p><i>Research and Training</i></p> <p>Researchers and scientific institutions will be activated for the interests and sustainable development of the heritage assets. Particular attention will go to initiating research projects on conservation, human origins and development.</p>	<p>1. Develop a list of relevant research priorities and issues</p>	<ul style="list-style-type: none"> • Contact to research institutions • Offer subjects for academic dissertations
<p><i>Educational services for young people and the public</i></p> <p>Special educational services will be developed for young people in colleges and Universities in order to convey information about the NCA World Heritage and other cultural assets and their outstanding universal values.</p>	<p>1. Implement cultural heritage clubs programs</p> <p>2. Increase and improve field schools and volunteer programs</p>	<ul style="list-style-type: none"> • Offer opportunities for schools and colleges visitation • Increase facilities e.g. tents, housing etc.

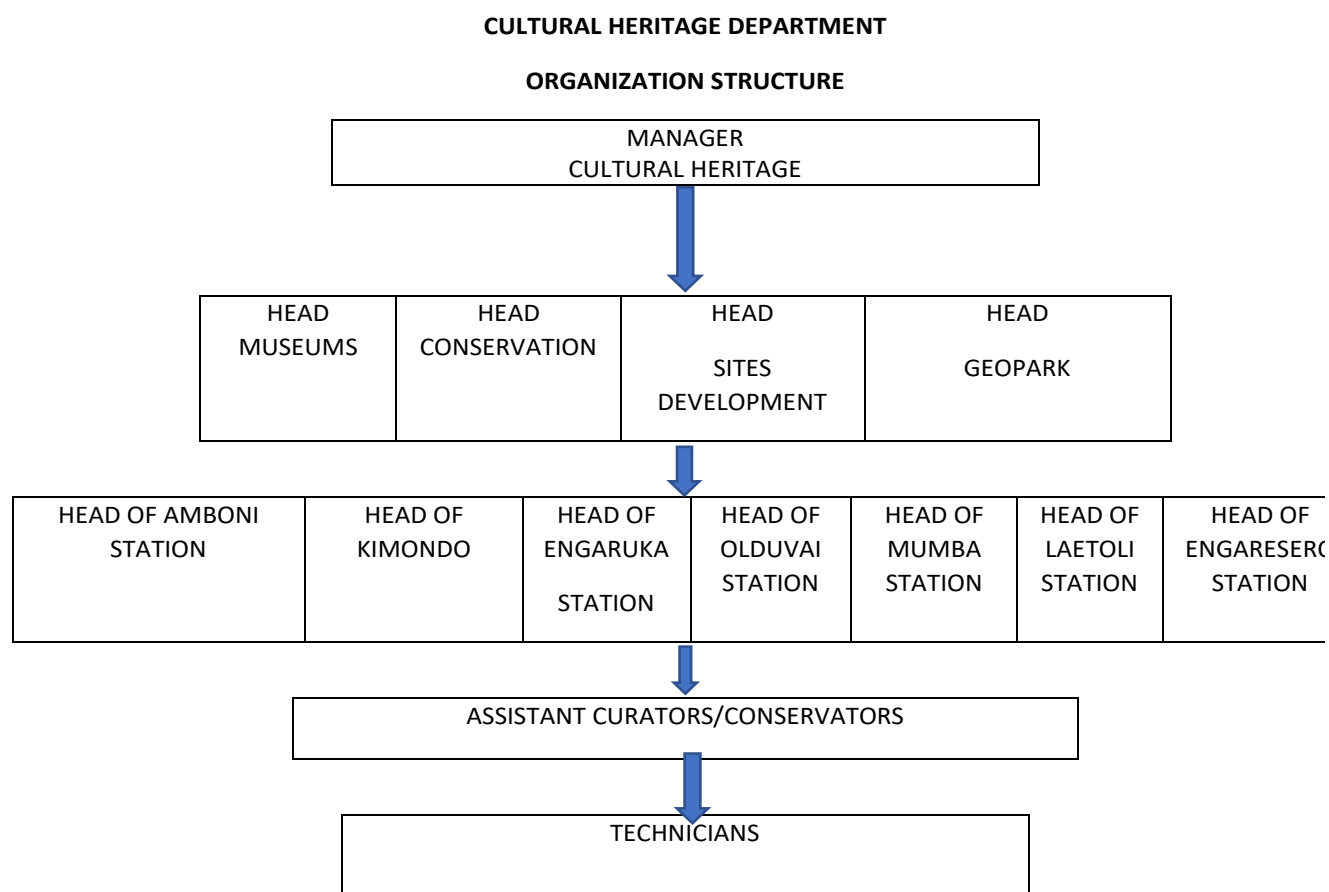
Field of Action: 6. Economic Development		
Objectives	Measures	Comments
<p><i>Improvement of range and diversity of offers</i></p> <p>The NCAA will be strengthened as the primary retail and supply site through maintenance and enhancement of the range and diversity of offers. Good quality of local supplies will be ensured.</p>	<ol style="list-style-type: none"> 1. Realization and support of local community projects will be enhanced 2. Establishment and improvement of more Maasai bomas and community centers in heritage sites 	<ul style="list-style-type: none"> • Increase awareness on local products benefits
<p><i>Supporting start-ups</i></p> <p>Start-ups and new business ideas to be supported, particularly smaller sized businesses.</p>	<ol style="list-style-type: none"> 1. Continuation of support for CBOs on heritage initiatives 	
<p><i>Invite investment and partnership in heritage related activities</i></p> <p>Heritage resources need to benefit the local community and other stakeholders with vested interest in heritage management. NCAA will facilitate smooth environment for investment in heritage related activities.</p>	<ol style="list-style-type: none"> 1. Inform on the benefits of investing in heritage endeavors. 	<ul style="list-style-type: none"> • Inform on opportunities
Field of Action: 7. Implementation of WHC Requirements		
Objectives	Measures	Comments
<p><i>Awareness on WHC frameworks and requirements</i></p> <p>NCA as World Heritage Site works under international laws. To maintain its obligations to WHC, awareness on WHC frameworks will be enhanced and implemented.</p>	<ol style="list-style-type: none"> 1. Programs for implementation of WHC requirements 	<ul style="list-style-type: none"> • Workshops and seminars
Field of Action: 8. Legal and Policy Frameworks		
<p><i>Improving Sectorial involvement to address</i></p>	<ol style="list-style-type: none"> 1. Develop programs for sectorial involvement in 	<ul style="list-style-type: none"> • Conducting legal outreach programs

<p><i>conflicting laws and policies</i></p> <p>NCA's heritage assets are protected by national and international laws. Different stakeholders with interest in NCA usually get into conflicts as a result of conflicting laws between community welfare and conservation endeavours.</p>	<p>community awareness programs</p>	
---	-------------------------------------	--

CHAPTER 7

MANAGEMENT SYSTEM

7.1 Structural Organization



The management system pursues two primary objectives. First of all, the safeguarding of the World Heritage has been ensured, not only by early identifying risks to the World Heritage, but also by co-ordinating safeguarding and development-related needs for a multifunctional and vibrant World Heritage area. Secondly, support should be given to the implementation and updating of the Management Plan. These primary objectives are decisive for the responsibilities and the procedures as defined by the management system. Another significant element of the management system is the monitoring, by which an objective overview is maintained about World Heritage development. On the one hand, a systematic method of monitoring can provide objective data for controlling the implementation of the Management Plan; which is also an important basis for the updating of the plan. However, monitoring provides an optimal basis to assure that the safeguarding of the World Heritage

and the development of the World Heritage sites are ensured and correspond to the UNESCO stipulations.

Therefore, the communal and institutional-level authorities are primarily responsible for co-ordination and decision-making. They are the contact points for all issues and plans relating to heritage assets. NCA's heritage assets are managed under the Cultural Heritage Department in collaboration with other departments and the local community.

7.2 Responsibilities

At institutional level, the Conservator is responsible for management of all heritage assets within NCA. The conservator is assisted by the Cultural Heritage Manager who is responsible for all actions concerning decision-making, directing and controlling heritage assets activities.

- The Manager for Cultural Heritage Department is assisted by four heads of sections, namely head of conservation section, head of museums development, head of research and development and head of geo-park section.
- The heads of sections are responsible for actions related to controlling, decision-making and directing activities concerning their sections.
- Each site is managed by a heritage site manager. Site managers are responsible for actions pertaining to management of heritage assets in their areas of jurisdiction. Heritage site managers' will report and account their responsibilities to the head of department.
- Site managers will be assisted by heritage technicians within respective sites. The number of technicians in a given site will depend on the need and requirement of care of the heritage assets at the site
- The local community will be engaged at the low level of responsibility. This will involve serving as casual laborers or non-skilled personnel. These personnel will be responsible for all actions related to manual works within a heritage site.

NCAA a multi-level decision-making organization, it is therefore noted in this heritage plan that development of OUV, authenticity and integrity of NCA heritage assets will engage involvement of other departments and sectors including Community Development, Tourism Services, Engineering Services, Information and Communication Technology, Accounts, Protection Services and Wildlife and Range Management. These levels of authority shall be responsible to execute heritage related activities including;

- Tourism activities and services
- Planning and investment
- Protection services
- Enforcement of legal matters
- Community Engagement
- Development of Heritage Assets
- Control and management of financial Issues
- Technical and statistics services
- Implementation of strategic plans
- Ecological issues

CHAPTER 8

IMPLEMENTATION AND MONITORING

The monitoring function delivers objective data about the respective state of the heritage assets development. This data is used for a variety of purposes:

- UNESCO-compliant monitoring- Focusing on reparation of monitoring reports in accordance with UNESCO guidelines
- Continuous monitoring- Continuous monitoring of the preservation of the UNESCO World Heritage properties and the development of other heritage assets in order to detect problematic developments early, identify their causes and act.
- Success evaluation- Monitoring and measuring the Heritage Management Plan success, as well as the functional capacity of the organizational structures and procedures
- Updating the Heritage Management Plan- The necessity for updating the plan will be determined on the basis of continuous monitoring and success evaluation (e.g. adaptation of the principles, objectives measures or even the organization and procedures)

8.1 Areas of focus

The periodic reporting demanded by UNESCO concerns several defined areas, which are to be continuously monitored and which also correspond with management objectives outlined in this Management Plan.

8.2 Controlling the Implementation of the Heritage Management Plan

NCA-Management is responsible for upgrading the Heritage Management Plan. Together with the Cultural Heritage department, it will conduct regular monitoring of NCA heritage assets.

The Cultural Heritage Department will examine the findings of its monitoring actions, determine the current status, the state of key measures implementation and determine to which extent the HMP has to be updated. Members of the Cultural Heritage Department will also discuss new concepts, plans and measures, which are of relevance to the welfare of NCA heritage assets.

For the issues that do not accord with the principles and objectives of the Heritage Management Plan. The Cultural Heritage Department will recommend to NCA-Management for action as to how the Heritage Management Plan should be updated and how concepts, plans and measures can well be adapted.

The Cultural Heritage Department- has established a unique way of reporting activities related to heritage assets development. The process includes report on the heritage status in terms of tourism potential, conservation state, community involvement and important stakeholder's opinions. The Department also has a tradition of conducting monthly meetings for discussing issues related to heritage assets. This is an important channel for communicating issues related to implementation of measures outlined in this Management Plan from the local community and other stakeholders. Important information arising from implementing this Plan will be comprehensively discussed in monthly or retreat meetings.

8.3 Monitoring Program

No.	UNESCO	MANAGEMENT OBJECTIVE- field of action
1.	Monitoring the status and the development of the OUV, authenticity and integrity of heritage assets	Conservation and management
2.	Monitoring the development of heritage assets, cultural tourism and community involvement	Cultural tourism, Stakeholders' participation and awareness, Research and Training
3.	Monitoring the status and sustainable development	Economic development, Implementation of WHC recommendations
4.	Monitoring status of World Heritage Sites, Man and Biosphere reserve and Global Geopark	Sites presentation and interpretation, legal and policy framework
5.	Other data	Demographic data, costs, expenses, procurement of resources

8.4 Indicators

To check whether there is positive change in implementing this HMP, the Cultural Heritage Department members will discuss the best way to develop indicators the objectives outlined in the Management Plan will be measured. A target range should be defined for each of the indicators, to allow a check to be performed to ascertain if there has been a positive change compared to the previous year or the previous two years. Broader institutional objectives should be taken into consideration when preparing performance indicators.

8.5 Implementation

As noted earlier, NCAA is a multi-level decision-making organization; as such, it is proposed in this CGHMP that monitoring be conducted once a year by the NCA-Management and the Cultural Heritage Department. This will be carried out in two steps.

1. Collection of data, analysis and discussion of Results

- the Manager for Cultural Heritage will demand collection of data and other relevant information concerning the indicators
- The heads of sections, heritage site managers will analyze the data to identify any possible problems and trends. In case the issues are beyond the desired objectives, they will discuss with the relevant levels of authorities and departments and stakeholders and analyze the causes for action. The results of these deliberations will serve as primary data for World Heritage monitoring report.
- The preliminary monitoring report will be shared among Cultural Heritage Department members. At their monitoring meeting, which is proposed to be held in June each year they will discuss the need for adaptation of other key measures, or supplementation of management objectives.
- Based on the monitoring meeting, the heads of sections from the Cultural Heritage Department or any team appointed by the Manager will prepare the final World Heritage monitoring report and describe the need for action by the NCA-Management then may be shared to other relevant institutions or archived.

2. Updating the World Heritage Management Plan

- Based on the World Heritage monitoring reports, the Heritage Management Plan will be updated as required by the World Heritage co-ordination committee.

REFERENCES

- Baldwin, M. (2004). How are caves formed? *Memphis Archaeological and Geological society youth newsletter*, Volume 3, No. 6.
- Buchwald, U., F. (1975). “*Handbook of iron meteorites*”. California: University of California press. 1418pp.
- Day, M.H., Leakey, M. D. & Magori, C. (1980). *A new hominid fossil skull (LH18) from the Ngaloba Beds, Laetoli, northern Tanzania*: Nature **284**, 55-56.
- Harrison, T. (2011). “*Laetoli renewed paleontological and geological investigation of localities on the Eyasi plateau in Northern Tanzania in paleontology and geology of Laetoli*”. *Human evolution in context. Volume 1; Geology, Geocx*
- Hay, R. L., & Leakey, M. D. (1982). *The fossil footprints of Laetoli*. Scientific American, 246, 50–57.
- Laulumaa, V. (2006). *Estimation of the Population of Ancient Engaruka- a new approach*. University of Helsinki
- Leakey, M. D., & Harris, J. M. (Eds.). (1987). *Laetoli: A Pliocene site in northern Tanzania*. Oxford: Clarendon.
- Luitkus, M. C et all. (2016). *Radioisotopic age, formation, and preservation of Late Pleistocene human footprints at Engare Sero, Tanzania*.
- Lwoga N. B (2011). *Tourism; meaning, practices and history*. Dar Es Salaam University press
- Magori, C.C. & Day M.H (1983). “*An early Homo sapiens skull from the Ngaroba Beds*”. Laetoli, Tanzania: Anthropas.
- Mapunda, B.B.B (2007), *An Annotated list of cultural Heritage Resources of Tanzania*; A handbook, Dar es salaam, Department of History, UDSM; Department of antiquities; National Museum of Tanzania and National Archives, Tanzania. ss
- Mehlman, M. (1989). *Later Quaternary Archaeological sequences in Northern Tanzania*: PhD Dissertation, University of Illinois, Urbana.
- Mora, R., et al (2003). *The archaeology of Peninj “ST Complex” (Lake Natron, Tanzania)*. In: Martinez, Moreno, J. Mora, R, de la Torre, I. (ed.), *Oldowan: Rather more than smashing stones. First Hominid Technology workshop*. Bellatera: December 2001. Treballs d' Arqueologia, Barcelona 9, 77-116.
- Mturi, A. A. (1976). New hominid from Lake Ndutu, Tanzania. Nature.
- Mturi, A., A (1996). “*Whose cultural heritage? Conflicts and contradictions in the conservation of Historical structures, Towns and Rock Art in Tanzania*”. In Schmidt, P.R and McIntosh, R.J *Plundering Africa's past*. Indiana: Indiana university press, pp. 170-190.

- Peter, M. (2013). Archaeological Study of Amboni Cave, Tanga in Northern Coast of Tanzania. Dar es Salaam, Tanzania: Master Dissertation, University of Dar es Salaam.
- Rightmaire, A. F. (1983). The Lake Ndutu Cranium and the early Homo sapiens in Africa. *American Journal of physical Anthropology*, 61, 247-254
- Robbins LM. (1987). Hominid footprints from site G. In: Leakey MD, Harris JM(Ed). *Laetoli: A Pliocene Site in Northern Tanzania*. Claredon: Oxford.
- Sassoon, H. (1967). *Guide to the Mbozi Meteorite*. Dar es Salaam: Department of Antiquities.
- Serageldin, I & Steer, A. (1994). *Making Development Sustainable: From Concepts to Actions*. Environmentally Sustainable development Occasional paper series No. 2
- Sutton, J. E. G. (1974). *The aqualithic civilization of Middle Africa*. *Journal of African History*.
- Sutton, J. E. G. (1978). *Engaruka and its waters Azania* 13 37-70.
- Sutton, J. E. G. (1986). *The irrigation and Manuring of the Engaruka field system: further observations and historical discussions of Later iron age settlement in northern Tanzania rift* 21 27-48.
- Sutton, J. E. G. (2000) [1998]. *Engaruka: an irrigation agriculture community in northern Tanzania before the Maasai reprint from Azania* 33 Nairobi, British institute from eastern Africa.
- United Nation Education, Science and Cultural Organization, (1972). *Convention of Protection of the World Cultural and Natural Heritage*. Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization, (2003). *The Convention for the Safeguarding of Intangible Cultural Heritage*. Paris: Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization. (1954). *The Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and Its Protocols*. Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization. (1970). *Convention on the Means of Prohibiting and Preventing Illicit Import, Export and Transfer of Ownership of Cultural Property*. Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization. (2012). *Operational Guidelines for the implementation of the World Heritage Convention*. Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization. (2013). *Managing Cultural World Heritage*. Paris: UNESCO Publication.
- United Nation Education, Science and Cultural Organization. (2015). *The Protection and Promotion of the diversity of cultural expressions*. Paris: UNESCO Publication
- United Republic of Tanzania. (1964). *Antiquities Act*. Dar-es-Salaam, Tanzania: Government Printers.

- United Republic of Tanzania. (1974). *Wildlife Conservation Act*. Dar-es-Salaam, Tanzania: Government Printers.
- United Republic of Tanzania. (1999). *Environmental Management Act*. Dar-es-Salaam, Tanzania: Government Printers.
- United Republic of Tanzania. (1999). *Land Act*. Dar-es-Salaam, Tanzania: Government Printers.
- United Republic of Tanzania. (2003). *Population and housing census general report*. Dar-es-Salaam, Tanzania: Government Printers.
- United Republic Tanzania. (1959). *Ngorongoro Conservation Area Ordinance No. 413 1959*. Dar-es-Salaam, Tanzania: Government Printers.
- White, T. D. (1977). New fossil hominids from Laetolil, Tanzania. *American Journal of Physical Anthropology*, 46, 197–230.
- White, T. D. (1980a). Additional fossil hominids from Laetoli, Tanzania: 1976–1979 specimens. *American Journal of Physical Anthropology*, 53, 487–504.
- White, T. D. (1980b). Evolutionary implications of Pliocene hominid footprints. *Science*, 208, 175–176.

ANNEXES

3.0 Analysis and Development Issues and planning context

3.1 Overview

3.2 Issues arising from participatory consultation -Arising issues from the stakeholder and community eg. Any concerned from different groups

3.3 Community awareness and benefits

3.4 Development of Cultural and geo-tourism (Add more information on geo-tourism, how tourists benefits & statistics-projections, markets etc.)

3.5 Research and Training (*onsite training*)