

Kora National Park Management Plan, 2018-2028





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Planning carried out by

Kora National Park Managers
Kora Stakeholders

KWS Biodiversity Planning and
Environmental Assessment Department

In accordance with the

KWS PROTECTED AREAS PLANNING FRAMEWORK



Acknowledgements

	<p>This General Management Plan has been developed through a participatory planning process involving a cross section of Kora National Park stakeholders, under the coordination of a Core Planning Team comprising representatives from Meru Conservation Area, KNP managers, KWS HQ planners, and County Government of Tana River officials.</p>
	<p>Funding for the planning process was provided by USAID through the Kenya Wildlife Protection and Conservation Program (KWPCP)</p>
	<p>The George Adamson Wildlife Preservation Trust provided geographic data and infrastructure information used in this plan.</p>

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Approval Page

The management of the Kenya Wildlife Service has approved the implementation of this management plan for the Kora National Park.

Director General

Executive Summary

This new 10-year management plan (2018-2028) for the Kora National Park (KNP) is intended to be a practical tool to support and guide the coordinated and integrated management of KNP. In the past, KNP was managed under the Meru Conservation Area (MCA) management plan together with the other three constituent PAs that make up the MCA (Meru National Park, Bisanadi National Reserve and Mwingi National Reserve) as a single ecological and administrative unit. But due to the vastness and uniqueness of KNP, need arose to develop a Management plan specifically for KNP.

The plan sets out clear management goals for the entire KNP, and a series of prescriptions and management actions that will be enforced and implemented in order to achieve the KNP conservation goals.

In line with and the constitution of Kenya, Wildlife Act and PAPF, the plan development process directly involved and built on the knowledge and experience of a wide range of stakeholders. As a result, the final plan sets out a vision for the future management of the KNP that is consensus based.

The KNP plan structure is set out according to the PAPF specifications, and aims to ensure the plan can be easily understood by stakeholders and implemented by KNP management. At the heart of the plan are the zonation scheme and the plan's four management programmes. These programmes are:

- Ecological Management Programme
- Tourism Development and Management Programme
- Community Partnership and Education Programme
- Protected Area Operations and Security Programme

KNP Purpose and Values

The purpose of the KNP as defined by the area's stakeholders is *"To conserve wildlife species, especially large carnivores and herbivores and their associated habitats, and protect sites of cultural and historical importance for the benefit of present and future generations"*

The development of the above Purpose Statement was based on the stakeholder identification of the KNP's "Exceptional Resource Values" (ERVs), which were divided into four categories: biodiversity, scenic, social and cultural. The five most important ERVs for the KNP were identified as: the KNP's African elephant (biodiversity); the Panoramic landscape (Inselbergs (Kora Twin Hills), grass-lands and shrubland, Tana River (scenic), Riverine Forest) (biodiversity); the Orma cultural shrines and sacred places and George Adamson story (cultural); and the Traditional river wells (social).

KNP Zonation Scheme

The KNP zonation scheme provides a dual framework aimed at facilitating management and administration of this vast protected area and the regulation and promotion of visitor use across the area. To achieve this, the KNP has been divided into three visitor use zones and three management sectors:

The three management sectors are:

- ▶ Kamukunga
- ▶ Asako
- ▶ Boka

The three visitor use zones

- ▶ Restricted zone (Inselbergs)
- ▶ Low Use Zone (Tana riverine area covering 5km from the river)
- ▶ Wilderness Zone (area beyond the 5km buffer)

Management Sectors

The division of the KNP into three management sectors aims to increase management presence and infrastructure development across the entire KNP. The Warden Kora NP will remain the overall officer in charge of the KNP, while the sectors will be managed by Junior Wardens. This is expected to enhance security in the KNP thereby minimise threats to ecological integrity.

Visitor Use Zones

The three visitor use zones have been developed to enable the degree and type of visitor use to be managed spatially across the KNP, and to support the overall aims of the Tourism Development and Management Programme, in particular to increase and expand tourism investment and visitor use across the entire KNP.

The key features of each of the three visitor use zones are summarised in the following paragraphs:

▪ Restricted Zone

The Inselbergs found in KNP form part of the scenic values. The Inselbergs are included in the restricted zone to protect the unique and unstudied plant and animal life found there. Use of these Inselbergs for research or recreation will be subject to authorisation by the Park Warden.

▪ Low Use Zone

This zone comprises the 5km buffer on the south of Tana River. In the Low Use Zone (LUZ) limited low impact tourist facilities and activities are permitted. Since wildlife concentrate in this zone due to availability of water from Tana River, the zone has potential for wildlife viewing of both terrestrial and aquatic wildlife.

▪ Wilderness Activity Zone

The Wilderness Activity Zone covers the vast majority of Kora National Park. The zone is the least developed and least accessible area of the KNP, and opportunities for traditional game viewing are extremely limited because of paucity of wildlife. Although there is a limited road network in the area, it has mainly been designed for administrative and security purposes. There is currently limited tourist accommodation, or supporting infrastructure, in this zone.

Ecological Management Programme

The Ecological Management Programme aims to ensure that *“The ecological components and processes of the KNP are understood, restored and conserved, and threats to the area’s key ecological features are reduced”*.

The eight conservation targets identified for the KNP are:

1. Large carnivores (Lion, cheetah, wild dog)
2. Greater kudu
3. Elephant

4. Vultures (Egyptian and the Lappet faced vulture)
5. Acacia-Commiphora bush land
6. Hills & Inselbergs
7. Tana Riverine ecosystem
8. Riparian ecosystems

The objectives of the Ecological Management Programme focus on enhancing the status of the Conservation status of the KNP's threatened mammals and birds. KNP is known for the high number of threatened large carnivores including the lions, wild dogs, leopards and the cheetahs. However, the population status, distribution and movement pattern is not known. The KNP elephant population dynamic is not well documented, the prey base status is also not well understood.

The programme also focuses on restoring and maintaining Important KNP habitats most notably riverine, Acacia-Commiphora bush land, and hills/inselbergs. Currently little on the biodiversity status of KNP is available. Therefore there is need to design and undertake targeted research and biodiversity monitoring programmes to collect data to inform appropriate mitigation measures. Finally the programme also aims at ensuring that Climate change impacts are mitigated and adaptation interventions mainstreamed.

Tourism Development and Management Programme

The Tourism Development and Management Programme aims to ensure that *“The KNP is offering memorable visitor experiences based on its wildlife diversity, wilderness values and history”*. Within the bounds of maintaining a high quality wilderness experience in the area, the programme sets out an ambitious strategy for tourism development and new investment across the KNP.

Currently, there are no tourism facilities within KNP. Most visitors are forced to make a day long trip to KNP and then drive to Meru National Park (MNP) where they are able to get accommodation facilities and other amenities. Due to lack of tourism investments and underutilisation of the park by visitors, communities around the KNP have not benefitted from wildlife conservation. This programme thus focuses on developing appropriate and sufficient tourism infrastructure and facilities as well as diversifying tourism products within KNP. KNP is at present generally underutilised by visitors, introducing a variety of products within KNP will lead to visitor retention, create a market source for both farmers and pastoralists and also create a general change of attitude towards conservation. In addition the programme focuses on strengthening tourism administration and management by establishing a tourism department at KNP so that tourism resources in the Park can be developed to enhance visitation.

Community Partnership and Education Programme

The Community Partnership and Conservation Education Programme aims to ensure that *“KNP's adjacent communities embrace conservation and realize tangible benefits that improve their livelihoods”*. Key in achieving this aim is ensuring that human-wildlife conflict is reduced and collaboration and communication mechanisms with local communities is strengthened.

At the same time, the programme aims to improve Opportunities for local communities to benefit from the KNP. This will be done through establishing community conservancies, promoting partnership with development partners to support community projects, and supporting establishment of community social and enterprise projects. Further the programme aims at enhancing conservation education awareness through deploying an education Warden in KNP since the park currently does not have an educational officer.

Protected Area Operations and Security Programme

This programme therefore aims “*to secure wildlife and visitors in KNP and surrounding community areas and ensure illegal natural resource exploitation within the core protected area are minimised by a well facilitated workforce*”. As such, this programme focuses at ensuring institutional collaborations are strengthened and KNP’s management effectiveness is enhanced through increased collaborations in security operations and community relations.

The programme also aims at ensuring performance and motivation of KNP staff is improved. To ensure that the park has sufficient staff with high morale, KNP management will work closely with the Eastern Conservation Area management and KWS Human capital to ensure that the park has adequate staff to deliver the KNP’s management objectives; staff are trained in relevant skills; and adequate staff accommodation, office and welfare facilities are availed.

In addition the programme focuses on ensuring that infrastructure, transport and communications to support PA management and tourism development is improved. KNP does not have a well-designed road network to facilitate park administration activities and tourism. With a very low density of roads it is difficult to extend security and administration operations to many parts of the park. Consequently, the road network will be improved, adequate transportation in the KNP Provided, the telecommunication system installed and maintained and administrative and tourism support infrastructure constructed and maintained.

On the other hand, the programme aims at enhancing security for the park’s resources by expanding law enforcement presence across the entire KNP. This will be achieved through establishment of new outposts and rehabilitation of existing ones, and the intensification of both ground and air patrols over the entire area.

The efficiency of law enforcement operations will also be improved by strengthening collaboration with key stakeholders, including local police and KNP tourism industry investors, to improve visitor security across the area, and by building links with key informers in surrounding communities. Complementary to these approaches, efforts will be made to improve the arrest and prosecution rate of offenders in order to provide an effective deterrent against illegal activities in the KNP.

Plan Monitoring

The plan monitoring section provides a framework for monitoring the potential impacts, both positive and negative, that are anticipated from the implementation of each of the four management programmes’ objectives. The framework also includes easily measurable indicators for monitoring positive and negative impacts, and potential sources of this information.

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Acronyms

AD	Assistant Director
ASAL	Arid and Semi Arid Land
CAP	Conservation Action Planning
CBO	Community Based Organisation
CCC	Community Consultative Committee
CCF	Community Consultative Forum
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CP & CE	Community Partnership and Conservation Education
CPT	Core Planning Team
DRSRS	Department Resource Survey Remote Sensing
ECA	Eastern Conservation Area
EIA	Environmental Impact Assessment
ERV	Exceptional Resource Value
GIS	Geographic Information System
GPS	Geographical Position System
NCO	Non Commissioned Officer
HQ	Headquarters
HWC	Human-Wildlife Conflict
ICT	Information Communication Technology
IUCN	International Union for the Conservation of Nature
KATO	Kenya Association of Tour Operators
KEA	Key Ecological Attribute
KNP	Kora National Park
KWS	Kenya Wildlife Service
KWPCP	Kenya Wildlife Protection and Conservation Program
LUZ	Low Use Zone
MBD	Marketing and Business Development
MCA	Meru Conservation Area
MIKE	Monitoring of Illegal Killing of Elephants
MNP	Meru National Park
MNR	Mwingi National Reserve
NGO	Non-Governmental Organisation
NP	National Park
NRM	Natural Resource Management
PA	Protected Area
PAC	Problem Animal Control
PAPF	Protected Areas Planning Framework
TAS	Trust For African Schools
TCA	Tsavo Conservation Area
TD&M	Tourism Development and Management
TOR	Terms Of Reference
TNC	The Nature Conservancy
WAZ	Wilderness Activity Zone
USAID	United States Agency for International Development
VIC	Visitor Information Centre

Plan Foundations

The Plan

This 10-year (2018-2028) management plan for the Kora National Park (KNP) has been developed in accordance with the KWS Protected Area Planning Framework (PAPF). In line with the PAPF, this plan has been developed in a highly participatory manner, incorporating and building on ideas from a broad cross-section of KNP stakeholders.

Plan functions

The plan is designed to be a practical management tool supporting the KNP managers in carrying out their duties. The plan achieves this aim by providing strategic guidance on the vision and management objectives towards which management is working, and a series of prescriptions and management actions that need to be implemented in order to achieve the KNP's vision and objectives.

Plan structure

The following points summarise the plan's main sections:

- ▶ **Plan Foundations.** This chapter introduces the plan functions and the planning process used to develop the plan, it outlines the plan structure and stakeholder participation mechanisms. The chapter also provides an introduction to the KNP, its location, its purpose and exceptional resource values.
- ▶ **KNP Zonation Scheme.** This section sets out areas of the KNP where different types of visitor use and tourism developments are permitted. The scheme also describes the management sectors that the KNP is divided into to facilitate efficient and effective management of the KNP.
- ▶ **The four management programmes.** The main bulk of the plan is divided into four management programmes:
 - **Ecological Management Programme**
 - **Tourism Development and Management Programme**
 - **Community Partnership and Conservation Education Programme**
 - **Protected Area Operations and Security Programme**

Each programme includes a programme purpose statement, which sets out the overall goal to which management under this programme is working towards, and guiding principles underpinning the programme. Each programme also contains management objectives that set out the goals that KNP management aims to achieve, and a set of specific management actions to achieve these goals.

- ▶ The **plan monitoring** framework provides guidance to enable the assessment of the potential impacts, positive, and where appropriate negative, resulting from the implementation of each of the four management programmes..

Stakeholder participation in planning

The three principal mechanisms used to enable stakeholder participation in planning were: the Core Planning Team, Stakeholder Planning Workshops, and Expert Working Groups. The roles and functions of these mechanisms are elaborated in the following paragraphs:

- ▶ The KNP **Core Planning Team** (CPT) provided overall guidance and oversight to the entire planning process. KNP CPT membership consisted of: KWS, County Government of Tana River, Tana River County Wildlife Conservation and Compensation Committee, and other co-opted members e.g. George Adamson's Wildlife Preservation Trust.
- ▶ One KNP **Stakeholder Planning Workshop** was held during the plan's development. The workshop involved around 40 stakeholders including representatives from KNP management, KWS HQ, the Tana River County Government, Kitui County Government, a representative of National Environment Management Authority (NEMA), a representative of Water Resources Authority (WRA) and the local community.
- ▶ Four **Expert Working Groups** were formed during the plan's development, each responsible for developing one of the plan's four management programmes (the **Ecology Management; Tourism Development and Management; Community Partnership and Education Awareness; and. Park Operations and Security**). Each of these working groups comprised of CPT members, key stakeholders and experts with knowledge on the various management programmes.

Annex 2 provides a detailed list of stakeholders who participated in the KNP's plan development, and the specific events that they contributed to..

The Kora National Park

Area description

Kora National Park (KNP) covers 1,787 km² and is by far the largest PA in the Eastern Conservation Area (ECA), and the third¹ largest protected area in Kenya. The park is located in Tana River County, and was gazetted as a national park in 1989 (Legal Notice #: 339 of 6 October 1989), prior to which it had been gazetted as a game reserve since 1974. Wildlife populations in the area are currently low; although surveys have shown the area is rich in floral biodiversity.

KNP is one of the five protected areas that make up the Meru conservation Area (MCA): Meru National Park, Bisanadi National Reserve, Kora National Park, Rahole National Reserve and Mwingi National Reserve (see Figure 1 below). KWS has jurisdiction over the two national parks, while Isiolo and Kitui County Governments have jurisdiction over Bisanadi and Mwingi National Reserves respectively. Garissa County Government has jurisdiction over Rahole National Reserve.

KNP is located in a semi-arid region with an annual rainfall of between 250mm in the east to 500mm in the west. The altitude rises from 230m in the east to 560m in the south west. KNP soils are basement complex derived and for the most part shallow gritty, but along the Tana and at the mouths of watercourses the soil is alluvial. *Acacia commiphora* bushland is the dominant vegetation community, with patches of riverine forests along the Tana which, together with the shallow valley bottoms, the laggas and the many rock outcrop inselbergs contribute to a complex and unique flora.

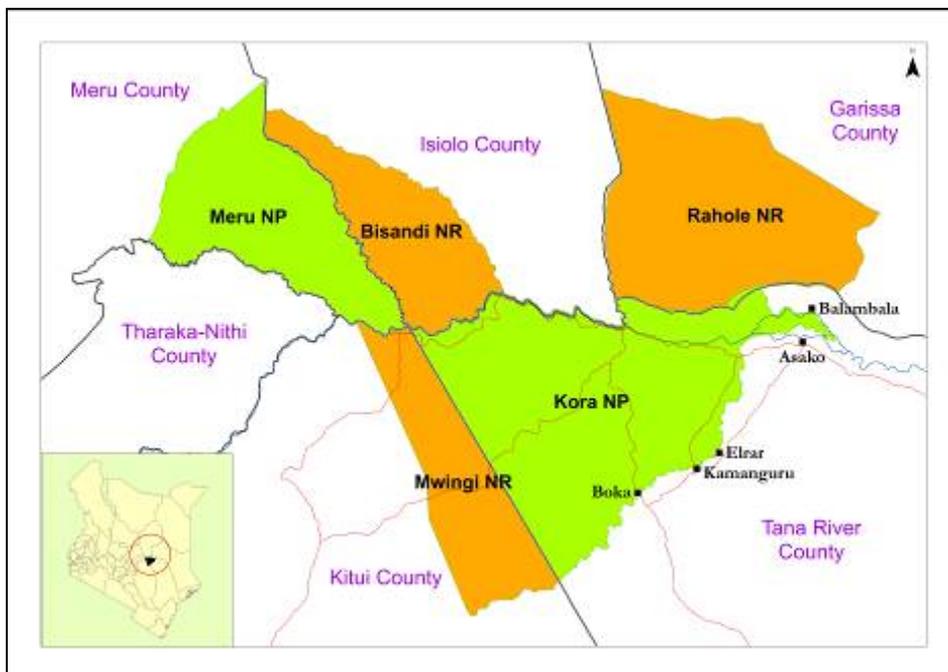


Figure 1. Kora National Park regional context

¹ Third after Tsavo East and Tsavo West National Parks

KNP Purpose Statement

The KNP Purpose Statement summarises the importance of the KNP, clarifies the reasons for its existence, and provides the overall goal that KNP managers are striving to achieve. The Purpose Statement is divided into a primary KNP Purpose followed by a series of supplementary purposes that expand on and complement the primary purpose. Both primary and supplementary purposes have been defined by KNP stakeholders.

The Purpose of the KNP is:

To conserve wildlife species, especially large carnivores and herbivores and their associated habitats, and protect sites of cultural and historical importance for the benefit of present and future generations”.

Supplementary purposes of the KNP are:

- ▶ ***To provide optimal benefits to local communities, other KNP stakeholders and the nation, in harmony with the KNP’s unique wilderness characteristics***
- ▶ ***To enable collaboration between stakeholders in the conservation and sustainable ;natural resources***
- ▶ ***To preserve all sites of aesthetic, historical and cultural significance in the KNP***
- ▶ ***To promote scientific research and education in order to guide sustainable management of natural resources in and around the KNP***

The development of the above Purpose Statement was based on the stakeholder identification of the KNP’s “Exceptional Resource Values” (ERVs). These ERVs are discussed and elaborated in the following section.

KNP Exceptional Resource Values

The Kora NP Exceptional Resource Values (ERVs) describe the area’s key natural resources and other features that provide outstanding benefits to local, national and international stakeholders and that are especially important for maintaining the park’s unique ecological, scenic, and socio-cultural characteristics. Table 1 shows the KNP’s ERVs.

Table 1. KNP Exceptional Resource Values

<i>Category</i>	<i>Exceptional Resource Value</i>
Biodiversity	<i>Acacia -Commiphora</i> Bushland
	Riverine Forest
	African elephant
	Large carnivores (Lion, Cheetah, Leopard and Spotted Hyena)
	Hippopotamus
	Diverse small to medium sized mammals
Scenic	Diverse bird species
	Adamson’s falls
	Panoramic landscape (Inselbergs (Kora Twin Hills), grass-

Category	Exceptional Resource Value
	lands and shrubland, Tana river)
	Hippo points
	Kora rock
Social	Kora bridge
	Expansive wilderness area
	Disease free Area
	Pasture rich area (Habarow)
	Livestock corridor to Tana River
	Boka wells
	Sport fishing
	Traditional river wells
Cultural	Orma cultural shrines and sacred places
	George Adamson story

Biodiversity values

Acacia commiphora Bushland

Dense *Acacia commiphora* bushland is the dominant vegetation community in KNP. The community is interspersed with undergrowth of *Grewia*, *Bauhinia*, *Aspilia* and *Solanum* species among others. There is very little undergrowth below the woody plant community, partly due to high woody cover that shields other plants from growing under it and over-grazing by livestock that invade the park especially during the dry season. Due to the woody vegetation cover, the park is unattractive to grazers, mixed feeders, and eco-tone species. However, the bushland is dominated by a variety of bird species and could be an ideal attraction for visitors interested in bird-watching as well as enjoying extensive and quiet natural wilderness. The bushland also supports a variety of reptiles and large mammals.

Riverine Forest

Dense riverine forests of doum and raffia palms *Hyphaene* and *Raphia* species grow along the Tana River. There are some riverine swamps with *Cyperus* species and grasses *Echinochloa hapladelphoides* and *Pennisetum mezianum*. As a result, the vegetation types provide protection for diverse species, including four² of the “Big Five”. The vegetation provides scenic sites for establishing tented campsites along the Tana River, while also providing forage for hippopotamuses that range along the Tana River.

African Elephant

Elephants are known to sparingly use protected areas that have high human and livestock presence. However, evidence of elephants using the area of the park next to Tana River has been recorded through sighting of elephant dung. About 414 elephants are known to use the Meru National Park and the surrounding area. If KNP is secured from human activities and livestock incursion, elephants can re-colonize KNP from the nearby Meru NP. This can attract tourists and elephant researchers, especially those interested in studying elephants re-colonizing new habitats.

² Elephant, Lion, Leopard, Buffalo

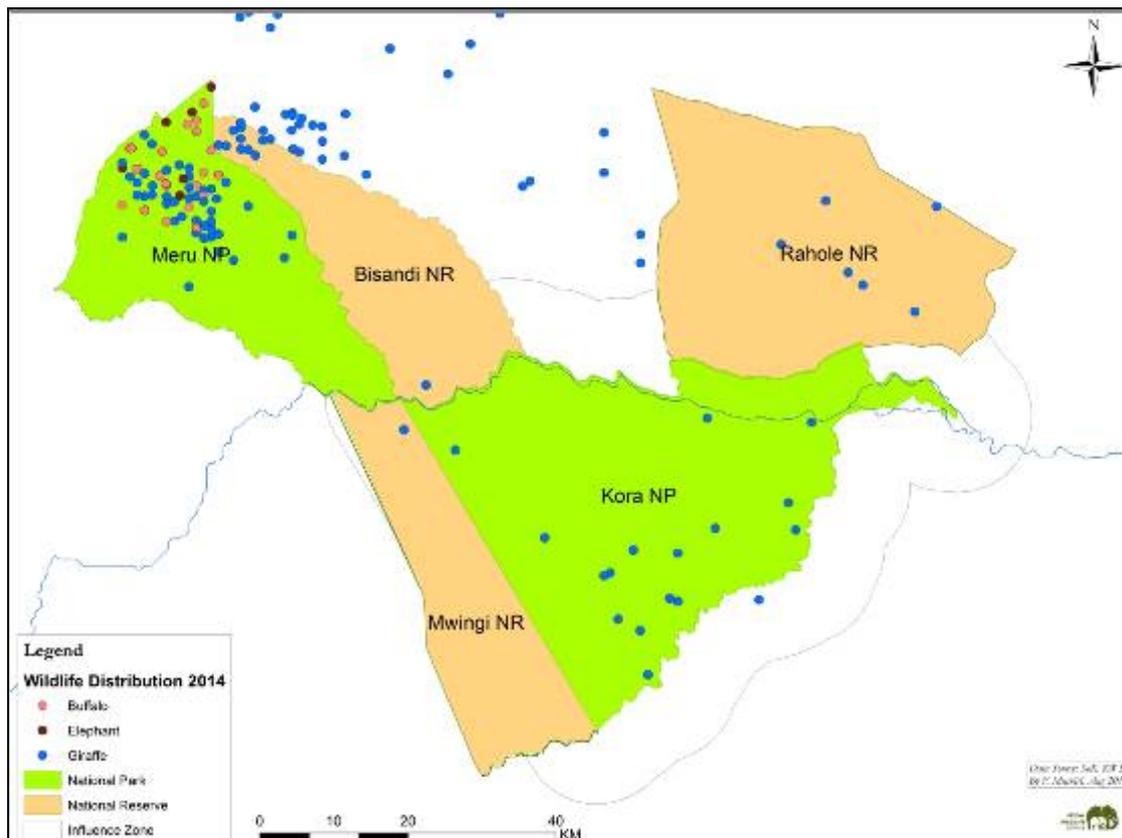


Figure 2. Wildlife distribution in MCA (2014 Census)

Large carnivores (Lion, Cheetah, Leopard and Spotted Hyena)

The large carnivores are a key attraction to tourists in Protected Areas (PAs). Among the large carnivores, the lions are the most sought by tourists visiting PAs. They are classified as vulnerable on the IUCN Red List of Threatened Species and listed in Appendix II of CITES. The population status of lions in KNP is not known. Only 2000 lions are remaining in Kenya. Therefore, focusing on them in KNP will positively contribute towards the revival of this threatened species at the site level as recommended by the Lions Conservation and Management Strategy.

Leopards are one of the most widely dispersed large cats on the continent, but are difficult to see and encounter in the KNP. Therefore, their current status in the park is not known. However, since 2000, several leopards have been translocated to the MNP with a possibility of moving to KNP. The translocations were aimed at addressing HWC in more densely-populated areas around Hells Gate, Lake Nakuru and Tsavo National Parks. Leopards are classified by the IUCN as “least concern”.

The spotted hyenas are commonly found in KNP especially along the laggas and riverine vegetation. They scavenge for food left over by other carnivores or that have died naturally in the natural environment. Hyenas actively hunt in packs for larger herbivores but, also rarely attack human beings. The spotted hyena is listed as of “least concern” by the IUCN on account of its widespread range and large numbers although the species is experiencing declines mostly due to habitat loss. Spotted hyenas are social and normally live in packs. Due to their scavenging behaviour, hyenas are known as environment cleaners. They consume

both organic and inorganic materials (such as hide) that occur unattended in the environment. They are also able of consuming and completely digesting the largest bones.

Cheetahs are categorised as “threatened” by IUCN. Their population status in Kenya is not well understood. In addition, cheetahs are key attraction to tourists. Cheetahs are persecuted by humans because of predation on livestock, resulting in human-cheetah conflicts. Therefore, they are of key focus in this plan as saving them in KNP will contribute towards the revival of their population in Kenya.

Hippopotamus

The common hippopotamus inhabits Tana River whose riverine vegetation provides their forage. Hippopotamuses are semi-aquatic animals that remain in the river during the day, emerging at dusk to graze.

Hippos are listed as “Vulnerable” in the IUCN Red List. A 1996 assessment described common hippo populations as widespread and secure. However, since then, there have been substantial changes in several key countries where the hippos are found. The most recent population estimates suggest that over the past 10 years there has been a 7–20% decline in common hippo populations. Although the causes of the population decline are known (exploitation and habitat loss), the threats have not ceased, nor is there evidence the threats will be removed in the near future. Therefore, there is need to further understand the hippo population in Tana River section of KNP.

Diverse small to medium-sized mammals

KNP is home to a variety of small to medium-sized mammals. These include Kirk’s dik-dik, common duiker, lesser kudu, greater kudu, gerenuk, common zebra and diverse rats such as the naked mole rat. The rats are a source of food to small-sized carnivores like mongoose and snakes. The other mammals are prey to large carnivores and are also the most targeted by man as a source of protein through bush meat. This in conjunction with habitat loss has led to a decline in most of their populations. The role of small to medium sized mammals in the ecology of KNP is the reason for focusing on them in this plan.

Diverse bird species

KNP is rich in bird diversity with more than 200 bird species inhabiting the park, due to the presence of wild undisturbed habitats. The birds include the lappet-faced vulture (*Torgos tracheliotos*) and the Egyptian vulture (*Neophron percnopterus*), both of which are classified as threatened according to the IUCN Redlist 2017. Other birds found in KNP are hornbills, Somali ostriches, African fish eagle, guinea fowls, francolins, quails and weavers. Their populations are, however, threatened due to hunting for game meat.



Figure 3. Lappet faced vulture, Ruppels griffon and white backed vultures in the neighbouring MNP

Scenic values

Undisturbed wilderness

KNP, the third largest protected area in Kenya covering an area of 1,787Km², has remained largely undisturbed since it was gazetted in 1989. The park has limited road network and other park-related infrastructure hence conserving its wilderness value. KNP can be marketed as a choice for tourists looking for solitude and a pristine environment.

Adamsons Falls

The falls are found along the Tana River about 200m from Adamson Bridge. The free falling waters create a beautiful and attractive scenery. The relaxing waterfall sounds also create a soothing feeling to any visitor venturing into the falls. The scenic site is also appealing to photography and filming enthusiasts.

Kora Rapids

A series of small falls create the Kora rapids which are found along Tana River just below the Adamsons falls. The Kora Rapids provide an impressive scenic view that connects tourists to nature.

Kora Bridge

The Kora Bridge, commissioned for use in 1998, connects Meru, Kora National Park and Mwingi National Reserve. The bridge is 150m in length, 7m in width and is suspended at 15m from the river floor. The bridge is made of metal to ensure strength and durability. Its height above the water level is the main attraction to most visitors. It creates an ideal place for viewing the river flowing and is also used as a photography site.

Tana River

The Tana River is the longest river in Kenya stretching for 1000km from its catchment area in the Aberdare ranges. In most of the areas the river is about 150m in width and flows smoothly except in rocky areas where it creates intermittent falls. Its size and flow therefore present awe for visitors who see it. Most part of the river front has a potential accommodation facility sites. Other tourist activities that can be undertaken near the water include water sport activities, cable car, bungee jumping, and aquatic birds and animal viewing.

Kora Rock

There are several rock outcrops across the KNP. The rocks were formed as a result of tectonic movement and became fully exposed by years of continuous soil erosion. The rocks have different forms. Some of the interesting ones include the 'lion teat rock' as it has its tip resembling the teat of a lioness. These rocks are beautiful, attractive to look and photograph.

Woodlands

KNP is home to a variety of trees standing together continuously forming very unique woodlands. Some of the trees include *Commiphora spp*, *Acacia spp*, and *Delonix elata*, among other dryland trees. Nature trails under these woodlands could create a wonderful nature walk. These woodlands could also be of interest to ornithologists.

Riverine Forests

The entire KNP is a semi-arid area. The narrow uninterrupted belt of forest vegetation which for the most part is made up of a few species presents a unique view for visitors. There are large trees like *Ficus spp*, *Hyphaene Coriacea*, *Acacia elatior* and the umbrella shaped *Acacia tortilis*. The few forests found along Tana and Mojo rivers are used by communities to perform traditional and religious rituals.

Tana Islands

In KNP, Tana River has 3 unique islands that were naturally created through soil deposits and siltation in the middle of the river. They are fascinating to look at, and are huge enough to be used for visitor accommodation facilities, undertake nature walks and do bird-watching as one enjoys the serenity of the park.

Inselbergs and Kopjes

These are attractive rocky outcrops some rising up to 160m above the adjoining area. The tops of the larger inselbergs are devoid of vegetation except for occasional water pools which have aquatic wildlife. Often soil collects in the shallow depressions at the summit which supports a few rock adapted plants. They also form habitats for some mammals and reptiles (Klipspringer, rock hyrax, lizards, and snakes). These features break the monotony of the flat plains in KNP.

Social values

Community consultative committees and forum

A number of forums to enable communication and dialogue between KNP management and local communities have been developed under Meru Conservation Area management. This was after a series consultative meetings between communities, local leaders and KWS. KNP has three Community Consultative Committees (CCCs) (Asako, Elrar and Boka). The main purpose of the committees is identification and prioritization of viable community projects, and raising community awareness on conservation issues. The forums have not been active in the last three years and it is envisaged that revival of the forums is one of the priority actions that will be implemented in this plan.

Cultural values

Adamson's Grave and Camp

George Adamson moved to the then Kora National Reserve in 1970 to continue his work on the rehabilitation of captive or orphaned big cats for reintroduction into the wild. He and his wife Joy Adamson are best known through the book and the Academy Award winning film "Born Free", which depicts the story of Elsa, an orphaned lioness cub they raised and later released into the KNP (and that is buried in Meru National Park). In 1989, at the age of 83, George Adamson was killed near his base at *Kambi ya Simba*. Both George Adamson and his brother Terrance are buried at *Kambi ya Simba*, which has recently been restored and which will be further developed, along with other key sites associated with Adamson's life and work.

Ethnic and cultural diversity

KNP is surrounded by people with varied cultures, traditions and livelihood support system. Somali pastoralists are found in the south eastern areas of the park; Tharaka and Kambas who are mainly agriculturalists occupy areas to the south western of KNP; and to the west. Orma pastoralists and Munyuyaya farmers mainly occupy the remaining areas to the north and east of Kora National Park. KNP management is taking steps to help improve the compatibility of cultural practices and land-uses surrounding KNP with the area's conservation, and to ensure that KNP-adjacent communities are directly benefiting from the area's existence. This is achieved through management actions under the Community partnership and Education Awareness Programme, which will involve enhancing or developing community conservancies and promotion of community tourism initiatives and potential attractions outside the protected area, such as the Somali *Manyattas*.

Traditional river wells

These are shallow wells which draw water from a natural or manmade aquifer, e.g near sand dams or around ponds which are not located inside a riverbed. The depth of these wells varies and can range from 5m to more than 10m. In community areas adjacent to KNP these wells are the main source of water in the dry season for both people and livestock. These traditional river wells are of social value to communities around KNP. These wells include Boka well, Boka Ben well, Kamaguru well and Elrar well. The wells are communally owned and provide community resilience to changes in the environment e.g. drought.



Figure 4. Aerial image showing camels crowded at Boka wells

Major Issues of Concern

Livestock incursion

Illegal livestock grazing remains the biggest challenge in Kora NP. Most of the livestock (comprising of camels, goats, cattle, and a few sheep) comes from Garissa, Hola, Ijara and Tana River. More effort is needed to curb illegal grazing by using both law enforcement and community sensitization strategies. To address livestock incursion, in Kora two security operation bases exist at *Kambi ya Simba* and Moju/Asako. The onset of a dry spell usually brings in massive livestock influx in the park and in the Mwingi National Reserve. In the recent past, KWS has been conducting joint operations with the Kenya Police Service to drive livestock out of the protected areas. These efforts should be intensified to secure the park from livestock threat.

Poaching and bush meat

Kora NP in the past decades had been frequented by poachers especially areas around Asako, Moju, Roka, Elrar, Boka and Kyethoni area of Mwingi National Reserve. However, recently, increased security and law enforcement has effectively suppressed poaching in Kora NP and the adjacent areas. Game meat trade has also been popular among the Kamba and Orma communities within the Roka area. Communities living in both Mwingi North and East Constituencies are known for bush meat poaching. The most affected areas are Nuu, Wingemi, Ukasi, Ngomeni, Kanyonyo, Tyaa, Masyungwa up to Mbirimbiri. Patrols need to be intensified these areas as well as areas around the Kora Rapids and Moju in the park.

Degradation of wildlife habitats

Kora National Park lies in an area classified as Arid and Semi-Arid Lands (ASAL) which predisposes it to seasonal threat of livestock incursion from neighbouring pastoralist commu-

nities. Additionally, the neighbouring Mwingi National Reserve, which is considered a part of the Kora ecosystem, is under a perennial threat of charcoal burning, cultivation, harvesting hard woods from indigenous species such as *Melia volkensii*, as well as illegal informal settlement. These intrusions and unsustainable extraction of natural resources has precipitated a conservation impasse, which has resulted in adverse degradation of wildlife habitats in KNP. Moreover, the pastoralist communities have erected their temporary residential structures (*Manyattas*) in a large portion of the park and brought in thousands of livestock comprising of camels, shoats, cattle and donkeys. All these human activities in a protected area have led to fragmentation of wildlife habitats, destruction of wildlife breeding and nesting grounds, and disturbance of animal movements. It is crucial to note that habitat loss poses the greatest threat to species. Without a strong plan to enforce habitat restoration and ecological monitoring, KNP ecological integrity will progressively be compromised.

The increased human activities in KNP has loosened the soil and led to complete loss of lower vegetation like bryophytes and cryophytes, which play a crucial role in primary production. This has resulted in massive soil erosion where gullies are forming from the lagga system and this is a major issue that needs to be addressed. Reforestation is key while community participation and education in taming the adverse effects of this destruction is dire. The fact that there are colossal numbers of livestock that has resulted in habitat destruction has precipitated into reduced carrying capacity of KNP in hosting the right number of wildlife. Additionally, *Prosopis juliflora* has taken over in some parts of KNP and Asako area along the Tana River and needs to be managed or eradicated to minimize threat to the habitat.

Charcoal production is undertaken mainly for commercial purposes where the producers select hardwoods such as *Acacia* species which produce high quality charcoal. Consequently, the preferred tree species have been depleted in Mwingi National Reserve thus increasing the threat of this vice spreading to KNP. This action of selective felling of *Acacia* species and other hardwoods has led to dominance of *Commiphora* species. The loss of preferred species, erosion and increasing aridity arising from climate change dynamics have led to the regrettable outcome of habitat degradation.

The Vision 2030 recognises tourism as a key economic pillar to drive socio-economic development in Kenya. Wildlife plays a key role in tourism as most of the tourists visiting the country are attracted to the diversity of Kenya's wildlife. Efforts geared towards habitat restoration of KNP will promote tourism, therefore ensuring the objectives of the tourism pillar of Vision 2030 are achieved. Based on the above, and in efforts to conserve biodiversity in the country, it is important to rehabilitate KNP following the actions stipulated in the ecological management programme.

Scarcity of water

All across KNP, the concern for water resources is growing as a result of population growth, climate change and alarming signs of groundwater depletion. Tana River, which is the only permanent river in the area, is an important lifeline to the community, livestock and other household uses. At the areas away from the river, groundwater harvesting through boreholes and shallow wells are the most common sources of water. KNP being a water scarce region, water availability has a direct impact on wildlife and food availability. To effectively cope with water scarcity in KNP and the community adjacent to the park, adaptation measures need to be put in place in order to mitigate the adverse impacts of droughts, and reduce the community's and wildlife's vulnerability to water shortage. Some adaptations can include:-

- Soil and water conservation measures such as construction of check dams and vegetative barriers, stone bunds and terraces.

- Water harvesting structures (WHSs) such as check dams, water pans and percolation tanks for efficient utilization of available rainwater.
- Alternate land uses for non-arable lands such as afforestation and pasture development supported by rainwater conservation measures such as contour trenches and vegetative barriers.
- Promotion and strengthening of Self Help Groups (SHGs) as village institutions and capacity-building of participating households/ beneficiaries with support from local Non-Governmental Organizations (NGOs), in order to ensure effective utilization, maintenance and sustainable operation of WHSs and soil and water conservation practices even after the withdrawal of support from NGO.

Wildlife dispersal area loss

Boka, Mitiboma and Mandongoi which border Kora NP are important wildlife dispersal areas connecting Kora NP to the Tsavos. However, increasing pressure for livestock pasture has invaded the corridors and gradually converted them into livestock grazing lands thus displacing wildlife and increasing HWC.

Bush encroachment

Bush encroachment occurs world-wide and is a common phenomenon in savannas and has been described to be a massive problem in arid savannas. Local drivers of bush encroachment include reduction in densities of mega fauna, overgrazing by cattle which reduce the competitive effect of grasses and decreasing population of browsers. Global drivers include increased rainfall volume and intensity as well as elevated CO₂ levels (improved WUE).

Most of KNP is dominated by dense *Acacia/Commiphora* bushland, with *Commiphora* being the most common plant species. However, there are open areas of bushy herbs and grasses which provide good habitats for grazers. These grasslands are now threatened by the drastic reduction of the elephant population which were estimated to be about 600 in 1984 (Cunningham-van G.R, 1984) to none in 2014 (KWS, 2014). Elephants are known to be key in opening up woodland vegetation. Another factor is the invasion by massive herds of livestock which overgraze and deplete the grass species giving way to woody plants. A reduction in browsing herbivores like giraffes in the park over the years (KWS, 2014) would have had a positive cumulative effect on woody cover. Increasing atmospheric CO₂ levels and climate change will also pose a threat to the park.

Bush encroachment depends on the interplay of history, environment, management and vegetation, recognition of which is essential for containing encroachment. The restoration of grasslands will not only support the re-establishment of the area's natural vegetation cover and related wildlife, but could also help improve game viewing in KNP. As such, potential areas of former grasslands will be identified for piloting methods to reduce bush encroachment.

Invasive species encroachment in Kora National Park

The Wildlife Conservation and Management Act, 2013 talks of offences relating to invasive species while the seventh schedule provides a national list of invasive species upon which action should be taken in protected areas. The National Strategy and Action Plan for the Management of Invasive Species in Kenya's Protected Areas lists 34 species (27 species of plants, 2 species of birds, 3 species of fish & 2 species of mammals). These policy documents are clear on the actions which should be taken to control and manage invasive species in protected areas in Kenya.

Invasive species are a problem within Kora and the surrounding areas. However, the current status of threat has not been scientifically documented and as no survey has been carried out in the park (KNP) and the surrounding Mwingi National. However, *Prosopis juliflora* “*Mathenge*” species is a common sight along the roads in Tana River County and along the Tana within the park. *Prosopis juliflora* has been observed to spread from Garissa side towards Mwingi & Kora. Particular sites of concern within Kora Park are Boka, Kamaguru, Bangale, Miti boma, Bula Grush, Barkin, Asako and West Kora especially at water points. Other invasive species recorded in Kora include the red-billed quelea, *Quelea quelea* representing bird’s category while the reptiles are represented by the delicate rainbow Kopja Skink, *Lampropholis* and the common or red-headed agama, *Agama agama*

In this regard, there is need to initiate invasive species identification and mapping followed by manual removal and burning of plant species like *P. juliflora* especially in the newly invaded areas.

Diseases and pests

Diseases and pests in wild animals and their landscapes are becoming increasingly recognized as an important problem for wildlife conservation. Disease epidemics can lead to catastrophic population declines in endangered wildlife. For example, an outbreak of anthrax in wildlife in Lake Nakuru National Park in 2015 caused 7% (5) mortality in critically endangered black rhino, 9% (3) in white rhino population and 20% (669) mortality in buffalo³.

In Kenya increase in livestock population with concomitant human population expansion and degradation of their habitat has contributed to livestock incursion into protected areas. As a result disease epidemics in domestic animals such as canine distemper, rabies, peste des petit ruminantes (PPR) and anthrax can spillover to wild animals.

Disease emergence in wild animal population can also be a result of changes in ecology of vectors such as tsetse fly and ticks. In 2011 an outbreak of cutaneous filariasis in black and white rhinos in Meru National Park (MNP) was believed to have been caused by intrusion of humans and livestock into wildlife habitat⁴ (Mutinda et al., 2012). Trypanosome infection has also been recorded in white rhinos introduced to MNP (Mihok S. et al., 1992).

Disease surveillance programmes in wildlife provide an understanding of their epidemiology and guide control programmes and therefore protect wildlife.

Human wildlife conflict

Problem Animal Control (PAC) operations have been on going with some challenges. Cases of HWC are common and strategies on countering it effectively are required. KNP has few PAC rangers compared to the magnitude of the problem, challenges of resources and the vast area of coverage is overwhelming to mitigate PAC. The park has no trap to capture and translocate problem carnivores. The land surrounding the park is communally owned and is used for settlement, livestock grazing and cultivation. Wildlife disperse into the community areas and at times the interaction negatively affects the community. Livestock grazing is currently rampant in the park causing conflict between the community and KNP management.

³ KWS Report, 2005

⁴ Mutinda et al, 2012

Table 2. Reported HWC incidences outlook 2014-2017 in KNP- to be replaced

PAC Situation from 2014 to 2017					
Year	Predation	Deaths	Injuries	Human threats.	Totals
2014	191	105	92	4	392
2015	120	72	48	3	243
2016	182	109	74	10	375
2017	103	92	11	4	210
Totals	596	378	225	21	1220

N/B: These are only reported cases.

a) Summary of Predators per year.
 2014- Most predators- Lion & Hyena
 2015- Most Predators- Crocodile, Lion & Hyena.
 2016- Most Predators- Leopard, Hyena & Lion
 2017- Most predators- Hyena.

b) Most wildlife that caused deaths are: elephants, crocodiles, poisonous snakes and squirrels.

c) Human threat by wildlife in the area are:

- ✓ Elephants
- ✓ Buffalos
- ✓ Leopards
- ✓ Hippos- along Tana River
- ✓ Crocodile- along Tana River.

d) Some of the injured victims have their limbs amputated.

Lack of awareness on the importance status of the Park

The survival of KNP depends on how much local communities around the park value it and appreciate its benefits both direct and indirect. Most communities will value a PA when they are receiving direct benefit which is not the case now in KNP. There is therefore need to make the local communities aware of the importance of KNP and especially the indirect benefits before they can start getting direct benefits. The park for a long time had a park warden without a community and education warden to carry out community and conservation education awareness programmes around the park. Some community forums had been formed but majority are not currently active. To raise conservation awareness on the importance of KNP, the following needs to be done:-

- i. Meetings/ Community *Barazas*
- ii. Workshops/ seminars
- iii. Exposure tours/ field visits
- iv. CSR projects
- v. Community enterprise projects
- vi. KNP to provide casual jobs to local communities

Lack of community involvement and benefit sharing mechanisms

The absence of a community and education warden in KNP has negatively affected the interaction of local communities in Kora with KWS. The community forums that had been formed some years ago are not active and need to be revived. It is also a requirement by KWS to have a park management committee in every park, and Kora is not an exception. The committee members will be sourced from the community, thereby encouraging its partic-

PLAN FOUNDATIONS

ipation in the conservation efforts. Although the *Wildlife Conservation and Management Act, 2013* has outlined a 5% benefit sharing from the park to the communities, there are no guidelines to actualize this. There is a need to come up with clear guidelines on benefit sharing. However KNP does not generate any revenue for now. Despite the current situation, KWS has partnered with other development partners like Trusts African Schools (TAS) to do some projects that directly benefit the communities around the park. So far within the partnership, TAS has spent approximately Ksh 50 Million to support community projects.

KNP Zonation Scheme

Introduction

The KNP zonation scheme provides a dual framework aimed at supporting both the decentralised management of the protected area and the regulation and promotion of visitor use across the area. To achieve this, the KNP has been divided into three visitor use zones and three management sectors. Each of the three management sectors will be managed from a sector HQ, which will be delegated management authority over the sector concerned. Each visitor use zone will focus on providing a different type of tourism experience.

The three visitor use zones are:

- ▶ Low Use Zone (Tana riverine area covering 5km from the river)
- ▶ Wilderness Zone (area beyond the 5km buffer)
- ▶ Restricted zone (Inselbergs)

The three management sectors are:

- ▶ Kamukunga
- ▶ Asako
- ▶ Boka

The following section provides further details on the location and management structure for each of the three management sectors. Following on from this, details of the three visitor use zones are set out, including details of the visitor activity and accommodation facilities prescriptions for each zone.

Management Sectors

The decentralisation of the KNP's management into three management sectors aims to increase management presence and infrastructure development across the entire KNP. The Warden Kora NP will remain the overall officer in charge of the KNP, while the sectors will be managed by Platoon Base Commanders. The location of the three sectors, their headquarters, and principal ranger outposts are shown in Figure 5. Details of the management sector headquarters and ranger outposts are set out in Table 3 below.

Table 3. KNP Management Sectors and Administration Centres

Management sector	Headquarters	Ranger Patrol Centres
▶ Kamukunga	▶ Kamukunga	
▶ Boka	▶ Boka	Katanawa
▶ Asako	▶ Asako	Elrar, Moju

ZONATION SCHEME

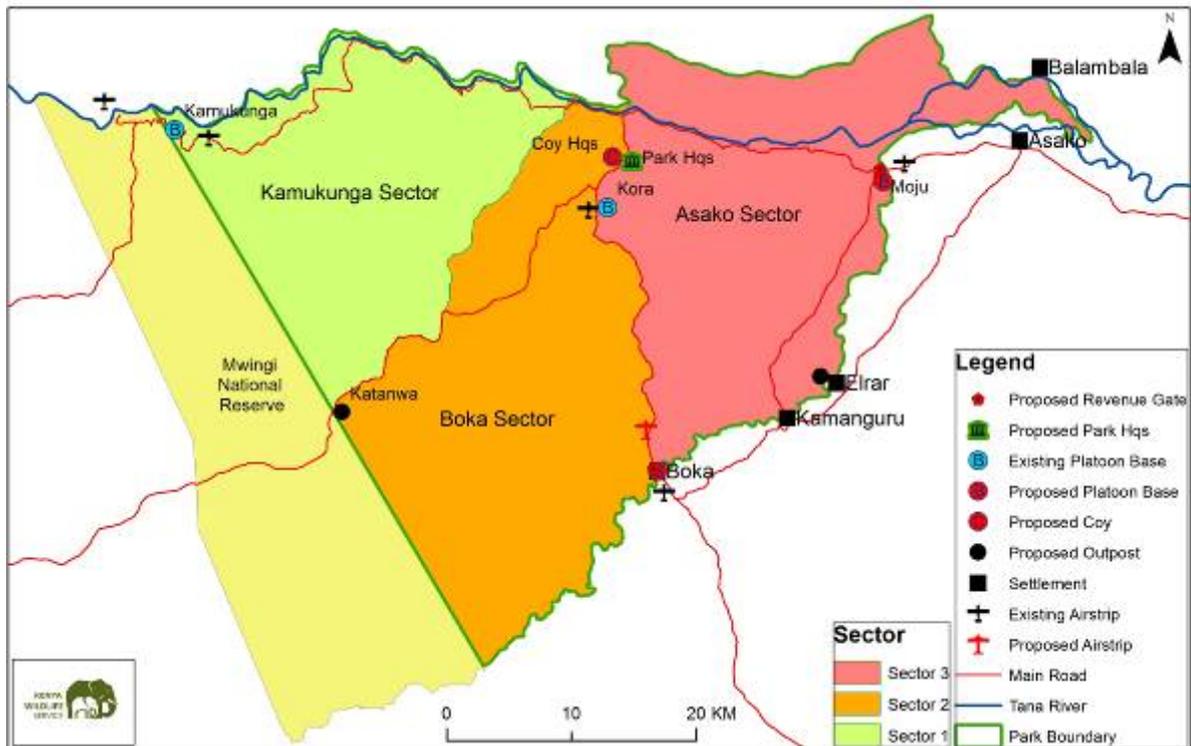


Figure 5. KNP management sectors

Visitor Use Zones

As shown in Figure 6, the KNP has also been divided into three visitor use zones: the Restricted Zone; Low Use Zone (LUZ), and the Wilderness Activity Zone (WAZ).

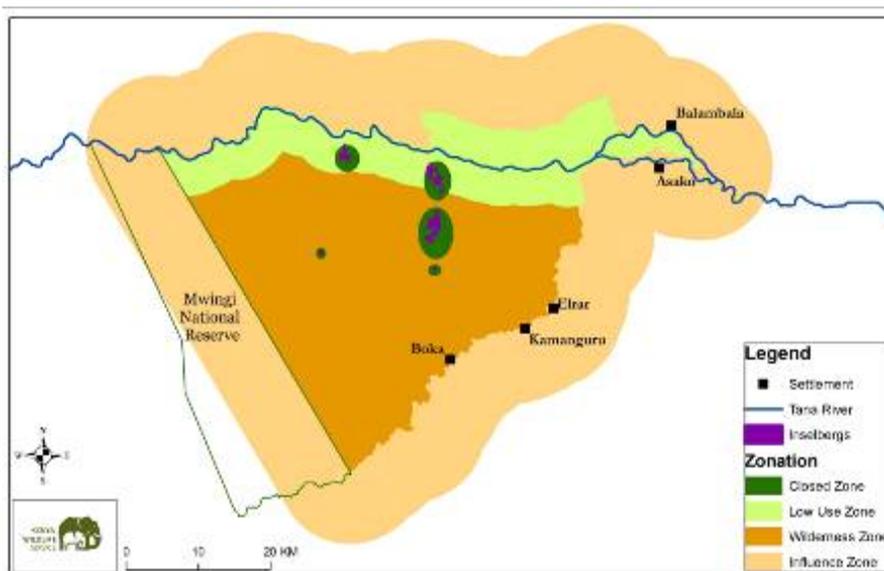


Figure 6. KNP visitor use zones

The three visitor use zones, the activities allowed, and visitor accommodation facilities permitted are shown on table 4.

Table 4. Summary of KNP permitted tourism infrastructure and activities

Zone	Wilderness	Low USE	Restricted
Infrastructure & activities			
Permitted Tourism Infrastructure	<ul style="list-style-type: none"> ▶ Special campsites ▶ Fly camps 	<ul style="list-style-type: none"> ▶ Tented camps ▶ Bandas ▶ Special campsites ▶ View points ▶ Picnic sites ▶ Interpretive stops ▶ Toilets ▶ Interpretive Centre ▶ Interpretive Signs 	<ul style="list-style-type: none"> ▶ No development is permitted
Permitted Activities	<ul style="list-style-type: none"> ▶ Short walks ▶ Camping ▶ Fly camping ▶ Camel safaris ▶ Game drives 	<ul style="list-style-type: none"> ▶ Game drives ▶ Short walks ▶ Camping ▶ Camel rides ▶ Sport fishing 	<ul style="list-style-type: none"> ▶ Low impact activities like short guided walks, but with authority from park management

Restricted Zone

The Inselbergs found in KNP form part of the scenic values. The inselbergs are included in the restricted zone to protect the unique and unstudied plant and animal life found there. Use of these inselbergs for research or recreation will be subject to authorisation by the Park Warden.

Low Use Zone

This zone comprises the 5km buffer on the south of Tana River as shown in Figure 6. In the Low Use Zone (LUZ) limited low impact tourist facilities and activities are permitted. Since wildlife concentrate in this zone due to availability of water from Tana River, the zone has potential for wildlife viewing of both terrestrial and aquatic wildlife.

Wilderness Activity Zone

The Wilderness Activity Zone covers the vast majority of Kora National Park. The zone is the least developed and least accessible area of the KNP, and opportunities for traditional game viewing are extremely limited because of paucity of wildlife. Although there is a limited road network in the area, it has mainly been designed for administrative and security purposes. There is currently limited tourist accommodation, or supporting infrastructure, in this zone.

Ecological Management Programme

Programme Purpose

The purpose of the ecological programme is to ensure that:

The ecological components and processes of the KNP are understood, restored and conserved, and threats to the area's key ecological features are reduced

Over the past thirty years, the ecology of KNP has been altered considerably, with wildlife numbers having been drastically reduced mainly due to intense poaching pressure during the 1980s and early 1990s and currently livestock incursion. Although poaching has now been greatly reduced, livestock incursion continue to be a major threat to the ecology of KNP. The KNP Ecological Management Programme aims to address the threats that are impacting on the most important ecological values of the KNP ecosystem, and to provide a guiding framework for the long-term ecological monitoring of the area.

Guiding Principles

In implementing the KNP's Ecological Management Programme, KNP Management and stakeholders should strive to ensure that:

KNP habitats and wildlife are restored

KNP habitats have been degraded over time due to increased livestock incursions leading to overgrazing and soil erosion. Illegal charcoal burning which is rampant in adjacent Mwingi NR has spread into KNP causing habitat degradation. Consequently the presence of livestock in the park has pushed wildlife populations into MNP and Bisanadi NR. Poaching in the 1970s and 1980s also led to drastic reduction in KNP browsing and grazing wildlife species. The Ecological Management Programme will aim to restore the area's natural wildlife species composition, with particular attention to large carnivores, elephants, black rhinos and greater kudu, and work towards re-establishing natural vegetation composition and dynamics in the area.

Habitat connectivity with surrounding areas is maintained

The migratory species in KNP depend not only on the conservation of suitable habitat within the protected area, but also on the surrounding dispersal areas and connecting corridors. The ability of wildlife species to migrate or disperse is an important ecological process of their life cycles. Over the years increase in human population settlements and change in land use practices in areas surrounding KNP has led to wildlife habitat fragmentation and blockage of migratory corridors. As part of the efforts to re-establish and conserve natural population dynamics and processes, management activities under this programme will aim to perpetuate the unrestricted dispersal of animals into areas outside of the KNP.

KNP ecological trends and threats are monitored and understood

Given the increasing human and climate-induced pressures in KNP, it is important to monitor the key ecological parameters over time to ascertain the overall ecosystem health and design appropriate mitigation measures. The ecological monitoring programme will be designed and implemented in such a way as to provide a firm foundation for adaptive management and for measuring management effectiveness.

Adaptive research is promoted to address key ecological threats

Limited research has been conducted in KNP compared to the adjacent MNP. There is need to conduct adaptive research to better understand key ecological threats and identify suitable solutions to solve them.

Targeting ecological management action

The PAPF prescribes the use of the **Nature Conservancy's (TNC) Conservation Action Planning (CAP)** process as a foundation for designing the PA plan's Ecological Management Programme. The rationale underlying this is that, with limited human and financial resources available to PA managers, it is impractical to attempt to manage and monitor every single aspect of the complex ecology of a protected area. The CAP methodology provides a tried and tested mechanism for targeting ecological management, by identifying and developing an accurate definition and understanding of the PA's most important ecological features and their management needs, and the major threats to these features. In line with the PAPF, this programme also adopts the CAP framework.

The PAPF identifies three main stages in applying the CAP methodology: the selection of **conservation targets**; the identification and ranking of **threats** to the conservation targets; and the development of **management objectives and actions** to address these threats as well as to enhance the conservation targets. These key stages and their application in the KNP planning process are elaborated in the following sections. The identified conservation targets and threats to conservation targets are presented in Table 5 and Table 6 respectively.

Table 5. KNP conservation targets

	Conservation target	Rationale for selection	Important subsidiary targets	Key ecological attributes
Species	Large carnivores (Lion, cheetah, wild dog)	Large carnivores are crucial in maintaining ecosystem health through provision of natural control of wild herbivore populations. They are amongst the most threatened species globally (Cellabos et al., 2005; Schipper et al., 2008). The KNP population is small but their actual numbers and distribution patterns are not known. The prey base status is also not well understood. Population increase targets are unlikely to be met without active management.	<ul style="list-style-type: none"> ▶ Small carnivores 	<ul style="list-style-type: none"> ▶ Prey availability ▶ Competition among carnivore species ▶ Population size, recruitment and structure ▶ Genetic diversity and variability
	Greater kudu	The species is very rare in KNP and their population is threatened by destruction of their woodland habitat by human and elephants. They are also poached for meat and horns. The current population in KNP may not be viable due to the low numbers	<ul style="list-style-type: none"> ▶ Other ungulate species inhabiting the woodlands e.g. Plains zebra. Buffaloes, eland, Oryx and giraffes. 	<ul style="list-style-type: none"> ▶ Habitat size and quality (water and forage) ▶ Population size, recruitment and structure ▶ Genetic diversity and variability
	Elephant	Classified as vulnerable by the IUCN. Current population remains well below records from the early 1980's. Play a key role in maintaining KNP habitats, especially grasslands. Threatened by livestock encroachment into their habitats and blocking of their migration and dispersal routes outside KNP boundaries.	<ul style="list-style-type: none"> ▶ Other species that migrate or disperse outside the KNP (e.g. buffalo, lions, zebra) 	<ul style="list-style-type: none"> ▶ Migratory corridors between KNP and Tsavo ▶ Dispersal area (Boka, Moju, Asako areas) ▶ Population size, recruitment and structure ▶ Genetic diversity and variability
	Vultures (Egyptian and the Lappet faced vulture)	The two species are listed as endangered under the IUCN Red list, 2017. Their population in KNP is declining due to poisoning and loss of habitat	<ul style="list-style-type: none"> ▶ Other threatened bird species e.g. raptors 	<ul style="list-style-type: none"> ▶ Habitat size and quality ▶ Roosting and nesting sites ▶ Infrastructure development along migratory corridors
	Acacia-Commiphora bushland	Dominates most of KNP. Important for browsing species. Threatened by livestock incursions.	<ul style="list-style-type: none"> ▶ Gerenuk ▶ Dikdik ▶ Lesser and Greater Kudu ▶ Bats 	<ul style="list-style-type: none"> ▶ Population size of browsing species ▶ Extent of bushland ▶ Vegetation structure and composition

ECOLOGICAL MANAGEMENT PROGRAMME

	Conservation target	Rationale for selection	Important subsidiary targets	Key ecological attributes
	Hills & Inselbergs	Basement rock projections that occur in parts of KNP e.g. Kampi ya Simba, Komuyu, Mansumbi, Nzoka, Masasini, Kiume and Katania. Some contain localized plant communities found nowhere else in the entire KNP ecosystem ¹ .	<ul style="list-style-type: none"> ▶ Plant species such as: <i>Xerophya spekei</i>, <i>Loudetia arundinacea</i>, <i>Bulbostylis</i> and <i>Mariscus</i> 	<ul style="list-style-type: none"> ▶ Population size of unique plant communities
Systems	Tana Riverine ecosystem	Important for riverine forests which provide important dry season habitats for many wildlife species. Under threat from conversion into agricultural farms and intensifying water diversion for irrigation.	<ul style="list-style-type: none"> ▶ Riverine vegetation ▶ Bohor reedbuck ▶ Bird species ▶ Hippopotamus ▶ Nile crocodile 	<ul style="list-style-type: none"> ▶ Riparian forest structure & composition ▶ River regime (flow and pattern) ▶ Water quality
	River (Lagga) Ecosystems	They form springs and pools which provide water and habitats for wildlife especially during the wet season. They are lined by mostly Doum palm vegetation and are threatened by livestock overgrazing and habitat destruction by humans	<ul style="list-style-type: none"> ▶ Swamps ▶ wells 	<ul style="list-style-type: none"> ▶ Water quality ▶ River regime (flow and pattern) ▶ Riparian forest structure & composition

¹Kabuye, C.H.S., Mungai, G.M. and Mutangah, J.G. (1984) *Flora of Kora National Reserve. Report by East African Herbarium, National Museums of Kenya*

Table 6. Threats to KNP Conservation Targets

TARGETS	River (lagga) ecosystems	Acacia-Commiphora bushland	Inselbergs	Tana riverine ecosystem	Elephant	Greater kudu	Large carnivores	Vultures
THREATS								
Poaching		Medium			High	High	High	
Livestock incursions	High	High	High	High	High	High	High	
Invasive species	medium	Low		Medium	Low			
Disease					Low		Medium	
Settlement in dispersal areas					Medium	Low	Low	
Charcoal burning and logging	Medium	Medium	Low		Medium			Medium
Human encroachment					Medium	Medium	Medium	
Bush encroachment						High	High	High
Destruction of catchment forest	High			High				
Conversion of riparian habitat for rice irrigation				High	High			
Abstraction of water for irrigation				High				
Sand scooping for construction	Medium			Low				
Poisoning							High	Very High
Harvesting of building materials	Medium	Medium		High	High	Medium		High
Hydroelectric dams				Very High				
Flooding				Very high				
Climate change	Medium	Low		Medium	Low			

Ecological management objectives and actions

The identification and ranking of the threats to the KNP's conservation targets and their KEAs provides the basis for the development of the Ecological Management Programme's management objectives and actions. Objectives have been developed to address the clusters of threats. Four objectives have been developed addressing threats to the KNP's threatened large mammals and birds (covering conservation targets: large carnivores, black rhino, greater kudu and elephant); addressing crosscutting threats to the KNP's most important habitats (covering conservation targets: Tana River ecosystem, *Acacia-Commiphora*, Hills and Inselbergs); and addressing threats to targets selected beyond the KNP boundary. The four objectives developed for the KNP Ecological Management Programme are:

- MO 1. Conservation status of the KNP's threatened mammals and birds enhanced**
- MO 2. Important KNP habitats are restored and maintained**
- MO 3. Understanding of ecological processes and functions enhanced**
- MO 4. Climate change impacts mitigated and adaptation interventions mainstreamed**

These management objectives and their subsequent management actions are described in detail in the sections below. Under each management objective there is a brief description of the relevant management issues and opportunities, which provides the specific context and justification for the management actions.

Objective 1: Conservation status of the KNP's threatened mammals and birds improved

The desired future state of the KNP is one where the population status and dynamics of the target species is well understood. The MCA management plan 2007-2017 identified elephants as one of the conservation targets, however, during the KNP management plan 2018-2028 development, large carnivores and birds were also identified as important conservation targets.

The KNP elephant population dynamic is not well documented though their movement pattern is known to follow Balambala, Moju and Asako riverine habitat. In 2012, fourteen (14) elephants were translocated from Asako to Meru NP and Aberdares NP due to human-wildlife conflict in the area.

KNP is known for the high number of threatened large carnivores including the lions, wild dogs, leopards and the cheetahs, however, the population status, distribution and movement pattern is not known. The prey base status is also not well understood. Further, the Egyptian and the Lappet-faced vultures which are listed as endangered under the IUCN Redlist, 2017 are known to inhabit the park but their population status and trends are poorly understood.

The increased presence of livestock and herders in the park has displaced wildlife into adjacent protected areas and thus increased competition for pasture and water. Diseases in livestock can also spill over into wildlife populations leading to wildlife mortality. Other threats to wildlife species include stochastic events such as drought. Hence to address issues facing threatened species the following actions will be implemented:

Action 1.1 Restore populations of declining species in KNP

Over the years population of wildlife in KNP has declined tremendously and some species are locally extinct. For instance the black rhino population which was estimated to be about 5 animals in the park in 1983⁵ are now thought to be extinct. Livestock incursion, poaching, and bush encroachment have been identified as some of the causes for this population decline.

Re-introduction of black rhinos and restoration of other species that have declined will be carried out to re-establish their populations as well as to raise the conservation profile of KNP. The re-introduction and restoration process will involve conducting habitat suitability studies; establishing the ecological carrying capacity for target species; carrying out feasibility studies on wildlife restocking; and identifying source populations prior to translocations. In the case of the black rhino, re-introduction will be done in phases (see Figure 7). The first phase of re-introduction will target hand-reared individuals which will be raised in a secure enclosure/*Boma* (measuring 1km²) near *Kampi ya Simba*. The restocking of other species will be done in phases and informed by the successful post restocking monitoring reports.

The Senior Research Scientist -Eastern Conservation Area (SRS-ECA) and Kora NP management will advise the KWS species re-introduction committee upon completion of the habitat suitability and ecological carrying capacity studies to initiate the restocking process.

The restocking exercise is planned to be implemented in 2-5 years after the plan endorsement. In addition to the restocking, it is expected that wildlife will naturally move in to the restored areas of the park. To ensure successful restoration of the target species, funding in terms of financial resources, monitoring vehicles and human capital will be required.

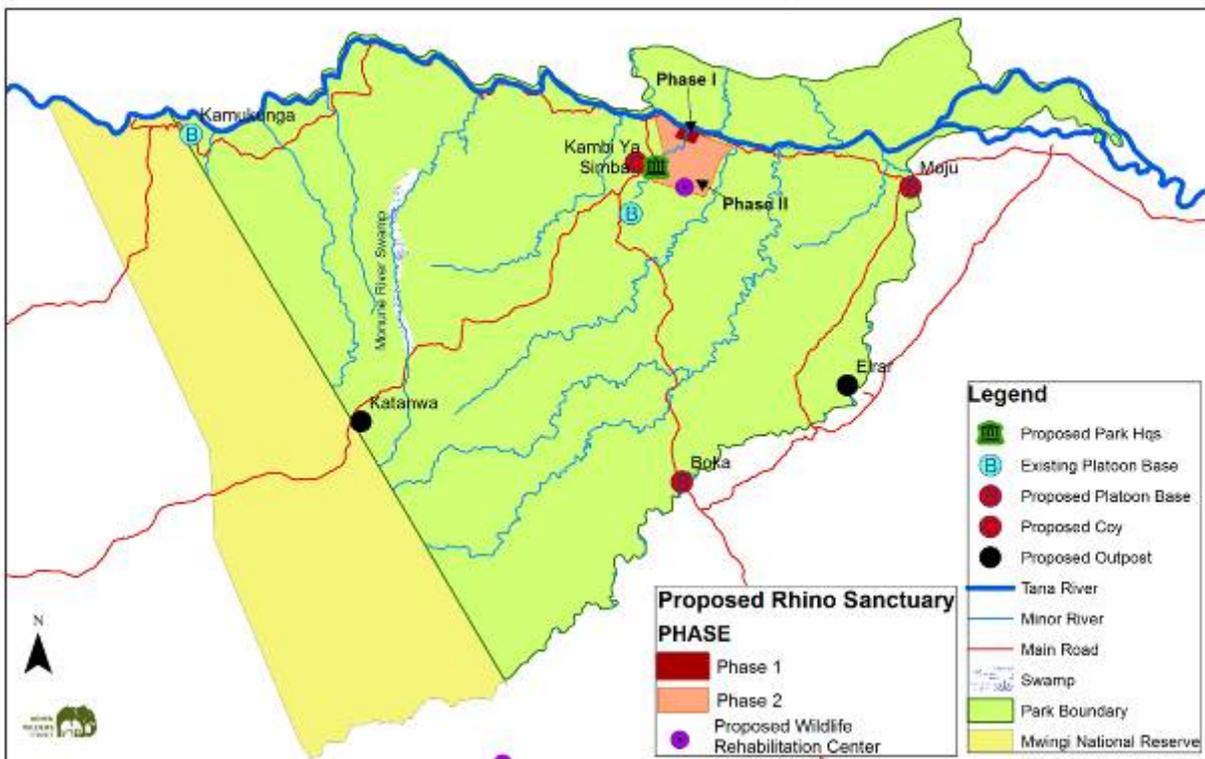


Figure 7. Map showing proposed phases of rhino re-introduction

⁵ Cunningham-Van Someren, G.R. (1983) The larger mammals of Kora National Reserve with notes on the Scuiridae and Bathyergidae, National Museums of Kenya, Nairobi.

Action 1.2 Design and implement species specific monitoring programmes

KNP currently has no programmes in place to monitor threatened species and the population status of most of these species is not well understood. According to census reports, the elephant population in the MCA declined in 1976 from 1328 hitting a low of 251 individuals in 1990 due to poaching. The population has registered a slow growth from 1996 to the present where it oscillates between 450 and 700 individuals due to local seasonal migration. The situation in KNP is similar or even worse than that of the larger MCA as the aerial census conducted in 2005 recorded no elephants in the park compared to 72 individuals counted in 2011. Currently the presence of resident populations of elephants in KNP is not well ascertained, albeit the occasional physical sightings and activity signs. There have been no specific surveys targeting other species like the large carnivores.

Regular species monitoring (e.g. using physical sighting, spoor survey) to establish seasonal habitat utilization will be conducted. Some wildlife will be fitted with GPS collars to monitor their movement and bird roosting and breeding sites will be mapped to establish the critical habitats that require protection to secure the species. Critical wildlife movement routes will be identified and mapped such as the Tsavo-KNP and the KNP-Meru NP-Northern grazing zone elephant migratory routes. In implementing this action, threats facing the conservation of threatened species in KNP will be investigated.

Species specific monitoring programmes will be implemented in KNP and the influence zone covering an area of approximately 5,464 km². The design and implementation of specific species monitoring programmes will be spearheaded by the SRS-ECA in collaboration with donors working in KNP together with the KNP Warden.

To ensure threatened species in KNP are effectively conserved, specific species monitoring programmes will be implemented within the first 3 years after plan approval. Financial and human resources will be required to carry out these activities.

Action 1.3 Conduct disease surveillance and control programmes

To ensure a viable population of wildlife in KNP there is need for a continuous wildlife health monitoring programme. The presence of large herds of livestock in KNP presents a disease risk for wildlife population and is a potential health risk for re-introduction of wildlife (Leighton F. 2002). Disease outbreaks in domestic animals can spill over to wildlife causing mortality. Previous studies have also shown a low prevalence of tsetse fly (*Glossina spp.*) in KNP along the riverine vegetation which pose a threat to re-introduction of native black rhino population.

Pre-translocation disease risk assessment will provide information to mitigate health risk during translocation, for instance identify suitable areas for establishment of a black rhino sanctuary. Tsetse surveillance in KNP will inform control programmes. Targeted disease surveillance and control programmes like rabies control in domestic carnivores to safeguard spill over to large carnivores and veterinary interventions on sick and injured target wildlife species will be undertaken. Disease risk assessment will cover the livestock and wildlife in the entire KNP and surrounding community land.

Wildlife health programmes will be coordinated by the KWS Heads of Veterinary Department and Species Programmes in collaboration with KNP management. Tsetse fly surveillance and control will be undertaken in collaboration with Kenya Tsetse fly and Trypanosomiasis Eradication Council (KENTTEC), while disease control in domestic animals will be done in collaboration with the state Directorate of Veterinary Services (DVS).

Disease risk assessment will be conducted prior to translocation of wildlife. Disease and tsetse fly surveillance programmes will be conducted annually during the first three years of the implementation of this management plan.

The important resources that will be required to implement these activities will be veterinary staff, financial input and specific drugs.

Action 1.4 Provide water for wildlife within KNP

KNP has only one permanent river, Tana River, with the rest of the park having no permanent watering points for wildlife. This has led to skewed wildlife distribution within the park with most of the wildlife concentrating along the Tana River. To address the water scarcity problem, therefore, water pans will be constructed and boreholes drilled in identified areas within the park. Check dams will also be constructed on the Moju and Monune streams so as to provide supplementary water during the dry seasons.

Wildlife water supplementation in KNP is an urgent intervention if threatened species are to be restocked, secured and conserved effectively. Water provision will be done in the first 2 years after plan endorsement. Water provisioning requires high financial input and suitable plant machinery to carry out the works. The SRS and Kora NP management through the civil works department will work together to ensure that water for wildlife is provided in the identified sites within the park.

Action 1.5 Monitor populations of vultures

The population of vultures in the KNP is said to be declining. This decline is attributed to poisoning and loss of habitat. The vultures will be monitored to discern their population status and trends as well as their feeding behaviour.

Objective 2: Important KNP habitats improved

The desired future state for the KNP habitats is where diverse habitats are healthy and supporting optimum levels of wildlife populations. Kora National Park comprises of three major habitat types namely; riverine, *Acacia-Commiphora* bushland, and hills/inselbergs. Hills and Inselbergs are special habitats for seasonal aquatic plant species such as *Xerophya spekei*, *Loudetia arundinacea*, *Bulbostylis* and *Mariscus* that are unique to KNP ecosystem, hence they need to be managed and maintained in their current state.

Presently, these habitats are experiencing a myriad of threats, which if not mitigated, are likely to lead to extirpation of some species. Persistent droughts have killed many plant species and degraded these habitats extensively. Invasive species have become a common occurrence resulting from drought. For example, *Prosopis juliflora* has extensively occupied most of the areas previously occupied by wildlife food. Moreover, there is uncontrolled livestock incursion in the park, particularly along the Tana River, as herders access grass and water. Thousands of cattle, shoats and camels have made KNP a grazing zone thus causing massive habitat degradation. This degradation is a big threat to conservation in this park and needs to be addressed.

Previously, the land between KNP and Tsavo Conservation Area (TCA) was bare and was used by wildlife as a migratory corridor. Land uses on this area have changed over the past few decades, thus, blocking the migratory corridors and wildlife dispersal areas. This is a threat that needs to be aptly addressed to restore habitat integrity in KNP. It is crucial to note

that Kora National Park has previously been managed as a sector in MCA, a factor that has resulted in its lack of prioritization. For the last 30 years, this conservation area has witnessed dwindling wildlife populations especially because of poaching in the late 1980s and early 1990s, livestock incursion and persistent drought. The pressure from these occurrences has created significant changes in the KNP vegetation where major plant species have disappeared and crucial habitats fragmented or extirpated all together. The grazing and browsing ability of both grazers and browsers in this region has been nipped because of this loss of habitat diversity in KNP. The outcome has been restricted tourism activity and bleak future of this park.

Principally, there is a need to ensure that the natural vegetation structure and composition of habitats is re-established. In a bid to achieve the desired future state of the KNP habitat, six (6) management actions have been formulated to address the identified threats for riverine, *Acacia-Commiphora* bushland and hills/inselbergs habitats. These actions are discussed in the following sections.

Action 2:1 Implement drought mitigation and adaptation measures

KNP has experienced increased bouts of drought, a factor that has led to reduced food for wildlife leading to movement of wildlife populations to other areas; hence reducing the tourism potential of the park. To mitigate this problem habitat restoration plots will be established a pilot basis, and if successful, will be replicated elsewhere in degraded areas. However this measure will be contingent on reducing the heavy livestock grazing pressure in the park that is making drought impacts worse.

Scarcity of water in most of the park leads to concentration of water dependent wildlife close to Tana River. Hence, to ensure that wildlife is using the underutilized parts of the park, sand dams, water pans and boreholes will developed in suitable habitats in the park. These intervention measures will be carried out in Kora Lagga system, Tana River riverine ecosystem, areas around *Kambi ya Simba* and Boka area.

Action 2:2 Restore degraded and eroded habitats

Rehabilitation of degraded areas in KNP will play a central role in the provision of ecosystem services as it will aid to regain ecological integrity, enhance biodiversity and resilience to climate change. Degradation of key habitats in KNP has been well recognized as a major threat to biodiversity and environment wellbeing due to the resulting loss in biodiversity, soil degradation, and significant contribution to greenhouse gas emission.

In order to rehabilitate the eroded and degraded areas, several activities will be carried out. Firstly, the degraded areas will be mapped out and targeted for rehabilitation or promotion of natural regeneration. Natural regeneration can be achieved through controlled access to certain degraded areas.

The KNP management will be the lead agency spearheading the entire process of rehabilitation and will ensure that all the stakeholders are involved.

The implementation of the restoration programme will be guided by the mapping report and will require resources in terms of vehicles, finance and scientific equipment.

Action 2:3 Carry out a study to establish impacts of livestock incursions on vegetation structure and composition

Presently, there is a substantial amount of illegal grazing taking place in Kora National Park. Every year, KNP management uses considerable resources, in trying to curb the influx of livestock in the KNP. However, success has been limited in combating these incursions and law enforcement efforts are increasingly being complemented by awareness raising and building relationships with KNP-adjacent communities. A critical tool in this awareness raising is the ability to inform communities on the impacts of livestock grazing on the KNP's conservation, and in particular its vegetation structure and composition. As such, under this action, a study will be carried out to establish the impacts of livestock incursions on the vegetation structure and composition of habitats in the KNP. This study will be carried out by KNP Research Section staff during the third year of plan implementation.

Action 2:4 Carry out a KNP land cover change study

In the past, KNP has suffered heavily from poaching and encroachment, which has had far-reaching impacts on the area's ecology. Many browsing and grazing species were extirpated from the area or drastically reduced in numbers, which has resulted in significant changes in the KNP's vegetation composition and structure.

Although these changes are widely acknowledged, scientific investigation and documentation of the actual changes in KNP vegetation types has not been undertaken. As such, a land cover change survey will be carried out in order to establish the specific changes that have occurred regarding the KNP vegetation types, and clearly identify areas where significant changes in land cover have occurred (especially changes in *Acacia-Combretum* grassland). This information will aid the piloting of the bush encroachment reduction programme.

Action 2:5 Control and monitor the spread of invasive species

The spread of invasive species in protected areas around Kenya is an emerging management concern. The livestock incursion problem in Kora has aggravated the problem, resulting in increased spread of invasive or non-native plants. The invasive species of key concern is *Prosopis juliflora* which has not only taken over large grazing areas outside KNP but is also spreading into the park.

Prosopis juliflora invasion occurs in Boka, Kamanguru, Bangale, Miti Boma and Bula Grush areas outside the park. Currently the abundance and distribution of this invasive species in KNP is not mapped. It is therefore essential that an invasive species distribution map is prepared followed by a manual control and eradication of the same through uprooting and burning. Once cleared of invasive species, there is need to develop habitat restoration and recovery programmes. This is a scientific exercise which will be driven by KWS, Meru conservation area team in collaboration with other stakeholders including the county government of Kitui, Tharaka Nithi/Meru and Tana River. Control of invasive species will be a continuous exercise throughout the plan period.

Action 2:6 Secure migratory corridors and dispersal areas

Elephant survival depends not only on the conservation of suitable habitats, but also on habitat connectivity with surrounding areas. Their ability to migrate or disperse outside of the KNP is an important component of their life cycles. In KNP, the population of elephants utiliz-

ing the PA and the surrounding dispersal and migratory habitats have been reducing over the years a factor suspected to be mainly attributed to increased invasion by herders and their livestock. In addition, conservation-incompatible land uses, particularly in settled agriculture areas, are gradually eroding wildlife dispersal areas and the migration corridors.

Within Kora and the surrounding areas, elephants migrate from Northern Tsavo/South Kitui National reserve via Ukasi area, Mandongo area into Kora park/Mwingi National Reserve moving along Kitui and Tana River county boundary. The area between Kora and Rahole National reserve is equally important and a corridor to connect the two should be established. The other route is from Kora to Meru National park and Samburu/Laikipia ecosystem.

As part of the effort to re-establish and conserve natural population dynamics and processes, KNP management activities under this action will aim to perpetuate the unrestricted dispersal of animals into areas outside of the park (see Figure 8). The management in collaboration with other stakeholders will focus on re-establishing corridors to increase wildlife range and enhance ecosystem resilience. The management will also work in partnership with Garrisa and Tana River county governments to identify and secure wildlife corridors while at the same time liaising closely with the landowners to establish wildlife conservancies and protect the dispersal areas as appropriate.

To lay a strong case for keeping the migration routes open, an elephant movement study will be carried out. This will involve monitoring GPS-collared elephants in the area to discern their movement patterns and deduce factors influencing their movements.

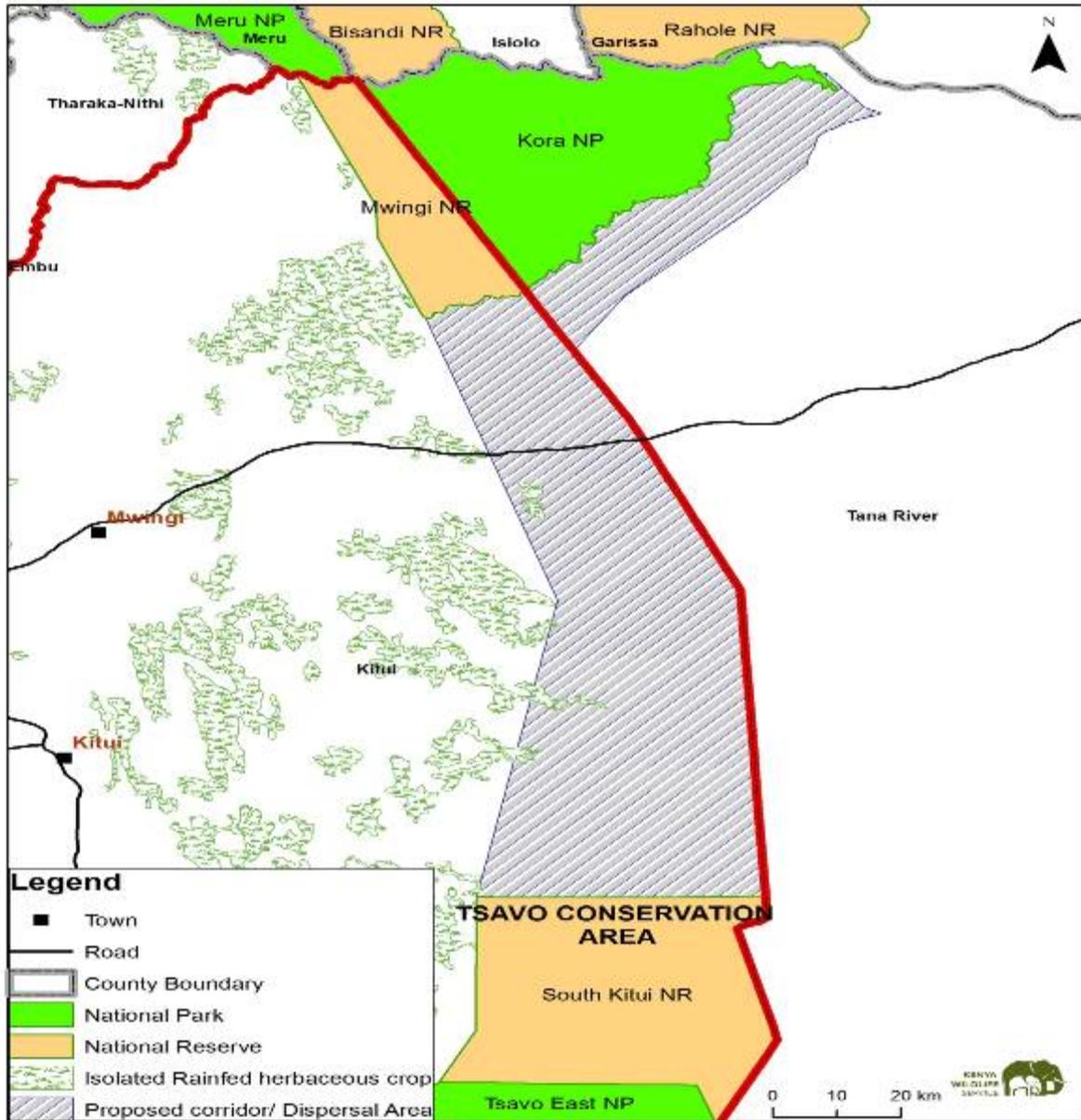


Figure 8. Proposed migratory corridors and dispersal area to be secured

Objective 3: Understanding of ecological processes and functions enhanced

The desired state at KNP is where long term and elaborate ecological monitoring and research programmes is carried out to generate reliable data to inform and guide management and conservation decisions. The ecological functions of any ecosystem require proper understanding if they are to be maintained in their natural form and continue to provide the products and services required of them.

Currently little on the biodiversity status of KNP is available since most of the existing ecological monitoring and research focus only on the adjacent Meru National Park. KNP is faced by

many alterations due to human activities especially livestock incursions, but the level of the impacts have not been quantified. KNP is also an important habitat for several threatened species including elephants and large carnivores. Therefore there is need to design and undertake targeted research and biodiversity monitoring programmes to collect data to inform appropriate mitigation measures.

The management actions that have been designed to achieve this objective are elaborated in the following sections.

Action 3:1 Conduct baseline surveys

There is little information on the studies undertaken to determine the biodiversity status in KNP. A project commissioned by the National Museums of Kenya in 1983 and 1984 inventoried the avifauna, the large mammals and flora of the then Kora National Reserve. It is expected that human pressure and climatic changes may have induced many changes to the ecosystem since the time the project was undertaken. Thus, another inventory needs to be carried out to establish the current biodiversity status and inform the designing of a long-term ecological monitoring programme.

The data obtained will provide baseline information which will indicate the biodiversity status of the park. This will form a basis of identifying the issues of concern and areas that need to be monitored over time and generate trends in the ecosystem. The information obtained will then be used to guide adaptive management interventions and decisions.

Action 3:2 Develop a long term ecological monitoring programme

Currently there are no ecological monitoring programmes being undertaken in KNP. Long term collection of ecological data is key to understanding changes in the ecosystem over time. The data is collected systematically through established ecological monitoring programmes which take measurements of selected environmental variables in the ecosystem. Some of the impacts which need to be quantified and understood well in KNP include those of climate change and livestock incursion.

The first step in developing the Ecological Monitoring programme will be to prepare detailed monitoring protocols, that is, the monitoring indicators, their information sources and methods to be used in collecting information, based on the information already set out in the ecological monitoring framework at the end of this programme. The detailed elaboration of monitoring protocols will in turn determine human resource, equipment and any other requirements for undertaking the protocols.

Action 3:3 Develop an information and data management system

Several of the management actions listed in this programme, and as a result of the implementation of the KNP ecological management programme, will generate a significant amount of ecological information. Likewise, a considerable amount of data is collected by other KWS departments e.g. Human Wildlife Conflict, tourism visitation and revenue data. If this information is to be used effectively, it needs to be managed, stored and synthesised effectively and efficiently. Essentially, the outputs must be disseminated to all relevant KNP and KWS officers in a format that in timely fashion. Unless this is achieved, much of the ecological information is likely to be unused or unusable, leading to a waste of time and resources.

Hence, a digital KNP database will be established to ease data management and access by relevant users. This digital database will contain biological inventory records from all surveys conducted in KNP and research findings. It will also include updated data on all the ecological monitoring programmes taking place in KNP at any particular time. A digital herbarium will also be established. A natural capital atlas that will display the current natural capital in KNP, its location and possible utilisation channels shall also be developed. The design of the new database will be complemented by the development of a reporting framework and communication protocols aimed at ensuring that database outputs are regularly available in a simple and transparent form for all users. This will also involve the production of periodic reports detailing key aspects of KNP ecological monitoring information, including trends in key indicators.

To implement this database a desktop computer, a laptop, internet services, backup systems, relevant software and skilled staff will be required. To ensure use of the database, park management and other stakeholders will be trained on the database.

Action 3:4 Establish the Adamson resource centre

Kora National Park owes a large part of its existence to George Adamson who made it his home for nearly 20 years and was involved in conservation activities including rehabilitation of lions and leopards. Available records indicate that in the past, researchers from various institutions (e.g. The Polytechnic of Central London and the National Museums of Kenya) have conducted research in the park. However, information generated by these researchers is not readily available. Thus, there is need to establish a resource centre in KNP where local and international scholars, visitors, tourists, school children and other interested persons can visit and access information. The centre will also host visiting researchers who will be able to take advantage of the diverse research opportunities in the park. Information on research carried out in the park and adjacent areas will also be disseminated at the centre.

Action 3:5 Identify and conduct targeted research

There has been relatively little research carried out in KNP; hence most research questions remain unanswered. This implies that most of the management decisions being made in the park are not driven by science.

Hence to base management decisions on scientific information, key research areas in KNP will be identified and prioritised. The list will be used to guide KWS research activities in the area as well as advise external researchers who are interested in conducting research in the KNP. However, management oriented research will be prioritized and promoted to address the challenges facing conservation in the park. The identified research areas will be used to develop a long-term research strategy for KNP in order to streamline all research activities in the park. One of the priority areas of focus involves assessing the effects of habitat fragmentation and degradation on wildlife including the relationship between anthropogenic activities and wildlife populations. The research will be conducted in KNP and its influence zone by a team of KWS scientists, local and international university students, Research institutions and other interested researchers.

Objective 4: Climate change impacts mitigated and adaption interventions mainstreamed

The future desired state of at KNP is where all the habitats and the species therein are able to respond to climate change without experiencing detrimental ecological effects and are able to endure and continue offering the same ecosystem products and services. The ecosystem should also strive to reduce loss of biological diversity, reduction and modification of wild areas, or extinction of or threat of extinction to wildlife species and natural areas, which serve as its habitat.

Currently, climate change is a reality in Kenya as depicted by variation in weather patterns, unpredictable levels of water in lakes and rivers, frequent and prolonged occurrence of droughts and floods in protected areas, and other environmental disasters. Kora National Park, which is within the ASALs, is heavily impacted by climate change, which has resulted into degraded and eroded habitats, and decline in wildlife species populations.

The impact of drought outside the park has resulted in over-utilization of natural resources leading to degraded pastures leading to immense human and livestock encroachment in the park.

Over-population of livestock in the area has exacerbated the degradation of habitats in terms of selective over-browsing of tree species preferred by camels and goats and over grazing by cows and sheep. Charcoal burning in the neighbouring Mwingi National Reserve and the destruction of woody and grass vegetation, which is an important resource base for rural people's livelihood, has led to increasing poverty, demand for fuel wood and other complex socio-economic factors which have put enormous pressure on the scarce productive areas. This is further aggravated by the increasing human population in the region.

In view of the above, the existing anthropogenic threats on habitats shall be remediated and minimized through the following four actions spelt out below:

Action 4:1 Assess ecosystem-level drought risks

Drought is a climatic event that cannot be prevented, but interventions can be made to: be better prepared to cope with drought; develop resilient ecosystem to recover from drought; and mitigate the impacts of droughts.

There is need to have a drought assessment team and procedure to be undertaken when droughts occur. This assessment, which would include climate risk analysis and disaster preparedness, will help mitigate the conflicts and losses that are witnessed every time drought occurs.

As such, under this management action, KNP management will collaborate with the County Government of Tana River in ensuring that climate change adaptation measures are incorporated in the County Integrated Development Plan. Efforts will also be made to undertake climate risk analysis and ecosystem-based disaster risk reduction and climate change adaptation planning at different levels. The local community will also be encouraged to participate in resource use conflict management.

Action 4:2 Restore degraded areas in the park and adjacent areas

Areas adjacent to the KNP are degraded through human activities such as overstocking of livestock. To ensure that productive livestock pastures are maintained outside the park, KNP will support establishment of community conservancies, which will be required to develop and implement livestock grazing plans to minimize degradation (Community Partnership and Conservation Education Programme). Further, KNP management and other stakeholders will initiate regular range assessment; conduct water, flood and soil management (stone bunds and check dams), as well as undertake bush encroachment control (reduction of dominance of unpalatable indigenous trees and shrubs) in a bid to restore the ecosystem health of the degraded areas. In addition, invasive species, *such as Prosopis juliflora*, will be controlled and grass re-establishment on degraded grasslands carried out.

Restoration activities in the park will focus on fragile and degraded ecosystems like the riverine systems, while community based interventions will be carried out in areas around Kora National Park majorly, Boka, Mbalambala, Kamaguru, Moju, and areas between Rahole National Reserve and Kora National Park.

Action 4:3 Support climate responsive and ecosystem resilience economic investments and incentives

Climate change has increased ravages of drought and the lack of preparedness in the pastoralist communities has always heaped pressure in the KNP. As such having ecosystem-resilient economic investments can help cushion pastoralists and improve the coexistence of KNP and the pastoralist in the wildlife dispersal areas without degrading the ecosystem beyond repair.

In order to achieve climate responsive and ecosystem resilient mechanisms to cushion pastoralists for losing their livestock from severe drought effects can be achieved through supporting smart livestock-based value chain investments. Priority will be given to establishment of drought reserves/dry season grazing areas, promoting climate resilient livestock breeds (e.g. Maasai Red sheep), promoting camel milk value chain for urban markets, market support programmes that build in climate resilience, climate education for market traders, restoration of value chains including grass-seed markets, as well as business incubation programmes to strengthen entrepreneurship skills development.

This intervention will be carried in the neighbouring communities of KNP with key focus on pastoralists who majorly flock KNP during the dry season for grazing.

Action 4:4 Create awareness on impacts of climate change among the local communities

The literacy level of nomadic groups in Kenya is relatively low. As a result, these people undertake many unsustainable practices like overgrazing and overutilization of resources. With climate unpredictability, the effects of these unsustainable practices are severe necessitating need for active engagement of the community in local level climate change mitigation and adaptation strategies.

Hence, under this action, KNP management will liaise with other stakeholders to ensure that the community is sensitized and educated on climate change issues. Community sensitization will be carried out through seminars, workshops, and public meetings (i.e. Barazas)

KNP Ecological Monitoring Plan

The Ecological Monitoring Plan provides a basis for both monitoring overall ecosystem health and assessing the effectiveness of, and recommending adaptations to, the management actions under this programme.

The framework for the development of the KNP Ecological Monitoring Plan is set out in Table 7. As shown in this table, the plan framework is set out by conservation target.

Table 7. Framework for the development of the KNP Ecological Monitoring Plan

KEA/Threat	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
Conservation Target 1: Large carnivores(Lion, cheetah, wild dog)						
KEA: Population size , recruitment and structure Threat: Declining population	Number of individuals (age & sex)	Call back surveys, spoor transects, individual ID's	Monthly	ID reports	ECA - RS	No data is available
KEA: Genetic diversity Threat: Inbreeding/ small founder population	No. of individuals with similar or different genotypes; Quantitative characteristics of the population (phenotype)	Genetic analysis and mapping; Population performance	Every 3 years	Genetic analysis reports	ECA – RS/consultant/collaborative institutions	No data is available
KEA: Prey species availability Threat: Insufficient Prey species	Number of individuals of different sex and age classes of key grazing species	Aerial surveys, ground counts	Seasonal (wet & dry) after every 3 years	Ground counts and aerial survey reports	ECA- RS/DRSRS	Baseline data available for all species
KEA: Healthy carnivores popula-	Incidence of canine distemper, rabies, mange, tick borne	Blood samples for canine distemper and tick borne	As per reported cases	Veterinary department	KWS vet department/	No Baseline reports

KEA/Threat	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
tion Threat: Disease)	diseases or any other disease in the carnivores	diseases, skin samples for mange and rain samples for rabies. , Surveys of vectors such as ticks		disease surveillance reports	collaborative institutions	
Conservation Target 2: Greater Kudu						
KEA: Habitat size and quality (water and forage)	Extent of suitable bushland and browse; quality and quantity of preferred forage species	Mapping of habitat through satellite image analysis; lab forage quality analysis; transects & quadrants to establish forage quantity, rainfall to relate to primary productivity	Bi-annual; Daily (rainfall data)	Monitoring and mapping/land cover changes report	SRS/ KNP management	No data is available
KEA: Population size, recruitment and structure	No. of individuals (age and sex); body condition	Individual IDs; ground counts	Quarterly	ID reports; ground count reports	SRS	No baseline data is available
KEA: Genetic diversity and variability Threat Inbreeding/ small population	No. of individuals with similar or different genotypes; Quantitative characteristics of the population (phenotype)	Genetic analysis and mapping; Population performance	Every 3 years	Genetic analysis reports	SRS/ consultant	No data is available
Conservation Target 3: Elephant						
KEA: Dispersal area and migratory corridors Threat: Settlement in critical elephant habitat	Length and width of migratory route; size of dispersal areas	Mapping of habitat through satellite image analysis; elephant surveillance	Annual (mapping) Daily sighting	Land cover changes report; Elephant movement pattern report	SRS	No data available
KEA: population size, recruitment and structure Threat: Poaching	Elephant population, habitat variability	Individual identification method; aerial survey	Continuous; every three years (Aerial survey)	Elephant ID; aerial census report	SRS	Available
KEA: genetic diversity and variability	Number of individuals with similar genes; quantitative characteristic of population	Genetic mapping; population performance	Every three years	Genetic mapping reports	SRS	No data available

ECOLOGICAL MANAGEMENT PROGRAMME

KEA/Threat	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
Threat: Inbreeding						
Conservation Target 4: Vultures (Egyptian and the Lappet faced vulture)						
KEA: Habitat size and quality Threat: Infrastructure development along migration routes/ disturbance of roosting and nesting sites	Extent of suitable roosting and nesting sites; population decline	Mapping of migration routes, roosting and nesting sites and number of cases reported	Annual	Monitoring and mapping report; electrocution and collision reports	SRS/ KNP management	No data is available
KEA: Population size, recruitment and structure Threat: Poisoning/ persecution	Number of vultures sighted Population decline	Road/ ground survey Toxicological analysis	Bi-annual; incident occurrence	Vulture survey reports; Toxicology reports	KNP/ SRS/VO	No baseline data available
Conservation Target 5: Acacia – Commiphora bushland						
KEA: Population of key browsing species	Stocking rates of key browsing species	Aerial surveys, ground counts	Seasonal (wet & dry) after every 3 years	Ground counts and aerial survey reports	MCA-RS/DRSRS	Baseline data available for all species
Threat: Bush meat & poaching	Species populations, Number of arrests made and snares removed	Analysis of occurrence book; effort on snare removal, species census	Monthly	Census reports, incidents of arrests and snare removal	MCA – RS/security	Baseline data available
KEA: Weather conditions	Seasonal changes	Weather measuring equipments	Monthly	Meteosats data, monthly records, weather monitoring stations	MCA – RS/Consultant	Data is available
KEA: Vegetation structure , composition & extent	Number of species and vegetation cover	Sampling transects to assess vegetation composition & structure, Analysis of satellite	Seasonal (wet and dry) after every 3 years	Land cover changes report Reports on	MCA - RS	Data available

KEA/Threat	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
		images		floral structure		
Threat: Invasive species	Reduction in invasive species spread	Acreeage of invasive species successfully controlled and managed	Monthly	Field surveys	MCA - RS	Data available
Threat: Livestock incursion	Livestock stocking rates	Aerial surveys; daily surveillance	After every 3 years; Daily	Livestock distribution reports	MCA – RS/security	Baseline data is available
Conservation Target 6: Hills & inselbergs						
KEA: Vegetation structure and composition	Number of species and vegetation cover	Sampling transects to assess vegetation composition & structure	Seasonal (wet and dry) after every 3 years	Reports on floral structure	ECA – SRS	Old data available
Threat: livestock overgrazing	Number of livestock	Livestock counts	Twice a year, end of dry season	Livestock incursion reports	ECA-SRS/security	No baseline data is available
Conservation Target 7: Tana riverine system						
KEA: Riparian forest structure and composition Threat: habitat conversion and abstraction	Forest cover	Analysis of satellite images and aerial photos	Every 5 years	Land cover changes report	SRS	No data available
KEA: River regime (flow and pattern) Threat: Water abstraction	Tana river water levels	Water flow meters	daily	Water flow monitoring reports	SRS	No data is available
KEA: Water quality Threat: pollution	Amount of pollutants dissolved in water	Laboratory analysis of water sample	Seasonal	Water quality analysis reports	SRS	

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<i>KEA/Threat</i>	<i>Indicator of change</i>	<i>Method of measurement</i>	<i>Collection frequency</i>	<i>Data source</i>	<i>Responsibility</i>	<i>Data currently collected?</i>
Conservation Target 8: River (lugga) ecosystems						
KEA: Riverine forest & riparian vegetation size	Area under riparian vegetation	Analysis of satellite images and aerial photos	Every 5 years	Land cover changes report	MCA Research station	No data is available
Threat: Livestock incursion/encroachment	Degraded area of riparian Habitats	Analysis of satellite images and aerial photos	monthly	Land cover changes report	MCA Research station	No data is available
KEA: <u>Species diversity</u>	Species diversity & abundance	Ground counts	seasonal	Seasonal reports	MCA Research station	No data is available

Tourism Development & Management Programme

Programme Purpose

The purpose of the Tourism Development and Management Programme is to ensure that:

The KNP is offering memorable visitor experiences based on its wild-life diversity, wilderness values and history

Kora NP does not have revenue gates and it relies on Meru National Park for revenue collection. There is need to have Kora separated from Meru National Park in terms of tourism revenue collection. This management planning process provides an opportunity to address this gap and promote KNP as a destination of choice to both local and foreign tourists. The Park also lacks tourist accommodation facilities limiting its use by visitors.

Guiding Principles

In implementing the KNP's Tourism Development and Management Programme, KNP Management will strive to ensure that:

Tourism is developed appropriately

Currently there is no tourism development activity within KNP. Most visitors are forced to make a day long trip to KNP and reside at Meru National Park (MNP) where they are able to get accommodation facilities and other amenities. All visitors who want to access KNP have to make payment at MNP which leads to revenue loss for the park. Currently KNP is not able to retain visitors for a longer period to undertake more tourism activities because the place is underdeveloped. Implementation of this tourism programme will improve visitation as well as create jobs for the community neighbouring the park.

KNP offers attractive investment opportunities

Most tourism investors are currently looking for under utilised and safe tourism destinations. It is therefore important that KWS adopts an affirmative and innovative approach in order to kick-start tourism investment in the park thereby generating revenue for conservation. This can be done by developing distinctive visitor activities and providing investors with innovative tourism investment opportunities.

The community is benefitting from tourism

Due to lack of tourism investments and underutilisation of the park by visitors, communities around the KNP have not benefitted from wildlife conservation. Consequently, there is need to partner with county governments to support and establish community conservancies that can undertake ecotourism activities as an alternative source of livelihood.

These guiding principles underpin the design and implementation of management objectives and actions discussed in the next section.

Tourism management objectives and actions

Four management objectives were identified under the Tourism Development and Management Programme. These are:

- MO 1. Tourism infrastructure and facilities developed**
- MO 2. Tourism products within KNP diversified**
- MO 3. Tourism administration and management strengthened**

The management objectives and the actions designed to achieve them are elaborated in the following sections.

Objective 1. Tourism infrastructure and facilities developed

The future desired state at the KNP is where tourism infrastructure and accommodation facilities are available to improve visitor experience and satisfaction. Currently KNP does not have any tourist standard accommodation facility and therefore visitors to the park are accommodated in facilities in the adjacent Meru National Park. Hence, to ensure that visitors can enjoy the many tourist attractions in the KNP with ease, tourism support infrastructure and accommodation facilities will be developed through implementation of the following actions; develop quality and affordable eco-lodges and tented camps; develop cottages and Banda's; establish campsites, picnic sites and viewpoints; develop suitable/appealing tourism road circuit; construct decent and secure revenue gates; establish and equip visitor information centre, education centre and hostel; and develop new airstrips and improve existing ones for use by chartered planes. These actions are expounded in the following sections.

Action1:1 Develop quality and affordable eco-lodges and tented camps

There are no quality visitor accommodation facilities within and around Kora National Park. The closest are in Meru National Park and are high-end and limited in bed capacity. Development of strategically located visitor accommodation facilities will encourage use of the park as well as justify why livestock should not be grazed in the park.

Under this management action, suitable sites for establishment of tourist accommodation facilities will be identified and demarcated. The facility sites will thereafter be awarded to investors through a competitive process in line with the Public Procurement and Asset Disposal Act. Those awarded the facility sites will undertake EIAs before construction facilities.

Preliminary assessment indicate that Ekime Hill, Kambi ya Simba, Kamanguru, and Kora rapids are potential sites for such facilities.

Action 1:2 Develop self help cottages

Low visitation by domestic tourists is partly attributable to lack of affordable and flexible forms of accommodation facilities. To promote domestic tourism in KNP, self help cottages will be developed. The cottages/Bandas will be located near the proposed Kora Park HQ, Asako Platoon base and near Kambi ya Simba. The cottages will be developed and operated by KWS.

Action 1:3 Establish campsites, picnic sites and viewpoints

There is only one public campsite (Adamson Public Campsite) in the park. With expected increase in visitor numbers this campsite is likely to be congested. There are no picnic sites and viewpoints in the park. Hence, additional special campsites, public campsites, picnic sites and viewpoints will be established. And to facilitate camping, camping gear will be provided at a fee.

The special campsites will be located along the Tana River; the public campsites near the proposed park headquarters and below Lion tits. The picnic sites will be located at the foot of Kora rock and Mlima Mbuji. The viewpoints will be located at Kora rocks, Ikime Hill and at Lions tits.

Action 1:4 Develop tourism circuits

The current road network was developed to serve security operations as well as ecological monitoring but it does not put into consideration the visitor attractions and tourism activities in the park. As such new tourist activity based roads will be identified, constructed and maintained, while taking into account the location of tourist attractions within KNP. One of the new tourist road circuit will run along the Tana River, around Kora Rock, *Kambi ya Simba*, connecting tourist facilities and air strips.

Action 1:5 Construct decent and secure revenue gates

Currently there are no revenue gates in Kora NP and the few visitors coming to KNP have to pay park entry fee in Meru National Park. To facilitate visitor access to the park, two standard KWS revenue gates will be constructed at Moju and Boka.

Action 1:6 Establish a visitor information centre, education centre and hostel

Visitor information on Kora National Park is limited. The George Adamson story which Kora is famous for need to be well documented and displayed. There is also need for students to have affordable accommodation in order to spend more time in the Park. The well-preserved grave of George Adamson and his old house at *Kambi ya Simba* are unique tourism resources which can be used to create captivating stories at the centre.

As such, a visitor information centre with a museum will be constructed and equipped. One education hall and a 32-bed student hostel will also be developed and furnished. All the facilities will be located at *Kambi ya Simba*.

Action 1:7 Develop new airstrips and improve existing ones

There are currently two functional airstrips used for security and park operations. These airstrips are not well-maintained and their distribution is not meant to land visitors near attraction sites or proposed accommodation facilities. Hence, new airstrips will be developed and maintained at Boka, Mansumbi and Manyuni. The Kora platoon airstrip and Kamukunga airstrip will be renovated.

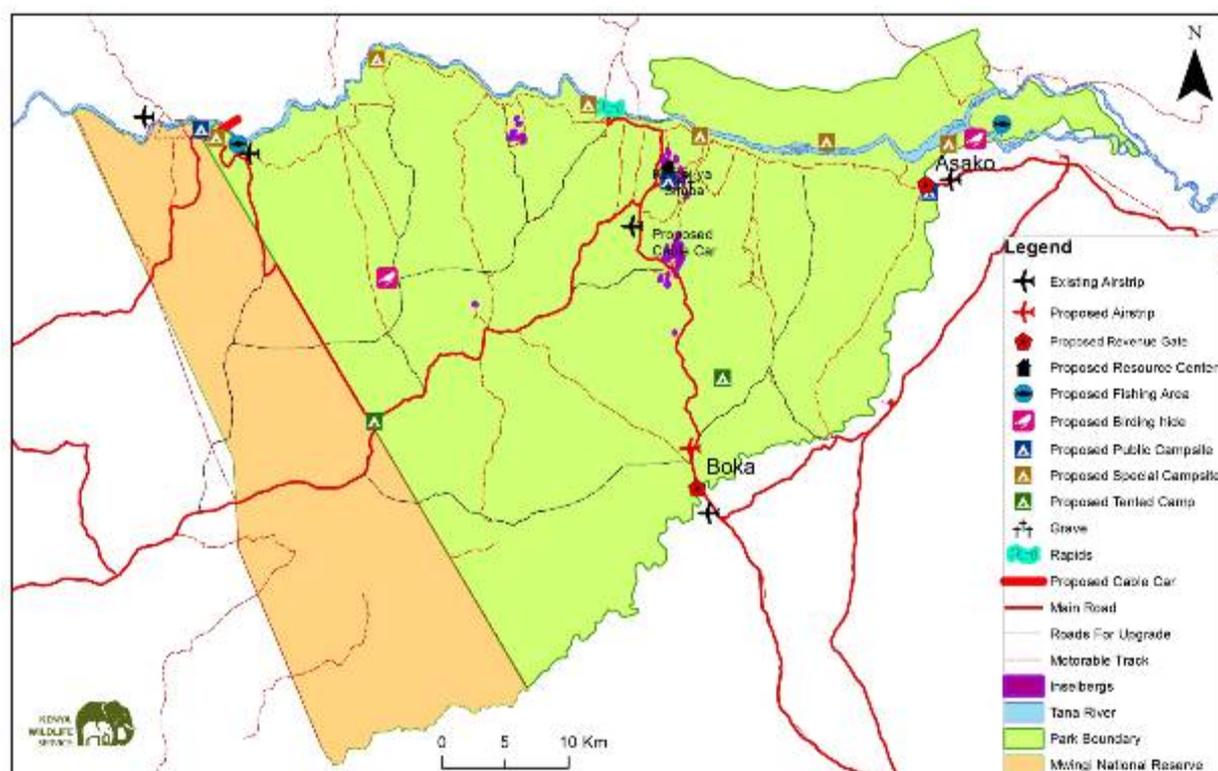


Figure 9. Proposed tourist facilities

Objective 2. Tourism products within KNP diversified

Due to a combination of factors including remoteness, historic insecurity and unsuitability for traditional game drives, KNP is at present generally underutilised by visitors. The area is presently severely impacted by livestock incursion and peripheral encroachment for agriculture and human settlement. Introducing a variety of products within KNP will lead to visitor retention, create a market source for both farmers and pastoralists and also create a general change of attitude towards conservation. The future desired state for the KNP is therefore where tourism values are being used to enhance visitor experience as well as indirectly lead to enhanced protection of the park's resources. To achieve the desired state KWS and stakeholders will introduce alternative wildlife viewing to traditional game drives; identify and introduce new tourism activities; and promote cultural tourism. These actions are elaborated in the following sections.

Action 2:1 Introduce alternative wildlife viewing to traditional game drive

Game drives and game viewing are the only known activities in KNP; hence the need to introduce new and exciting activities to attract various market segments. There are about 250-300 bird species in Kora National Park. This presents a unique experience and destination for birders/ornithologists. (Hides babbler). being a wilderness area, riding on either horse or camel will create an opportunity for visitors to enjoy the park in different ways. Night game drives will be undertaken near visitor accommodation facilities. Nature walks will be located around *Kambi ya Simba*, Lion tits, *Mlima Mbuji* and Kora Rocks. Cycling will be done at park headquarters and selected platoon bases. Cable cars will be developed between Adamson Kopje and Kora Rocks. Bird watching will be done at the woodlands and along the riverine forests. This will also create business avenues for both the local community and investors.

TOURISM DEVELOPMENT AND MANAGEMENT PROGRAMME

As such KNP management and stakeholders will collaborate to introduce the visitor following tourism activities:

- Night game drives to experience nocturnal animals
- Nature walks to sites of interest
- Cycling along selected circuits
- Cable car and zip line
- Team building activities
- Sundowners, and bush dinner and breakfast
- Bird watching
- Horse and camel riding

Action 2:2 Identify and introduce new tourism activities

There are few visitor activities to encourage visitors to stay longer in the park. To ensure that visitors stay longer in the park once the visitor facilities proposed under objective 1 of this programme are established, KNP management and stakeholders will endeavour to diversify visitor activities by promoting:

- Sport fishing- Tana River which is a permanent river runs along the Meru-Kora National Park border. It has several fish species which could be of interests to visitors. It is therefore possible to introduce catch and release fishing. Fishing equipment will be procured for use by visitors.
- River rafting- This activity will be introduced in selected sections of Tana River.
- Rock Climbing- One of the exceptional tourism resources found inside KNP are several huge kopjes. Some of them will be used for rock climbing.
- Filming and photography- KNP is full of spectacular and unique sites that can be used for photography and shooting films.

Sport fishing (catch and release) and river rafting will be done along selected sections along Tana River. Rock climbing and filming will be done at Kora Rock, Adamsons Kopje and Lion tits. Private investors will be identified to carry out rock-climbing activities and river-rafting, while filming and photography will be done by approved interested players.

Action 2:3 Promote cultural tourism

Communities around the park have diverse cultures that can be used to promote cultural tourism. Introduction of cultural tourism is also one way of encouraging communities to adopt land uses that are compatible with wildlife conservation. The ancient graves within the park are cultural resources that can attract visitors if properly interpreted. In addition, there are several cultural events already taking place outside the park. These events can be undertaken within and outside the park with a view of encouraging benefit sharing with the community. Such cultural activities include cultural dances, traditional rites of passage, and customary weddings, among others.

Towards this a cultural centre will be established at Boka to exhibit the cultures of the ethnic groups in the area. Cultural dances and storytelling will also be done at visitor information centre, ecolodges and tented camps. On the other hand homestays are becoming popular to tourists who wish to interact with local communities in their homes, where they perform traditional chores. Consequently, homestay homes will be identified at Boka, Kamunguru and Asako and marketed.

Action 2:4 Establish a Museum at Kambi ya Simba

The KNP has a rich history associated with the late George Adamson who lived at Kambi ya Simba. In recognition of his contribution to conservation, a “George Adamson Memorial Museum” will be constructed at Kampi ya Simba in collaboration with the George Adamson’s Wildlife Preservation Trust. The museum will also be an education center where the works, life and legacy of George Adamson will be explained. It will also be a widely used community resource providing a wide array of services such as educating the locals, hosting community exhibitions and facilitating collaboration with community organizations to showcase their work, heritage and future.

Objective 3. Tourism administration and management strengthened

Currently KNP has no tourism officers to develop and coordinate tourism in the park and adjacent areas. Tourism issues such as park entry are handled by Meru National Park which is far from Kora. There is need to establish a tourism department in KNP so that the tourism resources in the Park can be developed to enhance visitation. In addition, development of tourism in the KNP will demonstrate that the park is being used for the purpose it was established and thereby it will be easier to convince local communities not to graze their livestock in the park.

The future desired state at the KNP is therefore where tourism is developed as a force to control illegal activities in the park. Under this objective therefore, tourism management in KNP will be improved, so that KWS is able to meet the expectations of visitors and tourism investors. This will be achieved through establishing a functional tourism department at KNP; and engaging tourism stakeholders in development and management of tourism in the KNP. These actions are elaborated in the following sections.

Action 3:1 Establish a functional tourism department for KNP

There is need to establish a tourism department in KNP to handle tourism related issues. Consequently, KNP management will liaise with Assistant Director ECA and KWS Headquarters Human Capital Department to have tourism officers deployed to the KNP. The KNP Tourism department will be responsible for implementation of the management actions outlined this Tourism Development and Management Programme. On the other hand, deployment of tourism officers should be accompanied by a budget for implementation of the tourism programme. Hence, KNP management will liaise with the KWS Finance Department to establish a tourism budget line for KNP to facilitate tourism development and management tasks.

Action 3:2 Collaborate with tourism stakeholders and investors to improve the tourism activities in KNP

Once tourism facilities are developed and visitation increases in the park, there will be need for a platform through which tourism investors and tour operators can engage KNP management to ensure that tourism related issues are promptly addressed. Such a forum will also advise on development of tourism support infrastructure to ensure that visitors have memorable experiences in the Park. As such, a KNP tourism committee will be established and it will be meeting quarterly. The committee will be chaired by the Park Warden.

Action 3:3 Monitor visitor satisfaction and tourism use

The tourism department that will be established under action 3.2 of this programme will be responsible for ensuring that visitors have quality experience in the Park. Consequently, the department will track visitor satisfaction and tourism use in the area so that timely intervention measures can be implemented to address visitor concerns. Towards this, regular visitor satisfaction surveys will be carried out and consolidated into visitor satisfaction and tourism use reports for KNP tourism product.

Action 3:4 Market KNP and its attractions

As mentioned elsewhere in this plan, the KNP has a wide variety of tourism values that, if developed, can offer a visitor diverse experiences. It has wildlife viewing and potential water based activities along the Tana River, a rich history and culture, and opportunities for several adventure-based activities e.g. camping. Hence, to ensure that visitors are aware of these opportunities, KWS will embark on a market the park and its attractions nationally and internationally. In regard to this, KWS will carry out national-level advertising focusing KNP's wildlife attractions as well as adventure opportunities. KWS will enhance the park's visibility through preparing and disseminating park marketing materials through tourism, wildlife and travel media, and the KWS website. Further, KWS will market the park through local and international travel trade exhibitions.

Action 3:5 Brand the KNP

Since KNP was gazetted, it has never been branded. It is regarded as an extension of Meru National Park. The park seems to be unappealing to visitors after their first visit and as a result, there are low numbers of return visits. It also lacks a marketing slogan similar to other national parks. Consequently, during the plan period, the park will be branded based on its unique history and wilderness qualities.

Community Partnership & Education Programme

Programme Purpose

The purpose of the Community Partnership and Conservation Education Programme is to ensure that:

KNP's adjacent communities embrace conservation and realize tangible benefits that improve their livelihoods

KNP is heavily impacted by the adjacent communities through various illegal activities including livestock grazing, temporary settlements, bush meat poaching, tree cutting, and charcoal burning. As human population in the KNP adjacent areas increase there is corresponding increase in livestock and since community land is seriously degraded from overgrazing, the community resorts to illegal livestock grazing in the park. This illegal and unsustainable use of natural resources has had significant adverse consequences on wildlife and its habitats in the KNP. Wildlife species have been displaced from the park leading to an increase in human wildlife conflicts in the community settlement areas.

The KNP Community Partnership and Conservation Education Programme will work towards reversing the current situation through implementation of a robust community outreach programme that focuses on awareness creation as well as ensuring that communities benefit from the KNP. It is hoped that these strategies will increase community support for conservation and result in reduced illegal activities in the park.

The key strategic guiding principles underpin the Community Partnership and Conservation Education Programme are set out below. Wherever appropriate, guidance has been drawn from the following policies:

Guiding Principles

In implementing the KNP's Community Partnership and Conservation Education Programme, KNP Management will strive to ensure that:

- ***Communities will actively participate in conservation both inside and outside park***
- ***Conservation awareness is enhanced***
- ***Communities are benefitting from wildlife conservation***

These strategic principles are intended to guide the development and implementation of the four management objectives set out in the following section

Management objectives and actions

The four management objectives to be implemented to achieve the KNP Community Partnership and Conservation Education Management Programme are:

MO 1. Human-wildlife conflict reduced

MO 2. Collaboration and communication mechanisms with local communities strengthened

MO 3. Opportunities for communities to benefit from the KNP improved

MO 4. Conservation education awareness enhanced

The following sections describe these management objectives and actions to achieve them.

Objective 1: Human wildlife conflict reduced

Human wildlife conflict (HWC) in the form of livestock predation and human threat is prevalent in KNP's influence zone. Predation of livestock by predators (such as Hyena, Lion, Leopard, Cheetah and Crocodile) has been common both during the wet and dry seasons in areas adjacent to the park such as Asako, Boka, Elrar, Kamanguru and Masyungwa. When there is paucity of prey in the park, predators move out of the park and attack livestock, which is an alternative prey. Other human wildlife conflicts include, property damage, human injuries and death. To minimize human wildlife conflicts, under this management objective, KNP management will: create awareness on traditional ways of protecting livestock from hyena predation; engage the local community in wildlife conservation activities; sensitize the community on the compensation process; liaise with Tana River and Kitui counties, to develop local level land use plan to protect the wildlife corridors; expand the community radio communication coverage; trap and translocate problematic predators; strategically deploy PAC personnel; establish a Kora hotline for rapid response; and establish and maintain a HWC database. These actions are elaborated in the following sections.

Action 1:1 Create awareness on traditional ways of protecting livestock from wildlife predation

There is minimal community conservation knowledge and techniques on harmonious coexistence with wildlife among the local community. Hence, under this management action, the local community at conflict prone areas such as Asako, Boka, Elrar, Kamaguru, Masyungwa and Kaningo, will be trained on a wide range of techniques such as use of born fires and domestic dogs to scare away wildlife and thereby avert livestock predation. In addition to the training, predator proof bomas will be established at Boka and Elrar where predation incidences are highest to demonstrate the effectiveness of this HWC mitigation measure.

Action 1.2 Engage the local community in wildlife conservation activities

Currently there are inadequate channels of community involvement in conservation and management of wildlife outside KNP. As such there is need to engage the local community in the areas adjacent to the park in wildlife conservation activities so that the community is able to manage problem animals in its midst. Hence, once the conservancies envisaged under action 3.1 of this programme are established, KWS and other partners will support the community in training and equipping their game scouts.

Action 1.3 Sensitize the community on the compensation process

Currently there is undue delay in compensating victims of human-wildlife conflicts. This has resulted in a strained relationship between KWS by the local communities and negative attitude towards wildlife. To improve the community attitudes and perceptions towards wildlife, as a first step the community will be educated on the wildlife compensation process and the role of the County Wildlife Conservation and Compensation Committee. The Tana River Wildlife County Compensation Committee (TRCWCCC) will be facilitated to meet regularly to evaluate the wildlife compensation claims. The TRCWCCC will also lobby the Ministry of Tourism and Wildlife to hasten release of compensation funds.

Action 1.4: Liaise with Tana River and Kitui counties, to develop local level land use plans to protect the wildlife corridors

Currently there is no local land use plan in place that identifies wildlife corridors between KNP, the influence zone and beyond to South Kitui National Reserve. With the current observed population growth rate and expansion of settlements in the parks adjacent areas, it is important that wildlife corridors are identified, mapped and alienated to minimized increased wildlife-human interactions. Consequently, under this management action, KNP management will work closely with the community and the County Governments of Tana River and Kitui to ensure that wildlife corridors are identified and maintained. The target areas will be Boka, Barkin and Miti Boma communities.

Action 1.5 Expand the community radio communication coverage

Poor communication and links between KNP management and local communities, along the southern and western side of the park which have experienced erratic animal threats is vital. Hence, to improve communication between KWS and the community as regards human wildlife conflicts (HWC), communication radios will be provided to the community.

Increased radio coverage will be provided in such areas as Masyungwa, Kaningo, Mandongoi and Miti Boma which are HWC hotspots. KNP management will implement this action in liaison with KWS HQs telecommunication department. Since a basic telecommunication infrastructure to support this already exists, this action aims at up-scaling the current network.

Action 1.6: Trap and translocate problem predators

Instead of eliminating problem predators, they will be trapped and translocated to other protected areas with a good prey base. This expected to give them an opportunity to survive, thrive and enhance the genetic pool of the recipient population. Towards this, predator traps will be deployed in Asako, Kamanguru, Boka, Masyungwa and Kaningo areas where predator conflicts have been high. The KNP community warden will deploy Problem Animal Control (PAC) rangers to set the traps as need arises while translocation of problem animals will be done by KNP management in consultation with the AD-ECA.

Action 1.7: Strategically deploy Problem Animal Control personnel

Kora is only served by one Problem Animal Control outpost located at Asako. To enable KNP PAC officers to respond to wildlife threats in a prompt and effective manner, two more PAC outposts will be established at Boka and Masyungwa. Towards this, KNP management will liaise with KWS HQs and AD-ECA for deployment of more officers and establishment of the outposts.

Action 1.8: Establish a Kora hotline for rapid response

KNP has no official hotline for communicating with the community, which has made it difficult for the community to report issues that require prompt response.

The establishment of a hotline will improve and enhance effective communication between KNP management and local communities which is essential to both parties to raise common problems and work towards achieving shared goals.

Action 1.9 Establish and maintain a HWC database

There is lack of information on HWC hotspots as well as lack of temporal and spatial data on the movements of problem animals. This leads to proactive as opposed to reactive strategies in dealing with HWC issues. A proper database of HWC shall be developed and maintained to support identification and mapping of any new HWC hotspots. The HWC database will be established and maintained at the Community Wardens office at the KNP HQs. This will be done by KNP management in liaison with KWS GIS and SRS- ECA. To realize this, the database software, GPS, digital camera and computer will be procured.

Objective 2: Collaboration and communication mechanisms with local communities strengthened

The future desired state at the KNP is where there is meaningful collaboration between protected area management and the local community since a PA's management effectiveness is closely linked with the level of collaboration between the PA management and the surrounding community. At the KNP, participation of the local community in park management issues has been wanting. This is partly attributed to lack of a Community Warden to engage the community in wildlife matters. As such, this management objective aims to improve park-community relations through strengthening and supporting PA community consultation mechanisms; building capacity of the CCCs and CCF to effectively manage community projects; reviving existing community consultative forums; establishing a park management committee; and initiating special community events. These actions are expounded in the following sections.

Action 2.1: Strengthen and support PA community consultation mechanisms

Currently, there is minimal involvement of the community in conservation of KNP. There is need to engage the community to gain support for conservation as most of the threats to the parks values are from the activities of local communities. The KNP adjacent community has community consultative committees that were established act as a bridge between the community and the park as well as sensitise and train the communities on conservation issues. However, these CCCs have been dormant because of lack of linkages with park management. Consequently, to enhance community-park collaboration, KNP management will liaise with AD-ECA to have a community warden deployed to the KNP. Further, KNP management will work towards the revival of the dormant CCCs and once revived they will be trained and supported to be meeting regularly to address park related issues.

Action 2.2: Revive existing community consultative forums

Currently there are three community consultative forums in Boka, Elrar and Asako which were established in 2012 but have remained inactive. Under this management action, these forums will be revived and strengthened to enhance active community engagement with park management.

Action 2.3: Establish park management committee

Currently there is no Park management committee. Establishment of a functional park management committee comprising diverse stakeholders including the local community will provide necessary platform for friends of the park to contribute to its conservation. Hence, KNP Management will collaborate with its local partners in establishing the park management committee to oversee park-community as well as fund raise for park projects.

Action 2.4: Initiate special community events

Currently no community activities that brings together all KNP communities to showcase their cultural and celebrations is organised in the area. Under this management action, therefore, park management will revive the annual commemoration of George Adamson's anniversary. This will not only create awareness on the park, locally and internationally, but it will also be a forum for the community to showcase their culture.

Objective 3: Opportunities for local communities to benefit from the KNP improved

The local communities around KNP have a range of environmental, social and economic factors limiting the enhancement of their livelihood. The major ones include poverty, poor climatic conditions like persistent droughts, inability to access loans, poor technology, lack of land tenure rights and restricted access to resources. Over dependency on livestock keeping and lack of conservation awareness are some of the factors contributing to habitat destruction, livestock incursion in the parks, human wildlife conflict, poaching and poverty in local communities around KNP. While there is a potential for alternative livelihood options, cultural factors as well as limited economic incentives among other factors have inhibited development in local communities. Consequently, this management objective has been designed to empower local communities to exploit diverse opportunities presented by natural and cultural resources in the area, thereby enhancing their livelihoods and at the same time minimizing pressure on KNP.

The management actions that have been designed to achieve this objective are discussed below:

Action 3.1. Establish community conservancies

Establishment of conservancies dedicated to integration of wildlife conservation in the land use matrix outside the KNP is beneficial to the entire ecosystem. Firstly, it buffers the park from livestock incursions and other illegal activities. Secondly, ecologically sensitive areas such as breeding grounds and food resources for wildlife can be protected. Finally, active management of pastures ensures that habitat degradation is averted and the community has grass reserves during times of drought. Increase in the area under grass has an indirect benefit too, in that it acts as a carbon sink.

Under this management action, KWS will support the establishment of community wildlife conservancies at Asako, Elrar, and Boka. In addition, the conservancies will be assisted in developing management plans to guide conservancy managers in their day-to-day activities. This will be carried out in collaboration with the Tana River County Government which is the competent authority in regard to the community land.

Action 3.2. Promote partnership with development partners to support community projects

Currently there is minimal partnership between the park management and other development partners. Hence, under this action KNP management will liaise with other development partners in the implementation of community projects. Towards this, management will organise bi-annual development partners forums to discuss joint project proposals developed by communities and KNP management.

Action 3.3 Support establishment of community social and enterprise projects

Acknowledging that Kora NP cannot meet its conservation and tourism objectives exist without the goodwill of the neighbouring communities, KWS and its partners like the George Adamson Wildlife Preservation the Trusts for African Schools have initiated projects in the settlements along the park boundary. These include school infrastructure (dormitories, classrooms, teacher accommodation, desks etc) and water infrastructure. Areas of support include Asako, Elrar, Kamanguru and Boka. Trusts for African Schools have also done extensive work in various Ukambani schools as well as support for Madogo School (Garissa). Hence, under this management action, KWS and its partners will continue to support social community projects in the KNP-adjacent areas. In addition, to improve community livelihoods, communities will be encouraged to start conservation based enterprise projects such as bee keeping.

Objective 4.0 Education awareness enhanced

Field reconnaissance and village meetings done in Asako, Boka, Elrar and Kamanguru villages indicated that, lack of education and awareness on wildlife conservation is part of the problem hindering conservation efforts among the locals. Education awareness plays a key role in the survival of any protected area; hence capacity building among the locals cannot be overlooked. Currently, there has been very little work done on conservation education awareness in and around KNP. This objective is therefore designed to improve the knowledge of the local community on conservation issues and opportunities that communities can exploit.

The management actions that will be implemented to achieve this objective are expanded in the following sections.

Action 4.1: Deploy an education Warden in KNP

Currently KNP does not have an education warden and there are no education materials and equipment at the park. KNP for a long time has been relying on Meru NP education warden, who is already overwhelmed in the busy park. Hence, KNP management will liaise with KWS HQs for a conservation education officer to be deployed in the park. The KNP education office will also require education materials, transport and supporting staff to be effective.

Action 4.2: Establish an Education centre

The education centre envisaged under this action will be developed together with the museum proposed under action 2.4. of the Tourism Development and Management programme. The Education Centre will focus on disseminating wildlife information to visitors to increase appreciation of the park. Other activities will involve giving conservation talks and screening of wildlife films at the Education centre, local schools and trading centres.

Action 4.3: Conduct exposure tours for community members/ Groups and schools

Inadequate exposure of the local community poses a great challenge in conservation and protection of KNP's Wildlife resources. There is low or no record of local/ domestic tourism due to high poverty levels. Introduction of sponsored park tours for local communities/groups and or schools to Kora Park and other established community conservancies e.g. Samburu and Isiolo, is an effective tool to increase awareness on conservation of natural resources found in the protected area. As such, KNP management will organise sponsored exposure tours for local schools and community groups to generate interest and appreciation of wildlife among the local community and as a result win public support for wildlife conservation in KNP.

Action 4.4 organise and participate in conservation events and exhibitions

Kenya, like the rest of the world commemorates the World Environment Day, World Wildlife Day, World Wetlands day, among others to create awareness among the population on conservation of environmental features. Consequently, KNP management will strive to ensure that it mobilises the community to celebrate such days with events and activities that create awareness among the local communities on the importance of conservation.

Action 4.5 Establish a community outreach programme

Increasing pressures on land and other natural resources in land adjacent to the KNP undermines the integrity of the KNP Ecosystem. Enhanced awareness of the values of wildlife among local communities can result in reduction of pressure on resources as well as increase support for wildlife conservation. As such, this management action has been designed to establish a robust community outreach programme that will target different social strata with messages on how they can co-exist with and benefit from wildlife.

PA Operations and Security Programme

Programme Purpose

The purpose of the PA operations and Security Management Programme is:

To secure wildlife and visitors in KNP and surrounding community areas and ensure illegal natural resource exploitation within the core protected area are minimised by a well facilitated workforce

Security in KNP is a key ingredient if the protected area is to thrive as a unique biodiversity area and a destination of choice for visitors. Insecurity and elephant poaching incidents in KNP and MCA at large in the past have hampered development and investment in the area. Currently, the elephant numbers in KNP have drastically reduced and species like the black rhino that once thrived have been wiped out. KNP currently, has been secured by the KWS security team, however, a lot needs to be done to secure the entire park and the adjacent areas as to the north of the park, across the Tana River, the area cannot be said to be stable as activities by wildlife crime offenders have been reported.

KNP is located in the Tana River County where again incidents of insecurity have been reported. Due to these incidents, for normal park operations to be achieved, security remains an issue of paramount importance. As such, efficient, effective and extensive security operations are particularly important in the KNP, and are vital for successful implementation of various aspects of this plan.

It should be noted that KNP does not have a security office and the only Platoon at *Kambi ya Simba* reports to the Company Commander based at MNP. Kora NP actually operates as an outpost for MNP, and therefore has very lean staff, with most services being received from the Meru NP. To realize the vision of this plan, it is crucial to support the establishment of KNP as a fully functional park with all the basic requirements for a national park including the human resources capacity.

Guiding Principles

In implementing the KNP's Park Operations and Security Programme, KNP Management will strive to ensure that:

The park is working with others to achieve its management objectives

There are government and non-government organisations implementing various programmes in areas adjacent to the KNP. Some of these organisations (e.g. the George Adamson's Wildlife Preservation Trust) share the same goals with KNP. Hence, KNP management will work such agencies communities, partners, and government agencies to complement capacities.

Good communications and access

Good communications and access is one of the prerequisites for effective management in a protected area. It is vital that KNP management is fully equipped with communication and

transportation infrastructure to ensure that information can be relayed easily from this remote location and security breaches can be responded to rapidly. As such, this programme will focus on developing and maintaining the necessary protected area infrastructure to provide maximum support for the effective management of the park, and to support tourism development.

Operational effectiveness is improved

KNP has a small ranger force, a number that undermines the long-term effectiveness of security operations in the area. As such, in order to maximise the effectiveness of KNP law enforcement operations, and ensure that the best possible use is made available resources, the PA operations and security programme aims to strengthen the capacity of the KNP ranger force, enhance information management and analysis to better inform security operations, and improve intelligence gathering.

Sufficient and well-allocated human and financial resources

This programme will aim to ensure that KNP human resources are of sufficient number in order to implement this plan's management actions, and that the financial resources required to deliver the plan's management actions are made available, through expeditious development of the appropriate budgets and their submission to KWS Headquarters and donors as appropriate.

Management Objectives and Actions

The following objectives are designed to guide the implementation of the PA Operations and Security Programme:

- MO 1. Institutional collaboration strengthened**
- MO 2. Performance and motivation of KNP staff improved**
- MO 3. Infrastructure, transport and communications to support PA management and tourism development improved**
- MO 4. Security for the park's resources enhanced**

The following sections describe these management objectives and provide an outline of the management actions needed to achieve them

Objective 1: Institutional collaborations strengthened

The desired future state at the KNP is where its conservation stakeholders have a forum through which they can participate effectively in the conservation efforts of KNP, and KNP management is integrated in the regional government administrative structures. (i.e. Tana River County, Kitui County, Other Government agencies and County Administration). This is expected to, among other things, enhance KNP management effectiveness through increased collaborations in security operations and community relations.

This objective has therefore been designed to enhance collaboration between KNP management and KNP stakeholders. To achieve this objective and at the same time gain support

for conservation from the administration and other stakeholders at the county and sub county levels, KNP management will liaise with, and participate in relevant sub county and county committees; collaborate with sub county Security Committees to control illegal encroachment on the protected area; and establish communication mechanisms with the relevant institutions. These actions are expanded in the following sections.

Action 1:1 Liaise with, and participate in relevant sub county and county committees

Linkages between KNP Management and the two county authorities that have jurisdiction over parts of KNP have traditionally been inadequate, leading to minimal support for KNP management activities. It is important that collaboration with sub-county authorities be streamlined and enhanced to get support from surrounding areas and sub county authorities. As such, the KNP Warden in charge will participate in the Kitui County meetings and Warden Hola will participate in the Tana River County meetings as shown in Table 8 below. For the two wardens to participate in the county meetings it is critical that they are provided with transport.

Table 8. Outline of Sub-County meetings

County	Sub county committees	Time frame	Officer responsible
Kitui(Tseikuru, Kyuso, Ngomeni sub counties)	Sub County Development Committee	Quarterly	Warden Kora
	Sub County Environmental Committee	Quarterly	
	County Compensation Committee	Quarterly	
	Sub county security Committee	Monthly	
Tana River	Sub County Development Committee	Quarterly	Warden Hola – with a briefing from Warden Kora
	Sub County Environmental Committee	Quarterly	
	County Compensation Committee	Quarterly	
	Sub county security Committee	Monthly	

Action 1:2 Collaborate with sub county Security Committees to control illegal encroachment on the protected area

Livestock incursion and human settlement have displaced most wildlife from KNP. Hotspot areas known for livestock incursion are Boka and Elrar. Temporary structures or *Manyattas* are occasionally established by illegal herders in the Park. The livestock is from the neighbouring community as well as neighbouring Counties i.e. Garissa and Kitui.

To resolve this problem, KNP management through the sub county Security Committees, will be involved in driving livestock out of the park. The KNP management in liaison with the sub county security committees will also hold community sensitization meetings at villages adjacent to KNP that are known hotspots areas. The target areas will be Boka, Elrar, Asako and Kamanguru. KNP management and the Sub-County Commissioner will be responsible for organizing the livestock drives and community meetings.

Action 1:3 Establish communication mechanism with the relevant institutions

To enhance security of wildlife and visitors in KNP and surrounding areas, collaboration with the local community and government security agencies is paramount. These stakeholders

can support security operations through gathering and sharing of intelligence information regarding wildlife crimes, thus assisting KNP management to intervene before crimes occur.

To improve and strengthen stakeholder collaboration it is important that a communication mechanism be established to facilitate sharing of information among partners in the KNP and adjacent areas. Towards this, radio communication will be established to facilitate communication between security agents and KNP. A community radio system will also be installed to link Boka, Elrar, Asako, Kamaguru and Roka villages.

Objective 2. Performance and motivation of KNP staff improved

The desired future state of KNP is one where the KNP is optimally staffed with highly motivated staff that have skills and training matching the jobs at the Park. The KNP permanent staff establishment presently comprises 12 permanent staff. In addition to this, each month the KNP employs 11 casuals in different sections to support the permanent staff in their daily activities. To ensure that the park has sufficient staff with high morale, KNP management will work closely with the ECA management and KWS Human capital to ensure that the park has adequate staff to deliver the KNP's management objectives; staff are trained in relevant skills; adequate staff accommodation, office and welfare facilities are available. These actions are discussed in the following sections.

Action 2:1 Deploy adequate staff to KNP

The staff strength at KNP is currently inadequate and if this state continues it will be difficult to realize the objectives of this management plan. The park lacks skilled staff needed to deliver the park's ecological, tourism, security and community management programmes.

In order to address the inadequacies noted on staff establishment, and in the process realize improved efficiency and effectiveness of staff at the KNP, KWS management will conduct a human resources needs assessment to ascertain the number of staff that are required for the effective management of KNP and thereafter deploy new staff to understaffed sections.

Action 2:2 Train staff in relevant skills

Staff training is vital in ensuring that staff have necessary and up-to-date skills to carry out their work efficiently. To ensure that staff match the skills needed at the KNP, a training needs assessment will be carried and based on the output from this assessment staff will be trained accordingly. However, focus of training will be on gaining practical and applicable field knowledge, rather than theoretical knowledge. Training will focus on the following areas:

- ▶ Basic training for rangers at Manyani Law Enforcement Academy
- ▶ First aid training for rangers
- ▶ On-the-job PAC training for rangers
- ▶ Customer service training for officers and rangers
- ▶ Range Practise for uniformed staff
- ▶ NCO's and security officers trained in prosecution of court cases
- ▶ Train rangers on court procedures and how to draft effective charge sheets
- ▶ Rangers and officers to be trained in rhino identification, GPS applications, map reading, data collection and rhino protection and surveillance

Action 2:3 Improve staff accommodation

Although the KNP’s remoteness and wilderness characteristics attract many visitors to the area, it presents an isolated, difficult and challenging environment for the workforce. These factors, combined with poor transport and communication networks, can have negative impacts on the morale of the staff, and consequently their ability to perform to their maximum potential.

In order to ensure high staff morale and motivation, KNP management will liaise with ECA and KWS headquarters to improve staff housing. Towards this, efforts will be made to construct and rehabilitate residential and non-residential buildings.

The main staff accommodation and welfare facilities in KNP are currently located at KNP Headquarters at Kamukunga. During the plan period, additional staff houses will be constructed at the newly proposed Park Headquarters at Kampi ya Simba and rehabilitation of residential houses that are in poor condition will be carried out. A summary of construction and rehabilitation of residential and non-residential buildings to be completed in KNP is given in Table 9 below.

Table 9. Proposed construction and rehabilitation of buildings in KNP

Administration	Type of buildings	Description of work	Remarks/Justification
Park HQS at Kampi ya Simba (proposed)	Residential houses	Construction	The newly proposed HQ to be constructed at Kampi ya Simba due to the following reasons: <ul style="list-style-type: none"> • Kampi ya simba is more centralised for ease of park operations • Strategically located to deal with the major threat to the PA i.e. livestock incursion and among other threats • Kamukunga base (current HQ) is not properly planned • Relative ease of accessibility to social amenities e.g. water, electricity etc. • Proximity to the communities and other stakeholders such as Boka, Kamaguru, Asako and Elrar
	Office Block	Construction	
	Workshop and stores	Construction	
	Social Hall/ Canteen	Construction	
	Dispensary	Construction	
Company HQS at Kampi ya Simba (proposed)	Residential houses	Construction	For ease of management of the proposed sectors (Boka, Kamukunga and Asako sectors)
	Office Block	Construction	
	Stores	Construction	
Kamukunga platoon(Current Park HQS)	Residential	Rehabilitation	The current HQ to be retained as Kamukunga Sector HQ
	Office Block	Rehabilitation	
Boka Platoon(proposed)	Residential housing	Construction	Strategically located to deal with major threat to the PA i.e. livestock incursion, among other threats because it is a watering point for livestock. It will also serve as HQ for Boka sector
	Office Block	Construction	
Moju Platoon (proposed)	Residential housing	Construction	The base would be located at proposed Asako sector and would act as security patrol base
	Office Block	Construction	
Katanawa Base (proposed)	Residential housing	Construction	The base would be located at proposed Boka sector and would act as security patrol base
	Office Block	Construction	
Elrar base(proposed)	Residential housing	Construction	The base would be located at proposed Asako sector and would act as security patrol base

Administration	Type of build-ings	Description of work	Remarks/Justification
	Office Block	Construction	
Rhino Sanctuary (proposed)	Residential housing	Construction	This is because Black Rhinos are locally extinct in KNP. Their reintroduction would help propa- gate the population of this critically endangered species and also raise status of the Park. This would open up new frontiers for Rhino conserva- tion.
	Office Block	Construction	
Asako PAC out- post	Residential	Rehabilitation	Already existing
	Office block	Rehabilitation	

To implement this management action KNP Management will liaise with KWS HQs Building and Civil Works Department through the regional office. KNP management will also solicit funding support from partners and KWS HQs to support construction of the proposed HQs and security bases and rehabilitation of existing residential and non-residential buildings.

2:4 Enhance staff welfare to boost morale

KWS recognizes the importance of providing recreational facilities to field staff as a morale booster. Staff welfare facilities are lacking from KNP administration centre, and recreational clubs are yet to be established.

In order to boost staff morale in the staff residential areas, satellite TV will be installed at social halls or canteens once they are established. The satellite TV units will be installed at Kamukunga (Kora Park HQs), *Kambi ya Simba*, Boka, and Moju. Solar power will be in- stalled to provide power to the satellite TV.

Objective 3: Infrastructure, transport and communications to support PA management and tourism development improved

KNP does not have a well-designed road network to facilitate park administration activities and tourism. With a very low density of roads it is difficult to extend security and administra- tion operations to many parts of the park; hence threats such as illegal grazing which can be deterred effectively if the road network was spread across the protected area of the park are rampant. In addition, the park lacks transport for park administration and park welfare. Fur- thermore, the telecommunication network does not cover the entire park; hence communica- tion with the outside world is limited. Consequently, under this management objective the following management actions will be implemented; improve the road network; improve transport in KNP; improve communication and other infrastructure. These actions are elabo- rated in the following sections.

Action 3:1 Improve the road network

Apart from the “Tana River Road”, most of the roads in KNP run north to south, following the elevated areas between the drainage lines. Although there are numerous tracks, many of them are in poor condition with the main roads accessing Adamson’s Bridge, *Kambi ya Sim- ba* and the Moju drainage. The greatest density of roads in the KNP is mostly located along Tana River. The road network in KNP is currently very limited, due to low tourism use in the park.

To address gaps in the road network, new roads will be constructed and existing ones rehabilitated. Patrol roads will be constructed in the Low Use Zone to facilitate vehicle patrols aimed at curbing destructive illegal activities such as bush meat poaching and livestock encroachment. New tourist roads will also be constructed in the Low Use and Wilderness Activity Zones to access visitor facilities and attractions. In addition, existing unused roads, which are currently overgrown with vegetation, will be rehabilitated to all weather standards. Moreover, several new east-west road alignments are proposed that follow camel paths between water sources. Further, the Moju Crossing Bridge will be upgraded to all weather to ensure rainy season access from Garissa.

Action 3:2 Provide adequate transportation in the KNP

Availability of reliable transport is critical to effectively carry out management activities. KNP has a fleet of 1 vehicle, 1 tractor and 1 plant (grader CAT 120), most of which are more than ten years old and are uneconomical to run. These vehicles, plant and machinery, however, require regular servicing to ensure that they are mechanically functional at all times. However, this is constrained by shortage of skilled staff at the Meru N. Park mechanical workshop and slow procurement of spare parts.

KWS management will procure new vehicles, tractor and plant machinery for KNP as outlined in Table 10 below.

Table 10. Vehicle and plant machinery needs for KNP

No	Equipment	Existing	Required	Deficit
1	Vehicles 4 X 4 WD	1(unreliable and old)	Park Headquarters Welfare - 1 Education/Community - 1 Senior Warden - 2	4
		1 (unreliable and old)	Platoons (Boka, Moju and Kamukunga @ 2) - 6	6
		0	Coy HQ (Kampi ya Simba) – 2	2
		0	Outposts (Elrar and Katanawa) – 2	2
		0	Intelligence (Kambi ya simba) – 2	2
		0	Investigation(Kambi ya simba) – 2	2
2	Tractor	1	2	1
3	Grader	1	1	0
4	Lorry	0	Low loader – 1 Tipper – 2 Box body - 1	4
5	Water Bowser	1	2	1
6	Combined Shovel	0	1	1
7	Minibus for community /information/research/outreach programmes	0	1	1
8	Motorbike	0	Boka and Asako	2
9	Plant	0	Shovel – 1 Dozer (D9) – 1	2

Action 3:3 Install and maintain the telecommunication system

Effective communication within and outside KNP is essential for efficient management, and key to improving KNP management's response to urgent issues. KNP Headquarters has no phone and e-mail facilities. A radio network only serves KNP HQs, Kora Bridge, Asako outpost and Kambi ya Simba. Under this management action computers, VHF and HF radios will be procured for the new proposed security bases. The radio communication network will be maintained to ensure that communication is not disrupted. This will be done by KNP management in consultation with the KWS HQ- ICT Department.

Action 3:4 construct and maintain administrative and tourism support infrastructure

Alongside the improvements in transportation and communications, a range of other facilities and supportive infrastructure are needed to enhance effective management and administration of KNP. These include: airstrips, gates, utilities (electricity and water), signage and boundary markings.

This support infrastructure will be developed, or where appropriate rehabilitated, as follows;

- ▶ **Establish new airstrips and rehabilitate existing ones** - Aerial patrols are a critical management tool for monitoring wildlife and its habitat in expansive remote ecosystems such as KNP. Evenly distributed airstrips across the area are therefore essential for total aerial coverage of KNP and adjacent areas
- ▶ **Build new revenue gates at Boka and Moju** - KNP will eventually attract visitors looking for a wilderness experience. In order to facilitate visitor entry into KNP, new entry gate will be constructed at Boka to cater for visitors coming from the coast through the Hola route. An additional gate will be constructed at Moju, primarily to serve as a point of contact with the surrounding communities in that area and to enable entry for any visitors from Garissa.
- ▶ **Provide utilities such as water and electricity** - Utilities are necessary to support protected area administration and visitor use, and contribute to the achievement of KNP purpose statement. Utilities such as water supply and electricity are essential in all the major administration stations and visitor accommodation facilities. The proposed bases and Park HQs will be fitted with low maintenance solar power. In addition, the KNP bases will be located close to the river and hence their water supply will be adequate.
- ▶ **Improve signage throughout KNP** - Directional road signage in KNP is limited and inadequate especially in the Low Use and Wilderness Activity Zones. The existing directional signage is less informative as it does not include distance to destination. To facilitate visitor movement and add interest to KNP's resource values, the signposts will be constructed using the KWS signpost design adopted in other branded terrestrial parks, and where appropriate information on distance to destination and other relevant interpretive information will be included. Additional informational signage will be installed at tourist facilities such as gates, campsites and bandas.
- ▶ **Align PA boundaries** - Increased ecosystem degrading activities like livestock incursions, encroachment of human settlement, and other illegal activities can partly be attributed to unclear and unmarked protected area boundaries between KNP and adjacent community land in many places. To remove this ambiguity, and stem illegal activities in KNP, the park boundary will be aligned, cleared and marked to inform people when they are entering the protected area.

Table 11. Infrastructure requirements in KNP

No	Infrastructure type	Location	Status	Remarks
1	Roads	Katanawa to mitamisyi	Existing	Requires an upgrade
		Boka to Asako transect	Existing	Requires an upgrade
		Kamukunga sector circuit	Existing	Requires an upgrade
		Katanawa to Boka	Existing	Requires an upgrade
		Kamukunga to Asako	Existing	Requires an upgrade
2	Airstrips	Kyethoni	Existing	Requires an upgrade
		Kampi ya simba	Existing	Requires an upgrade
		Moju	Existing	Requires an upgrade
		Asako	Existing	Requires an upgrade
		Boka	Proposed	Construction to serve the Boka sector
3	Bridges	Moju crossing	Proposed	Construction at the proposed revenue gate at Moju due to inaccessibility to the area during wet seasons

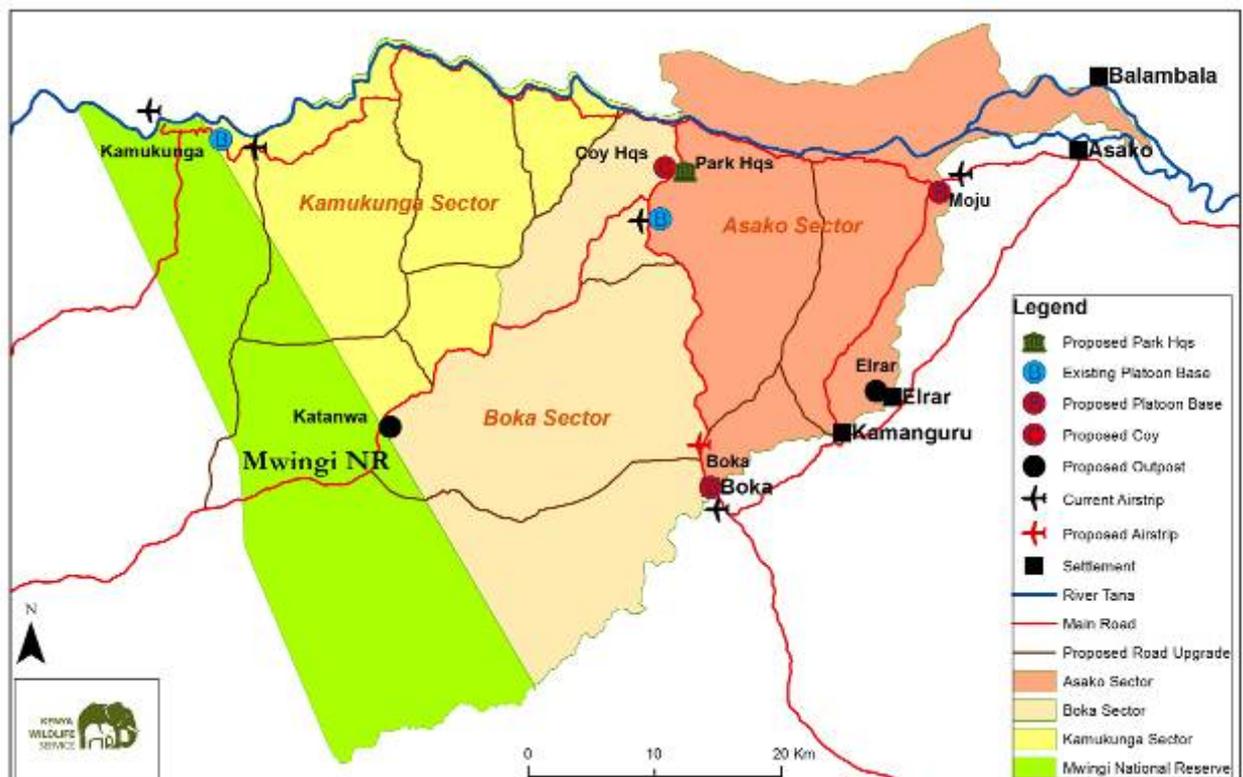


Figure 10. Existing and proposed infrastructure

Objective 4: Security for the park’s resources enhanced

There has been poaching of wildlife specifically elephants for trophy trade, zebras, dikdik, and hippopotamus mainly for subsistence and the need for bush meat. Poaching activities are prevalent in Kyethoni, Moju, Boka Airstrip, Kambi ya Simba and Bilisa (Balambala). The prevalence of charcoal burning and farming activities within KNP has led to habitat destruction. These activities happen in areas bordering Mwingi National Reserve.

Illegal grazing in KNP has caused habitat degradation and depleted resources i.e. Water, pasture, prey for predators and displaced predators and other wildlife. Some of the affected animals are elephants, cheetah, ostriches, the rare bat-eared fox, antelopes, zebras, buffaloes, and giraffes. Illegal grazing activities are prevalent in Kyethoni, Malenge, Munyuni, Kamunyu, Bosnia, Eldano, and Sikley areas as shown in Figure 10.

Currently, there is minimal tourist visitation and activities at KNP. However, there is potential for tourism if security is enhanced as the park is endowed with tourism resources including the history of George Adamson, wildlife, various scenic attractions and sites, and cultural practices of communities bordering the park.

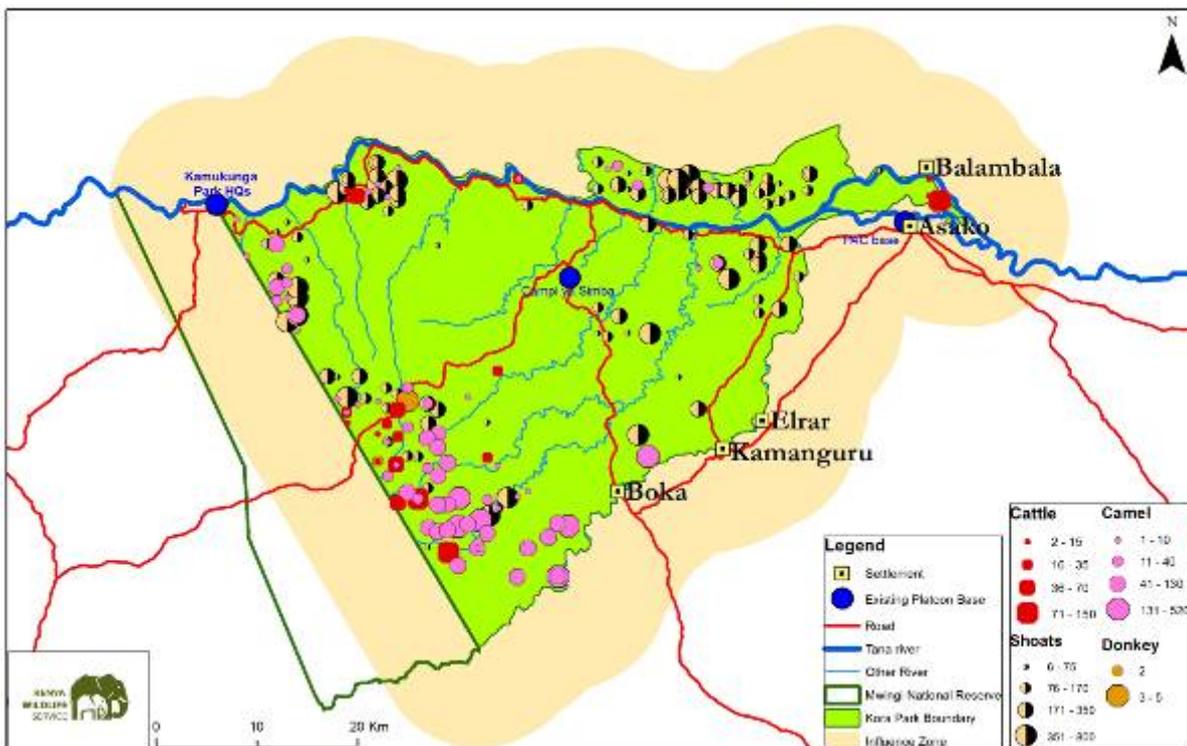


Figure 11. Map showing livestock distribution in KNP

Although currently there are no major security threats to KNP property and assets, as new activities are being implemented and new investments are made, there is need for security enhancement. This includes securing of staff premises, offices and other assets through strategic setting of infrastructure, security bases, and deployment of manpower, vehicles and equipment.

Action 4:1 Establish intelligence and investigation units

An effective wildlife security system should be complemented by a wildlife intelligence system that collects security related information, analyses it, and advises the wildlife authority on steps to be taken to counter various wildlife issues. Many wildlife-related crimes can be effectively prevented using reliable intelligence information. As such, a well dispersed intelligence network is essential and it will be maintained to obtain advance warning of events and movements of individuals that pose a threat to wildlife or tourism security in KNP.

Action 4:2 Establish a KNP security database and identify security hotspots

A security database is essential to monitoring and evaluating the effectiveness of the overall security strategy at KNP and to inform timely changes to the strategy if appropriate. Information from the database can be used to support planning of security operations and patrols, and help identify the optimal location of new security outposts. As such, to enhance security operations, a comprehensive security database for KNP will be developed. KNP management in consultation with KWS HQs Security Division will implement this action in the first year of plan implementation.

Action 4:3 Conduct high profile ground foot, vehicle and aerial surveillance

To ensure security of wildlife and visitors, and deter any threats that may arise, KNP management will conduct patrols to dominate KNP and disrupt any illegal activity and combat illegal activities through deterrence means. In regard to this aerial and ground patrols will be intensified within KNP. The expansion and intensification of these patrols will be based on the review of security operations carried out.

The main protected area offences committed within KNP are charcoal burning, illegal livestock grazing and bush meat poaching. Although significant advances have been made in securing KNP, with elephant poaching now reduced, livestock incursion poses a significant challenge. KNP Management with support from the KWS HQs security division will plan and implement enhanced security operations in KNP. However, for effective security operations serviceable vehicles, fixed wing Aircraft, and security equipment (GPS, Trap Cameras, Night Vision goggles, Computers, Printers, Digital Cameras etc.) will be needed.

Action 4:4 Enhance security of KNP facilities, assets and staff

To ensure safety of KWS staff, accommodation facilities, offices, installations, equipment, machinery and plants, security will be beefed-up in KNP. Extra security will be deployed to man service premises and strong rooms.

KNP management will ensure Standard Operating Procedures (SOPs) regarding assets management will be adhered to. With support from the KWS HQ assets office, control of movement, command and usage of service equipment e.g. vehicles, computers, office furniture, firearms and ammunitions will be done as per the procedures.

Plan Monitoring

The plan monitoring framework set out in the following tables has been designed to provide guidance for the assessment of the potential impacts resulting from the implementation of each of the five management programmes. The framework sets out the desired positive impact of each programme's objectives, as well as any potential negative impacts that may possibly occur. The framework also includes measurable and quantifiable indicators for assessing these impacts, and potential sources of the information needed.

Table 12. Ecological Management Programme Monitoring Plan

Objective or Sub-Objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
Objective 1: Conservation status of the KNP's threatened mammals and birds enhanced	Increase in population of elephants using KNP	Population size and recruitment rates	Population counts (
Objective 2: Important KNP habitats are restored and maintained	Habitat connectivity between the KNP and surrounding natural habitats is maintained	Extent of permanent settlements and wildlife habitat adjacent to the KNP	Land cover change study
	The area of grassland available for key grazing species in the KNP is maintained or increased	Area of grassland	Satellite imagery and ground observations
Objective 3: Understanding of ecological processes and functions enhanced			
Objective 4: Climate change impacts mitigated and adaptation interventions mainstreamed			

Table 13. Tourism Development and Management Programme Monitoring Plan

Objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
Objective 1: Tourism infrastructure and facilities developed	Increased use of the Low and Wilderness Activity Zones	Percentage of KNP visitors staying overnight in the LUZ and WAZ	KWS HQ visitor database and concession holder records
	Increased length of stay in the KNP	Average number of nights spent in the KNP per visitor	Concession holder records and bednight fees
	Visitor security incidents as a result of using remote parts of the KNP	Number of visitor safety and security incidents in LUZ and WAZ	Incident reports

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Objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
	Environmental degradation from new tourist activities and/or supporting infrastructure	Evidence of pollution/litter or habitat degradation at sites where activities or infrastructure are located	Targeted inspections by KNP staff
	Increased number of visitors to the KNP	Annual visitor numbers	KWS HQ visitor database
	Improved financial sustainability of the KNP	Annual revenue	KNP Finance records
	New developments impact on the KNP's wilderness characteristics	visitor and investor satisfaction	Feedback from investors and visitors
Objective 2: Tourism products within KNP diversified	Increased visitation and visitor satisfaction	Visitor satisfaction surveys and annual visitor numbers	KWS HQ visitor database and visitor satisfaction survey reports
	The KNP's wilderness and environmental qualities are compromised around attractions	Evidence of litter and environmental damage at KNP attractions	Targeted inspections by KNP staff
Objective 3: Tourism administration and management strengthened	Increased collaboration between KWS and investors and visitors		Meeting minutes
	Improved visitor understanding of the KNP's ERVs, conservation issues and history	Number of guidebooks and maps sold	KWS HQ tourism records)

Table 14. Community Partnership and Education Programme Monitoring Plan

Objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
Objective 1: Human-wildlife conflict reduced	Reduced costs of wildlife to KNP adjacent communities	Incidents of human-wildlife conflict around the KNP	Community Wildlife Service records (monthly reports and occurrence books)
Objective 2: Collaboration and communication mechanisms with local communities strengthened	Enhanced relationships between KNP management and surrounding communities	Incidences of KNP - community conflict	Community Wildlife Service records
Objective 3: Opportunities for communities to benefit from the KNP improved	Increased value and importance of the KNP to surrounding communities	Income from activities linked to the conservation of the KNP	Community Wildlife Service records

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Objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
	Increased immigration to KNP adjacent areas as a result of benefits	Trends in population growth and immigration in KNP adjacent areas	County records, national census, community surveys
Objective 4: Conservation education awareness enhanced	Improved understanding of the KNP's conservation importance	Number of conservation awareness activities held	Community Wildlife Service records
	Increased community awareness of and respect park rules and regulations	Number of local community members arrested for illegal activities in the KNP	Security Section Records
	Decreased degradation of wildlife habitat around the KNP	Area covered by bare ground due to over-grazing	land cover change study
	Reduced illegal natural resource use in the KNP's adjacent areas	Number of local community members arrested for illegal natural resource use	Security Section Records

Table 15. Protected Area Operations and Security Programme Monitoring Plan

Objective or Sub-objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
Objective 1: Institutional collaboration strengthened	Enhanced management collaboration between KWS and its partners	Number of projects supported	annual reports
	Increased stakeholder support for management of the KNP	Number of Park management Committee meetings or other stakeholder collaboration events held	Meeting minutes or management records
Objective 2: Performance and motivation of KNP staff improved	Improved efficiency of staff undertaking their roles	Staff performance against in terms of implementing programmes set out in this plan	Annual reports
	Improved morale of staff	Number of poor morale related incidences	Annual reports
Objective 3: Infrastructure, transport and communications to support PA management and tourism development improved	Improved visitor and management access across the KNP	Kilometres of roads built and/or improved	KNP management records and KWS HQ GIS database
	Environmental disturbance and pollution during construction of infrastructure such as roads and gates and operational bases	Evidence of litter, pollution or excessive environmental damage	Targeted inspections by KNP staff

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Objective or Sub-objective	Potential Impacts (Positive and Negative)	Verifiable Indicator	Sources and means of verification
	Improved efficiency in management operations (especially security and PAC responses)	Ratio of operational to non-operational vehicles	management records and/or periodic surveys
	Improved management response to security or HWC incidents	Number of security and HWC incidences successfully responded to	Community surveys
	Environmental disturbance and pollution during gate or airstrip construction	Evidence of litter, pollution or excessive environmental damage	Targeted inspections by MCA staff
Objective 4: Security for the park's resources enhanced	The KNP is a safe and secure destination for visitors and investors	Number of visitor security incidents reported	Security Section records (incident reports)
	Reduced impact of poaching and livestock incursions in the park	Size and frequency of livestock incursions into the park and number of poaching incidents detected	Security Section records and aerial surveys
	Increased disincentive for undertaking illegal activities	Number of repeat offenders caught in the KNP	Security Section records

Annexes

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 2: Important KNP habitats improved														
2:1 Implement drought mitigation and adaptation measures														
2.1.1 Undertake re-afforestation expeditions in and outside KNP in collaboration with community members and other stakeholders like KFS, County Government of Tana River, TAS, Born Free foundation and George Adamson Wildlife Preservation Trust	WK, SRS, KFS, BFF, CGT GOVT TANARIVER,GAWPT		X			X					X			Habitat restoration plots established
2.1.2 Establish pilot habitat restoration plots in KNP	SRS, WK			X										
2.1.3 Undertake a feasibility study and map the potential locations for the construction of sand dams, water pans and boreholes	SRS, WK					X								Reports produced
2.1.4 Construct sand dams, water pans and boreholes in accordance with the findings of activity 2.1.3 above	WK, SRS,							X						Sand dam, water pans and boreholes constructed by 2020
2.1.5 Increase the security presence in the park to reduce illegal natural resource use and decrease conversion of wildlife habitat to permanent agriculture and pastoralist grounds in Kora Ecosystem	WK, OC KORA SECURITY	X												Illegal natural resource use reduced Conversion of wildlife habitat to permanent agriculture reduced
2.1.6 Establish wildlife conservancies to act as dry season grazing areas	SRS, WK, CTY GOVT TANA RIVER, COMMUNITY									X				Conservancies established by 2021
2.2 Restore degraded and eroded habitats in KNP														
2.2.1 Map out the degraded areas for rehabilitation and promotion of natural regeneration.	SRS, WK	X												Reports Produced
2.2.2 Control access to some of the degraded areas so as to promote natural regeneration	WK, OC KORA SECURITY		X											Degraded areas restored
2.2.3 Undertake re-vegetation works in severely degraded areas to accelerate the restoration process and enable the reintroduction of species that may be lost from the site	SRS, WK							X						

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.3 Carry out study to establish impacts of livestock incursions on vegetation structure and composition														
2.3.1 Undertake a study to establish the impacts of livestock incursions on the vegetation structure and composition of habitats in the KNP.	SRS, WK	X				X				X				Reports produced
2.3.2 Sensitize the local communities on the impacts of livestock grazing on the KNP's conservation through workshops/seminars.	WK, WE, WC	X	X	X	X	X	X	X	X	X	X	X	X	Workshop/seminar conducted
2.4 Carry out KNP land cover change study														
2.4.1 Conduct a land cover change survey in KNP ecosystem	SRS, WK	X												Technical report availed
2.4.2 Initiate bush encroachment reduction programme in KNP	WK, OC KORA SECURITY	X												Habitat management initiated
2.5 Monitor and control spread of invasive species in KNP														
2.5.1 Identify and map invasive species spread in KNP	SRS, WK						X							Generate technical report
2.5.2 Initiate manual invasive species control and eradication programme in KNP through uprooting and burning	SRS, WK		X		X		X		X		X			Area and species managed
2.6 Migratory corridors and dispersal areas are secured														
2.6.1 Collar some migratory species e.g. elephants to generate data on their migratory corridors and dispersal areas	SRS, VET, WK					X				X				Monitoring of key species and secured corridors by 2020
2.6.2 Map and secure the identified wildlife corridors in partnership with NEMA, Garrisa, Meru, Isiolo, Kitui and Tana River county governments	SRS, WK										X			At least 2 conservancies established by 2020
2.6.3 Liaising with community and private landowners to establish wildlife conservancies along the dispersal areas	SRS, WK, CTY GOVT, COMMUNITY								X			X		Awareness and education barazas held
2.6.4 Develop & implement a sensitization strategy for the leaders and concerned stakeholders on the importance of wildlife corridors	SRS, WK, CTY GOVT, COMMUNITY		X	X	X	X	X	X	X	X	X	X	X	Resource inventory reports generated
2.6.5 Initiate a resource inventory along the identified corridors	SRS, WK, CTY GOVT					X				X				

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 3: Understanding of ecological functions and integrity of KNP enhanced														
3.1 Undertake baseline surveys												Proposal drafted by 2018		
3.1.1 Develop a proposal to source funding for the survey	SRS,WK			X										
3.1.2 Organize and procure survey equipment	SRS,WK, PRO-CUREMENT OF-FICER						X							Equipment purchased by early 2019
3.1.3 Design the methodology for data collection for each taxa	SRS						X	X						Application methods in place by 2019
3.2 Develop a long term ecological monitoring programme												Biodiversity monitoring program in place by 2019		
3.2.1 Design a monitoring protocol for KNP	SRS, WK						X							
3.2.2 Identify the monitoring indicators	SRS, WK								X					
3.3 Develop an information and data management system												Resources acquired for research work in KNP by mid-2018		
3.3.1 Purchase a desktop computer for database management	SRS,WK, PRO-CUREMENT OF-FICER	X												
3.3.2 Design and develop a database for KNP	SRS		X	X										
3.3.3 Deploy a person to manage the database	DDHC				X									
3.3.4 Purchase a back-up system	SRS,WK, PRO-CUREMENT OF-FICER						X							
3.4 Establish the Adamson resource centre												Adamson Resource centre constructed by 2020		
3.4.1 Engage the Architects at KWS-HQ to make the drawings	WK, COW						X							
3.4.2 Engage the quantity surveys to generate the bill of quantities	WK, QS,COW						X							
3.4.3 Develop a funding proposal for resource centre development	WK							X						
3.4.4 Construct and equip the resource centre	WK, QS, COW									X	X			
3.5 Identify and conduct targeted research														

Management Action and Activities	Persons Responsible	Timeframe												Milestones	
		FY 2018-19				FY 2019-20				FY 2020-21					
		1	2	3	4	1	2	3	4	1	2	3	4		
3.5.1 Conduct a study on the impact of anthropogenic activities in KNP	WK,SRS		X												Reports produced and disseminated by 2019
3.5.2 Disseminate the research findings to the management	SRS, WK					X									
Objective 4: Climate change impacts mitigated and adaption interventions mainstreamed															
4:1 Ecosystem-level drought risks assessed and successfully coordinated															
4.1.1 Establish drought assessment team	SRS, WK		X												
4.1.2 Develop guidelines and procedure to be followed when drought occur	SRS, WK				X										
4.1.3 Initiate Participatory action-planning at the county level in support of CIDP including GIS	SRS, WK, CTY GOVT TANA RIVER														
4.1.4 Undertake climate risk analysis	SRS, WK			X											
4.1.5 Initiate ecosystem-based disaster risk reduction and climate change adaptation planning at different levels including drought cycle management.	SRS, WK				X					X					
4.1.6 Organize and encourage community neighbouring KNP to participate in area conflict management and peace building	WK, WE, WC	X	X	X	X	X	X	X	X	X	X	X	X	X	
4.2 Restore degraded areas sustainably to deliver ecosystem-based climate risk reduction and other multiple benefits															
4.2.1 Initiate regular rangeland assessment	SRS, WK		X			X			X				X		Rangeland assessed
4.2.2 Conduct water, flood and soil management through building of stone bunds and check dams	SRS, WK									X					Stone bunds and check dams built
4.2.3 Establish Invasive species control and grass re-establishment programmes for degraded grasslands.	SRS, WK	X													Invasive species control and grass re-establishment programmes established
4.3 Undertake climate responsive and ecosystem resilience- economic investments and incentives															
4.3.1 Help communities establish priority drought reserves/dry season grazing areas,	SRS, WK, WC			X											Dry season grazing areas established

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.3.2 Introduce market support programmes that build in climate resilience	SRS				X									Market support programmes established
4.3.3 Initiate climate education for market traders	SRS, WC, WE, WK		X											Climate education initiated
4.3.4 Form a multidisciplinary team of professionals to assess, monitor and implement climate change mitigation protocols	SRS, WK			X										Multidisciplinary team formed
4.4 Knowledge management and learning actively supports climate change actions at the area level														
4.4.1 Develop a vibrant information generation and dissemination to communities around KNP	SRS, WK, WC, WE			X										Tools and mechanisms for ending drought emergencies developed and disseminated
4.4.2 Develop, disseminate and adopt tools & mechanisms on building resilience for ending drought emergencies (EDE)	SRS, WK, WC					X								

2. TOURISM DEVELOPMENT AND MANAGEMENT PROGRAMME

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: The KNP tourism product expanded and diversified														
1.1 Develop Quality and affordable Eco-lodges and Tented Camps														
1.1.1 Identify the sites	WE, WT, MARKET-ING DEPT		X											Sites identified
1.1.2 demarcate both the eco-lodge and tented camp sites	WK, QS, COW			X										Sites demarcated
1.1.3 Develop prospectus for the two facilities	MARKETING DEPT					X	X							Prospectus developed
1.1.4 Tender and award sites to selected investors	PROCUREMENT,							X						Sites awarded
1.1.5 Undertake an EIA before construction of the facility	SRS, WK,							X						EIA report produced
1.2 Develop cottages and Banda														
1.2.1 identify the place where it's best suitable for putting up the facility	WK, WT,			X										Sites identified
1.2.2 The warden tourism KNP will initiate the process by writing a concept paper to MBD for resource allocation	WT, WK				X									
1.2.3 Design of the facilities will initiated by marketing product	WK, QS,COW, MARKETING OF-FICER					X								Resources allocated Designs prepared by 2019
1.2.4 The warden to spear head the tendering process in liaison with KWS headquarters	WK, KWS HQS								X					Tenders awarded and bandas/ cottages constructed by 2020
1.2.5 The construction work begins	WK, WT, COW, QS									X				
1.3 Establish campsites, picnic sites and viewpoints														
1.3. Identify 6 Special campsites 2 public campsites, 2 picnic sites and 3 viewpoints.	WK, WT			X	X	X								Sites identified
1.3.2 Assess and confirm suitability and operationalize.	WK, WT					X	X							

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.3.3 identify suitable sites for 2 public campsites	WK, WT				X	X								Camping gear and construction materials procured
1.3.4 Write concept letter to park management and KWS HQs for approval and EIA.	WT, WK					X	X							
1.3.5 .Initiate the Procurement procedures for camping gear and construction materials.	WK, WT, PROCUREMENT OFFICER					X								
1.4 Develop suitable/appealing tourism road circuit														
1.4.1 Identify suitable roads circuit	WK, WT, CWS			X										Suitable circuits identified Road circuit constructed by mid-2019
1.4.2 Constructed and maintained the circuit	CWS, WK					X	X	X	X					
1.5 Construct decent and secure revenue gates														
1.5.1 Identify suitable sites for two revenue gates construction	WK, WT, COW				X									Sites identified by 2019 Resources allocated Tender awarded and gates constructed by 2020
1.5.2 Write a concept paper for approval and financial support	WK, WT							X						
1.5.3 initiates the tendering and construction process	WK, WT, PROCUREMENT OFFICER								X	X				
1.5.4 Implement the construction of the projects	WK, COW, WT									X	X	X	X	
1.6 Establish and equip visitor information centre														
1.6.1 Write a concept paper	WT, WK			X										Concept paper written
1.6.2 Partner with stakeholders to get appropriate and accurate information for display at VIC	WK, WT		X											Information shared
1.6.3 Initiate the procurement process	WK, WT, PROCUREMENT OFFICER						X							Construction materials procured and information centre constructed by end of 2020
1.6.2. Begin the process of construction	WT, COW, WT									X	X	X		
1.7. Improve existing airstrip to act use by chartered planes														
1.7.1 Assess existing airstrip in liaison with KWS air wing, building and MBD	WK, CWS		X											Report produced on airstrips status
1.7.2. Generate a report and Request for funding for maintenance and repairs	WK, CWS			X										Resources allocated and airstrips repaired

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.7.3 Deploy revenue staff	WK, HCO, WT				X									Staff deployed
Objective 2: Tourism products within KNP diversified opportunities developed														
2.1 Introduce alternative wildlife viewing to traditional game drive														
2.1.1 Liaise with KWS MBD to prepare guidelines on night game drive, nature walks, cycling, cable car, special activity bird watching, bush break first horse and camel riding inside KNP	WK, MBD, WT					X								Guidelines produced
2.1.2 Convene stakeholders meeting to discuss the guidelines	WK, WT								X					Meetings held
2.2 Identify and introduce new tourism activities														
2.2.1 Liaise with KWS MBD to come up with guidelines, on filming and photography, sport fishing, rock climbing and river rafting	WK, WT			X										Guidelines produced
2.2.2 Designate specific sites for activity 2.2.1	WK, WT				X	X								Sites allocated for activity 2.2.1
2.2.3. Discuss and domesticate guidelines	WK, WT					X								Proposals developed
2.2.4 Request for proposal from investors for operation of rafting activities	WK, WT								X	X	X			
2.3 Identify, introduce and enhance cultural events within KNP														
2.3.1 Identify cultural activities i.e. dancing, honey harvesting, circumcisions, weddings among others within KNP	WT, WK, COMMUNITY						X	X						Cultural activities identified
2.3.2 Partner with other stakeholders like county government to support construction of community cultural centre	WK, WT, CTY GOVT TANA RIVER									X	X			Cultural centre constructed and operationalised by 2020
2.3.3 Launch and operationalize the cultural centre	WK, WT, COMMUNITY										X	X	X	
2.4 Identify and support the development of cultural tourism														
2.4.1 Review the existing and tendered tourism concessions in the MCA to find out whether there is need for development of additional sites	WT, WK			X										Existing tendered concessions reviewed

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.4.2 Prepare a prospectus detailing potential new sites for development	WK, WT, MBD				x									Prospectus developed
2.4.3 Advertise the prospectus, evaluate proposals and award sites (as per Activities 2.2.2 - 2.2.4 above)	KWS HQS					x								
Objective 3: Tourism administration and management strengthened														
3.1 Build tourism human resource capacity														
3.1.1 Identify personnel requirement and liaise with KWS HQs for deployment	WK, HCO		x											Personnel deployed to the Tourism Department by first year of the plan implementation
3.1.2 Deploy tourism staff appropriately	HCO, WK			x										
3.2 Collaborate with tourism stakeholders and investors to improve the tourism activities in KNP														
3.2.1 Identify stakeholders and engage them all	WK, WT		x											Stakeholders identified and TMC established Meetings held with the stakeholders
3.2.2 Establish a tourism management committee for the area in collaboration with the area	WK, WT			x										
3.2.3 Review proposed designs with other key stakeholders	WK, WT				x									
3.2.4 Organize and convene regular meeting on tourism management and improvement for KNP	WK, WT				x									
3.3 Develop work plans, budget and come up with tourism proposal for funding														
3.3.1 Come up with a list of all tourism planned activities for KNP	WT		x											Work plans and budgets developed
3.3.2 Prioritize the activities and their budgets	WT			x										
3.3.3 Partner with relevant stakeholders to mobilize for funds	WK, WT			x	x									
Objective 4 Tourism attractions within KNP are marketed to specific target segments														
4.1 Design, develop and distribute marketing collaterals														
4.1.1 Liaise with tourism stakeholders and area tourism management to design marketing materials	WK, WT			x										Marketing materials developed and distributed

Management Action and Activities	Persons Responsible	Timeframe												Milestones				
		FY 2018-19				FY 2019-20				FY 2020-21								
		1	2	3	4	1	2	3	4	1	2	3	4					
4.1.2 Consult MBD for design approval and printing	WK, WT				X													
4.1.3 Distribute the materials in both local and international exhibitions	WK, WT						X											
4.2 Enhance Park's visibility																		
4.2.1 Do an inventory of existing signage	WK, WT, COW		X															Inventory of all signage developed
4.2.2 Identify the strategic and suitable allocations erecting signage	WT, WK, COW			X														
4.2.3 Partner with all relevant stake holders to fund the innovation design and erections for both highway and park signage	WK, WT					X	X					X	X					Signage erected at Highways and inside the Park
4.3 Market the park to travel trade through exhibitions, sales calls, sales blitz, and farm trips																		
4.3.1 Identify potential client sources	WK, WT		X															Potential client sources identified
4.3.2. Partner and conduct proper market research with stake holders	WK, WT				X													
4.3.4 Come up with a proposal and budget for each marketing activity	WK, WT						X											Proposals and budgets developed
4.3.5 Organize and conduct farm trip for tour operators and media houses	WK, WT											X						Resources allocated Farm trip for tour operators conducted
4.4 Collaborate with media houses to develop park documentaries																		
4.4.1 Do a request letter TO KWS HQ outlining the activity	WK, WT		X															Suitable park attractions identified Resources allocated Documentaries developed and broadcasted
4.4.2 Identify suitable park attractions to be covered in the documentary	WT, WK			X	X													
4.2.3 Partner with county governments and other tourism stakeholders in ECA to mobilize for funding of the activity	WK, WT, CTY GOVT TANA RIVER					X	X	X										
4. 4.4 Approach media houses in liaison with KWS Multimedia to prepare and run a short documentary on KNP attractions	WK, WT											X						

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.4.5 Use the documentary for both marketing and education awareness.	WK, WT									X	X	X	X	
4.5 .Market the park through social media-(websites, Facebook, twitter, what's up, Instagram etc.)														
4.5.1 Cluster social media and website chosen for marketing as per market segment.	WK,WT		X											Content developed and circulated Marketing page established on the social media platforms
4.5.2 Develop and circulate content for different market segments in collaboration with KWS MBD	WT				X									
4.5.3 Open page and assign staff to update on daily basis	WT					X								
4.6 Product branding														
4.6.1 Identify the need to position the park in the global market space	WK, WT, MARKET-ING OFFICER		X											Park marketing slogan developed Branding ceremony held
4.6.2 Develop a park marketing slogan in collaboration with KWS MBD	WK, WT, MARKET-ING OFFICER					X								
4.6.3 Organize a branding ceremony and media coverage of the activity	WK, WT, MARKET-ING OFFICER							X	X	X				
4.7 Undertake market research to identify potential market for KNP and guide in tourism product enhancement and diversification														
4.7.1 Initiate a marketing research project in collaboration with KWS MBD and other relevant stakeholders.	WK, WT, MARKET-ING OFFICER			X										Report produced
4.7.2 Come up with the list of potential markets in collaboration with KWS-MBD and magical Kenya	WK, WT, MARKET-ING OFFICER		X											Potential markets identified
4.7.3 Know the market behaviours and dynamics across borders	WK, WT, MARKET-ING OFFICER					X								
4.7.4 Have a list of competitors within ECA and adjust market strategies accordingly	WK, WT, MARKET-ING OFFICER		X											Marketing strategy developed

3. COMMUNITY PARTNERSHIP AND CONSERVATION EDUCATION MANAGEMENT PROGRAMME

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Human wildlife conflict minimized														
1.1 Create awareness on traditional ways of protecting livestock from hyena predation														
1.1.1 Train community members local techniques of scaring wild animals e.g. lighting bon fires, use of domestic dogs, scare crows etc.	WK, WC		X	X	X									Community members trained
1.1.2 Liaise with county government of Kitui and Tana River	WK, CTY GOVT KITUI				X									Predation hotspot areas identified
1.1.3 Identify the predation hotspot area	WK, WC	X	X											Meetings held
1.1.4 Create awareness on predator proof bomas to the local community in the hot spot areas	WK, WC	X	X	X	X	X	X	X	X	X	X	X	X	Predator proof bomas designed and built by 2020
1.1.5 Hold a meeting for endorsement of the construction of predator proof boma	WK, WC			X	X	X								
1.1.6 Design the predator proof boma	WK, COW, WC			X										
1.1.7 Prepare bill of quantities	QS, COW				X									
1.1.8 Mobilise resources as per the bill of quantities prepared	WK, WC				X	X	X							
1.1.9 Advertise tender	PROCUREMENT OFFICER						X							
1.1.10 Evaluate received tenders	EVALUATION COMM							X						
1.1.11 Award the tender for predator proof boma	PROCUREMENT OFFICER							X						
1.1.12 Hand over the site of construction to winning bidder in presence of the community members	WK,WC,COW, COMMUNITY								X					
1.1.13 Supervise the predator proof boma construction	WK, WC,COW								X	X	X			
1.1.14 Hand over the predator proof boma to the local community	WK, WC, COMMUNITY										X			

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.2 Recruitment and training of community scouts														
1.2.1 Carry out assessment to establish the number of scouts required	CTY GOVT TANA RIVER				X									Reports produced
1.2.2 Mobilise for resources for training the scouts	CTY GOVT TANA RIVER					X								Resources allocated
1.2.3 Advertise for the community scout positions	CTY GOVT TANA RIVER						X							Community scouts recruited and trained by 2020
1.2.4 Conduct a recruitment exercise	CTY GOVT TANA RIVER, CTY SEC COMMITTEE						X							
1.2.5 Offer employment cards to the successful candidates for reporting to training school	CTY GOVT TANA RIVER						X							
1.2.6 Train the successful candidates	CTY GOVT TANA RIVER, KWS LEA							X	X					
1.2.7 Deploy the trained community scouts	CTY GOVT TANA RIVER								X					
1.3 Sensitize the community on the compensation process														
1.3.1 Identify stakeholders to attend the meeting	WK, WC	X		X		X		X		X		X		Stakeholders identified
1.3.2 List down the stakeholders and participants	WK,WC	X		X		X		X		X		X		List of participants and stakeholders prepared
1.3.3 Invite the stakeholders and participants through appropriate means	WK,WC	X	X	X	X	X	X	X	X	X	X	X	X	
1.3.4 Hold the meeting	WK, WC	X	X	X	X	X	X	X	X	X	X	X	X	Meeting held
1.3.5 Take minutes on the deliberations during the meeting	WC	X	X	X	X	X	X	X	X	X	X	X	X	Minutes produced and disseminated
1.3.6 Disseminate the minutes to the stakeholders and participants	WC	X	X	X	X	X	X	X	X	X	X	X	X	
1.4 Liaise with Tana River and Kitui Counties, to develop a local level land use plan to protect the wildlife corridors														

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.4.1 Hold consultative meetings with Tana River and Kitui Counties to deliberate on establishment of wildlife corridors	CTY GOVTS KITUI & TANARIVER, SRS, WK, WC	X	X	X	X									Report produced on outcome of the meeting
1.4.2 Hold deliberations with the community leaders and members to identify potential area of wildlife corridors	WK, WC, COMMUNITY		X	X	X	X								Potential wildlife corridors identified
1.4.3 Map potential areas identified as wildlife corridors	SRS, WK, CTY GOVTS			X	X									Potential areas mapped
1.4.4 Prepare maps showing area of interest	SRS, GIS					X	X							Maps showing areas of interest prepared
1.4.5 Analyse the maps developed	SRS, WK, WC							X						Report produced
1.4.6 Prepare the spatial plan in consultation with KWS	CTY GOVTS, SRS, WK, WC					X	X	X						Spatial plans developed
1.4.7 Reserve and Adjudicate the community land for the wildlife corridor	CTY GOVTS TANARIVER & KITUI									X	X			Wildlife corridors adjudicated. Reports produced
1.5 Increase more community radio coverage														
1.5.1 identify the areas that require community radio coverage	WC, WK		X											Areas identified
1.5.2 mobilise resources to procure the radio equipment	WK, WC			X	X									Resources allocated
1.5.3 procure radio equipment	PROCUREMENT OFFICER, WK, STS NYERI, WC					X	X							Equipment procured
1.5.4 install radio equipment	STS NYERI, WC, WK							X						Radio installed and maintained
1.5.5 maintain the radio equipment	STS NYERI, WK, WC									X	X	X	X	
1.6 Trap and translocate problematic predators														
1.6.1 identify the hotspot areas with problematic predators	WK, WC, SRS		X											Hotspot areas identified
1.6.2 Lay appropriate trap for the problematic predator	WK, WC		X	X	X	X	X	X	X	X	X	X	X	Traps laid
1.6.3 Identify the suitable location to release the trapped predator	WK, SRS, WC					X		X			X			Suitable location for release identified

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.6.4 Collar/ear notch/tag the trapped predator before release at the identified site	SRS, VET, WK, CAPTURE OFFICER					X				X				Trapped predator collared/ ear notched/tagged
1.6.6 Monitor the released predator	SRS, WK, WC			X	X	X	X	X	X	X	X	X	X	Monitoring programme in place
1.7 Strategically deploy PAC personnel														
1.7.1 Identify the HWC hotspot areas	WK, WC			X										HWC hotspots identified
1.7.2 Establish the optimum number of personnel required	HCO, WK			X										Optimum staff level established
1.7.3 Elect the suitable area for establishment of Pac base	WK, WC				X									Suitable area selected
1.7.4 Design the PAC outpost	WK, COW					X								PAC outpost designed
1.7.5 Mobilise resources for outpost construction	WK, WC					X	X	X						Resources allocated
1.7.6 Construct and install appropriate structures for the outpost	WK, WC, COW						X	X	X	X	X			Outpost constructed and appropriate structures installed
1.7.7 Deploy the PAC personnel at the new base	HCO, WC, WK								X					Personnel deployed
1.8 Establish Kora hotline for rapid response														
1.8.1 Establish hotline desk will be at KNP HQs	WK, WC					X								Kora hotline established and staff deployed
1.8.2 Deploy a customer care staff to man the hotline desk	HCO, WK						X							
1.9 Establish and maintain a HWC database														
1.9.1 Design a computer database to store and analyse HWC related information	WK, WC			X	X									HWC database established
1.9.2 Input and update data into HWC database	WC					X	X	X	X	X	X	X	X	
1.9.3 Identify HWC hotspots through analysis of security data	WK, WC, OC KORA SECURITY					X		X		X		X		HWC hotspots identified
Objective 2: Collaboration and communication mechanisms with local communities strengthened														
2.1 Strengthen and support PA-community consultation mechanisms														

Management Action and Activities	Persons Responsible	Timeframe												Milestones			
		FY 2018-19				FY 2019-20				FY 2020-21							
		1	2	3	4	1	2	3	4	1	2	3	4				
2.1.1 Hold discussions with community leaders and decision makers with the aim of reviving community consultative forums (CCFs) in Boka, Elrar and Asako	WK,WC,COMMUNITY		X	X													Community consultative forums reconstituted Meetings held and reports/briefs produced
2.1.2 Develop simple action plan for reconstituting CCC and CCF and agree with key decision makers	WK,WC,COMMUNITY			X	X												
2.1.3 Incorporate mechanisms for ensuring gender balance and participation of youth and marginalised community members in community forums	WK,WC,COMMUNITY			X	X												
2.1.4 Assist CCCs and CCF in establishing governance systems, election procedures and by-laws	WK,WC,COMMUNITY				X	X	X										
2.1.5 Participate in CCC and CCF meetings and promote linkages between the community forums and wider community	WK,WC,COMMUNITY			X	X	X	X	X	X	X	X	X	X	X	X	X	
2.2 Build capacity of the CCCs and CCF to effectively manage community projects																	
2.2.1 Provide training to CCC and CCF members in project cycle management - proposal writing, implementation, and monitoring	WK,WC				X	X											CCC and CCF members trained on project management Exposure tours undertaken
2.2.2 Support community exposure tours to areas where successful collaborative projects have been undertaken	WK,WC,									X	X						
2.3 Revive existing community consultative forums																	
2.3.1 Establish KNP toll- free communication hotlines	WK,WC				X												Toll free communication hotline established Meetings held Conservation champions identified
2.3.2.Hold regular community meetings	WK,WC, WE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2.3.3 Identify conservation champions among the community members and use them in sensitizing others on conservation issues	WK,WC,WE				X	X											
2.4 Establish park management committee																	
2.4.1 Hold a stakeholders meeting to identify committee members	WK,WC			X	X												Stakeholders identified

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.4.2 Develop TORs for the park management committee	WK,WC						X							TORs developed
2.4.3 Hold regular meetings with park management committee	WK, WC					X	X	X	X	X	X	X	X	Meetings held
2.5. Initiate special community events														
2.5.1 Organize cultural events	WK,WC,WE		X				X				X			Special events organized and held on an annual basis
2.5.2 Hold the George Adamson Anniversary events	WK,WC,WE			X				X				X		
Objective 3: Opportunities for local communities to benefit from Kora NP improved														
3.1 Promote partnership with development partners to support community projects														
3.1.1 Identify and list key partners in KNP	WK, WC		X											
3.1.2 Create a forum to engage KNP partners	WK,WC			X	X									
3.1.3 Conduct a community needs assessment	WK,WC					X								
3.1.4 Prioritize the needs and initiate important projects	WK,WC										X			
3.2. Establish community conservation groups														
3.2.1 Create and register community conservation groups in Boka, Kamanguru and Asako	WK,WC,COMMUNITY				X									Conservation groups created and registered
3.3 Support establishment of community based enterprise and CSR projects														
3.3.1 Implement bee keeping projects	WK,WC,ENTERPRISE OFFICE				X				X				X	Bee keeping projects implemented
3.3.2 Construct classes in schools	WK,WC,ENTERPRISE OFFICE			X			X				X			Classrooms constructed
Objective 4: Education Awareness enhanced														
4.1 Deploy an education Warden in KNP														
4.1.1 Identify the personnel gaps in KNP education department	HCO,WK		X											Reports produced
4.1.2 Deploy education staff as appropriate	HCO,WK			X										Staff deployed to the section

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.1.3 Develop a proposal for requirements for the conservation and education	WE			X										Proposals developed
4.2 Establish an Education centre														
4.2.1 Conduct site selection	WK,WE,COW		X											Site selected
4.2.2 Develop a funding proposal for the education centre	WK,WE,COW				X									Proposals developed
4.2.3 Engage the technical department to do the architectural drawings	QS,COW,WK,WE						X	X	X					Architectural drawings done

4. PA OPERATIONS AND SECURITY MANAGEMENT PROGRAMME

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Institutional collaboration strengthened														
1.1 Liaise with, and participate in relevant sub county and county committees														
1.1.1 Participate in relevant sub county and county committee meetings	WK	X	X	X	X	X	X	X	X	X	X	X	X	Security meetings attended and minutes produced
1.2 Collaborate with the sub county security committees to control illegal encroachment into the protected area														
1.2.1 Liaise with the sub county security committees	WK	X	X	X	X	X	X	X	X	X	X	X	X	Community sensitization meetings held
1.2.2 Hold community sensitization meetings at villages adjacent to KNP that are known hotpots areas	WK,WC	X	X	X	X	X	X	X	X	X	X	X	X	
1.2.3 Organize livestock drive	WK,OC KORA SECURITY		X		X		X		X		X			

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
1.2.4 Conduct livestock drive	WK,OC KORA SECURITY		X		X		X		X		X			Livestock drive conducted and reports produced. Meetings held
1.2.5 Organize quarterly meetings	WK	X	X	X	X	X	X	X	X	X	X	X	X	
1.3 Establish communication mechanism with the relevant institutions														
1.3.1 Collaborate with the local community and government security agencies	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Communication mechanism established with the relevant institutions. Community radio installed and maintained
1.3.2 Establish communication mechanism	WK,OC KORA SECURITY		X											
1.3.3 Install community radio system	STS, WK			X										
1.3.4 Maintain the radio equipment	STS,WK			X	X	X	X	X	X	X	X	X	X	
Objective 2: Performance and motivation of KNP staff improved														
2.1 Deploy adequate staff to KNP														
2.1.1 Conduct a human resources needs assessment	HCO, WK	X												Reports produced Staff deployed by 2019
2.1.2 Deploy new staff to understaffed sections	HCO,WK		X											
2.2 Train staff in relevant skills														
2.2.1 Conduct Training Needs Assessment	HCO,WK			X										Reports produced
2.2.2 Collaborate with KWS Headquarters training section in training staff in relevant skills	HCO,WK, TRAINING OFFICER			X										Training conducted
2.3 Improve staff accommodation														
2.3.1 Liaise with AD ECA and KWS Building Civil Works Department	WK,AD ECA, COW		X											Existing houses rehabilitated Resources allocated New houses and offices constructed by 2020
2.3.2 Rehabilitate existing houses and offices	WK, COW		X	X	X	X	X							
2.3.3 Construct new houses and offices	WK,COW					X	X	X	X					
2.3.4 Solicit funding support from partners and stakeholders	WK		X	X										
2.4 Enhance staff welfare to boost morale														
2.4.1 Install satellite TV	WK				X									Satellite TV and solar

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
2.4.2 Install Solar power	WK,STS,COW				X									power installed in all the bases
Objective 3: Infrastructure, transport and communications to support PA management and tourism development improved														
3.1 Improve the road network													New roads constructed by 2020 and existing ones continuously rehabilitated Moju Crossing upgraded to all weather	
3.1.1 Construct new roads	WK, CWS				X	X	X	X						
3.1.2 Rehabilitate existing roads	WK,CWS		X		X		X		X		X			X
3.1.3 Upgrade Moju Crossing Bridge to all weather	WK,CWS													
3.2 Improve transportation in the KNP													New vehicles and plants procured Existing vehicles and plant machinery maintained and repaired	
3.2.1 Procure new vehicles and plant machinery	KWS HQS			X										
3.2.2 Maintain existing vehicles and plant machinery	WK,WM	X	X	X	X	X	X	X	X	X	X	X	X	
3.3 Improve telecommunication													VHF and HF radios procured and installed LAN and WAN procured and installed Intercom procured and installed	
3.3.1 Procure VHF and HF radios	PROCUREMENT OFFICER, WK, STS		X											
3.3.2 Install VHF and HF radios	WK,STS		X	X										
3.3.3 Maintain VHF and HF radios	WK,STS			X	X	X	X	X	X	X	X	X		X
3.3.4 Procure LAN system	PROCUREMENT OFFICER, WK, STS		X											
3.3.5 Install LAN system for KNP offices	WK,STS			X										
3.3.6 Maintain LAN system for KNP offices	WK,STS				X	X	X	X	X	X	X	X		X
3.3.7 Procure intercom system	PROCUREMENT OFFICER, WK, STS		X											
3.3.8 Install intercom system	WK,STS			X										
3.3.9 Maintain intercom system	WK,STS				X	X	X	X	X	X	X	X	X	
3.4 Improve other KNP infrastructure													New airstrips construct-	

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
3.4.1 Construct new airstrip	WK,CWS									X				ed by 2020 and existing ones rehabilitated and maintained
3.4.2 Rehabilitate existing airstrips	WK,CWS		X	X	X	X	X	X	X	X	X	X	X	
3.4.3 Maintain existing airstrip	WK,CWS	X	X	X	X	X	X	X	X	X	X	X	X	
3.4.4 Build new revenue gates	WK,COW													New revenue gates built
3.4.5 Procure solar power equipment	PROCUREMENT OFFICER, WK, STS,COW		X											
3.4.6 Install solar power	STS, COW,WK				X									
3.4.7 Maintain solar power	WK,COW			X										Solar power equipment procured and installed
3.4.8 Procure water supply equipment	PROCUREMENT OFFICER, WK,COW				X									
3.4.8 Install water supply equipment	WK,COW					X								
3.4.9 Maintain water supply	WK,COW		X											Water supply equipment procured and installed
3.4.10 Rehabilitate existing signage	WK,COW,CWS	X	X	X	X	X	X	X	X	X	X	X	X	
3.4.11 Construct new signage	WK,COW,CWS										X			
3.4.12 Maintain the signage	WK,COW,CWS		X	X	X	X	X	X	X	X	X	X	X	New signage constructed by 2020 and existing ones maintained continuously
3.4.13 Align PA boundary	QS, LANDS OFFICER, WK					X								
3.4.14 Maintain PA boundary	QS,LANDS OFFICER, WK						X	X	X	X	X	X	X	
3.4.15 Install boundary marks	QS,LANDS OFFICER, WK						X	X	X	X	X	X		PA boundary aligned and demarcated Beacons installed by 2021
Objective 4: Security for the park's resources enhanced														
4.1 Establish intelligence and investigation units														
4.1.1 Establish intelligence unit	HEAD INTELLIGENCE					X								Intelligence and investigation units established by 2019 Staff deployed Informants established
4.1.2 Establish investigation unit	DDS					X								
4.1.3 Deploy staff	HCO					X								

Management Action and Activities	Persons Responsible		Timeframe												Milestones		
			FY 2018-19				FY 2019-20				FY 2020-21						
			1	2	3	4	1	2	3	4	1	2	3	4			
4.1.4 Establish contacts with key informants	INTELLIGENCE OFFICER	OF-	X		X				X		X		X		X	and maintained Reports produced Reports distributed to relevant departments New intelligence cells established Intelligence information analyst deployed by 2019	
4.1.5 Maintain the key informants	INTELLIGENCE OFFICER	OF-	X	X	X	X	X	X	X	X	X	X	X	X	X		
4.1.6 increase community involvement in gathering intelligence related to wildlife crime	WK,WC,INTELLIGENCE OFFICER		X	X	X	X	X	X	X	X	X	X	X	X	X		
4.1.7 collect intelligence information	INTELLIGENCE OFFICER	OF-	X	X	X	X	X	X	X	X	X	X	X	X	X		
4.1.8 analyse intelligence information collected	INTELLIGENCE OFFICER	OF-	X	X	X	X	X	X	X	X	X	X	X	X	X		
4.1.9 Disseminate the analysed intelligence information to relevant departments for action	INTELLIGENCE OFFICER	OF-	X	X	X	X	X	X	X	X	X	X	X	X	X		
4.1.10 Revamp existing intelligence cells	INTELLIGENCE OFFICER	OF-		X		X		X		X		X		X			
4.1.11 Increase the number of intelligence cells	INTELLIGENCE OFFICER	OF-	X		X		X		X		X		X		X		
4.1.12 Deploy intelligence information analyst	HCO,HEAD INTELLIGENCE						X										
4.2 Establish a KNP security database and identify security hotspots																	
4.2.1 Design a computer database to store and analyse security related information	HEAD INTELLIGENCE						X										Database designed by 2019
4.2.2 Input and update data into security database	DATABASE OFFICER		X	X	X	X	X	X	X	X	X	X	X	X	X		Data input and updated in the database. Reports produced
4.2.3 Identify security hotspots through analysis of security data	WK,DATABASE OFFICER	OF-	X	X	X	X	X	X	X	X	X	X	X	X	X	Hotspots identified	
4.3 Conduct high profile ground foot, vehicle and aerial surveillance																	
4.3.1 Carry out daily foot and vehicle patrols	OC KORA SECURITY		X	X	X	X	X	X	X	X	X	X	X	X	X	Foot and vehicle patrols done daily	

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Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.3.2 Carry out daily aerial patrols	OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Aerial patrols done daily
4.3.3 Establish observation posts at strategic points	OC KORA SECURITY		X											Observation posts established
4.3.4 Mount ambush patrols as per intelligence information	OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	X
4.3.5 Carry out de-snaring patrols	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Snares removed ,if any
4.4 Enhance security of KNP facilities, assets and staff														
4.4.1 Deploy security to man service premises and strong rooms	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Service premises and strong rooms manned
4.4.2 Ensure Standard Operating Procedures (SOPs) regarding assets management is adhered to	WK	X	X	X	X	X	X	X	X	X	X	X	X	SOPs adhered to
4.4.3 Control movement of service equipment	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	
4.4.4 Control usage of service equipment	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Service equipment in good condition
4.4.5 Review security operations to suit dynamism of the security scenarios	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Security operations upgraded
4.5 Establish communication mechanism between the KNP security units, tourist facilities security units and other security agencies														
4.5.1 Establish a communication mechanism between KNP security units and tourist facilities in KNP	WK,OC KORA SECURITY													Communication established by 2019
4.5.2 Engage the local police and judiciary to improve on prosecution outcomes	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Improvement on prosecution outcomes
4.5.3 Provide park visitor details at the gates during entry and exit	WK,OC KORA SECURITY,WT	X	X	X	X	X	X	X	X	X	X	X	X	Visitor register at all entry points
4.6 Establish revenue security mechanisms														
4.6.1 Deploy security staff at revenue gates	WK,OC KORA SECURITY	X	X	X	X	X	X	X	X	X	X	X	X	Revenue gates are secured Reduction in revenue

Management Action and Activities	Persons Responsible	Timeframe												Milestones
		FY 2018-19				FY 2019-20				FY 2020-21				
		1	2	3	4	1	2	3	4	1	2	3	4	
4.6.2 Conduct impromptu ticket inspection	WK,OC KORA SECURITY,RPU OFFICER	X	X	X	X	X	X	X	X	X	X	X	X	fraud at all entry points Reports produced
4.6.3 Investigate and report revenue fraud	WK,OC KORA SECURITY, RPU OFFICER	X	X	X	X	X	X	X	X	X	X	X	X	

Annex 2. Stakeholder Participation in Plan Development

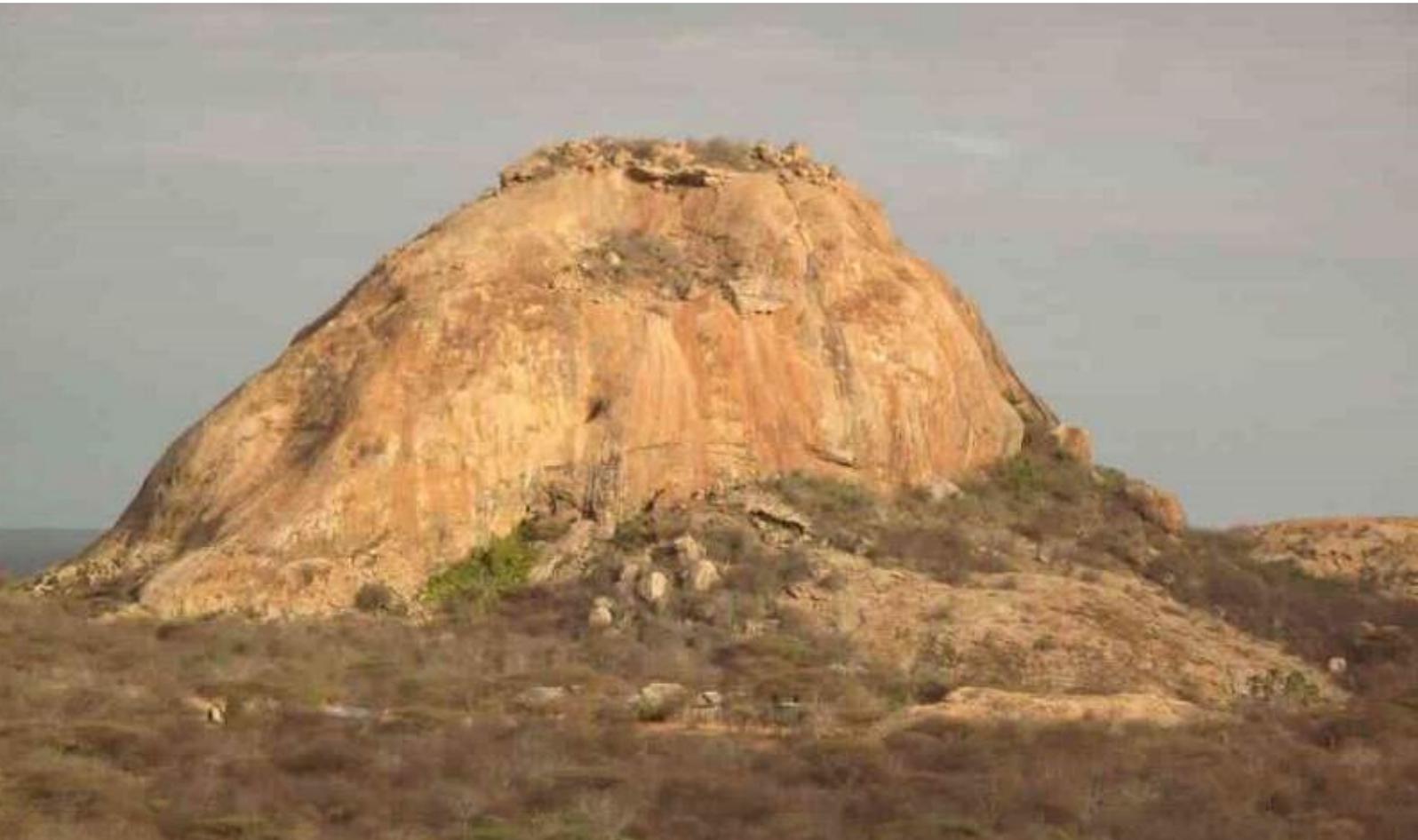
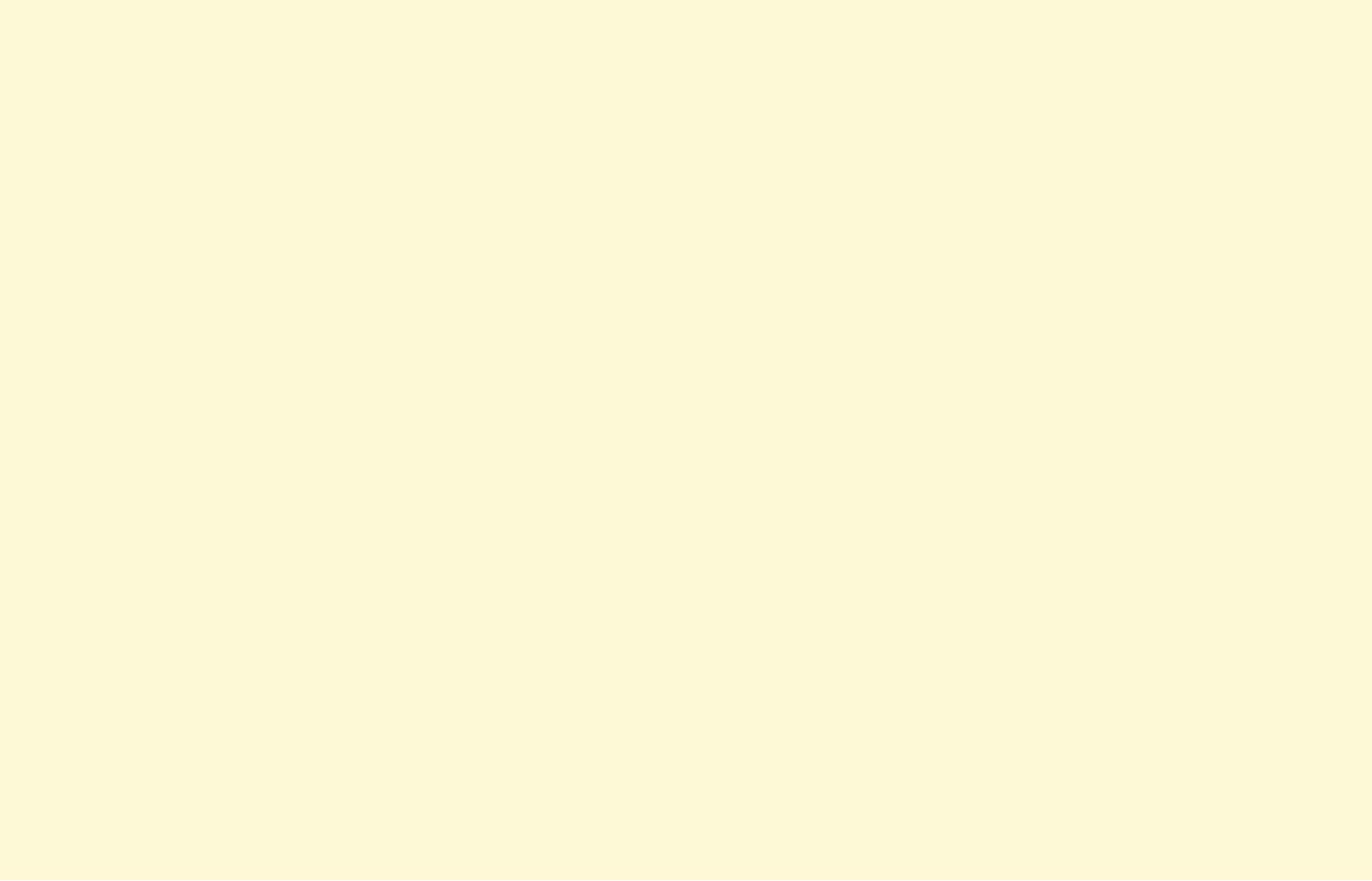
Name	Position and Organisation	Workshop		Working Groups				Consult
		#1	#2	Ecology	Tourism	Community	Sec /PA Ops	
Pauline A. Okode	Warden Education KWS	X	X		X	X		X
Jackline Mutwiri	Resource Planner KWS		X	X				X
Geoffrey Bundotich	SRS- ECA			X				X
Faith Muchiri	G.I.S Technician - KWS		X		X			X
Peter Mbote	Senior Warden Isiolo -KWS		X		X			X
Muraya Githinji	Warden Meru National Park	X	X	X	X	X	X	X
Martha Nzisa	Resource Planner KWS	X			X			X
Paul Omondi	Warden Kora National Park				X			X
Mohamed Mandera	Warden Community KWS	X	X			X	X	X
Mark Cheruiyot	Senior Investigation Officer		X				X	X
Darius Kayago	Project Manager	X	X			X		X
Leonard K. Towett	Ranger							X
Titus Kamau	Ranger							X
Nassur Twahir	Ranger							X
Geoffrey Mbugua Ngigi	Ranger							X
Anthony Kiptoo	Ranger							X
Willy Mutisya	Ranger							X
Billy Simiyu	Ranger							X
Ronald Yegon	Ranger							X
Ali Abdullahi Kari	Elder	X	X					X
Suleiman Abdi Osman	Elder							X
Issa Mohammed Samar	Elder		X					X
Rashid Osman	Elder					X		X
Ahmed Sarole	Elder	X	X				X	X
Ahmed Abass Abdullahi	Elder	X						X
Abdiaziz Jibrii Isaak	Elder			X		X		X
Ali Madobe	Chairman	X					X	X
Mohammed Burale	Youth Chairman				X			X
Suleiman Shidow	Peace Chairman		X					X
Oyou Khaliff	Boka Community			X				X
Mohamed Gutu	Elder		X	X				X
Dakan Abdullahi	Elder					X		X
Batula Dubow	Elder		X	X			X	X
Adey Muhammed	Elder							X
Abdia Abdi Kheir	Elder	X				X		X
Habera Dube	Elder		X					X
Farhiya Bishar	Elder	X	X		X	X	X	X
Badiya Jeheow	Elder	X	X	X	X			X
Rukia Isaack	Elder	X	X	X		X		X
Rukia Mohamed Karani	Elder	X	X				X	X
Arabi Salal Muhamed	Elder			X		X	X	X
Ali Noor Abdi	Elder	X						X
Abdi Hosman	Elder		X					X

KNP MANAGEMENT PLAN (2018 – 2028)

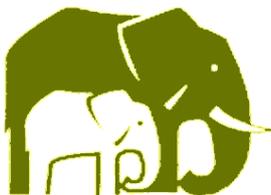
Name	Position and Organisation	Workshop		Working Groups				Consult
		#1	#2	Ecology	Tourism	Community	Sec /PA Ops	
Sheick Ahmed Ali	Elder				X			X
Ali Dubow	Elder		X			X	X	X
Farah Ahmed	Elder							X
Farah Hussein	Elder	X	X		X			X
Hussein Muhammed	Elder		X	X	X			X
Badija Jellow	Elder		X		X	X		X
Aden Barow	Elder			X				X
Aden Abdi	Elder	X				X	X	X
Abdullahi Udgow Salla	Elder							X
Muhammed Farah	Elder						X	X
Isaack M.Muchumbo	Elder	X						X
Mohammed A. Ahmed	Secretary	X						X
Mohamed Yatane	Chief			X				X
Mohamed Dame	Assistant/Chief	X				X		X
Ibrahim Ikrew	Elder				X			X
Adan Barhu	Elder					X		X
Yayou Hassan	Elder	X						X
Kulisha Shora Dirikicha	CBO/Secretary	X		X				X
Adhan Aress Sugar	CBO/Chairman		X					X
Salat Abdi Abdullahi	CBO Member							X
Osman Sala Dota	School Chairman	X			X			X
Ismail Solola Fodho	Sec. School Chairman		X					X
Abarufa Balafa	CBO Member		X					X
Ibrahim Abasowa	CBO Member	X		X				X
Isack Kampicha	CBO Member	X	X				X	X
Ismaili Mohamed	CBO Member	X	X	X	X			X
Abdikhadir Futi	Headman				X			X
Khalif Ibrahim	CBO Member		X	X				X
Ibrahim Abaloni	CBO Member		X					X
Hamisi Mohammed	CBO Member		X					X
Hagutu Shora Dirikicha	CBO Member		X		X			X
Fatuma Machawa	CBO Member		X					X
Muslima Abamuka	CBO Member	X	X	X	X	X	X	X
Mumina Rashid	CBO Member			X				X
Hatunu Ruke	CBO Member	X					X	X
Dasho Abauru	CBO Member	X			X			X
Khalifo Kayo	CBO Member		X	X				X
Omar Guyo Loka	CBO Member		X		X			X
Mohamed Ibrahim	CBO Member		X					X
Fumo Guyo	CBO Member		X	X	X			X
Hawo Abdi Kampicha	CBO Member	X						X
Safia Bagaja	CBO Member	X		X	X	X	X	X
Amina Abdi Roba	CBO Member		X					X
Bashir Radu Kore	CBO Member							X
Agutu Boru	CBO Member		X					X
Mutane Mohammed	CBO Member		X				X	X
Hassan Ali	CBO Member		X	X				X
Said Salat	CBO Member							X
Ibrahim Galgalo	CBO Member	X						X
Komor Galano	CBO Member	X						X
Yakub Mohamed	CBO Member	X						X
Abdi Siyad	CBO Member	X						X

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Name	Position and Organisation	Workshop		Working Groups				Consult
		#1	#2	Ecology	Tourism	Community	Sec /PA Ops	
Issack Fanin	CBO Member	X						X
Hassan Yussuf	CBO Member		X					X
Godana Guyo	CBO Member		X					X
Mohamed Gutu	CBO Member		X					X
Abdinoor Abdi	CBO Member		X					X
Fatuma Muhammed	CBO Member		X					X
Abdullahi Mursal Yatane	CBO Member		X					X
Yussuf Ahmed Kuno	Elrar-Community		X					X
Amina Khalif Ibrahim	Elrar-Community		X					X
Sahara Muse Kune	Elrar-Community		X					X
Hussein Abdi Mohamed	Elrar-Community		X					X
Mohamed Ahmed	Elrar-Community		X					X
Samou Abdi	Elrar-Community		X					X
Ibrahim Abdi	Elrar-Community		X					X
Ibrahim Diney	Elrar-Community		X					X
Mohamed Aden	Elrar-Community		X					X
Nasri Osman Abdulla	Elrar-Community		X					X
John Wambua	Warden Tana River		X			X		X
Simiyu Newton	Born Free		X			X		X
Stephen N. Kameti	Project manager		X			X		X
Abdikhani Yussuf	Tana River County		X			X		X
Kenneth N. Opi	RS-Meru NP		X	X		X		X
Jimmy Musili	Warden- Mwingi NR		X	X			X	X
Simon Wachira	RS Meru NP		X					X
Bernard Rono	FVO-Meru NP		X					X
Damaris Thairora	KWS		X		X			X
Sammy Towett	Marketing -KWS		X		X			X
Apollo Kariuki	Ag. H-PEC		X	X	X	X	X	X
Bernard Ngoru	SRS- KWS		X	X				X
Geoffrey Munene	KWS		X				X	X
Peter Mathenge	Finance-KWS Meru		X				X	X
Grace Waiguchu	GIS-KWS		X					X



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