**KENYA WILDLIFE SERVICE**

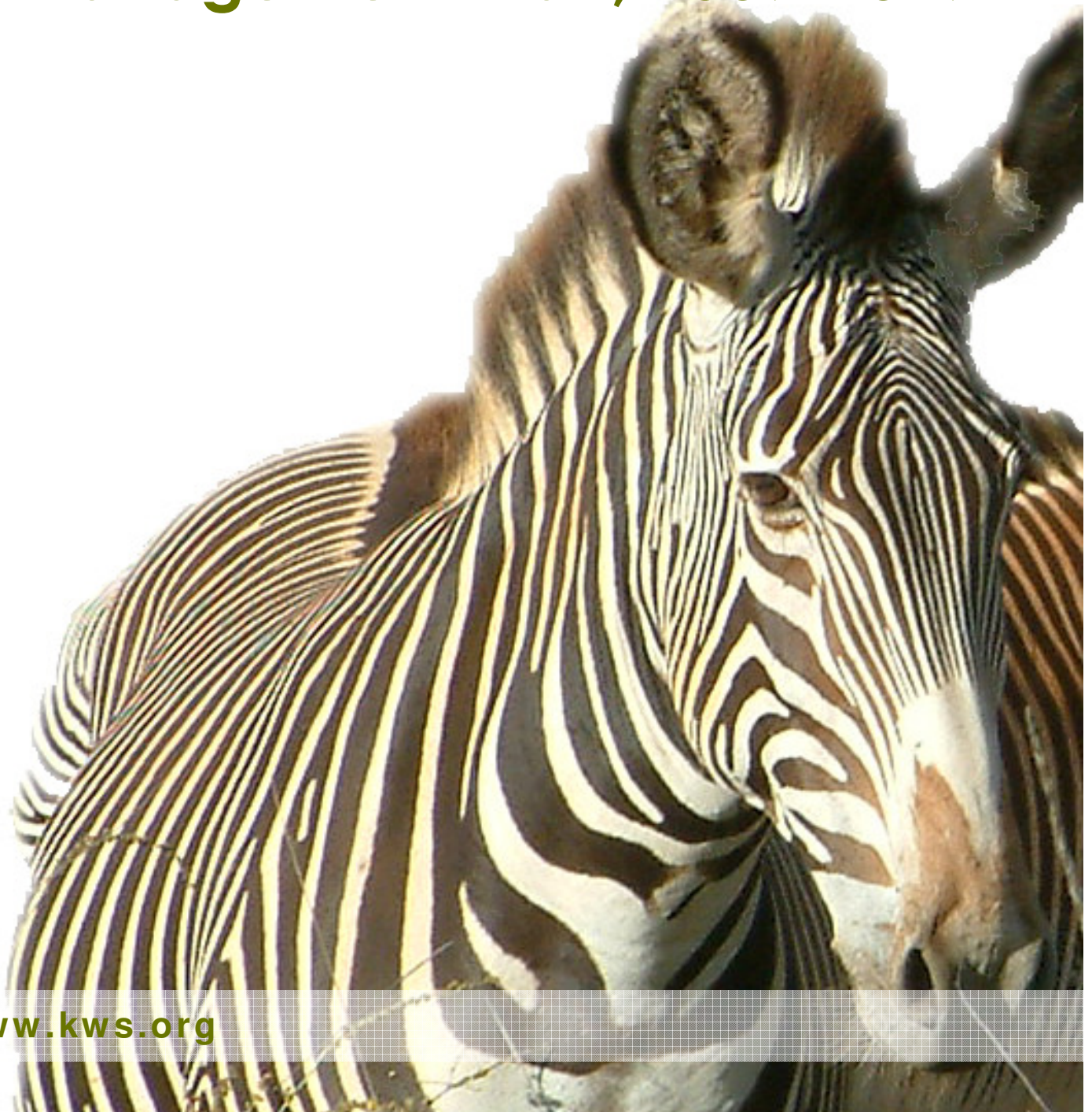# Meru Conservation Area
## Management Plan, 2007-2017

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## Management Plan, 2007-2017

*Planning carried out by*

MCA Managers
MCA Stakeholders
KWS Biodiversity Planning Department

*In accordance with the*

# KWS PROTECTED AREAS PLANNING FRAMEWORK

# Approval Page

**The Board of Trustees and the management of the Kenya Wildlife Service, have approved the implementation of this management plan for the Meru Conservation Area.**

Mr Julius Kipng'etich
Director

Mr. Daniel Ndonye
Chairman, Board of Trustees

# Foreword

When future generations of Kenyans look back on protected area conservation in our nation at the beginning of the 21st Century, they are likely to view this as an era of enormous challenges alongside unprecedented opportunities. On the opportunity front, they are likely to note the incredible advances in technology that are underway, which has enabled global travel to become affordable for a much larger number of people worldwide, and which has fuelled a rapid expansion in tourism in our national parks and reserves. Other technological advances, such as the Internet, are having an enormous impact, not only by making information about Kenya's unique protected areas easily available world-wide, but also by facilitating enhanced management of even the more remote protected areas, through easier communications and better management systems.

Those same future generations will, however, no doubt also be very disturbed about the challenges confronting Kenya's protected areas at the beginning of the new century, some of them brought about by the same advances in technology. Of major concern is the rapidly increasing human population densities in community areas neighbouring the protected areas, and the growing demand in these communities for natural resources to meet their livelihood needs and aspirations. Land use changes are rapidly transforming the wider environmental setting of our protected areas, with closure of tradi-tional animal dispersal areas and diminishing flows of water into the protected areas from the water towers that have always been their lifeblood.  Future generations are also likely to observe that while tourism is producing vital revenues for the national economy and for maintaining Kenya's protected area system, this same tourism is also bringing about huge pressures on the very wilderness and natural habitats that the visitors have come to see, threatening to destroy the fragile asset base on which the tourism industry depends.

One might imagine that future generations will throw their hands up in despair at our response to these conflicting opportunities and challenges. However, it is my dream that instead they will be greatly relieved to see that our generation, noting the precarious situation that we are in, has taken prudent and forceful action to protect our natural heritage, and ensure that it continues to fulfil the needs of ours as well as future generations. But how can we make this vital contribution to posterity?  One of the main ways of doing this is through careful and far sighted *planning* of our protected areas, aimed at ensuring both *conservation* and *wise use* of the natural resources. To achieve just such careful planning, in early 2006 KWS launched a new nationwide initiative called the **Protected Areas Plan-ning Framework**, or PAPF, which aims to bring about a new approach to planning that will be ***inclu-sive*** of all our stakeholders, *appropriate* for the times that we live in that requires clarity in both our aims and our actions, and *cost effective* in providing the plans that we need in as short a timeframe as possible, and at a reasonable price. It is now more than a year since we launched the PAPF, and in that time, we have piloted the new planning procedures in two of our most important protected areas, the Meru Conservation Area and the Tsavo Conservation Area. The MCA Plan is the first to be final-ised, and it is very appropriate that the plan will be formally launched at the Meru National Park brand-ing ceremony, attended by national and local leaders and dignitaries as well as many other stake-holders in the MCA, including the local communities and our tourism industry partners.

I have personally monitored the piloting of the new PAPF planning process in both the Meru and Tsavo Conservation Areas over the past year, and I have also had the opportunity to participate in several of the events relating to the development of these plans.  I have been delighted with what I have seen unfolding, because here is a process that has enabled all the key stakeholders of a pro-tected area to ***define the future*** of that protected area. Not so that a plan is produced that meets their own personal short-term needs, but so that a plan is developed that meets the long-term needs and aspirations of all stakeholders, and of the wider Kenyan society. The new plans, as I hope you will agree for this MCA plan, also spell out very clearly for all to see the conservation and management needs of the protected areas, and then, in practical terms that both stakeholders and protected area managers can easily understand, they set out what has to be done to achieve our conservation and utilisation vision, and the limits of development that we must not go beyond.

Now that we have a tried and tested practical framework for planning out the conservation and use of our protected areas, it is KWS' intention in the next few years to roll out this model to protected areas around the country, so that within 3-4 years, every single protected area will have a management plan produced in accordance with the PAPF framework, and of the same standard and clarity as we have achieved with the MCA and TCA plans. Already, the management and Board of Trustees of KWS have developed an activity plan and budget for preparing **eight new PAPF-based plans** in the next financial year, commencing in July 2007. Coupled with the new plans, we will be implementing an organisational change and capacity building programme both in the field and at KWS Headquarters designed to make PA plans a kingpin in the day-to-day management of the parks, as well as the activities of the wider KWS organisation. Finally, we are talking to other government institutions, in particular the Ministry of Tourism and Wildlife and the National Environment Management Authority, about the need to have the protected area management plans produced through the new PAPF process gazetted, so that they have the full force of law in ensuring the conservation and sustainable use of our priceless natural heritage.

Developing new management plans for all KWS protected areas through the PAPF process, and ensuring that they are the major instruments in achieving the wise use of these areas and the effective management of KWS as a national institution, is one of the major pillars of our ongoing efforts to transform KWS into a truly 21st Century, world-class institution, which applies the highest standards of management and leads the way internationally in achieving innovation and best practice in wildlife management. We hope and trust that by these means future generations of Kenyans will look back favourably on the efforts we are making to resolve the challenges and opportunities presently facing Kenya's protected area estate, and to work together with our stakeholders and partners to achieve conservation in harmony with sustainable economic benefits for the nation.

Finally, I would like to take this opportunity to thank all the stakeholders who have selflessly donated their time and ideas towards the development of this new MCA management plan.  I appreciate that not everyone will like every aspect of this plan – but that is the nature of planning. Hopefully, however, everyone will agree that the plan represents a consensus viewpoint that all have had the opportunity to contribute to. I would like to express a special thank you to our key partners in the MCA – the County Councils of Isiolo and Mwingi – who have worked tirelessly alongside us in the development of the new plan, and with whom we will continue to work with in its implementation in the years ahead. Like the MCA plan itself, we see this cooperation with the two County Councils as a model for collaboration with county councils around the country in the management of other similar conservation areas and ecosystems. On behalf of KWS, I pledge that we will do our utmost to make this cooperation a fruitful and convivial one for both the councils, and we will strive alongside the councils to ensure that the entire MCA, not just KWS' two national parks, is a resounding conservation success.

Along with this new management plan, the Meru Conservation Area has just launched its new logo, with the tagline "***Complete Wilderness***". This is the very essence of the Meru Conservation Area, which the new MCA management plan strives to protect and develop for the benefit of all stakeholders in the years ahead. KWS looks forward to working with you at realising the management plan's purpose and vision, so that this and future generations can enjoy the outstanding wilderness attributes that makes the Meru Conservation Area so unique and special.

Julius Kipng'etich CBS, EBS
Director, KWS

# Executive Summary

This new 10-year management plan (2007-2017) for the Meru Conservation Area (MCA) is one of two planning initiatives piloting the new KWS **Protected Area Planning Framework** (PAPF). The PAPF manual has been developed to guide the development of all future KWS protected area (PA) management plans, so as to ensure that plans are developed according to a common process, and have a similar structure. This uniformity is intended to not only improve a plan's usability and ease of implementation, but also to enhance the efficiency of planning initiatives and the understanding and buy-in of both managers and stakeholders.

The MCA Management Plan is intended to be a practical tool to support and guide the coordinated and integrated management of the four constituent PAs that make up the MCA (Meru National Park, Bisanadi National Reserve, Kora National Park, and Mwingi National Reserve) as a single ecological and administrative unit. In order to achieve this aim, the plan sets out clear management goals for the entire MCA, and a series of prescriptions and management actions that will be enforced and implemented in order to achieve these goals. Closely associated with the management planning process, new Memorandums of Understanding have been put into place to support the collaboration necessary for successful plan implementation between the three agencies that have jurisdiction over the four individual PAs: KWS in the case of the Meru and Kora National Parks, and the County Councils of Isiolo and Mwingi in the case of Bisanadi and Mwingi National Reserves respectively.

In line with the PAPF, the plan development process directly involved and built on the knowledge and experience of a wide range of stakeholders including: MCA management, KWS HQ, County Councils of Isiolo and Mwingi representatives, local communities, tour operators and investors, and researchers and scientists. As a result, the final plan sets out a vision for the future management of the MCA that is consensus based, and if not entirely agreeable, is at least acceptable, to all concerned.

The MCA 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 MCA management. At the heart of the plan are the **zonation scheme** and the plan's five **management programmes**. These programmes are:

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

The **Logical Framework Approach** has been applied throughout the development of the management programmes to ensure that there are explicit and logical links between the purpose statement (which sets out the overall goal of the programme), management objectives, and the management actions to achieve these objectives. Each management programme also contains a strategy, which describes the overall approach pursued throughout its implementation, and is completed by a **3-Year Activity Plan**. These activity plans provide the vital link between the actions set out in the management plan and the day-to-day management activities in the MCA, by breaking down a programme's individual management actions into a series of tangible management activities, and setting out the timeframe and responsibility for their implementation. The activity plans also provide a bridge between the

management plan and the annual operational planning and budgeting carried out by MCA management and the KWS Corporate Planning Department.

## MCA Purpose and Values

The purpose of the MCA as defined by the area's stakeholders is:

> **To protect and conserve the endemic and threatened northern wildlife species and habitats within the unique wilderness landscape of the MCA for the benefit of present and future generations**

The development of the above Purpose Statement was based on the stakeholder identification of the MCA's "Exceptional Resource Values" (ERVs), which were divided into four categories: biodiversity, scenic, social and cultural. The five most important ERVs for the MCA were identified as: the MCA's Black rhino population (biodiversity); the Tana River that runs through the heart of the MCA (scenic), the area's population of elephants (biodiversity); the ethnic diversity of communities living around the area (cultural); and the water catchments of the rivers that flow through the MCA (social).

## MCA Zonation Scheme

The MCA 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 MCA has been divided into three visitor use zones and their closely corresponding management sectors:

▸ High Use Zone (Kinna Sector)
▸ Low Use Zone (Tesiwa Sector)
▸ Wilderness Activity Zone (Kora Sector)

In order to facilitate implementation and understanding of the scheme, and in line with the PAPF, the number of zones has been kept to a minimum, and, wherever possible, the management sector and visitor use boundaries aligned with each other as well as easily identifiable physical features on the ground.

### Management Sectors

The decentralisation of the MCA's management into three management sectors is in accordance with the wider KWS Sectoral Management Strategy for Conservation Areas, and aims to increase management presence and infrastructure development across the entire MCA. The Senior Warden (based at Kinna) will remain the overall officer in charge of the MCA, while the sectors will be managed by junior wardens based at sector headquarters (Kinna, Ura and Kamukunga).

### 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 MCA, 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 MCA, whilst ensuring the preservation of a high quality, wilderness-based visitor experience (see Tourism Development and Management Programme below for details of this approach). However, any expansion of tourism investment and use, particularly into remote and currently underused parts of the MCA, will be

contingent on the security situation in the area, and must occur concomitantly with enhanced security operations (see Security Programme below).

In order to support of the aims of the Tourism Programme of ensuring a high quality, wilderness-based visitor experience, "*limits of acceptable use*" have been calculated for the desired number of visitors in the High and Low Use Zones (using the anticipated number of encounters with other game viewing vehicles as a proxy for measuring the quality of the visitor experience), upon which the accommodation prescriptions for each of these zones have been based. In addition, to encourage use of currently underutilised parts of the MCA, visitor activity prescriptions are gradually relaxed from the High Use Zone through the Low Use Zone to the Wilderness Activity Zone. The key features of each of the three visitor use zones are summarised in the following paragraphs:

► The **High Use Zone** covers 16.4% of the MCA over the north-west section of Meru National Park and the adjoining northern part of Bisanadi National Reserve. This zone contains the highest concentration of large mammals in the MCA, which, combined with areas of open grassland, presents the best opportunities for game viewing in the MCA. To help ensure a quality experience in this area, visitor activities in this zone will be restricted to game viewing from vehicles and short walks along specified routes from permanent accommodation facilities. In addition, a maximum of 213 new beds can be developed in this zone during the lifespan of this management plan (not including the new Mulika Lodge development), which will give the HUZ a total bed capacity of 461. The maximum facility size in this zone will be 60 beds, and the minimum distance between permanent concession sites will be 5km.

► The **Low Use Zone** covers 26.3% of the MCA, and comprises the southern portions of Meru National Park and Bisanadi National Reserve. To ensure that development is regulated in the commercially attractive and ecologically sensitive riverine forests along the Tana River, the zone also extends 5km south of the Tana River into Kora National Park and Mwingi National Reserve. This zone is characterised by dense vegetation cover and provides less favourable conditions for game viewing than are typically found in the HUZ. Tourism use of this zone will be encouraged by allowing a wider variety of low impact tourist activities than in the HUZ, including catch and release fishing, rafting or boating along the Tana River, and walking safaris along specified routes. In order to provide opportunities for exclusivity and solitude, and limit the influx of tourist vehicles into the HUZ (with its better opportunities for traditional game viewing), a maximum of 350 beds will be developed in this zone during the lifespan of the plan (there is currently no accommodation in this zone). The maximum facility size in this zone will be 30 beds, and the minimum distance between permanent concession sites will be 10km, except for sites established on opposite banks of the Tana River.

► The **Wilderness Activity Zone** covers the vast majority of Kora National Park and Mwingi National Reserve, and a total of 57.3% of the MCA. This zone is the least developed and least accessible area of the MCA, and opportunities for traditional game viewing are extremely limited. As such, a wide variety of tourist activities and facilities are permitted in this zone, including, in addition to all activities permitted in the other two zones, horseback safaris, camel safaris and fly camping. All types of visitor facilities allowed in the MCA (except lodges and eco-lodges) are permitted in this zone, up to a maximum of 10 permanent facilities (300 beds). The maximum facility size in this zone will be 30 beds, and the minimum distance between permanent concession sites will be 10km. In addition, as a mechanism for promoting tourism investment in this zone, "Exclusive Use Areas" may be established and leased to a commercial operator(s) on a seasonal or longer-term basis.

# Ecological Management Programme

The Ecological Management Programmes aims to ensure that "*the ecological components and processes of the MCA are understood, restored and conserved, and threats to the area's key ecological features are reduced*". In order to achieve this aim, and in line with the PAPF, the programme uses The Nature Conservancy's Conservation Action Planning (CAP) process as a mechanism for focusing the ecological management of the area. This process involves identifying and developing an accurate definition and understanding of the PA's most important ecological features (the *conservation targets*), their management needs, and the major threats to these features. This information then provides the foundation for developing the programme's objectives and management actions. The eight conservation targets identified for the MCA are:

1. Black rhino
2. Grevy's zebra
3. Elephant
4. *Acacia-Combretum* grassland
5. *Acacia-Commiphora* bushland
6. Inselbergs
7. Ngaya Forest
8. River Systems

The objectives of the Ecological Management Programme focus on enhancing the status of the MCA's threatened large mammals (specifically Black rhinos, Grevy's zebra and elephants), and improving the management of important habitats in the MCA, most notably grasslands, which are currently being encroached upon by woody species and shrubs. The programme also focuses on abating threats to two conservation targets that are either partially or completely beyond the boundaries of the MCA, but nevertheless remain critical to its long-term ecological integrity: the Ngaya Forest Reserve and river systems. This will involve a high level of collaboration with the agencies mandated to deal with these issues in the wider ecosystem, such as the Kenya Forest Service and the Tana River Water Services Board. In addition, the programme includes an ecological monitoring plan framework, also based on the outputs of the TNC CAP process, which has been designed to provide a mechanism for monitoring the overall ecological health of the MCA and for assessing the impact of ecological management actions.

# Tourism Development and Management Programme

The Tourism Development and Management Programme aims to ensure that "*the Meru Conservation Area is a major tourism destination in Kenya, offering a distinctive and diverse visitor experience that capitalises on the area's special 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 MCA. This strategy is designed to optimise the potential benefits from tourism to the area's conservation, not least by increasing the MCA's local and national profile and importance, as well as the financial resources needed to enhance management and security operations. The strategy focuses on providing new and innovative opportunities for private sector investment in the area, and encouraging and supporting the expansion of visitor use across the area through providing a diverse variety of visitor use options. Expansion of visitor use in currently underutilised parts of the MCA, coupled with strengthening of associated KWS staff presence, will, the programme argues, have the additional benefit of helping deter illegal activities (such as livestock grazing) currently severely impacting on the ecology of large parts of the MCA.

The expansion and diversification of the MCA tourism product and the creation of attractive investment opportunities in the area is facilitated by allowing an increasing diversity of visitor activities from the High Use Zone through the Low Use Zone to the Wilderness Activity Zone, as set out in the MCA Zonation Scheme above. Actions under this programme will focus on both fostering the development of these activities and their regulation through the creation of guidelines, and the identification of specific routes and areas where activities can take place. Complementary to this approach is the development of innovative and attractive investment opportunities in the area, including new concession opportunities which offer multiple sites across the MCA, where one investor operates several facilities, for example in each of the three visitor use zones. Another innovative investment opportunity proposed is the development of Exclusive Use Areas (EUAs) in underutilised parts of the Wilderness Activity Zone. These EUAs are designed to promote investment by restricting access to the area concerned to the investor and their clients, and MCA Management. The programme's remaining two objectives focus on improving visitor experience in the MCA through the development of interpretation materials, such as an MCA guidebook and map, and strengthening the human resource and capacity of the MCA Tourism Section.

## Community Partnership and Education Programme

The Community Partnership and Education Programme aims to ensure that "*the support and participation of MCA adjacent communities in conservation and sustainable use of natural resources is enhanced*". Key in achieving this aim is ensuring that MCA management and adjacent communities are able to effectively communicate and collaborate with each other, which is addressed through actions to strengthen both the capacity and sustainability of the Community Consultative Forums initially established by the Meru Conservation Area Development Project (MCADP). The programme also aims to both reduce the costs MCA-adjacent communities are incurring from the presence of the MCA (primarily through measures to abate human-wildlife conflict), and increase support for the area by enhancing the opportunities for community members to benefit from the MCA, through, for example, the development of ecotourism or cultural tourism ventures. At the same time, the programme aims to reduce the impacts of community natural resource use on the MCA's conservation by improving community awareness of the area's exceptional conservation values, through the production of community awareness-raising materials and sponsoring visits to the area, and by supporting community based-natural resource management initiatives, such as the formation of water resource and forest user associations, and the establishment of grazing blocks in areas adjacent to the MCA.

## Security Programme

The safety of MCA visitors and staff, and the protection of the area's natural resources, remains an issue of major importance in the MCA, and is key to the successful implementation of various aspects of this plan; including, perhaps most importantly, the proposed expansion and diversification of tourism in currently underused parts of the MCA. The MCA Security Programme therefore aims to ensure that "*the MCA and surrounding community areas are a safe and secure environment, and encroachment, livestock grazing and other illegal natural resource uses within the core protected areas are minimised*". As such, this programme focuses on both expanding law enforcement presence across the entire MCA, through the establishment and rehabilitation of existing patrol outposts 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 MCA 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 MCA.

# Protected Area Operations Programme

The aim of this programme is to ensure that "*the Meru Conservation Area's operational systems and structures are effectively and efficiently supporting the achievement of the MCA purpose, and the delivery of the MCA's management programmes"*. This is the broadest of the five management programmes, and the programme covers a variety of issues that are vital to the efficient and effective management of the MCA. The programme's first objective focuses on strengthening institutional collaboration in the management of the MCA, both between KWS and CCI and CCM in the coordinated administration and management of the MCA's four constituent PAs (a vital underpinning to the management of the area as a single management unit), and with other MCA stakeholders and district authorities. The second objective focuses on measures to improve the efficiency and morale of the MCA staff themselves, by providing training opportunities and by improving the provision of staff welfare and leisure facilities.

The programme's remaining two objectives focus on the development of the area's infrastructure and improving the availability of the resources needed for management of the area. Of particular importance is the development and maintenance of infrastructure essential for supporting the expansion of tourism use and accompanying security presence over the entire MCA, such as roads, airstrips and entry gates. The programme also aims to improve the availability of resources for MCA management by improving financial management systems and the preparation of specific project proposals for funding from external sources, in order to support the successful implementation of the actions set out in this management plan.

# 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 five management programmes' objectives and/or sub-objectives. The framework also includes easily measurable indicators for monitoring positive and negative impacts, and potential sources of this information.

# Contents

## Tables

# Acronyms

| | |
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| BNR | Bisanadi National Reserve |
| BoT | Board of Trustees |
| CAP | Conservation Action Planning |
| CBNRM | Community Based Natural Resource Management |
| CBO | Community Based Organisation |
| CCC | Community Consultative Committee |
| CCF | Community Conservation Forum |
| CCI | County Council of Isiolo |
| CCM | County Council of Mwingi |
| CFA | Community Forest Association |
| CFA | Community Forest Association |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CP & E | Community Partnership and Education |
| CPT | Core Planning Team |
| ECA | Eastern Conservation Area |
| EIA | Environmental Impact Assessment |
| EM | Ecological Management |
| EOI | Expression of Interest |
| ERV | Exceptional Resource Value |
| EUA | Exclusive Use Area |
| EWALS | East Africa Wildlife Society |
| GIS | Geographic Information System |
| GPS | Global Positioning Systems |
| HUZ | High Use Zone |
| HWC | Human-Wildlife Conflict |
| IFAW | International Fund for Animal Welfare |
| IUCN | The World Conservation Union |
| KATO | Kenya Association of Tour Operators |
| KEA | Key Ecological Attribute |
| KFS | Kenya Forest Service |
| KNP | Kora National Park |
| KWS | Kenya Wildlife Service |
| LAU | Limits of Acceptable Use |
| LUZ | Low Use Zone |
| MAC | Management Advisory Committee |
| MCA | Meru Conservation Area |
| MCADP | Meru Conservation Area Development Project |
| MIKE | Monitoring of Illegal Killing of Elephants |
| MNP | Meru National Park |
| MNR | Mwingi National Reserve |
| MOH | Medical Officer Health |
| MoU | Memorandum of Understanding |
| NEMA | National Environmental Management Authority |
| NGO | Non-Government Organisation |
| NP | National Park |
| NR | Natural Resource |
| NRM | Natural Resource Management |
| PA | Protected Area |
| PAC | Problem Animal Control |
| PAPF | Protected Areas Planning Framework |
| SSC | Species Survival Commission |
| TD&M | Tourism Development and Management |
| TNC | The Nature Conservancy |
| WAZ | Wilderness Activity Zone |
| WCK | Wildlife Clubs of Kenya |
| WRUA | Water Resource Management Association |

# Plan Foundations

# The Plan

This 10-year (2007-2017) management plan for the Meru Conservation Area (MCA) has been developed in accordance with the recently developed KWS **Protected Area Planning Framework** (PAPF). The plan is one of two management planning initiatives piloting the PAPF process, the other being for the Tsavo Conservation Area. 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 MCA stakeholders.

## The PAPF

Management plans have the potential of playing a vital role in ensuring the coherent and coordinated development and management of a protected area (PA), and that the impacts from the intensifying diversity of threats impacting PAs are mitigated. However, although there is a long history of PA planning in Kenya, many of the management plans developed have not been used effectively, and have often ended up as reference materials rather than a practical guide for PA management action. Recognising this problem, KWS has put into place a Protected Area Planning Framework to ensure that all new KWS management plans provide practical and effective guidance and support for PA management. The PAPF aims to ensure that future PA management plans are developed according to a common process, and that the final plans produced have a similar structure. This uniformity in both process and structure aims to not only improve a plan's usability and ease of implementation, but, by removing the need to revisit issues regarding plan process, structure and content each time a new plan is developed, to also enhance the efficiency of planning initiatives.

To ensure the management plans produced are both realistic and appropriate, and to build wider stakeholder understanding and support for implementation, the PAPF planning process incorporates a high level of stakeholder participation. This is realised through a variety of mechanisms designed to enable stakeholders to meaningfully contribute their ideas and opinions throughout the plan's development (see MCA Stakeholder Participation below for details). The structure of the management plan itself has also been designed to maximise ease of implementation by PA managers, which is achieved through a rigorous application of the "*Logical Framework Approach*" in the plan's management programmes, and the development of "*3-year Activity Plans*" that provide the bridge from the 10-year vision and components of the plan to the annual work planning carried out by the PA managers responsible for plan implementation.

The following sections on the plan functions, plan structure and stakeholder participation in the plan's development provide an overview of the practical application of this new planning framework

## Plan functions

Prior to the PAPF, management plans developed for Kenya's PAs have been designed to fulfil a variety of different functions, and as a result, the plans developed have varied greatly in the issues they address and the information they provide. This historical ambiguity regarding the functions of a management plan has created some uncertainty as to the role that the new PAPF-based plans will play in the management of Kenya's protected areas. PAPF-based plans are primarily designed to be a practical management tool supporting PA man-

agers in carrying out their duties. PAPF plans achieve this aim by providing strategic guidance on the goals towards which management is working, and a series of prescriptions and management actions that need to be implemented in order to achieve these aims. In line with this, the following points set out the key functions of the MCA Management Plan.

***The MCA Management Plan (2006-2017) is designed to:***

▶ **Vision**: Set out a common understanding between stakeholders of the purpose of the MCA and its most important values, towards which all management action in the PA will be focused

▶ **What**: Establish clear management objectives that are agreed by the MCAs stakeholders and managers and that, if achieved, will ensure the PA purpose will be fulfilled and exceptional values conserved

▶ **How**: Provide clear and unambiguous guidance and a rationale for the specific management actions that PA Managers will need to implement over the 10-year timeframe of the plan to achieve the management objectives

▶ **Where**: Define a mechanism for PA zoning to enable different types and intensities of use in different parts of the MCA, thereby facilitating reconciliation of the MCA's sometimes competing conservation and development objectives

▶ **When**: Provide a detailed activity plan for the first three years of implementing the management plan, thereby establishing a crucial link between the plan's long-term management objectives and the annual operational planning and budgeting routinely carried out by PA Managers

▶ **Who**: Provide a practical framework enabling the collaboration of PA managers and other institutions and stakeholders in implementing the plan

▶ **Rules**: Set out clear and unambiguous prescriptions and regulations on what can and cannot occur in different parts of the MCA in order to achieve the area's management objectives and fulfil the PA purpose.

***The Plan is NOT designed to:***

▶ Provide a comprehensive reference source for the MCA, with detailed background information on the area's biodiversity, ecology, geology, soils, etc

▶ Set out a detailed inventory of issues or problems impacting the MCA, that are not directly addressed through the plan's management objectives and actions

▶ Provide detailed descriptions of the PAs management, administration, and national policies, unless they are relevant to the plan's management objectives and actions.

# Plan structure

In order to fulfil the Plan's functions, and in accordance with the PAPF, the MCA plan structure has been developed to be as simple as possible, and as such, easily understood by stakeholders and implemented by MCA management. The following points summarise the plan's main sections:

▸ **Plan Foundations**. This chapter introduces the PAPF planning process used to develop the plan, and describes the plan's functions, structure and stakeholder participation mechanisms. The chapter also provides an introduction to the MCA, its location, constituent protected areas, and exceptional resource values. It sets out the MCA's Purpose Statement, which explains why the MCA has been established as a protected area, and the major functions and roles the PA aims to fulfil.

▸ **MCA Zonation Scheme.** This section sets out areas of the MCA where different types of visitor use and tourism developments are permitted. The scheme contains detailed prescriptions on the size and number of tourism developments allowed in different parts of the MCA, and specific prescriptions on the types of visitor activity allowed in each zone. The scheme also describes the management sectors that the MCA is divided into, which are aligned with the visitor use zones and that facilitate efficient and effective management of the MCA.

▸ **The five management programmes.** The main bulk of the plan is divided into five management programmes:

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

Each programme includes a programme purpose statement, which sets out the overall goal to which management under this programme is working towards, and a strategy describing the overall management approach pursued through the programme. Each programme also contains management objectives that set out the goals that MCA management aims to achieve, and a set of specific management actions to achieve these goals. In order to facilitate plan implementation, wherever possible the management programmes, or in some cases specific objectives therein, have been designed to align with MCA management section(s), and/or KWS HQ departments.

Each of the management programmes are completed by a *3-year Activity Plan*, which breaks down the individual management actions to be completed in the first three years of the plan implementation period into a series of tangible management activities, and sets out the timeframe for their implementation, allocates responsibility for their completion, and the "milestones" that management aims to achieve. These activity plans are designed to provide the basis for annual operational planning by MCA managers and are a vital link between the management plan's 10-year outlook, and day-to-day management activities in the MCA. It is intended that the 3-year Activity Plans will be rolled forward annually as part of the annual operational planning carried out by MCA managers.

▸ 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 five management programmes. The framework sets out the desired impact of each programme's objectives and/or sub-objectives, and any potential negative impacts that may occur. The framework also includes easily measurable and quantifiable indicators for assessing these impacts, and potential sources of the information required.

# Participation in planning

As discussed above, the PAPF planning process has been designed to ensure a high degree of stakeholder participation in the development of a PA management plan. This is achieved through a multi-layered approach involving a variety of mechanisms designed to ensure that all stakeholders can meaningfully contribute to the plan's development. The three principal mechanisms used to enable this participation are: the Core Planning Team, Stakeholder Workshops, and Expert Working Groups. The roles and functions of these mechanisms are elaborated in the following paragraphs:

▸ The **MCA Core Planning Team** (CPT) provided overall guidance and oversight to the entire planning process. The MCA CPT met five times throughout the plan's development. Membership consisted of: MCA managers; KWS HQ staff; Isiolo and Mwingi County Council representatives; and plan facilitators. Members of the team initially defined the scope and functions of the plan, and allocated roles and responsibilities for the plan's development. CPT members then ensured that the plan's development progressed smoothly, which included: ensuring funding was available for planning events; collecting and collating information necessary for planning; organising and facilitated planning events; and writing up planning event outputs into the final management plan. CPT members also participated in all other planning mechanisms described below.

▸ Two **MCA Stakeholder Workshops** were held during the plan's development: one near the beginning and one near the end of the planning process. These workshops involved around 30-40 stakeholders including representatives from MCA management, KWS HQ, the County Councils, local communities, tour operators and investors, and researchers and scientists. The initial workshop identified the exceptional resources and purpose of the MCA. Stakeholders then went on to identify the key problems and issues the plan must address, what management programmes should be included in the plan, and defined the specific management objectives that MCA managers should be working towards. The second workshop provided the opportunity for stakeholders to review, comment on, and endorse the final contents of the management plan.

▸ Four **Expert Working Groups** were formed during the plan's development, each responsible for developing one of the plan's five management programmes (the Security and PA Operations Programme was covered by one working group). Both the Tourism and Ecology Working Groups held two meetings during the plan's development, while the Community/Education and Park Operations/Security Working Groups were able to cover the ground necessary in one meeting of each group. Each of these working groups comprised of CPT members, and other key stakeholders and experts (for example, Tourism Working Group Meetings involved tourism industry representatives and investors in the MCA, and the Ecology Working Group Meetings involved external researchers and scientists). Each working group refined the relevant management programme's purpose, strategy and objectives, and developed the subsidiary management actions necessary for achieving each objective. In addition, all working groups were involved in the development and review of the MCA Zonation Scheme.

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

# The MCA

# Area description

Covering 4,000 km$^2$, the MCA is the second largest protected area complex in Kenya, and comprises four adjacent individual protected areas: Meru National Park, Bisanadi National Reserve, Kora National Park, and Mwingi National Reserve (see Figure 1 below). KWS has jurisdiction over the two national parks, while Isiolo and Mwingi County Councils have jurisdiction of Bisanadi and Mwingi National Reserves respectively.

The four PAs have a high degree of ecological interdependence, especially with regard large mammal movements. There are also significant synergistic benefits to be achieved by managing the area holistically, in particular regarding the development of PA infrastructure and security operations, and in the promotion and development of the MCA as a single visitor destination. For these reasons, the MCA has in recent years been managed by KWS as a single management unit, with a Headquarters at Murera in the north-west corner of Meru National Park.

*Figure 1. The MCA's four constituent PAs*
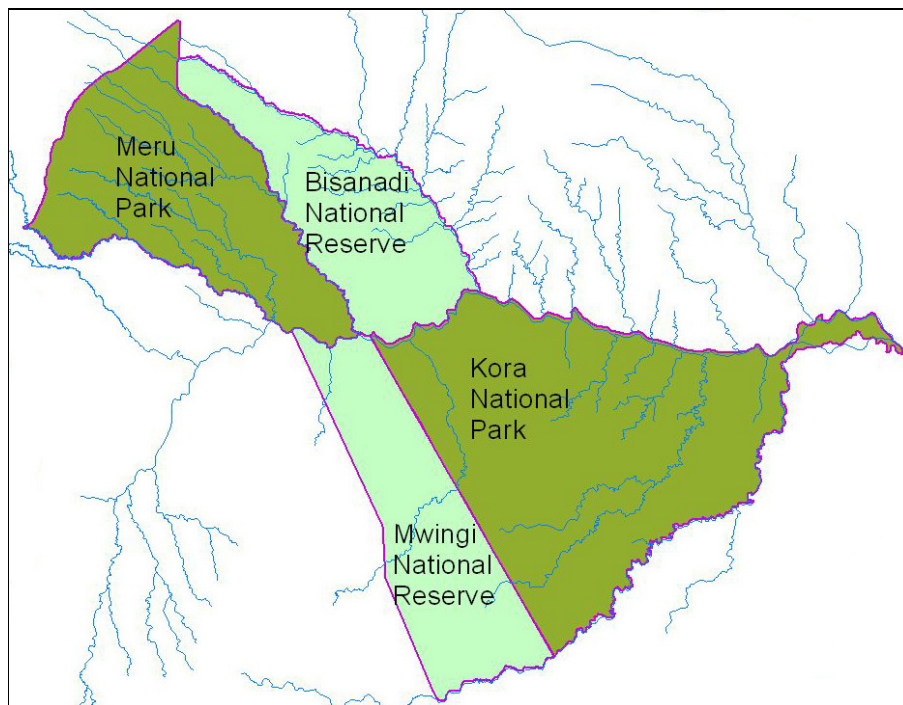


(Source: KWS GIS)

As part of a wider KWS sectoral management strategy, the MCA has recently been subdivided into management sectors to facilitate ease of management, with boundaries designed to enhance management effectiveness rather than align with individual PA boundaries. The new management sectors have been integrated into this management plan (especially the PA Operations Programme), and broadly correspond with the main MCA zones (see Zonation Scheme).

The following sections provide a brief overview of the MCA's four constituent PAs (detailed maps of each area are included in Annex 4).

## Meru National Park

Meru National Park (MNP) was gazetted in 1966 (Legal Notice #: 4756 of 18 December 1966), and is one of the oldest national parks in Kenya. The park is located in Meru North District, and covers 870 km$^2$. MNP has the highest concentrations of wildlife in the MCA, and has such has traditionally been the focus of tourism and management in the MCA, and currently contains the majority of PA infrastructure, such as roads, airstrips and entrance gates. Much of the western boundary of the park is fenced to reduce HWC, and it is the only PA in the MCA that is not seriously impacted by livestock incursions during the dry season.

## Bisanadi National Reserve

Bisanadi National Reserve (BNR) was gazetted in 1979 (Legal Notice #: 261 of 28 September 1979) and is located in Isiolo District. The reserve covers 606 km$^2$ and, due to its location just north of MNP, provides an important dispersal area for many wildlife species that concentrate around the permanent swamps in MNP during the dry season. The northern section of the reserve has recently been developed for tourism, with a permanent tented camp and an entrance gate; however, much of the southern part of the reserve is periodically invaded by livestock.

## Kora National Park

At 1,787 km$^2$, Kora National Park (KNP) is by far the largest PA in the MCA. The park is located in Tana River District, 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 has high plant species richness. The park is currently unused for tourism; however, access to the area has recently been improved through the building of the Adamson's Falls Bridge connecting the park with MNP over the Tana River.

## Mwingi National Reserve

Mwingi National Reserve (MNR), formerly known as North Kitui National Reserve, was gazetted in 1979 (Legal Notice #: 187 of 7 September 1979). The reserve covers 745 km$^2$ and is located in Kitui District. Similar to KNP, the reserve also has low wildlife populations, and in the recent past has been encroached by settlements and permanent agriculture (leading to the excision of a 2km strip along the reserve's western border). The reserve is currently unused for tourism, although management efforts are already underway to enhance the area's road network.

# KWS – County Council management collaboration

Although clearly desirable from both conservation and management perspectives, the implementation of a single management plan for the four PAs making up the MCA will necessitate a high degree of collaboration between the three institutions with jurisdiction over the constituent PAs (i.e. KWS and Isiolo and Mwingi County Councils). Such collaboration requires the clear allocation of roles and responsibilities for management plan implementation

between these institutions, and necessitates agreement on a variety of issues such as visitor access between the individual PAs, and the distribution of tourism revenues. As such, Memorandums of Understanding (MoUs) concerning the implementation of this management plan have been agreed between KWS and Isiolo and Mwingi County Councils. Specific issues addressed in these MoUs relating to the implementation of this management plan include:

▶ A definition of the roles and responsibilities of the Councils;
▶ A definition of the roles and responsibilities of KWS;
▶ Agreements on management and access over the entire MCA; and
▶ Agreements on distribution of revenues and allocation of expenditure

# MCA Purpose Statement

The MCA Purpose Statement summarises the importance of the MCA, clarifies the reasons for its existence, and provides the overall goal that MCA managers are striving to achieve. The Purpose Statement is divided into a primary MCA 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 MCA stakeholders.

***The Purpose of the Meru Conservation Area is:***

> To protect and conserve the endemic and threatened northern wildlife species and habitats within the unique wilderness landscape of the MCA for the benefit of present and future generations

Supplementary purposes of the MCA are:

▶ ***To provide optimal benefits to local communities, other MCA stakeholders and the nation, in harmony with the MCA's unique wilderness characteristics***

▶ ***To enable collaboration between stakeholders in the conservation and sustainable use of MCA natural resources***

▶ ***To preserve all sites of aesthetic, historical and cultural significance in the MCA***

▶ ***To promote scientific research and education in order to guide sustainable management of natural resources in and around the MCA***

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

# MCA Exceptional Resource Values

The MCA 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 area's unique qualities, characteristics and ecology. The following sections describe the MCA ERVs that have been prioritised by MCA stakeholders, their importance to the area and, where appropriate, relevant sections of the management plan

that relate to the ERV in question. These sections have been set out according to the four categories of ERV identified: Biodiversity, Scenic, Social and Cultural (see Table 1 over-page).

# Biodiversity values

## Black rhino

The number and distribution of Black rhinos has declined drastically all over Africa during the last thirty years, and they are currently classified as critically endangered by the IUCN. In Kenya, populations have declined from around 65,000 in 1970, to an estimated 539 by 2005. A number of both Black and White rhinos have been reintroduced to the MCA, and at present there are 56 rhinos in the conservation area, of which 21 are black. All these rhinos are currently located in the sanctuary located near Murera Gate, and are under 24-hour surveillance. Both rhino populations remain small, and as a result, vulnerable to threats such as disease, poaching and inbreeding. A series of management actions have been developed to address the issues potentially impacting on the conservation of Black rhinos in the MCA under Sub-Objective 1.1 of the Ecological Management Programme.

*Table 1. MCA Exceptional Resource Values*

| Category | Exceptional Resource Value |
|---|---|
| Biodiversity | ▶ Black rhino |
| | ▶ Grevy's zebra |
| | ▶ Elephant |
| | ▶ Mosaic of vegetation types |
| | ▶ Bohor reedbuck |
| | ▶ Leopard |
| | ▶ Naked mole rat |
| Scenic | ▶ Undisturbed wilderness |
| | ▶ Tana River and Adamson's Falls |
| Social | ▶ Community consultative committees and forum |
| | ▶ Water catchments |
| | ▶ Ngaya Forest |
| Cultural | ▶ Ethnic and cultural diversity |
| | ▶ Adamson's grave and camp |

## Grevy's zebra

The distribution of Grevy's zebra is now restricted to a portion of northern Kenya and a small section of southern Ethiopia. Their population size has declined drastically since the 1970's, and recent studies estimate the number of Grevy's zebra in Kenya to be around 1,600-2,000 individuals; a decline of 85% over the last 30 years. In addition, only 0.5% of Grevy's zebra range in Kenya falls within protected areas, of which the MCA makes up a substantial portion. However, the current MCA population is not ecologically viable, and it is likely that only eight Grevy's zebra remain in the MCA: seven mature females and one immature male. Management actions to address this issue are included in the Ecological Management Programme under Sub-Objective 1.2.

**Elephant**

Elephants play a key role in maintaining many MCA habitats, especially grasslands found in the northern part of the MCA. However, during 1970s and 1980s, the MCA elephant population crashed to around 10% of its former size, mainly as a result of severe poaching. Since 1998, a number of elephants have been translocated to the conservation area, and the MCA elephant population has been growing at rate around 5% per annum since the late 1990s. By 2002, 413 elephants were recorded in and around the MCA. Many of these elephants disperse outside the MCA protected areas at certain times of year, and now that the threat of poaching has been reduced, the closure of migration and dispersal routes outside the MCA is the principal threat to their conservation. Measures to keep these dispersal areas open are addressed under Sub-Objective 1.3 of the Ecological Management Programme, and Action 3.1 of the Community Partnership Programme.

**Mosaic of vegetation types**

The MCA contains a huge variety of vegetation types, mainly due to variations in soil type and rainfall across the area, including woodland, bushland, grassland, wooded grassland and swamps. As a result, the area provides protection for a diversity of species, including all of the "Big Five". A number of these specific habitat types have been selected as foci for management action under the Ecological Management Programme, these are: *Acacia-Combretum* grassland, *Acacia-Commiphora* bushland and Inselbergs (see Objective 2 of this programme). In addition, management actions aimed at conserving the area's swamps, which provide critical dry season refuge for a large number of wildlife species, are also included in the Ecological Management Programme under Sub-Objective 3.2.

**Bohor reedbuck**

The Bohor reedbuck is an antelope native to central Africa, mainly found in grassland areas near water. As part of the rehabilitation of the MCA, 128 Bohor reedbucks have been translocated to the area since 2000. They are mainly distributed either singly or in pairs around swamps and in thick riverine vegetation in Meru National Park. They are classified as "lower risk" by the IUCN, and have not themselves been prioritised as a focus for management action in the Ecological Management Programme, although their key habitats have been prioritised (see Table 11).

**Leopard**

Although one of the most widely dispersed large cats on the continent, leopards are notoriously difficult to see and encounters with leopards in the MCA are infrequent; as a result their current status in the area is not known. However, since 2000, several leopards have been translocated to the MCA, mainly to reduce HWC in more densely populated areas around Naivasha, and Nakuru and Tsavo National Parks. Leopard's are classified by the IUCN as "least concern", and have not been selected as a focus for management action under this plan.

**Naked mole rat**

The Naked mole rat is a small, hairless rodent adapted to a fossorial habitat, digging elaborate burrows with their incisor teeth, and mainly feeding on plant roots and tubers. Clusters of 20 to 300 animals live together in systems of burrows in a complex social structure in which only one female (the queen) and one to three males reproduces, while the rest of the members of the colony function as workers; they are the only known mammalian example of

eusociality. Naked mole rats are distributed throughout Ethiopia, Eritrea, Somalia and Kenya, and according to the IUCN Red List, the species is relatively common, with no immediate major threats.

# Scenic values

## Undisturbed wilderness

Covering 4,000 km$^2$, the MCA is Kenya's second largest conservation area. The area does not currently attract large numbers of visitors, and the vast majority of those who do visit the area remain in the northern part of Meru National Park. As a result, much of the conservation area has retained its wilderness characteristics and pristine environmental qualities. These qualities are becoming increasingly hard to find in Kenya's PA system, and as such provide the MCA an advantage over more accessible areas with larger populations of easily visible wildlife. This is reflected in the purpose statement of the Tourism Development and Management Programme, which aims to promote the development of tourism in the area, whilst conserving and capitalising on the area's wilderness qualities.

## Tana River and Adamson's Falls

The Tana River is the longest river in Kenya, and flows east from its source in the Aberdare Mountains around the Mount Kenya massif through the MCA where it forms the north-south boundary between the Meru NP and Mwingi NR, and Bisanadi NR and Kora NP. Flowing through the heart of the MCA, the river provides potential opportunities for rafting and boating, an attractive location for new tourism accommodation sites, and an added dimension to any walking safaris or other activities that may be developed in the area (all of which are addressed under the Tourism Development and Management Programme). A particularly impressive section of this river is a series of rapids known as Adamson's Falls, located around 200 metres from the bridge crossing the Tana River, which provides an ideal location for short walks and picnics.

# Social values

## Community Consultative Committees and Forum

A number of forums to enable communication and dialogue between MCA management and local communities have been developed under the donor-financed Meru Conservation Area Development Project (MCADP). These consist of six Community Consultative Committees (CCCs) and an umbrella Community Conservation Forum (CCF). The main purpose of these committees is the identification and prioritisation of viable community projects, and raising community awareness of conservation issues. Management actions under the Community Partnership and Education Programme have been developed to improve the sustainability of these mechanisms, and to help ensure that the CCCs and CCF continue playing their respective conservation roles effectively long after the MCADP has finished (see Actions 1.1 and 1.2 of the CP&E Programme).

## Water catchments

Although outside the immediate jurisdiction of KWS, MCA management recognises the importance of conserving water catchment areas for both the MCA's conservation and local community livelihoods. The volume of water in the 13 rivers entering the MCA from the Nyambene Hills and the area to the west of Meru National Park has already been reduced as a result of increasing permanent agriculture in these areas. This not only has the potential to seriously impact on the riverine forests and permanent swamps in the MCA, which provide

important dry season habitats for many wildlife species, but may also impact on downstream communities who rely on this water for their livelihood needs. Actions have been developed to address these issues under both the Sub-objective 3.2 of the EM Programme and Actions 3.2 and 3.3 of the CP&E Programme.

### Ngaya Forest

The Ngaya Forest Reserve, located around 14km north west of the MCA in the Nyambene Hills, is one of the few remaining areas of indigenous equatorial forest in Kenya. The reserve is also an important water catchment, and the source of rivers that flow into the MCA. Again, although outside the immediate jurisdiction of KWS, MCA management recognises the ecological and social importance of this forest, and, in line with the Forest Act (2005), support will be provided to communities around Ngaya Forest forming forest user associations and in the preparation of a forest management plan in order to promote the conservation and sustainable use of the forest reserve (see CP&E Programme Action 3.4).

## 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 MCA (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 the Adamsons' life and work, under TD&M Programme Action 3.2.

### Ethnic and cultural diversity

The MCA is surrounded by a variety of different peoples, with varied cultures, traditions and associated land uses. Boran pastoralists are found to the northern and eastern areas of Meru National Park and Bisanadi National Reserve; Tharaka and Kambas agriculturalists occupy areas to the south of MCA; and to the west of the area the Wameru agriculturalists predominate. Orma pastoralists mainly occupy the remaining areas to the north and east of Kora National Park, with increasing numbers of Somali pastoralists migrating into the area in recent years. MCA management is taking steps to help improve the compatibility of cultural practises and land-uses surrounding the MCA with the area's conservation, and to ensure that MCA-adjacent communities are directly benefiting from the area's existence. This is achieved through management actions under the CP&E Programme, which involve enhancing or developing community NRM institutions, and the promotion of community tourism initiatives and potential attractions outside the protected area, such as the Njuri Ncheke Shrines.

# MCA Zonation Scheme

# Introduction

The MCA 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 MCA has been divided into three visitor use zones and closely corresponding 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 and their corresponding management sectors are:

- High Use Zone (Kinna Sector)
- Low Use Zone (Tesiwa Sector)
- Wilderness Activity Zone (Kora Sector)

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: an overview of the rationale behind their development; information on the establishment of limits of acceptable use; and details of the visitor activity and accommodation facilities prescriptions for each zone.

# Management Sectors

The decentralisation of the MCA's management into three management sectors is in accordance with the wider KWS Sectoral Management Strategy for Conservation Areas, and aims to increase management presence and infrastructure development across the entire MCA. The Senior Warden (based at Kinna) will remain the overall officer in charge of the MCA, while the sectors will be managed by junior wardens based at sector headquarters. The location of the three sectors, their headquarters, and principal ranger outposts are shown in Figure 2 overpage (more detailed descriptions of the area each sector covers are elaborated under the descriptions of visitor use zones in the following section). Details of the management sector headquarters, sub-headquarters and ranger outposts are set out in Table 2 below.

**Table 2. MCA Management Sectors and Administration Centres**

| Management sector | Headquarters | Sub-Headquarters | Ranger Outposts |
|---|---|---|---|
| **MCA** | Kinna | -- | -- |
| ▸ **Kinna** | Kinna | Murera | Bisanadi, Korbessa, Rhino, Mugwongo, Punguru, Kathithini, Garbatulla |
| ▸ **Tesiwa** | Ura | Tesiwa | Kiorimba |
| ▸ **Kora** | Kamukunga | *Kambi ya Simba* | Boka, Asako, Mwingi, Masyungwa (proposed), Kaningo (proposed), |

*Figure 2. MCA management sectors*
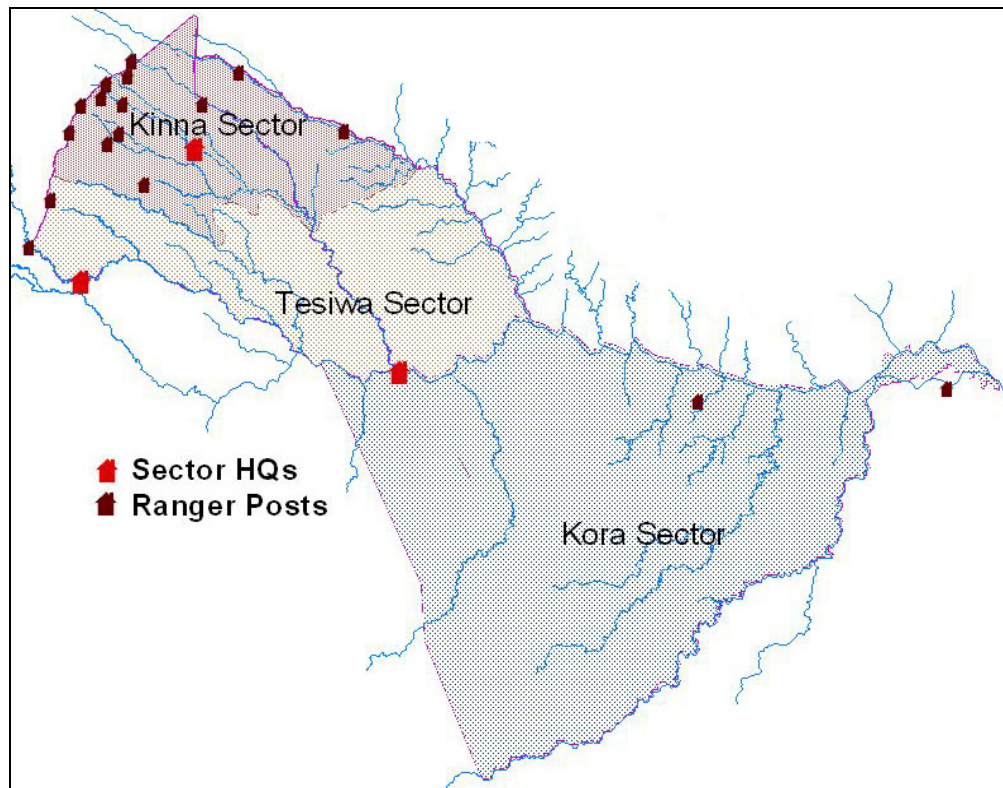


(Source: KWS GIS)

# Visitor Use Zones

As shown in Figure 3 overpage, the MCA has also been divided into three visitor use zones: the **High Use Zone** (HUZ), the **Low Use Zone** (LUZ), and the **Wilderness Activity Zone** (WAZ), which closely correspond with the MCA management sectors. The only exception is the 5km extension of the Low Use Zone south of the Tana River into the Kora Management Sector.

These three visitor use zones have been developed to enable the degree and type of visitor use to be managed spatially across the MCA, and to support the aims of the Tourism Development and Management Programme. This programme aims to increase and expand tourism investment and visitor use across the entire MCA, whilst ensuring the preservation of a high quality, relatively low density, wilderness-type visitor experience. As such, strict limits have been placed on the number of beds that can be developed in the HUZ and LUZ in order to preserve the quality of visitor experience (explained below), and restrictions have also been placed on the maximum size of the different accommodation facility types permitted in each zone. To further support these aims, a minimum distance between permanent tourism concession sites is established for each zone (see zonal descriptions below).

In order to encourage visitor use over the entire area, restrictions on the type of visitor activities permitted are gradually relaxed from the HUZ through the LUZ to the WAZ. The intended end result of the implementation of the zonal visitor management prescriptions is one of decreasing visitor density, but increasing variety and diversity of visitor activities and experiences, from the HUZ through the LUZ to the WAZ. This will not only support the area's con-

servation by increasing visitor use, investment and associated security presence in currently under-utilised areas, but will also increase revenue generated by the MCA, and in particular that generated by the national reserves and collected by both CCI and CCM.

*Figure 3. MCA visitor use zones*
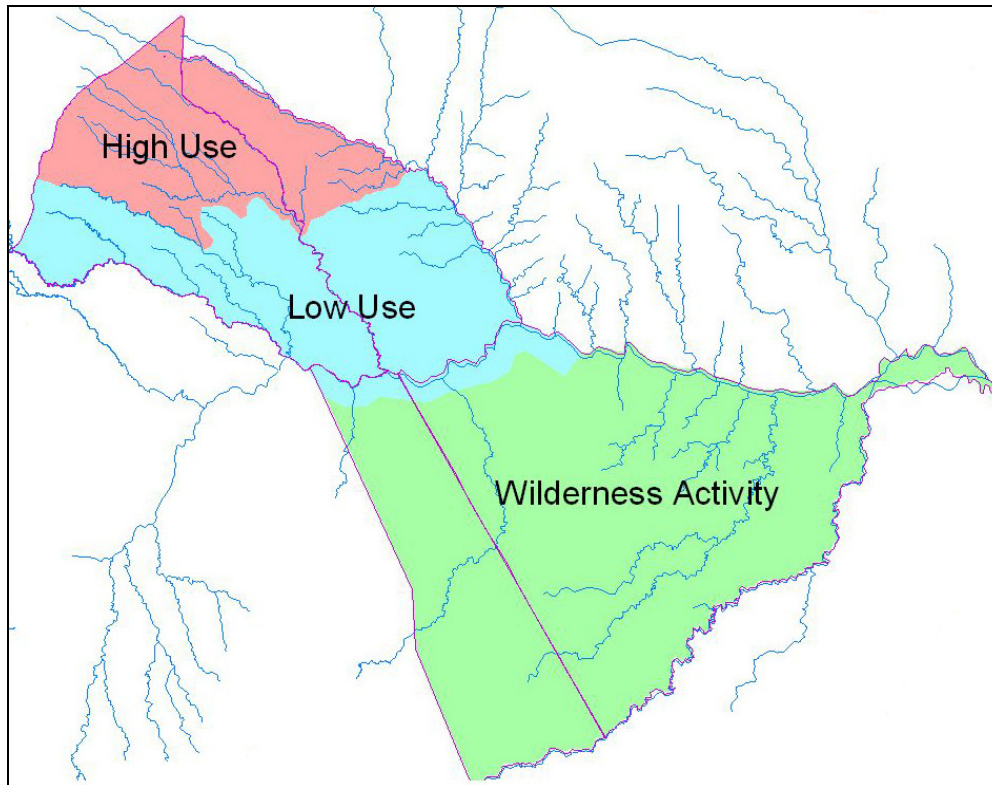


(Source: KWS GIS)

The three visitor use zones, the activities allowed, and visitor accommodation sites permitted are described in more detail in the following sections. This is preceded by an explanation of the zonal Limits of Acceptable Use that have been established for the High and Low Use Zones, and a description of the MCA-wide prescriptions on visitor accommodation facility size.

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**Visitor Security and Increased Tourism Use**

As is appropriate for a 10-year timeframe, the Zonation Scheme includes activities (such as walking and camel safaris) that although not currently viable, may at some point in the next ten years become highly attractive to tourism investors as tourism increases in Kenya, national and PA infrastructure improves, and the MCA becomes more established as a major tourism destination. However, as specified in the Tourism Development and Management Programme, the proposed expansion of tourism investment and use, particularly into currently underused areas (such as Kora NP and the national reserves) will be contingent on the security situation in the area, and must occur concomitantly with enhanced security operations (see Security Programme for details of how this will be achieved).

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# Limits of Acceptable Use

As mentioned above, a major function of the visitor use zones is to enable different levels of visitor use in different parts of the MCA. Ultimately, this means setting and then maintaining appropriate targets for the number of visitors desirable in the different zones. The PAPF calls these targets for visitor numbers "**Limits of Acceptable Use**" (LAU).

The optimal method of establishing zonal LAU on visitor use is through developing an understanding of visitor impact on the ecological features of the zone, and the subsequent definition of LAU designed to achieve a balance between maintaining the zone's conservation values and a desirable level of visitor use. However, developing this understanding of visitor impact on ecological features will inevitably take many years and requires monitoring of baseline indicators of ecological health, and this cannot normally be done as part of a management planning process. However, the Conservation Targets, Key Ecological Attributes, and the Ecological Monitoring Framework set out in the plan's Ecological Management Programme provide a strong foundation for monitoring the ecological health of the MCA and its component zones. In the long-term, this will in turn enable a better understanding of visitor impacts on the MCA's ecology, and thereby a definition of ecologically-based LAU.

In the meantime, another more practical and immediate method is needed to establish LAU on visitor use, and in this plan the approach used is based on the **quality of the visitor experience**, using the "**number of encounters with other tourism vehicles per hour**" as a proxy. The assumption made is that visitor experience in any particular zone, especially in a PA offering an exclusive wilderness experience such as the MCA, is determined by the sense of solitude that visitors experience, which is in turn largely influenced by the number of encounters that a visitor has with other visitors during game drives, i.e. the more encounters there are, the lower the sense of solitude and the poorer the overall visitor experience.

Table 3 overpage provides an overview of a simple model developed to determine the LAU on visitor numbers in two of the MCA's zones – the High Use and Low Use Zones. The model has not been developed for the Wilderness Activity Zone because it was considered that for all practical purposes, there will be very limited tourism development in this zone for the next 10 years, and therefore it is unnecessary to establish LAU for this zone for the duration of this plan. As shown in the table, the number of encounters per hour that tourism stakeholders agreed is appropriate in the High Use Zone is 2.5, while for the Low Use Zone it is 1.25. That is, the High Use Zone visitor experience will feature an encounter with another tourism vehicle approximately every 25 minutes, while the Low Use Zone experience will feature an encounter with another vehicle approximately every 50 minutes.

Table 3 shows the other assumptions that have been figured into the model to calculate the eventual LAU on visitor numbers associated with these encounter rates, including the average speed of tourist vehicles, the number of clients in each vehicle, and the length of suitable tourist road in the relevant zone. The latter figure has been worked out from existing GIS roads data, selecting only those roads that are considered suitable for tourist use.

There are several obvious weaknesses of this model. For example, the assumption that tour drivers are choosing to distribute themselves reasonably evenly throughout the zone rather than at viewing hotspots or near to lodges is a large one. Another issue is that visitors may be impacted by viewing vehicles across open areas that are on neighbouring tracks, especially where viewsheds are open.

Ultimately, little can be done by the MCA managers to control the visitor experience if tour drivers and the visitors themselves choose to congregate around, say, a lion kill. In these circumstances, the driver and visitors are taking a conscious decision to forego solitude in

favour of an animal sighting. Nonetheless, the encounter rates and the values of the various assumptions of the model (e.g., speed of travel and number of passengers per vehicle) have been chosen on a conservative basis to help compensate for the potential weaknesses of the model. As a result, the final LAU calculated by the model are considered as underestimates of the total number of visitors that the zone can reasonably support, while maintaining the overall visitor experience expected for the zone.

*Table 3. Model for determining Limits of Acceptable Use on visitor numbers in the High and Low Use Zones*

| | Parameter | High Use | Low Use |
|---|---|---|---|
| **Assumptions** | Number of vehicle encounters accepted in game drive (per hour) | 3.0 | 1.5 |
| | Average speed (km per hour) | 20 | 20 |
| | Average number of clients per vehicle | 4 | 4 |
| | Available tourism road in zone (km) | 528 | 530 |
| | Percentage spillover to neighbouring zone | 15% | 50% |
| | *Visitors entering zone from neighbouring zone* | *84* | *39* |
| | *Visitors exiting zone to neighbouring zone* | *39* | *84* |
| **LAU** | **Number of vehicles per km** | **0.150** | **0.075** |
| | **LAU on total visitors in zone (per day)** | **317** | **159** |
| | **LAU on overnight visitors in zone (per day)** | **271** | **204** |

As shown in Table 3, the model provides the following **LAU for total visitor numbers** in the two zones: 317 visitors in the High Use Zone and 159 visitors in the Low-Use Zone. However, it is anticipated that there will be visitor movement between neighbouring zones, especially from the Low Use Zone to the High Use Zone, where wildlife viewing is better. Therefore, the model also calculates adjusted **LAU for overnight visitor numbers** for each zone. This is the acceptable number of visitors staying within any particular zone overnight, which, when considered in conjunction with the estimated movements of visitors into and out of the zone, will ensure that the LAU for total visitor numbers in the zone are not exceeded. The LAU on total overnight visitor number are: **271 visitors in the High Use Zone** and **204 visitors in the Low Use Zone**. These LAU on overnight visitors have been used for developing prescriptions on the number of beds that can be developed within each of these zones for the 10-year duration of the plan; these are described along with their respective zones in the following sections.

# High Use Zone

This zone comprises the north-west section of Meru National Park and the adjoining northern part of Bisanadi National Reserve, and covers 16.4% of the MCA. The zone contains all current permanent tourism facilities, the most extensive network of game-viewing circuits in the MCA (around 528km), the current rhino sanctuary, and the MCA Headquarters. In addition, the MCA Education Centre and KWS Eastern Conservation Area (ECA) Headquarters are located on the border of the zone, just outside the MCA beyond Murera Gate. As shown in Figure 4 overpage, the zone is bordered by the Kiolou River along its southern edge; the zone's eastern border is formed by the road beginning at the Kiolou River drift (just north of sign number 81), and continues 1km to the east of this road through sign numbers: 80, 79, and 78 (taking in Kenmare Campsite and the adjacent airstrip). From this site the zone border follows the road alongside the Rojerwero River to the boundary of Bisanadi NR, and then

continues along the straight road to the external boundary of the reserve. As discussed above, this zone will be managed by the Warden Kinna Sector from the MCA HQ at Kinna.

*Figure 4. High Use Zone*
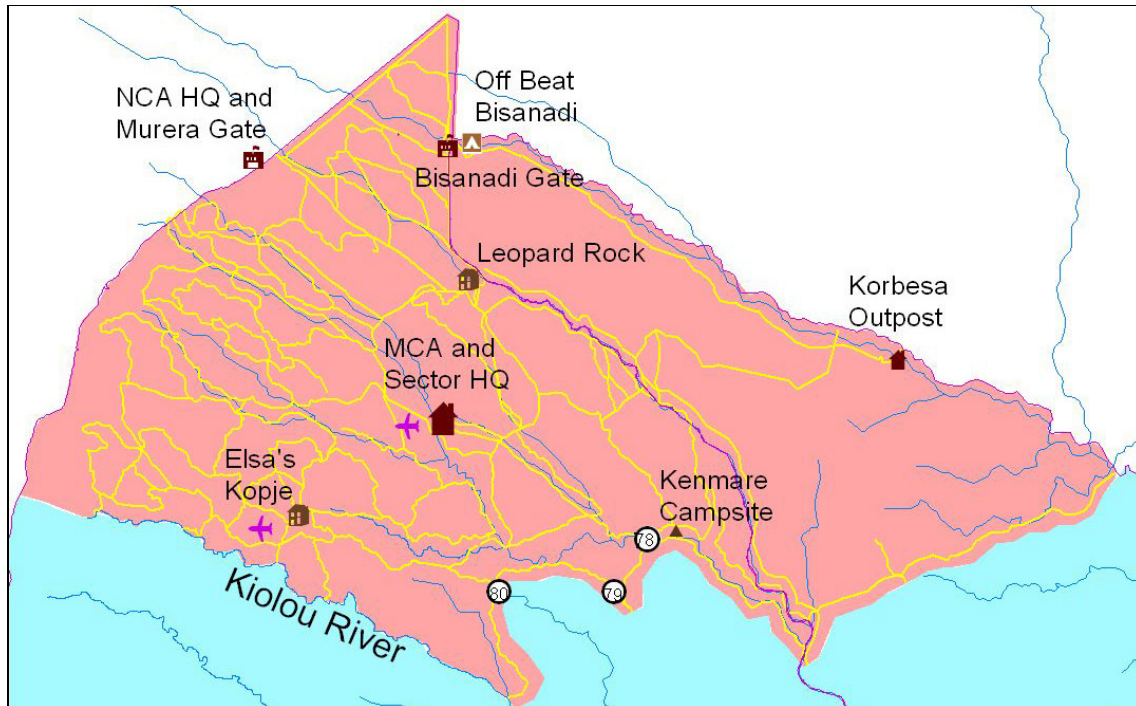


(Source: KWS GIS)

## Visitor activity prescriptions

This zone contains the highest concentration of large mammals in the MCA, which, combined with areas of open grassland in this zone, presents the best opportunities for game viewing in the conservation area. The zone will continue to have the highest level of tourism use in the MCA. However, in order to help ensure a quality experience, visitor activities in this zone will be restricted to game viewing from vehicles and short walks along specified routes from permanent accommodation facilities (management actions relating to the development and regulation of these activities can be found under Management Objective 1 of the Tourism Development and Management Programme). The specific activities allowed in this zone are set out in Table 4 below.

*Table 4. High Use Zone: Visitor activity prescriptions*

▶ **Game drives**

▶ **Night game drives**. Along specified routes agreed between the operator and MCA management. Red/pink filters must be placed over spotlights. Visitors must return to their accommodation by 20.30. Subject to security considerations.

▶ **Short walks**. Along specified routes agreed between operator and MCA management. No overnighting, except walks between existing permanent facilities (lodges or permanent tented camps).

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## Visitor accommodation prescriptions

This zone will contain the highest concentration of tourism accommodation in the MCA. However, in order to help disperse use over the entire zone and avoid bottlenecks of vehicles around large facilities, new developments are restricted to eco-lodges or permanent tented camps up to a maximum size of **60 beds** per facility, and special campsites up to a maximum size of **10 beds** (see Table 5 below). The minimum distance between permanent concession sites in this zone is **5km[1]**.

*Table 5. High Use Zone: Permitted tourism facility types and maximum size*

| Facility type | Maximum size |
|---|---|
| ► **Lodges** | **No new developments** |
| ► **Eco-lodges** | **60 beds** |
| ► **Permanent tented camps** | **60 beds** |
| ► **Special campsites** | **10 beds** |
| ► **KWS self-help bandas** | **No new developments** |
| ► **Public campsites** | **No new developments** |

## Bed capacity prescriptions

Table 6 below shows the present bed capacity in the High Use Zone, including the recently tendered Mulika site. There are presently 248 beds in the zone which, accounting for estimated occupancy rates[2], gives an average of 147 overnight visitors in the zone per day.

*Table 6. High Use Zone: Existing tourism accommodation*

| Facility Type | Facility name/location | Max. number of Beds | Estimated high season occupancy | Average number of overnight visitors |
|---|---|---|---|---|
| Lodge | Leopard Rock | 34 | 60% | 20.4 |
| Lodge | Elsa's Kopje | 24 | 60% | 14.4 |
| Lodge | Mulika | 60 | 80% | 48 |
| Permanent Tent. Camp | Offbeat Bisanadi | 24 | 60% | 14.4 |
| Special Campsite | MNP #1 | 10 | 60% | 6 |
| Special Campsite | MNP #2 | 10 | 60% | 6 |
| Special Campsite | MNP #3 | 10 | 60% | 6 |
| Special Campsite | MNP #4 | 10 | 60% | 6 |
| Special Campsite | MNP #5 | 10 | 60% | 6 |
| Special Campsite | MNP #6 | 10 | 60% | 6 |
| Bandas | Bwatherongi | 10 | 50% | 5 |
| Bandas | Murera | 16 | 25% | 4 |
| Public Campsite | Bwatherongi | 20 | 25% | 5 |
| *Totals* | | *248* | | *147.2* |

*(NB: There are more special campsites in MNP than the six shown above. However, these are rotated such that a maximum of six special campsites are occupied at any one time.)*

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[1] Some existing lease agreements may state a larger minimum distance, in which case this figure will apply for the concerned concessions.
[2] Estimated high season occupancy rates have been used for this calculation, in order that visitor numbers remain within the LAU during peak periods.

Table 7 below calculates the additional bed capacity that can be developed in the High Use Zone based on the LAU specified in Table 3. The LAU for overnight visitors in the zone specified in Table 3 is 271 visitors. Of these, 147 visitors are estimated as already using the zone based on the existing accommodation in the zone (see Table 6 above). This leaves room for an additional 124 overnight visitors in the HUZ. Taking into account occupancy rates, this gives scope for the development of **an additional 213 beds in the High Use Zone** during the lifespan of this management plan, as detailed in the table. This equates to a total number of beds permitted in the zone for the duration of the management plan to 461 beds. The additional beds in this zone have been preferentially allocated to Bisanadi National Reserve to boost tourism use, and therefore revenue generation, for the Reserve.

*Table 7. High Use Zone: Bed capacity prescriptions*

|  | Visitors | Beds |
|---|---|---|
| LAU on overnight visitors in HUZ per day (see Table 3) | 271 | 461 |
| *Made up of:* | | |
| **Existing accommodation** (see Table 6) | 147 | 248 |
| **New Ecolodges & Permanent Tented Camps** (based on 60% occupancy) | | |
| ► Meru National Park | 36 | 60 |
| ► Bisanadi National Reserve | 80 | 133 |
| **New Special Campsites** (based on 40% occupancy) | | |
| ► Bisanadi National Reserve (2 sites) | 8 | 20 |

# Low Use Zone

This zone covers 26.3% of the MCA, and comprises the southern portions of Meru National Park and Bisanadi National Reserve. As shown in Figure 5 overpage, in order to ensure that development is regulated in the more commercially attractive and ecologically sensitive areas along the Tana River, the zone also extends 5km from the Tana River into Kora National Park and Mwingi National Reserve (incorporating Kamukunga, the Kora Sector HQ and the road network along the river's southern bank). This zone (except the 5km strip south of the Tana River) will be managed by the Warden Tesiwa Sector from the Headquarters at Ura, with support from the main patrol base to be developed at Tesiwa.

## Visitor activity prescriptions

This zone is characterised by dense vegetation cover, which, combined with a lower density of roads (around 530 km), creates less favourable conditions for game viewing than are typically found in the High Use Zone. The dispersal of tourism use into this zone will be encouraged by allowing a wider variety of low impact tourist activities than the High Use Zone; these include catch and release fishing, rafting or boating along the Tana River, and walking safaris along specified routes (management actions relating to the development and regulation of these activities can be found under Management Objective 1 of the Tourism Development and Management Programme). The specific activities allowed in this zone are set out in Table 8 overpage.

*Figure 5. Low Use Zone*
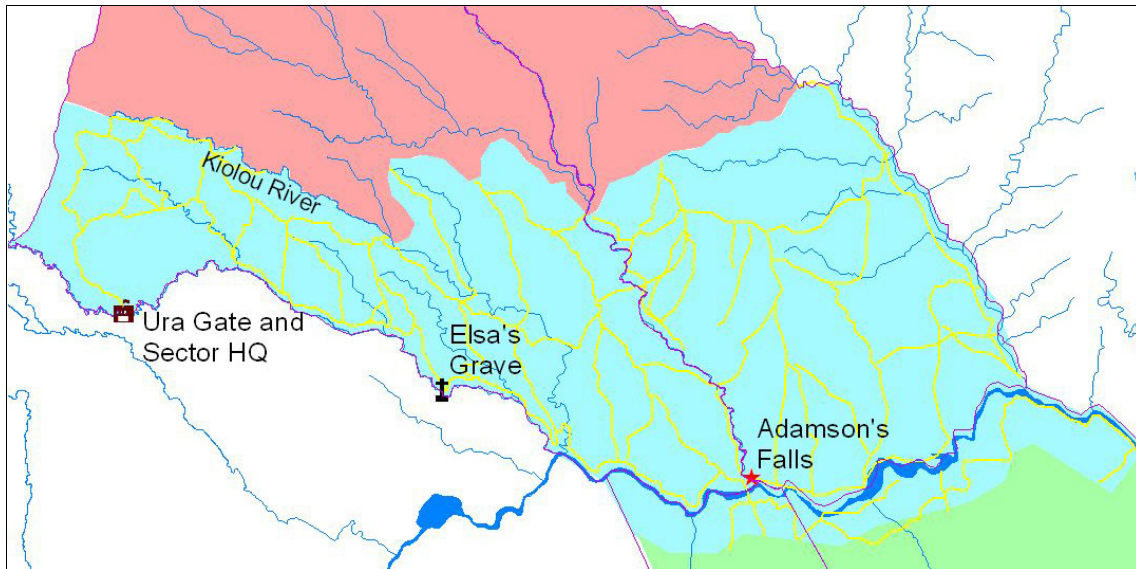
*Table 8. Low Use Zone: Visitor activity prescriptions*

▸ **Game drives**

▸ **Night game drives**. Along specified routes agreed between the operator and MCA management. Red/pink filters must be placed over spotlights. Subject to security considerations.

▸ **Short walks**. Along specified routes agreed between operator and MCA management. No overnighting, except walks between existing permanent facilities (permanent tented camps or starbed camps).

▸ **Catch and release fishing**. Along designated lengths of river agreed between operator and MCA management. All fish caught to be released at same location.

▸ **Rafting/boating**. On the Tana River.

▸ **Walking safaris**. Along specified routes between permanent and/or temporary camps agreed between operator and MCA management.

# Visitor accommodation prescriptions

As shown in Table 9 overpage, the maximum size of tourism accommodation facilities permitted in the Low Use Zone is **30 beds**, lower than that established for the High Use Zone. This is designed to help spread visitation and use more widely across the zone, thereby providing a distinctive lower density tourism product than that on offer in the HUZ, and to protect the ecologically sensitive areas of riverine forest along the Tana River from over development. The minimum distance between permanent concession sites in this zone will be **10km**. However, for permanent sites established on opposite banks of the Tana River, a lower minimum distance will be acceptable provided that such sites are out of sight of one another and other forms of disturbance are likely to be minimal.

*Table 9. Low Use Zone: Permitted tourism facility types and maximum size*

| Facility type | Maximum size |
|---|---|
| ▶ Eco-lodges | 30 beds |
| ▶ Permanent tented camps | 30 beds |
| ▶ Special campsites | 10 beds |
| ▶ Starbed camps | 10 beds |

***Starbed camps*** have also been included in the accommodation facility types permitted in the LUZ. Although new to KWS protected areas, this concept has proved popular in several privately-managed reserves in Kenya. These camps are low volume, low impact facilities with minimum infrastructure, and will enable the MCA to diversify its visitor accommodation and experience options with minimal impact on the area's ecology. They will be solely developed as an extension of existing lodge, or new eco-lodge/permanent tented camp concessions, and **are permitted within the defined exclusion radius around permanent facilities operated by the same investor**. (See also Annex 1 for details).

## Bed capacity prescriptions

Table 10 below calculates the bed capacity that can be developed in the Low Use Zone based on the LAU specified in Table 3. The LAU for overnight visitors in the zone specified in Table 3 is 204 visitors. Since there is no existing overnight accommodation in the zone, there is room for an additional 204 overnight visitors in the zone. Taking into account occupancy rates, this gives scope for **the development of 350 new beds** during the lifespan of this management plan, as detailed in the table.

*Table 10. Low Use Zone: Bed capacity prescriptions*

| | Visitors | Beds |
|---|---|---|
| LAU on overnight visitors in LUZ per day (see Table 3) | 204 | 350 |
| *Made up of:* | | |
| **New Ecolodges & Permanent Tented Camps** (based on 60% occupancy) | 144 | 240 |
| **New Starbed camps** (5 sites, based on 60% occupancy) | 30 | 50 |
| **New Special Campsites** (6 sites, based on 50% occupancy) | 30 | 60 |

*(NB: Only six special campsites are allowed to be occupied at any one time, however additional sites will be identified to allow use to be rotated between sites.)*

# Wilderness Activity Zone

The Wilderness Activity Zone covers the vast majority of Kora National Park and Mwingi National Reserve, and represents a total of 57.3% of the MCA. The zone is the least developed and least accessible area of the MCA, and opportunities for traditional game viewing are extremely limited. Although there is a limited road network in the area, it has mainly been designed for administrative and security purposes. There is currently no tourism accommodation, or supporting infrastructure, in this area. This zone, and the 5km strip of Low Use Zone south of the Tana River, will be managed by the Warden Kora Sector from the Headquarters at Kamukunga, with support from the main outpost at *Kambi ya Simba*.

*Figure 6. Wilderness Activity Zone*
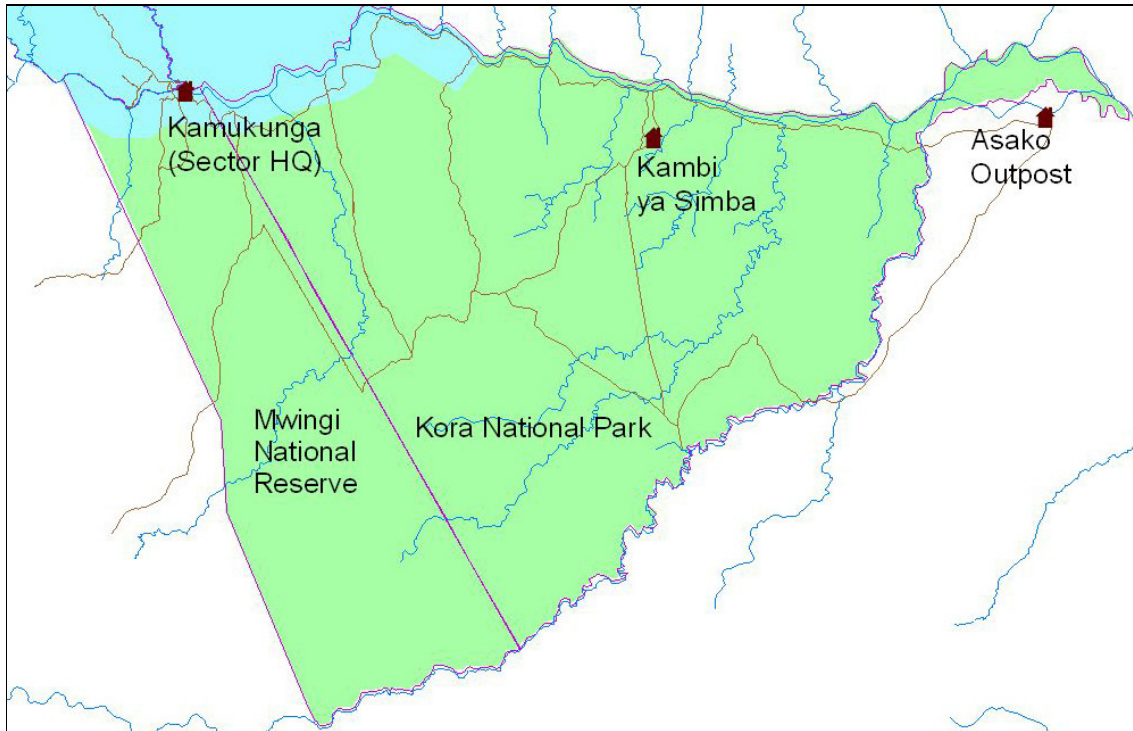


(Source: KWS GIS)

## Visitor activity prescriptions

A wide variety of tourist activities and facilities are permitted in this zone in order to encourage the development of tourism visitation and use (all of which will be dependent on enhanced security operations in the area). In addition to all activities permitted in the other two zones, activities that could be developed to encourage use of this zone include horseback and camel safaris and fly camping. Permission for the development of other appropriate activities will be considered as opportunities arise (management actions relating to the development and regulation of these activities can be found under Management Objective 1 of the Tourism Development and Management Programme). The activities allowed in this zone are set out in Table 11 overpage.

## Visitor accommodation prescriptions

All types of visitor facilities (except lodges) are permitted in this zone, up to **a maximum of 30 beds per facility**. The minimum distance between permanent concession sites in this zone will be **10km**.

## Bed capacity and access prescriptions

It is not anticipated that tourism use pressure will increase to levels of concern in this zone within the 10-year time horizon of this management plan. For this reason, no Limits of Acceptable Use for visitor numbers or total bed capacity of the zone have been calculated as is the case for the High Use and Low Use Zones (see Table 3 above). However, a maximum of **10 permanent concession sites** (i.e. 300 beds) will be permitted in the WAZ for the duration of this plan. This represents an overall visitor density of less than half that established for

the LUZ (taking into account the comparative sizes of the two zones). Bearing in mind the overall strategy to promote visitor use of the WAZ, this visitor density is considered appropriate.

### Table 11. Wilderness Activity Zone: Visitor activity prescriptions

▶ **Game drives**

▶ **Night game drives**. In open access areas, along specified routes agreed between the operator and MCA management. No restrictions in Exclusive Use Areas. Red/pink filters must be placed over spotlights. Subject to security considerations.

▶ **Short walks**. In open access areas, along specified routes agreed between operator and MCA management. No overnighting, except walks between existing permanent facilities (permanent tented camps or starbed camps). No restrictions in Exclusive Use Areas.

▶ **Catch and release fishing**. Along designated lengths of river agreed between operator and MCA management. All fish caught to be released at same location.

▶ **Rafting/boating**. On the Tana River.

▶ **Walking safaris**. In open access areas, along specified routes between permanent and/or temporary camps agreed between operator and MCA management. No restrictions in Exclusive Use Areas.

▶ **Camel and horseback safaris**. In open access areas, along specified routes agreed between operator and MCA management. No restrictions in Exclusive Use Areas.

As a mechanism for promoting tourism development in the Wilderness Activity Zone, "***Exclusive Use Areas***" may be established in the zone and leased to a commercial operator(s) on a seasonal or longer-term basis. KWS will remain responsible for the security and maintenance of infrastructure in these areas, while the operator(s) granted exclusive use of the area will ensure all activities are in line with the zonation scheme and KWS policy restrictions. The development and implementation of this concept is described in more detail under the Tourism Development and Management Programme, Management Action 2.3.

# Revenue implications of the LAU and visitor accommodation prescriptions

Figure 7 overpage gives projections for tourism revenues for both the High and Low Use Zones for the period of this management plan, based on the LAU and visitor accommodation prescriptions detailed in this Zonation Scheme. The model is based on the lease fees for various categories of tourism concession provided in the KWS Tourism Facilities Development Procedures, and an estimated gate fee of $30 per person (to take account of resident visitors as well as children). Occupancy rates of the facilities have been estimated conservatively, such that the revenue projections are regarded as under rather than over-estimates. A gradual development of new facilities is envisaged, with allowances built into the model for construction lag times, as well as for start-up incentives provided to investors in the Low Use Zone as per the KWS Tourism Facilities Development Procedures.

*Figure 7. Estimated annual revenues (thousands of US dollars) from MCA tourism developments in accordance with the MCA Zonation Scheme*
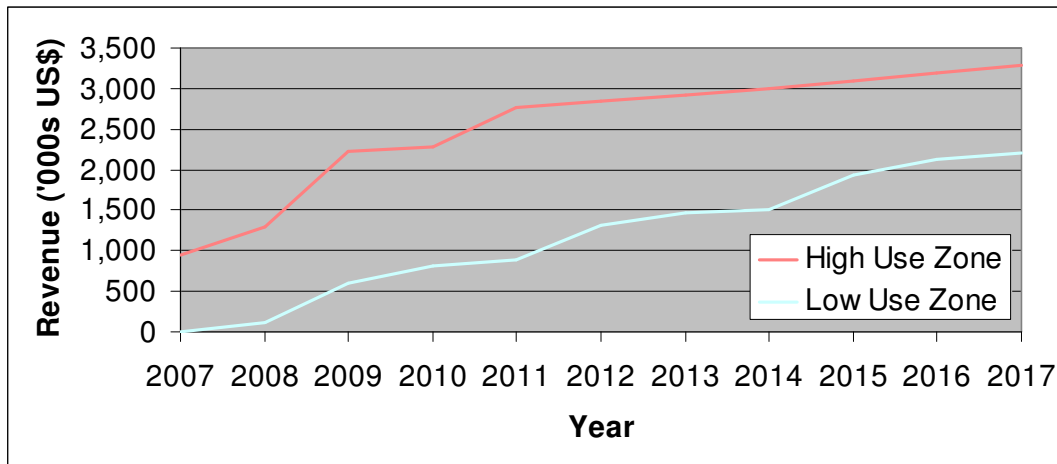


The outcome of this financial modelling is a projected gradual rise in annual tourism revenues in both zones, reaching a maximum of approximately US$3.3 million in the High Use Zone in 2017, and US$2.2 million in the Low Use Zone in the same year, or a grand total of US$5.5 million (not including potential revenues that may also be generated by the Wilderness Activity Zone).  This compares favourably with the total estimated annual expenditure by KWS and GOK in the MCA during the 2005/06 Financial Year of US$3.5 million (including the expenditure by the AFD MCADP project). Considering that the revenue figures given in Figure 7 are regarded as conservative, these forecasts suggest that the LAU and visitor accommodation prescriptions set out in this Zonation Scheme are appropriate, both from the standpoint of providing an optimal visitor experience with minimal environmental aspects, as well as from the standpoint of generating optimal revenues for park management and other revenue needs.

# Ecological Management Programme

# Programme Purpose and Strategy

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

Over the past thirty years, the ecology of the MCA has altered considerably, with wildlife numbers being reduced by three quarters, mainly due to intense poaching pressure during the 1980s and early 1990s. Changes in the area's vegetation have also occurred as a result of the decline in wildlife numbers, with grasslands being gradually encroached upon by more woody species. Although poaching has now been greatly reduced and wildlife numbers have begun to recover (although many populations remain vulnerable), other threats to the ecology of the MCA (such as illegal grazing, invasive species and abstraction of water upstream of the MCA) are escalating, mainly as a result of increasing human populations and intensifying land uses in the areas around the MCA. The MCA Ecological Management Programme aims to address the threats that are impacting on the most important ecological features and values of the MCA ecosystem, and to provide a guiding framework for the long-term ecological monitoring of the area.

The following paragraphs set out the **strategic principles** that are designed to guide MCA managers and stakeholders in the implementation of the Ecological Management Programme and the achievement of the Programme Purpose.

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

## MCA habitats and wildlife are restored

The major reduction of the MCA's browsing and grazing species brought about by intense poaching, and the consequent impacts on the area's vegetation and habitats, represents a significant change in the ecology of the MCA today compared to 25 years ago. While not seeking to preserve the MCA in a static ecological state, the Ecological Management Programme will aim to restore the area's natural wildlife species composition, with particular attention to endangered and northern wildlife species, and work towards re-establishing natural vegetation composition and dynamics in the area.

## Habitat connectivity with surrounding areas is maintained

Many of the larger charismatic and endangered species in the MCA depend not only on the conservation of suitable habitat within the area, but also on habitat connectivity with surrounding areas. The ability of such species to migrate or disperse outside of the MCA is an important component of many of their life cycles. According to the KWS Position Paper on Wildlife Policy (2006) "*access corridors, buffer zones and dispersal areas are essential for the maintenance of protected areas* [and] w*here such corridors exist, every effort shall be made to sustain them*". As such, as part of 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 MCA.

## Fire is effectively managed and monitored

Fire plays a critical role in the management of the MCA, with both positive and negative impacts. Properly prescribed fire can have beneficial effects by reducing bush encroachment (thus mimicking the ecological effects of the large numbers of herbivores that were once present in the area), and, if timed correctly, can improve the browsing and grazing conditions for many species. However, unprescribed or wildfires, can counteract the benefit of a prescribed fire management regime, and make the results of a controlled burning programme difficult to assess. As such, MCA Management will aim to minimise the negative impacts of wildfires and promote the use of prescribed fires for ecological management purposes.

## The MCA receives a sufficient supply of clean water

A variety of habitats and wildlife species in the MCA are dependent on water supplied by the rivers flowing into the conservation area, especially the area's riverine forest and permanent swamps. However, human population in the catchment areas of many of these rivers has increased rapidly in recent years, and as a result, water extraction and disturbance of the natural hydrological cycles essential for the survival of key habitats in the MCA have also increased. As such, management actions under this programme will seek to maintain the area's natural hydrological cycles, and help ensure a consistent and clean supply of water to the MCA, where appropriate in collaboration with other key stakeholders.

## MCA ecological trends and threats are monitored and understood

Given the high and increasing human pressures the MCA is facing, the monitoring of trends in the status of the most important features of the MCA's ecology, and the major threats impacting, or with the potential to seriously impact, on these features is a high priority during the lifespan of this management plan. In addition, ecological monitoring will be designed and implemented in such a way as to provide a firm foundation for adaptive management and for measuring management effectiveness.

# 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 MCA planning process are elaborated in the following sections.

# Conservation targets

The first step of the CAP process is the definition of a small number (usually about eight) of **conservation targets** which represent and encapsulate the unique biodiversity contained within the protected area, as well as any ecological features that may require specific management actions (such as particularly endangered species or habitats). A comprehensive ecological definition and understanding of each of these targets is then achieved through the further identification of the "***key ecological attributes***" (KEAs), which are the ecological parameters upon which long-term survival of each conservation target depends. Common examples of KEAs include: essential habitat requirements of a particular species; keystone species for a specific habitat; or ecological connectivity requirements. The eight MCA conservation targets, the rationale behind their selection, important subsidiary targets (i.e. other ecosystem components that share KEAs and threats with the conservation target concerned), and each the KEAs for each target are set out in Table 12 overpage.

# Threats to conservation targets

The comprehensive definition of conservation targets and their KEAs enables the identification of the "***threats***" to these targets and attributes, and the subsequent prioritisation of these threats according to their significance. The PAPF defines a threat as any factor, resulting either directly or indirectly from human activities, which has the potential to destroy, degrade or impair a conservation target during the 10-year lifespan of the PA plan. Table 12 overpage shows the priority threats impacting or likely to impact on the MCA conservation targets and their KEAs.

# Ecological management objectives and actions

The identification and ranking of the threats to the MCAs 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 shown in Table 12 overpage. Three objectives have been developed addressing threats to the MCA's threatened large mammals (covering conservation targets: Black rhino, Grevy's zebra and elephant); addressing crosscutting threats to the MCA's most important habitats (covering conservation targets: *Acacia-Combretum* grassland, A*cacia-Commiphora* bushland and Inselbergs); and addressing threats to targets selected beyond the MCA boundary (covering conservation targets: Ngaya Forest and River Systems). The three objectives developed for the MCA Ecological Management Programme are:

**MO 1. Conservation status of the MCA's threatened large mammals enhanced**
**MO 2. Important MCA habitats managed and improved**
**MO 3. Forests and river systems in the greater MCA landscape protected, in collaboration with other stakeholders**

These management objectives and their subsidiary management actions are described in detail in the sections below. Where appropriate, "*sub-objectives*" have been developed to provide a clearer framework for the subsidiary management actions. Under each management objective (or sub-objective) there is a brief description of the relevant management issues and opportunities, which provides the specific context and justification for the management actions.

*Table 12. MCA conservation targets*

| | Conserva-tion target | Rationale for selection | Important subsidiary targets | Key ecological attributes |
|---|---|---|---|---|
| **Species** | **Black rhino** | Classified as critically endangered by the IUCN. Global population declined drastically over last 30 years. MCA Population remains small and vulnerable. Population increase targets are unlikely to be met without active management. | ▶ White rhino (both species are currently located within the same sanctuary) | ▶ Habitat size and quality (water and forage)<br>▶ Population size, recruitment and structure<br>▶ Genetic diversity and variability |
| | **Grevy's zebra** | Endemic to northern Kenya and southern and eastern Ethiopia, classified as endangered by the IUCN. Population declined drastically over last 30 years. Current MCA population is not ecologically viable. | | ▶ Habitat size and quality (water and forage)<br>▶ Population size, recruitment and structure<br>▶ Genetic diversity and variability |
| | **Elephant** | Classified as vulnerable by the IUCN. Current population remains well below records from late 1970's. Play a key role in maintaining MCA habitats, especially grasslands. Threatened by closure of migration and dispersal routes outside MCA boundaries. | ▶ Other species that migrate or disperse outside the MCA (e.g. buffalo, lions, zebra) | ▶ Ngaya Forest (breeding area)<br>▶ Dispersal area (Bisanadi corridor)<br>▶ Population size, recruitment and structure<br>▶ Genetic diversity and variability |
| **Habitats** | ***Acacia-Combretum* grassland** | Located mainly in the north-western area of MNP and BNR. Particularly important for grazing species, and provides ideal habitat for game viewing. | ▶ Burchell's zebra<br>▶ Bohor reedbuck<br>▶ Naked molerat<br>▶ Beisa oryx | ▶ Population size of grazing species<br>▶ Extent of grassland<br>▶ Vegetation structure and composition |
| | ***Acacia-Commiphora* bushland** | Dominates most of KNP and MNR, and the southwestern parts of MNP and BNR. Important for browsing species. Threatened by livestock incursions. | ▶ Gerenuk<br>▶ Dikdik<br>▶ Lesser and Greater Kudu<br>▶ Bats | ▶ Population size of browsing species<br>▶ Extent of bushland<br>▶ Vegetation structure and composition |
| | **Inselbergs** | Basement rock projections that occur throughout the MCA e.g. Mughwango and Leopard Rock. Contain plant communities found nowhere else in the MCA. | ▶ Plant species such as: *Xerophya spekei*, *Loudetia arundinacea*, *Bulbostylis* and *Mariscus* | ▶ Population size of unique plant communities |
| | **Ngaya Forest** | One of the few remaining stands of indigenous equatorial forest in Kenya. Contains a high diversity of tropical hardwood trees. An important water catchment, and dry season refuge for elephants. | ▶ Forest primates<br>▶ Indigenous tree species<br>▶ Giant forest hog | ▶ Forest size<br>▶ Floral composition<br>▶ Floral structure |
| **Systems** | **River Systems** | Important for riverine forests and permanent swamps in Meru National Park, which provide important dry season habitats for many wildlife species. Under threat from intensifying water use and conversion of catchments. | ▶ Swamps<br>▶ Riverine vegetation<br>▶ Bohor reedbuck<br>▶ Bird species | ▶ Forest catchment<br>▶ River regime (flow and pattern)<br>▶ Water quality<br>▶ Riparian habitat |

### Table 13. Threats to MCA Conservation Targets

| THREATS \ TARGETS | River systems | Ngaya Forest | Acacia-Combretum grassland | Acacia-Commi-phora bush-land | Inselbergs | Elephant | Grevy's zebra | Rhino |
|---|---|---|---|---|---|---|---|---|
| Poaching | | Low | Low | Medium | | High | Low | High |
| Livestock incursions | | | Medium | High | | | | |
| Fire | | Low | Low | Medium | Low | | | |
| Invasive species | Low | Low | Low | | | | | |
| Inbreeding | | | | | | Low | Very high | High |
| Ecto-parasites | | | | | | | Low | High |
| Disease | | | | | | | Low | High |
| Settlement in dispersal areas | | | | | | Medium | | |
| Predation | | | | | | | High | |
| Too small founder population | | | | | | | High | |
| Charcoal burning and logging | | High | | | | | | |
| Human encroachment | | High | | | | | | |
| Bush encroachment | | | Medium | | | | | |
| Tourism infrastructure development | | | | | Very High | | | |
| Destruction of catchment forest | High | | | | | | | |
| Conversion of riparian habitat | Very High | | | | | | | |
| Swamp drainage | Very High | | | | | | | |
| Use of agricultural chemicals | Medium | | | | | | | |
| Planting inappropriate exotics | High | | | | | | | |
| Abstraction of water for irrigation | Very High | | | | | | | |
| Sand scooping for construction | Medium | | | | | | | |

Following the description of management objectives, the next section of the programme contains the **3-Year Activity Plan** for the Ecological Management Programme, and details the activities, responsibilities, timeframe and input requirements necessary for the completion of each of the management actions in the first 3-year timeframe of the management plan. The final section of the programme sets out a framework for the development of the **MCA Ecological Monitoring Plan**, also based on the KEAs and threats identified through the TNC CAP.

# Management Objectives

Figure 8 below shows the overall objectives tree for the MCA Ecological Management Programme.

## Figure 8. MCA Ecological Management Programme objectives tree



**MCA ECOLOGICAL MANAGEMENT PROGRAMME PURPOSE**

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

**OBJECTIVES**

**MO 1. Conservation status of the MCA's threatened large mammals enhanced**

**MO 2. Important MCA habitats managed and improved**

**MO 3. Forests and river systems in the greater MCA landscape protected**

**SUB-OBJECTIVES**

**SO 1.1 Black rhino population managed and enhanced**

**SO 1.2 A viable population of Grevy's zebra established and maintained**

**SO 1.3 Elephant migration and dispersal movements understood and protected**

**SO 3.1 Collaboration and support for the conservation of Ngaya Forest Reserve strengthened**

**SO 3.2 Quantity and quality of water supplied to the MCA maintained in collaboration with responsible agencies**

# Objective 1: Conservation status of the MCA's threatened large mammals enhanced

The desired future state of the MCA is one where the three conservation target species selected for the MCA are effectively managed and monitored, so as to ensure their long-term survival in the MCA, and that of the co-occurring species and habitats. In order to achieve this desired state, a series of management actions have been developed under three sub-objectives, each relating to one of the species-level conservation targets selected for the MCA: Black rhinos, Grevy's zebra and elephant. These sub-objectives and their subsidiary management actions are set out in the following sections.

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# Sub-Objective 1.1 Black rhino population managed and enhanced in accordance with the KWS National Rhino Strategy

The number and distribution of Black rhinos has declined drastically in Africa over the last thirty years; a trend reflected in Kenya, where populations have declined from around 65,000 in 1970 to an estimated 540 in 2005. In response to the critical situation facing Kenya's Black rhino population, which accounted for over 85% of the eastern sub-species in 2005, and in order to capitalise on recent successes that have seen populations increasing once again, KWS has developed a National Strategy for the Conservation and Management of Black Rhinos. The overall goal of the National Strategy is to increase Black rhino numbers by at least 6% per annum in sanctuaries, achieved through an emphasis on biological management and effective law enforcement. According to this strategy "*the primary goal of **biological management** [addressed under this sub-objective] is to breed rhinos as rapidly as possible in order to benefit from compounded growth rates and preserve their genetic diversity in the long term*". The strategy highlights that without proper biological management of stocking rates and the minimisation of competition for browse, the overall population increase target is unlikely to be met, even with the elimination of all poaching.

This sub-objective has been developed to ensure that the management of the MCA Black rhino population is contributing to the overall goal of the national strategy by maximising the population growth rates of the MCA rhino populations, and ensuring the long-term survival of an ecologically-viable rhino population in the area. Through the achievement of this sub-objective, it is anticipated that the MCA will be making a vital contribution in achieving the national strategic vision of establishing a metapopulation of 2,000 Eastern African Black rhinos, managed in their natural habitat over the long-term; as well as global efforts to secure the conservation of a critically endangered species. It should also be noted that, although not a specific conservation target itself, many of the major issues impacting on the non-indigenous White rhino populations in the MCA will also be addressed under this objective (mainly due to the two species' similar geographical distribution and common threats).

As part of the rehabilitation of the MCA, the reintroduction of both Black and White rhinos to the area began in 2001, and at present there are 56 rhinos in the MCA, of which 35 are white and 21 are black. Due to concerns over security, all the rhinos are located in a fenced sanctuary located near Murera Gate, and are under 24-hour surveillance. However, recent rhino deaths have occurred within the sanctuary as a result of disease, and the suitability of the sanctuary's location has now been called into question, most notably due to the high prevalence of tsetse flies in the area, and because a significant portion of the area is a swamp. The size of the current sanctuary has also been raised as a potential problem, and as rhino populations increase over the 10-year duration of this plan, the ecological carrying capacity of the current rhino sanctuary is likely to become an important issue, as negative density-dependent mechanisms may begin to impact on the growth rate of rhino populations.

The management actions under this sub-objective that have been developed to ensure that the MCA rhino population is managed and enhanced in accordance with national rhino strategy are elaborated in the following sections. Management actions relating to law enforcement are considered under the Security Programme.

## Action 1.1.1 Intensify and expand the tsetse fly control programme

Recent rhino deaths in the MCA have been attributed to the high prevalence of tsetse flies in the rhino sanctuary. Although there is an ongoing tsetse control programme, and there are

now approximately 80 tsetse fly traps within the rhino sanctuary distributed along all main roads and in the riverine and swamp vegetation, it seems that this has not been sufficient to reduce the tsetse burden in the sanctuary and the disease risk to the Black rhinos. Therefore, as an immediate measure to reduce the risks of further rhino deaths, the ongoing tsetse fly control programme will be immediately intensified and expanded. This will necessitate increasing the number of tsetse fly traps in the sanctuary, and in particular the density of traps within key areas of tsetse fly habitat.

On a longer-term basis, the control programme will be expanded to cover the increased area of habitat used by the rhinos. The area covered by the control programme will also be expanded to include a 0.5km buffer zone around the sanctuary (existing or relocated, see Action 1.1.2 below). As far as possible, traps will be positioned to minimise their visibility from tourist viewing circuits. As appropriate, and in line with measures implemented under Action 1.1.5, the programme will be expanded to the wider MCA if rhinos are eventually released from the sanctuary, with traps being placed in areas with the highest concentration of tsetse flies as an initial priority. In order to enhance the financial sustainability of the programme, the costs involved (in particular additional trap construction and chemical poison), will be included in MCA budget requests or steps taken to ensure they are allocated by the KWS Rhino Executive Committee.

### Action 1.1.2 Relocate the rhino sanctuary to a more suitable location within the MCA as appropriate

As discussed above, both the location and size of the current rhino sanctuary have been called into question, mainly due to the very high densities of tsetse flies found over much of the area, which is likely to have contributed to rhino deaths in the MCA, and the suitability of much of the current sanctuary's habitat for rhinos. There is, however, the possibility that other more ecologically appropriate sites for the sanctuary exist in the MCA, which are also suitably located to address concerns over security. As such, a feasibility assessment will be carried out by MCA staff and the KWS HQ Rhino Programme officers to investigate suitable areas for the relocation of the rhino sanctuary in the MCA. The assessment will need to consider the habitat requirements of viable populations of both rhino species, sources of water, security arrangements, and the practicalities of fencing the area. In addition, a sanctuary may also be required for Grevy's zebra (see Action 1.2.1 below) and, if ecologically and technically feasible, the new sanctuary should provide the necessary protection for both Black and White rhinos and Grevy's zebra. If a more appropriate new sanctuary location is found, the proposals for relocation will need to be approved by the KWS Rhino Executive Committee before work can commence on preparing the area and erecting the fence. Once the area has been secured, and, if appropriate, provisions made for housing Grevy's zebra within the same area (such as ensuring part of the area is lion proof), the subsequent movement of animals into the new sanctuary can begin.

### Action 1.1.3 Carry out a study to determine the carrying capacity of the rhino sanctuary and establish target population size

In accordance with the National Rhino Strategy, managers must ensure that "*maximum growth rates are attained through proper stocking rates and minimisation of competition*" and "*that populations do not exceed 75%* [of the area's] *ecological carrying capacity*". As such, one of the key actions to be implemented under the national strategy is to determine the ecological carrying capacity of the areas inhabited by MCA rhino populations (whether in the current or the relocated sanctuary). Without a clear definition of the population numbers of *both* rhino species (taking into account both intra- and inter-specific competition) that the MCA sanctuary can support, it will be very difficult to anticipate when negative density-

dependent mechanisms may begin to impact on the population growth and reproduction of rhinos in the MCA. Therefore, a study will be undertaken to establish the ecological carrying capacity of the MCA rhino sanctuary (existing or relocated), and set clear population targets for the size of both rhino populations to be maintained in the fenced area.

### Action 1.1.4 Carry out new rhino reintroductions as appropriate

Dependent the population targets identified under Action 1.1.3, and the ongoing monitoring of rhino population growth rates (see Action 1.1.6 below) and health, additional reintroductions to the MCA may be necessary in order to achieve the national targets for rhino population growth, or to address imbalances in the age or sex structure of the MCA populations that are restricting population increases. As such, if appropriate during the 10-year timeframe of this management plan, requests will be made to the KWS Rhino Executive Committee for the additional reintroduction of rhinos to the MCA in order to help achieve national targets for rhino population increases. These requests will be supported by the information collected under Action 1.1.6 on the populations' size, growth rates, and age/sex structure, and information on the ecological carrying capacity of the sanctuary and the population targets for the area (established under Action 1.1.3).

### Action 1.1.5 Implement measures to increase available rhino habitat as appropriate

Rhino density in the existing MCA sanctuary is currently at 0.6 individuals per km$^2$; however, due to the uneven distribution of rhinos within the sanctuary, the density is effectively closer to 1 individual per km$^2$. Although the existing sanctuary is likely to be able to accommodate a relatively high density of rhinos because the two rhino species have different habitat requirements, negative density-dependent mechanisms may begin to impact on the population growth and reproduction of rhinos during the 10-year timeframe of this plan. Although such effects may be delayed if the existing sanctuary is relocated (as proposed under Action 1.1.2), additional interventions may still be necessary to ensure that population growth targets are achieved.

As such, under this action, when population numbers in the existing or relocated sanctuary are approaching 75% of the ecological carrying capacity of the area (as identified under Action 1.1.3 above), the security situation in the MCA will be reviewed and measures to increase the available habitat to rhinos considered. Depending on the results of the security situation assessment, potential measures to be considered include:

- ▸ Increasing the size of the fenced sanctuary;
- ▸ Releasing individuals into the wider MCA; or
- ▸ Removing the sanctuary fence altogether.

MCA managers will then put forward the measures proposed to the KWS Rhino Executive Committee for final decision.

### Action 1.1.6 Carry out routine monitoring of rhino population dynamics and habitat suitability in the rhino sanctuary

The re-establishment of viable and self-sustaining rhino populations in the MCA is still at the initial stages, and the populations of both species remain fragile and highly susceptible to a number of potential impacts (such as poaching, disease, or intra-specific competition) that could easily undermine the success of the entire reintroduction programme. The monitoring

of both Black and White rhino populations is therefore essential for informing MCA managers on the overall status and trends in the rhino populations, and as basis for the implementation of the management actions under this sub-objective. Monitoring is particularly important in the MCA due to the high investment of reintroducing rhinos to the area and the current artificial confinement of both populations within a fenced sanctuary.

One of the strategic objectives of the National Rhino Strategy is to establish an "*integrated, standardised monitoring system*". The strategy highlights the importance of collecting information on each population's status and performance in terms of population dynamics, reproductive health and condition, in order to improve their biological management. As such, and in accordance with these guidelines and with the MCA Ecological Monitoring Plan (see below), information will be regularly collected, collated and disseminated on both the Black and White rhino population sizes, recruitment rates and age/sex structures. The habitat suitability of the current or new sanctuary will also be regularly assessed and monitored to ensure it is not degraded as the populations increase over time.

## Sub-Objective 1.2 A viable population of Grevy's zebra established and maintained

Once distributed over large parts of northern Kenya, Somalia and Ethiopia, the current range of Grevy's zebra is now restricted to a portion of northern Kenya, and a small section of southern Ethiopia. Recent estimates put the number of Grevy's zebra in Kenya at around 1,600-2,000 individuals, which represents an 85% decline in numbers over the last 30 years. Only 0.5% of Grevy's zebra range in Kenya falls within protected areas, and as such the Meru Conservation Area is exceptionally well placed to help ensure the long-term conservation of this endangered species, and the fragile arid and semi-arid ecosystem upon which it depends.

This sub-objective has been developed to ensure that the current population of Grevy's zebra in the MCA is enhanced, and that a viable and self-sustaining population is established and maintained in the area over the long-term. The Grevy's Zebra Task Force (chaired by KWS) is in the process of preparing a formal national conservation strategy for the species, which should be finalised in 2007. Once the national conservation strategy has been established and approved, the actions and aims of this sub-objective will be reviewed to ensure it is aligned with and contributing to the national strategy.

A total of 20 Grevy's zebra were translocated to the MCA from Lewa Downs in 2002. However, although the move and initial holding of the animals was successful, predators killed nearly all the breeding males within a few months of their release. It now seems highly likely that only eight Grevy's zebra remain in the MCA: 7 mature females and 1 immature male. Without the additional translocation of individuals to the area, this situation clearly presents significant problems for the long-term viability of the Grevy's zebra population in the MCA. However, the potential impacts of extraordinarily high predation, and other factors affecting the population size and growth of the Grevy's zebra in the MCA, need to be addressed before a translocation of additional zebra to the MCA can take place. The management actions that have been developed to ensure a viable population of Grevy's zebra is established and maintained in the MCA are elaborated in the following sections.

### Action 1.2.1 Investigate feasibility of relocating Grevy's zebra to a fenced sanctuary within the MCA

Although the translocation and initial release of Grevy's zebra in the MCA in 2002 was successful, once the animals dispersed into the wider area, their numbers swiftly declined and

have not yet begun to recover. This situation is not unique to the MCA, and, despite the fact that large-scale poaching ceased over 20 years ago, Grevy's zebra populations all over Kenya are not increasing at the anticipated rates. Studies elsewhere in Kenya have attributed this to two main factors: competition for resources with Burchell's zebra, and predation by lions[3]. Anecdotal evidence from the MCA seems to support the theory that predation had an extraordinary impact on the reintroduced Grevy's Zebra population.

As such and in line with the IUCN/SSC guidelines for re-introductions, which call for the "*identification and elimination, or reduction to a sufficient level previous causes of decline*", the threat of extraordinary predation on Grevy's zebra in the MCA needs to be reduced in order to both ensure the continued survival of the remaining individuals in the area, and to create a suitable environment for the translocation of additional individuals. Therefore, in order to first ensure the survival of the remaining individuals in the MCA, the feasibility of relocating all surviving Grevy's zebra in the MCA to a sanctuary will be investigated (ideally, if ecological requirements permit, in conjunction with the relocation of the rhino sanctuary, see Action 1.1.2 above). MCA staff in conjunction with the Grevy's zebra task force will carry out this feasibility assessment, which will involve identifying areas within the MCA that both meet the ecological requirements of the zebra, and where a sanctuary of a size appropriate for the establishment of a viable population (i.e. more that 20 individuals) can be established relatively easily. If this proves possible, a lion-proof fence will need to be erected around the area, and the surviving individuals moved into the sanctuary as soon as possible.

As set out above, without measures to reduce the threat from predation, new Grevy's zebra should not be translocated to the area, which would result in the population in the MCA remaining too small to be ecologically viable, with little chance of long-term survival. If the surviving Grevy's zebra cannot be protected within a sanctuary, or the threat from predation reduced in any other acceptable way, the individuals from the MCA will be translocated to a more suitable habitat elsewhere in Kenya, where the reproductive capacity of the individuals can contribute to the overall conservation of this endangered species.

### Action 1.2.2 Reintroduce additional Grevy's zebra to the MCA to establish a viable founder population

The current population of Grevy's zebra in the MCA of seven mature females and one immature male is not ecologically viable over the long-term; even if recruitment did begin, initial growth rates would be extremely slow and the population would remain highly susceptible to potentially catastrophic demographic, genetic or stochastic effects. The translocation of additional individuals to the MCA is the only realistic option for establishing a viable population of Grevy's zebra in the MCA. As such, assuming that measures implemented under Action 1.2.1 above have reduced the threat of predation from lions, additional Grevy's zebra will be translocated to the MCA. These translocations will be carried out in accordance with the IUCN/SSC guidelines for re-introductions, and will build on the lessons learnt and experience from the previous introduction of Grevy's zebra to the MCA.

### Action 1.2.3 Carry out ongoing monitoring of Grevy's zebra population

Even with additional translocations, the Grevy's zebra population will remain highly susceptible to a number of impacts (such as disease, genetic or demographic effects) that could easily extirpate Grevy's zebra from the MCA once again. Unfortunately, difficulties in gathering data and monitoring zebra movements (exacerbated by the rapid predation of all collared

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[3] For more details see Workshop Proceedings, Mpala Research Centre, Kenya, 22-24 March 2004. Edited by Stuart Williams & Belinda Low

individuals released into the MCA) have to-date limited the ecological information routinely collected on the area's Grevy's zebra population. However, the establishment of baseline data and ongoing monitoring of the MCA Grevy's zebra population is essential for informing MCA managers on the population's status, and as basis for implementing the management actions under this sub-objective (most notably the translocation of additional individuals, discussed under Action 1.2.2 above). As such, and in accordance with the MCA Ecological Monitoring Plan (see below), information will be regularly collected and collated on the population size, recruitment rate and age/sex structures of the Grevy's zebra population in the MCA. This information will become increasingly important if, as anticipated, the individuals are moved to a secure sanctuary where knowledge of habitat requirements, and potential density dependent effects will essential for informing and assessing management success.

## Sub-Objective 1.3 Elephant migration and dispersal movements understood and protected

In the 1970s and 1980s, the numbers of the African elephant declined at an unprecedented rate from an estimated 1.3 million in 1979 to 600,000 in 1991. During this period the MCA elephant population experienced immense poaching pressure and declined to around 10% of its former size. As shown in Figure 9 below, by 1990 only 251 elephants were found in Meru National Park, which represented an 81% decline from the 1976 estimate[4]. However, since 1998, KWS has been translocating elephants to the MCA to help restore the natural ecology of the area, and to control bush encroachment and improve wildlife viewing. As a result of these translocations, high recruitment and low adult mortality, the MCA elephant population has been growing steadily since the late 1990s at rate of about 5% per annum; by 2002 a total of 413 elephants were recorded in and around the MCA[5].

*Figure 9. Elephant population size estimates in and around the MCA*[*]



(*1965 count was of a smaller area)
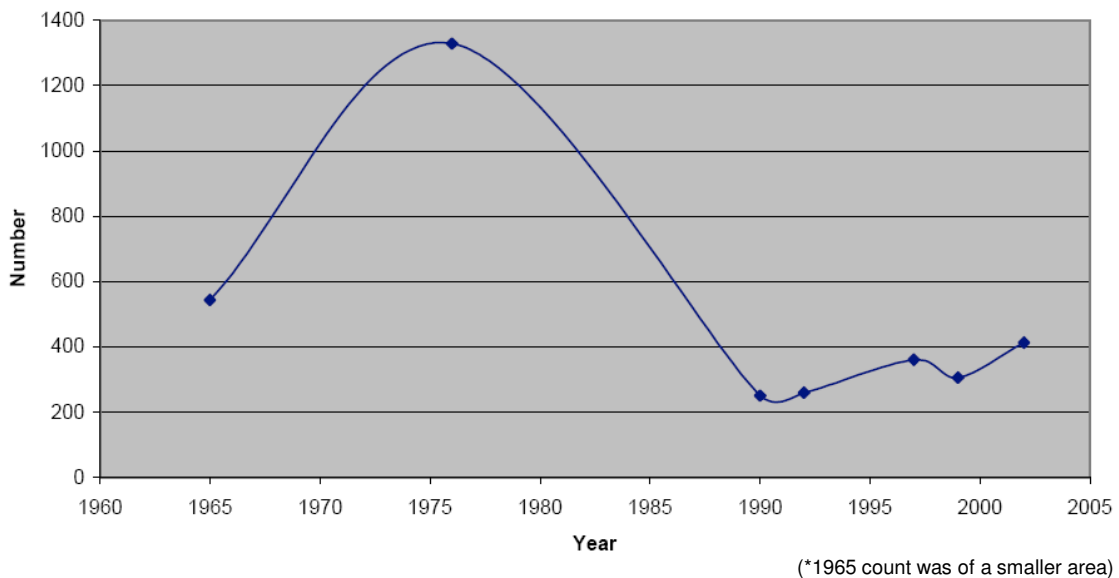
Figure 10 overpage shows that a substantial portion of the MCA elephant population migrates seasonally into the wildlife dispersal area and migration route to the north of Meru NP

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[4] Ogola O. Patrick (2003) Demographic Status Of The Meru Elephant Population. Final Report to the Elephant Research Fund/KWS and Save the Elephants
[5] Omondi, P., Bitok, E. & Mayienda, R. (2002) Total aerial count of elephant, buffalo, livestock and other wildlife in the Meru Conservation Area. Kenya Wildlife Service Report. Unpublished

and Bisanadi NR (known as the Bisanadi Corridor). This area is particularly important as it connects the MCA with Ngaya Forest (see Sub-Objective 3.2 below), which forms a potential breeding area and dry season refuge for part of the MCA elephant population. As the threat from poaching in and around the MCA has now been reduced, due to increased law enforcement operations, the closure of elephant dispersal areas and migration routes is now considered by many to be the most serious threat to the long-term establishment and conservation of sizeable elephant populations in the MCA. This sub-objective aims to enhance current understanding of the movement patterns and distribution of elephants throughout the year, and to ensure that the habitats and resources upon which that these ecologically important and endangered large mammals depend remain open and accessible as they disperse beyond the protection of the MCA boundary.

### Figure 10. Elephant distribution in and around the MCA (2005)
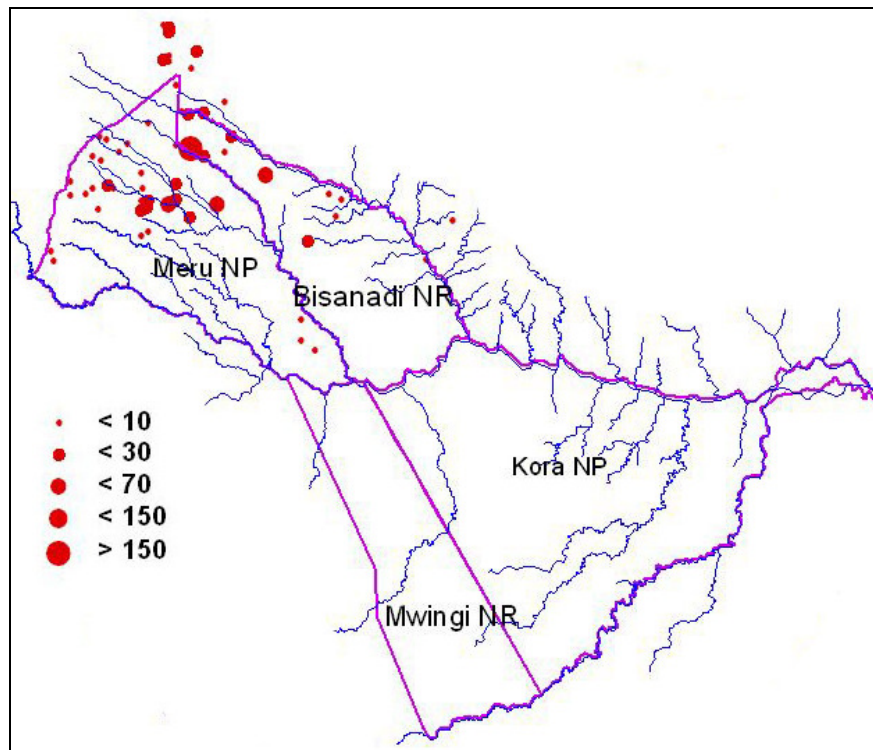


(Source: KWS GIS)

The management actions that have been developed to ensure that elephant migration and dispersal movements are understood and maintained are elaborated in the following sections.

### Action 1.3.1 Carry out ongoing monitoring of MCA elephant population dynamics

Although MCA elephant numbers have increased in recent years, numbers are still well below the population size found in the area in the 1970s. However, to date, little monitoring or research has been undertaken on the MCA elephant populations except for population counts, and the population dynamics, distribution and trends over the long-term are not well understood. One of the specific objectives of the KWS Elephant Programme is to "*provide close monitoring of trends in numbers and status of elephant populations*". In the MCA, the monitoring of translocated individuals is especially important, where without post-release monitoring it is impossible to determine the success of the translocations unless the fate of

the translocated elephants is known. As such, and in line with the specific objective of the KWS Elephant Programme and the MCA Ecological Monitoring Plan (see below), information will be regularly collected, and collated on MCA elephant population sizes, recruitment rates and age/sex structures. This information will provide a baseline for assessing the effectiveness of the management actions under this sub-objective, and for improving management responses to changing conditions and threats.

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**Action 1.3.2 Carry out research to assess the importance of dispersal areas and wildlife corridors outside the MCA**

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As indicated above, the main intact elephant dispersal area and migration route to and from the MCA is found to the north of Meru NP and Bisanadi NR (known as the Bisanadi Corridor). However, management actions with the aim of keeping this area open and accessible to elephants (and by default other large mammals), need rigorous and scientific information to identify the most important areas to focus on, and the most effective and appropriate strategies that should be pursued to achieve this. Without such information it will be difficult for MCA management to demonstrate to potential partners (such as local communities or Nyambene County Council) the importance of the areas that lie within their jurisdiction, and the rationale behind the intervention strategies proposed. As such, research will be carried out to identify the specific movements of elephants to and from the MCA and to identify the key areas of importance that management efforts should focus on. Movement patterns will be identified by radio collaring elephants believed to be using dispersal areas (e.g. Ngaya Forest), which will then enable the geographic identification of critical dispersal areas and migration corridors. This information will be used to determine the ecologically most important areas beyond the MCA boundaries that need some form of protection, and to identify the most appropriate mechanisms (e.g. fencing, land-use planning or establishment of community conservancies) for achieving this.

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**Action 1.3.3 Collaborate with NEMA, Nyambene and Isiolo County Councils to establish wildlife corridors and protect dispersal areas as appropriate**

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The 1999 Household Census recorded an 86% increase in populations in the six districts around the MCA. These population increases have contributed to the rapid expansion of permanent agriculture in recent years, especially in the more fertile areas to the west and south of the MCA. This has severely impacted on the availability and connectivity of wildlife habitat outside of the area, and, primarily to reduce human-wildlife conflict, the MCA boundary is now fenced along the western and part of the southern border next to these permanently settled agricultural areas. Although, the Bisanadi Corridor (discussed above) is traditionally a pastoralist area and migration routes are not yet cut off by permanent agriculture, human-wildlife conflict in the area has increased as human populations have expanded and other wildlife dispersal routes have become restricted. If permanent agriculture continues to expand around the MCA, it will have significant impacts on the ability of elephants and other animals to disperse to and from the area. As such, if appropriate, MCA management will implement strategies aimed at protecting priority wildlife corridors and dispersal areas beyond the MCA (based on the areas identified and strategies proposed in Action 1.3.2 above). Depending on the strategy selected, this action is likely to necessitate collaboration with relevant partners (such as NEMA, Nyambene and Isiolo County Councils, or local communities) who have jurisdiction over the areas concerned. Implementation of this action will to take place in conjunction with Action 3.1 of the Community Outreach and Education Programme, which aims to establish a community wildlife conservancy to the north of the MCA.

> **Action 1.3.4 Implement ranger-based monitoring of elephant mortalities in conjunction with the CITES-MIKE Programme**

Elephant poaching in the MCA has reduced dramatically since the 1990s due to enhanced anti-poaching operations in the area, and incidents have now declined to less than ten per year. However, due in part to the geographic location of the MCA, this threat remains a potential issue, and factors beyond the control of MCA management (for example a change in CITES listing, or increased political instability in neighbouring countries) could easily cause a resurgence of this problem. Meru National Park was named as a site for the CITES Monitoring of the Illegal Killing of Elephants (MIKE) Programme in 2003. This programme aims to measure levels and trends in the illegal hunting of elephants, determine changes in these trends over time, and identify the factors causing or associated with such changes. In order to continue contributing to the objectives of the MIKE programme, the on-going ranger-based monitoring programme of elephant mortalities will continue to be implemented throughout the duration of this plan. In line with the requirements of the MIKE Programme, information will continue to be collected on the number of elephants recorded dead and alive in the MCA, the causes of mortality (where possible), and the mortality levels relative to the law enforcement patrol effort. The information collected through this process will be complemented by the aerial surveys conducted every three years (as specified in the MCA Ecological Plan, see below), which will provide information on the size of the MCA elephant population and carcass ratios.

# Objective 2: Important MCA habitats managed and improved

Wildlife numbers in the MCA have reduced by around 77% over the last thirty years, mainly as a result of intense poaching pressure during the 1980s and early 1990s. This dramatic decline in wildlife numbers, especially the large reduction in the MCA elephant population, combined with increased impacts from surrounding communities (such as wildfires and livestock grazing), has resulted in significant changes in the MCA's vegetation. Most notably the area's swamps, *Acacia-Combretum* grassland and wooded grasslands are being gradually encroached upon by more woody species resulting in an overall increase in *Acacia-Commiphora* bushland habitat across the MCA. These changes have not only impacted on the habitat diversity in the MCA and the ability of grazing species to recolonise the area, but have also effectively restricted game viewing by tourists to a relatively small area of grasslands within the High Use Zone (see MCA Zonation Scheme).

The desired future state that this objective aims to achieve is one where the management of key habitats within the MCA is improved, so as to re-establish the area's natural vegetation composition and dynamics, support the restoration of the area's natural wildlife species composition, and improve tourism game viewing in the MCA. In order to achieve this future desired state, four management actions have been developed that address the threats impacting on the three habitat-level conservation targets selected for the MCA: *Acacia-Combretum* grassland; *Acacia-Commiphora* bushland; and Inselbergs. In contrast to the other management actions in this programme, due to the crosscutting nature of the threats and issues impacting on the MCA's habitats, actions under this objective address issues or threats impacting on several conservation targets (e.g. fire management), rather than addressing threats on a target-by-target basis. This objective's four management actions are elaborated in the following sections.

### Action 2:1 Develop and implement MCA Fire Management Plan

Evidence suggests that across the MCA, and in particular in MNP, grasslands and wooded grasslands are closing up, and trees and shrubs are encroaching upon some swamps. It has been suggested that a lack of a comprehensive fire management programme, combined with the drastic reduction in elephant numbers over the last thirty years, is the main reason behind the observed changes in MCA vegetation. Increased unprescribed fires in the MCA in recent years, primarily as a result of farm clearance and efforts to improve grazing, have contributed to bush encroachment by reducing grass vigour and improving the competitiveness of woody shrubs and trees, thus undermining both the effectiveness of previous fire management efforts and any assessment of its effectiveness. Although a fire management programme has been implemented in MNP, documentation of the rotational burning programme is lacking, and the programme does not extend to the wider MCA. As such, an MCA Fire Management Plan will be developed under this Programme to cover the entire PA complex, with particular attention paid to conserving and encouraging *Acacia-Combretum* grassland in the High Use Zone. As an initial step, a literature review of existing national guidelines and MCA documents will be carried out to ensure that the plan is based on the best available guidance and information. Results from the monitoring carried out under the MCA Ecological Monitoring Plan will provide the information on the impacts of the burning programme, and enable the plan to be adapted as necessary. As part of the plan's implementation, firebreaks will also be improved along the MCA's western boundary in order to reduce the incidence of wildfire within the PAs.

### Action 2:2 Carry out MCA land cover change study

As discussed above, in the past the MCA 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 MCA's vegetation. However, although these changes are widely acknowledged, scientific investigation and documentation of the actual changes in MCA vegetation types needed as a basis for their current management has not been undertaken. As such, a land cover change survey will be carried out with support from the MCADP, in order to establish the specific changes that have occurred regarding the MCA vegetation types, and clearly identify areas where significant changes in land cover have occurred (especially changes in *Acacia-Combretum* grassland). This will information will not only provide a scientific basis for the objectives and implementation of the MCA Fire Management Plan (discussed above), but will also aid the piloting of the bush encroachment reduction scheme discussed in the following action.

### Action 2:3 Design and implement pilot scheme to reduce bush encroachment, and roll out as appropriate

This action focuses on the development and implementation of a pilot scheme aimed at re-establishing *Acacia-Combretum* grassland in areas where it previously existed. 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 the MCA. As such, potential areas of former grasslands will be identified for piloting methods to reduce bush encroachment. These areas will be situated away from the main areas of tourism use, and at least one of the areas will be located in the High Use Zone area of Bisanadi National Reserve, which has been prioritised for tourism development. Once the scheme has been designed, which will include a variety of management regimes to be applied to each of the pilot areas, the selected experimental plots will be cleared and their regeneration monitored. If

successful, additional priority areas will then be selected for rolling out the scheme, adapted according to the lessons learnt from the pilot plots.

> **Action 2:4 Carry out study to establish impacts of livestock incursions on vegetation structure and composition**

Presently, there is a substantial amount of illegal grazing taking place in Bisanadi and Mwingi National Reserves and Kora National Park (see Figure in PA Operations Programme). Every year, MCA management uses considerable resources, in trying to curb the influx of livestock in the MCA. However, success has been limited in combating these incursions, and law enforcement efforts are increasingly being complemented by awareness raising and building relationships with MCA-adjacent communities. A critical tool in this awareness raising is the ability to inform communities on the impacts of livestock grazing on the MCA's conservation, and in particular its vegetation structure and composition. In addition, information on how grazing may be influencing changes in MCA habitats (such as encouraging or potentially abating bush encroachment) could make important contributions to efforts to reduce bush encroachment (as described above). 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 MCA. The feasibility of involving outside researchers or post-graduate students in the development and implementation of the study will be investigated, with technical and logistical support provided by KWS as appropriate. MCA Research Section staff will develop and undertake the study if collaboration with eternal agencies is not possible.

# Objective 3: Forests and river systems in the greater MCA landscape protected, in collaboration with other stakeholders

The desired future state that this objective aims to achieve is one where the forests and river systems in the greater MCA landscape, in particular those with which the MCA is ecologically connected or dependant, are sustainably managed and conserved so as to ensure the continued conservation of the MCA, and the unique assemblage of habitats and species it protects. In order to achieve this desired state, a series of management actions have been developed under two sub-objectives that correspond to the two MCA conservation targets located outside of the MCA protected area network: the Ngaya Forest Reserve and River Systems. These two sub-objectives and their subsidiary management actions are set out in the following sections. As these conservation targets are located beyond the MCA and as such, outside the immediate jurisdiction of KWS, many of the action focus on establishing or strengthening KWS collaboration with other stakeholders.

## Sub-Objective 3.1: Collaboration and support for the conservation of Ngaya Forest Reserve strengthened

As shown in Figure 11 overpage, the 25km$^2$ Ngaya Forest Reserve lies just under 14km from the MCA in the Nyambene Hills, and falls under the jurisdiction of the Kenya Forest Service (KFS). The forest is one of the few remaining stands of indigenous equatorial forest in Kenya, and contains a high diversity of tropical hardwood trees. In addition the reserve is also an important water catchment and source of rivers that flow into the MCA (discussed in the following sub-objective). It has also been suggested that the forest serves as a breeding ground and dry season refuge for a significant part of the MCA elephant population (as discussed under Sub-Objective 1.3 above). Other important wildlife species found in the forest

reserve include leopard, giant forest hog, buffalo and a number of primate species. The management actions that have been developed to ensure that collaboration and support for the conservation of the Ngaya Forest Reserve are elaborated in the following sections.

*Figure 11. Location of Ngaya Forest Reserve and permanent agriculture (shown in red) west of the MCA[6]*
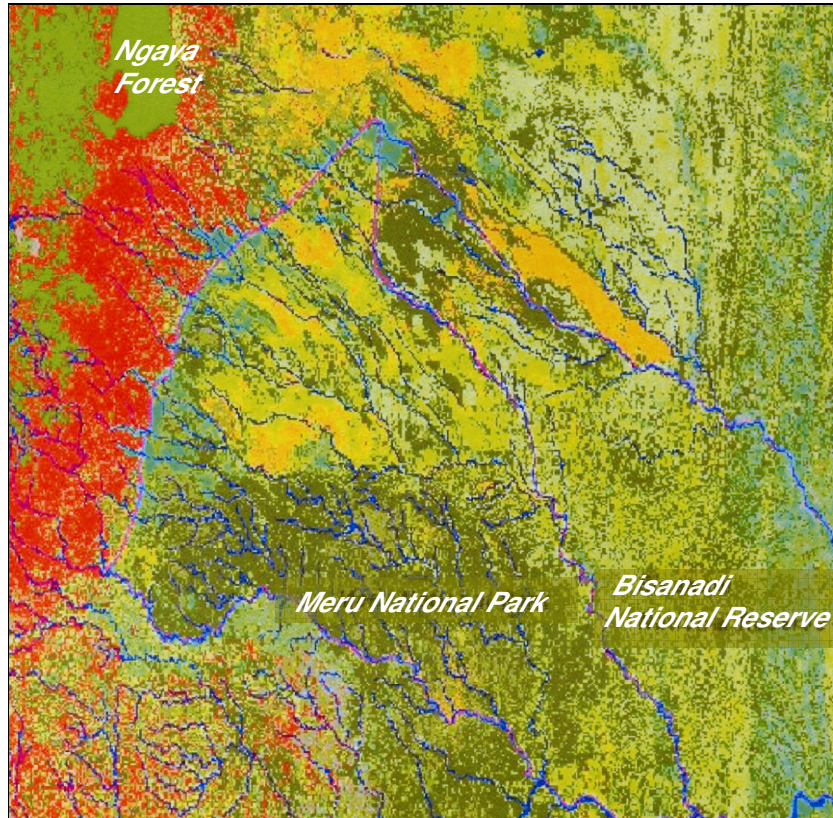


> **Action 3.1.1 Incorporate Ngaya Forest into existing KWS-KFS collaborative management arrangements**

Establishing clear roles and responsibilities of KWS and the KFS is an essential first step in establishing and formalising institutional collaboration in the conservation and management of the Ngaya Forest Reserve. There are a number of precedents where KWS and the KFS have been collaborating for a number of years in the management of forest reserves (for example around the Aberdares and Mount Kenya National Parks). An MoU already exists between the two organisations that forms a basis for these existing management collaborations, and which also specifies the reserves where collaboration has been agreed. Under this action, the Ngaya Forest Reserve will, subject to agreement with the KFS, be added to this existing KWS-KFS MoU, in order to provide a foundation for the management collaboration implemented through the subsequent actions under this sub-objective.

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[6] J. Otuoma 2004. The Effects of Livestock-Wildlife-Human Interactions in the Meru Conservation Area, Kenya. LUCID Working Paper 39

### Action 3.1.2 Establish baseline information and carry out ongoing ecological monitoring of Ngaya Forest in collaboration with Kenya Forest Service staff

Although the Ngaya Forest Reserve is recognised as nationally important, rigorous and compressive inventories of the biodiversity found in the reserve have not been undertaken. Although some studies have been completed, these studies have typically focused on one category of biodiversity, and have not been planned or undertaken with a view to enhancing long-term ecological monitoring of the reserve. The long-term ecological monitoring of the Ngaya Forest is especially important due to the forest's ecological isolation, and its resulting vulnerability to both direct human induced threats (such as charcoal burning or logging) and ecological disturbances that may only become apparent over a number of years (such as a lack of recruitment of key tree species). As such, an initial ecological survey of the Ngaya Forest will be undertaken in collaboration with KFS staff to obtain the information required as a basis for the ongoing ecological monitoring of the reserve. This initial survey will be guided by the MCA Ecological Monitoring Plan (see below), which sets out the Key Ecological Attributes of the forest that need to be monitored over the long-term. Once this baseline information has been established, ongoing monitoring of the reserve will be undertaken by KWS and/or KFS staff in accordance with the specifications in the MCA Ecological Monitoring Plan.

### Action 3.1.3 Carry out joint patrols with Kenya Forest Service staff

As discussed above, although the Kenya Forest Service has a presence in the Ngaya Forest Reserve, currently numbering around eight officers, patrols have not been sufficient to halt illegal activities in the reserve (especially logging and charcoal burning). Although KWS law enforcement operations are already significantly extended in the MCA itself, wherever possible joint patrols between KFS and KWS will be undertaken in the forest reserve in order to boost the law enforcement presence in the area, and reduce the level of illegal activities in the reserve. Joint patrols will necessitate close collaboration between the two organisations to clearly establish respective roles and responsibilities, and ensure that patrols are maximising their effectiveness. This action will be implemented in conjunction with Objective 2 of the PA Operations Programme, in particular Sub-Objective 2.2 that focuses on enhancing security patrols.

### Action 3.1.4 Support the establishment of forest user association(s)

Although many of the threats to the conservation of the Ngaya Forest Reserve result from the activities of forest adjacent communities, if properly empowered and organised, these same communities can play an important role in forest conservation and management. The Forest Act (2005) recognises the potential role that communities can play in forest management and allows for the creation of Community Forest Associations (CFA), consisting of community members who have a traditional association with a forest for purposes of livelihood, culture or religion. A CFA can apply to the Director of Forests for permission to conserve the forest in accordance with a forest management plan, and, as a result, benefit from the sustainable utilisation of forest resources in accordance with this forest management plan. As such, under this action assistance will be provided to communities around the Ngaya Forest in the CFA registration process. This will include facilitating key decision-making meetings and the preparation of a management plan for the forest, all of which will occur in close collaboration with the Kenya Forest Service. This action will be implemented in conjunction with Action 3.4 of the Community Partnership and Education Programme, which has been developed to address the same issue.

## Sub-Objective 3.2: Quantity and quality of water supplied to the MCA maintained in collaboration with responsible agencies

Many habitats and wildlife species in the MCA are dependent on water supplied by the thirteen rivers that flow into the MCA from the Nyambene Hills or originate from springs just beyond the area's western boundary. Of particular importance are the riverine forests and permanent swamps in Meru National Park, which provide important dry season habitats for many wildlife species. However, permanent agriculture now covers significant parts of the Nyambene Hills and the area to the west of the MCA. Much of this agriculture uses inefficient furrow irrigation techniques, which, combined with the conversion of catchment forests to agriculture, has already caused a reduction in the volume of water in the rivers entering the MCA. Any further increases in the extraction of water that would otherwise have entered the MCA could have serious consequences for the area's ecology, and in particular specific water-dependent habitats and wildlife in Meru National Park.

This sub-objective has been developed to ensure that the quantity and quality of water in key rivers supplying the MCA are maintained, so as to ensure the continued conservation of key habitats and wildlife species within the MCA. Although the area of focus for this sub-objective is outside the immediate jurisdiction of KWS, the potential impacts of reduced water supply on the MCA's ecology and wildlife populations are considered too serious and far-reaching to be left unaddressed by the Ecological Management Programme. As the issues impacting on the supply of water to the MCA are located outside of KWS' immediate mandate, actions under this sub-objective will involve establishing or strengthening collaborations and supporting the work of key stakeholders in the area, such as Water Resource Management Authorities and the Tana Water Services Board. The management actions that have been developed to ensure that the quantity and quality of water supplied to the MCA is maintained are elaborated in the following sections.

### Action 3.2.1 Develop and implement MoUs with Tana Water Services Board and Meru North Water Resource Management Authority

As discussed above, the principal issues that need to be addressed under this sub-objective are outside the KWS' immediate area of jurisdiction. As such, many of the actions that need to be completed will involve collaborating with or providing support to the agencies with primary responsibility for addressing these issues. An essential foundation for the successful establishment of collaborative efforts to address issues of mutual concern is agreement with key agencies on the roles and responsibilities of all parties concerned. This can be most effectively achieved through an MoU between KWS and the appropriate partner institution. The principal stakeholders that KWS needs to establish and formalise collaboration mechanisms with are the Tana Water Services Board, responsible for the efficient and economical provision of water services, and the Meru North Water Resource Management Authority, which is responsible for protecting and conserving water resources at the catchment area level. As such, and as a basis for the implementation of subsequent management actions under this sub-objective, MoUs will be developed and signed between KWS and these key stakeholders. These MoUs will specify the respective roles and responsibilities of both partners, and provide a basis for practical collaborative efforts on the ground.

### Action 3.2.2 Establish and maintain water monitoring stations on rivers leading to the MCA

The monitoring of the flow rates, water level and quality of water in rivers flowing into the MCA is essential for determining the intensity of the threat to the area's conservation, and for assessing the effectiveness of the management actions developed under this sub-objective. Although some information is already collected on the flow and pattern of some key rivers flowing into the MCA, this monitoring needs to be expanded to an increased number of rivers flowing into the area, and, in line with the specifications in the MCA Ecological Monitoring Plan, also include an analysis of water quality. As such, under this management action, water monitoring stations will be established along priority rivers flowing into the MCA. These stations will be capable of monitoring water flow and pattern, and the collection and simple analysis of water quality samples. The long-term ecological monitoring of these aspects will then continue in line with the specifications in the Ecological Monitoring Plan. The Meru North Water Resource Management Authority has the primary responsibility for the collection and analysis of this information, and in order to improve the long-term sustainability of monitoring activities, KWS will provide appropriate on-going logistical and technical support to this authority in undertaking these tasks. If significant increases in chemical pollution in these rivers are recorded, potential sources will be identified and the information provided to the relevant water resource management authorities and NEMA for appropriate action.

### Action 3.2.3 Support and engage with community Water Management Associations in promoting sustainable water extraction along rivers feeding the MCA

Along with the rest of the country, the Nyambene Hills have been experiencing rapid increases in population and demand for agricultural land. This trend has been compounded by the improved security situation in areas bordering the MCA, which has also contributed to increased settlement and cultivation in areas west and north of MNP. Increased water use has reduced the amount of river water reaching the MCA, and has the additional potential to impact on the area's conservation values. However, the Water Act (2002), which is now in force, recognises the positive role that communities can play in the management of water resources, provided they are given proper organisation and support. The Act provides for the formation of river Water Resource Users Associations (WRUAs), made up of water users along a river's course. The functions of the WRUAs include protection of the water catchments, addressing environmental problems in the watershed, and resolving water use conflicts. MCA Community Partnership and Education officers have been working closely with Meru North Water Resource Management Authority in creating awareness on the impacts of poor water management in the water catchment area. In addition, in order to improve the sustainable use and management of water in rivers flowing into the MCA, support will be provided for the formation WRUAs by co-funding meetings that organised during the community mobilisation stage. This action will be implemented in conjunction of with Action 3.3 of the Community Partnership and Education Programme, which has been developed to address the same issue.

### Action 3.2.4 Support the preparation of integrated water management plans for rivers feeding into the MCA

As discussed above, all of rivers entering the MCA are threatened by the degradation of the water catchment area and inefficient water use. In response to these issues, support will be provided to the Meru North Water Resources Management Authority and the Water Resource Users Associations (WRUA) in the preparation of integrated water resource man-

agement plans for priority rivers flowing into the MCA. These plans will analyse water re-source uses and management issues in each river's watershed, and develop relevant man-agement actions to be implemented by the WRUAs. KWS will provide support to the planning process by attending and facilitating community planning meetings, and by providing other logistical and technical assistance as may be requested by the water management authority and/or the WRUAs. This action will be implemented in conjunction of with Action 3.2 of the Community Partnership and Education Programme, which has been developed to address the same issue.

### Action 3.2.5 Provide support to WRMA and TWSB in carrying out awareness raising activities concerning sustainable water use and appropriate practices

As described above, permanent agriculture now covers significant parts of the Nyambene Hills, much of which uses inefficient furrow irrigation techniques, which, combined with other inappropriate or inefficient land-uses (such as the planting of exotic trees along river banks), is having a substantial impact on the amount of water flowing into the MCA. However, there are often alternatives to such practices, which can improve the sustainable utilisation of water from key rivers without impacting on community livelihoods. For example, in some parts of the Nyambene Hills, farmers have switched from furrow irrigation to more efficient sprinkler irrigation, and in other areas farmers have initiated water management regimes where each farmer's access to water is restricted to a certain number of hours per day. How-ever, community awareness of alternative practises and potential management tools is often lacking. Although it is the principal responsibility of the WRUAs and TWSB to inform local community members and raise their awareness of these opportunities, transport and other logistical constraints often prevent their access to key areas in the Nyambene Hills. As such, wherever possible, KWS will provide logistical and technical support to the WRUAs and TWSB in order to improve community awareness of sustainable water use and appropriate practices in key areas. Under this action, steps will be taken to identify key areas of concern, and liaise with the appropriate officers about their ongoing work in these areas. Specific needs and support that are within the capabilities of KWS to provide will then be identified, and appropriate support provided.

### Action 3.2.6 Develop alternative water sources for wildlife inside the MCA

As discussed above, the MCA, and in particular the permanent swamps and water bodies in Meru National Park, is a dry season refuge for a large number of wildlife species that sea-sonally migrate into the area. Nearly all of these permanent water sources depend on water flowing into the area from the Nyambene Hills, and as such are under threat due to the in-creasing abstraction of water from these rivers. The loss of permanent water sources in the MCA could have serious and irreversible consequences for the ecology of the area, and in particular the seasonal distribution of important wildlife species. Although the previous ac-tions set out under this sub-objective aim to ensure this situation does not arise, artificial water bodies that capture water that currently flows through the MCA will not only provide an alternative and more secure source of water for wildlife species during the dry season, but, if appropriately located, could also encourage the dispersal of wildlife from its current concen-trations around the MCA High Use Zone. Under this management action, potential artificial water source sites in the MCA will be identified. Sites will be selected to capitalise on the natural features of the area wherever possible, in order to minimise habitat disturbance and construction costs. EIAs will then be undertaken for the proposed sites, addressing not only issues relating to construction, but also potential ecological impacts downstream, and any likely impacts on wildlife distribution. The appropriateness of the construction of the proposed water sources will then be assessed, and, if approved, construction will go ahead with care

being taken to minimise the visibility of artificial construction materials and any potential impacts on the MCA's wilderness qualities.

# Three Year Activity Plan 2007 – 2010

The following pages set out the first 3-Year Activity Plan for the Ecological Management Programme. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that MCA management aims to achieve in implementing the plan.

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 1: Conservation status of the MCA's threatened large mammals enhanced** | | | | | | | | | | | | | | |
| **Sub-Objective 1.1 Black rhino population managed and enhanced in accordance to KWS National Rhino Strategy** | | | | | | | | | | | | | | |
| **1.1.1 Intensify and expand the tsetse fly control programme** | | | | | | | | | | | | | | A report on the ideal distribution of tsetse traps prepared by December 2007 |
| 1.1.1.1 Carry out a survey of the distribution of the existing tsetse fly traps | SRS | ■ | | | | | | | | | | | | |
| 1.1.1.2 Identify new sites for placing additional traps | SRS | | ■ | | | | | | | | | | | |
| 1.1.1.3 Purchase and install required tsetse fly traps | SRS | | | ■ | | | | | | | | | | |
| 1.1.1.4 Maintain Tsetse fly traps | SRS | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **1.1.2 Relocate the rhino sanctuary to a more suitable location as appropriate** | | | | | | | | | | | | | | A report on the Rhino Habitat Suitability study ready by December 2008 |
| 1.1.2.1 Prepare terms of reference for a rhino habitat suitability study | SRS, RPC | | | | ■ | | | | | | | | | |
| 1.1.2.2 Identify and contract for technical assistance required to implement the habitat suitability study | SRS, RPC | | | | | ■ | | | | | | | | |
| 1.1.2.3 Review proposed locations for new sanctuary and select most appropriate (in conjunction with Rhino Executive Committee) | SRS, RPC | | | | | | | ■ | | | | | | |
| 1.1.2.4 Carry out an EIA of proposed location for new rhino sanctuary | SRS, RPC | | | | | | | | ■ | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 1.1.2.5 Fence the new rhino sanctuary | SRS, RPC | | | | | | | | | | | | | |
| 1.1.2.6 Translocate rhinos from the present sanctuary to the new sanctuary | SRS, RPC | | | | | | | | | | | | | |
| **1.1.3 Carry out a study to determine the carrying capacity of the rhino sanctuary and establish target population size** | | | | | | | | | | | | | | Ecological carrying capacity of the rhino sanctuary assessed by June 2010 |
| 1.1.3.1 Prepare terms of reference for the study on the eco-logical carrying capacity of the rhino sanctuary | SRS, RPC | | | | | | | | | | | | | |
| 1.1.3.2 Identify and contract for technical assistance to carry out the study | SRS, RPC | | | | | | | | | | | | | |
| 1.1.3.3 Coordinate implementation of the study | SRS, RPC | | | | | | | | | | | | | |
| **1.1.4 Carry out new rhino reintroductions as appropriate** | | | | | | | | | | | | | | |
| 1.1.4.1 Request for new rhino reintroductions from the KWS Rhino Executive Committee (if appropriate) | SRS, RPC | | | | | | | | | | | | | |
| 1.1.4.2 Translocate new rhinos to the sanctuary | SRS, RPC | | | | | | | | | | | | | |
| **1.1.5 Implement measures to increase available rhino habitat as appropriate** | | | | | | | | | | | | | | |
| 1.1.5.1 Carry out a security assessment of the MCA | SRS, RPC, SO | | | | | | | | | | | | | |
| 1.1.5.2 Review management options for minimising internal population pressures (in conjunction with Rhino Executive Committee) | SRS, RPC, SO | | | | | | | | | | | | | |
| 1.1.5.2 Carry out a feasibility study of expanding the rhino sanctuary/release individuals/remove sanctuary fence (as appropriate) | SRS, EIAC, RPC | | | | | | | | | | | | | |
| 1.1.5.3 Fence in additional area as per recommendations of the feasibility study (if appropriate) | SRS, EIAC, RPC, Eng. Works | | | | | | | | | | | | | |
| **1.1.6 Carry out routine monitoring of rhino population dynamics and habitat suitability in the rhino sanctuary** | | | | | | | | | | | | | | |
| 1.1.6.1 Carry out daily surveillance of rhinos recording age, sex, body condition, location and vegetation structure data | SRS, RO | | | | | | | | | | | | | |
| 1.1.6.2 Maintain the MCA rhino surveillance database | SRS, RO | | | | | | | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Sub-Objective 1.2 A viable population of Grevy's zebra established and maintained** | | | | | | | | | | | | | | |
| **1.2.1 Investigate feasibility of relocating Grevy's zebra to a fenced sanctuary within MCA** | | | | | | | | | | | | | | Feasibility study carried out by June 2008 |
| 1.2.1.1 Collaborate with the Grevy's Zebra task force in carrying out a feasibility study on establishing a viable Grevy's Zebra population | SRS, SRS-OS | | ■ | ■ | ■ | | | | | | | | | |
| 1.2.1.2 In line with recommendations, either identify most suitable part of the rhino sanctuary and establish lion proof area for Grevy's zebra (link with EIA under 1.1.2.4) or translocate Grevy's zebra out of MCA | SRS, SRS-OS | | | | | ■ | ■ | | | | | | | |
| 1.2.1.3 Relocate the Grevy's zebra into an expanded lion proof rhino sanctuary | SRS, SRS-OS | | | | | | | ■ | ■ | | | | | |
| **1.2.2 Reintroduce additional Grevy's zebra to the MCA to establish a viable founder population** | | | | | | | | | | | | | | |
| 1.2.2.1 Liaise with Grevy's Zebra task force about translocation of additional individuals to the MCA | SRS, SRS-OS | | | | | | | | | | | | | |
| 1.2.2.2 Translocate additional Grevy's Zebra into the expanded rhino sanctuary | SRS, SRS-OS | | | | | | | | | | | | | |
| **1.2.3 Carry out ongoing monitoring of Grevy's zebra population** | | | | | | | | | | | | | | |
| 1.2.3.1 Conduct regular ground surveys and monitoring of Grevy's Zebra in line with Ecological Monitoring Plan stipulations | SRS, SRS-OS | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **Sub-Objective 1.3 Elephant migration and dispersal movements understood and protected** | | | | | | | | | | | | | | |
| **1.3.1 Carry out ongoing monitoring of MCA elephant population dynamics** | | | | | | | | | | | | | | |
| 1.3.1.1 Carry out aerial elephant population count and distribution surveys | SRS, EPC | | | | | | | | ■ | | | | | |
| **1.3.2 Carry out research to assess the importance of dispersal areas and wildlife corridors outside the MCA** | | | | | | | | | | | | | | Migration and dispersal areas identified and mapped by March 2010 |
| 1.3.2.1 Carry out a geo-referenced elephant movement study to determine movement patterns beyond the MCA's boundary | SRS, EPC | | | | | | | ■ | ■ | | | | | |

| Management Action and Activities | Persons Responsible | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 1.3.2.2 Identify and map critical elephant dispersal areas and migration corridors | | | | | | | | ▓ | | | | | | |
| **1.3.3 Collaborate with NEMA, Nyambene and Isiolo County Councils to establish wildlife corridors and protect dispersal areas as appropriate.** | | | | | | | | | | | | | | |
| 1.3.3.1 Organise consultative meetings to discuss establishment of elephant corridors and develop action plan (link with Action 3.1 CP&E Programme) | SRS, CW, WK, WE, SW-ICC | | | | | ▓ | ▓ | ▓ | ▓ | | | | | |
| **1.3.4 Implement ranger-based monitoring of elephant mortalities in conjunction with CITES-MIKE Programme** | | | | | | | | | | | | | | |
| 1.3.4.1 Collaborate with the Security Department in the implementation of the MIKE programme | SRS, SO | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | |
| **Objective 2: Important MCA habitats managed and improved** | | | | | | | | | | | | | | |
| **2:1 Develop and implement MCA Fire Management Plan** | | | | | | | | | | | | | | A fire management plan prepared by December 2009 |
| 2.1.1 Carry out literature review on use of fire as a management tool including review of MCA documents and national guidelines relating to fire management | SRS | ▓ | ▓ | | | | | | | | | | | |
| 2.1.2 Develop a prescribed burning fire management plan | SRS | | | | | ▓ | | | | | | | | |
| 2.1.3 Implement the fire management plan | SRS | | | | | | | | | ▓ | ▓ | ▓ | ▓ | |
| 2.1.4 Improve fire breaks along MCA western boundary | SRS | | | ▓ | ▓ | ▓ | | | | | | | | |
| **2.2 Carry out MCA land cover change study** | | | | | | | | | | | | | | Study completed and report produced and disseminated by July 2010 |
| 2.2.1 Develop terms of reference for the land cover study | SRS | | | | | | ▓ | | | | | | | |
| 2.2.2 Procure technical assistance to carry out the study | SRS | | | | | | | | ▓ | | | | | |
| 2.2.3 Coordinate the implementation of the study | SRS | | | | | | | | | ▓ | ▓ | ▓ | ▓ | |
| **2:3 Design and implement a pilot scheme to reduce bush encroachment, and roll out as appropriate** | | | | | | | | | | | | | | |
| 2:3.1 Identify areas of former grassland for experimental plots (ideally in BNR section of HUZ) | SRS, SW-ICC | | | | | ▓ | | | | | | | | |
| 2.3.2 Clear plots and monitor regeneration | SRS | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 2.3.3 Roll out scheme to based on lessons learnt to other areas if appropriate | SRS | | | | | | | | | | | | | |
| **2:4 Carry out a study to establish impacts of livestock incursions on vegetation structure and composition** | | | | | | | | | | | | | | Study completed and report produced and disseminated by July 2010 |
| 2:4.1 Develop terms of reference for the study on impacts of livestock incursions in the MCA | SRS, WK, CW | | | | | | | | | ▓ | | | | |
| 2:4.2 Identify technical expertise required to implement the study | | | | | | | | | | | ▓ | | | |
| 2:4.3 Coordinate the implementation of the study | | | | | | | | | | | | | ▓ | |
| **Objective 3: Forests and river systems in the greater MCA landscape protected, in collaboration with other stakeholders** | | | | | | | | | | | | | | |
| **Sub-Objective 3.1: Collaboration and support for the conservation of Ngaya Forest Reserve strengthened** | | | | | | | | | | | | | | |
| **3.1.1 Incorporate Ngaya Forest in existing KWS-KFS collaborative management arrangements** | | | | | | | | | | | | | | Discussions on management of Ngaya forest initiated by September 2007 |
| 3.1.1.1 Make a formal request to Kenya Forest Service and KWS management to include Ngaya forest in the existing MOU between the two organizations | SRS, SW-MCA, FCOORD | ▓ | | | | | | | | | | | | |
| **3.1.2 Establish baseline information and carry out ongoing ecological monitoring of Ngaya Forest in collaboration with Forest Department staff** | | | | | | | | | | | | | | |
| 3.1.2.1 Develop terms of reference for carrying out a biological inventory at Ngaya forest | SRS, FCOORD, FO | | | | | ▓ | | | | | | | | |
| 3.1.2.2 Identify technical expertise required to carry out the biological inventory | " | | | | | | ▓ | | | | | | | |
| 3.1.2.3 Coordinate the implementation of the study | " | | | | | | | ▓ | ▓ | | | | | |
| 3.1.2.4 Carry out on-going ecological monitoring in line with MCA Ecological Monitoring plan | | | | | | | | | | ▓ | ▓ | ▓ | | |
| **3.1.3 Carry out joint patrols with KFS staff** | | | | | | | | | | | | | | Regular KWS-KFS patrols carried out in Ngaya Forest by July |
| 3.1.3.1 Collaborate with KFS to design a joint patrol programme for Ngaya Forest | SW-MCA, FCOORD, FO, SO | | ▓ | ▓ | | | | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 3.1.3.2 Implement a joint patrol programme for Ngaya Forest | FO, SO | | | | | █ | █ | █ | █ | █ | █ | █ | █ | 2009 |
| **3.1.4 Support the establishment of forest user association(s)** (Link to Action 3.4 CP&E Programme) | | | | | | | | | | | | | | |
| 3.1.4.1 Facilitate meetings on establishment and strengthening of a Forest Users Association for Ngaya Forest | CW, FO | | | | | █ | █ | █ | █ | █ | █ | █ | █ | |
| 3.1.4.2 Collaborate with KFS to develop a detailed management plan for Ngaya Forest | CW, SRS, SW-MCA, FO | | | | | | | | | █ | █ | █ | █ | |
| **Sub-Objective 3.2: Quantity and quality of water supplied to the MCA maintained in collaboration with responsible agencies** | | | | | | | | | | | | | | |
| **3.2.1 Develop and implement MoUs with Tana Water Services Board and Meru North Water Resource Management Authority** | | | | | | | | | | | | | | MOU negotiations initiated by December 2007 |
| 3.2.1.1 Organise MOU meetings | SW-MCA,CW, SRS,MNWRMA, TWSB | | █ | █ | | | | | | | | | | |
| 3.2.1.2 Develop MOUs as agreed in the MOU meetings | " | | | | | █ | █ | █ | █ | | | | | |
| 3.2.1.3 Collaborate with Tana Water Services Board and Meru North Water Resource Management Authority in the implementation of the MOUs | " | | | | | | | | | █ | █ | █ | | |
| **3.2.2 Establish and maintain water monitoring stations on rivers leading to the MCA** | | | | | | | | | | | | | | At least 5 river flow gauges established on rivers flowing into the MCA by July 2008 |
| 3.2.2.1 Collaborate with Meru North Water Resources Management Authority in installing river flow gauges along the main rivers flowing through the MCA | SRS, MNWRMA | █ | █ | █ | | | | | | | | | | |
| 3.2.2.2 Collaborate with Meru North Water Resources Management Authority in monitoring water pollution in the main rivers by assisting in collection and analysis of water samples | SRS, MNWRMA | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |

| Management Action and Activities | Persons Responsible | Timeframe FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **3.2.3 Support and engage with community Water Management Associations in promoting sustainable water extraction along** rivers feeding the MCA (Link to Action 3.3 CP&E Programme) | | | | | | | | | | | | | | |
| 3.2.3.1 Collaborate with Meru North Water Resources Management Authority in supporting communities to establish WRUAS for the major rivers flowing through the MCA | CW, SRS, MNWRMA | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **3.2.4 Support the preparation of integrated water management plans for rivers feeding into the MCA** (Link to Action 3.2 CP&E Programme) | | | | | | | | | | | | | | |
| 3.2.4.1 Collaborate with Meru North Water Resources Management Authority and local communities to develop integrated watershed management plans for the major rivers in the MCA | CW, SRS, MNWRMA | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **3.2.5 Provide support to WRMA and TWSB in carrying out awareness raising activities concerning sustainable water use and appropriate practices** | | | | | | | | | | | | | | |
| 3.2.5.1 Provide logistical and technical support to MNMRMA and TWSB to carry out awareness raising activities as per the MOUs signed under Action 3.2.1 | SW-MCA, CW | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **3.2.6 Develop alternative water sources for wildlife inside the MCA** | | | | | | | | | | | | | | Recommendations on suitability and, if appropriate, locations of potential sites for artificial water sources produced by December 2009 |
| 3.2.6.1 Develop terms of reference for carrying out a study on establishment of artificial water supply in the MCA | SRS | | | | | ■ | ■ | | | | | | | |
| 3.2.6.2 Identify technical expertise required to carry out the MCA artificial water supply study | SRS | | | | | | | ■ | ■ | | | | | |
| 3.2.6.3 Coordinate the implementation of the study | SRS | | | | | | | | | ■ | ■ | | | |
| 3.2.6.4 Carry out an EIA of recommended sites for artificial water supplies in the MCA | SRS, EIAC | | | | | | | | | | | ■ | ■ | |
| 3.2.6.5 Construct artificial water supply in the MCA as per the EIA findings | SRS, SW-MCA | | | | | | | | | | | | | |

**ABBREVIATIONS**

CW - Community Warden

EIAC- Environmental Impact Assessment Coordinator

EPC - Elephant Programme coordinator

FPC - Forest Programme Coordinator

FO- Forest Officer

MNWRMA - Meru North Water Resource Management Authority

RO - Rhino Officer

RPC - Rhion Programme Coordinator

SO - Security Officer

SRS - Senior Research Scientist

SRS-OS - Senior Research Scientist Other Species

SW-ICC - Senior Warden Isiolo County Council

SW-MCA - Senior Warden Meru Conservation Area

TWSB – Tana water Services Board

WE - Warden Education

WK - Warden Kora

WS - Works Superintendent

## MCA Ecological Monitoring Plan

In addition to the programme's management objectives and actions, the other key component of the Ecological Management Programme is the MCA Ecological Monitoring Plan. An additional benefit of the TNC CAP methodology (described above) is that the threats and the KEAs identified through the process also provide a comprehensive framework for monitoring the overall status of the conservation targets, and therefore a surrogate measure of the health of the entire MCA ecosystem. The use of the threats and KEAs also ensures that there is a direct link between the components of the ecosystem that are being monitored and this programme's management objectives and actions. As such, 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 MCA Ecological Monitoring Plan is set out in Table 14 overpage. As shown in this table, the plan framework is set out by conservation target. Wherever possible, KEAs and threats that are the reciprocal of each other (e.g. KEA: genetic diversity, Threat: inbreeding) have been grouped together for monitoring purposes. The indicators of change provide easily measurable attributes for assessing the status and trends of the KEAs or threats to each conservation target. The indicators selected also provide an early warning of any serious threats that may develop during the lifespan of this plan, which may potentially require the development of new management actions. The framework also outlines the data collection methodology, which sets out how, when, where and who will collect the data for the indicators. This framework provides the outline for the development of a comprehensive **MCA Ecological Monitoring Plan**, which will be elaborated and developed by the MCA Research Section early in the lifespan of this management plan. The MCA Research Section will be responsible for ensuring that monitoring activities are included in annual workplans, and will work together with KWS HQ to ensure appropriate budgets are approved to cover the activities stipulated.

*Table 14. Framework for the development of the MCA Ecological Monitoring Plan*

| KEA/Threat | Indicator of change | Method of measurement | Collection frequency | Data source | Responsibility | Data currently collected? | Relevant Action(s) |
|---|---|---|---|---|---|---|---|
| **Conservation Target 1: Rhino** | | | | | | | |
| **KEA**: Available habitat and quality **Threat**: Insufficient habitat | Quantity and quality of preferred forage species; Population size verses carrying capacity | Transects to establish forage quantity and lab forage quality analysis; See following KEA | Bi-annual | Monitoring reports | MCA – RS/ collaborative institutions | No data is available | Action 1.1.1 Action 1.1.2 Action 1.1.4 |
| **KEA**: Population size, recruitment and structure | Number of individuals (age & sex) | Individual IDs | Daily | ID reports | MCA - RS | Baseline data is available | Action 1.1.1 |
| **KEA**: Genetic diversity and variability **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 | MCA – RS/consultant/collaborative institutions | Samples for analysis available | Action 1.1.1 |
| **Threat**: Disease (trypanosomiasis) | Incidence of trypanosomiasis pathogens in rhino blood | Blood samples; Surveys of tsetse flies | Annual | Veterinary department disease surveillance reports | KWS vet department/ collaborative institutions | Baseline reports available | Action 1.1.5 Action 1.1.6 |
| **Conservation Target 2: Grevy's Zebra** | | | | | | | |
| **KEA**: Available habitat and quality | Extent of suitable grasslands; quantity and quality 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 | MCA – RS/ consultant | No data is available | Action 2.2 |
| **KEA**: Population size, recruitment and structure | No. of individuals (age and sex); body condition | Individual IDs; ground counts | Quarterly | ID reports; ground count reports | MCA - RS | No baseline data is available | Action 1.2.1 Action 1.2.2 |
| **KEA**: Genetic diversity and variability **Threat**: Inbreeding/ small founder | 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 | MCA –RS/ consultant | No data is available | Action 1.2.1 |

| KEA/Threat | Indicator of change | Method of measurement | Collection frequency | Data source | Responsibility | Data currently collected? | Relevant Action(s) |
|---|---|---|---|---|---|---|---|
| population | | | | | | | |
| **Threat**: Extraordinary predation | No. of individual lost due to predation | Daily surveillance; Ground counts | Daily | Daily surveillance and ground count reports | MCA – RS/security | Baseline data available | Action 1.2.1 Action 1.2.2 |
| *Conservation Target 3: Elephant* | | | | | | | |
| **KEA**: Migration routes/ dispersal areas **Threat**: Settlement in key areas | Length and width of migratory routes; size of dispersal area | Collaring; mapping of available habitat through satellite images | 3 years | Elephant movement patterns reports; land cover changes report | MCA – RS/ consultant | No data is available | Action 1.3.2 Action 1.3.3 Action 2.2 |
| **KEA**: Optimal population size, recruitment and structure | Elephant population performance; Habitat availability | Individual identification method; aerial surveys | Every 3 years | Elephant ID and aerial survey reports | MCA – RS | Baseline data is available | Action 1.3.1 |
| **KEA**: Genetic diversity and variability **Threat**: Inbreeding | Number of individuals with similar genes; Quantitative characteristics of the population (phenotype) | Genetic mapping; Population performance | Every 3 years | Genetic mapping reports | MCA – RS/KWS Veterinary department/ consultant | No data is available | Action 1.3.1 |
| **Threat**: Poaching | Number of poached elephants | Aerial surveys; aerial surveillances; mapping of carcasses through ground surveillance by security rangers (in conjunction with MIKE) | Every 3 years; daily | Aerial survey reports; daily surveillance; MIKE monitoring reports | MCA – RS/ Security | Baseline data available | Action 1.3.4 PA Operations Action 2.2.1 |
| *Conservation Target 4: Acacia-Combretum grassland* | | | | | | | |
| **KEA**: Population of key grazing 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 | MCA-RS/DRSRS | Baseline data available for all species | |
| **Threat**: Bushmeat poaching | Number of arrests made and snares removed | Analysis of occurrence book; removal | Monthly | Reports on arrests and snares | MCA – RS/security | Baseline data available | PA Operations Action 2.2.1 |

| KEA/Threat | Indicator of change | Method of measurement | Collection frequency | Data source | Responsibility | Data currently collected? | Relevant Action(s) |
|---|---|---|---|---|---|---|---|
| **KEA**: Extent of grassland **Threat**: Bush encroachment | Area under grassland | Analysis of satellite images and aerial photos | Every 5 years | Land cover changes report | MCA – RS/ consultant | Data available for MNP & KNP | Action 2.2 Acton 2.3 |
| **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 | MCA - RS | Data available for MNP & KNP | Action 2.4 |
| **Threat**: Invasive species | Invasive species distribution and area covered | Sampling transects to assess invasive species composition & structure | After every 3 years | Monitoring reports | MCA – RS/ consultant | Baseline data available at KU | Action 2.4 |
| **Threat**: Fire | Number of fire outbreaks; Area burnt | Analysis of MODIS satellite reports; Mapping burnt areas using GPS points | Twice a year, end of dry season | Pre- and post-burning reports | MCA – RS | No data is available | Action 2.1 |
| **Threat**: Livestock incursion | Number of livestock in PA | Aerial surveys; daily surveillance | After every 3 years; Daily | Livestock distribution reports | MCA – RS/security | Baseline data is available | Action 2.4 PA Operations Action 2.2.1 |
| **Conservation Target 5: Acacia-Commiphora bushland** | | | | | | | |
| **KEA**: Population of key browsing species | Number of individuals of different sex and age classes 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 | Number of arrests made and snares removed | Analysis of occurrence book; removal | Monthly | Reports on arrests and snares | MCA – RS/security | Baseline data available | PA Operations Action 2.2.1 |
| **KEA**: Extent of bushland | Area under bushland | Analysis of satellite images | Every 5 years | Land cover changes report | MCA – RS/Consultant | No data is available | Action 2.2 |
| **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 | MCA - RS | Data available for MNP & KNP | Action 2.4 |
| **Threat**: Fire | Number of fire outbreaks; area burnt | Analysis of MODIS satellite reports; Mapping burnt areas using GPS points | Twice a year, end of dry season | Pre-burning, burning and post-burning reports | MCA – RS/security/ consultant | No baseline data is available | Action 2.1 |
| **Threat**: Livestock incursion | Number of livestock in PA | Aerial surveys; daily surveillance | After every 3 years; Daily | Livestock distribution | MCA – RS/security | Baseline data is available | PA Operations Action 2.2.1 |

## ECOLOGICAL MANAGEMENT PROGRAMME

| KEA/Threat | Indicator of change | Method of measurement | Collection frequency | Data source | Responsibility | Data currently collected? | Relevant Action(s) |
|---|---|---|---|---|---|---|---|
| | | | | reports | | | |
| **Conservation Target 6: 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 | MCA - RS | Data available for MNP & KNP | Action 2.4 |
| **Threat**: Fire | Number of fire outbreaks; area burnt | Analysis of MODIS satellite reports; Mapping burnt areas using GPS points | Twice a year, end of dry season | Pre-burning, burning and post-burning reports | MCA – RS/security | No baseline data is available | Action 2.1 |
| **Conservation Target 7: Ngaya Forest** | | | | | | | |
| **KEA**: Forest size **Threat**: Habitat conversion (charcoal burning & logging, encroachment) | Area under forest; extent of destructive practices | Analysis of satellite images and aerial photos; ground observations by Kenya Forest Service | Every 5 years; daily | Land cover changes report; Kenya Forest Service reports | MCA – RS/ consultant/ Kenya Forest Service | No data is available | Action 2.2 PA Operations Programme Action 2.2.1 |
| **KEA**: Floral composition | Number of species | Sampling transects to assess floristic composition | Seasonal (wet and dry) after every 3 years | Reports on floristic composition | MCA – RS/Kenya Forest Service | Baseline data is available (National Museums of Kenya) | Action 3.1.2 |
| **KEA**: Floral structure | Vegetation cover | Sampling transects to assess floral structure | Seasonal (wet and dry) after every 3 years | Reports on floral structure | MCA – RS/Kenya Forest Service | Baseline data is available National Museums of Kenya) | Action 3.1.2 |
| **Conservation Target 8: River Systems** | | | | | | | |
| **KEA**: Catchments forest size **Threat**: Habitat conversion | Area under forest catchments | Analysis of satellite images and aerial photos | Every 5 years | Land cover changes report | MCA Research station//Consultant /KFS | No data is available | Action 2.2 |
| **KEA**: River regime (flow and pattern) **Threat**: Water abstraction | Level of water in key rivers | Installing and taking reading from water flow meters | Daily | Water flow monitoring reports | MCA - RS/Water resources department | Data available from 2001 | Action 3.2.2 |

| KEA/Threat | Indicator of change | Method of measurement | Collection frequency | Data source | Responsibil-ity | Data currently collected? | Relevant Action(s) |
|---|---|---|---|---|---|---|---|
| **KEA**: Water quality **Threat**: Chemical pollution | Amounts of dissolved chemi-cals in water | Direct measurements and laboratory analysis of chemi-cals in water samples | Seasonal (wet and dry) | Water quality analysis reports | MCA -RS | No data is available | Action 3.2.2 |
| **KEA**: Riparian habitat **Threat**: Habitat conversion | Area under riparian habitats | Analysis of satellite images | Every 5 years | Land cover changes report | MCA - RS/Consultant | No data is available | Action 2.2 |
| **Threat**: Drainage of swamps | Area under swamps | Analysis of satellite images | Every 5 years | Land cover changes report | MCA – RS/Consultant | No data is available | Action 2.2 |

# Tourism Development & Management Programme

# Programme Purpose and Strategy

> The Meru Conservation Area is a major tourism destination in Kenya, offering a distinctive and diverse visitor experience that capitalises on the area's special wilderness values and history

The MCA today has low visitor numbers, limited tourism infrastructure and facilities, relatively low densities of wildlife and, because of thick vegetation cover, much of the area is unsuitable for traditional game viewing. On the other hand, the area undoubtedly has significant tourism potential, as demonstrated during the late 1970s and early 1980s when it was one of the most popular destinations in Kenya. Furthermore, the wilderness attractions that once made the MCA popular are set to be even more highly prized as other wildlife destinations become increasingly overcrowded, and more and more discerning visitors and investors seek out areas that offer a more exclusive and out-of-the-ordinary visitor experience.

In recent years, the MCA has benefited significantly from donor projects that have enabled KWS to restore visitor and wildlife security, rehabilitate visitor and management infrastructure, and restock the area's depleted wildlife populations. These improvements set the stage for a resurgence of tourism over the next ten years, provided that a conducive environment for tourism investment and visitor satisfaction can be maintained and enhanced. This programme sets out a series of management objectives and actions that the MCA management will implement over the next 10 years aimed at realising the area's full tourism potential. It is based on a proactive and innovative tourism development and management strategy designed to overcome the obstacles that are presently holding back tourism development, by leveraging the area's many unique and presently underutilised attractions.

The following paragraphs set out the **strategic principles** that will guide MCA Management in the implementation of the Tourism Development and Management Programme and the achievement of this Programme Purpose.

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

## Tourism is developed as a major positive force in support of the MCA's conservation and management

Although donor-funded projects have enabled KWS to revamp the MCA's management over the past decade, such projects offer only a relatively short-term solution to meeting the significant costs that KWS incurs in managing the area and combating the major threats of poaching, insecurity, and livestock incursions. As with other protected areas in Kenya, tourism is the main potential source of sustainable long-term financing for the area's management and conservation. Furthermore, experience elsewhere has shown that tourism use can positively reinforce park management activities, by establishing a continual presence in areas which law enforcement patrols can only occasionally reach, and by demonstrating that the protected area is being actively used. A significant and active tourism industry also raises the profile of the protected area concerned, and thereby encourages political and financial support from government and donors. For these reasons, the promotion of tourism develop-

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ment such that it strongly supports the MCA's conservation and management is a key aspect of the tourism strategy set out in this programme.

At present the vast majority of visitors to the MCA do not explore beyond the High Use Zone, in which all permanent visitor accommodation is currently located. As such, and in order to ensure that tourism is supporting conservation throughout the MCA, it will be a high priority to facilitate and promote tourism investment and visitor use in currently underutilised parts of the MCA, especially in the two national reserves. This will not only capitalise on the MCA's full tourism revenue generation potential and make a clear statement that the entire MCA is being actively utilised for recreation, but will also establish the MCA as an important revenue source for the county councils. Combined with the accompanying expansion of law enforcement efforts (see Security Programme), this will contribute to the reduction of illegal activities in key areas of the MCA, and enhance political support for the area's conservation and management by the county councils and local communities. Finally, a strategy designed to expand tourism investment and visitor use in the MCA will also enhance KWS' contribution towards the national policy goal that tourism should become a major vehicle for job creation, poverty reduction and wealth creation for Kenyans (draft National Tourism Policy, 2004).

## Tourism is developed appropriately

While tourism has the potential to be a strong and sustainable source of support for PA management and conservation, experience in areas such as the Masai Mara National Reserve has shown that uncontrolled and ill-conceived tourism development has the potential of "killing the goose that lays the golden egg". Most visitors to the MCA are presently attracted by the area's wilderness characteristics, pristine environmental quality and opportunities for solitude, all of which are becoming increasingly difficult to find elsewhere in Kenya's protected area network. This "exclusivity" is the comparative advantage that the MCA offers, and the area is unlikely to be able to compete directly with more accessible PAs that have high densities of easily visible wildlife. The challenge therefore is to develop the capacity of tourism to support the long-term conservation of the area and contribute to national economic development, while continuing to ensure a top-quality visitor experience based on the wilderness values and opportunities for solitude that sets the MCA apart from its competitors. This balance is best achieved by fostering a high quality, low impact tourism product which is maintained and carefully managed through the management actions, prescriptions and Limits of Acceptable Use set out in this programme. In addition, in order to ensure that increased investment and use of the MCA is in keeping with the area's exceptional environmental and wilderness qualities, it will be important to ensure that any proposed new developments, by either investors or KWS, are subjected to thorough environmental impact assessment before work commences, according to the Environmental Management and Coordination Act (1999) regulations, and subject to certification by the National Environment Management Authority (NEMA).

## The MCA offers attractive investment opportunities

The MCA's tourism product is presently in an embryonic stage of development, and it will be necessary for KWS and its county council partners to adopt an affirmative and innovative approach in order to kick-start investment, and thereby develop the MCA tourism product to the stage that it achieves necessary reputation and economies of scale. This will involve two complementary strategies: developing distinctive visitor activities, and providing investors with innovative tourism investment opportunities.

Tourist activities in the MCA are currently focused on game viewing in the north-west section of Meru National Park. However, a wide range of recreational activities are permitted in KWS national parks, and the MCA, containing two national parks and two national reserves (where

policy restrictions are more flexible), is fortunate to have both the geographic area and an enabling regulatory environment to support the development of a diversity of distinctive visitor activities. As such, the programme's tourism strategy aims to enable and support the development of a wide variety of distinctive visitor activities in the MCA, including water rafting, walking safaris and camel safaris, especially in the presently little-used Wilderness Activity Zone to the south of the Tana River. Visitor activities that build on the Adamson and Elsa history will also be an important aspect of developing a unique MCA tourism product.

Through such developments, the MCA has the potential to provide a diverse visitor experience and accommodation options, ranging from traditional lodge-based game viewing in the High Use Zone to walking safaris and fly camping in the Wilderness Activity Zone, all in a single destination. Tourism investments that capitalise on the full potential of the area's natural resources by providing visitors with a variety of accommodation options and different tourism experiences across the MCA offer the best opportunity to both develop tourism in presently under-utilised parts of the MCA, as well as to provide attractive and innovative investment opportunities to potential developers. For this reason, a major feature of the tourism development strategy set out in this management plan is the development and promotion of multiple site/activity tourism investment packages.

## Visitor security remains paramount

This programme sets out an ambitious roadmap for increasing tourism investment and the variety of visitor activities on offer in the MCA. However, mainly due to its geographic location and a past history of serious incidents in the area, visitor security remains a high priority in the MCA, perhaps more so than for any other major protected area in Kenya. Measures to ensure visitor safety and security in the MCA are, therefore, paramount, and are likely to remain so for the 10-year duration of this plan. The proposed expansion of tourism investment and visitor use, particularly into currently underused areas (such as Kora NP) will be contingent on the security situation in the area, and must occur concomitantly with increased security measures (see Security Programme for details of how this will be achieved). Security concerns will continue to have precedence over the expansion of tourism in the area, since even a single security incident could seriously undermine investor and visitor confidence in the MCA, and as a result the long-term economic sustainability and conservation of the area.

## Investment in national reserves is encouraged

The continuing support of local communities and their representative county councils is vital for the long-term maintenance and conservation-friendly management of both the two national reserves that make up an important part of the MCA, as well as neighbouring community areas that form critical wet season dispersal areas for MCA wildlife. To maintain and enhance this support, it is imperative that the two county councils are adequately benefiting from the existence of their national reserves, and that communities neighbouring the MCA are provided with opportunities to participate in ecotourism activities. A key strategy of this tourism programme will therefore be to promote and support tourism investment and development in the national reserves, where appropriate and in line with the MCA Zonation Scheme, complemented by actions under the Community Partnership & Education Programme designed to promote direct community involvement in ecotourism and other community tourism-related benefits.

These strategic principles are intended to guide the implementation of the Programme's four management objectives that, when taken together, achieve the Programme Purpose. These four objectives are:

**MO 1.   The MCA tourism product expanded and diversified**
**MO 2.   MCA tourism investment opportunities developed**
**MO 3.   The MCA's unique wilderness identity established and visitor experience en-
          hanced**
**MO 4.   MCA tourism management improved**

The following sections describe these management objectives and the management actions needed to achieve them. 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. The final section of the programme contains the **3-Year Activity Plan** for the Tourism Development and Management Programme, and details the activities, responsibilities, timeframe and input requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan.

# Management Objectives

Figure 12 below shows the overall objectives tree for the MCA Tourism Development and Management Programme.

**Figure 12. Tourism Development and Management Programme objectives tree**



**MCA TOURISM DEVELOPMENT &
MANAGEMENT PROGRAMME PURPOSE**

The MCA is a major tourism destination in Kenya, offering a distinctive and diverse visitor experience that capitalises on the area's special wilderness values and history

**OBJECTIVES**

MO 1. The MCA tourism product expanded and diversified

MO 2.  MCA tourism investment opportunities developed

MO 3. The MCA's unique wilderness identity established & visitor experience enhanced

MO 4.  MCA tourism management improved

# Objective 1: The MCA tourism product expanded and diversified

The MCA's tourism product presently revolves around wildlife viewing in the north-west section of Meru National Park and the adjacent part of Bisanadi National Reserve. Outside this core wildlife area, the MCA does not presently have sufficient densities of wildlife to support traditional game viewing, but it does have major areas of pristine wilderness and alternative management regimes (national parks and national reserves) that together provide an ideal natural and regulatory setting for the development of wilderness activity-based visitor activities not available in most other KWS managed PAs. The promotion of innovative

visitor activities in the presently under-utilised parts of the MCA will strengthen the MCA's reputation as a major and distinctive tourism destination, establish the MCA as an important revenue source for the county councils, and help deter illegal uses, such as livestock grazing and bushmeat poaching, in these remote areas. However, as per the tourism strategy above, any expansion of visitor activities in the MCA, and in particular into currently underutilised areas such as Kora NP and the national reserves, will necessarily be contingent upon parallel measures to enhance security in these new visitor areas.

Objective 1 aims to expand and diversify the MCA's offering of visitor activities and their supportive infrastructure, in order to attract an increased number of visitors to the area and encourage tourism use of the entire MCA. Two of the key issues that need to be addressed in order to achieve this objective are the development of a conducive environment that fosters private sector interest and investment in new activities in the MCA, and the establishment of management systems necessary to support the implementation and operation of these activities. This will involve building on, and as appropriate adapting, existing national guidelines to take account of the specific issues and opportunities in the MCA, and communication and collaboration with the tourism industry to ensure that KWS is providing appropriate support for their initiatives.

The management actions under this objective that have been developed to address these issues, and to ensure that MCA visitor activities and supportive infrastructure are expanded and diversified, are elaborated in the following sections.

## Action 1.1 Facilitate and regulate existing alternative activities to traditional game-viewing

As discussed above, there is significant scope for the development of a wide variety of new and innovative visitor activities in the MCA (such as rafting, camel safaris and other activities), and this forms the main thrust of this management objective -see Actions 1.2 to 1.4 below). However, a small number of operators have already established a limited selection of other alternative visitor activities to traditional game viewing in the MCA, as part of efforts to diversify the experiences they can offer to their clients. These existing and on-going visitor activities in the MCA are:

▶ **Night game drives**
▶ **Short walks**, and
▶ **Catch and release fishing**

However, due in part to ambiguous regulations and a lack of clear guidelines, these activities are only occurring on an extremely limited scale in the MCA, and their full potential in the area is not presently being realised. As these existing activities will require minimal new supporting infrastructure and management systems, their development will provide a "quick win" towards the expansion and diversification of the MCA tourism product, and will complement and support more ambitious efforts to diversify the visitor activities on offer in the MCA as set out below. In addition, as tourism increases during the lifespan of this plan, the formalisation and regulation of these existing activities will become increasingly important in order to maintain a well-regulated and high quality tourism product.

To facilitate the regulation and promotion of these three existing alternative activities, this management action focuses on the review and adaptation of the relevant national KWS guidelines, in order to create a set of specific guidelines appropriate for the MCA context. Where necessary, in addition to the general prescriptions detailed in the MCA Zonation Scheme, detailed Limits of Acceptable Use will also be developed (e.g. number of rods allowed per concession in the case of fishing, or group size for short walks) and incorporated

into the MCA-specific guidelines. Once these guidelines have been developed, and reviewed by MCA investors, routes and areas where each activity can take place will be mutually agreed. All activities, and in particular potentially high risk activities such as night game drives, will need to be reviewed and approved by the MCA Security Section, Senior Warden MCA, and Assistant Director ECA before they can proceed. MCA management may also revoke permission for any activities at any time if the security risk is deemed too high.

Feedback from MCA investors on guideline adaptations or additional support needed from MCA management to facilitate the further development of these activities will be discussed at regular meetings between MCA managers and tourism industry partners (see Action 4.2 below). For all such activities (and other adventure activities detailed under this objective), it will be important for the operator to sign an indemnity agreement with KWS (in line with the KWS walking safari guidelines).

### Action 1.2 Support the development of walking safaris in the Low and Wilderness Activity Zones

Overnight walking safaris have proved a success in many protected areas in eastern and southern Africa, and there is a well-established market for walking safaris in Kenya, the majority of which currently occur outside of KWS-managed PAs. Although large parts of the MCA have marginal value for traditional game viewing, the MCA's large and currently under-used wilderness areas provide excellent opportunities for the development of walking safaris. Under this management action, the MCA Management will support the development of walking safaris in line with the general restrictions set out in the MCA Zonation Scheme. This will initially entail the review and adaptation of the draft national KWS walking safari guidelines to the specific MCA context. These specific guidelines will include LAU on group size and frequency of route use, and a clear designation of roles and responsibility between KWS and tour operators (especially regarding visitor safety and security). Specific walking routes will then be defined in collaboration with representatives from KATO (for example, it has been proposed that dry river beds in the Low Use Zone would be appropriate walking routes), and, if necessary, special campsites designated at appropriate locations along the routes (in line with the zone's LAU if applicable). A simple reservation system will also be developed for designated walking safari routes and for any KWS support personal required. If walking safaris are developed in conjunction with an exclusive use area in the Wilderness Activity Zone (see Action 2.3 below), routes and camping sites will not need to be designated, although the stipulations on visitor safety and security and any LAU specified in the exclusive use agreement will still be adhered to.

### Action 1.3 Support the development of rafting/boating along the Tana River

In addition to the development of walking safaris described above, there is also potential for the development of rafting or boating in the Low and Wilderness Activity Zones of the MCA along the Tana River. This activity has been taking place in a number of PAs in southern Africa, where it has proved both environmentally benign and commercially viable. Under this management action, MCA Management will provide support for the development of rafting and/or boating along the Tana River. As per the development of walking safaris, support provided will involve the adaptation of national KWS guidelines to the MCA context, including specific use prescriptions on the size/number of groups allowed on the river. Based on the MCA-specific guidelines, proposals for rafting operations will be solicited from potential investors. This will involve the development and advertisement of an Expression of Interest by the KWS HQ tourism section, followed by screening of proposals and selection and approval of the successful investor(s) in accordance with the standard KWS concession development procedures. MCA management will liaise with the approved operators and designate any

additional special campsites or other accommodation sites needed to support rafting operations along the river. Any additional infrastructure requirements (e.g. access roads, jetties etc.) will be jointly assessed and identified by both MCA management and the approved operator. Other requirements that emerge as rafting/boating operations continue can be discussed at regular meetings between MCA management tourism investors (see Action 4.2 below).

### Action 1.4 Promote the development of adventure/backcountry activities in the Wilderness Activity Zone

Although covering around 58% of the MCA, the Wilderness Activity Zone is currently completely unused by tourists visiting the area. This is mainly due to the zone's remoteness, and a lack of large mammals and unsuitable vegetation for game viewing from vehicles. This situation is unlikely to change during the lifespan of this plan unless potential investors and visitors are provided with incentives for utilising this zone. As such, under this management action, the development of a variety of backcountry tourist activities will be promoted. Those initially identified and that have proved a success in other PAs include camel and horseback safaris, but if proposed, other environmentally appropriate activities will also be considered in this zone. The development of these activities is in line with the recent KWS position on the Wildlife Policy, which states "*under special circumstances, domestic stock may be allowed into the national park for management purposes (e.g. to diversify tourism activities through horse/camel riding)*".

As an initial step in the development of backcountry activities, guidelines and LAU on size and number of groups allowed for potential activities will be developed. These will then be reviewed, and potential schemes/opportunities designed in collaboration with appropriate KATO representatives. Once these concepts and guidelines have been established, the KWS HQ tourism section will then incorporate them into an Expression of Interest, and proposals from potential operators solicited. Operators will then be selected and approved in accordance with standard KWS concession procedures, and any additional infrastructure needed to support activity development will be identified in collaboration with the approved investors. Any additional support infrastructure requirements that emerge as activities develop will be raised at the regular meetings between MCA management tourism investors (see Action 4.2 below).

As with activities introduced under Action 1.1 above, activities introduced in the Wilderness Activity Zone will need to be reviewed and approved by the MCA Security Section, Senior Warden MCA, and Assistant Director ECA before they can proceed The expansion of activities in this zone will need to be complemented by increased management and security presence (as set out under the Security Programme), and it is anticipated that they will be gradually phased in as security conditions permit.. MCA management may also revoke permission for any activities at any time if the security risk is deemed too high.

### Action 1.5 Designate and establish new special campsites

Special campsites provide opportunities for camping in a safe and exclusive location within a PA, a concept that appeals to many high-end mobile safari operators. With tourism already at high levels in many PAs, such opportunities are becoming increasingly difficult to find in Kenya, and the demand for this type of product is likely to increase during the lifespan of this plan. Currently all of the MCA's special campsites are located within Meru National Park. There is significant potential for the development of new sites in the Low Use Zone, as well as in the Bisanadi NR section of the High Use Zone. Under this management action, a number of new special campsites will be established, wherever possible identified in collaboration

with tourism operators familiar with the area. In accordance with the LAU specified in Table 10 in the MCA Zonation Scheme, a maximum of six special campsites will be in use in the LUZ at any one time, although additional sites may be established to allow use to be rotated between sites. In addition, two new special campsites will be established in the High Use Zone within Bisanadi NR (see LAU in Table 7 in the MCA Zonation Scheme).

# Objective 2: MCA tourism investment opportunities developed

Nature-based tourism is becoming an increasingly sophisticated market, with a growing number of visitors favouring access to a diversity of complementary visitor experiences in a single destination. With traditional wildlife viewing in the core wildlife area, water-based opportunities along the Tana River, remote wilderness activities in Kora NP and Mwingi and Bisanadi NRs, and historical possibilities linked to the Elsa story (discussed under Objective 3), the MCA offers outstanding opportunities for developing just such a diversity of visitor experiences. However, despite this tourism potential, the present underutilisation of the area coupled with lingering security concerns creates significant barriers to entry that may discourage new investors. As such, a proactive approach to promoting tourism investment in the area over the lifespan of this management plan will be essential, especially concerning investment in the remoter parts of the MCA.

One way of encouraging investment in the presently underutilised parts of the MCA is to provide opportunities for tourism activities that are unavailable in other national parks, such as the wilderness activities already discussed in Objective 1 above. Other ways include:

▶ Offering financial breaks on the payment of concession fees for the early years of a new tourism investment

▶ Encouraging linked investments comprising developments in the more commercially-attractive High Use Zone with another development(s) outside the main visitor hub. For example, this might involve the development of three complementary sites in each of the MCA's three zones, High Use, Low Use and Wilderness Activity, with each site offering contrasting visitor accommodation and experiences. This approach will enable investors to take optimal advantage of the MCA's unique diversity of wilderness-based visitor experiences as detailed above.

Objective 2 focuses on the development of such attractive and innovative investment opportunities in the MCA, in particular in the more remote and currently underutilised parts of Kora National Park and the two national reserves. To ensure that these investment opportunities are realistic and have investor confidence, it will be important to collaborate closely with the tourism industry in designing concession packages, and to award and develop concessions in an open and transparent manner in accordance with the KWS Tourism Facilities Development Procedures (currently under development).

The management actions under this objective that have been developed to promote appropriate tourism investment across the MCA are elaborated below.

| **Action 2.1 Develop prospectus for concession developments in the MCA** |
| --- |

The visitor LAU and accommodation prescriptions set out in the MCA Zonation Scheme allow for the development of a significant number of new tourism accommodation facilities in both the High Use and Low Use Zones during the ten-year lifespan of this plan. However, as

discussed above, a proactive approach to promoting appropriate tourism investment is necessary, especially to encourage tourism development outside the MCA's main tourism hub in the High Use Zone. As a first step in this process, a Tourism Prospectus will be developed to raise awareness and inform potential investors of the significant investment opportunities available in the MCA. In addition to an overview of the MCA tourism development strategy, the zonation scheme, and detailed descriptions of potential sites, the prospectus will outline the MCA-specific criteria that will be used by KWS to assess the suitability of investment proposals. These criteria will promote investments that are likely to make the maximum contribution to the area's conservation and management, both by increasing use of the Low Use and Wilderness Activity Zones and by their capability to promote the MCA as a major tourism destination. The proposed criteria to be included in the prospectus are outlined in Table 15 below.

*Table 15. Criteria for assessing new tourism concession proposals*

| Criteria | Rationale |
|---|---|
| 1. Location of proposed developments | ▶ Investments in the Low and/or Wilderness Activity Zones that are in accordance with management plan prescriptions will be encouraged |
| 2. Multiple/linked development sites | ▶ Preference will be given to investors wishing to develop multiple linked sites in the MCA, especially sites in all three of the MCA's zones |
| 3. Innovative visitor activities | ▶ Investments that are based on visitor activities other than traditional game viewing, thereby promoting a diversity of tourism uses and increased visitor length of stay in the MCA, will be encouraged |
| 4. Flagship tourism developments | ▶ Proposed developments by reputable and experienced investors that are able to use their extensive marketing network and established brand to build the MCA's reputation as the wilderness destination of choice will be encouraged |

The MCA tourism prospectus will be used to raise investor awareness of the MCA's tourism development opportunities, and it will lay the foundation for later stages of the concession development process as detailed in the draft KWS Facilities Development Procedures. The next steps in the process are dealt with in Action 2.2 below.

**Action 2.2 Advertise and select most appropriate set of investment opportunities**

The distribution of the MCA tourism prospectus will be followed closely by a formal Call for Expressions of Interest (EOI) in developing tourism accommodation facilities in the MCA. The EOI will invite proposals from potentially interested investors in accordance with the information provided in the MCA tourism prospectus, and will specify the general and MCA-specific criteria that KWS will use to assess proposals. Investors will be asked to include in their proposals information on the proposed site or sites, type(s) of facility, outline of the proposed development(s), and planned visitor activities. Based on these initial proposals, a number of potentially suitable and complementary proposals will then be short-listed in accordance with the defined criteria. The proponents of the short-listed proposals will then be invited to develop and submit a more detailed elaboration of their intended developments, in accordance with the "Proposal Requirements, Content & Format" guidelines provided in the draft KWS Facilities Development Procedures (Appendix 2). The remaining steps outlined in the Facilities Development Procedures will then apply, including the requirement for successful investors to carry out a detailed EIA in accordance with Environmental Management and Coordination Act (1999) regulations, and to obtain NEMA certification before commencing

any development (in order to ensure that new developments do not compromise the exceptional environmental qualities of the MCA).

> **Action 2.3 Define and develop additional tourism concessions incorporating "exclusive use concept" as appropriate**

Due to a combination of factors including remoteness, historic insecurity, and unsuitability for traditional game viewing, the Wilderness Activity Zone is at present unused by visitors and has no tourism accommodation facilities. The area is also presently severely impacted by livestock incursions and has suffered from some peripheral encroachment for agriculture and human settlement in the recent past. Despite the proactive approach to tourism development initiated through Actions 2.1 and 2.2 above, and the promotion of backcountry activities in the Wilderness Activity Zone (see Action 1.4), it seems highly likely that large parts of this zone will remain underutilised for tourism for the foreseeable future. However, the development of tourism in this area is a high priority, in order to increase the physical presence of visitors and associated KWS personnel on the ground, clearly demonstrate use of the area, and, in particular, to increase financial returns from Mwingi National Reserve (which is mainly located in this zone) to the County Council of Mwingi.

One possible innovative mechanism for promoting potential tourism investment in the WAZ is the establishment of "Exclusive Use Areas" (EUAs). These EUAs would comprise defined parts of the WAZ that are leased to a commercial operator(s) on a seasonal or longer-term basis. In return, access will be restricted to the operator(s) leasing the area, their clients and MCA Management. KWS will remain responsible for security, maintenance of infrastructure, and ecological management in such areas, while the operator(s) granted exclusive use of the area will be required to ensure all tourism activities are in line with the MCA Zonation Scheme prescriptions and KWS policy guidelines. Tourism industry stakeholders consulted during the development of this management programme have indicated that there could well be interest in such EUAs should they be established.

As an initial step in assessing the feasibility and appropriateness of introducing EUAs in the Wilderness Activity Zone, a review of ongoing visitor activities and concessions already established in the WAZ (as a result of Actions 2.1 and 2.2 above) will be undertaken by the MCA Tourism Section after a suitable period, to identify any remaining underutilised areas that could potentially be developed on an exclusive use basis. This assessment will need to consider the current security situation in the WAZ, and the ability of KWS to provide a safe environment for EUA operators and their clients. If at this stage the security risk is deemed too high, the process will be postponed until the situation has improved.

If this assessment finds that potentially attractive and underused areas remain in the WAZ where the development of EUAs may be appropriate, KWS Corporate Support Services in consultation with other KWS HQ divisions will take the lead in developing national KWS guidelines to guide the identification, development and management of such areas, and to spell out the respective roles, responsibilities and liabilities of KWS and the operator. The development of these national guidelines will also involve a review of any similar pilot schemes that may already be operating in other Kenyan PAs, or similar schemes abroad.

Based on the national guidelines developed, appropriate KWS HQ staff and MCA management will then carry out a detailed feasibility study of the potential for introducing EUAs in the MCA WAZ (ideally in collaboration with appropriate tourism industry stakeholders, such as representatives from KATO or current MCA investors), including defining the boundaries of proposed EUAs. The areas identified should be a minimum of approximately 200 square kilometres in size, and should be designed to minimise vital access roads and through traffic across them. Wherever possible, each EUA should include features such as Inselbergs,

rivers or dry river beds that may provide a basis for the development of backcountry activities, or attractive locations for accommodation facilities.

Once the potential EUAs have been defined, an Expression of Interest describing the concept, the proposed areas, and highlighting each area's attractions and potential (including relevant sections from the MCA Zonation Scheme) can then be prepared by the KWS HQ Corporate Support Services in collaboration with MCA management. This EOI will then be advertised, potential investors invited to submit their proposals, and the most appropriate investors selected. Discussions will then take place between selected investors and KWS regarding activity and accommodation prescriptions and Limits of Acceptable Use (in accordance with the prescriptions set out in this management plan). The agreements will then be formalised into a concession agreement between KWS and the investor, based on the national guidelines developed. Once the concession agreement is approved, the steps outlined in the draft KWS Facilities Development Procedures should be followed, and the new concession and Exclusive Use Area developed in accordance with the terms and conditions agreed, and national EIA regulations.

> **Action 2.4 Undertake second phase of tourism concession development**

Following the proactive efforts to promote tourism investment in the MCA described in Actions 2.1 and 2.2 above, it is likely that there will still be significant potential for additional tourism investment in the MCA. Bearing in mind the 10-year time horizon of this plan, a second round of tourism investment promotion is therefore likely to be needed in three to four years, incorporating the experiences and lessons learnt from the first investment round. This will involve carrying out an assessment of the existing tourism developments and capacity, and determining the scope and nature of additional investment, within the LAU and visitor prescriptions defined for each zone. Based on this assessment, a new MCA tourism prospectus detailing potential further investment opportunities and the criteria for selection will be developed. As with the first investment round, the prospectus will be disseminated to potential investors, a request for EOI subsequently advertised, and the steps outlined under Actions 2.1 and 2.2 followed to ensure that any new developments are in line with the MCA tourism development strategy, and are within the LAU outlined in the Zonation Scheme.

# Objective 3: The MCA's unique wilderness identity established and visitor experience enhanced

The MCA is presently not a well-known tourism destination, and many potential visitors are unaware that the area has now been rehabilitated and is safe to visit. Alongside the efforts to expand and diversify the MCA tourism product and developing tourism investment opportunities as set out under the previous two objectives, it will therefore also be important to establish the MCA's identity as a distinctive and highly desirable wilderness destination. This identity will be the cornerstone of efforts to market the MCA and will underpin the expansion of tourism in the area.

Objective 3 focuses on building this distinctive identity for the MCA, in particular through the coordinated marketing of the area as a single destination, which will be supported by a series of branding exercises in the MCA's constituent PAs. These efforts to establish the MCA tourism identity will be complemented by management actions aimed at enhancing the visitor experience in the MCA itself, through improved interpretation facilities and materials highlighting the area's exceptional natural resources and unique history. It will however be impor-

tant to ensure that any such interpretation facilities and materials do not undermine the very qualities of the MCA that they set out to enhance. For example, new interpretation displays will be modest and unobtrusive so that they reinforce the area's wilderness and solitude features, rather than disrupting them.

The management actions that have been developed under this objective to address these issues, and ensure that the MCA's unique wilderness identity and experience are firmly established, are outlined in the following sections.

### Action 3.1 Market the MCA as a single destination, building on its exceptional wilderness qualities and history

The MCA has suffered from some negative publicity in the past, mainly due to isolated yet serious incidences of poaching or banditry. As a result, many people remain unaware that the area is now safe and secure to visit, and that wildlife numbers and diversity are increasing again. As discussed above, there are many aspects of the MCA that set it apart from other PAs, such as the area's rich history and association with the work of the Adamson's, its exceptional wilderness qualities, and the protection it offers to many endemic northern wildlife species. Furthermore, when considered together the MCA's four areas have the potential to offer a unique variety of visitor experiences and opportunities in a single destination.

As such, this action will focus on establishing and marketing a distinctive tourism identity and visitor experience for the entire MCA, which sets it apart from other tourism destinations in Kenya. Marketing will be based on the area's special wilderness qualities and opportunities for solitude, but will also highlight the MCA's exceptional natural resources, including northern wildlife species, endangered large mammals and spectacular birdlife, along with the area's rich conservation history, in particular with regard the Elsa story and the work of George and Joy Adamson. This will be reflected in any publicity materials produced by KWS HQ, such as posters or leaflets, and in material published on the Internet. These same values should feature as part of the PA branding exercises that are scheduled to take place in the MCA over the next few years. All products of the area's branding, such as the logos, slogans and other key features, will be incorporated into the development of all publicity materials, new PA signage, and visitor interpretation materials (such as the interpretation displays, guide book and map) developed under this objective and discussed in the actions below.

### Action 3.2 Develop interpretation displays at key sites associated with the Adamsons' life and work

There are a number of historic sites of interest in the MCA associated with the work of Joy and George Adamson, and the Academy Award-winning feature film "Born Free" about their work in the area. The development of these sites will add an extra dimension to the MCA tourism product and visitor experience. Specific sites of interest include Elsa's grave and Pippa's grave located in Meru National Park, and George Adamson's grave and camp located in Kora National Park (*Kambi ya Simba*). Although these sites are in good condition, and *Kambi ya Simba* and the graves of George Adamson and his brother Terrance have recently been renovated, there are currently no interpretation materials for visitors to these sites, and the renovation and location of *Kambi ya Simba* has not been well publicised. As a result, many visitors to the area remain unaware of this unique aspect of the MCA's history, and its potential contribution to the MCA tourism product has not been realised. As an initial step to improve on this situation, simple, durable and low-key interpretation displays outlining the sites' significance and history will be erected at Elsa and Pippa's graves. MCA Management will liaise with appropriate NGOs (such as Born Free, the George Adamson Wildlife

Preservation Trust, and the Tony Fitzjohn Foundation) about appropriate information to be included on these displays, and potential funding for their development. This information will then be incorporated into the display design, which will be reviewed with tourism industry stakeholders (through meetings initiated under Action 4.2 below). Display production will then be outsourced. Similarly, the recently renovated *Kambi ya Simba* will be reassessed, and potential interpretation needs identified (again in collaboration with MCA tourism industry stakeholders). Information will then be sourced from relevant NGOs (such as those outlined above), the proposed interpretation materials designed, discussed with tourism industry stakeholders, and final display production outsourced. All interpretation materials developed will incorporate appropriate outputs from the MCA branding (such as the new MCA logo), and will be highlighted in the map and guidebook developed under the following two management actions.

## Action 3.3 Develop a visitor map covering the entire MCA

A significant number of visitors to the MCA are either Kenyan citizens or residents, who are likely to visit the area unaccompanied by a professional guide or safari company. As a result, almost all these visitors rely entirely on the maps KWS produces for navigating around the MCA, and even professional guides may need to refer to a map if they move away from the areas within the MCA with which they are familiar. Although a recent and reasonably accurate map of Meru National Park and Bisanadi National Reserve is available, and which includes some of the key sites of interest discussed above, the current map does not extend to Kora NP and Mwingi NR. If visitation and use of the entire MCA is to be encouraged, a visitor map covering the entire conservation area, including Kora NP and Mwingi NR, needs to be produced and disseminated. As such, MCA staff will liaise with KWS HQ Tourism and GIS sections to establish additional information that needs collecting in order for such a map to be produced. As appropriate, field staff will then assist with the collection of this data and feedback to KWS HQ for collation. This information will then be collected and developed by the GIS section and the production of the map outsourced. Once completed, these maps will be made available at entrance gates to the MCA, visitor accommodation, and appropriate retail outlets nationwide.

## Action 3.4 Develop a guidebook covering the entire MCA

If properly developed and presented, guidebooks can not only enhance a visitor's experience when visiting a protected area, but also serve to raise awareness of the area's importance and the role of KWS in its protection. A number of high quality guidebooks have been produced by KWS in collaboration with key stakeholders (such as those available for Lake Nakuru and the Aberdares National Parks). Typically these guidebooks provide visitors with information on the history of the PA and surrounding area, advice and information on visiting the area (including transport links from major centres), and information for visitors once in the area such as PA rules and regulations, accommodation options, maps, suggested itineraries and circuits, and detailed information on the PA's biodiversity, ecology, and surrounding communities.

In order to help improve the overall MCA visitor experience, a similar high quality guidebook will be developed for the Meru Conservation Area. This guidebook will provide visitors with information on the area's attractions and history, support efforts to encourage visitors to explore beyond the High Use Zone by suggesting circuits and providing maps, and also provide an important medium for raising visitor awareness of any community tourism initiatives developed in MCA-adjacent areas. MCA staff will liaise with KWS HQ regarding the development of the guidebook and provide feedback on key features that should be included. KWS HQ will also collaborate with tour and lodge operators and other key stakeholders who

may have information materials and photographs that should be included (such as EWALS, Born Free, IFAW, etc.) A draft guidebook will then be developed in partnership with key stakeholders, following a similar model used in the development of previous guidebooks, and a proof developed for circulation and review. Once the proof has been approved, the production and printing will be outsourced and the final product made available at key points in the MCA (such as entrance gates and visitor accommodation) and at retail outlets across Kenya.

> ### Action 3.5 Establish a simple, high-quality MCA visitor centre

Visitor centres have been developed in many protected areas, and are a popular and easily accessible method for enhancing visitor understanding and appreciation of the area they are visiting. Such centres can also provide a point of sale for interpretation materials such as maps and guidebooks, and, if staffed by knowledgeable officers, can provide a focus point for dealing with visitor enquiries. In PAs where tourism is only just re-establishing itself, such as the MCA, it is essential that any visitor centre which is established requires minimal maintenance, and is unobtrusive and in keeping with its surrounding environment. The location of the centre is also critical, as most visitors are unlikely to go out of their way to visit or spend significant time in such a centre. However, if conveniently located (for example at a major gate or airstrip, where many visitors have free time), the centre could be used by a substantial number of visitors, and the benefits it provides may well be worth the investment involved. As such, when tourism reaches an appropriate level, MCA management will liaise with tourism investors and operators to identify the most appropriate location for the development of an MCA Visitor Centre (for example at Murera Gate/MCA Education Centre, or near Kinna Airstrip). The MCA Warden Tourism will then develop a simple concept paper outlining the proposed Centre's functions, the subjects and topics the Centre will provide information on, potential display materials needed, and estimates of costs involved. This paper will then be reviewed in collaboration with tourism stakeholders, and adaptations made according to their feedback. The finalised paper will be forwarded to relevant NGOs, tour operators and other stakeholders who may have materials, photographs etc. that could be used (e.g. Born Free, IFAW), or who may be able to contribute to the establishment of the Centre. A final proposal and budget, with potential contributions from outside sources, can then be put forward to senior MCA and KWS management, who will then ensure that the establishment of the Centre is included in appropriate work plans and budget requests.

# Objective 4: MCA tourism management improved

Through the actions implemented under the previous three objectives, it is anticipated that visitor numbers, tourism infrastructure, and visitor activities in the MCA will greatly increase and diversify during the 10-year lifespan of this plan. If the MCA Management is to meet KWS' obligations to tourism investors and operators, and ensure that the quality of the overall MCA visitor experience is maintained and tourism investment encouraged, the anticipated increases in the scale and complexity of tourism in the area need to be complemented by strengthening and enhancing of MCA tourism management capacity and systems. Without appropriate and concomitant improvements in the management of tourism in the MCA, the long-term and sustained achievement of this programme's management objectives will be seriously undermined.

Objective 4 therefore focuses on ensuring that tourism management in the MCA is strengthened, and that MCA managers have the capacity and supportive administration systems to meet their obligations to tourism industry partners and to bring about the achievement of this

programme's management objectives. The management actions that have been developed under this objective are outlined in the following sections.

## Action 4.1 Strengthen MCA tourism human resource capacity

The implementation of the management actions set out in this programme will require dedicated human resources at the MCA who will take responsibility for ensuring their implementation. At present the MCA does not have a tourism section. Although this situation has not severely impacted on the rehabilitation of the MCA to date, due to the low volume of visitors to the area and other more pressing priorities such as re-establishing security, the strengthening of MCA tourism management capacity is now a high priority. The scope of work set out in this management programme is significant, and if the management objectives are to be achieved, the recruitment or reassignment of staff to an MCA tourism section needs immediate attention. The recently undertaken staff needs assessment[7] proposed that one full-time Warden Tourism and one full-time Assistant Warden Tourism be assigned to the MCA tourism section, with the support of a driver. In light of these recommendations and the increasing need for tourism management capacity that will develop through the lifespan of this plan, permanent staff will be assigned to the new MCA tourism section. The MCA Senior Warden will propose the staffing requirements, after consultation with other senior MCA staff, and recruitment or reassignment will be carried out in line with the recommendations from KWS HQ and budget restrictions. Once in place, MCA tourism section staff will periodically assess human resource needs as the implementation of the Tourism Development and Management Programme roles out, and tourism use and activities in the MCA increase.

## Action 4.2 Hold regular meetings with MCA tourism investors and operators

Tourism investors and operators are major stakeholders in the MCA, and their concerns and advice need to be regularly sought and considered in order to realise the area's tourism potential, and to successfully implement a large number of the management actions contained in this programme. This group of stakeholders is also best placed to advise MCA management on the key issues that may be impacting current tourism activities and operations in the MCA, or that may be discouraging the development of new activities and investments. As such, an MCA Tourism Management Committee will be established to improve communication and collaboration between MCA managers and private sector investors. This committee will consist of members from the MCA Management and representatives from tourism industry stakeholders operating in the MCA, and will hold scheduled meetings twice a year chaired by the MCA Senior Warden. The committee will address emerging tourism issues in the MCA, and catalyze and monitor implementation of management actions under the Tourism Development and Management Programme. Suitable participants will be identified for participation in committee meetings, and suggested dates, location and agenda items for biannual meetings communicated to potential committee members for approval and comment. Once meetings have been completed, MCA management will prepare and disseminate meeting minutes to participants, and other stakeholders, detailing the key decisions made, action to be taken and responsibility for implementation.

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[7] See Action 3.1.1 of the PA Operations Programme

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### Action 4.3 Implement MCA tourism infrastructure improvements in line with tourism stakeholder feedback

High quality and appropriately located infrastructure is essential to enable the expansion of tourism activities and investment promoted under this management programme. The quality of PA infrastructure, most notably usable airstrips and roads, is a major issue for current investors in the MCA, and unless certain issues are addressed, the commercial viability of investments in the MCA may be undermined. Improvements to the MCA's road network will take place under the Protected Area Operations Programme, which focuses on the preparation of a well justified road development plan and the construction of new tourist roads in KNP, MNR and BNR, as well as the upgrading of key tourist roads to all weather status (see PA Operations Programme Actions 4.1.2 and 4.1.3). However, other infrastructure improvements will be needed during the 10-year lifespan of this plan, and MCA Management needs to be able to respond to the changing situation on the ground, and to the needs of tourism industry stakeholders. As such, as part of the preparation for the MCA Tourism Management Committee meetings discussed above, the MCA Warden Tourism will hold individual consultations with tourism industry stakeholders in the MCA to identify specific issues regarding supporting infrastructure in the area. The needs identified by these stakeholders can then be tabled for discussion at the twice-yearly committee meetings, and the approved recommendations forwarded to the MCA Management for action. The MCA Senior Warden and Warden Tourism will then work together to ensure that the recommended improvements are included in annual workplans and budget requests to KWS HQ.

### Action 4.4 Adapt tourism management actions as appropriate

The vision for the development and management of the MCA set out in this programme's strategy, and implemented through the actions described above, is an ambitious undertaking and, if successful, will result in substantial changes in the visitation and use of the MCA. However, given the volatile nature of the tourism market, it is impossible to predict how tourism in the area will develop over the next 10 years. As such, adaptive management has a key role to play in the development and management of tourism in the MCA, and in ensuring that management activities are maximising their effectiveness and working towards appropriate goals. However, any changes or alterations need to be based on rigorously collected and analysed information, rather than the opinions or preferences of managers or stakeholders alone. As such, initial activities under this management action will focus on identifying both easily obtainable and useful information on tourism visitation and use that can be used to assess management effectiveness (such as the number and category of visitors, method of arrival, length of stay, and activities undertaken). A database will then be established for storing and analysing the information, which will then be collected at regular intervals. The collated information will be reviewed by the MCA tourism section with regard to the aims and objectives outlined in this programme, and annual summaries of the information provided in a simple report, which will also include any proposed adaptations or alterations to management activities. These reports will be circulated to both MCA management and relevant stakeholders, and any issues or changes to be made reviewed and discussed at the following MCA Tourism Management Committee meeting.

The following pages set out the first 3-Year Activity Plan for the Tourism Development and Management Programme. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that MCA management aims to achieve in implementing the plan.

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 1: The MCA tourism product expanded and diversified** | | | | | | | | | | | | | | |
| **1.1 Facilitate and regulate existing alternative activities to traditional game-viewing** | | | | | | | | | | | | | | Guidelines on alternative visitor activities ready by June 2008 |
| 1.1.1 Liaise with the KWS Marketing Section to prepare guidelines on night game drives, short walks and catch and release fishing (including LAU on size and number of groups allowed) | WT, SW-MCA | ▮ | ▮ | | | | | | | | | | | |
| 1.1.2 Organise stakeholder meetings to discuss the guidelines | " | | | ▮ | | | | | | | | | | |
| 1.1.3 Organise a security meeting to review and approve the guidelines | WT, SW-MCA, SO | | | | ▮ | | | | | | | | | |
| **1.2 Support the development of walking safaris in the Low and Wilderness Activity Zones** | | | | | | | | | | | | | | Walking safari routes designated and reservation system in place by December 2008 |
| 1.2.1 Liaise with the KWS Marketing Section to develop guidelines for walking safaris (including roles, responsibilities and liability of KWS and operators) | WT, SW-MCA | ▮ | ▮ | | | | | | | | | | | |
| 1.2.2 Define specific walking routes in collaboration with KATO | " | | | ▮ | ▮ | | | | | | | | | |
| 1.2.3 Organise security meeting to discuss the guidelines | WT, SW-MCA, SO | | | | ▮ | | | | | | | | | |
| 1.2.4 Designate special campsites along routes if necessary | " | | | | | ▮ | | | | | | | | |
| 1.2.5 Develop a simple reservation system for walking safari routes | " | | | | | | ▮ | ▮ | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **1.3 Support the development of rafting/boating along the Tana River** | | | | | | | | | | | | | | Guidelines on rafting/boating ready by June 2009 |
| 1.3.1 Liaise with the KWS Marketing section to develop guidelines for rafting and boating along the Tana River (including LAU on size and number of groups allowed) | WT, SW-MCA | | | | | | | | | █ | █ | | | |
| 1.3.2 Request proposals from investors for operating rafting/boating operations | WT, SW-MCA, H-M&BD | | | | | | | | | | | █ | █ | |
| 1.3.3 Organise meeting to discuss and select most appropriate proposals | WT, SW-MCA, SO | | | | | | | | | | | | | |
| 1.3.4 Liaise with selected rafting/boating operators to designate additional special campsites and identify other infrastructure needed to support operations | " | | | | | | | | | | | | | |
| **1.4 Promote the development of adventure/backcountry activities in the Wilderness Activity Zone** | | | | | | | | | | | | | | Guidelines on backcountry activities ready by June 2008 |
| 1.4.1 Liaise with the KWS Marketing section to develop guidelines for backcountry activities including LAU on size and number of groups allowed for potential activities | WT, SW-MCA | | █ | █ | █ | | | | | | | | | |
| 1.4.2 Organise security meeting to review and approve the guidelines | WT, SW-MCA, SO | | | | | █ | | | | | | | | |
| 1.4.3 Review guidelines and activities in collaboration with appropriate KATO representatives | WT, SW-MCA | | | | | | █ | | | | | | | |
| 1.4.4 Solicit proposals for development of backcountry activities from potential operators | WT, SW-MCA, H-M&BD | | | | | | | █ | | | | | | |
| 1.4.5 Organise meeting to discuss and select most appropriate proposals | WT, SW-MCA, H-M&BD, SO | | | | | | | | | | | █ | █ | |
| 1.4.6 Liaise with approved operators to identify other supporting infrastructure needs | " | | | | | | | | | | | | | |
| **1.5 Designate and establish new special campsites** | | | | | | | | | | | | | | |
| 1.5.1 Support the identification of 2 new special campsites in BNR section of the HUZ | WT, SW- ICC | | █ | █ | | | | | | | | | | |
| 1.5.2 Identify six sites that are suitable for establishment of special campsites in the Low Use Zone | WT, WK | | | | | █ | █ | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 2: MCA tourism investment opportunities developed** | | | | | | | | | | | | | | |
| **2.1 Develop prospectus for concession developments in the MCA** | | | | | | | | | | | | | | |
| 2.1.1 Carry out a site selection field visit in collaboration with KATO | WT, SW-MCA, WK, MM, KATO | Completed | | | | | | | | | | | | |
| 2.1.2 Select a designer to produce the prospectus | WT, BDM | Completed | | | | | | | | | | | | |
| **2.2 Advertise and select most appropriate set of investment opportunities** | | | | | | | | | | | | | | New developments in the MCA approved by June 2008 |
| 2.2.1 Advertise and disseminate prospectus to potential investors | H-M&BD | ▓ | | | | | | | | | | | | |
| 2.2.2 Call for "Expressions of Interest" from interested investors | H-M&BD | | ▓ | | | | | | | | | | | |
| 2.2.3 Select shortlist of potential investors and request more detailed proposals | H-M&BD | | | ▓ | | | | | | | | | | |
| 2.2.4 Select successful proposals in accordance with KWS Facilities Development Procedures | H-M&BD | | | | ▓ | | | | | | | | | |
| **2.3 Define and develop additional tourism concessions incorporating "exclusive use concept" as appropriate** | | | | | | | | | | | | | | |
| 2.3.1 Review the existing and tendered tourism concessions in the WAZ to ascertain potential for EUAs | WT, BDM | | | | | | | | | | | | | |
| 2.3.2 Develop national guidelines on development and management of such areas (including roles, responsibilities, and liability of KWS and operators) | WT&BDM | | | | | | | | | | | | | |
| 2.3.3 Carry out a feasibility study for establishment of exclusive use areas in the WAZ (including a definition of potential areas), in collaboration with KATO representatives | WT, BDM | | | | | | | | | | | | | |
| 2.3.4 Develop and advertise an Expression of Interest describing the proposed concept and potential areas in the WAZ | WT, BDM | | | | | | | | | | | | | |
| 2.3.5 Review and select most appropriate proposals | WT, SW-MCA, H-M&BD, SO | | | | | | | | | | | | | |
| 2.3.6 Formalise agreements between KWS and exclusive use area operators | WT, H-M&BD | | | | | | | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **2.4 Undertake second phase of tourism concession development** | | | | | | | | | | | | | | |
| 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, BDM | | | | | | | | | | | | | |
| 2.4.2 Prepare a prospectus detailing potential new sites for development | " | | | | | | | | | | | | | |
| 2.4.3 Advertise the prospectus, evaluate proposals and award sites (as per Activities 2.2.2 - 2.2.4 above) | WT, BDM, H-M&BD | | | | | | | | | | | | | |
| **Objective 3: The MCA's unique wilderness identity established and visitor experience enhanced** | | | | | | | | | | | | | | |
| **3.1 Market the MCA as a single destination, building on its exceptional wilderness qualities and history** | | | | | | | | | | | | | | |
| 3.1.1 Carry out a study to Identify distinct marketing themes of the MCA | WT, MM | | | | | ■ | ■ | ■ | | | | | | |
| **3.2 Develop interpretation displays at key sites associated with the Adamson's' life and work** | | | | | | | | | | | | | | Appropriate and informative interpretation materials in place at Kambi ya Simba, Elsa's and Pippa's graves by June 2010 |
| 3.2.1 Prepare information to be included on interpretation plaques for Kambi ya Simba, Elsa's and Pippa's graves | WT, MM | | | | | | | | | ■ | | | | |
| 3.2.2 Outsource design of simple, durable and low-key interpretation plaques | WT, MM | | | | | | | | | | ■ | | | |
| 3.2.3 Review proposed designs with other key stakeholders | WT, MM | | | | | | | | | | | ■ | | |
| 3.2.4 Contract out the work of installing interpretation displays | WT, MM | | | | | | | | | | | | ■ | |
| **3.3 Develop a visitor map covering the entire MCA** | | | | | | | | | | | | | | A comprehensive MCA visitor map produced by September 2009 |
| 3.3.1 Collect relevant geo-referenced tourist information covering the entire MCA | WT, KWS-GIS | | | ■ | ■ | | | | | | | | | |
| 3.3.2 Identify a cartographer to produce a visitor map for the MCA | WT, MM | | | | | ■ | ■ | | | | | | | |
| 3.3.3 Outsource production of visitor map for the entire MCA | MM | | | | | | | ■ | ■ | | | | | |
| **3.4 Develop a guidebook covering the entire MCA** | | | | | | | | | | | | | | MCA Guidebook produced by June 2010 |
| 3.4.1 Collaborate with relevant tourism stakeholders in generating information to be incorporated in the guidebook | WT, MM | | | | | ■ | ■ | ■ | ■ | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 3.4.2 Identify and contract a publisher/writer to produce draft guidebook | WT, MM | | | | | | | | ▓ | ▓ | | | | |
| 3.4.3 Review draft guidebook with key stakeholders | WT, MM | | | | | | | | | | | | | |
| 3.4.4 Produce guidebook and make available at key points of sale | WT, MM | | | | | | | | | | | ▓ | ▓ | |
| **3.5 Establish a simple, high-quality MCA visitor centre, as appropriate** | | | | | | | | | | | | | | |
| 3.5.1 Collaborate with tourism stakeholders in identifying the most appropriate location for the development of an MCA Visitor Centre | WT, SW-MCA, H-M&BD | | | | | | | | | | | | | |
| 3.5.2 Collaborate with tourism stakeholders in developing a simple concept paper outlining the proposed Centre's functions | WT, H-M&BD | | | | | | | | | | | | | |
| 3.5.3 Review proposals with key stakeholders and adapt accordingly | WT | | | | | | | | | | | | | |
| 3.5.4 Solicit support for centre (interpretation materials and funding) from NGOs and other stakeholders | WT, H-M&BD | | | | | | | | | | | | | |
| 3.5.5 Prepare detailed proposal and budget for review by MCA and KWS HQ management | WT | | | | | | | | | | | | | |
| 3.5.6 Include development in appropriate work plans and budget requests | WT, SW-MCA | | | | | | | | | | | | | |
| **Objective 4: MCA tourism management improved** | | | | | | | | | | | | | | |
| **4.1 Strengthen MCA tourism human resource capacity** | | | | | | | | | | | | | | Warden Tourism deployed to the MCA by September 2007 |
| 4.1.1 Deploy an officer to be in charge of coordinating tourism development and management in the MCA | SW-MCA, H-HC | ▓ | | | | | | | | | | | | |
| **4.2 Hold regular meetings with MCA tourism investors and operators** | | | | | | | | | | | | | | Annual meetings held between MCA management and tourism investors and operators |
| 4.2.1 Collaborate with tourism stakeholders at the MCA in the establishment of a tourism management committee | WT, SW-MCA | | | | | ▓ | | | | | | | | |
| 4.2.2 Organise regular tourism management committee meetings | " | | | | | | | | ▓ | | ▓ | | | |
| **4.3 Implement MCA tourism infrastructure improvements in line with tourism stakeholder feedback** | | | | | | | | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 4.3.1 Hold individual consultations with tourism industry stakeholders in the MCA to identify specific issues regarding support infrastructure in the area | WT, SW-MCA | ■ | | ■ | | ■ | | ■ | | ■ | | ■ | | |
| **4.4 Adapt tourism management actions as appropriate** | | | | | | | | | | | | | | |
| 4.4.1 Establish a tourism information database for the MCA | WT, SW-MCA | | | ■ | ■ | ■ | ■ | | | | | | | |

**Abbreviations**

BDM - Business Development Manager

H-HC - Head Human Capital

MBD - Marketing and Business Development

KATO - Kenya Association of Tour Operators

MM - Marketing Manager

SO - Security Officer

WK - Warden Kora

WT - Warden Tourism

# Community Partnership & Education Programme

# Programme Purpose and Strategy

> The support and participation of MCA adjacent communities in conservation and sustainable use of natural resources enhanced

The majority of community members in areas adjacent to the MCA directly depend on natural resources for their livelihood needs. The type of natural resource use in these areas varies greatly: from intensive agriculture to the east and south east of Meru National Park, to pastoralism in much of the areas to the north and west of the MCA. These communities impact on the MCA, through, for example, the closure of wildlife dispersal areas or water abstraction, and are also impacted by the MCA, for example, as a result of wildlife damage to crops or livestock, and even human life. These reciprocal impacts are likely to escalate in the future as population density in the area continues to increase. The MCA Community Partnership and Education Programme will work towards the mitigation of these impacts; improve awareness of the MCA's values; and foster a constructive and supportive relationship between MCA management, its adjacent communities, and other key stakeholders.

The key strategic principles, which will guide the implementation of the Community Partnership and Education Programme over the next 10 years and the achievement of the programme purpose, are set out below. Wherever appropriate, guidance has been drawn from the following policies:

▶ KWS Conservation Education Strategy 2006 - 2011
▶ KWS Strategic Plan 2005 - 2010

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

## Communities can express their concerns, ideas and opinions

Effective communication between PA-managers and local communities is essential to enable both parties to raise common problems and work towards achieving shared goals. Without such two-way communication, it will be difficult to ensure community support for conservation, as minor issues are more likely to escalate into serious problems, and MCA management activities may not be optimally targeted towards community needs. As such, activities under this programme will aim to further develop and strengthen MCA management communication and collaboration mechanisms with local communities.

## The MCA is having a positive impact on the lives of adjacent communities

MCA-adjacent communities bear many of the direct and indirect costs of wildlife conservation, both through human-wildlife conflicts and the loss of access to land and natural resources. If these costs are not offset, community support necessary for the continued survival of the MCA will not be sustainable. As such, activities under this programme will aim to mitigate the costs of wildlife conservation incurred by the adjacent communities, and increase the direct benefits communities receive from the MCA.

One of the most practical ways of giving direct benefits to communities neighbouring the MCA is to provide employment opportunities to local community members. The MCA already provides a variety of such employment opportunities for both skilled and unskilled casual labourers, and this programme will affirmatively give priority to local communities when new opportunities arise, e.g., maintenance of fences, roads, buildings or compounds, so that as large a number of people as possible from the local communities benefit from employment opportunities in the area.

## Communities and other stakeholders are aware of the MCA's values and importance

One of the core functions of KWS is to provide wildlife education and raise awareness of protected area values in order to improve support for wildlife conservation. As such, and in line with the KWS Education Strategy objective to *"develop conservation education programmes and disseminate information to targeted groups"*, activities under this programme will improve the scope, content and structure of MCA conservation education programmes, and focus partnership activities in community areas where support for conservation is poor, or where there are critical conservation issues that need to be addressed.

## Communities have the capacity to manage land and natural resources sustainably

Increasing pressures on land and other natural resources outside the MCA threaten to undermine both the ecology of the MCA, and the long-term sustainability of community livelihoods. As such, activities under this programme will aim to mitigate the negative impacts of unsustainable natural resource use on PA biodiversity and community wellbeing, by improving the capacity of communities to sustainability manage land and natural resource uses.

## There is collaboration between PA managers and other stakeholders in strengthening CBNRM

Many of the threats to the ecology and natural resources in the MCA stem from community land uses and practises many kilometres beyond the boundary of the protected area. The scale and intensity of these impacts is increasing and, although outside the direct mandate of KWS, these issues cannot be left unaddressed. As such, and in line with Objective 4 of the KWS Strategic Plan to *"Improve KWS' linkages, recognition, and relationships with stakeholders"*, activities under this programme will pursue partnerships and collaborations with other institutions and organisations (such as CBOs, district authorities and NGOs) to address issues of mutual concern outside of the core protected areas.

## The programme is sensitive to gender and marginalised community members

Different sectors of the communities adjacent to the MCA utilise natural resources in different ways. Marginalised community members (e.g. women or poorer individuals) or minorities, may have specific issues relating to the MCA conservation and natural resource use that other community members may not be aware of. As such, special attention needs to be paid to ensure that activities under this programme respond to the needs and issues of all community members, not just those of the most visible or vocal.

These strategic principles are intended to guide the development and implementation of the five management objectives that have been identified by stakeholders to achieve the Programme Purpose. These are:

**MO 1.  PA-community communication and collaboration mechanisms improved**
**MO 2.  Conservation education and awareness programme strengthened**
**MO 3.  Conservation-compatible community land uses and practises promoted**
**MO 4.  Human-wildlife conflict reduced**
**MO 5.  Opportunities for communities to benefit from the MCA improved**

The following sections describe these management objectives and provide an outline of the management actions needed to achieve them. The final section of the programme contains the **3-Year Activity Plan** for the Community Partnership & Education Programme, and details the activities, responsibilities, timeframe and input requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan.

## Management Objectives

Figure 13 below shows the overall objectives tree for the MCA Community Partnership and Management Programme.

**Figure 13. *Community Partnership and Education Programme objectives tree***
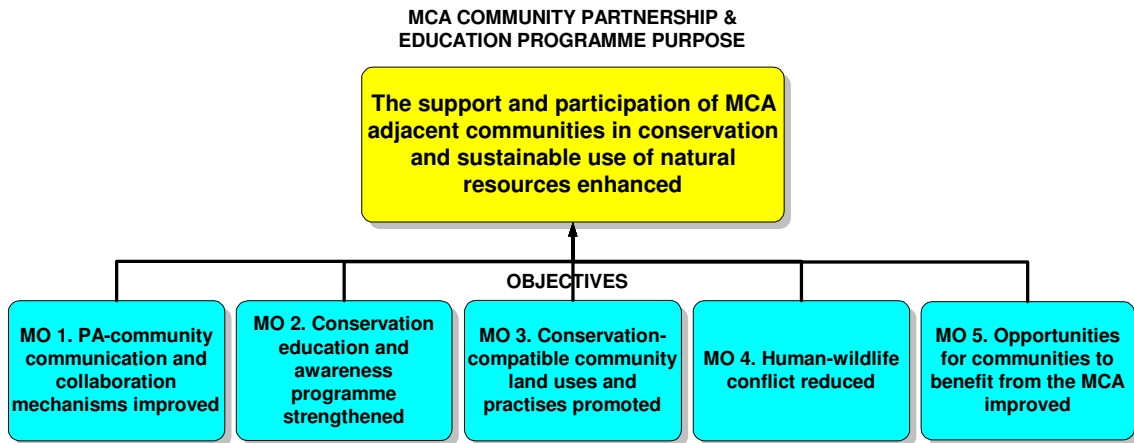


# Objective 1: PA-community communication and collaboration mechanisms improved

The desired future state of the MCA is where there are effective and efficient communication and collaboration mechanisms for building supportive and constructive relationships between PA managers and surrounding communities. These mechanisms need to ensure that issues can be raised and addressed by both sides before they escalate into serious problems, and enable managers and communities to work together to achieve shared goals.

Two principal mechanisms to enable PA-community communication and collaboration in the MCA, the Community Consultative Committees (CCC) and the MCA Community Consultative Forum (CCF), have already been established by KWS through MCADP. However, despite

the existence of these mechanisms, poor communication between MCA management and local communities is an ongoing problem. In order to achieve the desired future state, two management actions relating to reconstituting the CCCs and CCF and building the operational capacity of these committees, will be implemented. These management actions are described below.

## Action 1.1 Strengthen and support PA-community consultation mechanisms

Through the MCADP, communication and dialogue forums have been established for all communities living adjacent to the MCA. These are the Community Consultative Committees (CCCs) of which there are six[8], and the umbrella Community Conservation Forum (CCF), comprising of two members from each of the six CCCs. The main purpose of the CCCs is to identify viable community projects, and then prioritise them and present them for funding. In addition, both mechanisms have the objective of sensitising and training the communities on conservation issues. However, since the CCCs and CCF were chiefly established for purposes of implementing MCADP, there is a possibility of these mechanisms fading out when the project closes towards the end of 2007.

To ensure that the CCCs and CCF continue playing their respective conservation roles effectively, even after the completion of the MCADP, KWS will continue its support to the two bodies by facilitating their activities that are in line with the actions laid out in this management programme. For effective facilitation, the functions of the CCCs and CCF will be clearly defined and workplans drawn. The CCCs will oversee biodiversity resource utilisation activities such as beekeeping projects, collection of Gum Arabica (harvested from *Acacia senegal* which is widespread in the area), collection of fuelwood from dead wood, collection of medicinal plants, and ecotourism development. The committees will also participate in implementing measures to control activities destructive to the ecosystem such as poaching, illegal grazing in protected areas and charcoal burning.

Since members of the current committees were not selected using participatory approaches, these committees lack ownership within the community and membership favours men, with very modest representation of women. To redress this, KWS will support the revamping of the CCCs to ensure gender equity in community conservation activities in the MCA. The two community conservation bodies will therefore be reconstituted through a participatory selection process, which will involve all gender. And in recognition of the immense influence that local leaders and development partners wield in shaping the attitude of local communities, Area Chiefs will be included in the CCCs, while the local MPs, Councillors and influential community development partners will be included in the CCF as *ex-officio* members.

## Action 1.2 Build capacity of the CCCs and CCF to effectively manage community projects

Sustainability of some of the community projects being implemented through the MCADP hinges on continuous maintenance (for example boreholes or dams that have been developed). The CCCs and CCF lack the requisite capacity in project management to ensure that community projects initiated and implemented in collaboration with donors do not fail once the donors pull out. The committees will therefore be trained in various aspects of project planning and management and in maintenance of implemented projects. This will ensure that community projects do not stall because of poor management or lack of maintenance skills.

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[8] CCCs have been formed in each of the six neighbouring districts: Isiolo, Garissa, Tharaka, Meru North, Mwingi and Tana River.

# Objective 2: Conservation education and awareness programme strengthened

The desired future state for the MCA is one where the existence of the conservation area is valued and supported by the local communities to ensure viable wildlife conservation in the long term. This is in line with the draft KWS Conservation Education Strategy 2006-2011, which has development and strengthening of programmes for promoting conservation education and awareness as one of its major objectives.

Four management actions have been developed to realise this desired state. These focus on preparing interpretation materials targeting MCA adjacent communities; redesigning and implementing an education partnership programme that targets diverse members of the community; re-establishing sponsored protected area tours for the local community; and promoting the MCA through the mass media, the Internet, and organising and participating in both local and international conservation awareness events. These actions are described further in the following sections.

## Action 2.1 Prepare interpretation materials targeting local communities

Several marketing materials have been developed for the MCA, and in particular Meru National Park, including a detailed park infrastructure map, bird guidebook, brochure and poster. However, these interpretation materials (and others developed under Management Objective 3 of the Tourism Development and Management Programme) mainly target tourists. These interpretation materials are therefore inadequate in bringing out the importance of diverse resource values of the MCA to the local community. To rectify this, a review will be carried out to identify interpretation themes that illustrate the uniqueness of the natural and cultural resource values of the MCA (linked to the information obtained from Action 3.3 and 3.4 of the Tourism Programme). Interpretation materials, targeting various age groups in the community, will then be prepared and disseminated through the MCA Education Centre and the wildlife education outreach activities, in order to educate communities on the importance of the continued existence of the MCA.

## Action 2.2 Redesign the MCA Education Programme to target key sectors of the community

The MCA Education Programme is focused on creating awareness and appreciation of the MCA among the MCA-adjacent communities. Programme activities involve giving environmental talks and video shows at the MCA Education Centre, local schools and trading centres. Guided park tours are offered to organised groups by the Wildlife Education Officer, who interprets the MCA features for the group. In some cases, the education section provides free transport to members of local community to enable them to visit the MCA. Public meetings organised by the local administration as well as environmental awareness events are also used to disseminate information of wildlife conservation. Despite these efforts, however, minimal success has been achieved in gaining broad community support for the MCA. This is attested to by the frequent human-wildlife conflict-related tensions between MCA management and local communities, which at times degenerate to public protests. These protests are usually led by local leaders who seem not to appreciate the importance of wildlife and the MCA in general.

In order to create awareness on the MCA's biodiversity and gain support for the MCA from the local and national public, under this management action, the MCA Education Programme

will be revamped and deliberately re-designed to target opinion leaders and organised community groups that can influence community attitude towards wildlife conservation. The programme will target formal leaders in the civil service like councillors and chiefs, and leaders in schools and the religious sector. These community groups will be reached through workshops, seminars, and sponsored education trips to areas undertaking wildlife management.

## Action 2.3 Re-establish sponsored protected area tours for the local community

Sponsored park tours for local communities are an effective tool to increase awareness on natural resources found in a protected area. Most community members, because of poverty or lack of means, do not appreciate conservation, as they are unable to visit the parks and hence are not familiar with the biodiversity therein. In an effort to increase conservation awareness and bring about positive community attitudes towards wildlife conservation among the local community, KWS, with funding from IFAW, and using the MCA mini-bus, initiated sponsored tours within MNP in 2001. When these tours were operational, a significant increase in local tourism in the MCA was noted. However, with the closure of the IFAW MCA project in 2004, the park-sponsored tours were discontinued due to lack of funds and local tourism declined. During the plan period, MCA management will resume sponsored park tours specifically to cater for the local community. The aim of this action will be to generate interest and appreciation of the PAs among the local community and as a result, win public support for wildlife conservation in the MCA.

## Action 2.4 Promote the MCA through the mass media, Internet, and organising and participating in both local and international conservation awareness events

The mass media (radio, television and the press) plays an important role in conveying conservation education messages to the community. Special radio and TV programmes will therefore be designed and aired through radio and TV stations that can be received in the MCA-adjacent area. Efforts will also be made to prepare articles on the MCA and publish them in the local dailies. It is expected that this strategy will increase the variety of audiences that are educated on conservation issues within the MCA, and further enhance appreciation of the area.

In addition, MCA community & education staff will participate in local as well as international events such as World Environment Day, World Wetlands Day, and Agricultural Society of Kenya (ASK) shows, among others. During these events, the community will be enlightened on the unique MCA natural resources, and issues and challenges facing their conservation.

## Action 2.5 Support WCK's education activities

The Wildlife Clubs of Kenya (WCK) is an organisation that works closely with KWS in educating school children on the importance of wildlife conservation. WCK is the longest running school-based conservation awareness programme in Africa. Conceived in 1968, there are, in 2007, more than 2,000 Wildlife Clubs in Kenya secondary and primary schools. Over 38 years, more than one million Kenyan youth have participated in WCK's activities which include trips to parks, a regular Club magazine, annual art & essay competitions, visits from the Mobile Education Unit, and many more. The majority of KWS personnel claim to have been former WCK members.

In order to create a generation of Kenyans who want to preserve wildlife for its own sake and

not exclusively for economic benefits, positive, wildlife-related experiences such as park visits are a top priority. Reinforcement through training of teachers and integration with school curricula are essential, as are materials and projects which lend depth to experiential learning.

The Meru Conservation Area and surrounds is a prominent area for WCK. The Clubs maintains a teacher/volunteer Action Group Leader in Meru town who can liaise with KWS personnel to enhance any mutual efforts to gain public support for conservation. To strengthen the relationship between the MCA management and the local WCK office, KWS through this action will support WCK's wildlife education activities such as organising conservation rallies, seminars and workshops for teachers and students. In addition, KWS will collaborate with WCK in organising PA visits for community members and school groups (see Action 2.3 above).

WCK's theme for 2007 is: *Conserve Our Water Catchments*. The theme encompasses all the rivers in Kenya, necessary to animals and people for survival, and under threat from pollution, sand quarrying, irrigation, deforestation, waste disposal. WCK will therefore be a potentially important partner for MCA Management in implementing Actions 3.2 and 3.3 below, which both address the issue of community water conservation and management.

# Objective 3: Conservation compatible community land uses and practises promoted

The desired future state is one where land uses that are both sustainable and compatible with conservation are practiced in community areas adjacent to the MCA. The vast majority of MCA-adjacent communities directly depend on the use of natural resources for their livelihoods. The population of these communities has grown rapidly over recent years, and the consequent increases in the intensity and scope of their livelihood activities is increasingly impacting on the ecology the MCA. Excessive water abstraction from rivers that flow into the MCA, encroachment on riparian land, and destruction of water catchment has resulted in reduction in water flows in rivers feeding the conservation area. In addition, conservation-incompatible land uses, in particular settled agriculture, are gradually eroding wildlife dispersal areas and migration corridors that are important for several of the MCA's large mammal species, especially elephants.

To address these issues and achieve the objective, six management actions have been developed. These focus on: establishing a community wildlife conservancy between Kinna and Rahole NR; supporting preparation and implementation of integrated water resource management plans in the water catchment area; supporting formation of Water Resource Users Associations for management of the major rivers that flow through the MCA; supporting formation of a Forest Users Association for the management of Ngaya Forest; carrying out negotiations with farmers who are cultivating or residing in MNR so that they can move out of the reserve; and supporting establishment of community-managed livestock grazing blocks in Isiolo and Garissa Districts. These actions are elaborated further in the following sections.

> **Action 3.1 Establish a community wildlife conservancy between Kinna and Rahole NR**

The MCA is to a greater extent threatened by livestock incursion, which has become a permanent feature in Mwingi NR and Kora NP (see Action 2.4 of the Ecological Management

Programme). Due to increased policing, MCA management has been able to maintain MNP stock free. Most of the illegal grazing is carried out by herders from the rinderpest endemic districts of Wajir and Mandera who bring livestock to the MCA when these districts experience drought conditions. In order to preserve the northern wildlife dispersal areas, tap the tourism potential, mitigate impacts of overgrazing in the MCA and keep rinderpest at bay, the MCA Community Partnership & Education Programme will support the establishment of a community wildlife conservancy north of Bisanadi National Reserve spanning from Kinna to Rahole National Reserve. Since this land, like most of the pastoral land in Isiolo, is trust land under the trusteeship of the County Council of Isiolo, the community (through the CCCs and CCF) will collaborate with the Council in the establishment of the conservancy. This action will need to take into account the proposed expansion of BNR to the district boundaries. The community will then either lease the conservancy to a private entrepreneur for tourism development, or manage the conservancy as other pastoral communities are doing elsewhere in the country.

## Action 3.2 Support preparation and implementation of integrated water resource management plans in the water catchment area

Most rivers that flow through the MCA originate outside the protected areas. The sources of Kinna, Bisanadi, Murera, Mulika, Bwatherongi, Makutano, Mtundu and Kanjoo rivers are springs located just outside the Meru National Park boundary. The other rivers have their headwaters in the Nyambene Hills, which are situated much further from the park boundary. These rivers are critical to the maintenance of ecological integrity of the MCA because they provide drinking water to wildlife and support a large proportion of the MCA's aquatic life. They are, however, threatened by increased degradation of the water catchment area resulting in reduced water flow.

To redress this, the MCA Community Partnership & Education Programme will support Meru North Water Resource Management Authority and other Resource Water User Associations (WRUAs) (to be formed under Action 3.3 below) in the preparation of integrated water resources management plans for rivers flowing through the MCA. These plans will analyse water resource uses and management issues in each river watershed and develop relevant management actions to be implemented by the WRUAs. KWS' support to the planning process will be in form of attending and facilitating community planning meetings and providing other assistance as may be requested by Meru North Water Resources Management Authority and the WRUAs. It is expected that subsequent implementation of these plans will secure river sources, control over-abstraction of water, improve the rivers' water quality and restore riparian vegetation, leading to increased water flow in the MCA. This action will be implemented in conjunction with Action 3.2.4 of the Ecological Management Programme, which has been developed to address the same issue.

## Action 3.3 Support formation of Water Resource Users Associations for management of the major rivers that flow through the MCA

MNP is supplied with water by 13 rivers that originate from the upper catchment area of Nyambene. The catchment area, like the rest of the country, has been experiencing a rapid increase in population, leading to increased demand for land to cultivate. Increased security in areas bordering the MCA since the 1990s has also contributed to expanding settlement and cultivation in areas west and north of MNP. As a result, the demand for water both for domestic use and irrigation has increased, reducing the amount of river water reaching the MCA. The Water Act (2002), which is now in force, recognises the role of communities in the management of water resources. It provides for the formation of Water Resource Users

Associations comprising water users along a river's course. The functions of the RUAs include protection of the water catchment, addressing environmental problems in the watershed, and resolving water use conflicts. The MCA community and education staff have been working closely with Meru North Water Resource Management Authority in creating awareness on the impacts of poor management of the water resource in the water catchment area. In order to curb the problem of reduced water flow in the rivers, KWS will support formation of the associations, in particular by co-funding meetings that will be organised during the community mobilisation stage. This action will be implemented in conjunction with Action 3.2.3 of the Ecological Management Programme, which has been developed to achieve the same aims.

### Action 3.4 Support formation of a Forest Users Association for management of Ngaya Forest

Illegal cultivation, charcoal burning and logging are the major threats to conservation of Ngaya Forest Reserve, which is under the jurisdiction of the Kenya Forest Service. This forest has been identified as a key breeding area for a group of elephants that migrate here from MNP and BNR during the dry season. The Forest Act (2005) recognizes the role of forest communities in conservation and management of forests where they reside. It provides for registration of a Community Forest Association (CFA) comprising of community members who have traditional association with a forest for purposes of livelihood, culture or religion. The CFA can apply to the Director of Forests for permission to conserve the forest in accordance with a forest management plan and reap benefits that accrue there from. The MCA Community Partnership & Education Programme will assist the Ngaya Forest community in the CFA registration process. This will include facilitating key decision-making meetings and the preparation of a management plan for the forest. In all this, the MCA Management will work very closely with the Kenya Forest Service. This action will be implemented in conjunction with Action 3.4 of the Ecological Management Programme, which has also been developed to support the development of a Forest User Association.

### Action 3.5 Carry out negotiations with farmers who are cultivating or residing in MNR so that they can move out of the reserve

With enhanced security in the area around the MCA in the 1990s, coupled with lack of management presence throughout the PAs, MNR has experienced a huge influx of farmers in the last ten years. Human encroachment for cultivation, livestock grazing and subsistence poaching has effectively displaced wildlife from the reserve, such that none is seen in the reserve today. In order to restore biodiversity integrity and exploit the tourism potential of MNR, it is critical that cultivation and settlement in the reserve is discontinued. This will be achieved through negotiations and dialogue with community members who are settling and cultivating in the reserve. The County Council of Mwingi has already started the negotiations and these have borne fruit, as attested by the scattered abandoned farms in the reserve. The efforts of CCM will be sustained through support that will be accorded through the Community Partnership and Education Programme until the reserve is free of cultivation and settlement. In addition, to ensure that the negotiations are not derailed by politics, the support of the district administration and local politicians will be sought.

### Action 3.6 Support establishment of community managed livestock grazing blocks in Isiolo and Garissa Districts

Every year, MCA management uses considerable resources, both financial and human, in trying to curb the influx of livestock in the MCA, but with minimal success. The PA manage-

ment has been arresting herders, and subsequently taking them to court where they are tried and fined. However, the fines imposed by the courts, as established by the Wildlife Act, are not a sufficient deterrent to control livestock incursions. Therefore, it is prudent to try new and complementary measures that are community based and socially acceptable to the pastoralists in the MCA-adjacent areas. This action will therefore establish a grazing buffer zone around the protected areas to be managed by the local pastoralists, making it difficult for pastoralists from far-off districts to access the protected areas. The local community will develop and enforce traditional grazing control mechanisms, requiring community members to contain livestock in designated grazing blocks according to a rotational grazing system. KWS and other stakeholders will provide infrastructure such as water supply and cattle dips to support livestock production in the designated grazing blocks. Boreholes with wind pumps will be sunk in strategic areas around KNP, and at Masyungwa (Mwingi) and Kula Mawe and Boji (Meru). The establishment of these grazing blocks will require extensive consultations with stakeholders and particularly the local pastoralists who hold the major stake. Other important stakeholders to be consulted include Ministry of Livestock and district administration in Tana River, Garissa and Mandera Districts, and local NGOs. To the south of Kora NP and Mwingi NR, four grazing blocks will be established between Madogo and Boka wells. North of Bisanadi NR, livestock grazing blocks will be established in line with measures to be implemented under Action 3.1.

Pastoral communities neighbouring the MCA incur substantial livestock losses due to tick-borne diseases. While livestock is dipped to control ticks, wildlife on the other hand is not dipped, making it a reservoir of ticks and tick-borne diseases. Since interactions between livestock and wildlife are expected to increase over the lifespan of the plan, it is important that intervention measures be implemented to control tick-borne diseases. Under this management action, KWS will therefore support tick eradication programmes through the provision of acaricides to pastoralist communities.

# Objective 4: Human-wildlife conflict reduced

The future desired state at the MCA is where human-wildlife conflict (HWC) around the MCA, in particular crop raiding, livestock attacks/predation, disease transmission, and human injury or loss of life, are minimised in order to improve MCA-community relations. To achieve this objective, six management actions have been developed. These relate to: establishing and maintaining a human-wildlife conflict database and identifying HWC hotspots; constructing and maintaining wildlife barriers in areas prone to crop raiding; establishing an effective communication network to facilitate prompt reporting of human-wildlife conflict incidents; establishing problem animal control (PAC) outposts; providing wildlife control equipment to mobile PAC teams; and identifying and recommending gazettement of honorary wardens. These actions are elaborated below.

**Action 4.1 Establish a human-wildlife conflict database and identify HWC hotspots**

A well organised database can be a valuable source of information to support planning and decision making. A significant amount of HWC data is available at the MCA, but it is not organised and stored in a format that can facilitate quick analysis to discern nature, extent, spatial distribution and trends of the conflicts. The data is stored in occurrence books making retrieval a very tedious task. To correct this and facilitate monitoring of HWC cases, a computerised HWC database will be designed and implemented and, to ensure that the database is functional, MCA Community staff will be trained on aspects of database maintenance. In addition, to ensure that KWS acts promptly to HWC cases, HWC hotspots will be identified through a participatory process involving thorough analysis of HWC data, and extensive

consultations with the affected local communities. The identification of HWC hotspots will inform the selection of priority areas for constructing wildlife barriers (Action 4.2), the establishment of HWC communication facilities (Action 4.3), and the establishment of HWC outposts (Action 4.4).

> **Action 4.2 Construct and maintain wildlife barriers in areas prone to crop raiding**

Crop raiding is the most common HWC reported by MCA-adjacent communities, and is mainly caused by elephants, buffalo and baboons. The majority of incidents occur between June and August when crops (principally maize and legumes) are mature, and the main areas of conflict are in the agricultural areas found to the west and north of Meru National Park. KWS has used wildlife barriers, such as electric fences, moats and stone walls, to mitigate HWCs in many conflict hotspot areas in the country. However, the electric fence has proved to be the most effective barrier in containing large herbivores such as elephants, and it is for this reason that it is being used to mitigate crop-raiding incidents in the MCA. The northern and western border of MNP (from old Bisanadi gate to Kiorimba) has already been fenced, with a significant reduction in HWC as a result. To enhance problem animal management in the MCA, several measures will be carried out:

‣ The electric fence along the western boundary of MNP will be extended from Kiorimba to Tesiwa and thereafter up to Tana River to cover the entire northern and western boundaries of MNP.
‣ In order to contain primates and thereby minimise crop raiding (particularly by baboons), the electric fence along the western boundary of MNP will be up-graded at baboon crossing points to make it baboon proof.
‣ With enhanced management of Mwingi NR, it is expected that wildlife will re-colonise the reserve and HWC cases will increase. To minimise HWCs between MNR and adjacent communities and at the same time discourage livestock and agricultural encroachment into the reserve, an electric fence will be constructed on the western boundary of the reserve.

In order to ensure that the fences are functional throughout the year, KWS will carry out regular maintenance to both the boundary and the community fences (at Kinna, Rapsu, Asako, and Jarara). In addition it will be important to ensure that any new fence developments do not undermine efforts to keep migration and dispersal areas to the north of the MCA open (see Sub-objective 1.3 of the Ecological Management Programme).

> **Action 4.3 Establish an effective communication network to facilitate prompt reporting of human-wildlife conflict incidents**

One reason attributed for the poor relations between local communities and MCA management is undue delay in responding to human-wildlife conflicts incidents. This could be due to lack of an effective communication mechanism to enable the affected community to report problem animal incidents in time before extensive damage to crops or injury to people occurs. Therefore, to ensure that incidents are reported to MCA management rapidly, the communities living in areas prone to perennial HWC will be provided with telecommunication radios that are linked to the KWS radio communication network. The radios will be provided to HWC hotspot areas (e.g. Kinna, Asako, Kaningo, Masyungwa) through the CCCs, which are the forum for dialogue between MCA and local communities (Action 1.1). Also, the MCA Community Partnership & Education Programme will establish a HWC mobile telephone hotline to further boost the mechanisms of reporting HWC incidents.

### Action 4.4 Establish problem animal control (PAC) outposts

Certain areas, due to their location on wildlife migratory routes, experience very frequent HWCs (especially from elephants), warranting constant attention. A good example of this is Kinna-Rapsu in Isiolo, where most elephant-human conflict in the MCA occurs. For the HWC hotspots (identified through Action 4.1 above), PAC outposts manned by well-equipped rangers will be established through Action 2.2.1 of the Protected Area Operations Programme.

### Action 4.5 Provide wildlife control equipment to mobile PAC teams

It has been noted that there is a correlation between the number of HWC incidents reported and the MCA crop calendar. Most crop-raiding incidents are reported between June and August when crops are mature, leading to substantial losses. The incidents are also widespread with scores of farmers being affected. In order to respond to these incidents effectively, mobile PAC teams will be constituted during the peak HWC period. These teams will be provided with complete sets of camping gear to enable them to set camp in the affected areas and respond to cases from close proximity.

### Action 4.6 Identify and recommend gazettement of honorary wardens

The Wildlife Act (CAP 376) provides for the appointment of honorary wardens to further strengthen wildlife conservation and management, especially outside the protected area network. Such a warden exercises the same powers as a KWS warden and therefore can be used to carry out problem animal management activities. In order to further boost HWC response measures in the MCA, MCA management will identify from among the local community, persons of integrity who have a passion for conservation and recommend them to the Director KWS for gazettement as honorary wardens.

# Objective 5: Opportunities for local communities to benefit from the MCA improved

The desired future state of the MCA is one where MCA-adjacent communities are benefiting directly from support given through KWS' social responsibility projects or income-generating conservation projects. Eight management actions have been developed to achieve this objective, focusing on: promoting bird shooting blocks located adjacent to the MCA; implementing and supporting maintenance of projects identified by communities under the MCADP; supporting communities in identification and exploitation of ecotourism opportunities; promoting cultural tourist facilities and events; providing employment opportunities to members of the local community; promoting sustainable utilisation of biological resources, e.g. harvesting and marketing Gum Arabica; building entrepreneurship capacity among the local community; and supporting communities in preparation of proposals to seek donor funding. These actions are discussed further in the following sections.

### Action 5.1 Promote bird shooting blocks located adjacent to MCA[9]

In areas adjacent to the MCA, bird shooting is carried out on trust land in bird shooting block I4 which borders Bisanadi NR. Hunters usually use Bisanadi Tented Camp as their base during the hunting season, but the hunting block booking fees are collected by KWS at its licensing office in Nairobi. KWS in turn remits these fees to the Waso-Bisanadi Wildlife Forum to support community projects such as maintenance of the community radio communication network. For instance in 2006, the Kinna community received over Ksh. 400,000 from KWS. Although bird shooting has potential to improve community welfare, there is neither an established game bird management system nor a well-structured mechanism for community participation in the management and monitoring of bird shooting. For this reason, KWS will endeavour to promote participation of the local community in management and monitoring of game bird populations outside the protected areas. Regular game bird surveys will be carried out with a view to generating scientific information on the population status of game birds. This information will in turn be used in promoting and marketing the bird shooting blocks locally and internationally. The bird shooting blocks will be leased to bird shooting professionals who will manage and develop the block. In addition, KWS will support the establishment of a community bird shooting coordination office, which will work closely with KWS in monitoring bird shooting activities.

### Action 5.2 Implement and support maintenance of social projects identified by communities under the MCADP

Assisting communities by funding community projects not only helps KWS to fulfil its corporate social responsibility, but also increases community support for local conservation initiatives. KWS has therefore been funding a wide range of social projects in MCA-adjacent areas, key among these being construction of roads, classrooms, health clinics, and rehabilitation of community water supply systems. The communities around the MCA have identified several social projects for implementation through the MCADP, which are expected to be completed before the project ends in 2007. The MCA Community Partnership & Education Programme will strive to ensure that all planned projects are implemented and, in case some will not have been completed, funding will be sought to complete them. To ensure that the projects are sustainable, members of the local community will be trained on maintenance of equipment that has been installed (e.g. water pumps) as per Action 1.2 above. New community projects that may be funded during the implementation period of this plan will be identified and prioritised by the CCCs, supported under Action 1.1.

### Action 5.3 Support communities in identification and exploitation of ecotourism opportunities

Involving local communities in tourism development can provide a means to gain community support for conservation outside the protected areas. Aside from direct employment, tourism also offers opportunities for development of enterprises that supply inputs to the tourism trade. Income can also be earned through leasing access to land if the custodianship of the land is bestowed on the community. This action will seek to assist communities in identifying and mapping all potential ecotourism opportunities outside the protected areas. These include wildlife concentration areas in the northern grazing lands, areas with plants of medicinal, scientific or cultural significance, strategically located inselbergs that provide vantage

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[9] At the time of publication of this management plan, ongoing development of Kenya's wildlife legislation may result in the prohibition of all forms of bird hunting. Should this eventuate, this management action will no longer be appropriate and will not be pursued.

points for scenic viewing, picnicking and sundowners, and potential cultural villages. Sites that have potential for development of tourist accommodation facilities, such as ecolodges and tented campsites, will also be identified. This information will be used by KWS and local stakeholders to raise the interest of tour operators in the tourism opportunities in areas adjacent to the MCA. Where appropriate, information on community tourism ventures and attractions will also be included in new MCA interpretation materials, such as the MCA map and guidebook (see Actions 3.3 and 3.4 of the Tourism Development and Management Programme), in order to raise visitor awareness of the existence of these attractions.

## Action 5.4 Promote the Marka Cultural Centre and other cultural tourist attractions and events

The Borana community at Kinna is operating a cultural centre (Marka Cultural Centre) with support from KWS. Members of the centre also earn income from the cultural dances that they offer in the three existing tourist accommodation facilities in the MCA (Elsa's Kopje, Leopard Rock Lodge, and Bisanadi Tented Camp). In addition, camel riding safaris are offered to visitors who call at the cultural centre. However, with low tourist volume in the MCA, only a handful of visitors are received at the centre. Since it is anticipated that tourism volume will increase during the plan implementation period, cultural activities of the communities living in the MCA-adjacent area will be promoted to attract visitors. In addition, cultural events will be organised in collaboration with the communities and tourism stakeholders to show visitors the rich culture of the MCA communities. Other events which will aim at reaching out to tourists and create awareness on natural resources in the MCA will also be organised. These will include sport tournaments that will involve KWS, the community and tour operators in the MCA.

## Action 5.5 Promote sustainable utilisation of Gum Arabica in MCA-adjacent areas

The rich biological resources around the MCA provide local communities with livelihood means through the many products that are harvested including: timber for building, firewood and charcoal as source of energy, honey, medicinal plant products, natural gums, and edible wild fruits. From 1992-1994, an NGO, Semi Arid Lands Training and Livestock Improvement Centre (SALTLICK), with funding from GEF, implemented a Gum Arabica utilisation project in Isiolo District. This was a demonstration project that sought to assist the pastoralist communities to sustainability exploit Gum Arabica (which is harvested from *Acacia senegal*), to increase their incomes and thereby reduce tree cutting for charcoal. In this project, the community participated in collecting Gum Arabica from Acacia trees in the wild, grading it and packaging it for export. In view of the awareness that has already been created as regards Gum Arabica, ways and means of re-establishing a Gum Arabica harvesting and marketing system will be explored to complement communities' incomes from livestock keeping and agricultural activities.

## Action 5.6 Promote beekeeping in MCA adjacent areas

If well managed, conservation linked activities such as beekeeping can be a viable alternative source of income for the local community residing adjacent to the MCA. However, such ventures often fail due to lack of know-how on production of bee products and lack of a ready market, which often leads to producers of bee products being exploited by middlemen. Through this action, community members will be trained in production of high quality bee products, and efforts will be made to link beekeepers with established dealers in bee products. It is expected that increased economic benefits from beekeeping and other natural

resource utilisation projects will be strong incentives to counter threats posed by charcoal burning and over-harvesting of commercially viable medicinal plants in the MCA adjacent areas.

**Action 5.7 Build entrepreneurship capacity among the local community**

The pastoral community living adjacent to the MCA lacks entrepreneurial skills to exploit opportunities available in the tourism and conservation sectors. Because of this handicap, it will be difficult for them to participate fully in the conservation-compatible income generation projects that will be promoted and supported under this objective. This action therefore seeks to impart entrepreneurial skills among community members to enable them to initiate and operate businesses successfully. Training will be tailor made with special focus being put on the type of businesses that community groups would like to engage in, and will be targeted at those groups that are being supported in the development of income-generating activities through this objective.

**Action 5.8 Support communities in preparation of proposals to seek donor funding**

It is vital that sustainability of KWS-funded community projects is ensured, otherwise there is a likelihood of establishing community structures that cease to be of use when KWS funding is no longer available. A very effective way of mobilising funds to support maintenance of community projects is through the development of project proposals targeting identified donor funds. The MCA Community Partnership & Education Programme will assist the communities in preparing and marketing funding proposals to potential donor agencies with an aim of generating funds for maintaining the projects.

# Three Year Activity Plan 2007 – 2010

The following pages set out the first 3-Year Activity Plan for the Community Partnership & Education Programme. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that MCA management aims to achieve in implementing the plan.

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 1: PA-community communication and collaboration mechanisms improved** | | | | | | | | | | | | | | |
| **1.1 Strengthen and support PA-community consultation mechanisms** | | | | | | | | | | | | | | All CCCs and CCFs are reconstituted by end of FY08-09 and have met at least once |
| 1.1.1 Hold discussions with community leaders and decision makers about requirements for making CCC and CCF functional | CW, CCClerks, SW-ICC, WK | ▓ | ▓ | | | | | | | | | | | |
| 1.1.2 Develop simple action plan for reconstituting CCC and CCF and agree with key decision makers | " | | | ▓ | ▓ | | | | | | | | | |
| 1.1.3 Incorporate mechanisms for ensuring gender balance and participation of youth and marginalised community members in community forums | " | | | ▓ | ▓ | | | | | | | | | |
| 1.1.4 Assist CCCs and CCF in establishing governance systems, election procedures and byelaws | " | | | | | ▓ | ▓ | ▓ | | | | | | |
| 1.1.5 Participate in CCC and CCF meetings and promote linkages between the community forums and wider community | " | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **1.2 Build capacity of the CCCs and CCF to effectively manage community projects** | | | | | | | | | | | | | | At least one project proposal has been produced by each CCC by end FY09-10 and reviewed by the CCFs and MCA management |
| 1.2.1 Provide training to CCC and CCF members in project cycle management - proposal writing, implementation, and monitoring | CWS, CW, WK | | | | | | | X | X | | | | | |
| 1.2.2 Review project proposals and interact with CCC and CCF in revising and improving proposals ready for approval | CWS, CW, WK | | | | | | | | | X | X | X | X | |
| 1.2.3 Provide follow-up support to CCC and CCF in project development and implementation | CW, WK | | | | | | | | X | X | | | | |
| 1.2.4 Support visits to existing successful projects and highlight lessons learnt in project management | CW, WK | | | | | X | | | X | X | | | | |
| **Objective 2: Conservation education and awareness programme strengthened** | | | | | | | | | | | | | | |
| **2.1 Prepare interpretation materials targeting local communities** | | | | | | | | | | | | | | At least 100 copies of each category of interpretation materials produced and distributed per annum. |
| 2.1.1 Liaise with the KWS Education and Marketing sections in the production of leaflets and brochures for distribution to schools | WE | X | X | X | X | | | | | | | | | |
| 2.1.2 Prepare posters for distribution to schools in the MCA adjacent areas | WE, SW-MCA, WT | | | | | X | X | X | X | | | | | |
| **2.2 Redesign the MCA Education Programme to target key sectors of the community** | | | | | | | | | | | | | | At least 2 workshops are held per year from 2007-08 onwards |
| 2.2.1 Organise conservation workshops and seminars for local leaders | WE, COW, WK | X | | X | | | X | X | | X | X | | X | |
| 2.2.2 Organize workshops for students | " | | X | | | X | | | X | | | X | | |
| **2.3 Re-establish sponsored protected area tours for the local community** | | | | | | | | | | | | | | The KWS bus is hired at least once a month |
| 2.3.1 Organize sponsored PA tours for adult local residents from the MCA adjacent areas | WE, CW | X | X | X | X | X | X | X | X | X | X | X | X | |
| 2.3.2 Organise PA tours for local leaders | WE, WK | | | X | | | X | | | X | | | X | |
| 2.3.3 Introduce a bus hire programme to enable community groups to visit the MCA | WE, WK | | X | X | X | X | X | X | X | X | X | X | X | |

| Management Action and Activities | Persons Responsible | Timeframe FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **2.4 Promote the MCA through the mass media, Internet, and organising and participating in both local and international conservation awareness events** | | | | | | | | | | | | | | At least two radio talk shows organised and MCA Conservation Education Newsletter launched by end of 2007 |
| 2.4.1 Organize a monthly children call-in programme with a local radio channel | WE, SW-MCA, WT | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.2 Organize conservation radio talks shows | " | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.3 Produce quarterly conservation education newsletter | " | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.4 Participate in international conservation events (World Wetlands Day - February, World Environment Day - June, World Tourism Day - September) | CW, WE | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **2.5 Support WCK's education activities** | | | | | | | | | | | | | | |
| 2.5.1 Liaise with WCK Action Group Leader about KWS participation in WCK workshops, seminars and rallies. | WE | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **Objective 3: Conservation compatible community land uses and practises promoted** | | | | | | | | | | | | | | |
| **3.1 Establish a community wildlife conservancy between Kinna and Rahole NR** | | | | | | | | | | | | | | Proposal on conservancy establishment presented to Isiolo County Council by December 2009 |
| 3.1.1 Sensitize local communities on conservancy establishment | SW-ICC, CW | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | |
| 3.1.2 Identify and map potential conservancy area in collaboration with Isiolo County Council | " | | | | | | | | | | ■ | | | |
| 3.1.3 Prepare proposal to establish conservation area and submit to full county council meeting for approval (council resolution) | " | | | | | | | | | | ■ | ■ | | |
| 3.1.4 Assist communities and county councils in the development of a management plan | " | | | | | | | | | | ■ | | | |
| 3.1.5 Place beacons along conservancy boundary | " | | | | | | | | | | | ■ | | |
| 3.1.6 Support development of county council and community agreements on area management, distribution of benefits and responsibilities | " | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **3.2 Support preparation and implementation of integrated water resource management plans in the water catchment area** | | | | | | | | | | | | | | |
| 3.2.1 Provide logistical support for meetings of water resource users associations in preparing management plans | CW, MNWRMA | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 3.2.2 Participate in planning meetings | " | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 3.2.3 Provide logistical and material support as appropriate for implementation of completed management plans | " | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 3.2.4 Continue interacting with WRUAs to monitor implementation of management plans | " | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **3.3 Support formation of Water Resource Users Associations for management of the major rivers that flow through the MCA** | | | | | | | | | | | | | | |
| 3.3.1 Identify main MCA river catchments where WRUAs do not presently exist | CW, MNWRMA | ■ | ■ | ■ | ■ | | | | | | | | | |
| 3.3.2 Liaise with district water managers to decide on strategies and activities to support establishment/activation of WRUAs | CW | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| 3.3.3 Provide logistical support for awareness-raising and capacity building community meetings to promote WRUA establishment and to enhance activities of existing WRUAs | CW | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 3.3.4 Participate in WRUA/community meetings as appropriate | CW | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **3.4 Support formation of a Forest Users Association for management of Ngaya Forest** | | | | | | | | | | | | | | First KWS-KFS meeting on Ngaya forest held by December 2007 |
| 3.4.1 Discuss and agree with district forest managers on practical support needs of Ngaya Forest Users Association and possible role that MCA Management can play | CW, FO | | ■ | | | | | | | | | | | |
| 3.4.2 Provide practical and technical support to NFUA as necessary, in collaboration with district forest officers | CW | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 3.4.3 Support and participate in the preparation of a management plan for Ngaya Forest as appropriate | CW | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **3.5 Carrying out negotiations with farmers who are cultivating or residing in MNR so that they can move out of the reserve** | | | | | | | | | | | | | | Illegal cultivation in Mwingi National Reserve stopped by end of June 2010 |
| 3.5.1 Facilitate land surveyors to carry out sub-division and allocation of land in the 2km strip of Mwingi NR already degazetted | WK, MCC | | | | | | █ | █ | █ | | | | | |
| 3.5.2 Hold sensitisation meetings in affected communities in preparation for relocation | MCC | █ | █ | █ | █ | █ | █ | | | | | | | |
| 3.5.3 Remove squatters that are not eligible for resettlement in 2km strip | MCC | | | | | | | | | | █ | █ | | |
| **3.6 Support establishment of community managed livestock grazing blocks in Isiolo and Garissa Districts** | | | | | | | | | | | | | | |
| 3.6.1 Support Ministry of Livestock in carrying out socio-economic survey to identify the potential grazing blocks, the livestock owners, the potential water resources, and recommendations for future activities | WK | | | | | | | | | | | | | |
| 3.6.2 Support sensitisation of communities concerning study recommendations and reactivation of grazing blocks | WK | | | | | | | | | | | | | |
| 3.6.3 Support Ministry of Livestock in implementing community mechanisms supporting grazing blocks as necessary | WK | | | | | | | | | | | | | |
| 3.6.4 Purchase and supply acaricides to pastoralist communities | CWS | | | | | | | | | | | | | |
| **Objective 4: Human-wildlife conflict reduced** | | | | | | | | | | | | | | |
| **4.1 Establish a human-wildlife conflict database and identify HWC hotspots** | | | | | | | | | | | | | | Customised computer software designed and installed by December 2007 |
| 4.1.1 Provide computer and relevant database management system | CW, WK | █ | █ | | | | | | | | | | | |
| 4.1.2 Train problem animal control rangers on data management | | | | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| 4.1.3 Produce human wildlife conflict quarterly reports | WE | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 4.1.4 Hold community meetings to identify HWC hotspots based on information collected | CW, WK | | | | | | | | | | | | █ | |
| **4.2 Construct and maintain wildlife barriers in areas prone to crop raiding** | | | | | | | | | | | | | | |
| 4.2.1 Train members of the local community on fence mainte-nance | CW, CW, WK | | | | | | | █ | █ | █ | █ | █ | | |
| 4.2.2 Monitor the effectiveness of the existing fences | " | | █ | █ | █ | █ | █ | █ | █ | █ | █ | | | |
| 4.2.3 Maintain existing electric fences | " | | █ | █ | █ | █ | █ | █ | █ | █ | █ | | | |
| 4.2.4 Liaise with the KWS Technical Services Department in the construction of Kiorimba-Tesiwa-Tana River electric fence | " | | | | | | | | | | | | | |
| **4.3 Establish an effective communication network to facilitate prompt reporting of human-wildlife conflict incidents** | | | | | | | | | | | | | | |
| 4.3.1 Identify additional areas to install radio communication equipment to enhance the existing HWC radio network. | CW, WK, I/C Nyeri, Maralal Telecoms | | | | | | █ | █ | | | | | | |
| 4.3.2 Install radio communication equipment as required | " | | | | | | | | █ | █ | █ | █ | | |
| 4.3.3 Establish a HWC mobile telephone hotline to boost the mechanisms of reporting HWC incidents | " | █ | | | | | | | | | | | | |
| **4.4 Establish problem animal control (PAC) outposts (see Action 2.3 Security Programme)** | | | | | | | | | | | | | | |
| **4.5 Provide wildlife control equipment to mobile PAC teams** | | | | | | | | | | | | | | |
| 4.5.1 Procure camping gear for PAC teams | CW, SO, WK | | | █ | | | | | | | | | | |
| 4.5.2 Deploy PAC teams to problem areas | " | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | | |
| **4.6 Identify and recommend gazettement of honorary wardens** | | | | | | | | | | | | | | One honorary warden from MCA gazetted by end of December 2008 |
| 4.6.1 Identify honorary wardens from among members of the local community | CW, SW-MCA, | | | | | █ | █ | | | | | | | |
| 4.6.2 Liaise with KWS Director for the gazettement of the hon-orary wardens to be effected | " | | | | | | █ | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 5: Opportunities for local communities to benefit from the MCA improved** | | | | | | | | | | | | | | |
| **5.1 Promote bird shooting blocks located adjacent to MCA** | | | | | | | | | | | | | | A game bird survey in MCA adjacent areas carried out by end of June 2009 |
| 5.1.1 Sensitize the community on the importance of bird shooting. | SW-ICC, CW, Licensing HQS, WK, SRS | | | | | | ▓ | ▓ | | | | | | |
| 5.1.2 Carry out a game bird survey | " | | | | | | | | ▓ | | | | ▓ | |
| 5.1.3 Liaise with KWS Marketing section in the preparation of marketing material for bird shooting blocks in areas adjacent to the MCA | " | | | | | | | | | ▓ | | | | |
| 5.1.4 Support establishment of a community bird shooting coordination office | " | | | | | | | | | | | | | |
| **5.2 Implement and support maintenance of social projects identified by communities under the MCADP** | | | | | | | | | | | | | | At least one workshop organised by end of June 2008 |
| 5.2.1 Organise training workshops for members of the local community on maintenance of project equipment | CW, WK, SW-MCA | | | | | ▓ | | | | ▓ | | | ▓ | |
| 5.2.2 Identify new social projects in collaboration with CCCs and CCF | " | | | | | ▓ | | | | | | | | |
| **5.3 Support communities in identification and exploitation of ecotourism opportunities** | | | | | | | | | | | | | | A report on potential tourist sites in MCA adjacent areas prepared by end of June 2008 |
| 5.3.1 Carry out a survey of potential tourist sites in MCA adjacent areas | CW, WK, SRS | | | | | | ▓ | | | | | | | |
| 5.3.2 Liaise with KWS Marketing Section to ensure inclusion of sites in all relevant MCA interpretation materials (e.g. map and guidebook, including the Marka Cultural Centre - see below) | WT, CW | | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | |
| **5.4 Promote the Marka Cultural Centre and other cultural tourist attractions and events** | | | | | | | | | | | | | | |
| 5.4.1 Organize cultural dances at tourist facilities | CW, WE | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **5.5 Promote sustainable utilisation of Gum Arabica in MCA adjacent areas** | | | | | | | | | | | | | | |
| 5.5.1 Organise a training workshop for members of the pastoralist community to train them on harvesting and marketing of gum Arabica | CW, SW-ICC, MCC, | | | | | | | | █ | | | | | |
| **5.6 Promote beekeeping in MCA adjacent areas** | | | | | | | | | | | | | | |
| 5.6.1 Support establishment of apiaries in Mwingi | CW, WK, | | | | | | | | | █ | █ | █ | █ | |
| 5.6.2 Organise training seminars on production and marketing of honey | CW, WK, | | | | | | | | █ | | █ | | | |
| **5.7 Build entrepreneurship capacity among the local community** | | | | | | | | | | | | | | |
| 5.7.1 Organise entrepreneurship training workshops for members of the local community | CW, WK, SW-ICC, | | | | | | | | | █ | █ | █ | | |
| **5.8 Support communities in preparation of proposals to seek donor funding** | | | | | | | | | | | | | | At least one project proposal has been prepared and submitted for funding by June 2008 |
| 5.8.1 Organize seminars/workshops on proposal writing | CW, WK | | | | | █ | █ | █ | █ | | | | | |
| 5.8.2 Prepare community project proposals and submit to donors for funding | WE, WT, SRS | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |

**Abbreviations**

CCClerks - County Council Clerks

CW - Community Warden

CWS - Community Wildlife Service

MCC - Mwingi County Council

MNWRMA - Meru North Water Resources Management Authority

SRS - Senior Research Scientist

SW-ICC - Senior Warden Isiolo County Council

SW-MCA - Senior Warden Meru Conservation Area

WE - Warden Education

WK - Warden Kora

WT - Warden Tourism

# Security Programme

# Programme Purpose and Strategy

> The MCA and surrounding community areas are a safe and secure environment, and encroachment, livestock grazing and other illegal natural resource uses within the core protected areas are minimised

Over the last five years, the MCA Management has successfully reduced commercial elephant poaching and has prevented any visitor security incidents in the MCA. However, due to the area's geographic location and a past history of security incidents in and around the area, the safety of MCA visitors and staff, and the protection of the area's natural resources, remains an issue of paramount importance; a situation that is unlikely to change during the 10-year lifespan of this plan. As such, efficient, effective and extensive security operations are particularly important in the MCA, and are key to the successful implementation of various aspects of this plan; including, perhaps most importantly, the proposed expansion of tourism in currently underused parts of the MCA (such as Kora NP and the two national reserves).

The following paragraphs set out the **strategic principles** that will guide MCA Management in the implementation of the Security Programme and the achievement of the Programme Purpose.

***In implementing the MCA's Security Programme, MCA Management will strive to ensure that:***

## Security presence is extended across the MCA

Despite the important security improvements outlined above, the significant human and financial resources that MCA management have invested in law enforcement and security have only so far prevented some illegal activities (such as livestock grazing) in Meru National Park itself, with the rest of the MCA still being significantly impacted at certain times of the year. However, without a significant enhancement in security and the reduction in illegal activities throughout the remainder of the MCA outside MNP, wildlife populations in these areas are unlikely to recover, and tourism investment and use will not expand from the current core area in Meru National Park. This in turn will seriously compromise the MCA's revenue generation potential (with associated impacts on the benefits received by county councils and local communities). As such, a high priority of this management programme is the intensification and extension of security and management presence across the entire MCA. This will be supported by the decentralised sectoral management of the area, which aims to increase management presence and infrastructure development across the MCA, and the establishment of new ranger outposts in line with the sectoral management strategy.

## Operational effectiveness is improved

Although, compared to many other KWS PAs, the MCA has a relatively large ranger force, a number of reoccurring issues are currently undermining the long-term effectiveness of security operations in the area. For example, even in parts of the MCA that are covered by current security operations, difficulties have arisen in prosecuting offenders and establishing an effective deterrent to illegal activities in the area. In addition, potential information from the surrounding communities, which could be utilised to inform and better target security operations, thus making better use of the available security manpower and resources, has not to date been utilised to its full potential. As such, in order to maximise the effectiveness of MCA

law enforcement operations, and ensure that the best possible use is made available re-sources, the Security Programme aims to strengthen the capacity of the MCA ranger force, enhance information management and analysis to better inform security operations, and improve intelligence gathering.

## Collaboration with key stakeholders is strengthened

Covering just over 4,000 km$^2$, the MCA is a large and remote area, which, compounded by limited infrastructure in the area, presents major challenges for security operations. Despite the significant expansion of management presence and improvement of security operation effectiveness outlined in this management programme, communication and collaboration with key stakeholders in and around the MCA will remain essential to improve security re-sponses, strengthen the deterrent against illegal activities in the area, and improve the over-all effectiveness of security operations. Although the MCA Management will participate in appropriate district level committees (see Protected Area Operations Programme for details), operational collaboration with key stakeholders in and around the MCA is also vital. As such, and in particular to ensure a safe and secure environment for visitors and tourism invest-ments in the area, this programme will strengthen security collaboration with key stake-holders, such as tourism investors and local police.

These strategic principles are intended to guide the implementation of the Security Pro-gramme's four management objectives that, when taken together, achieve the Programme Purpose. These four objectives are:

**MO 1. Visitor security ensured**
**MO 2. Security patrols enhanced**
**MO 3. Intelligence information gathering strengthened**
**MO 4. Arrest and prosecution rates improved**

The following sections describe these management objectives and provide an outline of the management actions needed to achieve them. 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. The final section of the pro-gramme contains the **3-Year Activity Plan** for the Security Programme, and details the activities, responsibilities, timeframe and input requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan.

## Management Objectives

Figure 14 overpage shows the overall objectives tree for the MCA Security Programme.

# Objective 1: Visitor security ensured

Visitor security is, and will remain for the foreseeable future, a very important management issue in the MCA. Unless visitor security can be guaranteed over the entire area, tourism development and use will not expand outside of the High Use Zone, and if security inci-dences occur, even the use of this currently secure area may decline. However, with the anticipated increase in visitors and visitor facilities as the MCA regains its past glory, security measures, and especially proactive ones, need to be implemented to maintain and also boost visitor security in the MCA.

*Figure 14. Security Programme objectives tree*

**MCA SECURITY PROGRAMME PURPOSE**
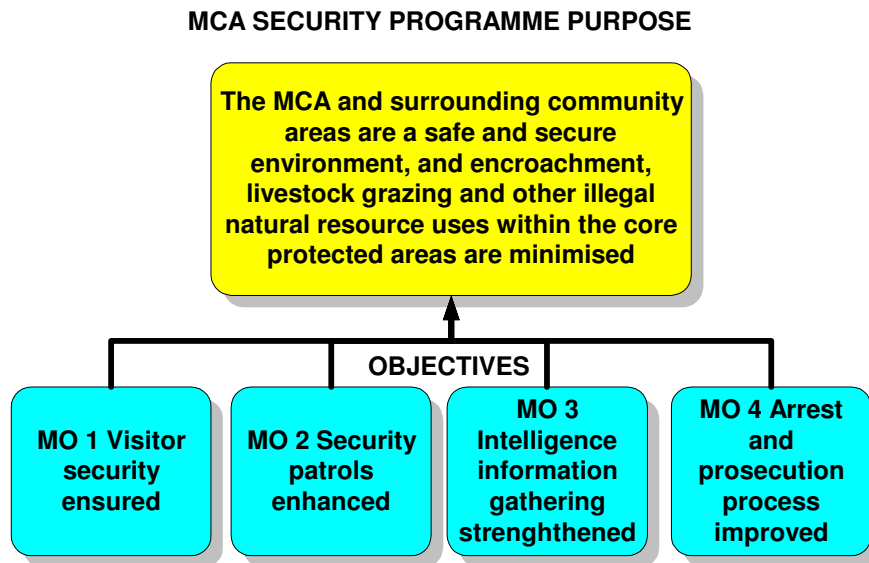


The desired future state of the MCA that this objective aims to achieve is one where visitor safety in and around accommodation facilities in the MCA is ensured. In order to achieve this objective, two management actions have been developed. These relate to: establishing a communication mechanism between the MCA security section and tourist facilities in the MCA, and liaising with the local police to enhance security at the tourist facilities throughout the MCA. These actions are further elaborated below.

**Action 1.1 Establish a communication mechanism between the MCA security section and tourist accommodation facilities**

Sustainable tourism development in the MCA mainly hinges on maintenance of a heightened state of security in the area. It is worth noting that in the last six years, because of a high level of security, not a single incident of attack on visitors has been reported at the MCA, which has contributed to an increase in tourism in the area. To maintain this status, security will be strengthened further by establishing a communication mechanism between the MCA security section and tourist facilities in the MCA. All tourist facilities will be provided with communication radios, which will have a channel for communicating with the MCA security team. In addition, a 24-hour security hotline (cell phone number) will be established to further boost communication between KWS, tourist facilities and the general public.

**Action 1.2 Liaise with the local police to enhance security at tourist accommodation facilities**

KWS is mandated to provide a safe environment for wildlife in the protected areas, but the security of tourist facilities and tourists falls under the ambit of the Kenya Police Force. It is therefore essential that MCA management liaise with the police to ensure that law and order is maintained at the tourist facilities, especially given that these facilities will be employing many staff in future as tourism grows. Through this action therefore, MCA management will liaise with the police to ensure that police officers are deployed at large tourist facilities in the area to maintain security.

# Objective 2: Security patrols enhanced

In the 1980s, wildlife poaching, especially of elephant and rhino, was very high in the MCA, leading to the disappearance of rhinos and a drastic decline in the elephant population in the area. With the formation of KWS in 1990, and an intensive anti-poaching offensive, poachers were driven out of the MCA and security was restored. However, although the overall security situation has improved, and some illegal activities have been reduced (most notably elephant poaching, which has declined to less than 10 incidences annually), some security issues remain a problem, impacting on both the natural resources and the development of tourism in the MCA. The most serious of these issues are livestock incursions and bushmeat poaching. As shown in Figure 15 below, there is seasonally a substantial livestock incursion into Bisanadi and Mwingi National Reserves and Kora National Park. Although some of the livestock grazed in the PAs is from the surrounding communities, most reportedly comes from as far away as Mandera, Garissa, Wajir, Ijara and Tana River Districts.

*Figure 15. Dry season aerial count showing the spatial distribution of domestic livestock in and around the MCA (2005).*
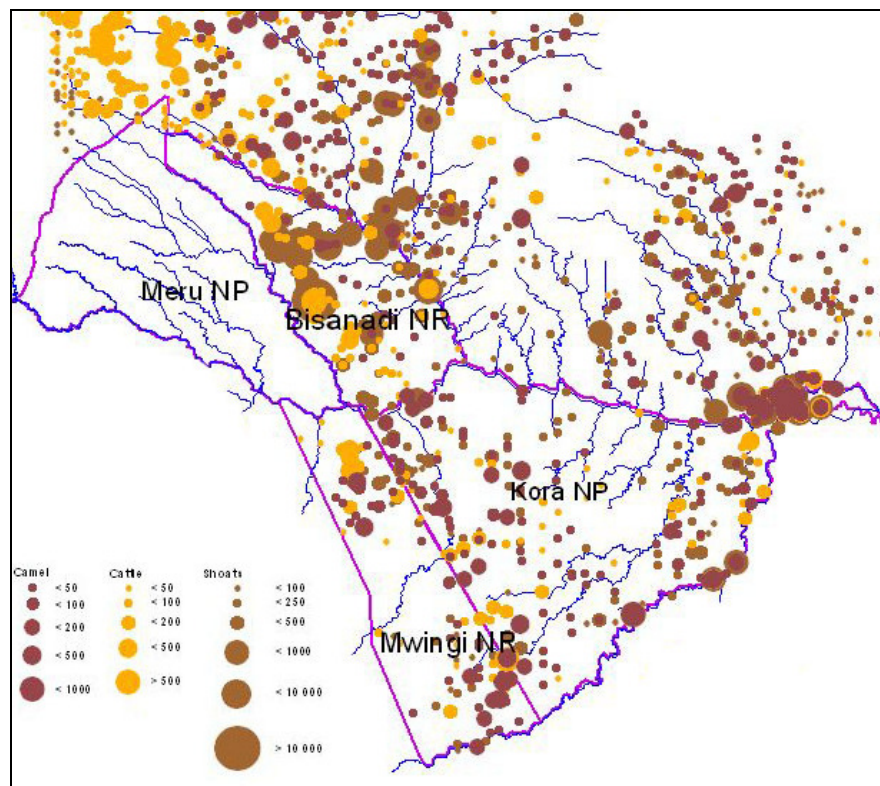


(Source: KWS GIS)

The future desired state this objective aims to achieve is one where security operations have been revamped to effectively address challenges posed by livestock incursion, bushmeat poaching and banditry in the MCA, as well as in adjacent areas. Towards this, three management actions relating to developing an MCA security database, establishing and equipping existing and new patrol outposts, and carrying out intense ground and aerial patrols have been defined. These actions are elaborated below.

## Action 2.1 Establish an MCA security database and identify security hotspots

A security database is essential in order to monitor and evaluate the effectiveness of the overall security strategy at the MCA, 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. Although a database on elephant mortalities has been established at the MCA, through the CITES Monitoring of Illegal Killing of Elephants (MIKE) programme, this database is limited in that it is designed to capture data on elephant mortalities only, and hence data on other species cannot be incorporated in the database. As such, in order to enhance security operations, a comprehensive security database for the MCA will be developed through this action. Key elements of this database will be details on patrols carried out per month (such as patrol route, observations made, and action taken in case of observed illegal activity), details on arrested individuals and action taken, and intelligence information on wildlife-related criminal activities. The database will be linked to a Geographic Information System (GIS) to facilitate display and output of information in the form of maps. This will enable the identification of areas where security issues are most pressing, and the revision of MCA security operations and location of new outputs developed under the following actions.

## Action 2.2 Review security operations and identify new outpost locations

Security patrols at the MCA are carried out both from the air and on the ground. Aerial patrols are carried out using an aircraft based at Kinna Airstrip, while ground patrols are carried out either on foot or using vehicles. Ground patrols are carried out from 14 patrol outposts strategically located in the MCA and adjacent areas (see Table 16 overpage). Currently, the operations of these outposts are coordinated from patrol bases located at Kinna, Rhino and Kamukunga, although this will change as the new sectoral management strategy is implemented in the MCA. However, MCA security patrols are currently poorly structured, with some geographic areas being covered intensely while others are rarely patrolled. Patrols carried out in this fashion have proved ineffective in deterring wildlife-related offences, and especially bushmeat poaching. As such, and incorporating the information collected and security hotspots identified in the previous action, areas for increased patrol effort and the appropriate location of new patrol outposts will be identified. In some cases these areas may also vary on a temporal basis as, for example, pressure from livestock incursions intensifies at different times of year in different parts of the area. This analysis will provide the basis for the rehabilitation and development of new patrol outposts, and for intensifying security patrols, which are implemented through the following actions.

## Action 2.3 Establish new patrol outposts and equip existing ones

Several of the MCA's 14 existing ranger outposts are non-functional; as they lack basic facilities and equipment (e.g. Garbatulla), while others although equipped, lack accommodation facilities (e.g. Korbessa). Although all outposts have radio communication sets, apart from *Kambi ya Simba*, Korbessa, and Rhino, all outposts lack essential tools such as binoculars and GPS. (Table 16 overpage gives facilities and equipment at each outpost.) Through this action, patrol sectors will be established in the three MCA management sectors, Kinna, Tesiwa and Kora. Each outpost will be assigned a patrol sector and it will be optimally staffed and provided with basic equipment such as binoculars, GPS and where necessary, a vehicle, to facilitate ground patrols. The positioning of new outposts will take into account the HWC hotspots and outpost needs identified under Objective 4 of the Community Partnership and Education Programme. The requirement for improving security in the Bisanadi National Reserve has already been recognised, and in this regard a security sector base will be con-

structed at Scot in the Malka-Yaka area, as proposed by the Isiolo County Council. In addition, other sites in Bisanadi NR will be identified and developed during the subdivision of Kinna and Tesiwa sectors into patrol sectors. Accommodation for rangers will be provided at all outposts in line with Action 3.2.1 of the Protected Area Operations Programme.

*Table 16. Facilities and key equipment at MCA security outposts*

| No. | Outpost | No./type of Houses[10] | Housing conditions | Patrol Vehicle | Radio VHF/HF | Binoculars | Fly sheet | GPS | Rain Gauge |
|---|---|---|---|---|---|---|---|---|---|
| 1. | *Kambi ya Simba* | 6 uniports | Poor | 2 | 4 | 2 | 2 | 2 | 2 |
| 2. | Korbessa | None | None | 2 | 3 | 1 | 1 | 1 | Nil |
| 3. | Meru | Uniports/timber hses | Fair | 1 | 2 | 2 | 1 | 1 | Nil |
| 4. | Rhino | 3 blocks | Fair | 1 | 9 | 8 | - | 3 | 1 |
| 5. | Asako | Uniports | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 6. | Punguru | Uniports/power house | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 7. | Kathithini | Uniports | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 8. | Ura | Uniports/timber houses | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 9. | Kiorimba | Uniports | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 10. | Mugwongo | Lodge | Poor | Nil | 2 | Nil | Nil | Nil | Nil |
| 11. | Bisanadi | Uniports/power house | Poor | Nil | 1 | Nil | Nil | Nil | Nil |
| 12. | Maua | Offices | Fair | Nil | 1 | Nil | Nil | Nil | Nil |
| 13. | Garbatula | Nil (housed with administration police) | - | Nil | 1 | Nil | Nil | Nil | Nil |
| 14. | Mwingi | Offices/houses | Poor | Nil | 1HF 1VHF | Nil | Nil | Nil | Nil |

## Action 2.4 Carry out intense ground and aerial patrols

The main protected area offences committed within the MCA are honey harvesting, logging, illegal livestock grazing, cultivation, bushmeat poaching, and collection of gemstones. Although significant advances have been made in securing the MCA, with elephant poaching now vastly reduced and incident-free visitor security during the last 5 years, significant challenges remain (such as livestock incursions illustrated in Figure 15 above). This is particular important in the national reserves and Kora National Park, and unless security can be assured in these areas, tourism will not expand beyond the High Use Zone. As a result, the expansion and intensification of security patrols to curb illegal activities over the entire MCA is paramount during the implementation period of this plan.

In order to combat illegal activities through deterrence means, aerial and ground patrols will be intensified within the MCA. The expansion and intensification of these patrols will be based on the review of security operations carried out under Action 2.2 above, and supported by the development of new security outposts (Action 2.3). In addition, to further facilitate the patrols, an efficient patrol road network will be designed and constructed as one of the activities under Action 4.1.1 of the Protected Area Operations Programme. The patrol teams will also be equipped with modern security equipment including GPS to record spatial data on patrol routes. This data will contribute to the security database that will be established under Action 2.1, and will be used to monitor efforts made by the patrol teams to curb wildlife crime in the MCA.

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[10] All uniports floors are not cemented, except at Asako

# Objective 3: Intelligence information gathering strengthened

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 such as poaching for bushmeat, ivory or rhino horn can be effectively prevented using reliable intelligence information.

The future desired state this objective aims to achieve is one where intelligence information is effectively gathered and is contributing to the enhanced effectiveness of MCA security operations. Two actions have been developed to achieve this, focusing on increasing the intelligence cells and recruiting more informers from the local community, and improving intelligence information handling and analysis.

## Action 3.1 Establish contacts with key informants to increase community involvement in gathering intelligence information

A well dispersed intelligence network is essential to obtain advance warning of events and movements of individuals that pose a threat to wildlife or tourism security in the MCA. The MCA Intelligence Unit collects information on wildlife crimes that are being planned and passes it on to the MCA WPU for action to prevent wildlife-related crimes. Community members can be a vital source of intelligence information as criminals live and operate within the community. Even in cases where criminals come from outside the MCA adjacent areas, there are always local contacts collaborating with them in perpetrating wildlife-related crimes. In areas where a strong relationship, based on trust, exists between KWS and the local community, the security section is usually tipped off about impending wildlife crimes by members of the local communities, and prompt pre-emptive actions are taken, saving wildlife in the process. In order to enhance intelligence information gathering, the existing intelligence cells will be revamped with new contacts being established among key informants in the community. The number of intelligence cells in the MCA adjacent areas will also be increased for comprehensive coverage of the area.

## Action 3.2 Improve intelligence information handling and analysis

It is important that intelligence information is analyzed, collated and verified before it is passed on to the Anti-poaching Unit for action. Pre-emptive security intervention measures usually require deployment of substantial resources, both human and equipment, hence the importance of the reliability of the information that is prompting action. The MCA currently lacks an intelligence information analyst to weigh the accuracy and relevance of intelligence information that is received from the intelligence network. In order to enhance information analysis, an intelligence information analyst will be deployed to the MCA. The analyst will be responsible for maintaining the security database that will be established under Action 2.1, in addition to analysing information received from the intelligence network.

# Objective 4: Arrest and prosecution process improved

Every year, MCA management uses considerable resources, both financial and human, in trying to curb the influx of livestock, and control poaching in the MCA. Figure 16 below shows the number of arrests for livestock incursion in the MCA, which peaks between July and December each year. Figure 17 below illustrates the temporal distribution of arrests for bushmeat poaching in the MCA, the majority of which are between June and October. As a comparison of the two figures shows, there is a high correlation between livestock incursion and bushmeat poaching in the MCA protected areas. The MCA Management has been arresting herders, and subsequently taking them to court where they are tried and fined. However, the fines imposed by the courts, as set by the Wildlife Act, are not a sufficient deterrent to prevent livestock incursions. In some cases, culprits are charged with lesser offences that are not in the Wildlife Act; hence the courts either release them or they get very light penalties.

*Figure 16. Temporal distribution of arrests for livestock incursion in the MCA*
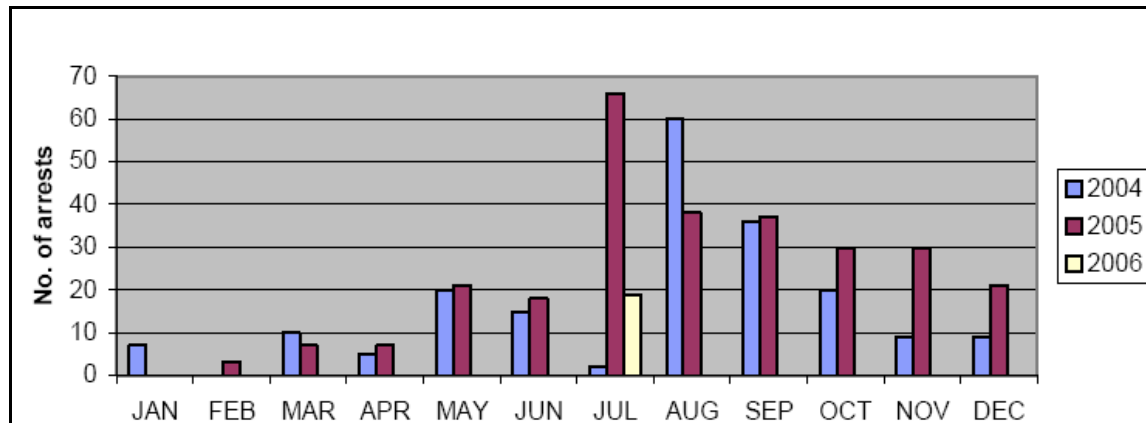


*Figure 17.  Temporal distribution of arrests for bushmeat poaching in the MCA*
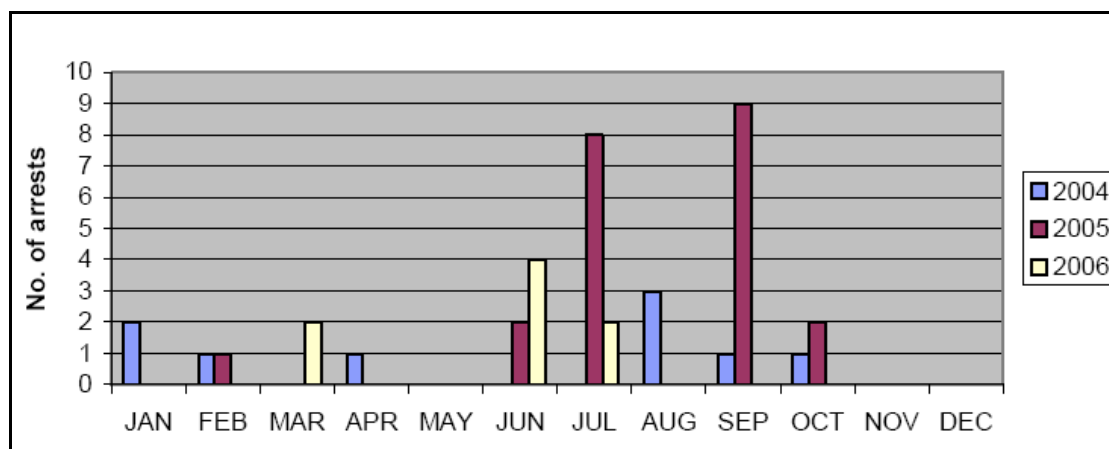


The future desired state that this objective aims to achieve is one where an effective deterrent to illegal activities in the MCA is maintained, and the overall occurrence of violations in the MCA is reduced. In order to achieve this state, two management actions will be implemented designed to increase conviction and prosecution rates. These relate to training MCA rangers on court procedures and the preparation of effective charge sheets, and working with

the local police to streamline the arrest and prosecution process. These actions are expounded in the following sections.

### Action 4.1 Train MCA rangers on court procedures and how to draft effective charge sheets

Most wildlife criminal cases are normally lost, not because the culprits are innocent, but because of legally defective charges or evidence that is poorly produced in court. It is vital to have rangers who understand fully the wildlife offences specified in the Wildlife Act (CAP 376) and who are conversant with the arrest and prosecution process, so that legal loopholes are closed before offenders are taken to court. Under this management action, security rangers will be trained in the arrest and prosecution process. The training will include drafting effective charge sheets that can sustain a case in court, and handling and producing evidence in court. This training will be offered through rangers' workshops with resource persons drawn from the Kenya Police Force and KWS Headquarters Security Division. This action is expected to increase the number of successful prosecutions and deter repeat offenders.

### Action 4.2 Work with the local police to streamline the arrest and prosecution process

Although KWS can arrest those who contravene the Wildlife Act, the mandate to prosecute is vested with the Kenya Police Force. Currently, KWS hands over culprits and evidence to the police, who then re-arrest the culprit, draft charge sheets and take the offender to court. In Nairobi for instance, KWS normally arrests culprits, drafts charge sheets and forwards these to the police who then verify the correctness of the charges preferred, endorse the charge sheets, and prosecute the culprits in court. This effectively saves time on the part of the police, and ensures that the culprits are produced in court promptly with clear charges. In addition to measures to be implemented under Action 4.1, which are expected to build capacity for drafting charge sheets for MCA rangers, the MCA Security Section will liaise with the local police at Meru to streamline the arrest and prosecution process so that the MCA Management can take responsibility for drafting the charge sheets for the offenders they arrest.

# Three Year Activity Plan 2007 – 2010

The following pages set out the first 3-Year Activity Plan for the Security Programme. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that MCA management aims to achieve in implementing the plan.

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 1: Visitor security ensured** | | | | | | | | | | | | | | |
| **1.1 Establish a communication mechanism between the MCA Security Section and tourist accommodation facilities** | | | | | | | | | | | | | | Radios procured by tourist facilities by June 2008 |
| 1.1.1 Collaborate with tourism facilities operators in the MCA to ensure all facilities have communication radios | SO, STS | ■ | ■ | ■ | ■ | | | | | | | | | |
| 1.1.2 Establish a 24-hour telephone hotline and inform the community and tourism stakeholders about it | SO | ■ | | | | | | | | | | | | |
| **1.2 Liaise with the local police to enhance security at tourist accommodation facilities** | | | | | | | | | | | | | | Police officers deployed at MCA lodges by June 2008 |
| 1.2.1 Liaise with local police chiefs to have policemen deployed at key tourist facilities | SO | ■ | ■ | ■ | | | | | | | | | | |
| 1.2.2 Liaise with the police to establish Tourist Police Unit in MCA | SO | | | | | ■ | ■ | ■ | ■ | | | | | |
| 1.2.3 Raise tourist security issues at the District Security Committees | SO, CO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **Objective 2: Security patrols enhanced** | | | | | | | | | | | | | | |
| **2.1 Establish an MCA security database and identify security hotspots** | | | | | | | | | | | | | | Security database design carried out by June 2008 |
| 2.1.1 Design a computer database to store and analyse security related information | CO, SO | ■ | ■ | ■ | ■ | | | | | | | | | |
| 2.1.2 Input and update data into security database | CO, SO | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 2.1.3 Identify security hotspots through analysis of security data | CO, SO | | | | | | | ■ | ■ | | | | | |
| **2.2 Review security operations and identify new outpost locations** | | | | | | | | | | | | | | |
| 2.2.1 Identify new outpost locations considering distribution of security hotspots | CO, SO | | | | | | | | | ■ | | | | |
| **2.3 Establish new patrol outposts and equip existing ones** | | | | | | | | | | | | | | Report on resource requirements for out-posts prepared by December 2007 |
| 2.3.1 Identify equipment requirements for existing outposts | SO | ■ | | | | | | | | | | | | |
| 2.3.2 Procure equipment required at each outpost | SO | | | | | ■ | | | | ■ | | | | |
| 2.3.3 Prepare proposals and budget request for development of new outposts | | | | | | | | | | ■ | | | | |
| 2.3.4 Include development of new outposts in appropriate work plans | | | | | | | | | | | | | | |
| **2.4 Carry out intense ground and aerial patrols** | | | | | | | | | | | | | | |
| 2.4.1 Carry out daily geo-referenced foot and vehicle patrols | SO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.2 Carry out daily geo-referenced aerial patrols | Pilot | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.3 Establish observation posts at strategic points | SO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.4 Mount ambush patrols at known poachers routes | SO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 2.4.5 Carry out de-snaring patrols | SO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| **Objective 3: Intelligence information gathered** | | | | | | | | | | | | | | |
| **3.1 Improve information gathering** | | | | | | | | | | | | | | |
| 3.1.1 Recruit additional informants into intelligence network | CO | | | | | | | | | ■ | | | | |
| 3.1.2 Increase the number of intelligence cells | CO | | | | | | | | ■ | | | | | |
| 3.1.3 Establish continuous contact with key informants | CO | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **3.2 Improve intelligence information handling and analysis** | | | | | | | | | | | | | | |
| 3.2.1 Deploy an intelligence information analyst to the Security Section | CO | | █ | | | | | | | | | | | |
| 3.2.2 Carry out training and retraining of intelligence personnel | SW-MCA, CO | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **Objective 4: Arrest and prosecution process improved** | | | | | | | | | | | | | | |
| **4.1 Train MCA rangers on court procedures and how to draft effective charge sheets** | | | | | | | | | | | | | | At least one workshop organised per year from 2007/8 - 2009/10 |
| 4.1.1 Organise training workshops on the arrest and prosecution process | SW-MCA, SO, CO | | | | █ | | | | █ | | | | | |
| 4.1.2 Follow up court cases and obtain outcomes of wildlife related court cases | CO, SO | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| 4.1.3 Organise training workshops on the Wildlife Act for MCA rangers | SW-MCA, SO, CO | | | | █ | | | | █ | | | | █ | |
| **4.2 Work with the local police to streamline the arrest and prosecution process** | | | | | | | | | | | | | | |
| 4.2.1 Collaborate with the local police to streamline the prosecution of wildlife related cases | CO, SO | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| 4.2.2 Hold regular meetings with police and court prosecutors to review arrest and prosecution rates | CO, SO | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |

**Abbreviations**

CO- Clic Officer

SO- Security Officer

STS- Senior Telecommunications Superintendent

SW-MCA- Senior Warden Meru Conservation Area

# Protected Area
# Operations Programme

# Programme Purpose and Strategy

The Meru Conservation Area's operational systems and structures are effectively and efficiently supporting the achievement of the MCA purpose, and the delivery of the MCA's management programmes

As discussed elsewhere in this management plan, the MCA faces an increasingly complex array of management challenges and issues, originating from both within and outside the conservation area's boundaries. Many of these threats, such as those resulting from adjacent community land-uses and livelihood activities, and tourism development pressures, are likely to intensify during the 10-year duration of this plan. Targeted and complementary management responses will be vital if all these emerging management issues are to be adequately addressed, and these are set out in the management strategies, objectives and actions included in each of the plan's management programmes. However, delivering these management responses in a remote and logistically difficult environment as is the MCA is a significant and ambitious undertaking. If the MCA Management is to be successful in the implementation of this management plan, it will also be essential to strengthen PA operations to enable the effective and efficient delivery of the plan's management actions, by establishing a conducive working environment and supportive management systems and structures. In particular, the effort spearheaded through this management plan to manage the MCA as a single management unit will require the establishment of effective collaboration mechanisms between KWS and the two concerned county councils, and the expansion and strengthening of PA operations to fully encompass all four PAs making up the conservation area. The Protected Areas Management Programme provides the means for strengthening the MCA's management systems, structures and human resources to support the implementation of the three other management programmes, and the overall achievement of the MCA's Purpose Statement.

The following paragraphs set out the **strategic principles** that will guide MCA Management in the implementation of the Protected Area Operations Programme and the achievement of the Programme Purpose. Wherever appropriate, guidance has been drawn from the following policies:

► KWS Strategic Plan 2005 – 2010
► KWS draft Park Management Manual
► KWS Sectoral Management Strategy for Conservation Areas (concept paper for Tsavo, Northern and Mountain Areas)

*In implementing the MCA's Protected Area Operations Programme, MCA Management will strive to ensure that:*

## Management is integrated and unified across the MCA

A fundamental premise of this management plan is that the MCA will be managed holistically as a *unified and integrated single management unit*. This approach will maximise the efficiency and effectiveness of the area's administration and management, ensure the conservation of the area's shared Exceptional Resource Values, and facilitate the development of tourism across the entire conservation area in an appropriate and compatible manner. As such, this programme will aim to ensure that agreements and mechanisms to enable the

effective management of the MCA as an integrated and unified management unit are put in place, and that KWS and Isiolo and Mwingi County Councils are collaborating together in the management of the MCA.

In addition to the county councils, the efficient and effective management of the MCA is also heavily dependent on positive and constructive relationships with a variety of institutional stakeholders, such as tourism industry stakeholders operating in and around the area, local government and KWS Headquarters. Therefore, this programme will also aim to ensure mechanisms are established to enable management collaboration and communication between key stakeholders and that communication between the MCA management and KWS Headquarters is timely and efficient.

## Good communications and access

The MCA is a large and remote area that has been traditionally beset by problems of both access to the area, and ease of movement once in the PA itself. However, with donor support, significant advances have now been made towards addressing these problems, such as the establishment of a bridge over the Tana River, and upgrading the main access road under the MCADP project. In addition, the new decentralised sectoral management system should help reduce the distance MCA staff have to travel from their bases when going about their daily activities. Nevertheless, good communications and access throughout the entire MCA remains essential to support the effective and unified management of the area, enable MCA management to respond rapidly to specific issues as they arise (most notably issues relating to security and HWC), and to support the dispersal of tourism investment and use across the MCA, and in particular into the national reserves and Kora National Park. As such, this programme will emphasise the continuing improvement of communication systems in support of management activities as well as cooperation between MCA Management and other stakeholders, such as tourism industry partners. In addition, improvements in infrastructure across the area will be planned and targeted to provide maximum support for the effective management of the MCA, and to support tourism development across the area.

## Sufficient and well-allocated human and financial resources

Underpinning every management action designed to achieve each of the management objectives outlined in this management plan, and thus achieve the desired future condition of the MCA, are the MCA staff that will be responsible for implementing them. These staff not only require conducive working conditions and facilities, but also the necessary equipment and training to carry out their duties. As discussed above, the scope of work set out in the plan's four programmes is an ambitious undertaking, and will require increases in both the levels of human resources available in the MCA, and in the financial resources required to support the implementation of the management actions set out in this plan. As such, this programme will aim to ensure that MCA human resources are of sufficient number and efficiently allocated 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.

These strategic principles are intended to guide the implementation of the Programme's four management objectives that, when taken together, achieve the Programme Purpose. These four objectives are:

**MO 1.** **Institutional collaborations formalised and strengthened**
**MO 2.** **Performance and motivation of MCA staff improved**
**MO 3.** **Infrastructure, transport and communications to support PA management and tourism development improved**
**MO 4.** **Resource requirements for effective MCA management met**

The following sections describe these management objectives and provide an outline of the management actions needed to achieve them. 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. The final section of the programme contains the **3-Year Activity Plan** for the PA Operations Programme, and details the activities, responsibilities, timeframe and input requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan.

## Management Objectives

Figure 18 below shows the overall objectives tree for the MCA Protected Area Operations Programme.

*Figure 18. Protected Area Operations Programme objectives tree*
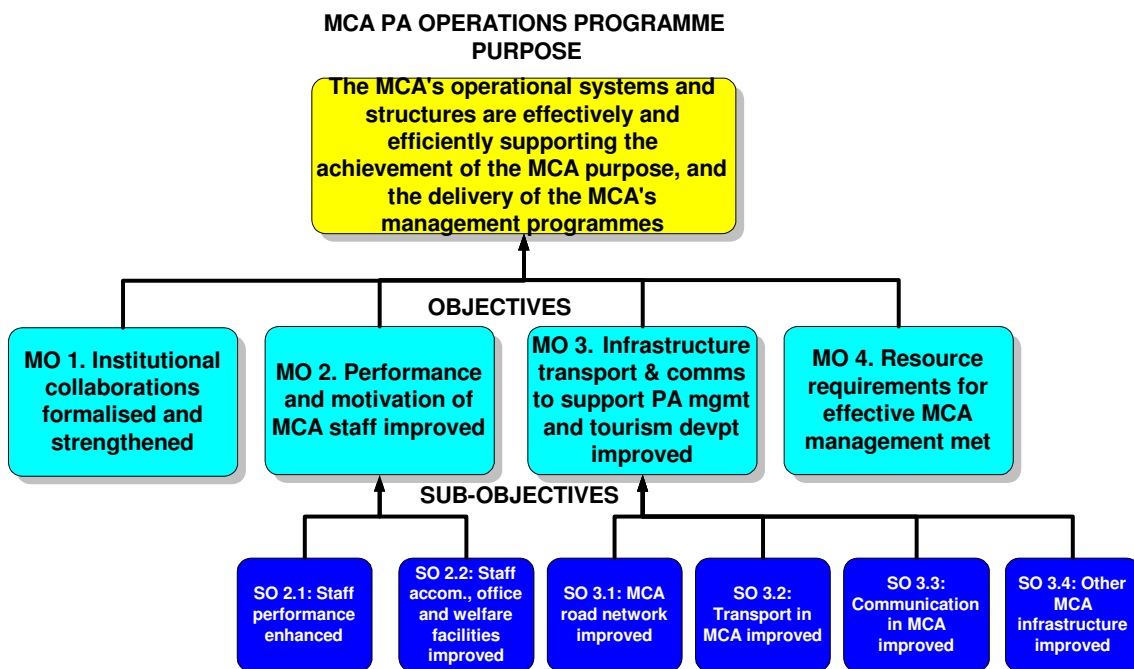


# Objective 1: Institutional collaborations formalized and strengthened

The desired future state of the MCA is where its four component PAs are managed by one management authority as a single ecological unit, conservation stakeholders have a forum through which they can participate effectively in the conservation efforts at the MCA, and MCA management is integrated in the regional government administrative structures. This is

expected to, among other things, secure a minimum viable conservation area for the conservation targets identified under the Ecological Management Programme, raise essential funds to support conservation efforts at the MCA, and gain support for conservation from the administration at the provincial and district levels.

In order to realise this objective, five management actions focusing on implementation of the KWS-County Council MoUs, improving collaboration with internal MCA stakeholders, and strengthening collaboration with district authorities have been designed. These are expounded in the following sections.

## Action 1.1 Implement MoU agreements between KWS and Isiolo and Mwingi County Councils for the implementation of the MCA management plan

Many of the principles underlying the development of a single management plan covering the entire MCA (such as the promotion of the MCA as a single tourism destination and the development of a variety of tourism products across the area) involve management collaboration and agreements on a number of key management issues. In particular, for long-term viability, it is important that the MCA protected areas are conserved and managed as a single ecological unit. This necessitates a high level of institutional collaboration between KWS and Mwingi and Isiolo County Councils. Unless successful management collaboration can be achieved amongst these authorities, the implementation of this management plan will be seriously undermined, with an increased risk of conflicting management strategies, and potential long-term negative impacts on the MCA's conservation and revenue generation as a result. As such, collaborative agreements between KWS and the Councils are essential to ensure that the MCA is managed in accordance with the strategic principles specified in this plan. This can only happen if KWS, CCI and CCM agree on how the MCA will be managed in the future, and how benefits accruing from the area will be shared among the three partners. To realise this, workable MoUs have already been drawn up between KWS and the Councils as an adjunct to the planning process leading to this plan. These MoUs spell out the obligations of each party in the management of the MCA, what resources each party will provide, and how they will participate in the implementation of this management plan. During the 10-year implementation period of this plan, the three parties will be meeting twice a year to review progress in the implementation of the plan. The focal point for the MoU will be the Senior Warden MCA, who will be responsible for organising semi-annual meetings and preparing plan implementation progress reports.

## Action 1.2 Establish a wildlife conservation sub-committee within CCM and CCI to steer conservation work at MNR and BNR

Active involvement of the County Councils, which are the landowners of the reserves, is critical to achieving conservation success in the MCA. The Councils are in a position to curb illegal activities such as livestock incursion and cultivation, which are currently a major threat to wildlife conservation in the area. In order to stem further environmental degradation (particularly of wildlife) that is taking place in the reserves, it is crucial that a conservation agenda owned and steered by the Councils themselves be propagated. This management action will therefore establish wildlife conservation sub-committees within the Councils to specifically lobby for and promote wildlife conservation in the two reserves, and to monitor implementation of the management plan. To further strengthen the conservation agenda, KWS and NEMA will be incorporated in the sub-committees as *ex-officio* members. The meetings of these committees will be held quarterly at the reserves, to give the committees an opportunity to inspect management and development activities on the ground.

> ### Action 1.3 Establish an MCA management advisory committee comprising all stakeholders with interest in the conservation of the MCA

Collaboration between stakeholders who operate within the MCA (such as tourism industry investors or operators and/or scientific researchers) and the area's management is a key aspect of effective management. The importance of such collaboration is likely to increase as tourism use increases in the MCA during the lifespan of this plan. The MCA management planning process has greatly benefited from the input of other conservation stakeholders, particularly in the development of management programmes. To ensure that these programmes are implemented fully, it is important that stakeholders, and especially professionals in the tourism sector, participate in the management of the MCA. Stakeholders can participate in a wide range of activities including tourism promotion and marketing, supporting community projects, and ecological research. Considering that conservation is a very expensive venture with only a few protected areas in Kenya making a profit, stakeholders can also help fundraise to supplement KWS finances.

Through Action 1.3, an MCA Management Advisory Committee (MAC) will be established comprising of key stakeholders in the MCA. These will include KWS, CCI, CCM, hoteliers, and other relevant conservation NGOs working in the Eastern Conservation Area. The role of this committee will be to promote and market the MCA in line with the management actions specified in the Tourism Management Programme, mobilize funds to implement management actions specified in this management plan, and to monitor plan implementation. This has proved effective in other protected areas (e.g. Hell's Gate/Longonot National Parks), where forums have been set up as mechanisms for internal stakeholders and PA managers to raise issues of mutual concern, share relevant information and fund raise to support implementation of critical management actions

In particular, the MAC will be responsible for overseeing implementation of the 3-year activity plans as well as the compliance with management prescriptions for each zone. The committee will primarily be private sector driven to give it the necessary impetus to succeed. But to avoid a situation where the MAC usurps the role of MCA Management, the MCA Senior Warden will chair the Committee, and the roles of Secretary and Treasurer will be taken by the private sector. The MCA Senior Warden will also be the convener of the MAC meetings, which will be held quarterly. To manage any funds raised by the Committee in support of MCA conservation and management, a separate accounts vote will be established within the MCA accounting system, and funds deposited in this vote will be applied at the discretion of the MAC in consultation with the MCA Senior Warden.

> ### Action 1.4 Liaise with, and participate in relevant district and provincial committees

Although covering a large geographic area, the MCA is still greatly influenced by activities and developments in the surrounding areas. Linkages between MCA Management and the six district authorities[11] that have jurisdiction over parts of the MCA have traditionally been weak, leading to minimal support for MCA management activities. It is important that collaboration with district authorities be streamlined and enhanced to help maximise the benefits from the MCA to the surrounding areas and district activities, and to help raise and address issues of mutual concern (such as security, community issues, or any proposed developments). However, current representation of the MCA in District Committees is poor, and in some cases KWS officers who work outside the area articulate MCA issues. To remove ambiguity on MCA representation at district and provincial levels, and so that KWS-funded

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[11] Meru North, Tharaka, Isiolo, Mwingi, Tana River, and Garissa

community projects are given due recognition in all the six districts that share the MCA, this action will ensure that an officer from the MCA attends District Committee Meetings, or that the counterpart at the District Wildlife Station is adequately briefed on MCA activities of concern to district committees. The Senior Warden MCA will attend provincial committee meetings. The attendance at district-level meetings is given in Table 17 below.

*Table 17. Responsibility for attending district level meetings*

| District | District Committee | Officer responsible |
|---|---|---|
| **Isiolo** | District Development Committee<br>District Environmental Committee<br>District Compensation Committee | Warden-Isiolo and BNR warden, with advance briefing from MCA Community Wildlife Officer |
| | District Security Committee | Isiolo Security Warden, with advance briefing from MCA security warden |
| **Meru North** | District Development Committee<br>District Environmental Committee<br>District Compensation Committee | Warden, Meru Station with advance briefing from MCA Community Wildlife Officer |
| | District Security Committee | MCA Security Warden |
| **Tharaka** | District Development Committee<br>District Environmental Committee<br>District Compensation Committee | Warden-Tesiwa |
| | District Security Committee | Warden-Tesiwa |
| **Mwingi** | District Development Committee<br>District Environmental Committee<br>District Compensation Committee | Warden-Kora |
| | District Security Committee | Warden-Kora |
| **Tana River** | District Development Committee<br>District Environmental Committee,<br>District Compensation Committee | Warden-Hola, with advance briefing fn Kora |
| | District Security Committee | Warden-Hola, with briefing from Warden-Kora |
| **Garissa** | District Development Committee<br>District Environmental Committee<br>District Compensation Committee | Warden-Garissa, with advance briefing from Warden-Kora |
| | District Security Committee | Warden-Garissa, with briefing from Warden-Kora |

## Action 1.5 Collaborate with District Security Committees to control illegal encroachment on MCA protected areas

Agricultural encroachment and settlement has displaced most wildlife from Mwingi National Reserve. The County Council of Mwingi alone does not have the capacity to rid the reserve of this encroachment because some people are not willing to leave, and because the Council has been slow in taking decisive action for fear of potential political ramifications. To resolve this problem, Mwingi District administration through the Mwingi District Security Committee, will be involved in the community negotiations to be implemented under Action 3.5 of the Community Partnership and Education Programme, and it will also facilitate implementation of agreements reached between the farmers and CCM.

# Objective 2: Performance and motivation of MCA staff improved

The desired future state of the MCA is one where the MCA is optimally staffed with highly motivated staff that have skills and training matching the jobs at the MCA. Two sub-objectives relating to enhancing staff performance, and improving staff accommodation and welfare facilities have been designed to achieve this state. These sub-objectives and their corresponding management actions are described in the following sections.

## Sub-objective 2.1: Staff performance enhanced

The MCA permanent staff establishment presently comprises 185 permanent staff. In addition to this, each month the MCA employs around 82 casuals in different sections to support the permanent staff in their daily activities. The MCA staff organisational structure follows the KWS corporate structure which groups staff into 5 divisions: Biodiversity Research and Monitoring; Security; Wildlife Services; Corporate Affairs; and Finance and Administration. Sections that engage casual labour (generally prompted by shortage of skilled and unskilled staff in these sections) are garage, rhino fence, community fences, rhino watchers, office administration, bandas, airstrips, research and works.

In order to address the inadequacies noted on staff establishment and training, and in the process realise improved efficiency and effectiveness of staff at the MCA, three management actions will be implemented under this sub-objective. These include deployment of new KWS staff to understaffed sections, deployment of staff by CCM and CCI to Mwingi and Bisanadi National Reserves respectively, and training of staff in relevant skills. These actions are elaborated in the following sections.

### Action 2.1.1 Deploy new staff to understaffed sections

A human resources assessment carried out under the MCADP in 2005 indicates that an estimated 196 extra staff are required for the effective management of the MCA. This is clearly a substantial figure and would involve over a 100% increase on current staff numbers. In addition, with the recent devolvement of MCA management to management sectors[12] coupled with the need to boost security operations, the PA Operations Working Group estimated a total deficit of 308 staff members (see Annex 3). In some MCA sections, such as the mechanical workshop and fence maintenance, the majority of staff are presently on casual employment. During the plan period, MCA management will liaise with KWS Headquarters Human Resources Department to ensure that skilled casual staff who have worked in the mechanical workshop as plant operators or mechanics for a long time are employed on permanent terms. This will be carried out in line with the MCADP staff assessment report and the KWS job evaluation exercise that has recently been concluded. Fence maintenance, carpentry and masonry tasks that are currently performed by casual staff will be outsourced.

### Action 2.1.2 Deployment of staff by CCM and CCI to Mwingi and Bisanadi National Reserves respectively

Active participation of local authorities in the management of national reserves is fundamental to gaining local community support to conservation. If the local authorities are passive and inactive, it is difficult for KWS to control illegal activities perpetrated by members of the com-

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[12] MCA Management sectors are described under Objective 4.

munity in the reserves, since it would seem as if KWS were trespassing on another authority's area of jurisdiction. It is therefore fitting that the Councils invest time and resources in the management of the reserves for success to be realised. CCM is actively participating in clearing of disused roads in MNR to facilitate patrols and future tourism development. For the last two financial years, the CCM budget has included funds for the development of the MNR. Likewise, CCI has been collaborating with MCA management in development of tourism facilities in BNR. This has seen the establishment of one tented camp in the reserve. In order to significantly increase the participation of the Councils in the running of MCA affairs, the Councils will deploy their staff to man the entry gates that will be constructed in the reserves. These staff will work hand-in-hand with KWS personnel both in visitor handling and in assisting law enforcement efforts in the two national reserves.

### Action 2.1.3 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. During the implementation of the IFAW project, which closed in 2004, training focused mainly on security personnel. This is understandable as security in the MCA is paramount given the high biodiversity loss attributable to poor security in the MCA in the 1980s. The more recent MCADP survey of MCA staff needs recommended that wherever possible, training is done "on-the-job" by the respective officers in charge of sections, while more specialised training should be carried out through competent institutions. The survey emphasises that the focus of training must be on gaining practical and applicable field knowledge, rather than theoretical knowledge. The specific training areas outlined in the recommendations include:

▶ Re-training of mechanics and plant operators
▶ Computer training for all senior officers
▶ Basic training for some rangers at Manyani
▶ First aid training for rangers
▶ On-the-job PAC training for rangers (by a professional hunter)
▶ NCO's and security officers trained in prosecution of court cases
▶ Rhino rangers and officers to be trained in rhino identification, GPS applications, map reading, data collection and rhino protection and surveillance

This management action will therefore build on what has been accomplished through other projects, like the IFAW project and the MCADP, to further enhance the capacity of the MCA staff. Firstly, due to staff changes that have occurred since 2005 when the last Training Needs Assessment (TNA) was carried out, a review of staff training needs will be carried out with a view to update the TNA report. Secondly, staff will be trained in liaison with the KWS Training Section and in line with KWS training policy.

## Sub-objective 2.2: Staff accommodation, office and welfare facilities improved

Although the MCA's remoteness and wilderness characteristics attract many visitors to the area, as a place of work it is a difficult and isolated environment that presents many challenges to the area's workforce. These factors, combined with poor transport and communication links, can have negative impacts on the morale of MCA staff, and consequently their ability to perform to their maximum potential. This sub-objective therefore, will address the existing shortcomings in staff accommodation and welfare in order to ensure high staff morale and motivation. This will be addressed through six management actions, which are described in the following sections. These relate to constructing and rehabilitating residential and non-residential buildings, subscribing to and installing satellite TV and its accessories at

staff canteens, establishing sport and recreational facilities/activities at MCA, liaising with the Ministry of Health in enhancing the management of the Murera health clinic, collaborating with the Ministry of Education to improve the standard of education at Kathithi Primary School, and establishing a code of conduct for officer's and other ranks' mess.

**Action 2.2.1 Construct and rehabilitate residential buildings and non-residential buildings**

Main staff accommodation and welfare facilities in the MCA are located at the ECA Headquarters at Murera, the MCA Headquarters at Kinna, Kamukunga (Kora Park HQ), and *Kambi ya Simba*. However, currently, staff houses are not adequate to house the 185 permanent staff deployed to the MCA. This has forced some junior staff to share houses, affecting staff morale. During the plan period, additional staff houses will be constructed and rehabilitation of residential houses that are in poor condition will be carried out. This will be in line with the sector management approach that is being implemented in the MCA. A summary of construction and rehabilitation of residential and non-residential buildings to be completed in the MCA is given in Table 18 below.

*Table 18. Construction and rehabilitation of buildings at the MCA*

| Management Sector | Administration Station | Type of buildings | Description of work |
|---|---|---|---|
| **Kinna** | Kinna (MCA and Sector HQ) | Residential houses | Construction |
| | Murera (ECA HQ) | Residential houses | Rehabilitation |
| | Korbessa | Barracks | Construction |
| **Tesiwa** | Ura | Residential houses | Construction and rehabilitation |
| | | Office block | Construction |
| | Tesiwa (Sector HQ) | Barracks | Construction |
| **Kora** | Kamukunga (Sector HQ) | Barracks | Construction |
| | | Residential houses | Rehabilitation |
| | *Kambi ya Simba* | Barracks | Construction |
| | Asako | Residential houses | Construction |
| | | Office block | Rehabilitation |
| | Kaningo | Residential houses | Construction |
| | | Office block | Construction |

**Action 2.2.2 Subscribe to and install satellite TV and its accessories at staff canteens**

KWS recognises the importance of providing recreational facilities to field staff as a morale booster. The draft KWS Park Management Manual states that staff "*welfare should be given due consideration to enhance morale*", and stipulates that the following issues should be addressed:

▶ The establishment and management of staff canteen(s)
▶ The provision of TV, with a subscription to DSTV
▶ The provision of equipment for games and games facilities
▶ The formation of recreational clubs, such as sport or games clubs and choirs

A welfare canteen, an officers and other ranks' mess have been established at Murera Gate and equipped with television sets linked to a satellite TV service. However, in most cases, welfare facilities are lacking from MCA administration centres, and recreational clubs are yet to be established. In order to boost staff morale in the rest of the staff residential areas, satellite TV will be installed at social halls or canteens in these areas. The satellite TV units will be installed at Kamukunga (Kora Park HQs), *Kambi ya Simba*, Kinna and Kanjoo Rhino Unit HQs. In areas lacking electricity (e.g Kora), solar panels will also be installed.

### Action 2.2.3 Establish sport and recreational facilities/activities at MCA

KWS has recently introduced sports competitions between the seven regional Wildlife Conservation Areas. At the MCA level, participation of staff in sports helps to enhance teamwork in addition to relieving stress. In order to promote sports in the MCA, and in line with the recommendations in the draft KWS Park Management Manual, sports clubs will be formed and these will be provided with the required sports equipment.

### Action 2.2.4 Liaise with the Ministry of Health in enhancing the management of Murera health clinic

Quality health care provision at the MCA is essential as the only alternative reliable health care facilities are at Maua Town, 40km away. Health care is provided in the MCA at Murera Headquarters, where a health clinic has been established (in collaboration with the Ministry of Health) to serve both KWS staff and the local community. However, it is not operated efficiently, and remains closed most of the time, inconveniencing health care seekers and forcing patients to seek treatment at Maua. Through this action, the MCA Management will liaise with the Meru North Medical Officer Health (MOH) to ensure that the health care services at the clinic are reliable. Since the clinic remains closed because of shortage of medical personnel, KWS will collaborate with the MOH to ensure that an extra clinical officer and lab technician are deployed at the clinic.

### Action 2.2.5 Collaborate with the Ministry of Education to improve the standard of education at Kathithi Primary School

For staff at MNP, the closest primary school where most MCA staff can enrol their children for primary school education is Kathithi Primary School located about 500m from Murera shopping centre. However, the quality of education at this school is low due to lack of teachers and educational equipment. At the moment, the school is understaffed as it has only four government employed teachers, who are teaching about 200 pupils. In order to ensure that children of MCA staff receive quality education, MCA management will participate in uplifting the education standards at the primary school. Efforts will be made to ensure that the school has adequate and up-to-date textbooks and any other essential school equipment. In addition, MCA management will collaborate with the Ministry of Education to ensure that more teachers are deployed to the school.

### Action 2.2.6 Establish code of conduct for officers and other ranks' mess

It is vital that discipline be maintained at all times among MCA staff to maintain an environment of security alertness at all times. The uniformed cadre, in particular, is supposed to be alert at all times, as security lapses or staff laxity can reverse the conservation gains that have been accomplished in the last decade at the MCA. It is common for disorderly conduct to occur in recreational places such as staff canteens when staff are under the influence of

alcoholic beverages. However, disorderly conduct can be prevented if a code of conduct is developed and implemented in these social places. In order to ensure that staff conduct at the Mess remain high, rules and regulations giving the do's and don'ts at the Mess will be developed and implemented.

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

The desired future state of the MCA is one where essential infrastructure to support effective tourism development and PA management is available. This will be supported by decentralising management of the MCA to the three MCA management sectors (discussed under the MCA Zonation Scheme), and then channelling management resources to these sectors. In order to realize the above-stated desired state, three sub-objectives relating to improvement of infrastructure and communications are described in the following sections.

## Sub-objective 3.1: MCA road network improved

The greatest density of roads in the MCA specifically developed for tourism is in MNP, and these roads are mostly located in the High Use Zone. The road network in Mwingi and Bisanadi NRs is currently very limited, due to low tourism use in these two reserves. Most of the roads in the two reserves are currently overgrown with vegetation because of a long period of neglect. In an effort to achieve the MCA purpose, road development will be carried out in such a way that the wilderness characteristic of the conservation area is not compromised. Hence, through this sub-objective, management actions relating to preparation of a road development plan for the MCA, limited road construction to provide access to visitor facilities, and enhancing safety at the major drifts, will be implemented. These actions are elaborated in the following sections.

### Action 3.1.1 Inventory drifts and install guard rails on drifts across major rivers

In an effort to enhance access to many parts of the MCA, MCA management has constructed drifts (30 in MNP) and one bridge (Kora Bridge) across rivers and *luggas*. Of the 30 drifts in MNP, seven were constructed to link patrol roads that have not yet been opened, hence they are not in use currently. Through this action, all the drifts will be inventoried and their positions pinpointed on a map, and they will be considered during the re-designing of the road network anticipated through Action 3.1.2 below. On the other hand, all drifts in the MCA lack guardrails, and it is normally very risky to cross swollen rivers as vehicles can easily be swept downstream. Incidents of vehicles being swept away have been reported at the Kenmere, Rojewero, and Mutundu drifts, but luckily there have been no fatalities. To enhance safety of motorists especially during the wet season, all drifts on major rivers will be fitted with guardrails.

### Action 3.1.2 Prepare a road development plan

A road development plan for the MCA does not exist and consequently road development has been carried out haphazardly. A road development plan that takes into consideration the access requirements for tourist facilities and activities, patrol bases, and other administrative

infrastructure, and which also gives due consideration to maintenance of environmental integrity, is necessary. Therefore, to ensure that the road network facilitates achievement of MCA's management objectives effectively, a well-justified road development plan will be drawn up in collaboration with the KWS Headquarters Civil Engineering Section. The development of this plan will also need to consider the new sectoral management of the MCA, and in particular the development of new security infrastructure linked to this new management structure (see Security Programme Action 2.3). The recent KWS Sectoral Management Strategy for Conservation Areas proposed that 200km of patrol roads and 100km game viewing roads are developed in Kora Sector.

### Action 3.1.3 Construct new roads and rehabilitate existing ones

The density of tourist roads In MNP is high and, apart from a few short roads to link new tourist facilities with the existing road network, no major construction of tourist roads is envisaged. However, 76km of wildlife viewing roads in the High Use Zone within MNP will be rehabilitated through the MCADP project. In addition, patrol roads will be constructed in the Low Use Zone to facilitate vehicle patrols aimed at curbing destructive illegal activities such as palm wine tapping along the Tana River, bushmeat poaching and livestock encroachment. In line with the road development plan, 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 tourist roads, which are currently overgrown with vegetation, will be rehabilitated to all weather standards.

## Sub-objective 3.2: Transport in the MCA improved

Availability of reliable transport is critical to the effective carrying out of management activities. The MCA has a fleet of 26 vehicles and 29 plant and machinery, most of which are less than five years old and are still economical 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 MCA mechanical workshop and slow procurement of spare parts. This sub-objective will therefore ensure that all MCA administration sections have transport available at all times to effectively carry out their duties. The management action to achieve this is expounded in the following section.

### Action 3.2.2 Ensure prompt service of vehicles and machinery

Prompt service of vehicles and machinery pre-empts lengthy work disruptions and unnecessary loss of working hours. Currently, delays in vehicle servicing are attributed to slow procurement of spare parts. This action seeks to correct this by requiring that all section heads ensure that vehicle and machinery maintenance schedules are adhered to and procurement of spare parts is expedited. Spare parts that are commonly required for routine maintenance of vehicles will be procured and stored at the MCA mechanical workshop. The workshop will strive to maintain an optimal fleet of vehicles and to ensure that all MCA sections are functional at all times. In addition, staff shortages at the mechanical workshop are also contributing to delays in servicing and repair of vehicles. To ease workload at the workshop, mechanics have been employed on casual terms, which are less attractive than permanent terms, and this affects staff morale negatively. To boost staff morale, therefore, mechanics on casual terms will be employed on permanent terms as per Action 2.1.1.

# Sub-objective 3.3: Communication in the MCA improved

Effective communication both within and outside the MCA is essential for efficient management, and key to improving MCA management's response to urgent issues. The MCA Headquarters has phone and e-mail facilities, although at present the connection is unreliable and slow. A radio network also serves the entire MCA, and the MCADP is installing a telecommunication radio trunking equipment to enhance radio communication across the area. The KWS draft Park Management Manual states "*wardens should ensure that there is good communication within and outside the park*", and ensure the following are serviceable:

▶ Telephone
▶ Computers with Internet connection (for email)
▶ VHF and HF radios

Through this sub-objective, and in line with the KWS Park Management Manual, communication will be improved further through two management actions that are described in the following sections. These focus on installing and maintaining VSAT (Very Small Aperture Terminal) Internet connectivity at the MCA, and upgrading the radio communication network.

## Action 3.3.1 Install and maintain VSAT and upgrade when appropriate

Currently the MCA is linked to the Internet through a fixed telephone line. Access to the Internet is therefore very expensive, limiting use of the Internet to email only. However, the MCA, through the MCADP project has now acquired VSAT technology, which is making it possible to access Internet and transmit and receive data, enhancing research and administration work. For maximum benefits to be derived from this system, it is important that the VSAT be reliable. The VSAT will therefore be maintained and upgraded as communication technology progresses and prompt payment of subscription fees will be made to avoid disconnection. To ensure that all MCA administrative sections are connected to VSAT, MCA management will liaise with KWS headquarters (IT Section) for procurement of adequate computers for all sections.

## Action 3.3.2 Upgrade the radio communication network

Radio telecommunication is the most common and efficient mode of communication among KWS-managed protected areas, stations and KWS Headquarters. The radio is very convenient as it allows communication with stations that cannot be reached by telephone. To enhance communication and make the entire MCA and adjacent areas reachable by radio, a telecommunication radio trunking equipment base station will be installed at Nyambene Hill, with links in Kora NP and Bisanadi NR. This system will ease network congestion, and increase efficiency by proper use of the frequency band spectrum. The radio network will be maintained to ensure that communication is not disrupted.

# Sub-objective 3.4: Other MCA infrastructure improved

Alongside the improvements in transportation and communications, a range of other facilities and supportive infrastructure are needed to enhance the effective management and administration of the MCA. This includes: airstrips, gates, utilities (electricity and water), signage and boundary markings. Under this sub-objective, this supportive infrastructure will be developed, or where appropriate rehabilitated, through five management actions that are elaborated in the following sections.

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### Action 3.4.1 Establish new airstrips and rehabilitate existing ones

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Aerial patrols are a critical management tool for monitoring wildlife and its habitat in expansive remote ecosystems such as the MCA. Evenly distributed airstrips across the area are therefore essential for total aerial coverage of the MCA and adjacent areas. There are currently 13 airstrips in Meru National Park, of which three airstrips[13] can be used by tourists. KNP has four airstrips[14], BNR has five airstrips[15], but MNR has none. In the MCA adjacent areas, KWS has established airstrips at Danyeri, Mbala bala, Karsa and Duse, to facilitate security operations.

To enhance tourism in the MCA, Kinna Airstrip will be recarpeted, while Mulika and Murera Airstrips will be rehabilitated to "well-gravelled" standard. Mugwongo Airstrip, which serves Elsa's Kopje Lodge, will be gravelled to make it usable all year round. The *Kambi ya Simba* Airstrip, in KNP, will also be upgraded to "well gravelled" standard, while all the other airstrips, which are mainly used for security operations, will be maintained through regular clearing of vegetation. To facilitate aerial patrols and tourism in the MCA, two airstrips will be established in MNR at Mitamisyi and Ekime (near Tana River). In addition, one airstrip will be opened at the Junction of Kathanawa-Masyungwa road to serve both KNP and MNR, and another one will be opened at Bangale to facilitate wildlife monitoring activities south of Kora Sector. The airstrip construction and rehabilitation work in the MCA is summarized in Table 19 below.

*Table 19. Airstrip construction and rehabilitation in the MCA*

| Management Sector | Airstrip | Current status | Description of work |
|---|---|---|---|
| **Kinna** | Kinna | Bitumen | Recarpeting with bitumen |
| | Mulika | Bitumen | Well gravelled standard |
| | Murera | Gravel | Upgrade to well gravelled standard |
| | Mugwongo | Earth surface | Well gravelled |
| | Korbessa and others | Grass covered | Grading and clearing of vegetation |
| **Tesiwa** | Tesiwa | Grass covered | Grading and clearing of vegetation |
| **Kora** | *Kambi ya Simba* | Earth surface | Upgrade to well gravelled standard |
| | Kyethoni, Moju and Asako | Earth surface | Grading and clearing of vegetation |
| | Kathanawa (MNR) | Not developed | Construction |
| | Bangale | Not developed | Construction |

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### Action 3.4.2 Construct entry gates in Mwingi and Bisanadi NRs and Kora NP

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As detailed in the Tourism Management & Development Programme, it is envisaged that enhanced visitor management and investment in the MCA will attract more visitors than are currently being hosted. MNR and KNP could eventually attract visitors looking for a wilderness experience. The northern part of Bisanadi NR is likely to see increased visitation be-

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[13] Kinna, Mulika and Mugwongo
[14] Asako, Moju, *Kambi ya Simba*, and Kyethoni
[15] Korbessa, Scot, Malka Yaka, Malka Rupia, and Mulima Mbuzi.

cause it falls within the High Use Zone. In order to facilitate visitor entry into the MCA, provided the security situation permits, additional entry gates will be constructed at Kaningo and Masyungwa (in Mwingi NR) for visitors using the Mwingi route, at Golo, Malka Radha and Marro in Bisanadi NR, and at Boka in Kora NP, to cater for visitors coming from the coast through the Hola route. The new gates will be designed and budgets for construction prepared in advance, so that gate construction can begin as soon as the investment is warranted. As appropriate, an additional gate may also be constructed at Moju, primarily to serve as a point of contact with the surrounding communities in that area, but also to enable entry for any visitors from Garissa.

### Action 3.4.3 Provide utilities such as electricity and water to staff quarters

Utilities are necessary to support protected area administration and visitor use, and contribute to the achievement of the MCA purpose statement. Utilities such as water supply and electricity are essential in all the major administration stations and visitor accommodation facilities (i.e bandas). Currently, Murera and Kinna stations use electric generators for power supply to staff quarters and the offices. However, since Murera is close to the mains power supply, which is relatively cheaper than power from diesel-fuelled generators, efforts are being made to connect the station to the mains. However, for the Kinna MCA Headquarters and the two MCA sub-stations, Kamukunga and Ura, the more environmentally-friendly and low maintenance solar power will be installed. In addition, all the stations in the MCA are located close to rivers and hence their water supply is adequate. However, water shortage is being experienced at many outposts especially in the drier Kora sector. To address this, a rock catchment water supply system will be constructed at *Kambi ya Simba*.

### Action 3.4.4 Improve signage throughout the MCA

Directional road signage in the MCA 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 the MCA's resource values, the signposts will be re-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.

### Action 3.4.5 Demarcate PA boundaries

Increased ecosystem degrading activities like livestock incursions, encroachment of agriculture, and illegal bushmeat poaching can partly be attributed to unclear and unmarked protected area boundaries between the MCA and adjacent community land in many places. To remove this ambiguity, and stem illegal activities in the MCA, the MCA boundary will be demarcated, cleared and marked to inform people when they are entering the protected area. The boundary markings with clear signs indicating, "Y*ou are now entering the MCA*", will be installed at all major incursion points.

# Objective 4: Resource requirements for effective MCA management met

The future desired state of MCA is one where resources required for effective management of the area are available, all revenue due to KWS is collected, expenditure is controlled and

adheres to approved work plans, the procurement of goods and services is expedited, and supplementary funding is solicited from funding agencies to support conservation projects in the MCA. Under this objective, ways of controlling expenditures and enhancing revenue are elaborated in the following management actions. These focus on the routine preparation of MCA budgets based on this GMP, liaising with tour operators to get information on aircrafts landing at MCA airstrips, expediting procurement of goods and services at the MCA, establishing a financial management database, and preparing project proposals for funding.

### Action 4.1 Prepare MCA recurrent budget based on the MCA 3-year activity plan specified in the management plan

KWS has been preparing Protected Area Management plans over the years, but their usefulness in guiding the management of protected areas has been minimal. In most cases the planning process has integrated international best practice for planning, including stakeholder participation, but despite this inclusiveness these plans have ended up on shelves. The main reason for lack of plan implementation is the lack of policies or mechanisms to guide plan implementation and monitoring. Hence, even though some PAs have elaborate management plans, managers are not obliged to use them. It is therefore important that a clear plan implementation process, which links the management plan to the annual workplans and budgets and has support from the top echelons of KWS and the field, be adopted. To ensure that the MCA management plan is implemented, therefore, annual workplans will be based on the management actions and activities outlined in this management plan. The Assistant Director, Eastern Conservation Area, assisted by the ECA Senior Research Scientist, will be responsible for ensuring that the MCA annual workplans and budgets are in line with the management plan. MCA management will in addition liaise with the KWS Corporate Planning Section for timely disbursement of funds and in monitoring plan implementation. Further to this, implementation of the management plan will be one of the key factors to be considered while assessing staff performance at the MCA.

### Action 4.2 Liaise with tour operators to get information on aircrafts landing at MCA airstrips

The four airstrips commonly used by visitors to access the MCA are Mulika, Kinna, Murera and Mugwongo. These airstrips are, however, not manned the whole day hence an aircraft can land and take off without paying the requisite landing fees. In view of the low tourism volume at the MCA, it will be uneconomical to deploy staff to man all the four major airstrips as they would be idle most of the time. However, to stem loss of revenue through non-payment of aircraft landing fees, MCA management will collaborate with tour and lodge operators so that the latter can provide advance information on aircraft expected to land in the MCA. Management will then be deploying KWS revenue collection staff at the airstrips only when aircrafts are expected.

### Action 4.3 Expedite procurement of goods and services at the MCA

Delays in procurement of goods and services have occurred at the MCA. This has been attributed to non-adherence to procurement procedures by MCA staff and lack of procurement plans. To expedite the procurement process, MCA heads of sections will be required to prepare comprehensive procurement plans to accompany the annual workplans. Since the MCA is far from major towns, the procurement officer will be proactive in procuring and stocking consumable goods including fuel. The officer will also ensure that all MCA heads of sections adhere to the KWS procurement procedures when they procure goods for their sections.

## Action 4.4 Establish a financial management database

Presently it is very difficult and time consuming to retrieve historical financial information concerning MCA revenues and expenditure, as most of the data is not computerised. In addition, the computerized data is not stored in a format that can facilitate quick analysis to generate information for planning. To organize finance data for easy retrieval and manipulation, a database will be established. Both current and historical financial data will be captured and stored to facilitate monitoring of revenue and expenditure trends. In addition to revenue and expenditure data, the database will include annual workplans and budgets for both KWS as well as donor-funded projects. To ensure data sharing with KWS Headquarters is possible, the database design and development will be carried out in close collaboration with KWS Headquarters Finance Department.

## Action 4.5 Prepare project proposals for funding

The role of stakeholders in conservation and management of Kenya's wildlife is given due recognition in the KWS Mission Statement, which states in part that Kenya's wildlife and habitats will be conserved "*in collaboration with stakeholders for posterity*". In addition, conserving and managing wildlife "*in partnership with communities and stakeholders*" is one of KWS' core values. MCA stakeholders have already played a major role in restoring security, which had deteriorated in the 1980s as a result of rampant poaching and banditry. MCA Management has been strengthened and wildlife restoration, through species reintroductions, has also been carried out through stakeholder support. This stakeholder intervention has put the MCA back on the path to regain its glory of the early 1980s. To ensure that stakeholders continue to contribute to the conservation activities at the MCA, MCA management will work closely with the KWS Resource Mobilization Office to develop proposals for soliciting funding support from potential donors. These proposals will mainly target non-core KWS activities like community projects. However, to enhance knowledge of environmental resources at the MCA, research proposals will also be prepared in collaboration with academic institutions of higher learning, and funding sought from conservation stakeholders.

# Three Year Activity Plan 2007 – 2010

The following pages set out the first 3-Year Activity Plan for the Protected Area Operations Programme. The activity plan details the activities, responsibilities, timeframe and extraordinary resource requirements necessary for the delivery of each management action over the first 3-year timeframe of this management plan. In addition, that plan sets out specific and timebound "milestones" that MCA management aims to achieve in implementing the plan.

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Objective 1: Institutional collaborations formalized and strengthened** | | | | | | | | | | | | | | |
| **1.1 Implement MoU agreements between KWS and Isiolo and Mwingi County Councils for the implementation of the MCA management plan** | | | | | | | | | | | | | | Two tripartite meetings held per year and at least one workshop organised for Councillors in 2007-08 |
| 1.1.1 Hold tripartite meetings twice annually | SW-MCA | | ■ | | ■ | | ■ | | ■ | | ■ | | ■ | |
| 1.1.2 Hold consultative meetings as need arises | " | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 1.1.3 Organise a workshop to sensitize the Councils on the MOU and the management plan | " | | | | ■ | | | | ■ | | | | | |
| **1.2 Establish a wildlife conservation sub-committee within MCC and ICC to steer conservation work at MNR and BNR** | | | | | | | | | | | | | | County Council wildlife conservation committees formed by September 2007 |
| 1.2.1 Form wildlife/game conservation committees within MCC and ICC | SW-ICC, CCClerks, SW-MCA, WK | ■ | | | | | | | | | | | | |
| 1.2.2 Organise quarterly meetings of the wildlife/game conservation committees | " | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 1.2.3 Organise regular wildlife/game committee visits to the MCA to monitor implementation of activities | " | | | ■ | | | | ■ | | | | ■ | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **1.3 Establish an MCA management advisory committee comprising all stakeholders with interest in the conservation of the MCA** | | | | | | | | | | | | | | MAC formed by June 2008 |
| 1.3.1 Identify stakeholders interested in conservation of resources at the MCA | SW-MCA | | █ | | | | | | | | | | | |
| 1.3.2 Hold consultations with relevant stakeholders on modalities of forming the MAC | " | | | █ | | | | | | | | | | |
| 1.3.3 Launch the Management Advisory Committee | " | | | | █ | | | | | | | | | |
| 1.3.4 Hold quarterly MAC meetings | " | | | | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **1.4 Liaise with, and participate in relevant district and provincial committees** | | | | | | | | | | | | | | |
| 1.4.1 Participate in District and provincial committee meetings | See Table 17 | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **1.5 Collaborate with District Security Committees (DSC) to control illegal encroachment on MCA protected areas** | | | | | | | | | | | | | | |
| 1.5.1 Hold meetings with the Mwingi DSC to discuss illegal encroachment in Mwingi National Reserve | Clerk-MCC, WK, DSC | | | | | | | | | | | | █ | |
| 1.5.2 Hold consultative meetings with Communities encroaching on the Reserve with input from Mwingi DSC | " | | | | | | | | | | | | █ | |
| **Objective 2: Performance and motivation of MCA staff improved** | | | | | | | | | | | | | | |
| **Sub-objective 2.1: Staff performance enhanced** | | | | | | | | | | | | | | |
| **2.1.1 Deploy new staff to understaffed sections** | | | | | | | | | | | | | | |
| 2.1.1.1 Employ casuals who have worked in the mechanical section for a long time on permanent basis | SW-MCA, H-HC, HRO, MS | | | | | █ | | | | | | | | |
| 2.1.1.2 Outsource fence maintenance work to members of the local community | " | | | | | █ | █ | █ | █ | █ | █ | █ | █ | |
| **2.1.2 Deployment of staff by MCC and ICC to Mwingi and Bisanadi National Reserves respectively** | | | | | | | | | | | | | | |
| 2.1.2.1 Deploy County Council rangers to the MCA to work with KWS Wardens | CCClerks, SW-ICC | | | | | | | | | | | | █ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 2.1.2.2 Recruit County Council rangers for the Reserves as need arises | KWS, MCC | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **2.1.3 Train staff in relevant skills** | | | | | | | | | | | | | | |
| 2.1.3.1 Carry out a new staff training needs assessment | SW-MCA, H-HC, HRO | | █ | █ | | | | | | | | | | |
| 2.1.3.2 Collaborate with KWS Headquarters training section in training staff in relevant skills | " | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **Sub-objective 2.2: Staff accommodation, office and welfare facilities improved** | | | | | | | | | | | | | | |
| **2.2.1 Construct and rehabilitate residential buildings and non-residential buildings** | | | | | | | | | | | | | | |
| 2.2.1.1 Collaborate with KWS Headquarters in contracting construction and rehabilitation works for key administration centres in the MCA management sectors | SW-MCA | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **2.2.2 Subscribe to and install satellite TV and its accessories at staff canteens** | | | | | | | | | | | | | | |
| 2.2.2.1 Install satellite units at Kamukunga (Kora Park HQs), Kambi ya Simba, Kinna and Kanjoo Rhino Unit HQs | SW-MCA | | | | | | | | █ | | | | | |
| **2.2.3 Establish sport and recreational facilities/activities at MCA** | | | | | | | | | | | | | | A functional sports club in place by June 2008 |
| 2.2.3.1 Hold discussions among staff regarding the establishment of a sports club | HRO | █ | █ | | | | | | | | | | | |
| 2.2.3.2 Provide sport equipment to the MCA sports club | HRO | | | █ | █ | | | | | | | | | |
| **2.2.4 Liaise with the Ministry of Health in enhancing the management of Murera health clinic** | | | | | | | | | | | | | | Murera Clinic functional by June 2008 |
| 2.2.4.1 Hold discussions with the Meru North MOH on the management of Murera Health Clinic | HRO | | | | | | █ | █ | | | | | | |
| 2.2.4.2 Support deployment of medical staff to Murera Health Clinic | SW-MCA, HRO | | | | | █ | █ | █ | █ | █ | █ | █ | █ | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **2.2.5 Collaborate with the Ministry of Education to improve the standard of education at Kathithi Primary School** | | | | | | | | | | | | | | Textbooks provided by September 2008 |
| 2.2.5.1 Provide education tools such as textbooks to Kathithi primary School | HRO, SW-MCA | | | | | █ | | | | | | | | |
| 2.2.5.2 Support deployment of an additional primary school teacher at Kathithi primary school | SW-MCA | | | | | █ | █ | █ | █ | █ | █ | █ | █ | |
| **2.2.6 Establish code of conduct for officers and other ranks' mess** | | | | | | | | | | | | | | Staff rules and regulations implemented by June 2008 |
| 2.2.6.1 Prepare rules and regulations for social facilities at the MCA | SW-MCA, HRO | | | █ | | | | | | | | | | |
| 2.2.6.2 Hold staff meetings to discuss the rules and regulations | " | | | | █ | | | | | | | | | |
| 2.2.6.3 Disseminate rules and regulations all staff social facilities | " | | | | █ | | | | | | | | | |
| **Objective 3: Infrastructure, transport and communications to support PA management and tourism development improved** | | | | | | | | | | | | | | |
| **Sub-objective 3.1: MCA road network improved** | | | | | | | | | | | | | | |
| **3.1.1 Inventory drifts and install guard rails on drifts across major rivers** | | | | | | | | | | | | | | Guard rails fitted by June 2009 |
| 3.1.1.1 Map all the drifts in the MCA | SW-MCA | | | █ | | | | | | | | | | |
| 3.1.1.2 Fit guardrails on drifts across major rivers | " | | | | █ | █ | █ | | | | | | | |
| **3.1.2 Prepare a road development plan** | | | | | | | | | | | | | | A road development plan prepared by June 2010 |
| 3.1.2.1 Map all existing and potential tourist sites | WT | | | | | | | | | █ | | | | |
| 3.1.2.2 Collaborate with KWS Headquarters Roads Section in the preparation of a road development plan | WT, SO, SW-MCA | | | | | | | | | | █ | | | |
| **3.1.3 Construct new roads and rehabilitate existing ones** | | | | | | | | | | | | | | |
| 3.1.3.1 Carry out regular grading of tourist circuits | SW-MCA, WT | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| 3.1.3.2 Collaborate with KWS Headquarters Roads Section in the construction of new roads in line with the road development plan | WT, SO, SW-MCA | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |

| Management Action and Activities | Persons Responsible | Timeframe FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **Sub-objective 3.2: Transport in the MCA improved** | | | | | | | | | | | | | | |
| **3.2.1 Ensure prompt service of vehicles and machinery** | | | | | | | | | | | | | | Vehicle maintenance schedules ready by December 2007 |
| 3.2.1.1 Prepare maintenance schedules for vehicle and machinery at the MCA | MS | | █ | █ | | | | | | | | | | |
| **Sub-objective 3.3: Communication in the MCA improved** | | | | | | | | | | | | | | |
| **3.3.1 Install and maintain VSAT (Very Small Aperture Terminal) and upgrade when appropriate** | | | | | | | | | | | | | | |
| 3.3.1.1 Maintain the VSAT installed at the MCA | SW-MCA | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **3.3.2 Upgrade the radio communication network** | | | | | | | | | | | | | | |
| 3.3.2.1 Collaborate with the KWS Headquarters Telecommunications Section to change the radio communication to trunk radios | SW-MCA | █ | █ | █ | █ | | | | | | | | | |
| **Sub-objective 3.4: Other MCA infrastructure improved** | | | | | | | | | | | | | | |
| **3.4.1 Establish new airstrips and rehabilitate existing ones** | | | | | | | | | | | | | | |
| 3.4.1.1 Collaborate with KWS Headquarters to rehabilitate existing airstrips and construction on new ones as per the recommendations in Table 19 | SW-MCA | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | |
| **3.4.2 Construct entry gates in Mwingi and Bisanadi NRs and Kora NP** | | | | | | | | | | | | | | |
| 3.4.2.1 Collaborate with KWS Headquarters in the construction of gates at Kaningo, Masyungwa, in Mwingi NR; Golo, Malka Radha and Marro in Bisanadi NR; and Boka and Moju in KNP | SW-MCA | | | | | | | | | | | | | |
| **3.4.3 Provide utilities such as electricity and water to staff quarters** | | | | | | | | | | | | | | |
| 3.4.3.1 Apply to KPLC for power to be supplied to Murera Headquarters | SW-MCA | █ | | | | | | | | | | | | |
| 3.4.3.2 Procure and install solar electricity supply kits for office and residential buildings at Kinna, Kamukunga, Ura , Korbessa and Kambi Ya Simba | SW-MCA | | █ | █ | █ | | | | | | | | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| 3.4.3.3 Contract the construction of a rock catchment at Kambi ya Simba | WK | | | | | | | | | | | | ■ | |
| **3.4.4 Improve signage throughout the MCA** | | | | | | | | | | | | | | |
| 3.4.4.1 Construct road signages using standard KWS signage designs | SW-MCA | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| 3.4.4.2 Prepare interpretive information to be displayed on road signages | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| **3.4.5 Demarcate PA boundaries** | | | | | | | | | | | | | | |
| 3.4.5.1 Collaborate with the KWS Headquarters Lands Section to survey and demarcate the protected area boundaries | SW-MCA | | | | | | | | | ■ | ■ | ■ | | |
| **Objective 4: Resource requirements for effective MCA management met** | | | | | | | | | | | | | | |
| **4.1 Prepare MCA recurrent budget based on the MCA 3-year activity plan specified in the management plan** | | | | | | | | | | | | | | |
| 4.1.1 Organise annual work planning meetings for the MCA managers and use the management plan to derive annual activities | AD-ECA, SW-MCA | | ■ | | | | ■ | | | | ■ | | | |
| 4.1.2 Draw staff performance contracts from activities stipulated in the MCA management plan | " | | ■ | | | | ■ | | | | ■ | | | |
| **4.2 Liaise with tour operators to get information on aircrafts landing at MCA airstrips** | | | | | | | | | | | | | | |
| 4.2.1 Design and implement a communication system between the tourist facilities and MCA management | SW-MCA | ■ | ■ | | | | | | | | | | | |
| **4.3 Expedite procurement of goods and services at the MCA** | | | | | | | | | | | | | | |
| 4.3.1 Prepare annual procurement plans for goods and services | PO | | | | ■ | | | | ■ | | | | ■ | |
| 4.3.2 Hold meeting to raise awareness of procurement procedures with MCA section heads | PO | | | ■ | | | | ■ | | | | ■ | | |

| Management Action and Activities | Persons Responsible | Timeframe | | | | | | | | | | | | Milestones |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FY 2007-08 | | | | FY 2008-09 | | | | FY 2009-10 | | | | |
| | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| **4.4 Establish a financial management database** | | | | | | | | | | | | | | |
| 4.4.1 Collaborate with KWS Headquarters Finance Section in designing and implementing a financial database at the MCA | ACCT | | | ■ | ■ | ■ | ■ | | | | | | | |
| **4.5 Prepare project proposals for funding** | | | | | | | | | | | | | | |
| 4.5.1 Collaborate with research institutions, researchers and conservation NGOs in the preparation of project proposals | SW-MCA, SRS | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |

**Abbreviations**

Acct - Accountant

AD-ECA - Assistant Director Eastern Conservation Area

CCClerks - County Council Clerks

DSC - District Security Committee

H-HC - Head Human Capital

HRO - Human Resource Officer

MCC - Mwingi County Council

MS - Mechanical Superintendent

PO - Procurement Officer

SW-ICC - Senior Warden Isiolo County Council

SW-MCA - Senior Warden Meru Conservation Area

# 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 and/or sub–objectives, as well as any potential negative impacts that may possibly occur. The framework also includes easily measurable and quantifiable indicators for assessing these impacts, and potential sources of the information needed. Monitoring the impacts of the plan implementation is a key aspect of the ultimate success of the plan and for informing adaptive management of the area, and as such ensuring that overall benefits from plan implementation are maximised, and that any negative impacts are appropriately mitigated.

*Table 20. Ecological Management Programme Monitoring Plan*

| Objective or Sub-Objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| Sub-objective 1.1: Black rhino population managed and enhanced | The Black rhino population in the MCA is increasing at target rates | Population size and recruitment rates | Population counts (MCA Ecological Monitoring Plan) |
| Sub-objective 1.2: A viable population of Grevy's zebra managed and maintained | The MCA Grevy's zebra population is increasing at optimal rates | Population size and recruitment rates | Population counts (MCA Ecological Monitoring Plan) |
| Sub-objective 1.3: Elephant migration and dispersal movements understood and protected | Habitat connectivity between the MCA and surrounding natural habitats is maintained | Extent of permanent agriculture/settlements and wildlife habitat adjacent to the MCA | MCA land cover change study (c.f. Action 2.2), satellite imagery and ground observations |
| | Elephants and other key species are able to continue moving between the MCA and dispersal areas | Elephant movements | Radio collaring of individuals (c.f. Action 1.3.2) |
| Objective 2: Important habitats managed and improved | The area of grassland available for key grazing species in the MCA is maintained or increased | Area of grassland | Satellite imagery and ground observations (MCA Ecological Monitoring Plan) |
| | Fire is making a positive contribution to the conservation of the MCA's key habitats | Incidence of wild or unprescribed fires in the MCA | Outbreak reports and MCA Fire Management Plan (c.f. Action 2.2) |
| Sub-objective 3.1: Collaboration and support for conservation of Ngaya Forest Reserve strengthened | The forest reserve's ecological integrity and rare indigenous tree species are conserved | Forest area and species composition | Satellite imagery and reports on floral structure (MCA Ecological Monitoring Plan) |
| Sub-objective 3.2: Quantity and quality of water supplied to the MCA maintained in collaboration with responsible agencies | The MCA is supplied with sufficient unpolluted water supply to ensure the conservation of the area's permanent swamps and water sources | Water quantity and quality | Water flow and quality analysis reports structure (MCA Ecological Monitoring Plan) |

**Table 21. Tourism Development and Management Programme Monitoring Plan**

| Objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| **Objective 1: The MCA tourism product expanded and diversified** | Increased use of the Low and Wilderness Activity Zones | Percentage of MCA visitors staying overnight in the LUZ and WAZ | KWS HQ visitor database and concession holder records |
| | Increased length of stay in the MCA | Average number of nights spent in the MCA per visitor | Concession holder records and bednight fees |
| | Visitor security incidents as a result of using remote parts of the MCA | Number of visitor safety and security incidents in LUZ and WAZ | Incident reports |
| | 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 MCA staff |
| **Objective 2: MCA tourism investment opportunities developed** | Increased number of visitors to the MCA | Annual visitor numbers | KWS HQ visitor database |
| | Improved financial sustainability of the MCA | Annual revenue | MCA Finance Dept records |
| | New developments impact on the MCA's wilderness characteristics | MCA visitor and investor satisfaction | Feedback from MCA investors (c.f. Action 4.2) |
| **Objective 3: The MCA's unique wilderness identity established and visitor experience enhanced** | Improved visitor understanding of the MCA's ERVs, conservation issues and history | Number of guidebooks and maps sold (numbers visiting the MCA visitor centre, if developed) | KWS HQ tourism records (visitor centre records) |
| | The MCA's wilderness and environmental qualities are compromised around attractions | Evidence of litter and environmental damage at MCA attractions | Targeted inspections by MCA staff |
| **Objective 4: MCA tourism management improved** | Increased collaboration between KWS and MCA investors | Number and participation at tourism investor and MCA management meetings (c.f. Action 4.2) | Meeting minutes |

*Table 22. Community Partnership and Education Programme Monitoring Plan*

| Objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| Objective 1: PA community communication and collaboration mechanisms improved | Enhanced relationships between MCA management and surrounding communities | Incidences of MCA - community conflict | Community Wildlife Service records |
| Objective 2: Conservation education and awareness raising programme strengthened | Improved understanding of the MCA's conservation importance | Number of participants on sponsored MCA tours | Community Wildlife Service records |
| | Increased community awareness of and respect for MCA rules and regulations | Number of local community members arrested for illegal activities in the MCA | Security Section Records |
| Objective 3: Conservation compatible land uses and practices promoted | Decreased conversion of wildlife habitat to permanent agriculture around the MCA | Area covered by permanent agriculture, and trends in rate of conversion | MCA land cover change study (c.f. Ecological Management Action 2.2) and satellite imagery |
| | Reduced illegal natural resource use in the MCA | Number of local community members arrested for illegal natural resource use the in MCA | Security Section Records |
| Objective 4: Human - wildlife conflict reduced | Reduced costs of wildlife to MCA adjacent communities | Incidents of human-wildlife conflict around the MCA | Community Wildlife Service records (monthly reports and occurrence books) |
| Objective 5: Opportunities for communities to benefit from the MCA improved | Increased value and importance of the MCA to surrounding communities | Income from activities linked to the conservation of the MCA | Community organisation records |
| | Benefits exacerbate inequalities within the surrounding communities | Socio-economic make up beneficiaries from schemes supported by MCA CWS | Community organisation and/or MCA Community Wildlife Service records |
| | Increased immigration to MCA adjacent areas as a result of benefits | Trends in population growth and immigration in MCA adjacent areas | District records, national census, community surveys |

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### Table 23. Security Programme Monitoring Plan

| Objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| Objective 1: Visitor security ensured | The establishment of the MCA as a safe and secure destination for visitors and investors | Number of visitor security incidents in the MCA | MCA Security Section records (incident reports) |
| Objective 2: Security patrols enhanced | Reduced impact of poaching and livestock incursions on MCA natural resources | Size and frequency of cattle incursions into the MCA, and number of snares collected | MCA Security Section records and aerial surveys |
| | Improved security situation in MCA adjacent areas | Security incidents (banditry, livestock theft etc.) around the MCA | MCA Security Section records (incident reports) |
| Objective 3: Intelligence information gathered | Increased efficiency of law enforcement efforts | Number of arrests made per law enforcement effort | MCA Security Section records (patrol records and monthly, quarterly and annual reports) |
| Objective 4: Arrest and prosecution process improved | Increased disincentive for undertaking illegal activities in the MCA | Number of repeat offenders caught in the MCA | MCA Security Section records |

### Table 24. Protected Area Operations Programme Monitoring Plan

| Objective or Sub-objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| Objective 1: Institutional collaborations formalised and strengthened | Enhanced management collaboration between KWS, CCI and CCM | Percentage of joint responsibility 3-year activity plan milestones achieved | MCA annual reports |
| | Increased stakeholder support for management of the MCA | Number of MCA advisory meetings or other stakeholder collaboration events held | Meeting minutes or MCA management records |
| Sub-objective 2.1: Staff performance enhanced | Improved efficiency of MCA staff undertaking their roles | Staff performance against 3-Year Activity Plan "milestones" | MCA annual reports |
| Sub-objective 2.2: Staff accommodation, office and welfare facilities improved | Improved morale of MCA staff | Number of poor morale related incidences | MCA annual reports |
| Sub-objective 3.1: MCA road network improved | Improved visitor and management access across the MCA | Kilometres of roads built and/or improved | MCA management records and KWS HQ GIS database |

| Objective or Sub-objective | Potential Impacts (*Positive* and *Negative*) | Verifiable Indicator | Sources and means of verification |
|---|---|---|---|
| | Environmental disturbance and pollution during road construction | Evidence of litter, pollution or excessive environmental damage | Targeted inspections by MCA staff |
| Sub-objective 3.2: Transport in the MCA improved | Improved efficiency in management operations (especially security and PAC responses) | Ratio of operational to non-operational vehicles | MCA management records and/or periodic surveys |
| Sub-objective 3.3: Communication in the MCA improved | Improved management response to security or HWC incidents | Number of security and HWC incidences successfully responded to | Community surveys and investor feedback (c.f. Tourism Development and Management Action 4.2) |
| Sub-objective 3.4: Other infrastructure improved | Enhanced visitor use of the Low and Wilderness Activity Zones | Percentage of MCA visitors staying overnight in the LUZ and WAZ | KWS HQ visitor database and concession holder records |
| | Environmental disturbance and pollution during gate or airstrip construction | Evidence of litter, pollution or excessive environmental damage | Targeted inspections by MCA staff |
| Objective 4: Resource requirements for effective MCA management met | Enhanced ability of MCA management to implement the plan | Percentage of 3-Year Activity Plan milestones achieved | MCA annual reports |
| | Increased external financial support for MCA management | MCA revenue sources | MCA annual budget reports |

# Plan Annexes

# Annex 1. Accommodation facility descriptions

The following sections provide an overview of the different categories of tourism accommodation permitted in the MCA. All of the sections below, with the exception of Starbed Camps, have been summarised from the draft KWS Facilities Development Procedures (2006). The KWS manual should be consulted for a more in-depth and accurate description of these categories, and for further details on regulations regarding payment and use. Starbeds are a new concept being piloted in the MCA, and as such have not yet been included in this manual.

# Private sector accommodation

## Lodges

These are single or multi-level, reinforced structures with permanent hard walls, typically containing a reception, gift shop, dining room(s), bar(s) and an office under one roof, with interior plumbing and power. Lodges also have a series of continuous permanent, steel-reinforced bedroom structures for guests. **No new lodges are allowed to be developed in the MCA for the duration of this management plan**.

## Eco-lodges

These are single level structures, with concrete foundations and semi-permanent solid walls of natural materials that blend well with the environment. Approved amenities include: a reception area, dining room(s), bar(s) and an office under one or separate roofs, with interior plumbing and power. Bedrooms are built on one level in separated bedrooms constructed with minimal concrete, in a manner similar to the reception and public areas. On-site accommodation of up to 20 essential staff is permitted. This management plan stipulates a maximum of 60 guest beds per facility is permitted in the High Use Zone, and 30 in the Low Use and Wilderness Activity Zones.

## Permanent Tented Camps

These facilities are constructed on a permanent basis using materials that blend with the environment. The camp is restricted to one level, made of a cement or wooden platform, with a tented structure containing a reception, dining room and bar. In addition there are normally a series of one level, cement or wood platform, separate permanent tented bedroom structures. This management plan stipulates that each permanent tented camp can accommodate a maximum of 60 guests in the High Use Zone, and 30 in the Low Use and Wilderness Activity Zones. Only essential staff are to be housed at the site.

## Starbed Camps

A starbed camp consists of a small number of raised wooden sleeping platforms that are partially covered with a thatched roof. Movable beds located on these platforms can either be directly under the stars or under the roof, as weather permits. In the MCA, these camps will have a maximum of ten beds, and will be made entirely of natural materials. Camps will be

designed to have minimal impact on the aesthetic and environmental qualities of the MCA. In addition to the sleeping platforms, permitted facilities include a simple covered lounge/dining area, and a simple kitchen, environmentally-sensitive toilets and showers. No petrol or diesel powered generators are permitted, and any staff accommodation will be kept to a minimum. Starbed camps can only be developed by investors operating either a lodge or permanent tented camp in the MCA, and may be developed within the defined exclusion radius around the lodge or permanent tented camp of the same investor.

# KWS managed accommodation

## Special Campsites

Formerly known as professional campsites, special campsites are usually located in secluded and especially attractive parts of the PA. The campsites are reserved on an exclusive basis for periods of 2-7 days. No permanent structures may be established on the site, all waste must be packed out from the site, and any site used for more than 14 continuous days should be allowed a recovery period. This management plan stipulates a maximum occupancy of 10 visitors at each site. On expiry of the camping period, the operator shall remove all waste and litter from the site.

## Bandas

Bandas are basic self-catering accommodation managed by KWS, mainly catering for the domestic market. Firewood and cooking areas are generally provided. This management plan stipulates a maximum of 20 visitors per site (with no expansion of existing facilities in or adjacent to the High Use Zone).

## Public Campsites

This is an area set aside for use by any member of the public for camping using tents or campervans. Public campsites are generally located at the same site as KWS bandas, and facilities generally provided include firewood, toilets, showers, and water points. In the MCA, a maximum of 20 visitors are permitted per site. MCA management will regularly collect and dispose of all litter at the site.

| Name | Position and Organisation | Workshop #1 | Workshop #2 | Ecology | Tourism | Community | Sec /PA Ops | Consult |
|---|---|---|---|---|---|---|---|---|
| Abdullahi Adan | NEMA, District Environment Officer, Isiolo | | | | | X | | |
| Andrew Toboso | Head Marketing and Business Development | | X | | | | | |
| Alex Kireria | Senior Consultant, ANECT Group | | | X | | | | |
| Alistair Addison | Operations Director, Serena Hotels | | | | X | | | X |
| Allan Earnshaw | KWS BoT; Ker & Downey Safaris | | X | | X | | | X |
| Apollo Kariuki | Senior Research Scientist – KWS Biodiversity Planning Department | X | X | X | X | X | X | |
| Bakari C. Mungumi | MCA Warden Administration and Tourism, KWS | X | | | X | | | |
| Benson Guantai Mucheke | Administrative Officer, Nyambene County Council | | | | X | | | |
| Benson M. Mutio | Chairman, County Council of Mwingi | | | | | X | X | |
| Benson Okita Ouma | Rhino Programme Coordinator, KWS | | | X | | | | |
| Benson Mutu | County Council of Mwingi | | | | | | | |
| Bilal Abato | Chairman, Bisanadi Wildlife Forum | X | X | | | X | | |
| David Henson | Programme Officer, Conservation Development Centre, | X | X | X | X | | | |
| David Kones | Research Officer, KWS | | X | | | | | |
| David Mukoronia | MCA Warden Roads, KWS | X | | | | | X | |
| Davis Mwangi | MCA Workshop, KWS | | X | | | | | |
| Dickson Ritan | MCA Warden Education, KWS | X | | | | X | X | |
| Dominic Wambua | Ag. Senior Warden MCA, KWS | X | | X | | X | X | |
| Erick Bosire | Project Officer, SNV | | | | | X | | |
| Fred Kaigua | CEO, Kenya Association of Tour Operators | | | | X | | | |
| Fredrick Lala | MCA Research Scientist, KWS | | | X | | | | |
| Gedfrey Olukoye | Senior Lecturer, Kenyatta University | | | X | | | | |
| Halake Jillo | Secretary, Bisanadi Wildlife Forum | X | X | | | | | |
| Helen Gichohi | KWS BoT; President AWF | | | | | | | X |
| Howard Saunders | KPSGA | | X | | | | | |
| Ibrahim Kiragara | Secretary, Kanjoo Community Conservation Comittee | | | | | X | | |
| Ignatius Analo | MCA Procurement Officer, KWS | X | X | | | | X | |
| J. Mutula | DOI, Meru North District | X | | | | | | |
| J.M. Kamau | NEMA, District Environment Officer, Meru North | | | X | | X | | |
| James Kiparus | MCA Warden Security, KWS | X | | | | | X | |
| John Muchiri | General Manager, Abercrombie | | | | X | | | |

| Name | Position and Organisation | Workshop #1 | Workshop #2 | Ecology | Tourism | Community | Sec /PA Ops | Consult |
|---|---|---|---|---|---|---|---|---|
| | and Kent | | | | | | | |
| John Kariuki | Research Scientist, KWS | | X | | | | | |
| Joseph Kurauka | Consultant, ANECT Group | | | X | | | | |
| Joseph M. Kamau | DEO – Meru North, NEMA | | X | X | | | | |
| Joseph M. Kilonzo | NCA Research, KWS | | | | | X | | |
| Joseph Mukeka | GIS Officer, KWS | | X | X | | | X | |
| Josephine Waithira | NCA, KWS | | | | | | | |
| Julius Muneni | Chairman, Mwingi Community Conservation Committee | X | | | | X | | |
| Julius K. Cheptei | Senior Warden Tsavo East, KWS | | X | | | | | |
| Kaio Mbulusi | Clerk, County Council of Mwingi | X | X | | X | X | X | |
| Kenn Esau | MCADP Coordinator, KWS HQ | X | X | X | X | | | |
| Kenneth Ole Nashu | MCA, Warden Community, KWS | X | X | X | | X | | |
| Kiplimo Wekesa | MCA Mechanical section, KWS | X | X | | | | X | |
| Lekapana Paul | NCA Research, KWS | | | | X | X | X | |
| Leonard Migowa | MCA Human Resource Officer, KWS | X | | | | | | |
| M.L. Kipkeu | Ag. D & R, KWS | | X | | | | | |
| Major (rtd) William Kamunge | Chairman, Kenya Tourism Federation | | | | X | | | |
| Mark Cheruiyot | Warden Kora/Mwingi, KWS | | X | | | X | X | |
| Mark Jenkins | (Former) MCA Senior Warden | | | | | | | X |
| Martha Anguzuzu | Marketing Officer, KWS HQ | X | X | | X | | | |
| Martha Nzisa | Research, KWS HQ | | X | X | X | | | |
| Mohamed Tubi Bidu | Senior Warden, County Council of Isiolo | | X | | X | X | | |
| Moses Lithoroh | Elephant Programme Coordinator, KWS | | | X | | | | |
| Newton Nyagah | MCA, Administration | X | | | | X | X | |
| Nigel Archer | Nigel Archer Safaris | | | | | | | X |
| Nur Gufu | MCA, Warden Community | | | | | | X | |
| Oscar Otieno | Assistant Manager, Leopard Rock Lodge | X | | | | | | |
| Patrick Leseketeti | MCA. Warden Fence, KWS | X | | | | | | |
| Patrick Omondi | Head – Species Conservation and Management, KWS HQ | | | X | | | | |
| Peter Kilingo | Rep., Wildlife Clubs of Kenya | X | | | | X | | |
| Peter Mugi | Food and Beverage Manager, Leopard Rock Mico Ltd | | | | X | | | |
| Peter Mungania | Clerk, Nyambene County Council | | | | | X | | |
| Peter Muthusi | Warden Community Kora and Mwingi, KWS | X | | | | | | |
| Peter Mwangi | Research, KWS HQ | X | | X | | | | |
| Peter N. Nyabuti | Forester, Kenya Forest Service | | X | | | | | |
| Phil West | Phil West Safaris | | | | | | | X |
| Philip Kambui | Chairman (former), County Council of Mwingi | X | | | X | | | |
| Philip Murithi | Project Assistant, Ecotourism Kenya | | X | | | | | |
| Prof. Shem Migot Adhola | Vice Chairman, KWS BoT | | X | | | | | |
| Richard Yego | Research Scientist, National Museums of Kenya | X | | X | | | | |
| Richardson Murithi | MCA, Accountant, KWS | X | X | | | | X | |

| Name | Position and Organisation | Workshop #1 | Workshop #2 | Working Groups Ecology | Working Groups Tourism | Working Groups Community | Working Groups Sec /PA Ops | Consult |
|---|---|---|---|---|---|---|---|---|
| Rob Malpas | CEO, Conservation Development Centre | X | X | X | X | | | |
| Robert Carr-Hartley | Sangalal Ltd, David Sheldrick Wildlife Trust, Managing Director and Trustee | | | | X | | | |
| Robert Chira | Lecturer, Univeristy of Nariobi | | X | X | | | | |
| Robert Njue | Senior Warden MCA, KWS | | X | | | | | |
| Robert Muasya | Assistant Director NCA, KWS | | X | | | | | |
| Salome Gachago | Ag. Head – Marketing and Business Development, KWS HQ | | X | | X | | | |
| Samuel Tokroe | MCA Company Commander, KWS | | X | | | | | |
| Shadrack Ngene | NCA, Senior Research Scientist, KWS | X | X | X | X | X | X | |
| Sharack Muya | Assistant Lecturer, Jomo Kenyatta University | | | X | | | | |
| Silas Mureithi | MCA, Warden Security, KWS | X | | | | | X | |
| Simon Kathata | Chairman, Mount Kenya Tourism Circuit Association | X | | | X | | | |
| Stanley Muchai | Hydrologist, Ministry of Water and Irrigation | | X | X | | | | |
| Stefano Cheli | Managing Director, Cheli & Peacock | | X | | X | | | |
| Stephen Chege | Vet. Officer, KWS | | X | | | | | |
| Stephen Manegene | Head – Planning, KWS HQ | | X | X | X | | | |
| Terry Mwangi | Planning Department, KWS HQ | X | | | | | | |
| Timothy Marangu | MCA, Research Scientist, KWS | X | | X | X | X | X | |
| Thomas Maryibe | Senior Research Scientist, KWS | | X | | | | | |
| Tristan Voorspuy | Off Beat Safaris | | | | | | | X |
| Vipul Patel | Director, Simba Lodges | | X | | | | | |
| William Opiyo | MCA, Human Resource Officer, KWS | | X | | | | X | |
| Wycliffe Mutero | Senior Scientist GIS, KWS HQ | | X | X | | | | |

# Annex 3. MCA staffing requirements

| Department/Section | Current | Optimum | Deficit |
|---|---|---|---|
| **ECA:** Assistant Director | 1 | 1 | 0 |
| **MERU CONSERVATION AREA: KINNA SECTOR** **Management and Administration** | | | |
| Senior Warden | 1 | 1 | 0 |
| Warden I | 0 | 1 | 1 |
| Warden Administration (W II) | 0 | 1 | 1 |
| Senior Accountant | 0 | 1 | 1 |
| Accountant | 1 | 1 | 0 |
| Accounts Assistant | 2 | 2 | 0 |
| Secretary | 0 | 2 | 2 |
| Drivers | 3 | 6 | 4 |

| Department/Section | Current | Optimum | Deficit |
|---|---|---|---|
| Supplies Officer | 0 | 1 | 1 |
| Supplies Assistant | 1 | 2 | 1 |
| Supplies Clerk | 0 | 1 | 1 |
| Support Staff | 2 | 4 | 2 |
| *Sub-total* | *11* | *24* | *14* |
| **Fence Maintenance** | | | |
| Fence Supervisor | 0 | 1 | 1 |
| Fence Technician | 2 | 4 | 2 |
| Fence Attendant | 0 | 53 | 53 |
| *Total* | *2* | *58* | *56* |
| **Workshop** | | | |
| Mechanical Superintendent | 0 | 1 | 1 |
| Workshop Supervisor | 1 | 2 | 1 |
| Motor Vehicle Mechanic | 3 | 7 | 4 |
| Plant Mechanic | 2 | 5 | 3 |
| Workshop Attendant | 1 | 3 | 2 |
| Welders | 2 | 2 | 0 |
| Panel Beater | 0 | 2 | 2 |
| Auto-Electrician | 0 | 2 | 2 |
| Spray Painters | 0 | 2 | 2 |
| *Total* | *9* | *26* | *17* |
| **Community Wildlife Service/Murera HQ** | | | |
| Community Wildlife Service officer (W I) | 1 | 1 | 0 |
| Deputy CWS officer (AW II) | 0 | 1 | 1 |
| Sergeant | 1 | 1 | 0 |
| Driver | 1 | 1 | 0 |
| Secretary/Typist | 0 | 1 | 1 |
| Corporals | 1 | 1 | 0 |
| Rangers | 17 | 20 | 3 |
| *Total* | *21* | *26* | *5* |
| **Human Resources** | | | |
| Human Resource Officer | 1 | 1 | 0 |
| Human Resource Assistant | 0 | 1 | 1 |
| Clerical Officer | 1 | 1 | 0 |
| Secretary/Copy Typist | 0 | 1 | 1 |
| *Total* | *2* | *4* | *2* |
| **Murera Education Centre** | | | |
| Warden Education (W I) | 0 | 1 | 1 |
| Warden Education (W II) | 1 | 0 | 0 |
| Assistant Warden I | 0 | 2 | 2 |
| Multi-media Assistant | 0 | 1 | 1 |
| Naturalist | 0 | 1 | 1 |
| Information Assistant | 0 | 1 | 0 |
| Corporal | 1 | 0 | 0 |
| Rangers | 0 | 2 | 0 |
| Drivers | 1 | 1 | 0 |
| Support Staff (cleaner) | 0 | 2 | 2 |
| Cook | 0 | 1 | 1 |
| *Total* | *3* | *12* | *8* |
| **Research** | | | |
| Senior Research Scientist | 1 | 1 | 0 |
| Research Scientists | 1 | 2 | 1 |
| Research Assistants | 0 | 2 | 2 |
| Driver | 0 | 1 | 1 |

| Department/Section | Current | Optimum | Deficit |
|---|---|---|---|
| GIS technician | 0 | 1 | 1 |
| Secretary/Copy Typist | 0 | 1 | 1 |
| Laboratory Technician | 0 | 1 | 1 |
| *Total* | *2* | *9* | *7* |
| **Security - Wildlife Protection Unit** | | | |
| Company Commander (W II) | 1 | 1 | 0 |
| Platoon Commanders (AW I/II) | 3 | 4 | 1 |
| Senior Sergeant | 0 | 1 | 1 |
| Sergeants | 3 | 5 | 2 |
| Corporals | 1 | 12 | 11 |
| Rangers | 51 | 108 | 57 |
| Driver | 5 | 5 | 0 |
| Radio Operator | 4 | 12 | 8 |
| *Total* | *68* | *148* | *80* |
| **Security – Intelligence** | | | |
| Clic Commander (W II) | 1 | 1 | 0 |
| Clic Officer (AW I/II) | 0 | 1 | 1 |
| Sergeant | 1 | 1 | 0 |
| Corporals | 3 | 4 | 1 |
| Rangers | 5 | 16 | 11 |
| Driver | 2 | 3 | 1 |
| *Total* | *12* | *26* | *13* |
| **Rhino Unit** | | | |
| Rhino Officer (AW II) | 1 | 1 | 0 |
| Sergeant | 1 | 1 | 0 |
| Corporal | 1 | 3 | 2 |
| Rangers | 25 | 27 | 2 |
| Drivers | 1 | 2 | 1 |
| *Total* | *29* | *34* | *5* |
| **Telecommunication** | | | |
| Radio Technicians | 0 | 2 | 2 |
| *Total* | *0* | *2* | *2* |
| **Works** | | | |
| Civil Works Superintendent | 0 | 1 | 1 |
| Maintenance Supervisor | 0 | 1 | 1 |
| Plant Operators | 3 | 5 | 2 |
| Plumber | 0 | 1 | 1 |
| Sign Writer | 0 | 1 | 1 |
| Carpenters | 2 | 3 | 1 |
| Mason | 0 | 1 | 1 |
| Painter | 1 | 1 | 0 |
| Driver | 0 | 1 | 1 |
| Warden Roads | 1 | 0 | 0 |
| *Total* | *7* | *15* | *9* |
| **Tourism** | | | |
| Warden Tourism (W II) | 0 | 1 | 1 |
| Assistant Warden II | 0 | 1 | 1 |
| Sergeant (Gate) | 0 | 4 | 4 |
| Corporal (Gate) | 3 | 8 | 5 |
| Ranger (Gate) | 5 | 15 | 10 |
| Driver | 0 | 1 | 1 |
| Copy Typist | 0 | 1 | 1 |
| Banda Attendant | 1 | 4 | 3 |
| *Total* | *9* | *35* | *26* |

| Department/Section | Current | Optimum | Deficit |
|---|---|---|---|
| **Airwing** | | | |
| Pilot | 1 | 1 | 0 |
| Aircraft Attendant | 0 | 2 | 2 |
| *Total* | *1* | *3* | *2* |
| **MERU CONSERVATION AREA: TESIWA SECTOR** | | | |
| Warden II | 0 | 1 | 1 |
| Assistant Warden II | 0 | 1 | 1 |
| Sergeant | 0 | 1 | 1 |
| Corporal | 0 | 2 | 2 |
| Ranger | 0 | 25 | 25 |
| Clerk | 0 | 1 | 1 |
| Supplies Clerk | 0 | 1 | 1 |
| Copy Typist | 0 | 1 | 1 |
| Driver | 0 | 2 | 2 |
| Support Staff | 0 | 1 | 1 |
| *Total* | *0* | *36* | *36* |
| **MERU CONSERVATION AREA: KORA SECTOR** | | | |
| Warden II | 1 | 1 | 0 |
| Assistant Warden II | 0 | 1 | 1 |
| Deputy CWS officer (AW II) | 0 | 1 | 1 |
| Sergeant | 1 | 1 | 0 |
| Corporal | 0 | 2 | 1 |
| Ranger | 7 | 25 | 18 |
| Clerk | 0 | 1 | 1 |
| Supplies Clerk | 0 | 1 | 1 |
| Copy Typist | 0 | 1 | 0 |
| Driver | 0 | 2 | 2 |
| Support Staff | 0 | 1 | 1 |
| *Total* | *9* | *37* | *26* |
| *GRAND TOTAL* | *185* | *495* | *308* |

# Annex 4. MCA protected areas

## MERU NATIONAL PARK



Area of Park = 870 Sq. Km Approx.

NATIONAL SETTING

### Elevation

| | |
|---|---|
| 320 - 460 | 1030 - 1170 |
| 460 - 600 | 1170 - 1320 |
| 600 - 750 | 1320 - 1460 |
| 750 - 890 | 1460 - 1600 |
| 890 - 1030 | |

1:180000

10    0    10 Kilometers
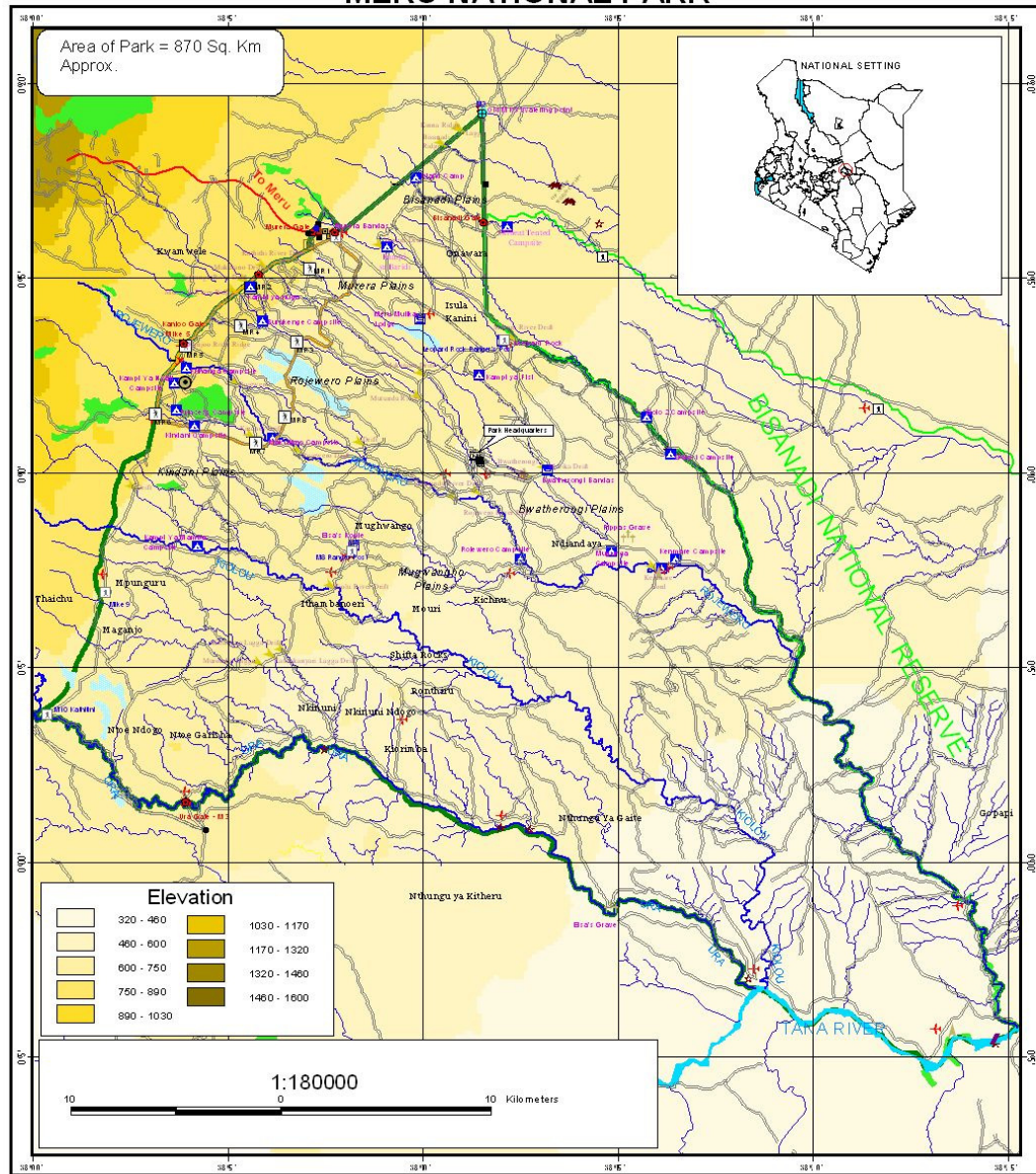
### LEGEND

**Tourist Information**
- Banda
- Campsite
- Grave
- Lodge
- Other important site

**Park services**
- Gate
- Office
- Ranger Post
- Staff Houses
- Bridge
- Airstrip

**Road**
- Drift
- Loose Surface Road
- Motorable Track
- Other Track/Footpath
- Major river
- Minor river

- Seasonal swamp
- Forest
- National reserve
- National Park

SOURCE : SURVEY OF KENYA 1990
MAP PRODUCTION; RESEARCH & BIODIVERSITY - GIS
SECTION MAP DIGITIZED
AND COMPILED BY:
Rose Mayienda & J. Mukeka

Users noting errors or omissions are requested
to note them on the map and forward to:
KWS Research & Biodiversity Dept, GIS office.
P.O Box 40241 Nairobi.

KENYA WILDLIFE SERVICE

N

## BISANADI NATIONAL RESERVE

AREA OF RESERVE
606 Sq. KM. APPROX

NATIONAL SETTING

Mauliti Wells

Bibi Dam

Old M3

Ole Mashuu Wildlife Corridor

Wako Wario
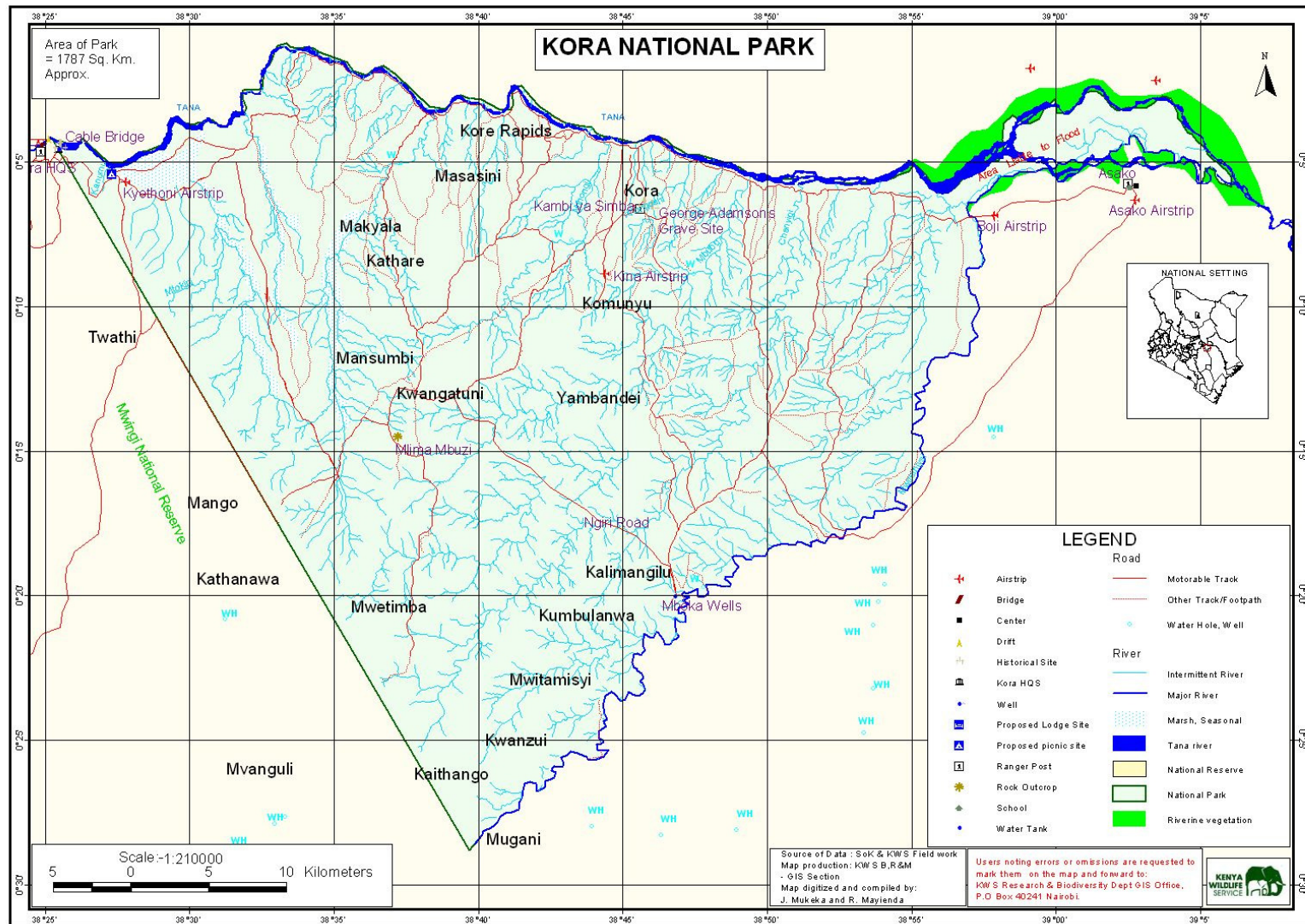Primary School

Offbeat
Campsite

Rapsu

Bisanadi River

Mara (Bisangurachia)

Golo 2

Arkinna

Korbesa

Golo 1

Meru National Park

Malka
Yaka

Dusi

Malka
Magado

Gof of Nigus

Bisanadi River

LEGEND

Rojewero

Gatich

Mado Kamo

Dabera

Gogapi

Madogohi
Hills

**UTM GRID ZONE DESIGNATION 37N**

| | |
|---|---|
| ▲ | Campsite |
| ⚔ | Corridor |
| ✦ | Dam |
| ⊞ | Ranger outpost |
| ■ | School |
| ⊕ | Watering point |
| ● | Well |
| ✈ | airstrip |
| ⚑ | Waterfall |
| — | UTM Zone 37 |
| — | Road |
| — | Minor river |
| — | Major river |
| — | Tana river |
| — | Contour |
| ○ | Water Hole |
| ▨ | Forest |
| ▭ | National Reserve |
| ▭ | National Park |

Rojewero

Masunduku
Airstrip

Waterfall

TANA RIVER

SCALE 1:185000

6    0    6    12  Kilometers

Source of Data: SoK and KWS
Map compilation by: Purity Mayiani
Update: J.Mukeka
Date: March 2005

Users noting errors or omissions are requested to
mark them on the map and forward to:
KWS R, B & M Division - GIS Office,
P.O.BOX 40241, NAIROBI.

KENYA
WILDLIFE
SERVICE

KORA NATIONAL PARK

## MWINGI NATIONAL RESERVE