

Mahale Mountains National Park

General Management Plan

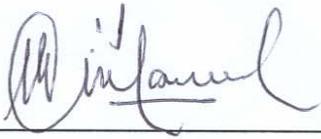
2006 - 2016

August 2006



Approval Page

The Board of Trustees and the Management of Tanzania National Parks have approved the implementation of this General Management Plan for Mahale Mountains National Park.



Col. Emmanuel Balele (rtd)
Chairman, Board of Trustees
Tanzania National Parks

Date: 06.04.2007



Gerald Bigurube
Director General
Tanzania National Parks

Date: 06.04.2007



This General Management Plan has been developed through a participatory planning process involving a cross section of Mahale Mountains National Park stakeholders, under the coordination of a Core Planning Team comprising representatives from Tanzania National Parks Headquarters, Mahale Mountains National Park managers, the Frankfurt Zoological Society and Conservation Development Centre.



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Foreword

This year is the 20th anniversary of the establishment of Mahale Mountains National Park, and I am therefore very pleased that this new General Management Plan for the Park, the first since its creation, is now finalised. The new plan is also opportune because of the mounting management challenges confronting the Park. These challenges include increasing tourism within the Park, especially focussing on the Park's world famous chimpanzee population, as well as growing external pressures, from expanding human populations and economic development activities. These pressures are set to continue and increase in the years to come, and one of the crucial roles of this new GMP is to put in place mechanisms whereby the Park's management can deal with growing pressures as they arise, and forestall negative impacts on the Park's exceptional resource values.

Like most visitors to this magnificent park, I have been struck by the breath-taking wildness and grandeur of the area, and the almost total absence of signs of human interference that is now all too common in most national parks around the world. This is a truly special aspect that we must all work hard to preserve in the years to come. This will require strict management prescriptions to ensure that existing activities do not compromise the park's wilderness values, as well as a cautious approach to future development of the area, to ensure that we do not "kill the goose that laid the golden egg".

I am especially pleased that this new GMP for the Mahale is the result of a participatory process that has brought together many of the key stakeholders in the National Park - ranging from the tourism concerns, local communities, scientists and researchers, local government, as well of course as MMNP's management and staff, and our partners in conservation in the ecosystem, TAWIRI and the Wildlife Division. This participatory process has involved all of the stakeholders working together and making compromises in order to achieve what is best for the long-term management of the Park. The resultant plan therefore represents a consensus viewpoint, not necessarily meeting everyone's needs precisely, but providing a strong foundation for the future management of the area that all are agreed upon.

This GMP is also special because it is one of the first plans to pilot TANAPA's revised strategic planning process. Some of the key features of the new process are the use of the "logical framework approach" to planning, which establishes strong linkages between management issues, objectives, and actions, and the introduction of a new 3-year action planning component alongside the traditional 10-year GMP strategic framework. TANAPA is optimistic that this new 3-year aspect will introduce an element of practicality and relevance to this plan which has been missing in some early GMP's, and which has perhaps contributed to their lack of use.

As part of the process of making this plan more relevant and practical for MMNP's managers, this GMP is also produced in a new loose-leaf binding, designed to enable new planning sections to be added in the year's to come, and for the 3-year action plan to be rolled forward. The end result we hope is a dynamic plan that keeps pace with changing circumstances and management priorities, not a static document gathering dust on a shelf.

In sum, this GMP will I am sure provide a crucial and valuable foundation to take forwards the management of this outstanding national park in the years ahead - to confront the challenges, expand on the achievements, and ultimately to ensure the future survival of the Mahale Mountains' magnificent and undisturbed environment.



G. Bigurube
Director General
Tanzania National Parks

Executive Summary

This 10-year (2006-2016) General Management Plan (GMP) is the first management plan to be written for Mahale Mountains National Park (MMNP). The plan has been produced according to the TANAPA Strategic Planning Process, with some modifications to take account of lessons learnt on previous TANAPA park planning exercises and to make the plan more relevant to the day-to-day management needs of MMNP park managers. The major structural innovation is the organisation of the GMP into four major Management Programmes, each of which is aligned with different MMNP Departments. These Management Programmes are designed to facilitate plan implementation by building a sense of ownership and accountability for delivering specific components of the GMP in the concerned Department. Each programme consists of a long-term strategy, with management objectives, targets, actions and, where appropriate, management prescriptions for the full 10-years of the GMP.

Each Management Programme also has an associated practical management-oriented 3-year Action Plan, designed to be regularly rolled forward throughout the implementation of the GMP. This will ensure that the GMP remains a dynamic plan, with the required flexibility and responsiveness to changing Park and TANAPA management needs and priorities. It will also help ensure strong linkages between the Management Actions prescribed by the GMP and the Annual Operations Plans developed by MMNP park management.

The other key innovation in this GMP is the application of the “**Logical Framework Approach**” (LFA). The main feature of the LFA is the **explicit and logical linkages** established between the GMP’s 10-year management objectives, targets, the 3-year Action Plans and, ultimately, the management tasks in the Park’s Annual Operations Plans. The application of the LFA has helped develop a GMP that can be effectively and efficiently implemented, as well as more easily monitored and evaluated.

To complement these innovations, the Mahale GMP has been produced in a loose-leaf format to ensure that the plan remains a dynamic document able to incorporate future additions, such as the Technical Detail Plans, and amendments and updates to the 3-year rolling Action Plans as required. This adaptability will help keep the GMP up-to-date and better able to guide park management activities throughout its 10-year lifespan.

Park Purpose and Exceptional Resource Values

The purpose of MMNP as defined by the Park’s stakeholders is:

To protect a sizeable Albertine Rift ecosystem and its globally-significant biodiversity, especially the chimpanzees and other primates, the endemic fish, and the mosaic of vegetation and habitat types

This purpose statement is derived from the Park’s Exceptional Resource Values (ERVs), which have been divided into four categories: Natural, Scenic, Social and Cultural. The most important of MMNP’s ERVs as identified by stakeholders include: Tanzania’s largest population of protected chimpanzees; high aquatic and terrestrial biodiversity, including many rare and endemic species; important fish breeding grounds; pristine water catchments; eco-tourism opportunities; and traditional sites of cultural importance.

Management Zones

Zoning MMNP into areas with similar types of management and levels of use provides an important mechanism for achieving and reconciling the twin goals of protecting the natural

qualities and environment of the Park and regulating and promoting visitor use. MMNP has accordingly been divided into two management zones: a **Low Use Zone**, and a **Wilderness Zone**, as described below. Wherever possible the zone boundaries have been designed to coincide with the Park's physical features, to aid their easy identification on the ground.

1. The **Low Use Zone** covers 24% of MMNP and incorporates both the main chimpanzee viewing area and the Mahale Research Centre near Kasiha, the Park Headquarters at Bilenge, the most accessible beaches, most of the evergreen Kasoge forest, and the northern part of the Mahale Mountains ridge, including Mt. Nkungwe and its hiking trail. The zone is the focus of all current tourism development and activities, and this emphasis will be maintained for the duration of this GMP.

A maximum of two new tourist concessions (permanent tented camps each restricted to 16 beds) will be allowed in this zone, providing they are outside of a development exclusion strip on the Lake Tanganyika shoreline between the Kabwe River (2km south of MMNP Bilenge HQ) in the north and the Syankuhe River (2km south of the Lubugwe River) in the south. This strip neighbours the M-group chimp habitat, is the location of the existing tourism concessions, and is believed to be already optimally developed. In order to enhance visitor use of the Mahale Mountains Ridge, two designated Wilderness Campsites will be permitted on the hiking trail to Mt. Nkungwe, one of which may in due course be substituted for by a simple mountain hut if the use of this trail increases. Elsewhere in the zone, only non-designated Wilderness Campsites will be permitted.

2. MMNP's **Wilderness Zone** covers the remaining 76% of MMNP and incorporates the southern part of the Mahale Mountains ridge, miombo woodlands to the south and east of the park, and 30km of undeveloped and pristine Lake Tanganyika shoreline and beaches that offer ideal locations for wilderness camping and hiking.

In order to maintain this area in its current pristine state, trail development will be kept to the minimum possible to promote wilderness hiking, whilst protecting MMNP's habitats. Temporary Wilderness Campsites will be permitted, both designated and non-designated, but all will follow "leave no trace" principles, with all rubbish removed. No permanent structures, except environmentally sensitive toilets at designated wilderness campsites and ranger outposts, will be permitted in this zone for the duration of the GMP.

Management Programmes

The GMP's four Management Programmes with their associated responsible Departments indicated in parenthesis are:

1. **Ecosystem Management Programme** (Ecological Monitoring Department)
2. **Tourism Management Programme** (Tourism Department)
3. **Community Outreach Programme** (Community Outreach Department)
4. **Park Operations Programme** (Protection, Administration and Stores/Works Departments)

The key features of these Programmes are described below:

1. Ecosystem Management Programme

The GMP's Ecosystem Management Programme is based on a simplified ecological management and monitoring approach which has been adapted from the latest international conservation planning methodologies and best practice. The Programme identifies eight MMNP **Conservation Targets** - the ecological components that capture the unique biodiversity of the Park. The planning methodology argues that if these eight Conservation Targets are

safeguarded, then the long-term health of the Park's ecosystem will be secure. The Conservation Targets selected for MMNP are:

Conservation Targets	Ecosystem Level
1. Water catchments	System
2. Evergreen forest 3. Miombo woodland 4. Lake Tanganyika 5. Montane vegetation	Community
6. Chimpanzees 7. Elephants 8. Wild dogs	Species

The Ecosystem Management Programme aims to ensure that all components and processes of the naturally evolving Park ecosystem are conserved through the implementation of management actions designed to abate specific threats to these Conservation Targets. During the time-frame of this GMP, this Programme will enhance the protection of the Park's world-famous chimpanzees; destroy exotic species in the Park; develop and implement an MMNP fire management plan; regulate the use of and minimise human impacts on the Park's freshwater systems; and initiate measures to help preserve MMNP's habitat connectivity with the areas surrounding the Park. Reducing the risk of disease transmission and other human impacts on the Park's single habituated chimpanzee group, M-group, which is also the main source of the Park's tourism revenue, will be an especially high priority for this Programme. The Programme also provides a framework for the development of a simple and cost-effective ecological monitoring plan for MMNP, based on the Park's Conservation Targets and their key ecological attributes. The ecological monitoring plan will be formulated subsequently as a Technical Detail Plan, and will enable an assessment of the Ecosystem Management Programme's management interventions as well as facilitating adaptive management.

2. Tourism Management Programme

The Tourism Management Programme aims to ensure that visitors to MMNP, both local and international, have an outstanding experience whilst optimising economic returns to the Park and minimising the impacts of tourism on the Park's natural resources. Of particular importance in achieving this aim is the introduction of Limits of Acceptable Use and regulations with regard to chimpanzee viewing; the Park's principal tourist activity. Specifically, in order to ensure a quality chimpanzee viewing experience at MMNP and to reduce the risk of disease transmission and human disturbance likely to disrupt the chimps' ecology, the number of visitors permitted to view the presently-habituated M-group chimps will be limited to **18 visitors per day**, in three groups of 6, with one hour total viewing time allowed for each group. The enforcement of these limits will be supported by the introduction of an advance booking system for chimpanzee tracking permits.

These limitations on chimpanzee viewing will be accompanied by a series of measures to promote alternative tourist activities across the Park, such as the development of infrastructure to support hiking in the Mahale Mountains ridge; the allocation of shoreline Wilderness Campsites to MMNP tourist concession holders, outside of the Low Use Zone; and preparations for tourist tracking of a second group of chimpanzees, once the chimp habituation process nears completion. The MMNP tourist experience will be further improved by enhancing the quality and capacity of the MMNP guiding services; the re-development of the MMNP visitor centre; and the production of a high quality guidebook for the Park.

The impacts of growing tourism activities on the Park's pristine wilderness environment will be mitigated through restrictions on the size and number of tourist concessions permitted within MMNP and by ensuring that all tourist concessions conform to the TANAPA Development-Action-Lease-Procedure, with particular attention to the Environmental Impact Assessment stage of this procedure.

3. Community Outreach Programme

The MMNP Community Outreach Programme aims to reduce the long-term impacts and threats to MMNP biodiversity through an enhanced collaboration with park-adjacent communities. This will be achieved by improving park-adjacent communities' support for the continued conservation and management of MMNP, primarily through the better targeting and expansion of the MMNP "Support to Community Initiated Projects" (SCIP) programme. In particular, the Programme will focus on developing income-generating activities in the surrounding areas, assisting the development of joint eco-tourism ventures, and improving the opportunities for local residents to gain employment in the Park, with either TANAPA or MMNP tour operators. Accompanying these initiatives, a mechanism will be developed to facilitate and regulate access by community members to traditionally important cultural sites within MMNP.

If the long-term threats to MMNP biodiversity from park-adjacent communities are to be effectively reduced, a necessary complement to the improvement of park-community relations is the improvement of community-based natural resource management. The Programme will therefore encourage and assist the development of sustainable and conservation compatible land-uses in areas adjacent to the Park, in particular by supporting the local government officers responsible for this task through the provision of logistical support to enhance their capacity, and by providing support to communities in the development of tree nurseries designed to reduce encroachment into MMNP. Support to strengthen community-based institutions charged with natural resource management will also be provided, and the creation of village land-use plans and natural resource bylaws encouraged.

4. Park Operations Programme

The aim of this Programme is to improve the efficiency and effectiveness of MMNP park operations, whilst ensuring the environmental impacts of park management activities and infrastructure are minimised. This is the broadest of the four management programmes and covers a variety of issues. One of the Programme's principal components is strengthening the protection of MMNP's resources, which will be achieved by both increasing the capacity of the Park's ranger force and by improving the intelligence gathering capacity of the MMNP's Protection Department. The impacts of park management operations on MMNP's environment will be minimised by the redevelopment of the research centre at Kasiha, which is currently detracting from the quality of the Park's environment and, due to its prominent location, negatively affecting MMNP visitor experience. The TANAPA site planning and environmental impact procedures will also be applied to this, and all other, park management infrastructure.

In order to improve the morale and effectiveness of MMNP staff, this GMP will guide efforts to improve both their living and working conditions, principally through the upgrading of staff housing and the development of the staff welfare centre. Estimates of the additional staff required for the effective and safe completion of park management activities are also provided. Management Actions have been developed to improve both internal and external communication and transportation networks at MMNP. These include investigating options for improving telecommunications between the Park and outside centres, and for improving the VHF radio network within the Park. A fast boat has recently been acquired for the Park. This will be complemented by the development of mechanisms to facilitate medical evacuation of Park staff or visitors by air. The final aspect of this Programme will involve the scheduling of a series of regular meetings to help ensure that all Park stakeholders are collaborating and their activities within MMNP are mutually compatible.

3-year Action Plans

This section provides the initial 3-year Action Plans for each of the four management programmes. These plans provide a clear and consolidated summary of the Management Actions to be carried out under this GMP, the timeframe on which they will occur, and who is responsible for the Actions' implementation. Where appropriate, each Action described under the management programme has been broken down into a series of **3-year activities** to facilitate the Action's implementation and to aid their incorporation into the Park's Annual Operations Plans.

Plan Monitoring

This section provides a monitoring plan for each of the GMP's four management programmes, and provides a framework for routinely assessing GMP implementation. The monitoring plan details the likely positive and negative impacts of delivering the GMP's management targets, a set of indicators for easily measuring these impacts, and the most likely sources of this information. Regular monitoring of GMP implementation will enable future adaptive management of MMNP, in particular through the subsequent adjustment of the rolling Action Plans, in order to maximise the positive impacts and to mitigate the negative impacts of GMP implementation.

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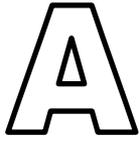
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Acronyms

AOP	Annual Operations Plan
BOSS	Biodiversity Special Study
CBNRM	Community-based Natural Resources Management
CCA	Community Conservation Advisor (FZS)
CCO	Community Conservation Officers (FZS)
CCW	Community Conservation Warden
CDC	Conservation Development Centre
CPW	Chief Park Warden
DALP	Development-Action-Lease-Procedures
DPDPTS	Department of Planning, Development Projects & Tourism Services
EIA	Environmental Impact Assessment
ERV	Exceptional Resource Value
EU	European Union
FZS	Frankfurt Zoological Society
FZS ARO	Frankfurt Zoological Society Africa Regional Office
GIS	Geographical Information System
GMP	General Management Plan
GPS	Global Positioning System
HRM	Human Resources Manager (TANAPA HQ)
IGA	Income Generating Activity
ISSG	Invasive Species Specialist Group (of IUCN)
IUCN	International Union for Conservation of Nature and Natural Resources
JGI	Jane Goodall Institute
JICA	Japan International Cooperation Agency
KEA	Key Ecological Attribute
LAU	Limits of Acceptable Use
LFA	Logical Framework Approach
LTBP	Lake Tanganyika Biodiversity Project
MAF	Missionary Aviation Fellowship
MEM	Manager, Ecological Monitoring (TANAPA HQ)
MEMP	Mahale Ecosystem Management Project
MMCRP	Mahale Mountains Chimp Research Project
MMNP	Mahale Mountains National Park
NP	National Park
NRM	Natural Resource Management
PA	Accountant/Personnel Officer
PE	Park Ecologist
PEA	Pragmatic Environmental Assessment
PrE	Project Ecologist (FZS)
PW	Protection Warden
RBI	Resource Base Inventory
SCIP	Support to Community Initiated Projects
TANAPA	Tanzania National Parks
TANRIC	Tanzania Natural Resource Information Centre
TAWIRI	Tanzania Wildlife Research Institute
TNC	The Nature Conservancy
ToR	Terms of Reference
TW	Tourism Warden
VC	Village Council
VEC	Village Environmental Committee
WO	Wildlife Officer (Wildlife Division)



THE PLANNING PROCESS

Introduction

This 10-year (2006-2016) General Management Plan (GMP) is the first management plan to be written for the Mahale Mountains National Park (MMNP). The plan is intended to guide and facilitate the management of MMNP resources, the uses permitted within the Park, and the infrastructure development needed to support this management and use. An important underpinning of the GMP is the establishment of long-term strategies and management objectives for addressing MMNP's management problems and issues and for achieving a desired future state over the 10-year duration of the plan. These objectives in turn provide the framework for determining what activities need to be implemented, when to undertake them, and the human and other resource requirements needed to implement them. These detailed management activities will be re-developed every three years according to the changing park management needs.

GMP structure

The MMNP GMP follows the generic GMP structure established by TANAPA, as described in the TANAPA Strategic Planning Process Manual (1995a). However, the MMNP Core Planning Team has made several adjustments to the planning process and plan structure to take into account lessons learnt on previous TANAPA park planning exercises, and the special needs of MMNP. Notably, important considerations have been to make the plan more relevant to the day-to-day management needs of MMNP park managers. The plan structure, as illustrated in Figure A.1 overpage, defines the main sections of the plan; the modified planning process is shown in the planning process flow diagram given in Annex 2. The following sections describe some key aspects of the plan structure adopted for the MMNP GMP.

Alignment of GMP with MMNP departments

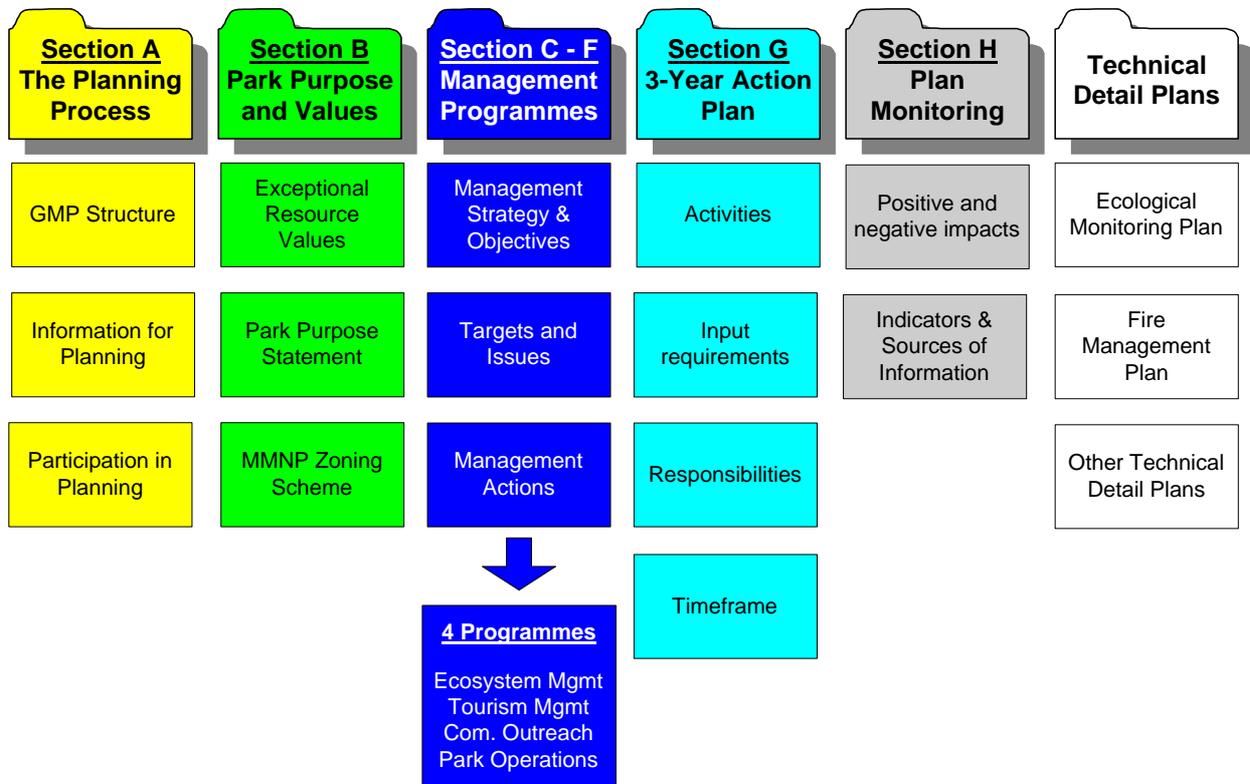
The structure of the GMP puts emphasis on planning by **Management Programmes**, rather than by management zone as in previous TANAPA plans. These programmes provide the long-term management strategies, objectives, targets, actions and, where appropriate, management prescriptions for achieving the Park Purpose and maintaining the Park's Exceptional Resource Values. The four Management Programmes for MMNP are:

- ▶ Ecosystem Management
- ▶ Tourism Management
- ▶ Community Outreach
- ▶ Park Operations

Structuring the GMP into these four discrete programmes will facilitate understanding and subsequent implementation. This is achieved because the programmes are aligned with different departments in MMNP, such as the Ecological Monitoring Department and or Tourism Department. Allocating responsibility for implementing individual Management Programmes to specific MMNP Departments also helps to build a sense of ownership and accountability for

GMP success in the concerned department. Finally, Management Programmes also complement the Logical Framework Approach to park planning (see below).

Figure A.1: GMP structure



10-year strategic and 3-year action plan structure

General management plans typically have a 10-year planning horizon, with both management objectives and actions established on a 10-year timeframe. This GMP takes a different approach, incorporating both 10-year strategic and 3-year action planning timeframes. This structure ensures that the GMP retains a long-term strategic vision while at the same time providing the required flexibility and responsiveness to changing Park and TANAPA corporate management needs and priorities. Specifically, the approach aims to ensure that there is a strong link between the actions prescribed by the GMP and the annual operations plans (AOP) developed by MMNP park management, which is directly linked to the corporate annual budgeting cycle of TANAPA headquarters.

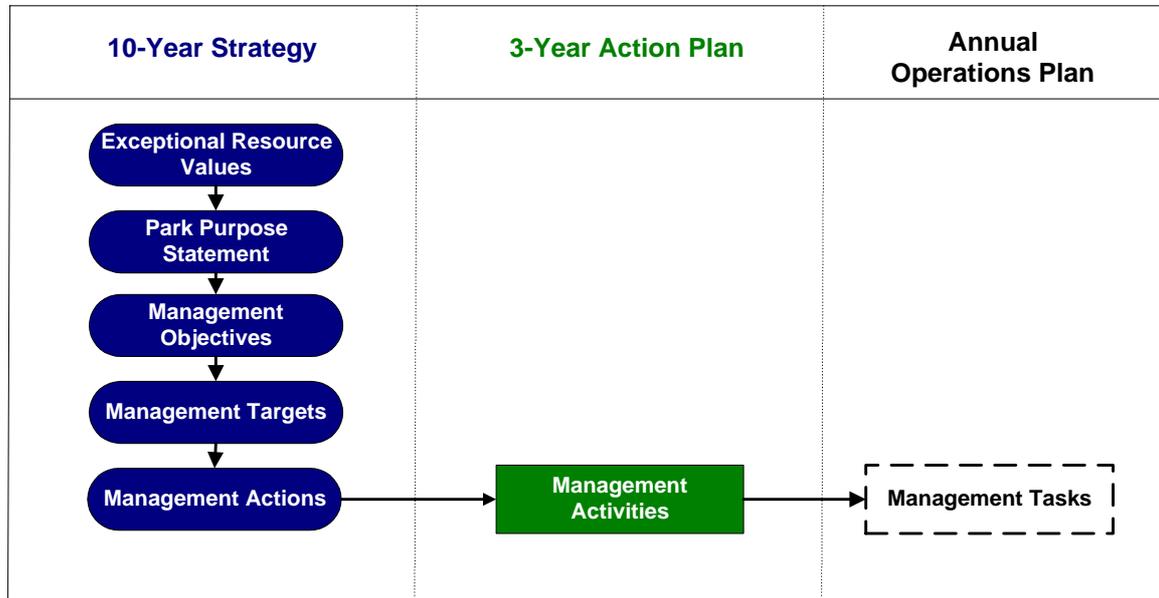
Figure A.2 overpage illustrates the linkages between the three main park-level planning mechanisms.

Logical Framework Approach

Another key innovation in this GMP is the application of the “**Logical Framework Approach**” (LFA). The LFA is now the methodology of choice in development project planning, and provides an efficient, accountable and logical rationale for planning which will result in a GMP that can be more effectively and efficiently implemented, as well as more easily monitored and evaluated. The main feature of the LFA is the **explicit and logical linkages** established between the GMP’s 10-year management objectives, targets and actions; the management

activities set out in the 3-year Action Plan; and ultimately the management tasks in the Annual Operations Plan (see Figure A.2 below).

Figure A.2: The 10-year strategic and 3-year action plan components of the GMP, and the link to annual operations planning



Information for planning

Four major sources of information provided the foundation for the development of this GMP: Previous plans for the Mahale area; national policies (both TANAPA and central government); a Problem Analysis for MMNP; and, based on this Problem Analysis, a Resource Base Inventory (RBI) of the Park. These sources of information are described in the following sections.

Previous plans

The Japan International Cooperation Agency work entitled “Study for the Proposed Mahale Mountains National Park” (JICA, 1980) is the major Mahale-specific document relevant to the development of this GMP. This report sets out the proposed boundaries for the national park and included a “Master Plan” for the development of MMNP. This plan contained a variety of development programmes outlining: the expansion of transportation and communication networks both within and without MMNP; the construction of the Park’s headquarters; the initiation of park protection activities; and the development of services and facilities for MMNP visitors. In addition, the study also contained the first field guide to Mahale, with an in-depth review of the findings from the chimpanzee research in the area; species lists for other faunal groups; and a description of the various vegetation types and topography contained within the proposed park area.

Although extremely detailed, the objectives and timeframe contained in this study were also very ambitious, especially given that tourism numbers and the capacity for managing the area at the time of writing were both a fraction of what they are at present. However, some of the proposed concepts originally contained in this study remain relevant to MMNP today. A number of these ideas (such as the development of hiking in the Mahale Mountains and improving park communication and transportation networks) resurfaced in similar or related forms during the

stakeholder consultations that took place in the development of this GMP. As a result some of these ideas have been adapted and redeveloped for inclusion in the current GMP.

National policies

The development of this GMP was guided by a number of TANAPA and national government policies. The TANAPA policies taken into consideration during the development of this GMP are:

- ▶ *National Policies for National Parks in Tanzania (1994)*
- ▶ *TANAPA Strategic Planning Process (1995)*
- ▶ *DALP: Development/ Action/ Lease Procedures (1995)*

The principal national government policies referred to are:

- ▶ *The Wildlife Policy of Tanzania (1998)*
- ▶ *National Tourism Policy (1999)*
- ▶ *The Integrated Tourism Master Plan for Tanzania (2002)*

The international convention which is of special relevance to this GMP and which provides an umbrella framework for natural resource conservation and management programmes around Lake Tanganyika is:

- ▶ *The Convention on the Sustainable Management of Lake Tanganyika (2003)*

The specific guidance drawn from these policy frameworks is explained in the management strategy of the relevant management programme.

MMNP Problem Analysis

One of the preliminary steps in the GMP's development was a Problem Analysis, carried out by the MMNP Core Planning Team (the composition of which is described in the following section on participation in planning). This exercise analysed the key management problems affecting MMNP and enabled the collation of these problems into related groups. This first identification of problems affecting MMNP provided the foundation for subsequent information gathering and investigation into these issues through the Resource Base Inventory (RBI) stage of the planning process (see below). Some of the principal issues identified in this exercise included: unregulated tourism activities and development; risks of disease transmission from humans to the habituated group of chimps; problems in effectively transferring park benefits to adjacent communities; negative impacts on visitor experience and the environment from park management infrastructure and facilities; a lack of long-term park-wide ecological research; and weak links between ecological monitoring and Park management actions;.

Resource Base Inventory

Guided by the issues identified in the Problem Analysis described above, but still at a very early stage in the planning process, a Resource Base Inventory (RBI) for MMNP was developed. The RBI report presents an up-to-date synthesis of key background information and the state of knowledge on MMNP resources and management issues. It contains information on the following main topics:

- ▶ MMNP ecological management research and monitoring
- ▶ The chimpanzees at MMNP
- ▶ Tourism at MMNP

- ▶ The communities adjacent to MMNP
- ▶ MMNP protection, operations and infrastructure

The RBI also provides a summary of issues and threats affecting the wider ecosystem of which MMNP is a part, including potential problems caused by developments outside of the Park such as road construction, mining and cross border security. Its appendices contain detailed species lists of the various faunal groups found in Mahale, and the Park's previous ecological monitoring plan and chimpanzee regulations. Coupled with the stakeholder participation mechanisms described in the following section, the RBI report was one of the primary sources of information for the subsequent elaboration of the four management programmes contained in this GMP.

Participation in planning

The TANAPA strategic planning process aims to ensure that the park's stakeholders are given an appropriate opportunity to contribute to the design of the GMP. In this way, stakeholders are encouraged to take ownership of the planning process, to ensure that the plan is both realistic and appropriate and that they are committed to its implementation.

The planning process adopted for the MMNP GMP involved a multi-layered approach to participation, with the objective of providing an opportunity for as many stakeholders as possible to contribute to the planning process in realistic and appropriate ways. A **Stakeholder Analysis** was carried out at an early stage in the planning process as a framework for determining the planning process' participation strategy. This is shown in Table A.1 below.

Table A.1: MMNP Stakeholder Analysis

Beneficiaries /Affected Positively	Partners /Collaborators	Supporters	Policymakers	Implementers	Opponents /Affected Negatively
<ul style="list-style-type: none"> ▶ Business people ▶ Camp operators ▶ District Councils ▶ Government treasury ▶ Hotel Owners (Kigoma) ▶ International communities ▶ Local Communities ▶ Local farmers (watershed) ▶ Local fishermen (fish breeding grds) ▶ National community ▶ Park Employees ▶ Refugees ▶ Researchers ▶ Tour & lodge operators ▶ Tourists ▶ Wildlife Division 	<ul style="list-style-type: none"> ▶ Albertine Rift Conservation Society ▶ District Councils ▶ Frankfurt Zoological Society ▶ Government ▶ Jane Goodall Institute ▶ Kyoto University ▶ Lake Tanganyika Biodiversity Conservation Project ▶ NGOs ▶ Researchers ▶ Tanzania Fisheries Research Institute ▶ Tanzania People's Defence Force ▶ Tanzania Tourist Board ▶ Tanzania Wildlife Research Institute ▶ Training Institutions ▶ Wildlife Division 	<ul style="list-style-type: none"> ▶ Donors ▶ European Union ▶ Mahale Wildlife Conservation Society ▶ NGOs ▶ Tourists 	<ul style="list-style-type: none"> ▶ District Government ▶ Fisheries Department ▶ Forestry Department ▶ International Agreements (CITES, RAMSAR) ▶ Ministry of Natural Resources ▶ TANAPA Board of Trustees ▶ TANAPA HQ ▶ Tourism Department ▶ Wildlife Division 	<ul style="list-style-type: none"> ▶ District Government ▶ Local Communities ▶ Mahale Ecosystem Management Project ▶ Mahale Mountains National Park ▶ Researchers ▶ TANAPA HQ ▶ Tanzania People's Defence Force ▶ Tanzania Wildlife Research Institute ▶ Tour & lodge operators 	<ul style="list-style-type: none"> ▶ Community-based illegal resource users ▶ Local Fishermen ▶ Migrant Fishermen ▶ Mining & other Natural Resources ▶ Pet Traders (Aquarium) ▶ Refugees

Four main mechanisms were used to enable stakeholder participation in the planning process:

- ▶ Core Planning Team
- ▶ Stakeholder Planning Workshops
- ▶ Working Groups
- ▶ Additional one-on-one stakeholder consultations

Details of the stakeholders involved in the various formal participation mechanisms are shown in Annex 5. The planning stages during which the various events occurred are detailed in Annex 2.

Core Planning Team

The Core Planning Team was responsible for guiding and overseeing the entire planning process. The Team worked together either through meetings or by e-mail exchanges. Membership of the Team comprised:

- ▶ MMNP Chief Park Warden
- ▶ TANAPA DPDPTS Planner
- ▶ CDC Planning Coordinator
- ▶ MEMP Community Conservation Advisor
- ▶ MEMP Ecologist
- ▶ FZS ARO Programme Officer
- ▶ MMNP Head of Departments (as required)

Stakeholder Planning Workshops

The two 2-day Stakeholder Planning Workshops were the main mechanism for directly involving a wide cross spectrum of MMNP stakeholders in the planning process.

- ▶ **Stakeholder Planning Workshop #1**, held in February 2004, developed the long-term strategic framework for managing MMNP. This included a review of the Park's purpose and resource values, and the identification and prioritisation of the main management issues and opportunities that impact on the Park's values and the achievement of the Park's purpose. The workshop also developed a first iteration of the 10-year Management Objectives and Targets for the four MMNP Management Programmes.
- ▶ **Stakeholders Planning Workshop #2**, held in April 2005, provided an opportunity for stakeholders to review the entire contents of the four GMP Management Programmes, including management targets, actions, activities and prescriptions such as proposed Limits of Acceptable Use.

Working Groups

The specific details of the four Management Programmes were developed by specialist Working Groups made up of appropriate MMNP and TANAPA HQ managers, along with other relevant stakeholders and experts. Each group elaborated the overall strategy, the 3-year Action Plans and where necessary Limits of Acceptable Use for the relevant Management Programme.

Additional stakeholder consultations

In addition to the formal opportunities provided through the Core Planning Team, Stakeholder Workshops and Working Groups, the planning process also involved additional stakeholder consultations, chiefly through the resource base information collection exercise carried out at the start of the planning process. These consultations were designed to obtain specific

information on particular aspects of the plan - for example the collection of information from tourists on the quality of the MMNP tourism product; or to provide an opportunity for stakeholders who could not be involved in any of the GMP's formal participation exercises to contribute their viewpoints and ideas - for example, village-level discussions with local communities neighbouring MMNP on the Park's outreach activities.

B

PARK VALUES AND PURPOSE

MMNP Exceptional Resource Values

Exceptional Resource Values (ERVs) are the features of a national park that are especially important to maintaining the unique ecological character and functions of the park and that provide outstanding benefits (social, economic and aesthetic) to local, national and international stakeholders. The identification of MMNP's ERVs provides a foundation for formulating the Park's Purpose Statement, identifying the Park's management problems and opportunities, and the development of the GMP's management objectives.

MMNP stakeholders established four categories of MMNP ERV: **natural values**, **scenic values**, **social values** and **cultural values**. Table B.1 below shows the most important ERVs by category, as prioritised by stakeholders.

Table B.1: MMNP Exceptional Resource Values by category

Category	Exceptional Resource Value	Rank
Natural	Tanzania's largest population of Chimpanzees	1
	Lake biodiversity: Endemic fish species (cichlids)	3
	Rare and endemic species (Albertine rift centre of biodiversity)	4
	Mosaic of vegetation types	5
	High number of primate species	7
	Large habitat to support wildlife	15
Scenic	Mahale Mountains ridge	12
	Pristine beaches	14
	Lake Tanganyika	16
Social	Fish breeding grounds	2
	Water catchments (rivers and streams)	6
	Tourism	8
	Community Conservation Services	10
	Well studied chimp population	11
	Employment opportunities	13
Cultural	Sacred mountain forest	9

Natural values

Tanzania's largest population of protected chimpanzees

Chimpanzees once inhabited 25 African countries. They are now extinct or nearing extinction in 13 of these. The eastern subspecies of chimpanzee (*Pan troglodytes schweinfurthii*) found at MMNP, has an estimated global population of 75,200-117,000 spread across East and Central Africa and, despite being the most numerous sub-species of chimpanzee, it is classified by IUCN as endangered.

Recent estimates (UNEP GRASP, 2005) put the total population of *Pan troglodytes schweinfurthii* in Tanzania at around 1,800, covering an area of around 10,000km² in Kigoma and Mpanda Regions. This is the easternmost limit of the chimpanzees' natural distribution, which is curtailed as the dominant habitat changes from tropical rain forest to the drier miombo woodlands and savannahs. It is estimated that around 700 of these chimpanzees inhabit MMNP, which is around twice the size of any other chimpanzee sub-population in Tanzania.

Lake biodiversity: Endemic fish species (cichlids)

Lake Tanganyika was formed about ten million years ago, and for six million years it has been completely isolated from other water systems. As a result of this long isolation, many of the fish species found within MMNP are now endemic to Lake Tanganyika. Of the 128 species recorded in the Park, 96% are endemic to Lake Tanganyika and 79% are cichlids (BIOSS, 2000). MMNP is one of the only protected areas on the lake, reinforcing the importance of the Park in preserving the lake's biodiversity. Most of this biodiversity is found in the shallow waters along the lake shoreline, where rocky and sandy areas provide an ideal habitat for cichlids. Recent declines that have taken place in the lake level (in the order of 1 - 1.5 metres over the past two years) are impacting on these habitats and potentially threatening the survival of the cichlid populations.

Rare and endemic species (Albertine Rift centre of biodiversity)

The Albertine Rift stretches from the tip of Lake Albert in Uganda, to the southern tip of Lake Tanganyika in Zambia. It straddles the borders of five different nations, and encompasses MMNP. This relatively small region is incredibly species rich, with more than 7,500 known species of mammals, birds, amphibians, reptiles and plants. This represents about 52% of birds, 39% of mammals, 19% of amphibians, 14.5% of plants and 14% of reptiles that occur in mainland Africa. It is also an area of exceptional faunal, and moderate floral endemism. More than 1,100 species are endemic to this region. In addition, the Rift contains over 100 species classed as critically threatened, endangered or vulnerable by IUCN Red-list. The Albertine Rift is classified as one of the world's 142 most important areas for terrestrial conservation by WWF, and is also part of one of the 34 Biodiversity Hotspots identified by Conservation International. MMNP lies in the southern part of the Albertine Rift and contains the high number of rare and endemic species of birds, fish and primates that is characteristic of areas within the Rift. The Park itself is classified as an Important Bird Area (IBA) by Birdlife International in recognition of its high number of endemic and restricted-range bird species.

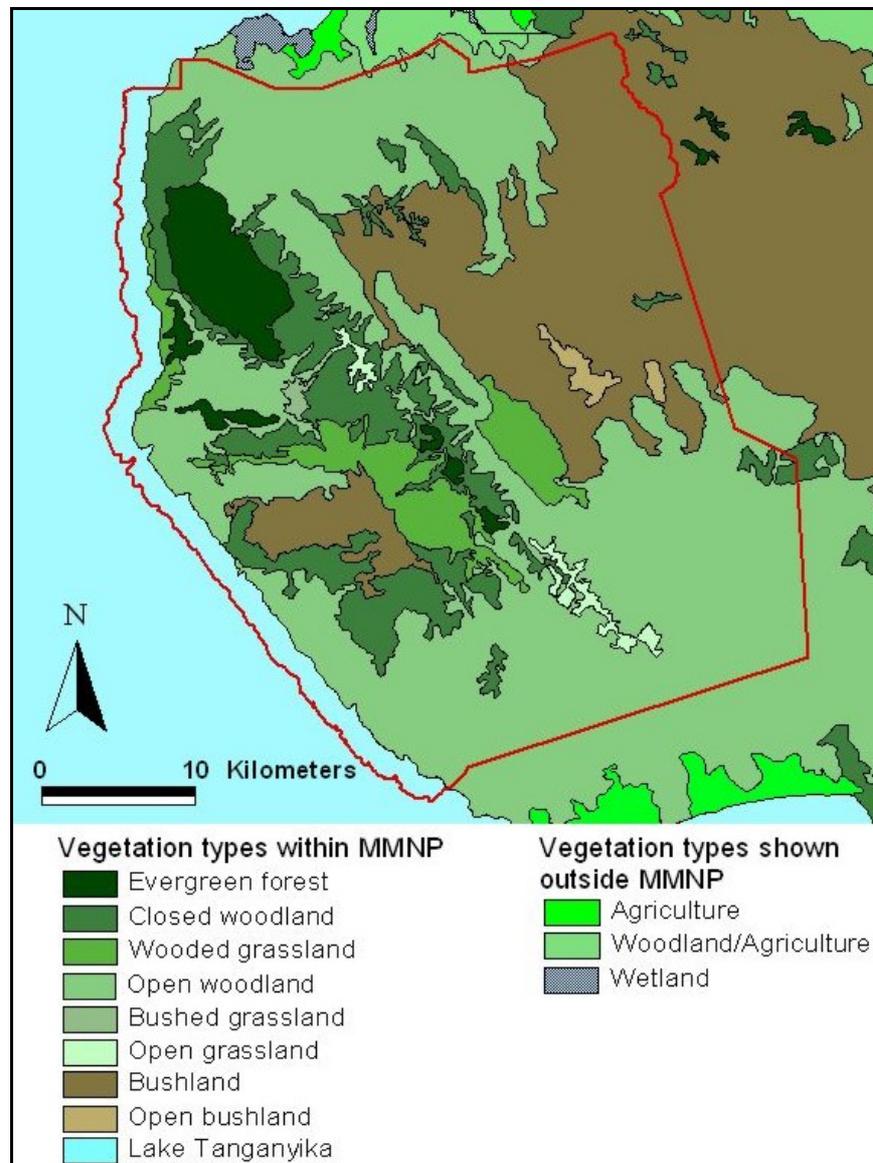
Mosaic of vegetation types

According to the TANRIC GIS map of MMNP, shown in Figure B.1 overpage, there are 9 categories of vegetation present in MMNP. This includes evergreen or Kasoge forest, large areas of miombo woodland, montane forest and high altitude grassland. The classification shown in Figure B.1 roughly coincides with the results of a study by the Japan International Cooperation Agency (JICA, 1980) that simplified MMNP's vegetation classification into five broad types. It describes the Miombo woodland/Oxytenanthera bamboo bush as the dominant vegetation type covering up to 75% of the park's area. As altitude increases this is replaced by mountain forest and high altitude grassland and mountain bushland. In the northwest of the park there is an isolated patch of acacia woodland. These five vegetation types are described in this survey as follows:

- ▶ **Miombo woodland and Oxytenanthera bamboo bush.** The miombo woodland is found to the east of the Mahale Mountains and to the north and south of the evergreen forest. This woodland is comprised of *Brachystegia*, *Isoberlinia* and *Julbernardia* trees. Along the rivers and other waterways is found gallery or Riverine forest and its plant composition is almost

identical to that of the evergreen forest described below. The Bamboo forest (*Oxytenanthera abyssinica*) is common to the east of the Mahale Mountains ridge.

Figure B.1: MMNP vegetation types as classified by TANRIC



- ▶ **Lowland evergreen forest.** This forest type is found at an altitude of 780-1,300m above sea level. It stretches for 7km from the Myako valley to the Lubulungu River on the western slopes of the Mahale Mountains. The evergreen (or Kasoge) forest is an enclave of tropical semi-deciduous forest, typical to the Congo Basin. The tall trees that make up the forest canopy belong to the *Canarium*, *Albizia*, *Cynometra*, *Khaya*, *Xylopia*, *Pseudospondias*, *Ficus*, *Pycnanthus*, and *Garcinia* genera.
- ▶ **Mountain forest.** This high altitude forest occurs above 1,500m and contains various plant communities. It is particularly dense in valleys where streams and rivers flow and at higher altitudes on steep slopes near the ridge of the Mahale Mountains. Major constituents are *Parinari excelsa* (Rosaceae), *Anthonotha noldeae* (Legminosae), *Croton megalocarpus* (Euphorbiaceae), *Ficalhoa laurifolia*, and *Podocarpus milanjanus*, one of the few conifers in Africa.
- ▶ **High altitude grassland and mountain bushland.** Adjoining the mountain forest are two different vegetation belts. The first comprises of pure stands of hollow stemmed alpine

bamboo (*Arundinaria alpina*). The second consists of high altitude grassland with short grass and a sporadic growth of trees of low to medium height.

- ▶ **Acacia woodland.** This woodland comprises of three main Acacia species, *Acacia sierberiana*, *A. albida*, and *A. polyacantha*. The presence of Acacia in the Mahale area is unusual and it is thought it may be secondary growth on land previously used for agriculture.

High number of primate species

A total of ten species of primates have been recorded within MMNP; this could potentially rise to twelve with further studies giving MMNP the highest number of primate species of any national park in Tanzania. The confirmed species at MMNP are:

- ▶ Eastern chimpanzee (*Pan troglodytes schweinfurthii*)
- ▶ Western red colobus (*Piliocolobus badius*)
- ▶ Angolan pied colobus (*Colobus angolensis*)
- ▶ Olive baboon (*Papio anubis*)
- ▶ Yellow baboon (*Papio cynocephalus*)
- ▶ Vervet monkey (*Cercopithecus pygerythrus*)
- ▶ Blue monkey (*Cercopithecus mitis*)
- ▶ Red-tailed monkey (*Cercopithecus ascanius*)
- ▶ Greater galago (*Otolemur crassicaudatus*)
- ▶ Lesser galago (*Galago senegalensis*)

As discussed above, of particular importance is the large population of chimpanzees contained within the park. These have also been the focus of a long-term research project and form the basis of current tourism activities in the park.

Large habitat to support wildlife

Covering an area of 1,613 km², MMNP is one of the larger parks in Tanzania. However, in contrast to many other parks, there are no roads within the park boundaries, and as such MMNP retains a large area of pristine wildlife habitat. In addition, this core protected wilderness area remains connected with even larger areas of intact wildlife habitat outside of the Park. When considered together, these areas create a vast area containing a variety of exceptional habits that can support significant populations of wildlife. MMNP is an important part of the Ramsar Site 1024;(WI Site 1TZ001) in the United Republic of Tanzania.

Scenic Values

Mahale Mountains ridge

The Park's Mahale Mountain ridge is about 50 km in length running from north to south, with an elevation over 2,000m. It is one of the largest mountain chains in western Tanzania and its highest peak, Mt. Nkungwe (2,462m above sea level), is amongst the highest on Lake Tanganyika. Of all the areas along Lake Tanganyika, MMNP is one of the richest in topographical variation, and the spectacular western slopes of the main ridge drop precipitously down to the lake, creating splendid scenic harmony with the lake waters.

Pristine beaches

The northern, and most accessible, area of the park contains a number of pristine beaches. The unspoiled nature of these beaches, set between the steep rise of the Mahale Mountains behind and the majestic expanse of Lake Tanganyika in front, provides an idyllic location for park visitors to enjoy sun bathing, swimming, snorkelling and picnicking.

Lake Tanganyika

Set at about 780m above sea level, Lake Tanganyika is the longest in the world (720km) and the second deepest (1,435m). It contains 17% of the world's fresh water. The vast expanse of water, either clement or tempestuous, and the views it affords across to the Congo, cannot fail to make a lasting impression of grandeur for visitors to the area. The lake's juxtaposition against the dramatic rise of the Mahale Mountains behind merely serves to enhance this impression.

Social values

Fish breeding grounds

MMNP protects important fish breeding grounds and fish stocks that are vital to the continued health of Lake Tanganyika's fish populations, already under heavy fishing pressure outside of the Park's waters. As such, MMNP provides an important contribution to sustaining the Lake's fishing industry - a vital source of protein and income for the majority of community members living along the lakeshore as well as further afield.

Water catchments (rivers and streams)

There are very few protected catchments flowing into Lake Tanganyika and a significant proportion of these are contained within MMNP. Communities are able to utilise the water provided by the rivers and streams emanating from MMNP secure in the knowledge that the water is clean and safe to use.

Tourism

Tourism at MMNP has been steadily increasing over the last few years, and this trend looks set to continue bringing benefits to both the national and local economies. As the tourism market diversifies and access to the area improves, the potential for the development of community based eco-tourism initiatives will increase, potentially enhancing the direct benefits from MMNP tourism to the communities surrounding the Park.

Community Conservation Services

Benefits from the continued conservation of MMNP have been extended to the communities around the park through the Community Conservation Service. This has resulted in the provision of infrastructure to support education and health care in these communities. As described in the Community Outreach Programme (see section E), the targeting and implementation of community benefits will be enhanced during the lifespan of this GMP, with special attention being paid to ensuring that any initiatives developed do not encourage further immigration into areas adjoining the Park.

Well studied chimp population

Along with the pygmy chimp or bonobo (*Pan paniscus*), the chimpanzee is the closest living relative to humans and is estimated to share 98% of our genes. Research into the Mahale chimpanzees has been ongoing since 1965, which was central to Mahale being gazetted to national park status. This research has made valuable contributions to the global understanding of our closest relative's culture, social development and ecology.

Employment opportunities

There are a number of employment opportunities for local communities at MMNP, with the Park and tourism operations. As Table E.2 shows, the employment of local people by TANAPA has

been steadily increasing over the last decade or so. This trend seems set to continue, and increase if, as planned, tourism operations expand and diversify in the Park.

Cultural values

Sacred Sites

The Tongwe were the first people to populate the Mahale peninsula and their culture is tightly linked to the natural landforms within and around MMNP. The Tongwe believe many of their ancestral spirits are found in the various mountains, rivers, and wetlands of the Mahale region. In the past, the Tongwe used many mountain sites for prayer and sacrifice to ancestral spirits that are now located within MMNP. Partly due to the taboos and management restrictions associated with these sacred places, the Tongwe have conserved many parts of the Mahale area, and sustainably utilised its forests long before the national park was gazetted.

MMNP Purpose Statement

The Park Purpose Statement summarises the importance of the protected area based on the exceptional resource values of the Park, historical considerations, and prevailing national and TANAPA policies. In this context, the primary purpose of the Mahale Mountains National Park as established by the Park's stakeholders is:

Park Purpose: To protect a sizeable Albertine Rift ecosystem and its globally-significant biodiversity, especially the chimpanzees and other primates, the endemic fish, and the mosaic of vegetation and habitat types

Supplemental and complementary purposes of the Park are:

- ▶ ***To maintain the wilderness character of the Park, with its unique and scenically beautiful combination of undisturbed forests, mountains, beaches and waterfalls***
- ▶ ***To promote ecologically sensitive tourism, to provide sustainable benefits for local communities and the nation***
- ▶ ***To strengthen the partnership with neighbouring communities for mutual benefit, and safeguard fish breeding grounds as well as areas of cultural significance within the Park***
- ▶ ***To work in partnership with local communities and other institutions in promoting a broad ecosystem approach to the conservation of Mahale's natural resources, taking account of wildlife corridors and dispersal areas, and local community natural resource and livelihood needs***
- ▶ ***To contribute towards the implementation of the environmental provisions of The Convention on the Sustainable Management of Lake Tanganyika***
- ▶ ***To encourage and support long-term scientific research on chimpanzees and other fauna and flora, and promote environmental educational activities***

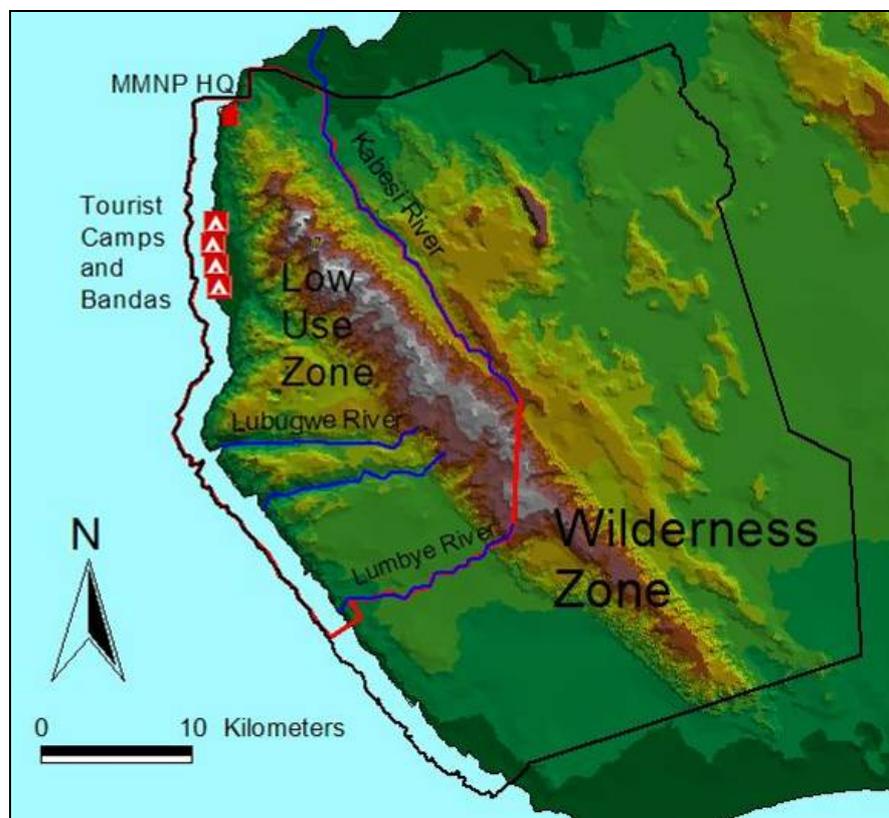
The fulfilment of the Park Purpose and the maintenance of the Park's Exceptional Resource Values will be addressed in this management plan through four distinct management programmes, described in the following sections

Section C: Tourism Management Programme
 Section D: Community Conservation Programme
 Section E: Ecosystem Management Programme
 Section F: Park Operations Programme

MMNP Zoning Scheme

The MMNP Zoning Scheme aims to provide a framework for achieving and reconciling the twin management needs of protecting the natural qualities and environment of the Park and regulating and promoting visitor use. The zones identify areas where similar types and levels of use and management emphases are applied; based on the Park's Purpose, its Exceptional Resource Values, appropriate park uses, and management objectives. The zoning scheme for MMNP is set out in the Figure B.2 below.

Figure B.2: Mahale Mountains National Park Zonation



As shown, MMNP has been divided into two zones: a **Low Use Zone**, and a **Wilderness Zone**. Where possible the zone boundaries have been designed to coincide with the park's physical features to aid their easy identification on the ground. The border of the Low Use Zone runs in a southerly direction along the park boundary from MMNP HQ until directly opposite the mouth of the Lumbye River, where it joins the border of the Wilderness Zone. From here the borders of both zones follow the Lumbye River until its source, and then continue in a northerly direction until they join the Kabesi River. Both borders then follow the Kabesi River until they again meet the park boundary in the north.

Low Use Zone

The Low Use Zone covers 24% of MMNP and incorporates both the main chimp viewing area and the Mahale Research Centre near Kasiha, the Park Headquarters at Bilenge, the most accessible beaches, most of the evergreen Kasoge forest, and the northern part of the Mahale Mountains ridge, including Mt. Nkungwe and its hiking trail. The zone is the focus of all current tourism development and activities, and this emphasis will be maintained for the duration of this GMP. In keeping with the maintenance of MMNP's wilderness character and low impact philosophy, infrastructure development in the Low Use Zone will be carefully regulated, with **no further development** taking place in a development exclusion strip along the Lake Tanganyika shoreline between the **Kabwe River** (2km south of MMNP Bilenge HQ) in the north of the zone and the **Syankuhe River** (2km south of the Lubugwe River) in the south of the zone (see bars on map above). Outside this area, TANAPA will consider appropriate applications for permanent tented camp concessions up to a maximum capacity of 16 guests each along the Lake Tanganyika shoreline. Carefully planned and environmentally benign enhancements of existing tourism, park administration or research facilities may also take place in this zone (see Tourism Management Programme). Existing tourism accommodation will continue to be of the permanent tented camp category, and will be limited to a maximum capacity of 16 guests per camp. The specific activities allowed in the zone and prescriptions on use are given in Table B.2 overpage.



Wilderness Zone



The Wilderness Zone covers the remaining 76% of MMNP and incorporates the southern part of the Mahale Mountains ridge, miombo woodlands to the south and east of the park, and 30km of uninhabited and pristine Lake Tanganyika shoreline and beaches that offer ideal locations for wilderness camping and hiking. To maintain the area in this pristine state, no permanent structures, except environmentally sensitive toilets at designated wilderness campsites and ranger outposts, will be permitted in this zone for the duration of the GMP. Temporary wilderness campsites will be permitted, both designated and non-designated, but all will follow "leave no trace" principles, with all rubbish removed. Trail development will be kept to the minimum possible to facilitate wilderness hiking while protecting habitats.

Table B.2: Overview of MMNP Zonal Prescriptions and Activities

Zone	Prescriptions	Activities
Low Use Zone	<ul style="list-style-type: none"> ▶ No further tourism concessions in the development exclusion strip along the Lake Tanganyika shoreline ▶ A maximum of two further new tourist concessions on the Lake Tanganyika shoreline outside this exclusion strip ▶ All concessions limited to a maximum of 16 beds each ▶ Two designated Wilderness Campsites permitted on the hiking trail to Mt. Nkungwe ▶ Only non-designated Wilderness Campsites elsewhere in the zone ▶ No Wilderness Campsites are permitted inside the M-group chimpanzee habitat ▶ No permanent structures are permitted at Wilderness Campsites except environmentally sensitive toilets and simple shelters at designated Wilderness Campsites ▶ One simple wooden mountain hut may be developed along the Mt Nkungwe trail (to replace a Wilderness Campsite along this route) ▶ Chimp LAU and viewing regulations ▶ No guided walks or tourist activity other than chimp viewing within M-group habitat¹ 	<ul style="list-style-type: none"> ▶ Chimp Viewing ▶ Guided Walks on maintained trails, including the Mt. Nkungwe trail ▶ Wilderness camping ▶ Tourism “sinks” (viewpoints, picnic sites, visitor centre) ▶ Sport fishing, snorkelling and kayaking ▶ Possibilities for community-managed tourism ▶ Permanent tented camps ▶ Research ▶ Park HQ and administration

¹ M-group habitat is defined as the area that M-group use over the long-term. It is characterised by the dense network of trails used by researchers and tourists tracking the chimpanzees, and adjacent beach areas. This area is under high use pressure and further infrastructure developments within it need to be tightly restricted, and the number of people in the area limited. Although the area’s definition is not precise, the management rationale behind the restrictions on this area is clear, which should facilitate the regulation of activities in the area. Defining the area in this way retains the benefit of flexibility enabling management to adapt, if, for example, M-group moves, and the area of high use pressure moves with them.

Zone	Prescriptions	Activities
Wilderness Zone	<ul style="list-style-type: none"> ▶ Minimal trail network and development ▶ “Leave No Trace” principles ▶ Designated Wilderness Campsites at selected beach locations ▶ Only non-designated Wilderness Campsites elsewhere in the zone ▶ No permanent structures, except environmentally sensitive toilets at designated Wilderness Campsites ▶ All rubbish created removed from zone 	<ul style="list-style-type: none"> ▶ Trekking ▶ Sport fishing, snorkelling and kayaking ▶ Wilderness camping ▶ Ranger outposts



ECOSYSTEM MANAGEMENT PROGRAMME

Programme Purpose: Mahale ecosystem health, functioning and key biodiversity and habitats better understood and maintained through appropriate, low-intervention management actions

Ecosystem management strategy

The aim of the Ecosystem Management Strategy is to provide a general statement of principles and policy to guide the management of MMNP's natural resources over the 10-year lifespan of the GMP. The strategy is aligned with the policies set out in the TANAPA National Policies for National Parks (1994). There are five general **guiding principles**, drawn from this national policy, that provide the foundation for the MMNP Ecosystem Management Programme:

1. ***MMNP management will in general pursue a non-intervention policy with regard the natural ecosystem. Management will avoid interference with natural processes unless it is designed to maintain wildlife and plant species diversity, to preserve sensitive species, and to restore native ecosystem functioning that has been disrupted by past or ongoing human activities***
2. ***MMNP management will attempt to maintain all components and processes of the naturally evolving park ecosystem, including the natural abundance, diversity, and ecological integrity of plants and animals***
3. ***Change is recognised as an integral part of the functioning of MMNP, and natural systems in natural zones will not be preserved as though frozen at a given point in time***
4. ***MMNP management will influence the surrounding communities, local and district governments, and other agencies to help ensure that activities occurring outside the Park do not impair park resources and values, especially through district planning forums***
5. ***Research and monitoring will provide an accurate scientific basis for planning, development and management decisions in pursuit of park objectives.***

The MMNP Ecosystem Management Programme will also contribute to the Government of Tanzania's obligations as a signatory to The Convention on the Sustainable Management of Lake Tanganyika. In particular, this includes the commitment to "conserve rare, fragile and representative ecosystems and rare, depleted, or threatened species and populations of flora and fauna and their habitats that form part of the Lake [Tanganyika] Basin".

The above five guiding principles are reflected in the components of the MMNP Ecosystem Management Strategy, set out in the following paragraphs.

Management of human impacts

By virtue of its inaccessibility, and the historic low human population densities in its environs, large parts of MMNP's environment have remained in an outstanding condition, free from the impacts of direct human disturbance. However, the prevailing socio-economic conditions that have enabled the Park's habitats to remain in a pristine state are changing, and growing pressures from both within and without the Park have the potential to impact negatively on the exceptional quality of MMNP's environment. As a result, management interventions are becoming increasingly necessary to ensure that the current effects of human disturbance on MMNP's environment are minimised, and any potential impacts mitigated. In order to maintain MMNP's wilderness characteristics and to conform with national policy, wherever possible an ecological management policy of non-intervention will be pursued. However where management interventions are deemed necessary, they will be as low-key, environmentally benign, and discreet as possible.

Protection of chimpanzees and their habitat

Of particular importance, and highly susceptible to human impacts, are MMNP's habituated chimpanzees and their habitat. Pressures on this group of chimpanzees are growing, from both their use by park visitors and through the invasion of their core habitat by an exotic tree species (*Senna spectabilis*). The pressures resulting from contact with humans will be mitigated through the implementation of stringent restrictions on visitor access and viewing (dealt with under the Tourism Management Programme). The spread of exotic tree species, currently affecting a significant proportion of the habituated group's home range, will be addressed through appropriate, unobtrusive management interventions designed to eliminate the main exotic tree species, with minimal impact on MMNP's native habitats and species.

Conservation of ecosystem processes

The low level of human impacts within MMNP, combined with the Park's large size, has enabled the survival of a mosaic of habitat types across the Park that have been allowed to follow natural ecological dynamics and environmental fluctuations, rather than responding to human disturbance. This variety of habitat types combined with the wide range of environmental gradients within MMNP has contributed to the high rates of endemism across many species groups found within the Park. It is essential that the ecological processes that have enabled this diversity of habitats and species to develop be maintained, in order to allow future adaptations and speciation. As such, and in accordance with national policy outlined above, management interventions at MMNP will take a holistic approach to the management of natural resources within the Park, and will seek to perpetuate ecosystem processes and dynamics, rather than preserve MMNP in a static ecological state.

Maintenance of hydrological cycles and fire regimes

Of particular importance to the conservation of habitats and species within MMNP, and the livelihoods of communities surrounding the Park, are the hydrological systems contained within and emanating from MMNP. Very few of Lake Tanganyika's catchments are afforded any protection, and MMNP management needs to ensure that in-park activities do not compromise this important component of the Park's ecosystem. This will be achieved through limiting the extractive use of water within the Park, and regulating activities that take place in the highly diverse shallows of Lake Tanganyika.

As the population surrounding MMNP has increased, and in particular as a result of the recent influx of pastoralists into the area, the incidence of fire within the Park has increased and the fire regime has been greatly altered. Accordingly, fire management efforts at MMNP will aim to

minimise the damage caused by *wildfires* to habitats within MMNP, and to promote the use of *prescribed fires* for management purposes in order to work towards re-establishing natural fire regimes within the Park. The specific objectives and strategies to be pursued will be stipulated in the *Fire Management Plan* (Technical Detail Plan) for MMNP. However, the ecology of some habitats within the Park, in particular montane vegetation, remains virtually unknown and further research is necessary to establish the most appropriate fire regime for these habitats before they can be incorporated into a *Fire Management Plan*.

Safeguarding of park connectivity

Many of the larger charismatic and endangered species at MMNP depend not only on the conservation of suitable habitat within the Park, but also on habitat connectivity with areas surrounding MMNP. The ability of such species to migrate or disperse outside of the Park is an important component of many of their life cycles, and essential for the maintenance of genetic diversity of within-park populations. Management efforts at MMNP will aim to perpetuate this unrestricted dispersal of animals into areas outside of the Park as part of efforts to conserve natural population dynamics and processes. In accordance with TANAPA policy, MMNP park management will pursue this aim through the preservation of populations and habitats of wide ranging species inside the Park, and through cooperation and collaboration with other organisations to ensure the preservation of connecting populations and habitats outside of MMNP.

Research and monitoring

There has been a long history of independent research at MMNP, which has played an important role in the designation of the Mahale Peninsular as a national park and made valuable contributions to the global understanding of the behaviour and ecology of man's close relative, the chimpanzee. However, to date, the vast majority of research at MMNP has been focused on one group of chimpanzees and has had limited practical implications for park management. Most of MMNP has not been surveyed and little is known about the Park's flora and fauna. To address the current imbalance in research efforts and the deficiency of ecological data concerning MMNP, and in accordance with TANAPA policy, research and monitoring pursued through this programme "*will be focused on applied research necessary to direct management action, will assemble baseline inventory data describing the natural resources under stewardship, and will monitor those resources at regular intervals*". Such research will bring about greater understanding of MMNP ecology and provide information necessary to assess and inform appropriate and adaptive management aimed at preserving the long-term ecological viability of the Park.

Prioritisation of ecosystem components and threats

As stated in the ecosystem management strategy, a key guiding principle for MMNP management over the lifespan of this GMP will be to '*maintain all components and processes of the naturally evolving park ecosystem*'. However, due to the inherent complexity of these natural systems, and the limited resources available, it is impractical for the MMNP Ecology Department to monitor and manage every individual ecosystem component. To provide a more realistic and achievable framework for monitoring and management action, an ecosystem management planning process² has been developed to identify representative ecosystem components and to prioritise strategic decisions regarding their conservation. This approach will ensure the optimal allocation of time and resources for implementing management strategies to protect and monitor the long-term health and functions of the MMNP ecosystem. The key features and outputs of this planning process are outlined below.

² Based on the Nature Conservancy's (TNC) Conservation Action Planning, or "5-S" conservation planning process

MMNP Conservation Targets

The MMNP Conservation Targets, listed in the box below, cover the various spatial scales and levels of biological organisation that the ecosystem functions at, from ecological systems and processes to individual species. The criteria for selecting species include those that are of particular conservation importance (e.g. chimpanzees), perform important ecological functions (e.g. elephants), or are especially susceptible to specific threats (e.g. Wild dogs).

Together, the Conservation Targets are intended to represent and encapsulate the unique biodiversity contained within MMNP, and the components that require special management actions. The underlying assumption behind establishing these Conservation Targets is that, provided they are truly representative, focusing efforts on their conservation will also ensure the conservation of all co-occurring ecosystem components, and therefore the maintenance of a healthy ecosystem.

Conservation Targets	Ecosystem Level
1. Water catchments	System
2. Evergreen forest 3. Miombo woodland 4. Lake Tanganyika 5. Montane vegetation	Community
6. Chimpanzees 7. Elephants 8. Wild dogs	Species

The co-occurring ecosystem components, or 'Subsidiary Targets', are listed alongside the eight Conservation Targets in Table C.1 overpage. The final column in the table lists the Key Ecological Attributes (KEAs), which are the factors that most clearly define or characterise each of the eight Conservation Targets. The KEAs include factors pertaining to the Conservation Target's biological composition, spatial distribution, biotic and abiotic interactions and ecological connectivity. The KEAs are sensitive to change and provide the basis for monitoring the overall health of their respective Conservation Target.

Table C.1: MMNP Conservation Targets and Key Ecological Attributes

Conservation Target	Subsidiary Targets	Key Ecological Attribute
Water catchments	<ul style="list-style-type: none"> ▶ Streams/rivers ▶ Deltas ▶ Wetlands ▶ Freshwater flora & fauna 	Water quality
		Water flow
		Wetland area
		Species composition
Evergreen forest	<ul style="list-style-type: none"> ▶ Primate communities ▶ Forest endemic species ▶ Large herbivores ▶ Large predators 	Extent and distribution
		Extent of exotics
		Trees species composition
		Habitat specific species e.g. birds
Miombo woodland	<ul style="list-style-type: none"> ▶ Lowland bamboo ▶ Primate communities ▶ Miombo endemic species ▶ Large herbivores ▶ Large predators 	Extent
		Canopy cover
		Abundance of key species
Lake Tanganyika	<ul style="list-style-type: none"> ▶ Cichlids ▶ Water cobra ▶ Spot-necked otter ▶ Hippopotami ▶ Crocodiles 	Water quality
		Abundance of key species
		Presence / absence of endemic & habitat specific species
Montane vegetation	<ul style="list-style-type: none"> ▶ Montane grasslands ▶ Aloes, xerophytes, proteas 	Fire frequency and intensity
		Indicator species, e.g. orchids, geophytes
Chimpanzees		Population size and distribution
		Reproduction and age structure
		Disease
		Extent of evergreen forest
Elephants		Population size and distribution
		Reproduction and age structure
		Migration routes / dispersal areas
Wild dogs		Population size and distribution
		Reproduction and age structure
		Migration routes / dispersal areas

Ecosystem threats

In this GMP, an ecosystem threat is defined as any factor, resulting either directly or indirectly from human activities, that has the potential to destroy, degrade or impair a Conservation Target in the next 10 years. The identification of threats to the ecological viability of the Conservation Targets are ranked according to the potential level of damage (severity) and geographic extent (scope), as detailed in Tables C.2 and C.3 overpage. The threats identified will be monitored by the MMNP Ecology Department and form the basis for management actions identified in this Programme.

Table C.2: Threats to MMNP Conservation Targets

Target	Threat	Severity	Scope	Ranking
Water catchments	Timber poaching	High	High	High
	Consumptive use	Low	Low	Low
Evergreen forest	Fire	High	Medium	Medium
	Exotic species	Very high	Low	Medium
	Tourism infrastructure	High	Low	Low
Miombo woodlands	Hot fires	Medium	High	Medium
	Timber poaching	Low	Low	Low
Lake Tanganyika	Pollution	Medium	High	Medium
	Fish poaching	Medium	Low	Low
Montane vegetation	Lack of fire	Low	High	Medium
Chimpanzees	Disease	Very high	High	High
	Poaching	Medium	High	Medium
	Human disturbance	Medium	Low	Low
	Fire	Low	Medium	Low
Elephants	Poaching	High	High	High
	Loss of habitat connectivity	Medium	High	Medium
Wild dogs	Disease	Very high	Very high	Very high
	Loss of habitat connectivity	Very high	Very high	Very High

Table C.3: MMNP Threat Analysis Matrix

Threats \ Target	Water catchments	Evergreen forest	Miombo woodlands	Lake Tanganyika	Montane vegetation	Chimpanzees	Elephants	Wild dogs
Poaching	(Timber)		(Timber)	(Fish)				
Lack of fire management								
Disease								
Loss of habitat connectivity								
Exotic species								
Pollution								
Tourism infrastructure								
Human disturbance								
Sedimentation								
Consumptive use								

KEY

Overall Threat Level	Very High	High	Medium	Low
Severity (level of damage)	Destroy or eliminate the Conservation Target	Seriously degrade the Conservation Target	Moderately degrade the Conservation Target	Slightly impair the Conservation Target
Scope (geographic extent)	Very widespread or pervasive	Widespread	Localised	Very localised

During the threat assessment, several threats were identified as affecting more than one Conservation Target. To facilitate the visualisation of the relationships between threats and the Conservation Targets, a threat analysis matrix has been developed, as shown in Table C.3 above. The matrix shows that a lack of fire management and poaching are the only two crosscutting threats, affecting four and five out of the eight Conservation Targets respectively. The poaching threat is countered through the improvement of MMNP law enforcement capacity (covered under Objective 1 of the Park Operations Programme), which aims to reduce all illegal activities (principally poaching) in MMNP. The remaining threats, which in some cases present very high risks, are specific to only one or two Conservation Targets.

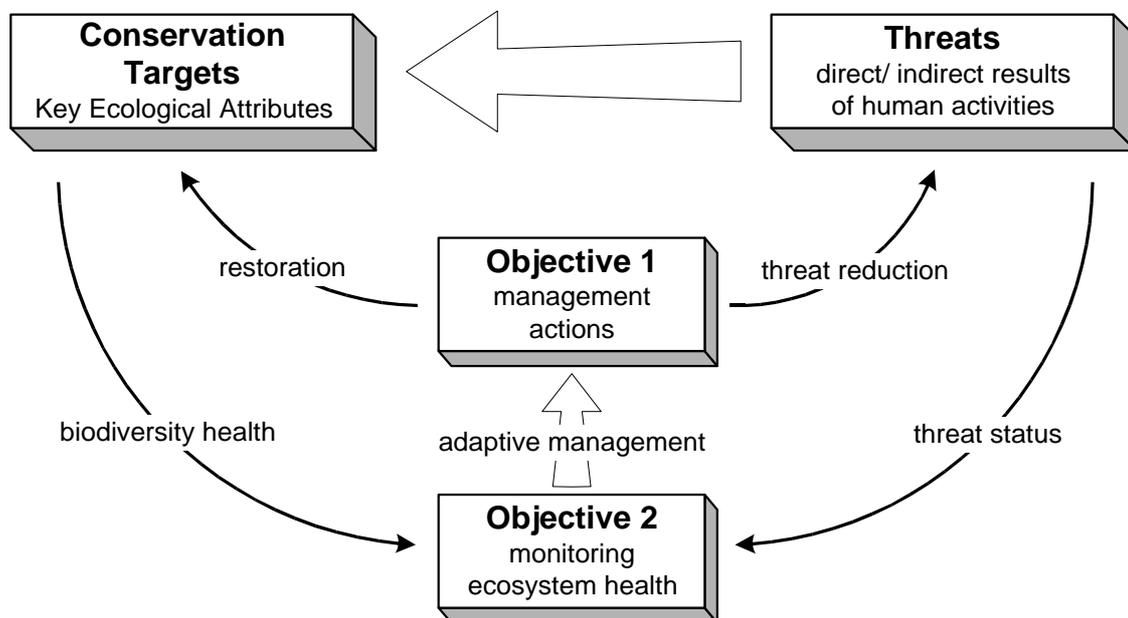
MMNP Ecosystem Management Programme Objectives

The prioritised Conservation Targets, Key Ecological Attributes and threats provide the foundation for the design of management actions and a monitoring system that will best achieve the Ecosystem Management Programme Purpose, set out above. The implementation of these tasks will be achieved through the two objectives of the Ecosystem Management Programme, which are:

1. **Threats** to the long-term conservation and ecological viability of MMNP Conservation Targets **abated**
2. Regular, management-oriented **monitoring and assessment** of key ecosystem values and processes strengthened

Figure C.1 below, illustrates how these two objectives address the restoration and monitoring of Conservation Targets and the reduction and monitoring of the threats.

Figure C.1: Ecosystem Management Programme Overview



In order to meet Objective 1, a series of 10-year **management targets**, with accompanying **management actions**, have been formulated. Each management target addresses a grouping of threats, as illustrated in Table C.3 above. For each management target there is a brief description of the relevant issues and opportunities, which provide the specific context and justification for the management actions. To support the implementation of these management actions, an initial 3-year Action Plan is provided, which lists the necessary activities, input

requirements, responsibilities and timeframe for the completion of each action (see Table G.1 in Section G).

To achieve Objective 2, a framework has been provided for monitoring the health of the MMNP ecosystem, based on measuring the Key Ecological Attributes and threats to the Conservation Targets. This framework is intended to provide the basis for the development of MMNP's Ecological Monitoring Plan (Technical Detail Plan - see Figure A.1).

Objective 1: Threats to the long-term conservation and ecological viability of MMNP Conservation Targets abated

The desired future state of MMNP is one where the threats to the functioning of the park ecosystem are minimised and all components and processes are maintained at their natural evolving levels. To achieve this desired state, a series of management targets and associated management actions have been formulated that aim to reduce the prioritised threats, under the assumption that the removal of threats will ensure the maintenance of the Conservation Targets. In support of successfully implementing these measures, other types of management actions have also been included under this programme, aimed at building capacity, informing and engaging stakeholders, or promoting priority policy actions.

The management targets below have been designed to address the emerging groupings of threats identified in Table C.3 above. The first two management targets address threats specific to the Conservation Targets: chimpanzees and evergreen forest. The third management target addresses the group of threats to the MMNP's freshwater Conservation Targets (Lake Tanganyika and water catchments). And the fourth and fifth management targets address the crosscutting threats potentially posed by uncontrolled fire in MMNP, and the loss of MMNP connectivity with wildlife habitat outside the park.

As cross referenced in the threat summary box for each management target presented below, some of identified threats are dealt with under other management programmes and targets in this GMP. The only significant threat identified not directly addressed is the potential impacts of disease transmission from domestic animals to wild dogs. This threat is not addressed due to a lack of data on the numbers of wild dogs and their distribution, both of which make practical management actions impossible due to constraints on time and resources.

Target 1.1: Risk of disease transmission and impacts from human disturbance on MMNP's chimpanzee population minimised

Disturbance from humans visiting the Park's single habituated chimpanzee group (M-group) is believed to be placing physiological and psychological stresses on the chimpanzees, and increasing their risk of contracting human diseases. Current tourist numbers visiting the chimps, in combination with the chimpanzee use by researchers, film teams, photographers and supervisory TANAPA staff, place the habituated group of chimpanzees at an unacceptable level of exposure to disease transmission and stress.

As a result, limits need to be placed on the access allowed by various users to M-group, and clear rules on visitor behaviour when viewing the chimps need to be enforced (implemented under the Tourism Management Programme). Ideally, these limits should be based on scientific findings indicating an optimal level of visitation that will ensure appropriate levels of continued access by visitors and researchers, and at the same time the health of the chimpanzees. However, although the limits set in this GMP are in line with those used in other great ape

national parks and are based on the best available expert advice, there is a significant lack of rigorous scientific data available to support these limits.

Part of the baboon population in MMNP inhabits areas around MMNP HQ and tour operator camps, where they are able to take advantage of an increased access to human food and garbage. This not only inconveniences visitors and staff at MMNP, but may also contribute to unnaturally high baboon population densities in these areas, which in turn enhances their ability to out compete the park's chimpanzees. However, the most serious aspect of this interaction is the baboons' increased exposure to human diseases, and the potential transfer of these diseases to MMNP's chimpanzee population.

An extract from Table C.3 summarising the threats to chimpanzees and the management responses is given in the box below.

Threats to chimpanzees	Threat Level	Response
Disease	High	Actions 1.1.1, 1.1.2 & 1.1.3
Human disturbance	Low	Actions 1.1.1 and 1.1.2
Lack of fire management	Low	See Target 1.4

The threats of disease and human disturbance are primarily addressed through Target 1.1 of the Tourism Management Programme, re-enforced through the management actions outlined below. As shown in the summary box, the threat from fire is addressed through Target 1.4 of this programme.

The actions in this section designed to address the threats from disease transmission and human disturbance are as follows:

Action 1.1.1: Ensure Actions under Target 1.1 of the Tourism Management Programme are implemented

Target 1.1 of the Tourism Management Programme aims to ensure that chimpanzee viewing is optimally regulated for the mutual benefit of chimpanzee well-being and visitor satisfaction; three management actions have been developed under this target. These actions focus on regulating the size and number of the groups that visit M-group through the establishment of LAU; disseminating and enforcing a clear and comprehensible set of viewing regulations; and the establishment of a booking system to ensure that the LAU developed are respected. The collaboration of the MMNP Ecology Department will help ensure the successful implementation of these management actions essential to ensure the long-term health of the chimpanzees.

Action 1.1.2: Undertake a study of the impacts on chimpanzees by visitation, and incorporate recommendations into revised LAU

This Action will address the current lack of rigorous scientific data upon which to base M-group chimp viewing Limits of Acceptable Use, through the implementation of a study to investigate the impacts of visitation on chimpanzees, and to provide recommendations on the most appropriate level of visitation. The study findings will provide the basis for subsequent adaptation of the M-group LAU that have provisionally been set in this GMP under Target 1.1 of the Tourism Management Programme. The study will also provide the basis for the development of a "Disease Outbreak Plan" that defines the emergency responses required.

Action 1.1.3: Minimise contact between MMNP's baboon populations and human settlements in the Park

Activities have been successfully implemented in other Tanzanian national parks that have reduced baboons' access to sources of food from human activities, helping to restore their population to natural levels, and also to reduce the risks of disease transmission to chimpanzees and other susceptible primates. For example at Gombe National Park, these threats have been abated through the prevention of baboons' access to fish drying on the shore of Lake Tanganyika, and the implementation of strict waste disposal and cooking regulations.

Unlike Gombe, there is no community access to the lakeshore at MMNP, and fish drying does not take place within the Park. Activities under this Action will therefore focus on limiting baboons' access to human food and garbage in the Park, for example through the development of improved waste disposal facilities. These will be developed along similar lines to those at Gombe National Park, which have proved to be both effective and easy to maintain.

Target 1.2: Exotic species in MMNP eradicated

The evergreen (or Kasoge) forest at MMNP is an enclave of tropical semi-deciduous forest, typical to the Congo Basin, and provides the main habitat for chimpanzees within the Park. The tall trees that make up the forest canopy belong to the *Canarium*, *Albizia*, *Cynometra*, *Khaya*, *Xylopia*, *Pseudospondias*, *Ficus*, *Pycanthus*, and *Garcinia* genera. As shown on Figure B.1, the main area of evergreen forest stretches from the Myako Valley to the Lubulungu River on the western slopes of the Mahale Mountains.

One of the most serious threats to the evergreen forest comes from *Senna spectabilis*, an exotic species introduced to the Mahale peninsula in 1967. It has since invaded approximately 2.25% of the Park's native evergreen forest. Its vigorous ability to grow has meant that where it has become established, it now dominates and suppresses the native forest flora. *Senna spectabilis* appears not to be utilised by wildlife, and therefore any further expansion of the species could have significant implications for wildlife conservation. Of particular concern is that the already invaded area amounts to approximately 10% of the core feeding range of the M-Group of chimpanzees.

Other exotic tree species were also planted in former villages along the lakeshore of what later became MMNP. These species include: African oil palm (*Elaeis guineensis*), Mango (*Bromus mango*), Guava (*Psidium guajava*) and Lemon (*Citrus limonus*). Although guava is listed on the ISSG's global invasive species database, it, and the other exotic tree species listed above, do not currently appear to pose a major threat to the flora and fauna of the evergreen forest. However, although less urgent than the removal of *Senna spectabilis*, these species also need to be eradicated in order to restore MMNP's evergreen forest to its natural composition.

As shown in the summary box below, the threat from uncontrolled fire to evergreen forest is addressed through Target 1.4 of this programme (see below). The threat from tourism infrastructure is not covered through this programme, but through Actions 1.1.2 and 2.1.2 of the Tourism Management Programme, which place restrictions on trail-cutting and the size and extent of tourist camps in the evergreen forest.

Threats to evergreen forest	Threat Level	Response
Exotic species	Medium	Actions 1.2.1 & 1.2.2
Lack of fire management	Medium	See Target 1.4
Tourism infrastructure	Low	Tourism Management Actions 1.1.2 & 2.1.2

The two actions in this section designed to address the threat to MMNP's evergreen forest are as follows:

Action 1.2.1: Eradicate *Senna spectabilis* from MMNP

TANAPA policy states “*high priority will be given to the management of exotic species that have substantial impact on park resources and can be reasonably expected to be successfully controlled*”. Accordingly, this action prioritises combating the spread of *Senna spectabilis*, which has the potential to have a significant impact on MMNP's exceptional resources, and can be brought under control with a reasonable investment of manpower and funding. Recent research at Mahale (see Wakibara and Mnaya, 2002, for details) has resulted in a recommended four-step process that should be followed to ensure the eradication of *Senna spectabilis*:

- 1) **Girdling of mature *Senna spectabilis* trees:** The debarked area should be a complete, closed ring a few centimetres in width, and must penetrate the cambium and the outer tissue of the xylem.
- 2) **Application of herbicide to freshly cut, debarked girdles:** Herbicides tested so far are Glyphosphate/Round-up (1:3 dilution in water) and Trichlopyr/Garlone (1:10 dilution in water). Although these dilutions proved successful in killing the trees to which they were applied, the optimal dilution of the different agents is not yet sufficiently known. The concentration of herbicide required is likely to differ depending on the season of application and the growth stage of the tree. In order to achieve the best results, and keep costs to a minimum, further trials are necessary in order to identify the most suitable herbicide dilution/s.
- 3) **Uprooting of seedlings and removal of shoots:** This should be undertaken immediately after mature trees are girdled and herbicide has been applied. Only trees less than three metres in height should be uprooted. All trees greater than three metres in height should be girdled and herbicide applied. The process must be repeated for three years following eradication of the mature trees to ensure *Senna spectabilis* is completely eliminated from the seed bank.
- 4) **Collection of seedpods:** This method is very successful in diminishing the seed bank. The pods may be collected from the ground or harvested from mature trees.

The eradication of *Senna spectabilis* from MMNP is likely to be long-term endeavour, and sustained efforts will be necessary to ensure complete elimination. Eradication attempts should be conducted between February and September when the species flowers, as this will prevent the annual renewal of the seed bank. Eradication should commence at the topographically highest area of *Senna spectabilis* infestation, to ensure that in the rainy season seedpods will not be carried downhill to areas that have been previously cleared.

Action 1.2.2: Implement measures to remove exotic tree species, other than *Senna spectabilis*, in MMNP

Although the threat from exotic species, other than *Senna spectabilis*, in MMNP is minimal, TANAPA policy stipulates that exotic species should be eradicated whenever “*control is prudent*”

and feasible". Measures to ensure the eradication of other exotic species established at MMNP will be implemented to prevent the future development of any threats from this source. Through this action, baseline data on the distribution and abundance of exotic trees will be periodically collected, and any changes in their abundance recorded. This data will provide the basis for a plan prioritising the systematic removal of these exotic species once the threat from *Senna spectabilis* has been abated.

Potential Impacts and Mitigation Measures for Target 1.2: Exotic species in MMNP eradicated

Potential negative impact	Mitigation measures
<ul style="list-style-type: none"> ▶ Health of native species adversely affected during the removal/ extermination of exotic species 	<ul style="list-style-type: none"> ▶ Develop and enforce clear procedures for application of herbicide to minimise environmental side-effects ▶ Ensure any chemicals are safely stored in appropriate containers and locations ▶ Establish procedures for dealing with any spillages of herbicides or other dangerous chemicals

Target 1.3: Human impacts on MMNP freshwater Conservation Targets are minimised

There are very few completely protected **water catchments** flowing into Lake Tanganyika, and a significant proportion of these are contained within MMNP. The biodiversity of the watercourses in MMNP has been little studied and the possible wider effects of altered water levels and flow due to consumptive use are not known. The TANAPA National Policy for National Parks stipulates that "*park water...will be withdrawn for consumptive use...only if absolutely necessary*", and that use of this water will not be allowed to significantly alter natural processes. Although the current extraction of water from rivers and streams within MMNP is limited to MMNP HQ, it is important that this and any future extraction of water from these sources conforms to the TANAPA policy in order to minimise any possible negative environmental effects.

A recent survey confirmed the area of **Lake Tanganyika** within MMNP as a centre for fish and mollusc diversity (BIOSS, 2000). The survey showed that 53% of all fish species known to inhabit Lake Tanganyika are found within MMNP waters. This is significant in conservation terms as over half the species in the lake enjoy a measure of protection in a single protected area. The sites with the greatest species diversity are mainly concentrated in the central portion of the park between Luahagala point and Lumbye Bay, although other locations both in the north (Nsele) and south (Lyamembe and Mankungwe) are also rich in species. According to this survey "*the lacustrine [lake and lakeside] component of the park is well protected from the major threats to the biodiversity of the lake (poaching, pollution and sedimentation)*".

An extract from Table C.3 summarising the threats to MMNP's freshwater Conservation Targets and the management responses is given in the box overpage.

Threats \ Target	Water catchments	Lake Tanganyika	Response
Consumptive use	Low		Action 1.3.1
Pollution		Medium	Action 1.3.2
Sedimentation		Low	Community Outreach Objective 2

The threat from sedimentation to Lake Tanganyika results from land-use practices in the areas surrounding MMNP. This is addressed under Objective 2 of the Community Outreach Programme, which aims to reduce threats to MMNP exceptional resources through improved community-based natural resource management.

The following Actions have been developed to mitigate any potential future impacts of the threats from to MMNP freshwater Conservation Targets:

Action 1.3.1 Regulate the extraction of water from MMNP streams and rivers

Currently water is withdrawn from MMNP's streams to serve MMNP HQ. Any future proposals to extract water from watercourses within the Park will be considered only if absolutely necessary, and, in accordance with TANAPA policy, will only proceed if subjected to and approved by an EIA.

Action 1.3.2 Minimise sources of water pollution from activities and developments within MMNP

In order to reduce the effects of pollution on the Park's aquatic diversity from point sources within MMNP, restrictions on washing clothes and disposal of human wastes in the lake, the principal sources of such pollution, will be developed and enforced at both MMNP HQ and the tourist concessions. To address the impacts from pollution from existing developments within MMNP, an EIA will be undertaken and measures implemented (such as composting rather than flushing toilets) to reduce risks of lake and groundwater pollution. This EIA should be carried out in liaison with Tourism Management Programme Action 2.1.2, and Park Operations Programme Action 2.2.2; both of which aim to minimise the environmental impacts of the respective in-park developments.

Target 1.4: Fire frequency and intensity within MMNP is managed and monitored

The risk of uncontrolled fires spreading into the Park is increasing as the population density around the Park grows and, mainly as a result of the recent influx of pastoralists, land use practises around the Park increasingly utilise fire as a tool. While fire is essential for some habitats within the Park, it is important that the intensity and frequency of fire is controlled in order to enhance rather than damage the ecological integrity of these habitats. Although the TANAPA National Policies for National Parks stipulates that each park should have a fire management plan, MMNP does not currently have such a plan and fire outbreaks are not recorded in monthly reports. However, TANAPA Headquarters does send MMNP management information about fire outbreaks within MMNP based on satellite images after these events have occurred. In conjunction with a fire management plan, TANAPA national policy also promotes active fire prevention, and encourages park management to work with adjacent landowners to prevent human caused wildfires and their potential adverse impacts.

The summary box below shows the four Conservation Targets affected by a lack of fire management in MMNP.

Threats \ Target	Evergreen forest	Miombo woodlands	Montane vegetation	Chimpanzees
Lack of fire management	Medium	Medium	Medium	Low
Response	Actions 1.4.1, 1.4.2 and 1.4.3			

The following three management actions have been developed to ensure that the incidence of fire at MMNP is managed and monitored:

Action 1.4.1: Develop a fire management plan

To ensure that fire makes a positive contribution to the achievement of MMNP management objectives, and to conform to national policy, a fire management plan will be developed for MMNP. In order to produce the most appropriate plan for MMNP, a review of other relevant fire management plans will be carried out, and any lessons learned built on and incorporated into the development of the MMNP plan. The plan will include a wide range of mechanisms to help regulate fire, such as the development of new byelaws, awareness raising in the surrounding communities on the impacts and dangers of fire, and investigating the source of all fires and enforcement of any appropriate penalties, as have been successfully developed for the Kilimanjaro National Park fire management plan. The plan should also include a system for recording and monitoring the incidence of fire at MMNP. The appropriate burning regime is not known for all the habitats within the Park, and as such the fire management plan must remain adaptable as more information is collected. Given the increasing risks and huge potential impact of uncontrolled fire within the Park, the development of a fire management plan is a high priority for this GMP.

Action 1.4.2: Implement fire mitigation measures

In conjunction with the fire management plan described above, measures need to be put into place to reduce the risk of fire spreading into the Park from the surrounding community areas. In order to reduce the risks of unprescribed fire spreading into MMNP, the park boundaries will be cleared annually to a width wide enough to provide an effective firebreak. Early burns will also be carried out along the Park's northern and southern boundaries to prevent the spread of fire into the Park and reduce the intensity of any later burns, and correspondingly their potential to negatively impact MMNP's biodiversity.

Action 1.4.3: Improve fire prevention awareness

Over the long-term, the proactive prevention of unintentional or uncontrolled fire in and around MMNP is a more cost effective solution than a reactive response to fires. The National Policy for National Parks states "TANAPA will work with adjacent landowners to prevent human caused wildfires and their potential adverse impacts". Accordingly, awareness raising will be done in the communities surrounding MMNP to highlight the risks and damage that fire can cause, and to emphasise any appropriate steps that community members can take to reduce the risks of fires getting out of control. Similar work will be undertaken with resident MMNP staff, their families and tourists within the MMNP to ensure that they too are aware of the risks and dangers of uncontrolled fire, and of the park regulations designed to minimise the risk of fire spreading.

Potential Impacts and Mitigation Measures for Target 1.4: Fire frequency and intensity within MMNP is managed and monitored

The mitigation measures under this target will be specified in the MMNP Fire Management Plan, developed under Action 1.4.1.

Target 1.5: Functional habitat linkages connecting MMNP with surrounding areas are maintained

The long-term survival of many MMNP species of conservation concern depends not only on the conservation of suitable habitat within MMNP, but also on the Park's biological connectivity with the surrounding area. Of particular importance in this respect are the migration requirements of elephants, which perform key ecological functions within the ecosystem, influencing processes such as habitat succession, seed germination and fire distribution. Wild dogs have also been highlighted as an important species to consider due to their high susceptibility to habitat fragmentation. Although there is little data to verify that wild dogs are currently present at MMNP, they have been observed in the area in the past and maintaining habitat connectivity between the Park and its surroundings will enhance the prospects of recolonisation. Habitat linkages between the Park and surrounding areas need to be maintained in order to benefit these, and a range of other co-occurring species.

An extract from Table C.3 summarising the threats to elephants and wild dogs from a loss of habitat connectivity, and the management responses is given in the box below.

Threats \ Target	Elephants	Wild dogs
Loss of habitat connectivity	Medium	High
Response	Actions 1.5.1 & 1.5.2	

The following two management actions have been developed to combat this threat and ensure that functional habitat linkages connecting MMNP with surrounding areas are maintained:

Action 1.5.1: Identify dispersal areas and migratory corridors

Presently, there is very little data about the presence and movement of animals both inside and outside of the Park. A crucial first step in ensuring that migration routes and dispersal areas remain intact is to ensure that resources allocated for this purpose are targeting the most essential areas. In order for this to occur, areas of intact habitat outside the Park must be identified and assessed to establish if they serve as migratory or dispersal areas.

The identification of key wildlife dispersal and migration areas outside of MMNP is an important component of the ongoing Mahale Ecosystem Management Project, being implemented by TANAPA and the Frankfurt Zoological Society with financial assistance from the European Union. Baseline biological surveys in the wider Mahale Ecosystem will take place during 2005-2006. Data from these surveys will provide part of the foundations for a Greater Mahale Ecosystem Management Plan, the remit of which is anticipated to cover a broad landscape with MMNP at its core. One of the principal aims of this plan is to ensure that important areas of wildlife habitat outside of MMNP remain intact. MMNP management will play an important role in supporting these baseline surveys, in particular through the provision of logistical and technical support.

Action 1.5.2: Cooperate with other organisations to promote the maintenance of migration and dispersal areas connecting MMNP and other areas of intact habitat

Through this action, MMNP management will investigate methods of enhancing cooperation between and providing assistance to the relevant organisations and stakeholders in the important wildlife areas surrounding the Park (defined in the previous management action), with the aim of ensuring that habitat linkages between the Park and surrounding areas remain functional. As part of the Greater Mahale Ecosystem planning process described above, the organisations and stakeholders with jurisdiction and influence over these wider areas will be identified and a mechanism developed to enable ecosystem stakeholders including MMNP management to exchange information and coordinate their activities.

Objective 2: Regular, management-oriented monitoring and assessment of key ecosystem values and processes strengthened

The desired future state of MMNP is one where the evolving functioning and status of the Park's ecosystem is understood and where this knowledge is used to make informed management decisions to achieve the Park's objectives. To achieve this desired state, a framework has been developed in this GMP for monitoring the health of the MMNP ecosystem, and to provide the basis for the development of a comprehensive MMNP Ecological Monitoring Plan (Technical Detail Plan)

The MMNP Ecological Monitoring Plan will monitor the health of the MMNP ecosystem; i.e. the sustained maintenance or enhancement of the viability of the Conservation Targets. The plan will also monitor key threats to the Conservation Targets as well as the Key Ecological Attributes of the Conservation Targets, as illustrated in Figure C.1 above. The objective will be to not simply focus on monitoring *per se*, but also on analysing and using the information collected to better inform management decisions.

Development of the Ecological Monitoring Plan will firstly require baseline data to be established; not only for future comparisons but also to enable the establishment of clearly defined indicators and, where appropriate, the limits of acceptable change. The limits of acceptable change will take into account natural variability in key ecological attributes and guide conservation action aimed at managing a target's attributes within this natural variability. Once the baseline and specific indicators are established, it will be possible to periodically collect, analyse and integrate monitoring information into management decision-making and practice.

To date, with the exception of fish and molluscs, no comprehensive or reliable surveys of MMNP's biodiversity have been conducted that could provide the required baseline data. The only contributions to the understanding of park fauna and flora have been a general vegetation classification and description made by JICA (1980), a partial inventory of plant species within the evergreen forest conducted by Nishida and Uehara (1981), and a survey of fish and molluscs in the area of Lake Tanganyika within MMNP (BIOSS, 2000). The species inventories of most faunal groups within MMNP are poor or non-existent, and many habitat types remain completed unstudied. The records that do exist are often old and unreliable, dating from as far back as the 1940s. In addition, survey methodologies involved in their collection are often unclear and there are suggestions that some of the species recorded may have been misidentified.

The Ecosystem Monitoring Plan will address this current shortfall in available baseline data, and provide a sound basis for adaptive ecological management within the Park. The plan framework is set out in Table C.4 overpage. The indicators provide the measurable entities for assessing the status and trends of the KEAs or threats to each Conservation Target. The indicators are designed to be easy to measure and to provide an early warning to serious threats that require mitigating actions. Included in the plan framework is the data collection methodology, which identifies how, when, where and who will collect the data for the indicators.

Table C.4: Framework for the MMNP Ecological Monitoring Plan (Technical Detail Plan)

KEA/threat	Indicator of change	Method of Measurement	Collection Frequency	Data Source	Responsibility	Data currently collected?
Conservation Target 1: Water catchments						
KEA: Water quality	Chemical composition, BOD, sedimentation	Sampling and lab analysis (Eric & Gereta Method)	Monthly	Water quality survey	Park Ecologist	No
KEA: Water flow	Flow rate of major streams	Eric Method	Monthly	Specific survey	Park Ecologist	No
KEA: Wetlands	Area	Ground survey using fixed markers	Annually	Specific survey	Park Ecologist	No
KEA: Species composition	Abundance of key species	Baseline survey	3 -5 years, once baseline data is established	Specific survey	Park Ecologist	No
Conservation Target 2: Evergreen forest						
KEA: Extent and distribution	Area	Remote sensing	3 – 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
Threat: Extent of exotics	Area	Aerial photos	2 years, during <i>Senna spectabilis</i> flowering	Specific survey	Park Ecologist, with aerial survey support	No
KEA: Habitat specific species	Abundance of key species (to be determined)	Bird call survey Permanent ground transects for mammals	Annually	Specific survey	Park Ecologist / MMCRP	No Previously collected, needs restarting and expanding
KEA: Trees species composition	Abundance and diversity	Permanent ground transects	3 – 5 years	MMCRP and survey data	Park Ecologist / chimpanzee researchers	Only for M-group range

KEA/threat	Indicator of change	Method of Measurement	Collection Frequency	Data Source	Responsibility	Data currently collected?
Conservation Target 3: Miombo woodland						
KEA: Extent	Area	Remote sensing	3 – 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
KEA: Canopy cover	Percentage cover	Remote sensing	3 – 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
KEA: Abundance of key species	Species composition	Permanent ground transects (in coordination with elephant/chimp nest transects)	3 – 5 years	Specific survey and extrapolation through remote sensing	Park Ecologist / researchers	No
Conservation Target 4: Lake Tanganyika						
KEA: Water quality	Chemical composition, BOD, sedimentation	Sampling and lab analysis (Eric & Gereta Method)	Monthly	Water quality survey	Park Ecologist	Only sedimentation
KEA: Lake level ³	Water level	Water meters	Monthly	On-going water level survey data	Park Ecologist	Yes
KEA: Abundance of key species	Species composition	LTBP baseline data, water transects	3 – 5 years	LTBP	Park Ecologist / LTBP	Yes
KEA: Presence and absence of endemic/habitat specific species	Species composition	LTBP baseline data, water transects	3 – 5 years	LTBP	Park Ecologist / LTBP	Yes

³ Linked to impact on abundance of cichlid species in lake shallows.

KEA/threat	Indicator of change	Method of Measurement	Collection Frequency	Data Source	Responsibility	Data currently collected?
Conservation Target 5: Montane vegetation						
Threat/KEA: Fire	Extent/occurrence	Remote sensing	Annually	Satellite data	Park Ecologist / TANAPA GIS centre	Yes
KEA: Indicator species, e.g. orchids, geophytes	Species composition	Baseline survey	3 -5 years, once baseline data is established	Specific survey	Park Ecologist	No
Conservation Target 6: Chimpanzees						
KEA: Population size and distribution	Abundance	Nest count transects	3 – 5 years	Specific ground survey, involving collaboration with other organisations	Park Ecologist / researchers	Not park wide
KEA: Reproduction and age structure	Age and sex composition	M-group information	Ongoing	Current research	Chimp project	Yes
KEA: Extent of Evergreen Forest	Area	Remote sensing	3 – 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
Threat: Disease	Prevalence of disease	Direct observation/ non-invasive sampling	Ongoing	Current research	Chimp project	Yes

KEA/threat	Indicator of change	Method of Measurement	Collection Frequency	Data Source	Responsibility	Data currently collected?
Conservation Target 7: Elephants						
KEA: Population size and distribution	Population size	Ground transect dung counts (in coordination with chimp nest counts) Ranger patrol sightings	3 - 5 years	Specific survey and Ranger reports	Park Ecologist / researchers	No
KEA: Migration routes / dispersal areas	Forest disturbance / cultivation expansion	Remote sensing	3 - 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
KEA: Reproduction and age structure	Age composition	Ranger patrol sightings	Ongoing	Ranger reports	Park Ecologist	No
Conservation Target 8: Wild dogs						
KEA: Population size and distribution	Frequency of sightings	Sightings	Ongoing	Ranger sightings / opportunistic sightings	Park Ecologist	Yes
KEA: Migration routes / dispersal areas	Cultivation expansion	Remote sensing	3 – 5 years (depending on resources & data used)	Appropriate satellite data	Park Ecologist / TANAPA GIS centre	No
KEA: Reproduction and age structure	Not feasible	Not feasible	Not feasible	Not feasible	Not feasible	Not feasible

D

TOURISM MANAGEMENT PROGRAMME

Programme Purpose: MMNP tourism developed and managed to provide an outstanding experience for both local and international visitors, with optimal economic returns and minimal impacts on the Park's resource values

MMNP tourism management strategy

The MMNP tourism management strategy seeks to align the long-term development of tourism in MMNP with the MMNP Tourism Programme Purpose above and with national tourism policies and strategies. The aim of this strategy is to provide a general statement of principles and policy to guide the Tourism Programme over the next 10 years.

The principal national policy-level instruments that the MMNP tourism strategy has been based on are: the National Policies for National Parks in Tanzania (1994); the revised National Tourism Policy (1999); and the Integrated Tourism Master Plan (2002). The development of a coherent tourism strategy for MMNP is facilitated by the alignment of the MMNP Tourism Programme Purpose with the principal objectives of these national policies.

The main objective of the National Tourism Policy that underpins the development of all tourism in Tanzania is “*to promote the economy and livelihood of the people...through encouraging the development of sustainable and quality tourism that is culturally and socially acceptable, ecologically friendly, environmentally sustainable and economically viable*”. The principles of the Integrated Tourism Master Plan, formulated to implement this policy, state that tourism in Tanzania should “*focus primarily (but not exclusively)*” on developing “*an integrated tourism product that is capable of attracting a low volume, high yield segment of the international tourism market*”. In accordance with these national policies, tourism at MMNP should continue to concentrate on the luxury end of the tourism market, alongside which “*deliberate plans will be put into place to promote domestic tourism*” (National Tourism Policy, 1999).

The tourism strategy has been based on the principles of ecotourism, namely that tourism is environmentally benign; that it contributes positively to conservation efforts (through both income generation and awareness raising), and also contributes wherever possible to local development. In accordance with these guiding principles, and with the national level policies outlined above, tourism at MMNP will be dispersed and tourist activities diversified over a wide area of the Park in a manner compatible with the wilderness character of MMNP. This will result in an increase in visitors' length of stay at MMNP, and enhance park revenue whilst decreasing current pressures on key park resources.

The MMNP tourism strategy incorporates a set of principles designed to promote the achievement of the Tourism Programme Purpose and to ensure alignment with national policies and strategies, as described below:

Compatible with the conservation of biodiversity

The biogeography of MMNP is unique; the park combines the highly diverse shallows of Lake Tanganyika, the scenic grandeur of the Mahale Mountains, forest types usually restricted to the

Congo basin, and extensive areas of miombo woodlands. MMNP contains a high number of primate species, and provides the unique opportunity to view in one location species associated with eastern, southern and western Africa. However, these exceptional features, which play a pivotal role in attracting tourists to MMNP, are at the same time both valuable and fragile. It is therefore essential that the development of tourism infrastructure and activities in MMNP is compatible with their continued conservation. Consequently, the development of tourism at MMNP will be carefully planned and regulated in order to ensure that any infrastructure or activities complement the natural environment and involve minimal environmental modification or manipulation. MMNP's pristine forest, montane and freshwater environments are extremely fragile and vulnerable to disturbance; therefore any developments must be comprehensively assessed in advance to ensure that they have the minimal possible environmental impact.

Maintenance of MMNP's wilderness characteristics

MMNP is a remote and unspoiled environment of exceptional scenic and biological value. The park's remoteness has helped to maintain its pristine nature, distinctive wilderness characteristics, and to avoid the negative impacts of mass tourism. The preservation of these factors is crucial to the continued viability of tourism at MMNP in its current form. Consequently, all tourist accommodation in MMNP should, as far as possible, be unobtrusive and environmentally benign. This GMP will put into place mechanisms to ensure this by restricting the location, size and type of tourism infrastructure allowed at MMNP.

Limits of Acceptable Use

The National Tourism Policy recognises that in order to ensure the continued attraction and satisfaction of visitors, it is essential to "*put into place mechanisms that will ensure tourist activities respect the use of biodiversity and wildlife conservation*". Accordingly, mechanisms to make certain that tourism does not have adverse impacts on MMNP's exceptional resources need to be put in place through this GMP, especially around the main group of habituated chimpanzees where tourism infrastructure and activities are presently concentrated. The level of visitation to this group of chimpanzees is already extremely high, and "Limits of Acceptable Use" for this fragile resource are urgently required to ensure a continued high quality visitor experience and that the chimpanzees and their habitats are protected.

Diversification of tourist activities

Such limitations on use will be complemented by efforts to diversify and disperse tourism activities in order to use a wider area of the Park. The Tourism Master Plan for Tanzania recognises that there is a need to "*broaden and diversify the nature-based tourism product*" and develop "*special interest and activity products*". This need is especially acute at MMNP, given the current geographic concentration of tourists, their focus on a single activity, and the Park's significant, and currently largely untapped, potential for diversification into activities such as trekking, kayaking and wilderness camping.

The National Tourism Policy clarifies that "*the private sector has the responsibility of developing tourism*" while the public sector should "*regulate, promote and facilitate*" this development. It follows that the development of tourism at MMNP should be led by tourism professionals, with any developments being both regulated and facilitated by TANAPA. The clear delineation of public and private sector roles in the development of tourism at MMNP is essential for both tour operators and TANAPA to operate efficiently, and to work effectively together.

Stakeholders involved in tourism development and activities

The Tongwe people, the traditional inhabitants of the Mahale area, have borne the main costs of MMNP's establishment, through the loss of access to areas of cultural importance and

restrictions on natural resource use. These restrictions have exacerbated cultural erosion and increased pressure on resources outside the Park. The establishment of links between the conservation of MMNP and the improved wellbeing of local communities has the potential to increase the value of MMNP to surrounding communities and address current inequities in the distribution of the Park's costs and benefits.

These links will be established through the involvement of all stakeholders, especially local communities, in the development and operation of tourism activities at MMNP. The National Tourism Policy reiterates the importance of this involvement, recommending that organisations should be “*giving priority to members of these communities in terms of training, employment generation and other social and economic benefits accruing from tourist activities*”. Accordingly, this involvement will be facilitated by TANAPA and private tour operators improving efforts to employ local people, buy local produce, and use local services wherever possible.

A learning experience for visitors

MMNP contains exceptional biodiversity and many charismatic species of great interest to visitors. One group of chimpanzees within MMNP has been the focus of intensive long-term scientific research for over 30 years, one of the longest running chimpanzee research projects in Africa. This research has made significant contributions to the global knowledge of chimpanzee ecology, behaviour and social organisation. The opportunity to view these chimpanzees is the main reason most visitors come to MMNP, and much of this research will be of great interest to them.

A recent survey of the area of Lake Tanganyika within MMNP showed that the park provides protection for over half the fish species found in the lake, the vast majority of which are endemic cichlids. The cichlid family has undergone extensive speciation to produce a vast array of highly colourful and charismatic species, and there is an extensive range of literature available on the processes that have produced such spectacular animals. This and other information relating to the biodiversity and ecology of MMNP is likely to be of great appeal to many MMNP visitors, and needs to be made available in an accessible and engaging format. Scientific knowledge and research findings will be incorporated into MMNP tourist promotion materials, which should in turn provide an excellent medium for the dissemination of this knowledge and improve the overall MMNP visitor experience.

These guiding principles of the MMNP tourism strategy provide the basis for the **objectives** of the Tourism Management Programme that define the future desirable state of MMNP and address the relevant problems and issues facing the MMNP management. The three objectives are:

1. **Visitor access and use** improved and diversified in environmentally appropriate and sustainable ways
2. **MMNP visitor facilities** improved to provide a better and more diverse tourism experience with minimal environmental impact
3. **MMNP visitor information** and guiding are high quality, relevant, informative and educational

In order to meet these objectives for the Tourism Management Programme, a series of 10-year **management targets**, with accompanying **management actions**, have been formulated, as described in the following sections. For each management target there is a brief description of the relevant management issues and opportunities, which provide the specific context and justification for the management actions. Table G.2 in Section G contains the **3-Year Action Plan** for the Tourism Programme, which lists the activities, responsibilities, timeframe and input requirements necessary for the completion of the management actions.

Objective 1: Visitor access and use enhanced and diversified in environmentally appropriate and sustainable ways

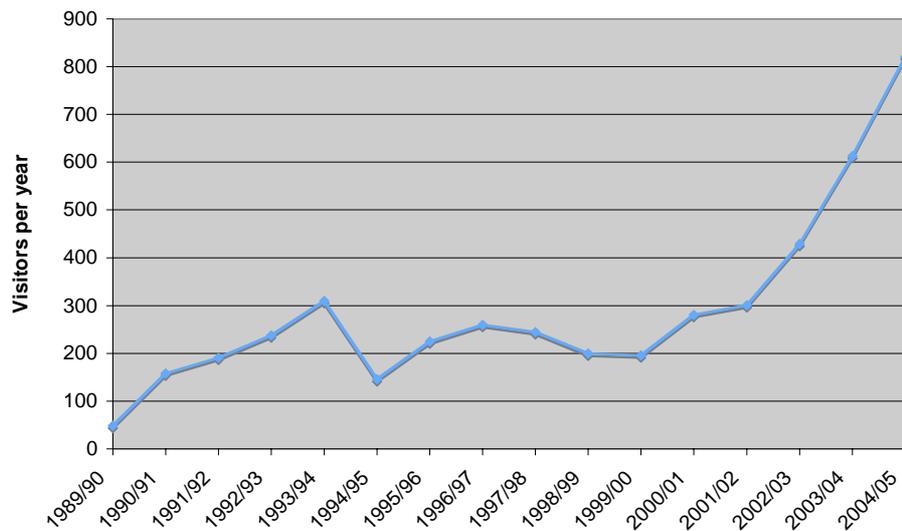
The desired future state of MMNP is one where visitors are able to enjoy a variety of high quality tourist experiences, with minimal impacts on MMNP's exceptional resources. Three management targets have been developed to help bring about this desired state, focusing on regulating chimpanzee viewing, diversifying the activities of tourists within MMNP, and strengthening administration systems to support this diversification.

Target 1.1: Chimpanzee viewing optimally regulated for the mutual benefit of chimp well-being and visitor satisfaction

Chimpanzee viewing in Mahale is presently restricted to a single habituated chimp population (M-group)⁴. This group was first habituated for research purposes by researchers from Kyoto University in 1968. Following the creation of MMNP in 1985, tourist visitation of the group began, and has been gradually increasing ever since. In recent years, the number of visitors to the group has been escalating rapidly (see Figure D.1 below), along with the establishment of several tourist camps adjacent to the chimp habitat. The resulting high level of contact between chimps and tourists, tour camp operators, film-crews, researchers and TANAPA staff is believed to be placing the chimps at a high risk of contracting potentially fatal human diseases, as well as potentially disrupting their ecology and behaviour.

Despite these growing numbers of visitors, chimp tracking in MMNP is still carried out in a largely unregulated fashion, with no formal booking system in place. While this has sufficed in the past, the growing numbers of visitors and the consequent threat to chimpanzee welfare makes it certain that unregulated access will no longer be acceptable during the course of this GMP. Visitor numbers at MMNP are likely to increase at an even greater rate if the Government's proposal to construct a major new trunk road to the east of MMNP comes to fruition, and a proposed regular aircraft service during peak tourist season from Arusha is instigated.

⁴ Efforts are currently underway to habituate a second group of chimpanzees at MMNP. See Action 1.2.1 below for details.

Figure D.1: MMNP visitor numbers, 1989-2005

Besides the potential effects on chimpanzee health, seasonal visitor overcrowding in the chimpanzee's core habitat is also negatively impacting on visitor experience. This problem is compounded by ambiguous and poorly enforced chimpanzee viewing regulations, which reduces visitor satisfaction while at the same time putting the chimps at even greater risk.

In order to address these issues the following three management actions have been formulated:

Action 1.1.1: Implement Limits of Acceptable Use (LAU) for the M-group of chimps

Tourism operators, TANAPA and researchers are all in agreement that the current level of access to M-group is at peak periods too high, and that limits now need to be placed on the access allowed by various users to M-group, and mechanisms put in place to enforce these limits. Under this action, Limits of Acceptable Use, presented in the Table D.1 below, will be implemented to ensure that restrictions are placed on the level of access allowed by different user groups to the M-group of chimps. The TANAPA guides accompanying groups tracking the chimpanzees will be responsible for enforcing these limits.

Table D.1: Limits of Acceptable Use: M-group of Chimpanzees

<p>Tourists and School visits:</p> <ul style="list-style-type: none"> ▶ Only one group is permitted to view the chimps at a time ▶ Maximum of three groups per day (see Action 1.1.2) ▶ Maximum viewing group size of seven, including six tourists and one trained and English-speaking TANAPA guide (see Action 1.1.2) ▶ One tracker and one tour camp-provided guide may accompany the tracking excursion, but once the chimpanzees are sighted, only the six tourists and the TANAPA guide may approach the chimpanzees ▶ The tracker and tour camp-provided guide must remain 200 meters away from the chimpanzees at all times ▶ Each group is permitted one hour total viewing time, timed from the first sighting ▶ If the chimps are mobile and viewing is impossible, the viewing time will be interrupted and re-started once they are relocated ▶ No group is allowed to track the chimps for longer than three hours after the initial sighting, even if the one hour total viewing time is not reached ▶ School groups must use the normal advance booking system as described in this GMP
<p>Researchers:</p> <ul style="list-style-type: none"> ▶ Researchers are limited to a group size of six (three researchers and three assistants). Special permission is required from MMNP Management for any group size higher than this number ▶ Researcher groups are in addition to the three tourist groups mentioned above
<p>Professional filmmakers and photographers:</p> <ul style="list-style-type: none"> ▶ Professional filmmakers and photographers comprise an extra group to the three allowed through the tourist booking system ▶ Group size is limited to six filmmakers plus one TANAPA guide ▶ Filmmakers will not film and will give way during the three one-hour periods that tourists are viewing the chimps ▶ Trackers and porters may accompany the film crew but once the chimpanzees are sighted, only the six film crew and one TANAPA guide can approach the chimpanzees. ▶ Trackers and porters must remain 200 meters away from the chimpanzees at all times. ▶ Professional filmmakers and photographers are restricted to the low season (1st November – 14th December and 16th March – 31st May) and a maximum of three weeks during the high season (1st June – 30th Oct and 15th Dec – 15th March). ▶ The endorsement of the MMNP Chief Park Warden is required for a visit by professional filmmakers and photographers, prior to obtaining formal TANAPA HQ filming permission ▶ TANAPA filming permission is in addition to any other professional filmmaking requirements imposed by Government

Action 1.1.2: Establish a chimp-tracking permit booking system

Chimpanzee tracking in MMNP has until now been carried out in an informal manner; an approach that has worked well while visitor numbers remained low, but is no longer viable with the increasing tourism volumes in the Park. A mechanism now needs to be developed and implemented, based on the LAU described above, to create a fair system of regulating the limited access allowed to the chimps, and ensure a quality tourist experience. In many other great ape national parks, this takes the form of an advance booking system, and such a system will be developed under this action. The new MMNP chimp tracking booking system will issue chimpanzee-tracking permits that will be required by each person visiting any group of chimpanzees.

The modalities of the chimpanzee-tracking permit booking system are presented below in Table D.2.

Table D.2: Modalities of the M-group Chimp Tracking Booking System

<p>Booking:</p> <ul style="list-style-type: none"> ▶ A maximum of 18 chimp tracking permits will be issued for each day, divided into three groups of six tourists (First Viewing Slot, Second Viewing Slot and Third Viewing Slot) ▶ Chimpanzee-tracking permits will be valid for one specific date and time slot ▶ The permits will be available for purchase at TANAPA HQ in Arusha
<p>Priority permit allocations:</p> <ul style="list-style-type: none"> ▶ The three existing tourism concession holders in the Low Use Zone will each have the option to purchase a guaranteed minimum of six chimpanzee tracking permits for M-group per day⁵ ▶ These priority allocations are available up to six months prior to the date the permit becomes valid, upon payment of a non-refundable 30% deposit ▶ Concession holders must settle the outstanding balance on any reserved permits at least 2 months prior to the date the permit is valid, or the reservation will be cancelled
<p>Unreserved permit purchasing:</p> <ul style="list-style-type: none"> ▶ Any unreserved permits can be purchased on a first-come, first-served basis at any time within six months of the date they become valid, upon payment of a non-refundable 30% deposit ▶ As above, if the outstanding balance is not paid 2 months prior to the date the date the permit is valid the reservation will be cancelled ▶ Permits purchased within 2 months of their validity must be paid for in full when they are purchased
<p>Refunds:</p> <ul style="list-style-type: none"> ▶ All payments (including deposits) are non-refundable, even in the absence of a chimpanzee sighting ▶ Any reservations cancelled due to a failure to pay the outstanding balance will be resold on a first-come, first-served basis ▶ Permits once sold are transferable between individuals and between tour operators

TANAPA guides will be responsible for verifying that all tourists intending to track the chimpanzees have the appropriate permit. In order to adequately enforce the new booking system at the park level, and to allow for last minute local purchasing of permits by casual visitors and school groups, it will be important that the TANAPA HQ booking office routinely passes on information about daily booking numbers either by e-mail or radio.

The successful achievement of this action will require changes to the existing MMNP fee structure, where all visitors to MMNP pay a standard entry fee that includes chimp viewing (i.e. the visitor pays the same fee even if they do not go chimp tracking). This fee structure therefore equates a visit to MMNP with chimp viewing, thereby providing an incentive for multiple chimp visits, and undermining efforts to regulate chimp viewing and diversify tourism activities.

A practice used in other great ape parks to encourage a diversity of visitor activities is to have a comparatively low park entry fee that covers park activities other than viewing primates, and a significantly higher fee required for a permit to undertake this activity. This serves to

⁵ These priority chimp tracking permit allocations are only available to the **existing three concession holders** in MMNP, not to new concessions that may be established in the Low Use Zone under Action 2.1.1 below. These new concessions are expected to primarily focus on other tourism activities in MMNP besides chimp tracking with the M-group of chimps.

disassociate primate viewing with a visit to the park in question, and provides a financial disincentive against multiple primate viewing visits.

This GMP therefore recommends that TANAPA management and Board of Trustees review the current fee structure and put into place a new structure which separates the park entrance fee from the chimp tracking fee. Without this separation, the advance chimp tracking booking system to be developed under this action will be impractical, and the crucial actions implemented under this GMP to regulate chimp viewing and diversify tourist activities will be undermined.

Action 1.1.3: Disseminate and enforce chimp-viewing regulations

A clear and enforceable set of chimpanzee viewing guidelines needs to be disseminated and enforced by TANAPA guides to help preserve both visitor and chimpanzee health and safety. The Chimpanzee Viewing Code of Conduct outlined in the box below has been developed from viewing guidelines produced by TANAPA, the Mahale Conservation Society, and recommendations given in the Mahale Tourism Report (Walpole, 2004). The Code of Conduct will be disseminated to all tourists, tourist operators, guides, TANAPA staff, and researchers at MMNP. These regulations will apply to **all visitors, staff and researchers** visiting any group of chimpanzees.

MAHALE MOUNTAINS NATIONAL PARK

Chimpanzee Viewing Code of Conduct

Welcome to Mahale Mountains National Park, home to one of Africa's most scientifically-studied chimpanzee populations. The support that you are giving through your chimp tracking and park entrance fees provides the Park with the means to safeguard and protect this unique population of chimps in their wild and pristine environment. However, we need your further help to ensure the health and wellbeing of the chimps, as well as your personal safety. Please help us by observing the Code of Conduct and viewing regulations set out below.

Enjoy your stay, and we hope you have a good visit with the chimps!

General Conduct

It is important not to do anything that may antagonise the chimpanzees or that they may see as a challenge. When in the presence of chimpanzees, don't talk unless absolutely necessary, avoid direct eye contact, and don't use perfume, spit, or smoke. Sudden movements or pointing at the chimpanzees should also be avoided. In the unlikely event that a chimp charges towards you, you should move to the nearest tree, stand up and hold on tightly. Most importantly, don't panic.

To minimise disturbance to the chimps, viewers should sit or squat, rather than stand, when viewing the chimps. The viewing group should be sure that they do not completely surround the chimps. If the chimpanzees move closer than the minimum distance allowed (10 metres), don't make any sudden movements to increase the distance between you and them, but slowly back away. Never attempt to touch any chimpanzee, if a chimpanzee touches you simply ignore it and slowly back away.

Finally, the opportunity for you to view the Mahale chimpanzees is a result of painstaking efforts by researchers over many years to habituate the chimpanzees to human presence. Please respect the scientific team members that are observing the chimps, by not

obstructing their view and giving them room to carry out their research.

Rules for viewing the chimpanzees

- ▶ Viewers must remain with and obey the TANAPA guide at all times whilst in the forest.
- ▶ Viewers should maintain a distance of **at least 10 metres** from the chimpanzees **at all times**.
- ▶ Do not use a camera flash when taking pictures of the chimpanzees. Visitors must switch these off **before** commencing to track the chimps.
- ▶ Viewers must walk approximately 250 metres away from the chimps before eating.
- ▶ Never leave personal belongings on the ground or where they may be accessible to chimps. They can transmit disease.
- ▶ It is not permitted to track the chimps if you are sick or have an infectious disease. This places the chimpanzees at major risk from disease transmission.
- ▶ No person under the age of 12 is permitted to track the chimps. Young people have a higher susceptibility to disease, many of which can affect chimpanzees.
- ▶ Do not defecate in the forest. If it is unavoidable, move 250 metres away from the chimps and completely bury all faeces and toilet paper in a deep hole.

Additional rules for filmmakers, photographers, researchers and guides

- ▶ Researchers **only** will maintain a distance of at **least 7.5 metres** from the chimpanzees.
- ▶ The forest environment is fragile and vulnerable to disturbance, consequently there should be no cutting of vegetation off the trails; trail width is limited to 1 metre.
- ▶ A trowel must be carried at all times by TANAPA guides for use in the event of emergency defecation.

Target 1.2: MMNP tourism attractions and activities expanded to provide a more diverse tourism experience

Current tourism at MMNP is centred on MMNP's single habituated chimpanzee group. The numbers of visitors viewing this group have steadily increased over the last few years (see Figure D.1 above) and are now seasonally very high, increasing the risks of disease transmission and impacting on visitor experience, as described and addressed under Target 1.1. Due in part to the historic low numbers of tourists at MMNP, and the fact that in the past visitors could easily make multiple visits to the chimps, all major tourism activities and infrastructure are currently located in and around M-group's habitat. This concentrates pressures and impacts from tourism in this key area. Furthermore, because a visit to MMNP is associated almost entirely with chimpanzee viewing, the full potential of developing a diversity of tourist attractions and activities at MMNP has not been realised. The development of a variety of alternative tourism activities away from this core intensively used area is now imperative in order to accommodate the increasing numbers of visitors to the Park, help disperse the current pressures being placed on the M-group chimpanzees, and increase the Park's overall tourism carrying capacity.

Three management actions have been developed to promote a more diverse tourist experience at MMNP, these are described below:

Action 1.2.1: Promote and regulate the use of northern group (N-group) of chimpanzees

The habituation of a second chimpanzee group was started in the Myako, Howassi, Mpila and Kasangazi Valleys in 2003, a process that is expected to last at least another 5 years. It is hoped that eventually the use of this new group (northern or N-group)⁶ for tourism viewing will help to relieve the current pressures on M-group. However, concerns have been raised about the suitability of N-group for tourism use, due to the mountainous terrain they inhabit, which makes access to the group difficult for tourists and trackers alike, an important consideration when approximately 40% of the tourists at MMNP are over 50 years of age.

Before visitation to N-group begins, clear and enforceable Limits of Acceptable Use need to be developed in order to establish limits on visitor group size, and an acceptable level of visitation. To promote the use of N-group, these LAU should make allowances for longer viewing times during the habituation process than the hour permitted with M-group. The price of the tracking permit for N-group will also need to be set competitively in order to encourage their use, and to reflect the poorer chimp viewing experience that is likely. Although harder to access than M-group, the use of N-group may become increasingly appropriate as different types of visitors begin to visit MMNP. Once the habituation process has progressed far enough, opportunities for developing habituation treks (combining N-group chimp visits with other trekking activities) will be investigated. However, care must be taken to ensure that visitors tracking N-group do not access the area through M-group's core habitat, and consequently increase the number of people in this already intensively used area of the Park.

Local community ecotourism initiatives would be greatly enhanced if they could include the opportunity to view chimpanzees, and the use of N-group would enable this to occur without increasing the pressure on M-group. If a community lodge is developed outside the Park, opportunities to combine staying at the lodge with viewing N-group will be examined. Other opportunities to develop community-based ecotourism initiatives in and around MMNP are addressed under the Community Outreach Programme (see Target 1.3).

Action 1.2.2: Improve the hiking trail to Mount Nkungwe and make suitable for tourism use

Alongside the ongoing process of habituating another chimp group, there is also considerable potential for the development of soft adventure and special interest tourist activities at MMNP that are in line with the Tourism Programme Purpose and TANAPA policy. This national policy prohibits any “*high profile form of recreation that tends to focus visitor and user attention on the event rather than imparting a deeper appreciation and understanding of the resources and significance of the park*”. This caveat is especially important at MMNP, given the Park's focus on high yield, low volume tourism, and the premium that the Park's wilderness character currently attracts.

In this regard, there are suitable opportunities for trekking to take place in the lower part of the ridge of mountain peaks along the track leading to the summit of Mount Nkungwe, ideally located in the north of the Park close to existing tourist camps and MMNP HQ. Although the higher parts of the trail are challenging and unsuitable for most tourists, there is the possibility for either day walks or walks with overnight wilderness camping in the lower and easier to access parts of the trail.

In order to make this existing track more suitable for tourist use, the track will be improved, with minimum modifications, to enable visitors to use the path safely and comfortably. In keeping

⁶ Further research is necessary to clarify if N-group is in fact a sub-group of B-group chimpanzees. At present MMCRP believe it is likely that they are in fact separate groups.

with the MMNP tourism strategy, all infrastructure needed along this trail will be kept to a minimum and will be unobtrusive. Special consideration will be given to the lower parts of the trail, prior to the climb to the summit of Mt. Mhasabantu, which is the area most suitable for tourist use and easiest to access. The development of options for overnight stopovers to support this activity is addressed under Target 2.2 below.

In order to advertise and facilitate the use of the trail, a simple route description card will be developed describing stages in the walk, water availability, scenic features, etc, and provided to the tourist concessions, as well as being made available at the MMNP Visitor Centre (see Action 3.1.1 below).

Any trekking that is developed at MMNP must conform to the “TANAPA Walking Safari Guidelines” as and when they come into force. These guidelines are presently under review, based on the experiences of a pilot scheme in Tarangire National Park. They clarify that TANAPA will provide an armed ranger to accompany the group, and that the tour operator will be overall responsible for the group and will provide a professional guide for interpretation.

Action 1.2.3: Identify and promote a diversity of tourist activities and attractions outside of M-group habitat

The study of tourism opportunities in MMNP (Walpole 2004) has identified three main opportunities for diversifying tourism activities away from chimp viewing: kayaking; trekking; and wilderness camping. The findings of this study now need to be built on and expanded in order to expand the range of tourism activities available.

Information on potential tourist attractions and campsites away from the current core tourist area needs to be collated and disseminated to help tour operators develop a diversity of tourist activities over a wider area of the Park. A survey of possible tourist attractions, including outstanding landforms and hydrological features, potential trekking routes and kayaking areas, snorkelling sites, scenic viewpoints, suitable wilderness campsites and picnic areas will be undertaken by MMNP management, in collaboration with MMNP tourism concession holders, and an inventory of the findings compiled.

Sport fishing is one tourism activity that is popular in other Tanzanian national parks with substantial water resources, and this is already being practiced with some success in MMNP. This GMP proposes that catch-and-release sport fishing be promoted in MMNP as part of the tourism diversification strategy, in accordance with the TANAPA Sport Fishing Guidelines that provide detailed guidance on catch size, number of rods permitted, and number of groups allowed.

Potential Impacts and Mitigation Measures for Target 1.2: MMNP tourism attractions and activities expanded to provide a more diverse tourism experience

Potential negative impact	Mitigation measures
<ul style="list-style-type: none"> ▶ MMNP’s ERVs, wilderness characteristics and environmental quality are compromised by increased and diversified tourist activities and supporting infrastructure 	<ul style="list-style-type: none"> ▶ Ensure LAU are developed and implemented prior to N-group visitation commencing ▶ Ensure Mt Nkungwe trail improvements are environmentally and visually benign, and include anti-erosion measures ▶ Carry out periodic inspections along any trails developed to remove litter, and assess any negative impacts of increased use

Potential negative impact	Mitigation measures
	<ul style="list-style-type: none"> ▶ Where appropriate, ensure EIAs are carried out prior to the promotion of additional tourist activities
<ul style="list-style-type: none"> ▶ Decline in visitor safety as a result of use of remote areas of MMNP 	<ul style="list-style-type: none"> ▶ Ensure guides are appropriately trained and equipped to deal with minor injuries, (Link with Tourism Management Programme Action 3.3.1) ▶ Ensure in-Park communications are improved (Link with Park Operations Programme Action 4.1.2) ▶ Ensure emergency evacuation procedures and protocol are prepared (Link with Park Operations Programme Action 4.2.2)

Target 1.3: Tourism administration strengthened to support efforts to diversify tourism activities

Target 1.2 above develops a variety of mechanisms that are designed to diversify tourism activities in MMNP, at the same time as decreasing visitor pressure on the habituated chimpanzees and their core habitat. These efforts combined will ensure that MMNP revenues will be maintained or increased while environmental impacts of tourism are minimised. However, they will only be successful if the variety of visitor activities available is effectively marketed. Visits to Mahale are currently almost entirely associated with chimp tracking. This image now needs to be changed and the range of other visitor activities available in the park made more widely known through national and international marketing efforts.

Additionally, the National Policies for National Parks stipulates that it is the responsibility of each park “to develop and maintain an accurate record and profile of all visitors”. Although TANAPA HQ does record basic figures on annual tourism volumes, resident category and length of stay in MMNP, detailed information that could inform adaptive park management is not presently collected or analysed. It will be especially important to collect and analyse this information in future in order to see whether the anticipated changes in tourism visitation and use at MMNP from the implementation of this GMP are actually occurring, and to adapt management accordingly.

The two management actions developed to strengthen tourism administration in support of the diversification of tourism activities at MMNP are described below:

Action 1.3.1: Market MMNP and its tourism opportunities nationally and internationally

The marketing of MMNP will be developed to promote the diversity of activities developed through this GMP, with the overall aim of increasing visitors’ length of stay and enhancing park revenues, without increasing visitor impacts on the park environment, and in particular the habituated chimpanzees. Under this GMP, the key components of a diversified MMNP tourism product will be developed jointly between MMNP management and the existing MMNP tourism concession holders, linked to Target 1.2 above. These components will then be disseminated to TANAPA HQ to ensure that any marketing of MMNP is appropriate.

Action 1.3.2: Establish a tourism monitoring system

There is a range of useful statistics that could be collected on a regular basis at MMNP to assist adaptive park management and to identify any changes in park visitation and use. The most important data that could be collected, and their sources, are outlined below in Table D.3 below.

Through this management action, a comprehensive tourism monitoring system will be established to capture all the relevant data regarding visitor numbers, activities, profile and attitudes. Wherever possible, visitation and use data will be recorded on a daily basis for fine-scale monitoring. Attitude data and more detailed visitor profile information will be collected twice yearly using a visitor questionnaire distributed at camps and bandas. A computer database to store the information collected will be developed and updated on a monthly basis, and annual summary reports of the information collected will be produced and made available to relevant stakeholders.

Table D.3: Tourism visitation information, and its most likely sources

Visitation Data	Source	Use
Daily overnight visitor numbers in each camp, which can be aggregated weekly/monthly/annually as required.	Monthly reports/receipts from the manager of each camp.	Monitor tourism growth, seasonality, and bed occupancy, predict future trends, identify peaks, and evaluate current capacity limits.
Visitor nationality, group size, composition, type (independent or package, etc.), length of stay.	As above, or a sample through a regular or periodic visitor questionnaire.	Monitor market niches and trends, identify market gaps, and evaluate performance of strategies to diversify market or increase length of stay.
Daily numbers of visitors undertaking different activities (e.g. M-group viewing, B- group viewing, trekking and kayaking).	Permit sales for chimpanzee viewing and fishing, daily reports by each ranger/guide for trekking, monthly reports/receipts from the manager of each camp.	Monitor the use of different elements of the park, predict future trends, evaluate capacity limits, evaluate performance of strategies to diversify activities, adaptive management of product/activity provision and promotion.
Visitor attitudes and evaluation of their tourism experience in Mahale	Regular or periodic visitor questionnaire, camp visitor comment books.	Monitor satisfaction and visitor suggestions, adaptive management of product quality and provision, and visitor regulations.

Source: Walpole (2004)

Objective 2: MMNP visitor facilities improved to provide a better and more diverse tourism experience with minimal environmental impact

The future desired state of MMNP is one where the visitor facilities are in keeping with zonal prescriptions, meet the expectations and requirements of visitors, and do not negatively impact on the ecological or visual integrity of the Park. The two management targets to achieve this objective will firstly develop procedures to ensure that the tourism facilities of concession holders comply with TANAPA environmental standards, and secondly improve and expand the park facilities.

Target 2.1: Systems for regulating and monitoring the environmental impacts of tourism facilities applied

There are currently a total of four tourist camps at MMNP, with TANAPA operating their own bandas, and the other three being concessions operated by private tour operators. As shown in Figure B.2, these concessions are all currently located in the north-west of the Park, in the Low Use Zone. These four concessions give MMNP a total capacity of 68 guests per night, as shown in Table D.4 below.

Table D.4: The overnight guest capacity of MMNP tourist camps

Tourist Camp	Current Camp Capacity	Maximum Permitted Camp Capacity
Nomad	12	16
Flycatcher	10	16
Hilltop	12	16 ⁷
TANAPA Bandas	20	20

Tourism at MMNP has developed relatively gradually over the last few years, and only recently have numbers reached levels high enough to warrant concern about the impacts of tourist activities on MMNP’s environment. The existing MMNP tourism facilities are all concentrated in an area close to the habituated chimpanzees’ core habitat. Any further expansion of these facilities could result in impacts on MMNP’s exceptional resources, particularly the habituated chimp group and their core habitat. Likewise, the development of any additional concessions within the Low Use Zone needs to be carefully regulated in order to avoid further overcrowding of the core tourist area of the Park, and deterioration in the quality of the MMNP tourism experience.

Due to the historical absence of a GMP at MMNP, none of the existing tourist concessions have been developed according to the TANAPA Development-Action-Lease-Procedure (DALP), which ensures the environmental and visual impact of concessions are kept to a minimum. Although the tour operators at MMNP have been granted an interim lease agreement, no tour operator in the Park currently has a permanent concession agreement implemented through the DALP, as required by TANAPA policy. This situation makes it difficult for park management to enforce regulations on tourist facilities at MMNP, and to ensure that they are developed in an unobtrusive and environmentally sensitive manner.

The potential impacts from these facilities are compounded by a lack of clear guidelines for tourism operators and their staff, which can leave people unsure of what activities are permissible in the Park. Despite national policy stipulating that TANAPA will “develop a code of conduct to regulate the activities of tour operators”, no such code of conduct currently exists at MMNP. In the past this has contributed to some tour operator employees undertaking inappropriate activities that have compromised the cultural integrity of certain sites within the Park.

In order to address these issues the following three management actions have been formulated, and are described below:

⁷ Hilltop Camp has been granted temporary permission by TANAPA for an additional 8 beds during the 2005 season.

Action 2.1.1: Enforce limits on the size, number and type of tour operator concessions

TANAPA national policy enables GMP's to impose park-specific restrictions on the development of tourist facilities. The policy states "GMP's will set limits of acceptable use that will determine the number, location and size of all facilities located in the park". Such restrictions need to be applied at MMNP to ensure that the development of tourist facilities proceeds in line with the MMNP tourism strategy of low volume, low impact tourism.

Under this action, limits will be placed on the number, size and type of tourist concessions in both the Low Use and Wilderness Zones. These will prevent the unregulated increase in tourist numbers and tourist concessions in the park. The LAU developed to achieve these aims are set out in Table D.5 below.

Table D.5: Limits of Acceptable Use: Tourist Concessions

<ul style="list-style-type: none"> ▶ Tourist concessions in the Low Use Zone will be limited to five facilities, including the three existing facilities (Nomad, Hilltop and Flycatcher tented camps) ▶ Concessions in MMNP will be restricted to the Permanent Tented Camp category, as defined in the DALP (see Annex 3), with a maximum capacity of 16 beds (however, see footnote 6 on Page 53) ▶ No further development of tourism concessions will be allowed in a development exclusion strip along the Lake Tanganyika shoreline between the Kabwe River (2km south of MMNP Bilenge HQ) in the north of the zone and the Syankuhe River (2km south of the Lubugwe River) in the south of the zone (see MMNP Zoning Scheme section above for details). ▶ Outside the development exclusion strip, TANAPA will consider appropriate applications for a maximum of two permanent tented camp concessions along the Lake Tanganyika shoreline ▶ No tourism concessions are allowed in the Wilderness Zone ▶ Concession areas must not extend beyond the beach/bay where they are situated or more than 50m from the natural forest edge into the forest behind
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There is currently no public campsite in MMNP. However, since the TANAPA Bandas provide ample and high quality budget accommodation for visitors and are ideally located for chimpanzee tracking and other park activities, the development of a public campsite is not proposed within the lifespan of this GMP.

Action 2.1.2: Formalise tour operator concession agreements through the DALP

Formalising permanent concession agreements and ensuring that all current and future developments conform to the DALP needs to begin in order to ensure the environmental and visual impacts of the tourism concessions are minimised. Existing or additional tour operators will be required to apply for a permanent lease to operate a camp through the DALP, or its equivalent. This procedure will include an EIA of the existing tourist developments. The lease agreement will also include a resident quota, to be agreed with tour operators, to ensure that the number of employees within the park is kept to a minimum.

Complementary EIA's of other in-park developments in MMNP, including the Mahale Research Centre at Kaisha and MMNP HQ, are dealt with under the GMP's Park Operations Programme (Target 3.1).

Action 2.1.3: Disseminate and enforce a tour operator Code of Conduct

The activities of tour operators and their staff need to be regulated in MMNP in order to help ensure that the effects of tourism operations in MMNP are having minimal environmental impacts, and are in keeping with the MMNP tourism strategy of low-key, low-impact activities. A Code of Conduct to regulate the activities of tour operators and their employees is outlined in the box below. This code will be disseminated to all tourist operators within the Park, and their employees. Tour operators should hold briefings with their staff to ensure the regulations are clearly understood.

<p style="text-align: center;">MAHALE MOUNTAINS NATIONAL PARK</p> <p style="text-align: center;">Code of Conduct: Tour Operators and Employees</p> <ul style="list-style-type: none">▶ No cutting of native vegetation for fuel wood or construction▶ No planting of exotic species in the park▶ No collection of biological material in the park▶ No collection of cultural or religious artefacts in the park▶ No fire lighting except on beaches or in designated kitchen areas▶ All aircraft are required to fly at over 1500 feet level when over national parks (with the exception of TANAPA administrative aircraft and those with special research permits from TANAPA). No sightseeing aircraft flights are allowed over MMNP.

Target 2.2: Visitor facilities improved and expanded to support a greater range and number of tourists and a greater diversity of activities

As previously described, the existing tourist facilities at MMNP are concentrated in a small area in the northwest of the Park. Outside of this area there are no facilities for tourists and a huge portion of MMNP remains unused. As a result, there are very few visitor activities outside the core area and little encouragement for visitor's to explore the Park more widely (as promoted under Target 1.2 above). As visitor numbers increase, this situation is certain to lead to an increasing number of tourists in the main tourist area and an augmentation of the current pressures on M-group, thereby compromising the quality of the MMNP visitor experience.

Outside of MMNP, there is an untapped potential to develop community campsites and lodges. The identification and development of such community ecotourism enterprises is addressed in this GMP's Community Conservation Programme (see Target 1.3).

In order address this issue the following two management actions have been formulated:

Action 2.2.1: Designate wilderness campsites along the lake shore and allocate these sites to individual tour operators

Wilderness camping presents an attractive alternative to the permanent camps for many visitors for part of their stay. The designation of Wilderness Campsites along Lake Tanganyika's shoreline will support the diversification of visitor activities, particularly kayaking, and enable visitors to use a wider area of the Park along the coast than they currently do.

The allocation of selected designated Wilderness Campsites within the concession agreements of particular tour operators will improve accountability and responsibility for their upkeep. Proposals will therefore be considered from tour operators for the inclusion of one Wilderness Campsite per concession holder, as defined in the DALP (see Annex 3), on beaches outside the Low Use Zone. A process will be implemented to ensure that the allocation process is fair and equitable. Occupation of these camps will be limited to one night per group, and, if necessary, environmentally sensitive toilets with minimum visual impact can be built at these sites.

Action 2.2.2: Establish options for overnight stopovers along the Mt Nkungwe trail to facilitate its use

The designation of Wilderness Campsites along the lower parts of the Mt Nkungwe Trail will enhance the potential for trekking in this area, further encouraging the dispersal of visitors across a wider area of the Park. Two wilderness campsites will be designated along the Mt Nkungwe Trail before Mhasabantu Peak. Sites for these campsites are yet to be selected, but they could ideally be located at the same sites used as the temporary ranger camps occasionally used during routine patrol, which are close to sources of clean water. These Wilderness Campsites will not be allocated to any particular tour operator and will be available for general use. Environmentally sensitive toilets and simple and aesthetic tent platforms and shelters will be the only permanent structures that may be developed at these sites.

In due course, if tourist use of this trail warrants it, a simple wooden mountain hut that will serve to improve the comfort and simplify the logistics of visiting this area may eventually replace one of these Wilderness Campsites.

A few visitors may wish to make the challenging climb to the summit of Mt Nkungwe. Although overnight accommodation near the summit is necessary to make this feasible, their numbers are likely to be so low that they do not warrant the construction of a purpose-built facility. Modalities will be established to enable the few visitors that make this climb to stay at the ranger post just below the summit.

Potential Impacts and Mitigation Measures for Target 2.2: Visitor facilities improved and expanded to support a greater range and number of tourists and a greater diversity of activities

Potential negative impacts	Mitigation measures
<ul style="list-style-type: none"> ▶ MMNP's ERVs, wilderness characteristics and environmental quality are compromised around visitor facilities 	<ul style="list-style-type: none"> ▶ Ensure tour operators are familiar with the prescriptions requiring them to adhere to "leave no trace" principles and remove all rubbish ▶ Periodically inspect wilderness campsites to verify their if their use is impacting on the environment ▶ Build environmentally sensitive toilets, if wilderness campsite use is high enough to make this worthwhile

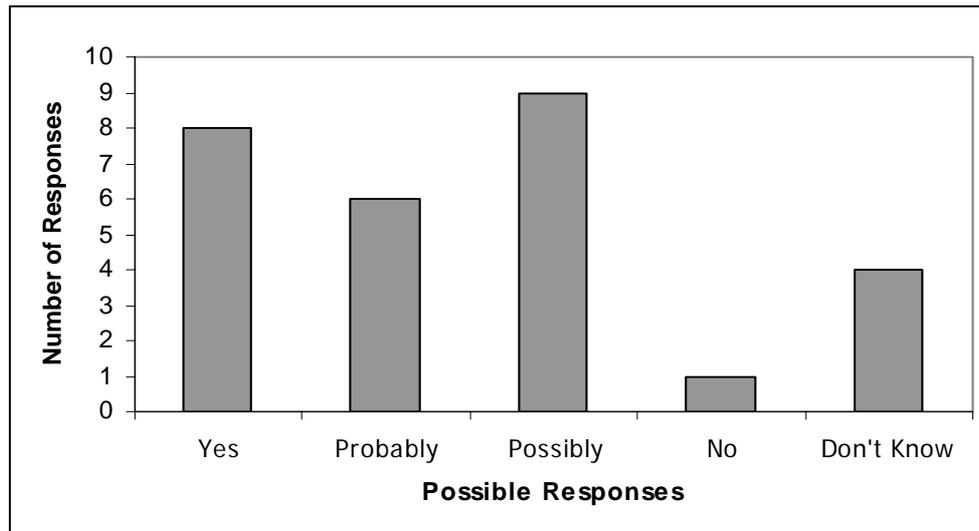
Objective 3: MMNP visitor information and guiding are high quality, relevant, informative and educational

The desired future state of MMNP is one where visitors can easily access relevant, high quality information that will enhance their understanding and appreciation of the Park's exceptional resources, while providing clear guidelines on the proper behaviour in relation to these resources. This information will stimulate visitors to develop an interest in and support for the importance of MMNP, and of conservation issues in general. Visitors will leave the Park with a deeper understanding and appreciation of the environment they have visited, and an improved overall experience.

Three management targets have been formulated to create this desired state. They aim to relocate and improve the MMNP visitor centre; develop a guidebook; and improve the quality of guiding services provided during chimpanzee tracking. These management targets are described below.

Target 3.1: The visitor centre is developed into a valued and popular point of call for many Park visitors

Protected areas have a duty to inform and educate their visitors, a role that can have environmental benefits where visitors' awareness of conservation and environmental issues and impacts is raised. One of the major objectives of the National Policies for National Parks in Tanzania is to "educate interested users and educational groups about the park, its exceptional resources and role in the national conservation strategy". A longstanding means of providing this information has been through the establishment of visitor interpretation centres. MMNP does currently have a visitor centre at the park headquarters; however, it is inappropriately located and has outdated interpretative materials. As a result, visitors are rare and the centre is mainly used by MMNP staff as a social centre. There is however demand for a functioning visitor centre at MMNP, as identified by the results of a recent tourist survey, shown below in Figure D.2.

Figure D.2: Tourists who would tour a visitor centre if available

Source: Willcox (2004)

The following two management actions have been developed to improve the visitor centre at MMNP:

Action 3.1.1: Relocate and develop the Visitor Centre at a new location at or near Kasiha

The relocation of the visitor centre to an appropriate location will increase its convenience and hence its use by tourists. This will enhance the centre's potential to serve not simply as a medium for imparting information about MMNP, but also as a point of sale for guidebooks and local handicrafts, and as a venue for tourists to receive an orientation briefing prior to commencing chimpanzee tracking. Under this Action, the visitor centre will be relocated to Kasiha in order to make the centre more accessible to tourists. Options for the most suitable location and type of development will be investigated. A simple Centre comprising a sheltered briefing area with benches for chimp tracking visitors, coupled with durable outdoor signs covering on aspects of the Park's ecology, is likely to be the most appropriate and cost effective option.

The entire Kasiha area is due to be redeveloped under Target 3.1 of the Park Operations Programme, and the relocation and development of the centre will be done in close coordination with the planned improvements for the Kasiha area.

Action 3.1.2: Plan and produce quality display materials for the MMNP visitor centre

The current displays in the MMNP visitor centre are in poor condition and only convey information about the chimpanzees at MMNP. While the chimpanzee research carried out at MMNP will be of great interest to many visitors, a recent survey has indicated that tourists would appreciate information on a wide range of MMNP's flora and fauna (Willcox, 2004). Under this Action, quality display materials inline with the TANAPA policy of promoting "*informative and interactive interpretive exhibits*" will be planned and developed for the Mahale Visitor Centre. This will include new interpretation materials on chimpanzees provided by the MMCRP and professional filmmakers, along with other exhibits providing information on other Park fauna and flora, local cultures and Park history.

Potential Impacts and Mitigation Measures for Target 3.1: The Visitor centre is developed into a valued and popular point of call for many Park visitors

Potential negative impacts	Mitigation measures
▶ Destruction of evergreen forest habitat during construction	▶ Ensure development is preceded by an EIA (in conjunction with activities under Park Operations Programme Target 2.1)
▶ Increased disturbance, pollution and litter in the area once operational	▶ Provide baboon proof litter bins, and link rubbish collection with that of the research centre ▶ Ensure toilets and human waste disposal systems are environmentally sensitive

Target 3.2: High quality visitor information materials produced and widely distributed

Currently there is only one small colour brochure of interpretative information about MMNP available. The brochure briefly outlines the Park’s history and chimpanzee behaviour and research, but it is not widely distributed to visitors. A draft interpretive document (the Mahale Guide Book) has been put forward for review; however it has not been developed any further. Tourists have stated they would be interested in purchasing interpretative documents about MMNP and the surrounding area, including maps, leaflets and books (Willcox, 2004). This includes information about the Park’s flora and fauna and local cultures, along with information on chimpanzees and park history.

The current MMNP page on the TANAPA website is a valuable marketing tool and is able to reach a huge global audience. This however increases importance that the information it contains on MMNP is kept up to date with any changes that occur at the Park. This is especially important for any changes in to the chimpanzee viewing regulations and fees, which are likely to directly impact on visitors to MMNP.

In order to improve the availability of visitor information about MMNP two management actions have been formulated; these are described below:

Action 3.2.1: Produce and disseminate a high quality guidebook

Under this Action, a high quality interpretative guidebook will be developed for MMNP. This will be done in liaison with MMCRP who have already submitted a draft document for review and have materials ready to contribute to a publication. Along with this information on chimpanzees, this guidebook will include information about Park history, local cultures, and Park flora and fauna. Where possible the guidebook will be developed in liaison with the TANAPA Desktop Publishing Unit, and where appropriate the production of maps or images that are unsuitable for in-house production will be outsourced. Once produced, this guidebook should be made available through the redeveloped MMNP Visitor Centre. Tour operators have also expressed a willingness to purchase guidebooks in bulk and distribute them to their clients.

Action 3.2.2: Establish a website providing up to date and accurate information on MMNP, linked to main TANAPA website

A website dedicated to Mahale (similar to the site for the Udzungwa Mountains National Park) would improve the marketing of MMNP and help attract more visitors. Such a resource would offer the opportunity to provide specific and up to date information on possible activities,

accommodation options, means of access, and park regulations. Accompanied by more general information regarding the activities of the chimpanzee groups, new research findings, and special features on the natural and cultural history of the park, this would provide a valuable and highly effective tool for disseminating information about MMNP.

Under this Action, a website will be developed to provide timely and accurate information on MMNP. Mahale is fortunate to have a good Internet connection, which will enable the site to be updated from the field. A member of staff at MMNP HQ will be trained to develop a simple site, and will be responsible for keeping the site updated from the Park. The site will be linked to the main TANAPA website in a similar manner to the Udzungwa Mountains and Serengeti websites.

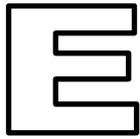
Target 3.3: Park guides are providing high quality guide and interpretation services, involving language capability and extensive park knowledge

One of the main opportunities for educating and informing visitors to MMNP is through the guiding services offered by TANAPA and private tour operators, which have the unique opportunity to educate visitors *in-situ*. The guides responsible for chimpanzee tracking are the only TANAPA employees many tourists will meet, and they have the responsibility of not only serving as ambassadors for TANAPA and MMNP, but also ensuring the health and safety of both visitors and chimpanzees. However, the majority of TANAPA guides who presently accompany tourist groups visiting the chimpanzees do not speak English and are hence unable to communicate directly with tourists. This limits the role of these guides purely to tracking chimpanzees, and inappropriately leaves all guiding, interpretation and enforcement of park regulations to tourist camp staff accompanying their clients.

The following management action has been developed to improve the quality of guiding services at MMNP:

Action 3.3.1: Establish and implement a guide-training programme

The provision of trained, high quality guiding services will provide an enhanced visitor experience and will be a strong promotional tool for MMNP. Under this Action, a guide training programme will be developed and implemented to ensure that TANAPA employees who lead chimp-tracking groups have the skills and knowledge to enable them to undertake their work both competently and professionally. The curriculum for such a program will include English language (or another appropriate language), park rules and regulations, basic first aid and MMNP fauna and flora. This curriculum will be developed in liaison with the tour operators at MMNP who are best placed provide guidance on what their clients require from chimp-tracking guides. Tour operators will also supply “on-the-job” training provided by their own guides (who currently accompany all chimp viewing groups) to TANAPA employees, with a view to eventually handing over responsibility to TANAPA guides.



COMMUNITY OUTREACH PROGRAMME

Programme Purpose: Long-term impacts and threats to MMNP biodiversity and habitats are reduced in collaboration with Park-adjacent communities

Community outreach strategy

The MMNP community outreach strategy aims to facilitate the alignment of the long-term development of MMNP community outreach with the Programme Purpose above, and the organisational goals of TANAPA. The aim of the strategy is to provide a general statement of principles and policy to guide the Community Outreach Programme over the next 10 years.

TANAPA was one of the first protected area management authorities in Africa to introduce outreach activities for communities resident around national parks. Since the late 1980s, best practice in this field has rapidly evolved, which has fed into Tanzanian national policies. The principal national policy-level instruments that form the basis for the MMNP community outreach strategy are: the National Policies for National Parks in Tanzania (1994) and the TANAPA Strategic Action Plan for Community Conservation Services (2000). This strategic action plan specifies that the main goals of the Community Conservation Services are “*to identify and implement opportunities for sharing parks’ benefits with adjacent communities [and] to protect the integrity of National Parks by reducing conflicts between wildlife and surrounding communities*”.

The main rationale underlying the distribution of park benefits to surrounding communities is that this will provide communities with incentives to support the park’s continued existence, thereby alleviating pressure on the park’s law enforcement efforts and benefiting the park’s overall conservation. The importance of benefit sharing is recognised in the National Policies for National Parks in Tanzania, which states that park outreach activities “*will be accompanied by mechanisms to ensure that the benefits of conservation are shared with local communities in appropriate ways*”. Under this GMP, the sharing of benefits with communities around MMNP will be complemented by efforts to improve the conservation compatibility of land uses and livelihood strategies of communities surrounding the Park, in order to reduce their negative impacts on MMNP’s natural resources.

The MMNP community outreach strategy incorporates a set of basic principles designed to guide the implementation of outreach initiatives, promote the achievement of the programme purpose and to ensure alignment with national policy. These principles are described below.

Communication and cooperation

MMNP is an integral component of a wider landscape in which an increasing variety of human activities and natural resource uses occurs. These human activities inevitably impact on the conservation and management of MMNP’s natural resources, and conversely the ways in which MMNP is managed has repercussions for local communities neighbouring the Park. This creates the need for efficient communication between communities and Park managers, to

ensure that they are able to work together effectively to maximise synergies and ensure the compatibility of their various activities. Effective communication is essential for achieving the first objective of the TANAPA Community Conservation Service, which is to “*improve relations between individual parks and local communities*”. Consequently, it is vital that mechanisms to enable collaborative working between MMNP management and surrounding communities are further developed and strengthened. These mechanisms need to ensure that all stakeholders are treated as equals during the resolution of any conflicts that may arise, and that collaboration is developed through dialogue and cooperation, undertaken in an atmosphere free from preconceived prejudice, and without dwelling on past conflicts.

Education and awareness

Since the creation of MMNP, there has been a history of conflict and mistrust between Park management and some of the surrounding communities. Much of this contention has been due to misunderstandings and a lack of clarity about Park regulations and boundaries. This lack of clarity and distrust has led to frequent disputes, and has left communities feeling disempowered, unsure of their rights and questioning the ultimate goals of MMNP management. In conjunction with the increased collaboration between park-adjacent communities and MMNP management, described above, special attention shall be given to raising communities’ conservation awareness, and in particular clarifying the rules, regulations and boundaries of the Park.

Park benefit sharing

Park adjacent communities have borne the main costs of MMNP’s establishment, through both the loss natural resources and restrictions on access to areas of cultural importance. This has contributed to a feeling of resentment towards MMNP in some park-adjacent communities, and created a lack of community support for the Park’s continued existence. In order to address the costs incurred by local communities, TANAPA national policy stipulates that park outreach “*will seek ways to share the benefits of conservation with local communities in ways that are sustainable and promote sound development*”. Accordingly, the provision of benefits to the communities surrounding MMNP needs to be developed in collaboration between Park management and the intended recipients of these benefits. As suggested by community members, the development of any future activities or initiatives will focus on enhancing livelihood security and reducing poverty. Clear links will be established between these initiatives, the benefits they create, and the continued conservation of MMNP.

Community-based ecotourism

Community based ecotourism is one of the principal mechanisms through which local communities can benefit from national parks. There is significant potential for the development of such initiatives at MMNP, and these opportunities are likely to increase as access to the Park becomes easier and a broader section of the market is able to visit MMNP. Although the development of any new initiatives should be market driven and run by the private sector, MMNP management will provide logistical and technical support to help identify viable opportunities, and to facilitate the development of such projects.

Access to sites of cultural importance

The cultural and religious beliefs of the Tongwe, the original inhabitants of the Mahale peninsular, are rapidly eroding, in part due to restrictions on access to sacred areas implemented when MMNP was gazetted. Currently, many community members are not aware of their right of access to such areas in the Park, and many culturally important activities could in reality take place within MMNP, within specified limits, without adversely affecting Park

resources. In line with the TANAPA policy of allowing the “*continued ritual use of contemporary cultural sites...within the context of overall resource protection*” this programme will put in place guidelines and procedures designed to facilitate local communities accessing sacred sites within MMNP.

Community natural resource management capacity

The loss of community land after MMNP was gazetted in 1985, in conjunction with high and escalating population pressures, have led to increasingly unsustainable natural resource practices and consequent environmental degradation around MMNP. The growing ubiquity and intensity of these practises are increasingly threatening the integrity of MMNP’s natural resources, manifested through amplified threats such as fire, sedimentation and habitat fragmentation. Weak natural resource management institutions combined with a lack of community-based land-use and natural resource planning are currently struggling to address these problems. This GMP will make provisions for MMNP management to collaborate with and facilitate existing local government initiatives to strengthen community natural resource management institutions. Complementing this, alternative sustainable sources of important natural resources, such as key tree species, previously harvested from within MMNP will be developed to enable communities to meet their needs, without being compelled to enter the Park illegally.

The guiding principles of this strategy provide the basis for the two objectives of the Community Outreach Programme that define the future desirable state at MMNP and address the relevant problems and issues facing MMNP management. The two objectives are:

1. Neighbouring community cooperation and **support for conservation enhanced**
2. Threats to MMNP exceptional resources reduced through **improved community-based natural resource management**

In order to meet these objectives for the Community Outreach Programme, a series of 10-year **management targets**, with accompanying **management actions**, have been formulated, as described in the following sections. For each management target there is a brief description of the relevant management issues and opportunities, which provide the specific context and justification for the management actions. Table G.3 in Section G contains the **3-Year Action Plan** for the Community Outreach Programme, which lists the activities, responsibilities, timeframe and input requirements necessary for the completion of the management actions.

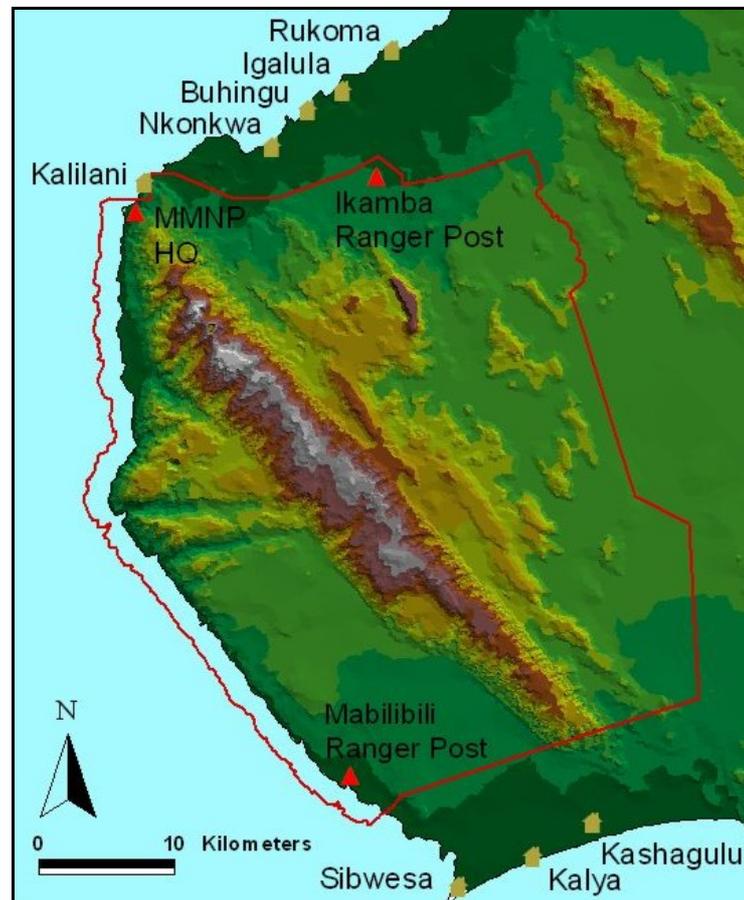
Objective 1: Neighbouring community cooperation and support for conservation enhanced

The desired future state of MMNP is one where local communities value and benefit from the Park’s existence and are supporting park management in their activities to ensure MMNP’s continued conservation. Four management targets have been developed to achieve this objective, focusing on developing mechanisms for improving Park-community dialogue; increasing and improving the benefits communities received from MMNP; facilitating the development of community-based ecotourism; and increasing community access to sacred areas within the Park. These are described in the following sections.

Target 1.1: Park-community communication channels and cooperation strengthened

MMNP Community Outreach Department activities are currently focused on the eight principal communities adjacent to MMNP, as shown below in Figure E.1.

Figure E.1: MMNP adjacent communities



Current communication channels between the park-adjacent communities and MMNP management are weak, due in part to difficult logistics and limited transport infrastructure in the areas around the Park. This situation is preventing the early resolution of problems between Park management and surrounding communities before they develop into serious issues. Partly as a result of this lack of communication, there is still ignorance of MMNP regulations in these communities, which is one cause of increasing illegal activities inside the Park. Community members also claim that there is a lack of transparency in park operations, and fear that the Park will expand into community land. This lack of effective communication has contributed to a feeling of resentment on the part of some communities towards MMNP, which has resulted in the vandalism of Park property, and reduced the efficiency of Park operations.

In order to meet this management target, the following management action has been formulated:

Action 1.1.1: Establish, formalise and strengthen a Park-Community Forum

It is essential that Park management and the surrounding communities have a mechanism through which they can effectively communicate with each other. Regular meetings are needed

between MMNP management and communities in order to strengthen communication and enable the early resolution of problems as they arise. Through this Action, a Park-Community forum will be developed and formalised, which will provide the official channel of communication through which issues that need to be discussed by either the MMNP management or communities can be raised.

Following the recommendations of the “VEC and VC Report for Community-Initiated Conservation Actions and the Establishment of Mahale Mountains National Park-Community Dialogue Forums” (MEMP, 2005), each of the eight villages around MMNP will select three senior representatives to represent their respective communities at this forum, which will take place on a quarterly basis. These representatives will include a VC member, a VEC member and, if no woman has already been selected, a woman who will represent women’s issues. This selection will ensure that the size of the meeting remains easily manageable, as there will be a total of 24 community representatives. The forum will be held rotationally in one of the three ward headquarters, and scheduled around the public ferry’s movements. Village representatives will be responsible for disseminating the meeting results back to their respective communities after the forum. The MMNP CCW will work with the meeting participants before and after the meeting to ensure the general public has a fair voice in the meeting, and that the meeting results are disseminated.

Target 1.2: New and appropriate opportunities for local communities to benefit from the presence of MMNP developed and implemented

The “Support to Community Initiated Projects” (SCIP) scheme was started in MMNP in 1997 and has been the main focus of the Park’s Community outreach activities. In the past six years, projects have been completed in six of the eight communities surrounding MMNP. Table E.1 below shows that with the exception of the Kalya Dispensary renovation, all of the completed projects related to primary education, and involved the construction of classrooms, teachers’ offices and toilets.

Table E.1: Completed MMNP SCIP projects

Year	Village	Project Description	Cost (TSh)
1997-1998	Kashagulu	2 Classrooms and Teachers’ Office for Primary School	4,466,400
1997-1998	Kalya	Rehabilitation of Dispensary	2,125,345
1998-1999	Kashagulu	Toilets for Primary School	1,135,550
1998-1999	Rukoma	2 Classrooms and Teachers’ Office for Primary School	6,736,878
2000-2001	Igalula	2 Classrooms and Teachers’ Office for Primary School	7,713,009
2000-2001	Nkonkwa	2 Classrooms and Teachers’ Office for Primary School	7,742,485
2002-2003	Kalya	2 Classrooms and Teachers’ Office for Primary School	9,096,742
Total			39,016,409

Source: Kinyau and Wilcox (2004)

Although SCIP has generally been well received by communities, problems have arisen during the implementation of these projects, mainly due to inadequate communication between MMNP management and local communities, and a lack of clarity over respective roles and responsibilities.

Alongside SCIP, employment within MMNP is the other main direct benefit local communities currently derive from the Park. The Mahale Mountains Chimp Research Project (MMCRP) provides local employment, as do tour operators who employ local staff for their camp operations and construction work. In addition, MMNP management hires skilled and unskilled casual labourers from local communities for construction projects, the loading and unloading of supply boats, boundary demarcation and airstrip maintenance. Table E.2 below shows TANAPA MMNP's casual labour records between 1992 and 2003.

Table E.2: Local labour employed by TANAPA from fiscal years 1992/3 - 2002/3

Year	Amount (TSh)	Number of Labour Days
1992-1993	915,295	610
1993-1994	846,798	565
1994-1995	942,547	628
1995-1996	1,004,646	670
1996-1997	1,243,897	829
1997-1998	2,385,897	1,591
1998-1999	1,495,095	997
1999-2000	1,540,397	1,027
2000-2001	4,443,000	2,962
2001-2002	4,069,438	2,713
2002-2003	3,411,390	2,274
Total	22,298,400	14,866

Source: Kinyau and Wilcox (2004)

Although the table above shows a general trend in increasing employment opportunities within MMNP, the majority of the work given to local people is unskilled and on a casual basis, with little job security or long-term prospects. This is primarily due to a lack of training opportunities and capacity within the local population, with the result that more suitably qualified candidates from outside the area are much more likely to gain permanent employment within MMNP. Consequently, the vast majority of wages paid by MMNP management are not to local community members, who gain relatively little of the potential benefits from this source.

In order to address these issues four management actions have been formulated, as described below:

Action 1.2.1: Implement SCIP initiatives in collaboration with local communities and government

It is important that better communication and consultation by MMNP Community Outreach staff and the intended beneficiaries be initiated to ensure that future SCIP projects are appropriate and responsive to the identified local community priorities. Under this GMP, the TANAPA SCIP guidelines will be disseminated and explained to relevant partner communities to enable them

to ascertain how their needs can be met within these policy guidelines. Subsequently, meetings will be held with local communities to agree upon and define and/or review project priorities, the activities to be implemented, the allocation of responsibilities, and the timeframes upon which the activities will occur. Where appropriate, in order to ensure projects fit with other district development plans, there will be liaison with and the involvement of district authorities in project design and implementation. It is essential that strong links be established between Park-supported projects and MMNP's continued conservation, as this will help ensure that communities clearly associate the benefits they receive with MMNP. This will be achieved through, for example, putting up appropriate signage with new buildings, and awareness-raising events associated with the completion of new facilities.

Action 1.2.2: Develop income generating activities that increase local economic linkages with MMNP

Community members have indicated that future SCIP activities should be directed towards livelihood improvements. This is in line with TANAPA national policy, which advocates providing "assistance in setting up sustainable income generating enterprises based on non-park natural resources". Through this Action, community self-help groups suitable for involvement in potential IGAs will be identified, and where possible their development will be assisted. Training and support to these groups will be provided to help the establishment of IGAs, and opportunities for local communities to sell products (such as handicrafts and fresh produce) to MMNP tourists, tourist camps and staff will be identified.

Although the establishment of IGAs has the potential to reduce direct pressures on natural resources surrounding the Park, caution must be taken with their implementation. Elsewhere in Africa similar income generating activities have attracted immigrants into the park boundary areas, and consequently undermined any potential conservation benefits. As such, the successes and sustainability of the IGAs developed at Mahale will be monitored, with particular attention paid to any effects of successful IGAs on in-migration.

Action 1.2.3: Raise awareness of employment opportunities in MMNP for local community members

The employment of local people at MMNP is an effective method for providing direct benefits to members of local communities. Due to national labour laws, MMNP management is not permitted to favour local candidates for employment, however under this action Community Outreach staff will improve local candidates' chances of gaining employment at MMNP by rising awareness in local communities of suitable job opportunities that become available in the Park, and the qualifications required for these positions.

Action 1.2.4: Facilitate the promotion of family planning and HIV prevention in park-adjacent communities

Family planning and the spread of HIV is a serious issue for the wellbeing of the local communities and, while this is not strictly within TANAPA's mandate, MMNP management is nonetheless in a strong position to assist in addressing these issues. Accordingly, under this Action MMNP will support the work of other agencies with lead responsibility for family planning and HIV prevention education and awareness-raising, primarily through the provision of logistical support.

Potential Impacts and Mitigation Measures for Target 1.2: New and appropriate opportunities for local communities to benefit from the presence of MMNP developed and implemented

Potential negative impacts	Mitigation measures
<ul style="list-style-type: none"> ▶ Increased immigration into areas surrounding MMNP as a result of the benefits extended by MMNP 	<ul style="list-style-type: none"> ▶ Ensure any SCIP or IGA activities target existing and well established communities ▶ Monitor immigration rates into areas where community outreach activities operate

Target 1.3: Community-based ecotourism initiatives developed

The main benefit that park-adjacent communities have gained from MMNP tourism operations is through short-term casual labour, described under Target 1.2. As at many national parks, most of the benefits generated from tourism at MMNP leave the local area, and mainly benefit international or national businesses. However, alternative community-based models for tourist operations have been developed successfully at other national parks in Africa. In contrast to mainstream tourist operations, these initiatives ensure that communities have substantial control and involvement in the project developed, and that the majority of benefits remain within the community.

There is significant potential for the development of such initiatives at MMNP, which will increase as access to the Park becomes easier and a broader section of the market is able to visit MMNP. Currently, Nomad Safaris, who also has a tourist concession within MMNP, is collaborating with local community members to establish an NGO called the Tongwe Trust. This group has sponsored surveyors to demarcate a piece of land near to the MMNP airstrip, and is in negotiations with the Kalilani Village Council for a formal agreement for an area of the village land upon which to develop a community-run lodge.

In order to develop opportunities for community-based tourism around MMNP, the following two management actions have been developed:

Action 1.3.1: Identify promising ecotourism and cultural tourism attractions outside the Park

In accordance with the National Tourism Policy, it is important that MMNP management's role in developing community-based ecotourism initiatives be limited to providing logistical and technical support to the development of projects, such as that being initiated by the Tongwe Trust. In line with this policy, the MMNP Community Outreach Department will liaise with local communities to help identify potential ecotourism attractions outside of the Park that could be of interest to tourists visiting the area. Once identified, the practicalities of tourists visiting these sites will be investigated in collaboration with tour operators, who are best placed to analyse the potential appeal to tourists of the sites selected.

Action 1.3.2: Assist communities to develop and manage ecotourism ventures

Following the identification of suitable attractions and sites for community ecotourism ventures, MMNP management will assist communities in developing simple business plans. These will include a definition of the respective responsibilities of the community and of the venture

partners. MMNP Community Outreach Department will provide negotiation support to communities when establishing joint venture agreements with potential partners, and provide basic management training to community venture leaders and staff. Once viable ventures have been established MMNP Community Outreach Department will continue to provide ongoing support to facilitate their operation, and the resolution of issues with joint venture partners as and when they arise.

Potential Impacts and Mitigation Measures for Target 1.3: Community-based ecotourism initiatives developed

Potential negative impacts	Mitigation measures
<ul style="list-style-type: none"> ▶ Benefits from IGAs are unfairly captured by wealthy/powerful community members 	<ul style="list-style-type: none"> ▶ Target support towards activities that will benefit the poorest/ marginalised sections of society ▶ Ensure any initiatives developed are through community based organisations (e.g. COCOBAs)
<ul style="list-style-type: none"> ▶ MMNP high quality tourism product degraded by inappropriate initiatives or activities (e.g. unlicensed hawkers around the airstrip) 	<ul style="list-style-type: none"> ▶ Raise awareness to community members of the negative effects of inappropriate activities on the MMNP tourism experience ▶ If necessary, support the formation of village bylaws to prevent inappropriate activities

Target 1.4: Cultural diversity and richness preserved and promoted

Tongwe elders have voiced concerns over the erosion of Tongwe culture due to the presence of MMNP. Many traditionally important sites are located within Park boundaries and are no longer visited. Although TANAPA national policy states that non-consumptive cultural visits are allowed within national parks providing they do not compromise resource protection, community members seem to be unaware of these dispensations, and the MMNP Chief Park Warden has never received any written or verbal applications from community members to visit traditional sites. This misunderstanding is contributing to a feeling of resentment towards MMNP in some park-adjacent communities, and unnecessarily hampering efforts to improve park-community relations.

Fostering the traditional Tongwe culture and their system of sacred forests will help encourage the preservation of traditional lands both inside and outside MMNP, as their conservation will fall under traditional conservation-compatible management systems. Traditionally, only select members of Tongwe society are allowed to enter these religious sites to conduct traditional ceremonies. However, outside of the Park, mainly due to recent influxes of immigrants into the area who do not adhere to the traditional management systems, these areas are becoming increasingly degraded. As a result, important wildlife habitat outside of the Park is being reduced, and the cultural integrity of these areas compromised.

In order to address these issues the following two management actions have been developed:

Action 1.4.1: Identify and document cultural areas within and outside MMNP

As a precursor to facilitating the resumption of traditional and conservation compatible cultural activities within MMNP, assistance will be provided to community members to identify and map areas of cultural importance inside and outside the Park, and establish what activities community members wish to undertake at each site. This will also provide useful baseline information for incorporation into the development of village land-use plans, developed under Action 2.2.3 below.

Action 1.4.2: Facilitate conservation-compatible cultural activities within MMNP

Once priority cultural areas in the Park, and their associated practises, have been identified, a review of schemes from other parks that allow cultural practises to take place will be undertaken. Any lessons learnt from this review will then be incorporated into the establishment of Limits of Acceptable Use for accessing cultural areas within MMNP. These LAU will ensure that any cultural practises do not compromise the continued conservation of MMNP. Once developed, the LAU will be incorporated into a simple mechanism, developed by MMNP management in collaboration with community members, which will both facilitate and regulate access to cultural sites within the Park. These guidelines will help preserve traditional cultural and religious practices, while at the same time ensuring that these dispensations are not used as an excuse for illegal activities within the Park's borders.

Potential Impacts and Mitigation Measures for Target 1.4: Cultural diversity and richness preserved and promoted

Potential negative impacts	Mitigation measures
<ul style="list-style-type: none"> ▶ Increased MMNP habitat degradation as a result of cultural activities that are undertaken 	<ul style="list-style-type: none"> ▶ Ensure LAU are developed and implemented prior to new activities commencing ▶ Carry out periodic inspections along any trails and areas used to assess any negative impacts from increased use
<ul style="list-style-type: none"> ▶ Increased community access complicates or compromises MMNP resource protection 	<ul style="list-style-type: none"> ▶ Ensure clear, rigorous and easily enforceable regulations and LAU are established prior to access commencing

Objective 2: Threats to MMNP exceptional resources reduced through improved community-based natural resource management

The desired future state of MMNP is one where its surrounding areas are sustainably managed by communities in a manner that supports the conservation of MMNP exceptional resources. The two management targets designed to achieve this desired state aim to improve the community management of natural resources in the land adjoining MMNP, and improve the capacity of community based natural resource institutions. These are described in the following sections.

Target 2.1: Sustainable land-use and environmental practices promoted

As highlighted in the recent study “Participatory Socioeconomic Surveys of the Mahale Peninsula” (MEMP, 2004), the conversion of land around MMNP, to either permanent or seasonal agriculture, is the most important land-use issue impacting on both traditional livelihoods and MMNP exceptional resources. This conversion includes the clearing of forests for building properties and cultivating crops, either for sale (e.g. oil palm) or subsistence (e.g. beans, corn and sweet potatoes). Land conversion is particularly intense along the valley bottoms where exceptionally fertile soil is found. Alongside this agricultural intensification, unsustainable fishing practices have also recently emerged as communities have abandoned traditional scoop nets (*katale*) as a result of the introduction of new techniques such as lift nets, sardine (*dagaa*) beach seines, larger fish beach seines, and gillnets. Beach seine is illegal throughout Tanzania, as the fine-meshed nets catch juvenile fish, and the nets drag the bottom of the lake destroying fish breeding sites. However, due to logistical difficulties and constraints on resources, local government is currently struggling to enforce the beach seine ban, and to educate villagers on the detrimental consequences of unsustainable fishing techniques, and on appropriate methods for improving other land-use practises.

Although, open access woodlands and forests still exist in most Mahale peninsula communities, intrinsic population increase combined with immigration has placed these areas under increasing pressures. This has resulted in some important medicinal or timber tree species becoming extremely hard to find outside MMNP. As there is no locally available substitute for many of these resources, this situation is compelling villagers to enter the Park illegally in the search for these resources and negatively impacting on the environmental integrity of the Park.

In order to promote sustainable land-use and environmental practises in the areas surrounding the Park, the following two management actions have been developed:

Action 2.1.1: Collaborate with local government to improve land-use practices and address land-use conflicts in areas adjoining MMNP

As outlined above, local government is struggling with limited resources against difficult logistics to improve land-use and fishing practises in the areas surrounding the Park. MMNP management is well located to provide the district agricultural and community officers with logistical support to help improve their effectiveness, and consequently reduce the threats from unsustainable livelihood activities to the continued conservation of MMNP. Under this Action, MMNP management will liaise with the district agricultural and community extension officers to ensure that Park management activities and district programmes are compatible, establish where logistical support is needed, and will take necessary steps to ensure this support is provided.

Action 2.1.2: Develop tree nurseries to provide a sustainable substitute for species previously obtained from within MMNP

Currently community members are compelled to enter MMNP illegally in the search for specific tree species that have become increasingly difficult to find outside the Park. Under this Action, a nursery scheme will be developed in collaboration with local communities to provide an alternative sustainable source of locally important tree species. A review of similar tree nursery schemes will be undertaken, for example that run by JGI’s TACARE initiative in Kigoma, and their experiences and advice incorporated into the development of a similar scheme at Mahale. Species of high economic or medical importance will be identified, and the cultivation of seedlings established in close collaboration with local communities. The MMNP Community Outreach Department will provide ongoing technical support and training to improve the

potential of the established tree nurseries, and when appropriate will work with community members to establish harvest sharing modalities.

Target 2.2: Effective community-based natural resource institutions and planning supported

Weak community-based natural resource management institutions in the areas surrounding MMNP have hampered the development of effective measures to counter the unsustainable land-use practices described above. This is evident in a lack of village land-use management plans and natural resource byelaws, the poor enforcement of natural resource byelaws that do exist, and many village boundaries remaining unsurveyed, which precludes the development and enforcement of these regulatory measures. This situation is contributing to the environmental degradation of areas adjacent to MMNP, which has the increasing potential to impact on the Park's natural resources.

The following three management actions have been developed to help strengthen community based natural resource institutions:

Action 2.2.1: Strengthen existing CBNRM committees in the surrounding communities

Community based institutions need to be strengthened to enable them to operate effectively, and improve the sustainability of land-use practices in the areas surrounding the Park. In this regard, it is important that the MMNP Community Outreach Department works through existing village institutions that are endorsed by the national government or embedded in traditional society.

Various committees, including the VEC, are mandated to take the lead on village environmental issues and to support and advise the VC decision makers. The VEC concept is quite new to Mahale-adjacent communities, but with government directives dictating the formation of VECs specifically to control illegal fishing practices, these institutions will soon be established in all villages around MMNP. VECs have the potential to reach a wide village audience due to their constant presence in the communities, which could make them a highly influential conservation partner.

The strengthening of community NRM institutions, such as the VECs, and provision of support for community-based planning is a major component of the ongoing 5-year Mahale Ecosystem Management Project (MEMP), being implemented by TANAPA, and the Frankfurt Zoological Society with financial assistance from the European Union. Although lead responsibility for community NRM institutional strengthening and land-use planning aspects of this project lies with Kigoma Rural District, as the mandated agency for community development in the area, MMNP management will play an important role in supporting these efforts through cooperation with Kigoma Rural District, by, for example, the provision of technical support.

Through this Action, the MMNP Community Outreach Department will work in conjunction with MEMP community officers to strengthen the VECs so that they become both authoritative and significant within their communities. This will involve identifying and providing necessary training to committee members in community leadership, administration and management, alongside the provision of appropriate logistical and technical assistance to support their activities.

Action 2.2.2: Support communities in surveying and registering village boundaries

The registering of village boundaries is an essential precursor to the development of village byelaws and land-use plans. Under this Action, communities will be identified that wish to

undertake village surveys. Working in collaboration with the MEMP project and relevant district extension staff, the MMNP Community Outreach Department will provide assistance to these villages in the form of technical advice and logistical support for the surveying and official registering of village boundaries. The Department will also promote the advantages of surveying village boundaries, and the support that MMNP management can offer, to villages that have not yet shown interest in undertaking surveys, with the eventual aim of surveying and registering all village boundaries adjacent to the Park.

Action 2.2.3: Support communities to prepare and implement land-use plans

Village land-use plans are a valuable tool for regulating the use of natural resources on community lands. Land-use planning is a relatively new concept in many villages surrounding the Park, and as such the MMNP Community Outreach department will raise community awareness of its importance and potential as part of their wider conservation awareness activities. The official responsibility for the development of land-use plans lies with Kigoma Rural District Land Use Planners who must undertake a land use planning exercise and obtain official endorsement of village plans. However, working in collaboration with the MEMP project, the MMNP Community Outreach Department will facilitate the development of land-use plans by providing logistical support to these officers, facilitating field visits to areas around the Park, and by periodically monitoring and assessing the effectiveness of any land-use plans developed.



PARK OPERATIONS PROGRAMME

Programme Purpose: Efficiency and effectiveness of MMNP park operations enhanced and their environmental impacts minimised

Park Operations strategy

The Park Operations strategy seeks to align the development of park infrastructure, services and operations with the programme purpose described above and with relevant national policies. The aim of this strategy is to provide a general statement of principles and policy to guide the Park Operations Programme over the next 10 years.

The principal national policy-level instruments that the Park Operations strategy needs to take into account are: the National Policies for National Parks in Tanzania (TANAPA, 1994); the Development-Action-Lease Procedures (TANAPA, 1995b), the Environmental Impact Assessment (EIA)/Pragmatic Environmental Assessment (PEA) guidelines (NEMC, 1997), and the Tanzania Wildlife Policy (1998).

The Park Operations strategy incorporates a set of principles designed to achieve the programme purpose and to ensure alignment with national policies and strategies, as described below:

Protection of park resources

MMNP conserves a huge diversity of natural resources, some found nowhere else on earth; however, local communities surround the Park and a number of their members are involved in the illegal extraction of these wild resources. In response, MMNP management will protect these resources for present and future generations, by supporting non-consumptive in-park activities and strengthening MMNP law enforcement. This will be achieved by increasing the number of rangers, improving ranger training and equipment, and the development of infrastructure to support law enforcement patrols. Mechanisms will also be developed to ensure that the entire Park is patrolled in a systematic manner. These factors will combine to create a more effective and efficient force, with the capability to cover the entire area of MMNP. In order to improve the effectiveness of these measures, the enforcement of laws affecting the access and use of MMNP will take a coordinated and collaborative approach with both local communities and other law enforcement institutions operating in the surrounding area.

Impacts from in-park developments

One of the major factors setting MMNP apart from other more accessible parks is the opportunity for visitors to view wildlife in a pristine wilderness setting. However, although limited in number and size, many of the buildings within MMNP are located in key tourist areas. Many of these facilities have not conformed to TANAPA national policy, with neither a site plan in place nor having been subject to an EIA. As a result particular in-park developments are having a disproportionate impact on MMNP visitor experience. In order to ensure any future structures

have the minimal detrimental impacts on both visitor experience and MMNP biodiversity, they will be located outside of the Park wherever possible. The impacts of those developments that remain within MMNP will be mitigated by ensuring that they conform to TANAPA national policies, and through the improvement of the Park's in-house EIA capacity.

Staff welfare and morale

Whilst MMNP's remoteness has many attractions for visitors, as a place of work it presents many challenges. Poor transport links with outside centres, and difficulties in communication combine to create an isolated environment, which can have negative impacts on staff morale, and consequently their ability to perform to their maximum potential. This is especially pertinent for staff members whose families have not accompanied them to the Park. In order to ensure staff remain motivated and committed to their work, Park management will seek to meet its obligations to MMNP employees through providing adequate housing; ensuring that park staff have the necessary equipment to safely and effectively carry out their duties; and by providing training and improved social services and amenities. Accompanied by enhancements in transport and communications, these measures will help improve the morale, safety, and ability of MMNP staff to carry out their jobs, and create a dedicated and disciplined workforce.

Working collaboratively

Effective communication and collaboration with the various institutional stakeholders operating in and around the Park is essential for the efficient management of MMNP. This will become increasingly important as many of the actions developed through this GMP will impact on the Park's stakeholders, and require cooperation for them to be implemented effectively. The relatively small number of MMNP institutional stakeholders makes it much easier for all parties to communicate effectively with each other and to harmonise their activities. Regular meetings between Park stakeholders will help ensure that their activities are working towards mutually compatible aims, and the successful implementation of this GMP.

These guiding principles of the MMNP park operations strategy provide the basis for the **objectives** of the Park Operations Programme that define the future desirable state at MMNP and address the relevant problems and issues facing MMNP management. The five objectives are:

1. **Protection of MMNP resources enhanced** in collaboration with neighbouring communities
2. **Negative impacts** on the environment and visitor experience **from in-park developments minimised**
3. Working and living **conditions of MMNP staff improved**
4. MMNP is served by **good internal and external transportation and communication networks**
5. **MMNP stakeholders are collaborating** to reduce conflict and to ensure their activities within MMNP are mutually compatible

In order to meet these objectives for the Park Operations Programme, a series of 10-year **management targets**, with accompanying **management actions**, have been formulated, as described in the following sections. For each management target there is a brief description of the relevant management issues and opportunities, which provide the specific context and justification for the management actions. Section G.4 contains the **3-Year Action Plan** for the Park Operations Programme, and lists the activities, responsibilities, timeframe and input requirements necessary for the completion of the management actions.

Objective 1: Protection of MMNP resources enhanced in collaboration with neighbouring communities

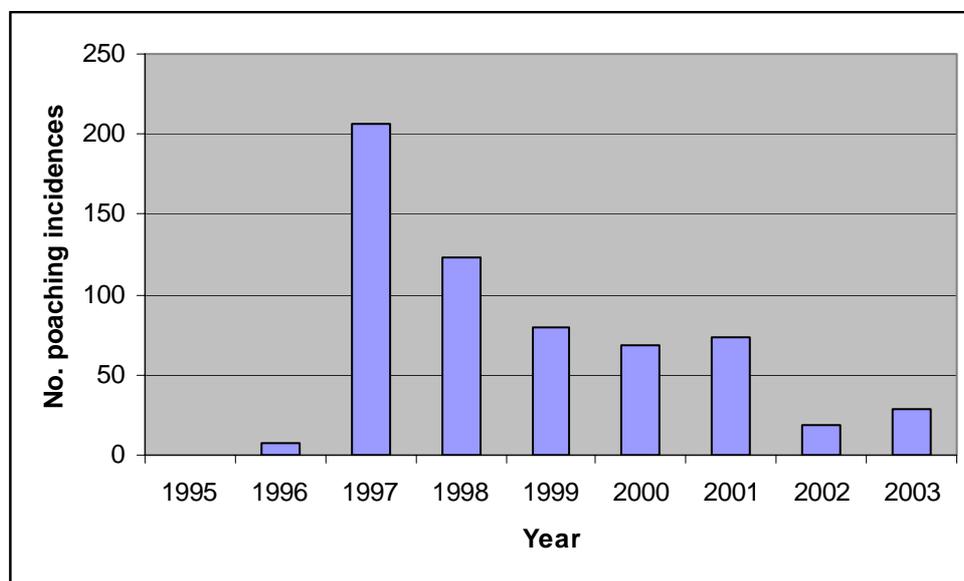
The desired future state of MMNP is one where the park's resources are well protected by an efficient and effective ranger force, enhanced by effective collaboration with park adjacent communities and external law enforcement agencies. Two management targets have been developed to help achieve this desired state focusing on developing MMNP's ranger force and improving law enforcement collaboration. These are described in the following sections.

Target: 1.1: MMNP ranger effectiveness and capacity improved

The Protection Department is the largest department at MMNP, with one Protection Warden and 27 rangers. As shown in Figure E.1, MMNP rangers are currently located at three stations located around the Park's boundary. At present, fifteen rangers and the Protection Warden are based at Park Headquarters at Bilenge, six rangers are located at the Ikamba outpost on the northern boundary of the Park, and six rangers are positioned at Mabilibili outpost near the Park's southern border

Figure F.1 below shows the number of poaching incidences at MMNP between 1995 and 2003. It is estimated that over 95% of people illegally entering the Park do so to poach fish. A further 3% of poachers are thought to be tree cutters primarily entering the Park to fell 'ndalai', long poles used to join two fishing boats together when fishing for 'dagaa' (sardines). The remaining 2% of poachers are arrested for the illegal removal of animals, firewood and grass for thatching.

Figure F.1: Number of poaching incidences at MMNP between 1995 and 2003



Although Figure F.1 indicates that poaching of natural resources is not currently a severe problem in MMNP, many poachers may be illegally entering MMNP and evading capture due to the irregular patrolling of the Park's entire boundary. At present it is very difficult to compare the level of poaching between years, as the variation in ranger effort is not known. Figure F.1 shows that between 1997 and 2001, the number of poachers captured was much higher than in 1995, 1996, 2002 and 2003. However, it is not clear whether this increase was due to an increase in ranger effort, or whether ranger effort remained constant and the number of people entering the Park illegally increased.

The following two management actions have been developed to address these issues:

Action 1.1.1: Develop and implement a programme of comprehensive ranger patrols, with particular attention to MMNP's eastern boundary

A well-planned programme of ranger patrols is necessary to ensure that the entire park is patrolled systematically, and that ranger effort is recorded to enable an effective comparison of law enforcement success between years. MMNP rangers have already been trained in the use of GPS enabling them to log patrol routes. This information will be collected and compiled in order to identify areas that patrols are currently missing, and enable their subsequent adaptation. In addition, a new ranger post will be constructed along the Park's eastern boundary to support law enforcement patrols in this logistically difficult area.

Action 1.1.2: Establish a ranger-based information system to collect information of benefit to other department programmes

The development of a comprehensive programme of patrols will increase ranger presence across the entire Park. Consequently, the Park's rangers will in very real terms be the eyes and ears of Park Management, not just for the Protection Department but also for other MMNP departments that need first-hand and up-to-date information from the field, such as the Ecological Monitoring Department, or the Community Outreach Department. This issue will be addressed through the development of mechanisms enabling rangers to collect specific information of interest to other MMNP departments during the course of their normal duties. A system will be developed between the Tourism Warden, Park Ecologist and Protection Warden, in consultation with the rangers themselves for collecting, compiling and disseminating data collected back to the relevant departments.

Target: 1.2: Cooperation with local communities and external agencies in law enforcement and intelligence gathering enhanced

In the past MMNP boundaries have been poorly demarcated, exacerbating encroachment and illegal activities in the Park. Amongst other offences, local community members have been apprehended within the park for growing crops, removing timber and extracting firewood. The reason often stated for these incursions is that the Park boundary is unclear. Incidences of encroachment are likely to increase concomitantly with rising human populations and a growing scarcity of natural resources in the park-adjacent community areas.

Due to the remoteness and difficulty in accessing many parts of MMNP, especially around the eastern landlocked border, a purely enforcement approach to park protection is unlikely to be completely effective. MMNP management has recognised this problem and is developing a collaborative approach to law enforcement at MMNP through the creation of the MMNP intelligence section, overseen by the Protection Department. This section has already started on intelligence gathering together with the local communities and is supplementing MMNP law enforcement activities through the collection and analysis of information, production of intelligence outputs, and by recommending actions to be taken. However, this initiative is still in its infancy and the potential benefits it can contribute in support of MMNP law enforcement activities are yet to be fully realised.

The following three management actions have been developed to enhance cooperation with local communities and others in park protection initiatives:

Action 1.2.1: Maintain MMNP boundary demarcation to ensure it is easily visible on the ground

Permanent beacons have now been placed along MMNP's boundary ensuring that it is easily visible to community members living around the Park. These beacons now need to be maintained and kept clear so that the boundary remains easily identifiable and future unintentional incursions into the park are prevented. Under this Action, periodic maintenance and clearance of the boundary will be carried out by MMNP staff working with locally-hired labourers.

Action 1.2.2: Develop an effective intelligence gathering system

The MMNP intelligence section has been established to help reduce the incidence of illegal activities in MMNP, but is currently hampered by a lack of appropriate training and funds. Under this GMP, intelligence gathering at MMNP will be expanded through the development and maintenance of a network of collaborators who can provide information on illegal activities taking place within MMNP. This system will be fostered through the implementation of an appropriate reward system.

A further priority for the strengthening of the intelligence section is the provision of intelligence gathering training to protection rangers; this is addressed under Action 3.1 below.

Action 1.2.3: Improve collaboration and understanding with external law enforcement agencies and institutions

In order to make MMNP law enforcement efforts as effective as possible, they need to be coordinated and where possible linked to external law enforcement agency activities. This is in line with TANAPA national policy, which states that “*close co-operation will be maintained between the Law Enforcement Department and the Police, Judiciary, and other government departments*”. In order to enable such collaboration, MMNP management will hold regular meetings with external law enforcement agencies operating in the area aimed at improving the coordination of their respective activities. MMNP management will also investigate ways through which appropriate logistical support can be provided to law enforcement agencies operating around MMNP, which will help reduce illegal activities both inside and outside the Park. Alongside these activities, visits to MMNP by local magistrates' will be organised to enhance their understanding of park rules and regulations, and the logistical and technical difficulties of law enforcement in such a remote area.

Objective 2: Negative impacts on the environment and visitor experience from in-park developments minimised

The future desired state of MMNP is one where in-park developments are compatible with the wilderness characteristics of MMNP, and are not impacting on MMNP visitors' experience, or detracting from the environmental quality of the Park. Two management targets have been developed to achieve this desired state, which focus on redeveloping the Park's research station, and reducing the environmental impacts from other developments within MMNP. These targets are described in the following sections.

Target 2.1: High quality and environmentally sensitive research and visitor facilities developed at Kasiha

The research centre at Kasiha presently houses TAWIRI and Kyoto University support staff and their families, as well as a number of TANAPA trackers/guides. It is located in the core tourist area of the Park, close to both the TANAPA bandas and the core habitat of the Park's habituated chimpanzee group. This research station is an unattractive sprawling facility that creates an extremely poor impression of MMNP to park visitors about to embark on chimpanzee tracking, and is potentially having a number of negative impacts on MMNP's environment.

The following management action has been developed to achieve this target:

Action 2.1.1: Redevelop Mahale Research Centre, in cooperation with all relevant stakeholders, and subject to EIA

There is a pressing need to redevelop the entire Kasiha area, and create an aesthetically pleasing and environmentally benign research centre, which will not detract from the MMNP visitor experience or compromise the environmental quality of MMNP. Under this management Action, a plan will be developed for the new Mahale Research Centre. (This plan will be developed in conjunction with Action 3.1.1 of the Tourism Management Programme, under which the MMNP visitor centre is relocated to the Kasiha area.) Initially, an inventory of staff and their families currently residing at the centre will be carried out. This will lead to the development of LAU for essential staffing and families permitted to stay in the area, and the rehousing of any remaining non-essential staff outside the Park. Subsequently, many of the existing facilities will be demolished and new buildings constructed in accordance with site and architectural plans developed. This redevelopment and subsequent landscaping initiative will be preceded by an environmental impact assessment of the facility, incorporating recommendations to improve the aesthetics of the buildings. The modalities of how the Mahale Research Centre will be used and managed will be developed between TANAPA, TAWIRI, FZS and MMCRP.

Potential Impacts and Mitigation Measures for Target 2.1: High quality and environmentally sensitive research and visitor facilities developed at Kasiha

Potential negative impact	Mitigation measures
<ul style="list-style-type: none"> ▶ Destruction of habitat, particularly evergreen forest, during facility construction 	<ul style="list-style-type: none"> ▶ Ensure development is preceded by a comprehensive EIA ▶ Ensure all construction-related staff are housed outside the Park and transported to the site daily ▶ Limit construction site area to the smallest feasible ▶ Avoid unnecessary ground disturbance to minimise damage on vegetation and soils ▶ Restore any borrow pits or spoil areas with natural vegetation

Target 2.2: TANAPA site planning and environmental impact procedures implemented

TANAPA policy requires the preparation of an EIA for all developments within and adjacent to national park boundaries, including park management facilities. This requirement is reinforced by the Tanzania Wildlife Policy, which requires all ‘*significant*’ development proposals within Tanzania’s protected areas to be subjected to EIA. Based on the Development-Action-Lease Procedures (TANAPA, 1995b), all developments that involve the construction of buildings in a park can only be carried out after a report has been made available on the site-specific environmental impact assessment (EIA) and the Pragmatic Environmental Assessment (PEA). No major development in the Park, by either MMNP management or private investors, can be carried out without these studies. To date, these policy requirements have not been implemented at MMNP, which could potentially lead to serious impacts on the park’s environment.

The following two management actions have been developed to address these issues:

Action 2.2.1: Prepare a site plan for MMNP HQ and any other major developments in the park

In order to ensure that MMNP HQ is developed in a co-ordinated and logical manner, a site plan will be developed and implemented for the future development of the area. This plan will also help ensure that the HQ’s visual and environmental impacts are kept to a minimum. A suitable expert will be hired by MMNP management to assist Park managers in undertaking this exercise, and the resulting plan implemented by MMNP management.

Action 2.2.2: Carry out EIA of MMNP HQ, and existing ranger posts where required

Along with the requirement for EIAs of current tourism infrastructure within MMNP, addressed through the Tourism Management Programme under Management Target 2.1, assessments also need to be applied to park management facilities, and appropriate measures taken to reduce the impacts as recommended. This will be achieved through the training of selected senior park staff in TANAPA EIA/PEA procedures, who will then ensure that these procedures are enforced during all major future developments. In addition, an EIA/PEA will be required for all existing infrastructure, to ensure conformity to environmental standards. The EIA/PEA process will take account of the criteria and guidelines established by the National Environment Management Council (NEMC, 1997).

Objective 3: Working and living conditions of MMNP staff improved

The future desired state of MMNP is one where it is staffed by a highly trained and motivated workforce, supported by a good standard of social services and amenities. In order to achieve this, two management targets have been developed which address the training and number of MMNP staff, and the improvement of MMNP staff facilities and amenities. These are described in the following sections.

Target 3.1: Training needs and staffing requirements for each department are met

The provision of training opportunities (in situ training, and short and long training courses) is a crucial aspect of TANAPA staff development and the maintenance of staff morale, especially in

isolated locations such as MMNP. Ensuring that all staff members are adequately trained to carry out their jobs in a safe and professional manner is also vital for the effective running of MMNP. TANAPA HQ identifies and arranges short-term training opportunities for field-based staff and sends requests to MMNP management to send appropriate representatives on these courses.

MMNP presently has a staff complement of 49, the majority of who are rangers in the Protection Department or specialist workers in the Administration and Works Department. This level of staffing, while adequate in the past, is no longer sufficient to meet the human resource requirements of managing an expanding tourism industry and the needs to cooperate effectively with a burgeoning human population around the Park. This GMP advocates that additional staff will need to be recruited in the next few years to fill existing gaps, address new management challenges, and effectively implement the management actions defined in this GMP.

The following two actions have been developed to ensure that the training needs and staffing requirements for each department are met:

Action 3.1.1: Implement staff training programme

A detailed self- assessment of the training needs of MMNP employees has already been carried out and is presented in Annex 4. As shown, MMNP staff indicated that they would benefit from a variety of short-term training courses including: swimming; first aid; mountain search and rescue; boat maintenance, handling and repair; and computers. Improvements in the capacity of park guides and the MMNP intelligence section have been highlighted under the relevant sections of this GMP as being of particular importance for the effective implementation this GMP. Accordingly MMNP management will ensure that whenever possible and appropriate, the capacity of MMNP staff will be developed through the provision of training to meet the needs identified in this assessment and throughout this GMP.

Action 3.1.2: Recruit new staff as per Staffing Needs schedule

The current staffing level at MMNP and the estimated staffing requirement to effectively implement the actions under this GMP are shown in Table F.1 below.

Table F.1: Current MMNP staffing levels and estimated staffing requirements

Department	Staff Member/s	Present Number	Target Number
	Chief Park Warden	1	1
Ecological Monitoring Department	Park Ecologist	1	1
	Junior Ecologists	0	1
Protection Department	Protection Warden	1	1
	Rangers	24	35
Tourism Department	Tourism Warden	1	1
	Guides	1	3
	Assistant Park Attendants	4	4
Community Outreach Department	Community Outreach Warden	1	1
	Community Conservation Assistant	0	1
Administration & Finance Department	Park Accountant	1	1
	Assistant Accountant	0	1
	Information Technology Officer	0	1
	Clinical Officer	1	1
	Accounts Technicians	3	3
	Secretary	1	2

	Assistant Park Attendants	2	2
Stores-Works Department	Boat drivers	4	5
	Mechanic	0	1
	Electrical Technicians	0	1
	Artisan	1	0
TOTALS		47	67

MMNP management will liaise with TANAPA HQ Human Resources personnel to have these staff incorporated into official TANAPA human resource establishment schemes, and thereafter to expedite the recruitment of these additional staff.

Target 3.2: MMNP staff accommodation, facilities and welfare improved

While the remoteness of MMNP is of great appeal to short-term visitors to the Park, and has helped preserve the wilderness nature of the Park, the isolation has the potential of undermining the morale of TANAPA staff on long-term assignment at MMNP. This is particularly pertinent for MMNP staff members whose families have not accompanied them to the Park. TANAPA and MMNP management recognises that the accommodation and amenities provided for staff have a significant role to play in countering the problems of remoteness and in building morale, however some of the accommodation remains of low quality and recreational facilities for staff members are minimal.

The following four actions have been developed to address these issues and improve MMNP staff accommodation and the facilities available:

Action 3.2.1: Upgrade staff accommodation

Some of the houses at MMNP HQ are of an inadequate standard and need to be upgraded. Of primary importance in this regard is upgrading the uniports and other temporary housing to permanent modern housing, which will be completed under this Action. In conjunction with the development of these houses, Phase 2 of Park HQ water supply scheme will also be implemented to ensure that all houses are supplied with running water. As the number of staff at MMNP expands, in-line with the needs outlined above under Action 3.1.2, new housing units will be constructed to accommodate these staff increases.

Action 3.2.2: Develop the MMNP Staff Welfare Centre

The current visitor centre is used as a *de-facto* social centre for MMNP staff. While it was not originally developed for this purpose, it is ideally located to provide this valuable facility for MMNP staff. Through this GMP, the official MMNP visitor centre will be developed at Kasiha in a location much more suitable for tourist use. This will enable the existing centre to be developed as a staff welfare centre. In order that this centre is able to meet the needs of MMNP staff, a survey will be undertaken of staff and their families to establish what facilities and services should be developed at the Staff Welfare Centre. The most popular, appropriate and affordable of these suggestions will then be developed for the benefit of all MMNP resident staff and families.

Action 3.2.3: Improve schooling for MMNP staff children

The proper schooling of MMNP staff children is of particular importance to staff members whose families reside with them at MMNP. The Park does run a kindergarten for children living at MMNP, but its facilities are currently limited. Through this action, these facilities will be improved to provide a better educational environment for children who attend the kindergarten. Methods will also be investigated for providing appropriate logistical or financial support to improve local

primary schools, which will not only enhance the opportunities for children of MMNP staff, but also help improve relationships with the surrounding communities.

Action 3.2.4: Improve health facilities and services

TANAPA HQ produces HIV prevention educational materials for Park staff. MMNP management will ensure that these materials are provided to staff at MMNP, in order to ensure they are aware of simple measures they can take to prevent infection.

Potential Impacts and Mitigation Measures for Target 3.2: MMNP staff accommodation, facilities and welfare improved

Potential negative impact	Mitigation measures
<ul style="list-style-type: none"> ▶ Environmental degradation as a result of facility construction 	<ul style="list-style-type: none"> ▶ Ensure development is preceded by an EIA ▶ Limit construction site area to the smallest feasible ▶ Avoid unnecessary ground disturbance to minimise damage on vegetation and soils ▶ Restore any borrow pits or spoil areas with natural vegetation
<ul style="list-style-type: none"> ▶ Disturbance to freshwater systems as a result of increased extraction for consumptive use 	<ul style="list-style-type: none"> ▶ Monitor extraction rates through the installation of a flow meter ▶ Monitor any impacts of extraction on riverine flora and fauna (link with Ecological Monitoring Plan, see Objective 2 of Ecosystem Management Programme) ▶ If necessary, investigate ways of regulating water use if extraction is excessive

Objective 4: MMNP is well served by good internal and external transportation and communication networks

The desired future state for MMNP is one where the Park is served by good communication and transportation networks, enabling MMNP staff to carry out their duties safely and effectively. In order to achieve this objective, two management targets have been developed, which focus on improving transport and communications within and outside of MMNP. These are described in the following sections.

Target 4.1: Transport and communication links within and around the park improved

As described previously, large parts of MMNP and its environs are extremely difficult for MMNP staff to access, mainly due to the limited transportation infrastructure in the area and a lack of park transport facilities. This presents many MMNP staff members with serious logistical problems when trying to carry out their assigned tasks; particularly the Park’s ranger patrols and

community outreach activities, both of which require MMNP staff to cover wide geographical areas. These logistical difficulties are often compounded by communication problems between MMNP staff and HQ when in the field, due to an unreliable VHF radio system.

In order to address these problems and improve transport and communication within the Park, the following management actions have been developed:

Action 4.1.1: Provide adequate equipment for efficient staff transportation within MMNP

It is the responsibility of the Park Operations Programme to ensure sufficient equipment is available to MMNP staff to enable them to effectively and safely carry out their duties. MMNP managers have estimated the additional transportation equipment required to implement the actions defined under this GMP as follows:

- ▶ 6 small boats (over 3 years)
- ▶ 6 motorbikes (over 3 years)
- ▶ 1 4x4 vehicle to support the new Ranger Post on eastern boundary (if the proposed road to the east of the Park is constructed)

The equipment needs of the Park will be assessed annually, and any additions or amendments to this provisional list made accordingly.

Action 4.1.2: Extend and improve the VHF radio system

Communications between MMNP staff within the park are currently unreliable, complicating the logistics of park operations, and potentially compromising the safety of MMNP staff (and visitors) while in the field. In order to address this issue, this Action will ensure that all ranger posts are covered by in the VHF radio network, and that the reliability of the repeater system is improved.

Target 4.2: Transport and communication links between MMNP and outside centres improved

Road access to MMNP is at present extremely difficult. Although there are plans for the development of a road that will pass to the east of the Park linking villages to the south of MMNP with Kigoma, until these plans come to fruition the only means to get in or out of the Park are by air or on the lake. The vast majority of tourists to the park arrive on charter flights, however these are often full and extremely expensive, as such it is impossible for the majority of park staff to take advantage of them. There is a TANAPA plane stationed in the region but for the majority of the time it is based at Katavi National Park, which is equally as inaccessible as MMNP. Consequently, most staff, and the majority of Park supplies, enter and leave the Park on the lake. Until recently this has meant depending on the public ferry service, which runs the length of the lake. However, this service is both inconvenient, as the closest stop is still a considerable distance from Park HQ, and unreliable; the ferry can be out of service for months at a time. This situation can leave Park staff feeling isolated and particularly at risk if there is a medical emergency. It also creates logistical complications for keeping the Park supplied with day-to-day essentials, such as fuel, medicines and a variety fresh produce.

The following two management actions have been developed to address these issues:

Action 4.2.1: Improve MMNP transportation infrastructure and equipment

A fast and reliable boat has now been acquired by MMNP that is appropriate for transport to Kigoma. This will address many of the issues described above and make the transportation of staff and supplies much easier. In order to ensure that the boat remains in good working order, MMNP’s harbour facilities will be improved, which will include appropriate mooring for the boat and a wave-breaker. This is essential as the lake can get extremely rough and this has previously caused considerable damage to MMNP boats. Access to the Park by air will be improved by upgrading the airstrip, which is currently quite small, so it can accommodate larger aircraft.

Action 4.2.2: Establish a reliable mechanism for emergency evacuation

The Park’s transportation difficulties could have very serious consequences if a medical emergency occurs and efficient mechanisms for the emergency evacuation of staff or tourists have not been established. This will be addressed under this GMP through the establishment of a procedure with Katavi NP to enable priority use of the TANAPA plane in case of emergencies. In conjunction, possible support that local medical organisations (e.g. MAF) can provide will be investigated, and appropriate links between these organisations and MMNP established to facilitate emergency evacuation from the Park.

Action 4.2.3: Improve telecommunication links to/from MMNP for staff use

In order to help MMNP staff communicate with their families, options for improving communication links from MMNP to the rest of Tanzania will be investigated. Any improvements in telecommunications could hold potential benefits not only for MMNP staff on a personal level, but also improve the effectiveness of park management. Realistically, given the Park’s remoteness and the low population density in the area, it will be a long while before a mobile phone network covers the park. MMNP does however have a good satellite Internet connection, and a possible alternative to conventional calling is the use of “internet phones”, which are also cheaper than regular calls. Technology is now available that is especially designed to facilitate making telephone calls over the Internet. The caller can connect through a regular telephone handset, which removes the problems of needing computer skills and, because it can connect directly to the public telephone network, the person receiving the call does not require an Internet connection. The potential and appropriateness of this method of communication for MMNP staff will be investigated, and if appropriate a mechanism for MMNP staff to make use of this facility developed.

Potential Impacts and Mitigation Measures for Target 4.2: Transport and communication links between MMNP and outside centres improved

Potential negative impact	Mitigation measures
<ul style="list-style-type: none"> ▶ Environmental degradation during harbour construction 	<ul style="list-style-type: none"> ▶ Ensure any developments are preceded by an EIA ▶ Limit construction site area to the smallest feasible ▶ Restore any borrow pits or spoil areas with natural vegetation

Objective 5: MMNP stakeholders are collaborating to reduce conflict and to ensure their activities within MMNP are mutually compatible

The desired future state of MMNP is one where MMNP institutional stakeholders, especially those operating within the Park, are coordinated and effectively working together to ensure the Park's long-term conservation. The role of MMNP management will have been central in instigating and coordinating this cooperation. The management target to achieve this desired state will focus on developing a mechanism to enable cooperation and collaboration between stakeholders within MMNP, and is described below.

Target 5.1: Communication and cooperation between park management, tourism operators, FZS and researchers strengthened

Compared with many national parks in Tanzania, MMNP has relatively few stakeholders operating within the Park, currently limited to the three tourist concession holders, scientific researchers (MMCRP and TAWIRI), FZS who provide logistical and technical support to the Park, and MMNP management. However, although the number of stakeholders is relatively few, the vast majority of their activities are all located close together in the north-west of the Park. At present these stakeholders are not effectively communicating with each other, which creates the risk that their respective activities will conflict with or undermine each other. As the various actions developed through this GMP are implemented, the need for effective communication between these parties will increase - in order to assess the effectiveness of the GMP's actions, allow for adaptive management based on the inputs of a full cross-section of stakeholders, and enable the best possible use of the resources and opportunities initiated under this plan.

In order to address this issue the following management action has been developed:

Action 5.1.1: Establish communication mechanisms between MMNP management, tour operators, FZS and scientific researchers in the Park

To improve cooperation and collaboration between the main stakeholders in MMNP (MMNP management, tour operators, FZS and scientific researchers), a mechanism will be developed to provide a formal method of communication between these parties. The relatively small number of stakeholders in the Park makes the logistics of developing this mechanism much simpler than in many other parks. Appropriate representatives will be selected to attend meetings between these stakeholders, which will take place on at least an annual basis, and more often as required. The number of representatives will be kept to the minimum possible, in order to keep the process as expedited as possible. The location, dates and agenda items for these meetings will be circulated to the participants in good time before the meeting, to ensure that they can attend and have the opportunity to add items to the agenda they would like discussed. In addition, efforts will be made to improve VHF radio communication between the various stakeholders for more *ad hoc*, day-to-day communication.



3-YEAR ACTION PLANS

General Management Plans typically define the long-term vision for a national park but often fail to provide practical and concrete actions to undertake in the short-term to achieve this vision. To address this need, 3-year Action Plans have been established for each of the four GMP Management Programmes to provide a guide for those who manage SENAPA on a daily basis.

Each Action Plan is organised by Programme Objectives and Management Targets to ensure that they are clearly linked to the GMP’s 10-year strategic framework (see Sections C-F above). The 10-year **Management Actions** from the GMP’s strategic framework provide the high-level actions to be implemented on a day-to-day basis. It is expected that good progress will be made in implementing these actions under the initial 3-year Action Plans, however, it is intended that many of the actions will be rolled forward for completion in the subsequent Action Plans for this GMP. Where appropriate, each action has been broken down into a series of **3-year Activities** to facilitate the action’s implementation and to aid their incorporation into the Park’s Annual Operations Plans.

This section provides the initial 3-year Action Plans for each of the four management programmes, with the timeframe on which Management Actions and Activities will occur, the necessary input requirements and the allocation of responsibility for implementation.

Table G.1: Ecosystem Management Action Plan

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: Threats to the long-term conservation and ecological viability of MMNP Conservation Targets abated															
1.1: Risk of disease transmission and	1.1.1: Ensure mechanisms to regulate chimp viewing developed under Tourism Management Target 1.1 are implemented														

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
impacts from human disturbance on MMNP's chimp population minimised	1.1.1.1: Ensure chimp viewing LAU (Tourism Management Action 1.1.1) are implemented	Transport, Fuel, Copies of LAU, Awareness/Educational Materials, Tour Operator/MMCRP Collaboration	PE, TW, Guides	█	█	█	█	█	█	█	█	█	█	█	█
	1.1.1.2: Ensure chimp viewing regulations (Tourism Management Action 1.1.2) are implemented	Transport, Fuel, Copies of LAU, Awareness/Educational Materials, Tour Operator/MMCRP Collaboration	PE, TW, Guides	█	█	█	█	█	█	█	█	█	█	█	█
	1.1.2: Undertake a study of the impacts on chimpanzees by visitation, and incorporate recommendations into revised LAU														
	1.1.2.1: Develop ToR for a study examining the effects of visitation on chimps	Relevant Documentation, Technical Expertise	PE, PrE, TW, MMCRP	█											
	1.1.2.2: Liaise with MMCRP, MEMP and Virginia Polytechnic regarding study implementation	Relevant Documentation, Technical Expertise	PE, TW		█										
	1.1.2.3: Facilitate researcher/consultant collection of baseline data, according to study ToR	Transport, Fuel, Labour	PE, PrE, TW, MMCRP			█	█								
	1.1.2.4: Facilitate subsequent data collection and analysis, according to study ToR	Transport, Fuel, Labour	PE, PrE, TW, MMCRP					█	█	█	█	█	█	█	█
	1.1.2.5: Review study recommendations with MMCRP and tour operators	Relevant Documentation, Technical Expertise	PE, PrE, TW												█
1.1.2.6: Adapt existing regulations according to the study's recommendations, and stakeholder contributions	Relevant Documentation, Technical Expertise	PE, TW												█	

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	1.1.2.7: Develop a Disease Outbreak Plan defining emergency responses and responsibilities	Relevant Documentation, Technical Expertise	PE, PrE, MMCRP												
	1.1.3: Minimise contact between MMNP's baboon populations and human settlements in the park 1.1.3.1: Implement measures to reduce the risk of baboons stealing human food and garbage	Appropriate Garbage Disposal System, Construction Materials, Transport, Fuel	PE, PrE												
1.2: Exotic species in MMNP eradicated	1.2.1: Eradicate <i>Senna spectabilis</i> from MMNP 1.2.1.1: Prioritise critical areas for focusing efforts to reduce <i>Senna spectabilis</i>		PE, Technical Expertise, TANAPA HQ MEM	Already completed											
	1.2.1.2: Girdle individual trunks and remove seedlings and seedpods in selected areas	Labour, Transport, Fuel, Camping Equipment, Tools, Herbicides, Allowances	PE, TANAPA HQ MEM												
	1.2.2: Implement measures to gradually remove other exotic tree species in MMNP 1.2.2.1: Establish baseline data on the distribution and abundance of exotic trees, other than <i>Senna</i> , in MMNP	Survey, Survey Equipment, Labour, Transport, Fuel, Camping Equipment, Allowances	PE												
	1.2.2.2: Develop a plan for prioritising the systematic removal of these exotic species	Technical Expertise	PE												
1.3 Human impacts on	1.3.1 Regulate the extraction of water from MMNP streams and rivers														

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
MMNP freshwater Conservation Targets are minimised	1.3.1.1: Subject all future applications for use of MMNP surface water to an EIA	Training/Technical Expertise	PE												
	1.3.2 Minimise sources of pollution from within activities and developments MMNP														
	1.3.2.1: Develop and enforce restrictions on washing clothes and disposal of human wastes in the lake	Transport, Fuel, Awareness/Educational Materials, Park Staff/Tour Operator/MMCRP Collaboration	PE												
	1.3.2.2: Carry out an EIA of existing in-park developments on lake and stream water	Training/Technical Expertise	PE												
	1.3.2.3: Ensure EIA coordination with EIAs implemented under Action 2.1.2 of the Tourism Development and Management Programme, and Action 2.2.2 of the Park Operations Programme		PE												
	1.3.2.4: Implement EIA recommendations to reduce risks of lake and groundwater pollution		PE												
1.4: Fire frequency and intensity within MMNP is managed and monitored	1.4.1: Develop a Fire Management Plan														
	1.4.1.1: Review other Fire Management Plans (e.g. Kilimanjaro NP) for lessons learned	Relevant Documentation, Technical Expertise	PE, PW, TANAPA HQ MEM												
	1.4.1.2: Identity the objectives of the Fire Management Plan		PE, PW, TANAPA HQ MEM												
	1.4.1.3: Include a system for recording and monitoring the incidence of fire	Satellite Information, Ranger Patrols	PE, PW, Rangers, TANAPA HQ MEM												
	1.4.2: Implement fire mitigation measures														

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
maintained	<p>1.5.2: Cooperate with other organisations to promote the maintenance of migration and dispersal areas connecting MMNP and other areas of intact habitat</p> <p>1.5.2.1: Identify potential partner organisations and stakeholders working in the area surrounding MMNP</p> <p>1.5.2.2 Develop a mechanism to enable park management and partner organisations and other stakeholders to exchange information and coordinate their activities</p>		<p>PE, PrE, WO</p> <p>CPW, PE, PrE, WO</p>												

Table G.2: Tourism Management Action Plan

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe												
				Year 1				Year 2				Year 3				
				1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Visitor access and use improved and diversified in environmentally appropriate and sustainable ways																
1.1: Chimpanzee viewing optimally regulated for the mutual benefit of chimp well-being and visitor satisfaction	1.1.1: Implement LAU for the M-group of chimps	Approved LAU, Copies of LAU, Awareness Raising Materials, Transport, Fuel, Tour Operator/MMCRP/Tourist Collaboration	CPW, TW, Guides													
	1.1.2: Establish a chimp-tracking permit booking system															
	1.1.2.1: Examine chimp and gorilla booking systems used for other national parks in East Africa and design booking system for MMNP based on lessons learnt	Consultant	CPW, TW, TANAPA HQ													
	1.1.2.2: Establish procedures for routine transmission of booking information from TANAPA HQ to MMNP	Consultant	CPW, TW, TANAPA HQ													
	1.1.2.3: Provide training to TANAPA HQ booking personnel in operation of the new system	Consultant	CPW, TANAPA HQ													
	1.1.2.4: Disseminate information on operation of the new scheme to relevant tour operators etc.	Copies of booking system modalities, Awareness Raising Materials, Transport, Fuel	CPW, TW, PrE													
	1.1.2.5: Develop a chimp booking website page and enquiry form on the MMNP website, linked with Action 3.2.2	Web Designer, Booking system information	CPW, TW, PrE, CCA													
1.1.3: Disseminate and enforce chimp-viewing regulations																
1.1.3.1: Produce leaflets detailing chimp viewing regulations	Technical Expertise, Relevant Documentation, Printer, Donor	TW, Guides														

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	1.1.3.2: Provide chimp viewing tourists with a pre-visit briefing session on viewing regulations	Transport, Fuel, Briefing Venue Guides, Guide Education, VHF Handheld Radios, Tour Operator and Tourist Collaboration	TW, Guides												
1.2: MMNP tourism attractions and activities expanded to provide a more diverse tourism experience	1.2.1: Promote and regulate the use of northern group (N-group) of chimpanzees														
	1.2.1.1: Investigate opportunities for developing "habituation treks" combining mountain trekking, developed under Action 1.2.2, with N-Group visits	Survey, Survey Equipment, Camping Equipment, Transport, Fuel, Allowances MMCRP Collaboration	TW, PE, PrE, MMCRP												
	1.2.1.2: Investigate opportunities for community ecotourism ventures to bring visitors to N-Group	Survey, Survey Equipment, Allowances Transport, Fuel	TW, CCW, CCA, COs												
	1.2.1.3: Develop LAU that both regulate and promote the use of N-group, prior to visitation beginning	Technical Expertise	CPW, TW, PE, MMCRP												
	1.2.2: Improve the hiking trail to Mount Nkungwe and make suitable for tourism use														
	1.2.2.1: Make any steep or unstable sections of the current trail to Mt Nkungwe more suitable for tourist use	Labour, Tools, Allowances, Camping Equipment, Tour Operator Collaboration	CPW, TW, PW, PE												
	1.2.2.2: Develop a discreet lookout with seating at a viewpoint around Pasagulu Hill	Transport, Fuel, Labour, Contractor, Construction Materials, Donor Allowances, EIA, Tour Operator Collaboration	CPW, TW, PW, PE												
1.2.2.3: Develop a route card describing the route to the summit of Mt Nkungwe including water sources, campsite locations, distances and altitude climbed															

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe															
				Year 1				Year 2				Year 3							
				1	2	3	4	1	2	3	4	1	2	3	4				
1.2.3: Identify and promote a diversity of tourist activities and attractions outside of M-group habitat	1.2.3.1: Survey for potential trekking routes and circuits, suitable wilderness campsites, and other potential attractions	Survey, Survey Equipment, Transport, Fuel, Camping Equipment, Allowances, Tour Operator Collaboration	TW, PE																
	1.2.3.2: Liaise with Camp Managers and Markus Borner to identify potential diving and snorkelling sites	Transport, Fuel, Allowances, LTBP Mahale Aquatic Biodiversity Report	TW, PE																
	1.2.3.3: Implement and disseminate TANAPA Sport Fishing Guidelines	Copies of Sport Fishing Guidelines, Transport, Fuel, Tour Operator Collaboration	TANAPA HQ (DPDPTS), CPW, TW																
	1.2.3.4: Raise internal understanding, and disseminate TANAPA Walking Safari Guidelines to MMNP tour operators	Copies of Walking Safari Guidelines, Transport, Fuel, Tour Operator Collaboration	TANAPA HQ (DPDPTS), CPW, TW																
	1.2.3.5: Approve Walking Safari Operators and guides, in accordance with TANAPA Walking Safari Guidelines		TANAPA HQ (DPDPTS), CPW, TW																
1.3: Tourism administration strengthened to support efforts to diversify tourism activities	1.3.1: Market MMNP and its tourism opportunities nationally and internationally																		
	1.3.1.1: Identify Marketing Plan objectives, in collaboration with tour operators	Meeting/Workshop, Venue & Refreshments, Transport, Fuel, Allowances, Stationary, Tourism Statistics	TANAPA HQ (DPDPTS), CPW, TW																

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	1.3.1.2: Collaborate with TANAPA HQ in activities to promote MMNP as a tourist destination nationally and internationally		CPW, TW												
	1.3.2: Establish a tourism monitoring system														
	1.3.2.1: Record visitation and use data on a daily basis	Tourist Data Sheets, VHF Handheld Radios, Stationary, Tour Operator Collaboration	TW												
	1.3.2.2: Prepare, and distribute, a questionnaire twice yearly to elucidate visitor attitudes and experiences	Questionnaire, Stationary, Tour Operator & Tourist Collaboration, Transport, Fuel	TW												
	1.3.2.3: Establish a computer database to collate data, and update on a monthly basis	Computer, Database Management Training/Expertise,	TW												
	1.3.2.4: Produce and disseminate annual reports of the information collected to relevant stakeholders		CPW, TW												
Objective 2: MMNP visitor facilities improved to provide a better and more diverse tourism experience with minimal environmental impact															
2.1: Systems for regulating and monitoring the environmental impacts of tourism facilities applied	2.1.1: Enforce LAU on the size, number and type of tour operator concessions	Approved LAU, Copies of LAU, Awareness Raising Materials, Transport, Fuel, Tour Operator Collaboration	CPW, TW												
	2.1.2: Formalise tour operator concession agreements through the DALP														
	2.1.2.1: Carry out EIAs of existing tourism facilities as part of the DALP	Technical Expertise/Training, Transport, Fuel, Tour Operator Collaboration	CPW, TW, PE, Other Trained TANAPA Staff												

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	<p>2.1.2.2: Liaise with tour operators to develop a resident quota to maintain minimal levels of employees living in MMNP</p> <p>2.1.3: Disseminate and enforce a tour operator staff Code of Conduct</p> <p>2.1.3.1: Produce a poster on the Code of Conduct for display in staff areas at the tourist camps</p> <p>2.1.3.2: Tour operators hold briefing sessions explaining the Code of Conduct to their staff</p>	<p>Tour Operator Collaboration</p> <p>Printer, Tour Operator Consultation Meeting, Venue and Refreshments</p>	<p>CPW, TW</p> <p>CPW, TW</p> <p>TW, Tour Operators</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p>											
<p>2.2: Visitor facilities improved and expanded to support a greater range and number of tourists and a greater diversity of activities</p>	<p>2.2.1: Designate wilderness campsites along the lake shore and allocate these sites to individual tour operators</p> <p>2.2.1.1: Collate and review all proposals from tour operators for beach wilderness campsite locations</p> <p>2.2.1.2: Develop agreements with individual tour operators concerning use and management of individual sites</p> <p>2.2.1.3: Ensure operators are aware of LAU for beach wilderness campsite use</p> <p>2.2.1.4: Periodically inspect campsites, to ensure their environmental impact is minimal, and LAU are respected</p> <p>2.2.2: Establish options for overnight stopovers along the Mt Nkungwe trail to facilitate its use</p>	<p>Tour Operator Collaboration</p> <p>Tour Operator Collaboration</p> <p>Copies of LAU</p> <p>Site Visits, Camping Equipment, Transport, Fuel</p>	<p>CPW, TW, PE</p> <p>TANAPA HQ (DPDPTS), CPW, TW, PE</p> <p>CPW, TW</p> <p>TW, PE</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p>											

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	<p>2.2.2.1: Designate two wilderness campsites along the trail before Mhasabantu Peak, and build appropriate low technology, environmentally sensitive toilets at these sites</p> <p>2.2.2.2: Develop a protocol to enable small groups of tourists to use the small back room at the Mt Nkungwe ranger post</p>	<p>Survey, Survey Equipment, Contractor, Construction Materials, Transport, Fuel, Camping Equipment, Allowances, EIA, Tour Operator Collaboration</p>	<p>CPW, TE, PE, PW</p> <p>CPW, TW, PW</p>												
Objective 3: MMNP visitor information and guiding are high quality, relevant, informative and educational															
<p>3.1: The MMNP Visitor Centre is developed into a valued and popular point of call for many Park visitors</p>	<p>3.1.1: Relocate and develop the Visitor Centre at a new location at or near Kasiha</p> <p>3.1.1.1: Identify options for the most suitable location for the new centre</p> <p>3.1.1.2: Link development with the redevelopment of the Kasiha Research Station, under Park Operations Programme Target 3.1</p>		<p>CPW, PE, PA, TANAPA HQ (DG) (DPDPTS) TAWIRI, MMCRP</p> <p>CPW, PE, PA, TANAPA HQ (DG) (DPDPTS) TAWIRI, MMCRP</p>												
	<p>3.1.2: Plan and produce quality display materials for the MMNP visitor centre</p> <p>3.1.2.1: Liaise with Mahale Chimp Project and professional filmmakers/photographers on availability of suitable materials</p> <p>3.1.2.2: Collate information on MMNP Exceptional Resource Values as the basis for display materials</p>	<p>MMCRP & Photographer Collaboration, Relevant Documentation/Pictures Etc.</p> <p>Relevant Documentation/Pictures Etc.</p>	<p>TW, PE, MMCRP, TAWIRI</p> <p>TW, PE, MMCRP, TAWIRI</p>												

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe															
				Year 1				Year 2				Year 3							
				1	2	3	4	1	2	3	4	1	2	3	4				
	3.1.2.3: Develop materials, in collaboration with TANAPA Desktop Publishing Unit, and outsource their production, as necessary	Publisher/Printer	TW, PW, TANAPA HQ																
3.2: High quality visitor information materials produced and widely distributed	3.2.1: Produce and disseminate a high quality interpretation guidebook	Professional Nature Writer, Publisher	TW, CPW, PE, Contractor, TANAPA Publishing Unit, Donor																
	3.2.1.1: Liaise with Mahale Chimp Project on availability of suitable materials for guidebook	MMCRP Collaboration	PE, TW																
	3.2.1.2: Seek assistance from TANAPA Desktop Publishing Unit in preparation of guidebook proof	Professional Nature Writer, TANAPA Desktop Publishing Unit Collaboration	CPW, TW, TANAPA HQ																
	3.2.1.3: Outsource publication and production of guidebook as appropriate	Publisher	TANAPA HQ, CPW, TW																
	3.2.1.4: Distribute guidebook through the tourist camps and the improved MMNP Visitor Centre	Tour Operator Collaboration	CPW, TW																
	3.2.2: Establish a website providing up-to-date and accurate information on MMNP, linked to main TANAPA website	Web Designer, Relevant Information	CPW, TW, CCA, PrE																
	3.2.2.1: Develop information on park pricing, transportation to the park, accommodation options, and park attractions and activities	Web Designer, Relevant Information	CPW, TW, CCA, PrE																
3.2.2.2: Develop a chimp booking website page and enquiry form on the MMNP website, linked with Action 1.1.2	Web Designer, Relevant Information	CPW, TW, CCA, PrE																	
3.2.2.3: Ensure the site is kept up to date, especially regarding changes in prices and access/transportation options	Web Designer, Relevant Information	CPW, TW																	

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe																			
				Year 1				Year 2				Year 3											
				1	2	3	4	1	2	3	4	1	2	3	4								
3.3: Park guides are providing high quality guide and interpretation services, involving language capability and extensive park knowledge	<p>3.3.1: Establish and implement a guide training programme</p> <p>3.3.1.1: Review other similar schemes for lessons learnt</p> <p>3.3.1.2: Design training curriculum in collaboration between MMNP management and tour operators</p> <p>3.3.1.3: Implement "on-the-job" training in collaboration with Tour Operators, involving already-qualified guides</p>	<p>Relevant Documentation</p> <p>Guide Library, Tour Operator Collaboration</p> <p>Transport, Fuel, Allowances Tour Operator/Guide Collaboration, Camping Equipment</p>	<p>TW, PE, PrE</p> <p>TW, PE, PrE, TANAPA HQ, Tour Operators</p> <p>TW, PE, PrE, TANAPA HQ, Tour Operators</p>																				

Table G.3: Community Outreach Action Plan

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: Neighbouring community cooperation and support for conservation enhanced															
1.1 Park-community communication channels strengthened	1.1.1: Establish, formalise and strengthen a Park-Community Forum														
	1.1.1.1: Assess existing institutions and collaboration mechanisms (e.g. village environmental committees), and agree on appropriate forum mechanisms with local communities	Transport, Fuel, Village Institution Consultations, Community Collaboration	CCW, CCA, CCOs, Village Institutions	Already completed											
	1.1.1.2: Identify, in collaboration with stakeholders, representative membership of the forum	Transport, Fuel, Village Institution Consultations, Community Collaboration	CCW, CCA, CCOs, Village Institutions												
	1.1.1.3: Establish the location, frequency and mode of operation of forum meetings	Transport, Fuel, Village Institution Consultations, Community Collaboration	CPW, CCW, CCA, CCOs, Village Institutions												
	1.1.1.4: Allocate responsibilities to forum members for organisation, coordination of meetings, and the dissemination of issues discussed and actions decided upon	Transport, Fuel, Venue & Refreshments, Stationary	CCW, CCA, CCOs, Village Institutions												
1.1.1.5: Hold regular forum meetings in accordance with the agreed mode of operations	Transport, Fuel, Venue & Refreshments, Stationary	CCW, CCA, CCOs, Village Institutions													

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	1.2.1.6: Organise educational community visits to MMNP	Event, Transport, Fuel, Refreshments, Theme, Awareness Raising/Educational Materials, Community Collaboration	CCW, CCA, CCOs, PE												
	1.2.1.7: Establish strong linkages between park-supported development projects and conservation, for example through appropriate signage with new buildings, and awareness events associated with completion of facilities	Signs, Event/Meeting/Workshop, Venue and Refreshments, Transport, Fuel, Theme, Awareness Raising/Educational Materials Community Collaboration	CPW, CCW, CCA, PE												
	1.2.1.8: Monitor the effectiveness of SCIP activities, and modify future activities in accordance with lessons learnt	Survey, Survey Equipment, Transport, Fuel	CCW												
	1.2.2: Develop income-generating activities that increase local economic linkages with MMNP														
	1.2.2.1: Investigate mechanisms and opportunities for selling local handicrafts and fresh products in MMNP HQ and tourist camps	Community/Tour Operator MMNP HQ Consultations	CCW, CCA, CCOs												
	1.2.2.2: Identify and where appropriate help establish community self-help groups for undertaking IGAs	Community Consultations, Trainer, COCOBA	CCW, CCA, CCOs												
	1.2.2.3: Facilitate groups to identify small-scale conservation compatible IGAs, in line with Activity 1.2.2.1	Business Training, COCOBA	CCW, CCA, CCOs												
	1.2.2.4: Assist communities in linking with appropriate markets, especially within MMNP	Market Study	CCW, CCA, CCOs												

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
1.3 Community-based ecotourism initiatives developed	1.3.1: Identify promising ecotourism and cultural tourism attractions outside the park 1.3.1.1: Liaise with local communities in the identification of possible sites of interest	Transport, Fuel, Survey, Survey Equipment, Camping Equipment, Transport, Fuel, Allowances, Local Community Experts, Community Collaboration	CCW, TW, CCA, CCOs												
	1.3.1.2: Investigate, in collaboration with tour operators, the suitability and practicalities of sites identified	Transport, Fuel, Site Visits, Meeting with Tour Operators	CCW, TW, CCA, CCOs												
	1.3.2: Assist communities to develop and manage ecotourism ventures 1.3.2.1: Assist communities in developing simple business plans for ecotourism ventures, including responsibilities of community and joint venture partners	Training/Technical Expertise, Tour Operator/Community Collaboration	CCW, TW, CCA, CCOs												
	1.3.2.2: Provide negotiation support to communities in establishing joint venture agreements	Training/Technical Expertise, Tour Operator/Community Collaboration	CCW, TW, CCA, CCOs												
	1.3.2.3: Provide basic management training to community venture leaders and staff 1.3.2.4: Provide ongoing support to community leaders in ecotourism venture operation, and in resolving issues with joint venture partners	Trainer/Technical Expertise,	CCW, TW, CCA, CCOs CCW, TW, CCA, CCOs												
1.4 Cultural diversity and richness preserved and promoted	1.4.1: Identify and document cultural areas inside and outside MMNP 1.4.1.1: Assist communities to map priority cultural sites within and outside of MMNP	Survey, Survey Equipment, Camping Equipment, Allowances, Transport, Fuel, Local Community Experts	CCW, CCA, CCOs												

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe															
				Year 1				Year 2				Year 3							
				1	2	3	4	1	2	3	4	1	2	3	4				
	<p>1.4.1.2: Establish what cultural practises communities would like to undertake take at which sites</p> <p>1.4.2: Facilitate conservation-compatible cultural activities within MMNP</p> <p>1.4.2.1: Review schemes from other parks that allow cultural practises for lessons learnt</p> <p>1.4.2.2: Establish LAU for practices that can occur without compromising MMNP exceptional resources</p> <p>1.4.2.3: Liaise with community members to raise awareness about access to cultural sites within MMNP</p>	<p>Relevant Documentation</p> <p>Transport, Fuel, Dialogue Forum, Community Collaboration</p>	<p>CPW, CCW, CCA, CCOs</p> <p>CCW, CCA, CCOs</p> <p>CPW, CCW, CCA, CCOs</p> <p>CPW, CCW, CCA, CCOS</p>																
Objective 2: Threats to MMNP exceptional resources reduced through improved community-based natural resource management																			
2.1 Sustainable land-use and environmental practices promoted	<p>2.1.1: Collaborate with local government to improve land-use practices and address land-use conflicts in areas adjoining MMNP</p> <p>2.1.1.1: Liaise with district agricultural and community officers to ensure park and district programmes are compatible, and establish where logistical support is needed</p> <p>2.1.1.2: Provide appropriate logistical support to district agricultural and community extension officers</p> <p>2.1.2: Develop tree nurseries to provide a substitute source for species previously obtained from MMNP</p> <p>2.1.2.1: Review similar nursery schemes for lessons learnt</p>	<p>Transport, Fuel, Allowances, District Meetings, District Collaboration</p> <p>Transport, Fuel, Other Forms of Logistical Support</p> <p>Relevant Documentation, Site Visit</p>	<p>CPW, CCW, CCA, CCOs</p> <p>CPW, CCW, CCA, CCOs</p> <p>CCW, CCA, CCOs</p>																

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	<p>2.1.2.1: Identify species of economic or medical importance communities would like improved access to</p> <p>2.1.2.3: Obtain seeds/seedlings and establish cultivation in collaboration with local communities</p> <p>2.1.2.4: Provide ongoing technical support and training to improve the potential of the established tree nurseries and outplanting activities</p>	<p>Transport, Fuel, Community Survey, Dialogue Forum</p> <p>Planting Materials, Nursery Equipment, Cultivation Site, Transport, Fuel</p> <p>Trainer, Planting Materials, Nursery Equipment</p>	<p>CCW, CCA, CCOs</p> <p>CCW, CCA, CCOs</p> <p>CCW, CCA, CCOs</p>												
2.2 Effective community-based natural resource management institutions and planning supported	2.2.1: Strengthen existing CBNRM committees in the surrounding communities														
	2.2.1.1: Identify existing environmental institutions/committees in the surrounding communities		CCW, CCA, CCOs	Already completed											
	2.2.1.2: Provide necessary training to committee members in community leadership, administration, and management	Trainer/Technical Expertise, Educational Materials, Transport, Fuel, Meeting/Workshop, Venue, Refreshments,	CCW, CCA, CCOs												
	2.2.1.3: Assess the needs of the institutions/committees, and provide appropriate logistical and technical assistance to support their activities	Meeting/Workshop/Interviews, Dialogue Forum	CCW, CCA, CCOs												
2.2.2: Support communities in surveying and registering village boundaries															
2.2.2.1: Identify villages to undertake villages surveys, and areas where assistance is needed to support this process	Survey Equipment, Fuel, Transport, Allowances, Dialogue Forum, Stationary, District Surveyors, Village Government/District Collaboration	CCW, CCA, CCOs, PW													

Management Targets	Management Actions/ Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	2.2.2.2: Promote the advantages of surveying village boundaries, and the support that MMNP can offer, in villages who have not yet shown interest in undertaking surveys	Meeting, Venue & Refreshments, Awareness Raising/Educational Materials, Transport, Fuel, Dialogue Forum, Village Government Collaboration	CCW, CCA, CCOs, PW	█	█	█	█								
	2.2.2.3: Provide appropriate technical and logistical support to assist surveys and the official registering of them	District Surveyors, Survey Equipment, Dialogue Forum Government/District Collaboration, Transport, Fuel	CCW, CCA, CCOs, PW	█	█	█	█								
	2.2.3: Support communities to prepare and implement land-use plans														
	2.2.3.1: Raise community awareness of the importance and potential of land use planning	Meeting, Venue & Refreshments, Awareness Raising/Educational Materials, Transport, Fuel, Dialogue Forum, Village Government Collaboration	CCW, CCA, CCOs			█	█	█	█						
	2.2.3.2: Facilitate visits by District Land Use Planners to undertake a land use planning exercise and to obtain official endorsement of village plans	Transport, Fuel, Refreshments, Accommodation	CPW, CCW, CCA, CCOs					█	█	█	█	█	█	█	█
	2.2.3.3: Periodically monitor and assess the effectiveness of land use plans, and adapt support accordingly		CCW, CCA, CCOs							█	█	█	█	█	█

Table G.4: Park Operations Action Plan

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe												
				Year 1				Year 2				Year 3				
				1	2	3	4	1	2	3	4	1	2	3	4	
Objective 1: Protection of MMNP resources enhanced in collaboration with neighbouring communities																
1.1: MMNP ranger effectiveness and capacity improved	1.1.1: Develop and implement a programme of comprehensive ranger patrols, with particular attention to MMNP's eastern boundary															
	1.1.1.1: Construct a ranger post on MMNP's eastern boundary	Site Selection, Transport, Fuel, Contractor, Construction Materials, Labour, Allowances	CPW, PW, PA													
	1.1.1.2: Train rangers in GPS use in order to log patrol routes	GPS Units, Training Materials, Stationary	PW, CCA, PrE, Rangers	Already completed												
	1.1.1.3: Collect and compile GIS data identifying areas within MMNP where patrols are missing, and adapt patrol routes accordingly	Field Data sheets, Camping Equipment, VHF Handheld Radios, Transport, Fuel, Allowances, GIS Training/Expertise, Stationary	PW, Rangers													
	1.1.2: Establish a ranger-based information system to collect information of benefit to other department programmes															
	1.1.2.1: Train rangers in GPS use (link with 1.1.1.1 above) in order to accurately identify the location of data collected	GPS Units, Training Materials, Stationary	PW, CCA, PrE, Rangers	Already completed												
1.1.2.2: Inform rangers of requirements and priorities for data collection			PW, PE, TW													

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe																																																										
				Year 1				Year 2				Year 3																																																		
				1	2	3	4	1	2	3	4	1	2	3	4																																															
	1.1.2.3: Develop a GIS-based system for collecting, compiling and disseminating data to the relevant departments	Field Data sheets, Camping Equipment, VHF Handheld Radios, Transport, Fuel, Allowances, GIS Training/Expertise, Stationary	PW, Rangers, PE, TW																																																											
1.2: Cooperation with local communities and external law enforcement agencies in law enforcement and intelligence gathering enhanced	1.2.1: Maintain MMNP boundary demarcation to ensure it is easily visible on the ground																																																													
	1.2.1.1: Place permanent beacons along MMNP's boundary	Transport, Fuel, Labour, Allowances, District Surveyor, Contractor, Construction Materials, Tools GPS Units, Camping Equipment	CPW, PW, CCW	Already completed																																																										
	1.2.1.2: Ensure beacons remain visible and are maintained	Transport, Fuel, Labour, Allowances, Tools, GPS Units, Camping Equipment	CPW, PW, CCW	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%;"></td><td style="width: 12.5%;"></td> </tr> <tr> <td></td><td></td><td></td><td style="background-color: #e6f2ff;"></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																																																										
1.2.2: Develop an effective intelligence gathering system																																																														
1.2.2.1: Maintain and develop system of informers	Intelligence Training/Expertise, Allowances, Intelligence Equipment (cameras, radios etc), Transport, Fuel, Stationary, Informant Collaboration	CPW, PW, Rangers																																																												
1.2.2.2: Implement appropriate informer reward system	Appropriate Rewards	CPW, PW																																																												
1.2.3: Improve collaboration and understanding with external law enforcement agencies and institutions																																																														

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe												
				Year 1				Year 2				Year 3				
				1	2	3	4	1	2	3	4	1	2	3	4	
	1.2.3.1: Hold regular meetings with external law enforcement agencies in the area to improve the coordination of activities	Meeting, Venue & Refreshments, Allowances, Transport, Fuel, Stationary, Awareness Raising Materials, Police/ Other Law Enforcement Agency Participation	CPW, PW, Rangers	█				█				█				
	1.2.3.2: Provide appropriate logistical support to law enforcement agencies operating around MMNP	Transport, Fuel, Rangers	CPW, PW, Rangers		█	█	█		█	█	█		█	█	█	
	1.2.3.3: Organise local magistrates' visits to MMNP, to enhance their understanding of park rules and regulations, and the environment in which law enforcement takes place	Meeting Venue & Refreshments, Accommodation, Allowances, Transport, Fuel, Stationary, Awareness Raising Materials	CPW, PW													
Objective 2: Negative impacts on the environment and visitor experience from in-park developments minimised																
2.1: High quality and environmentally sensitive research and visitor facilities developed at Kasiha	2.1.1: Redevelop Mahale Research Centre, in cooperation with all relevant stakeholders, and subject to EIA															
		2.1.1.1: Develop a site plan for an environmentally-friendly research centre and visitor facilities at Kasiha (link with Action 3.1.1 of the Tourism Management Programme)	Eco Architect, EIA Training/Expertise	CPW, PE, TANAPA HQ (DPDPTS), TAWIRI, MMCRP		█	█									
		2.1.1.2: Carry out inventory of staff and families currently residing at Kasiha and develop LAU for future essential staffing and families permitted to reside in the area	Transport, Fuel	CPW, PE, TAWIRI, MMCRP												
	2.1.1.3: Relocate any additional non-essential staff, families and facilities from Kasiha to outside the Park in accordance with LAU	Transport, Fuel, Labour, Allowances, Contractor, Construction Materials	CPW, TAWIRI, MMCRP			█	█		█	█						

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
	<p>2.1.1.4: Demolish any unsuitable facilities and construct new buildings in accordance with site plan, architectural plans and EIA</p> <p>2.1.1.5: Carry out landscape restoration around the Research Centre to natural conditions</p> <p>2.1.1.6: Develop modalities of how the Mahale Research Centre will be used and managed between TANAPA, TAWIRI and MMCRP</p>	<p>Transport, Fuel, Labour, Allowances, Contractor, Construction Materials</p> <p>Labour, Transport, Fuel</p> <p>Meeting, Venue & Refreshments, Accommodation, Transport, Fuel, Allowances, Stationary</p>	<p>CPW, TAWIRI, MMCRP</p> <p>CPW, PE, TAWIRI, MMCRP</p> <p>CPW, PE, TANAPA HQ (DPDPTS), TAWIRI, MMCRP</p>												
2.2: TANAPA environmental impact and site planning procedures implemented	<p>2.2.1: Prepare a site plan for MMNP HQ and any other major developments in the park</p> <p>2.2.1.1: Identify a suitable expert to assist MMNP to develop the site plan</p> <p>2.2.1.2: Implement site plan recommendations</p> <p>2.2.2: Carry out EIA of MMNP HQ and existing ranger posts where required</p>	<p>Technical Expertise, Allowances, Transport, Fuel, Stationary</p> <p>Technical Expertise, Allowances, Transport, Fuel, Accommodation</p> <p>Training/Technical Expertise</p>	<p>PE, CPW</p> <p>CPW,</p> <p>CPW</p> <p>CPW, Other Trained Staff</p>												
Objective 3: Working and living conditions of MMNP staff improved															
3.1: Training needs and staffing requirements for each department are met	<p>3.1.1: Implement TANAPA staff training programme</p> <p>3.1.1.1: Develop a series of training programmes to meet training needs specified in the GMP</p> <p>3.1.2: Recruit new staff as per Staffing Needs schedule</p>	<p>Trainers/Technical Expertise/Short Courses, Transport, Allowances, Stationary, Training Equipment</p> <p>Salaries, Transport, Accommodation, Allowances</p>	<p>CPW, TANAPA HQ (HRM)</p> <p>CPW, TANAPA HQ (HRM)</p>												

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe																		
				Year 1				Year 2				Year 3										
				1	2	3	4	1	2	3	4	1	2	3	4							
3.2: MMNP staff accommodation, facilities and welfare improved	3.2.1: Upgrade staff accommodation																					
	3.2.1.1: Upgrade existing uniports and other temporary housing to permanent modern housing	Contractors, Construction Materials, Transport, Labour, Allowances, Site Plan, EIA	CPW, PA																			
	3.2.1.2: Construct new housing units to accommodate staff expansions as per GMP projections (developed under Action 4.1.2)	Contractors, Construction Materials, Transport, Labour, Allowances, Site Plan, EIA	CPW, PA																			
	3.2.1.3: Implement Phase 2 of Park HQ water supply scheme	Water Engineer, Contractor, Construction Materials, Labour, Allowances, EIA	CPW, PA																			
	3.2.2: Develop the MMNP Staff Welfare Centre																					
	3.2.2.1: Survey staff and families to establish what facilities should be developed at the Staff Welfare Centre	Meeting, Venue & Refreshments, Stationary	CPW, PA																			
	3.2.2.2: Develop appropriate facilities and services that can be provided/used through the centre	Contractors, Construction Materials, Transport, Labour, Allowances, Site Plan, EIA	CPW, PA																			
	3.2.3: Improve schooling for MMNP staff children																					
3.2.3.1: Improve the MMNP kindergarten's facilities	Contractors, Construction Materials, Transport, Labour, Allowances, Site Plan, EIA, Educational Supplies, Teacher	CPW, Kindergarten Teacher	Already completed																			
3.2.3.2: Investigate methods for providing appropriate logistical or financial support to improve local primary schools	SCIP	CPW, CCW																				
3.2.4: Improve health facilities and services																						

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe																		
				Year 1				Year 2				Year 3										
				1	2	3	4	1	2	3	4	1	2	3	4							
4.2: Transport and communication links between MMNP and outside centres improved	4.2.1: Improve MMNP transportation infrastructure and equipment																					
	4.2.1.1: Acquire reliable fast boat for transport to Kigoma	Donor, Supplier Identification	CCA, CPW	Already completed																		
	4.2.1.2: Improve harbour facilities including mooring and a wave breaker	Donor, Transport, Fuel, Labour, Allowances, Contractor, Construction Materials, Marine Engineer	CPW, PA, TANAPA Engineer																			
	4.2.1.3: Upgrade airstrip to accommodate larger aircraft	Donor, Transport, Fuel, Labour, Allowances, Contractor, Construction Materials, Aviation Engineer	CPW, PA, TANAPA Engineer																			
	4.2.2: Establish a reliable mechanism for emergency evacuation																					
	4.2.2.1: Liaise with Katavi NP to establish a procedure for priority use of the TANAPA plane in case of emergencies	Avgas, Allowances, Thuriah Phone	DG, CPW, CPW Katavi, Clinical Officer																			
	4.2.2.2: Investigate possible support from local medical organisations (e.g. MAF) and establish appropriate links		CPW, Clinical Officer																			
	4.2.3: Improve telecommunication links to/from MMNP for staff use	Internet Telephone, Telecommunication Survey (Vodacom, Celltel)	CPW, TANAPA HQ																			
e 5: MMNP stakeholders are collaborating to reduce conflict and to ensure their activities within MMNP are mutually compatible																						
5.1: Communication and cooperation between park management, tourism operators,	5.1.1: Establish communication mechanisms between MMNP park management, tour operators, and Mahale Wildlife Research Centre	Transport, Fuel, Venue, Meeting Refreshment, Stationary	CPW, TW, PE, TAWIRI, Tour Operators, MMRP																			
	5.1.1.1: Identify meeting participants		CPW, TW, PE																			

Management Targets	Management Actions/Activities	Input requirements	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
and researchers strengthened	5.1.1.2: Select location, dates and agenda items for annual meetings	Meeting, Venue & Refreshments, Stationary, Tour Operator/TAWIRI/MMCRP Collaboration	CPW, TW, PE												



PLAN MONITORING

The monitoring of the impacts of GMP implementation is a key aspect of the plan's ultimate success. Monitoring will help ensure the overall benefits from the implementation of this GMP are maximised, and that any negative impacts are mitigated. The GMP monitoring plan frameworks, outlined below, provide guidance on the likely positive and negative impacts of GMP implementation, a set of indicators for easily measuring these impacts, and the most likely sources of this information. Regular monitoring of GMP implementation will enable future adaptive management of MMNP, in particular through the subsequent adjustment of the rolling Action Plans, in order to maximise the positive impacts and to mitigate the negative impacts of GMP implementation.

The following tables set out the monitoring frameworks for the GMP's four management programmes. The potential positive impacts (and related indicators) resulting from the implementation of each programme's management targets are given in **Green**, and, where appropriate, the potential negative impacts (and related indicators) are shown in **Red**.

Table H.1: Ecosystem Management Programme Monitoring Plan

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Objective 1: Threats to the long-term conservation and ecological viability of MMNP Conservation Targets abated			
Target 1.1: Risk of disease transmission and impacts from human disturbance on MMNP's chimpanzee population minimised	Reduced human to chimp disease transmission	Incidence of human-origin disease outbreaks Incidence of human disease antibodies in chimps	Guide/ MMCRP researcher consultations and records Chimp health veterinary samples
	Reduced psychological stress on chimpanzees as a result of human presence	Behavioural observations, and/or presence of stress indicating hormones	Chimp health veterinary samples
	No negative impacts foreseen	N/A	N/A

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Target 1.2: Exotic species in MMNP eradicated	Evergreen forest restored to natural species composition	Presence and/or area of exotic tree species	Direct observation and/or MMNP Ecological Monitoring results
	Health of native species adversely affected during the removal/ extermination of exotic species	Evidence of pollution or damage to /death of native vegetation	Targeted inspections by MMNP staff
Target 1.3: Human impacts on MMNP freshwater Conservation Targets are minimised	Environmental quality of MMNP freshwater systems enhanced or maintained	Water quality, species composition, and where appropriate flow rate	MMNP Ecological Monitoring results
	No negative impacts foreseen	N/A	N/A
Target 1.4: Fire frequency and intensity within MMNP is managed and monitored	Status of fire-sensitive habitats especially evergreen forest is maintained/ enhanced	Extent and species composition of fire sensitive habitats	MMNP Ecological Monitoring results
	Status of fire-dependent habitats such as montane vegetation is maintained/ enhanced	Fire frequency and presence/ abundance of indicator species	MMNP Ecological Monitoring results
	Potential negative impacts to be determined in Fire Management Plan	N/A	N/A
Target 1.5: Functional habitat linkages connecting MMNP with surrounding areas are maintained	Key species are able to continue moving between MMNP and nearby dispersal areas and habitats	Habitat connectivity between MMNP and surrounding natural habitats	Satellite imagery and ground observations
	No negative impacts foreseen	N/A	N/A

Table H.2: Tourism Management Programme Monitoring Plan

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Objective 1: Visitor access and use enhanced and diversified in environmentally appropriate and sustainable ways			
Target 1.1: Chimpanzee viewing optimally regulated for the mutual benefit of chimp well-being and visitor satisfaction	Reduced human to chimp disease transmission	Incidence of human-origin disease outbreaks Incidence of human disease antibodies in chimps	Guide/ MMCRP researcher consultations and records Chimp health veterinary samples
	Improved tourist chimp viewing experience	Visitor satisfaction	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	Decline in park revenues	Receipts from Park entrance fees and chimpanzee tracking permits	Park accounts
Target 1.2: MMNP tourism attractions and activities expanded to provide a more diverse tourism experience	Increased tourism use of areas outside of M-group chimp core habitat	The number of different activities tourists undertake during their stay at MMNP	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	Increased length of stay in MMNP	Concession holder bednight information	Concession holder records and bednight fees (park accounts)
	MMNP's ERVs, wilderness characteristics and environmental quality are compromised by increased and diversified tourist activities or their supporting infrastructure	Evidence of pollution, litter or habitat degradation at sites where activities or infrastructure are located	Targeted inspections by MMNP staff
	Decline in visitor safety as a result of use of remote areas of MMNP	Safety incidents	Park records

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Target 1.3: Tourism administration strengthened to support efforts to diversify tourism activities	Increased popularity of Mahale as a tourist destination	Number of visitors	Park entrance records
	Enhanced MMNP responsiveness to tourism needs and trends	Annual/monthly tourism statistics analysis	Tourism Department records
Objective 2: MMNP visitor facilities improved to provide a better and more diverse tourism experience with minimal environmental impact			
Target 2.1: Systems for regulating and monitoring the environmental impacts of tourism facilities applied	Tourism facilities are having a minimal impact on MMNP's environment	Evidence of pollution or litter around the facilities' locations	Targeted inspections by MMNP staff
	Enhanced/maintained visual appeal of MMNP tourism facilities	Visitor satisfaction	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	No negative impacts foreseen	N/A	N/A
Target 2.2: Visitor facilities improved and expanded to support a greater range and number of tourists and a greater diversity of activities	Increased use of new tourist campsites and other facilities	Wilderness campsite bookings/fees	Tourism and Accounts Department records
	MMNP's ERVs, wilderness characteristics and environmental quality are compromised around visitor facilities	Evidence of pollution, litter or habitat degradation at and around facilities' locations	Targeted inspections by MMNP staff
Objective 3: MMNP visitor information and guiding are high quality, relevant, informative and educational			
Target 3.1: The visitor centre is developed into a valued and popular point of call for many Park	Increased visitor support for MMNP	The number of tourists visiting the centre	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
		Visitor evaluation of the centre experience	

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
visitors	Destruction of evergreen forest habitat during construction	Habitat degradation at and around the visitor centre	Inspections by MMNP staff
	Increased disturbance, pollution and litter in the area once operational	Pollution and/or litter at and around the visitor centre	
Target 3.2: High quality visitor information materials produced and widely distributed	Visitors gain a better understanding of MMNP's ERVs, ecology and conservation issues	Number of guidebooks sold or leaflets distributed	Park management records
		Visitors' evaluation and feedback on information materials	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	No negative impacts foreseen	N/A	N/A
Target 3.3: Park guides are providing high quality guide and interpretation services, involving language capability and extensive park knowledge	Improved safety and enjoyment of visitors' excursions in MMNP	Visitors' evaluation and feedback on guiding quality	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	Visitor impacts on park habitats are minimised	Habitat inspections in visitor excursion areas	Targeted inspections by MMNP staff for pollution/habitat degradation along popular routes and intensively used areas
	No negative impacts foreseen	N/A	N/A

Table H.3: Community Outreach Programme Monitoring Plan

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Objective 1: Neighbouring community cooperation and support for conservation enhanced			
Target 1.1: Park-community communication channels and cooperation strengthened	Increased community awareness of MMNP rules/regulations	Incidences of trespass, encroachment and poaching within MMNP	Protection Department records
	Park outreach activities are better targeted to community aspirations	Community contributions (labour or resources) to park outreach activities	Park Outreach Department records
	Reduced conflict between MMNP and surrounding communities	Community attitude towards/ opinions of MMNP	Community surveys
	No negative impacts foreseen	N/A	N/A
Target 1.2: New and appropriate opportunities for local communities to benefit from the presence of MMNP developed and implemented	Increased value and importance of MMNP to Park-adjacent communities	MMNP SCIP contributions	Park accounts
		Income derived from economic activities linking communities to MMNP	COCOBA records
		Employment of local people, on an <i>ah hoc</i> or permanent basis	Park accounts
		Community attitude towards/ opinions of MMNP	Community surveys
	Increased immigration into areas surrounding MMNP	Trends in immigration/population increase in the Park-adjacent areas	Direct observation or ranger/outreach staff records
Target 1.3: Community-based ecotourism initiatives developed	Increased contribution of MMNP and conservation related activities to Park-adjacent communities	Direct benefits from tourists to communities	Community-based organisation/COCOBA records

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
	Benefits are captured by wealthy/ powerful community members	Number of recipients and distribution of financial benefits from schemes	Community based organisation/ COCOBA records
	MMNP high quality tourism product degraded by inappropriate initiatives/activities	Visitors' evaluation and feedback	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
Target 1.4: Cultural diversity and richness preserved and promoted	Enhanced linkages between the protection of MMNP and preservation of local culture	Frequency of cultural activities undertaken within the Park	Park management records
	Increased MMNP habitat degradation as a result of activities undertaken	Habitat degradation at and along access routes to cultural sites	Inspections by MMNP staff
	Access complicates or compromises resource protection	Increased incidence of poaching within MMNP	Protection Department records
Objective 2: Threats to MMNP exceptional resources reduced through improved community-based natural resource management			
Target 2.1: Sustainable land-use and environmental practices promoted	Decreased rate of natural habitat conversion to permanent agriculture in Park-adjacent areas	Clearance or burning of land	Direct observation or ranger/outreach staff records
	Decreased timber poaching from MMNP	Number of poachers caught, and tree stump counts	Protection Department records
	No negative impacts foreseen	N/A	N/A
Target 2.2: Effective	Optimised NRM in Park-adjacent	Number of village land use plans	MMNP Outreach Department records

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
community-based natural resource institutions and planning supported	areas for both MMNP resource conservation and community well-being	Operation of representative and inclusive village environmental committees in park-adjacent communities	
	No negative impacts foreseen	N/A	N/A

Table H.4: Park Operations Programme Monitoring Plan

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Objective 1: Protection of MMNP resources enhanced in collaboration with neighbouring communities			
Target 1.1: MMNP ranger effectiveness and capacity improved	Reduced impact of poaching/ trespass on MMNP resources	Number of arrests made per law enforcement effort	Protection Department records
	Other MMNP departments' operations are enhanced by information collected by rangers	Establishment of information-sharing mechanisms from rangers to other departments	Park management records
	No negative impacts foreseen	N/A	N/A
Target 1.2: Cooperation with local communities and external agencies in law enforcement and intelligence gathering enhanced	Decreased likelihood of illegal activities taking place in MMNP	Number of arrests made per law enforcement effort	Protection Department records
		Percentage of arrests leading to prosecution	
	No negative impacts foreseen	N/A	N/A

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Objective 2: Negative impacts on the environment and visitor experience from in-park developments minimised			
Target 2.1: High quality and environmentally sensitive research and visitor facilities developed at Kasiha	Improved environmental and visual impacts of MMNP research facilities	Implementation of EIA recommendations for developments	Inspections by MMNP and TAWIRI staff
		Any evidence of pollution, rubbish, or unplanned buildings in the area	Inspections by MMNP and TAWIRI staff
	Improved MMNP visitor experience	Visitor satisfaction	Visitor surveys (linked to Tourism Management Programme Action 1.1.3)
	Improved research outputs and researcher morale	Research documents and outputs	TAWIRI Annual Reports
	Destruction of habitat, particularly evergreen forest, during construction	Habitat destruction at and around the research facilities and visitor centre	Targeted inspections by MMNP and TAWIRI staff
Target 2.2: TANAPA site planning and environmental impact procedures implemented	Reduced environmental and visual impacts of park management facilities	Visitor and tour operator feedback	Visitor surveys and outputs of annual MMNP-tour operator meetings
	No negative impacts foreseen	N/A	N/A
Objective 3: Working and living conditions of MMNP staff improved			
Target 3.1: Training needs and staffing requirements for each department are met	Improved efficiency of MMNP staff undertaking their assigned duties	Performance against departmental annual operating plan activity targets	Park management records
	No negative impacts foreseen	N/A	N/A

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
Target 3.2: MMNP staff accommodation, facilities and welfare improved	Improved morale of MMNP staff	Staff satisfaction	Staff feedback, or specific surveys
	Environmental degradation as a result of facility construction	Excessive habitat degradation at and around construction sites	Inspections by MMNP staff
	Disturbance to freshwater systems as a result of increased extraction for consumptive use	Water quality, species composition and flow rate of rivers/ streams utilised	MMNP Ecological Monitoring results
Objective 4: MMNP is well served by good internal and external transportation and communication networks			
Target 4.1: Transport and communication links within and around the park improved	Improved efficiency of MMNP operations	Performance against departmental annual operating plan activity targets	Park management records
	Improved staff and visitor safety	Safety incidences	
	No negative impacts foreseen	N/A	N/A
Target 4.2: Transport and communication links between MMNP and outside centres improved	Simplified logistics of supplying MMNP with essential goods and services	Annual transport costs	MMNP accounting records
	Improved morale of MMNP staff	Staff satisfaction	Staff feedback, or specific surveys
	Environmental degradation during harbour construction	Evidence of habitat destruction or pollution	Inspections by MMNP staff
Objective 5: MMNP stakeholders are collaborating to reduce conflict and to ensure their activities within MMNP are mutually compatible			
Target 5.1: Communication and cooperation	Improved stakeholder support for MMNP	Number of formal MMNP-stakeholder meetings per year	Park management records

Management Target	Potential Impacts (Positive and Negative)	Indicator	Source of Information
between park management, tourism operators, FZS and researchers strengthened	management objectives	Number of GMP activities implemented by MMNP partners	Annual operation plan/ action plan review
	No negative impacts foreseen	N/A	N/A

Annex 1 Bibliography

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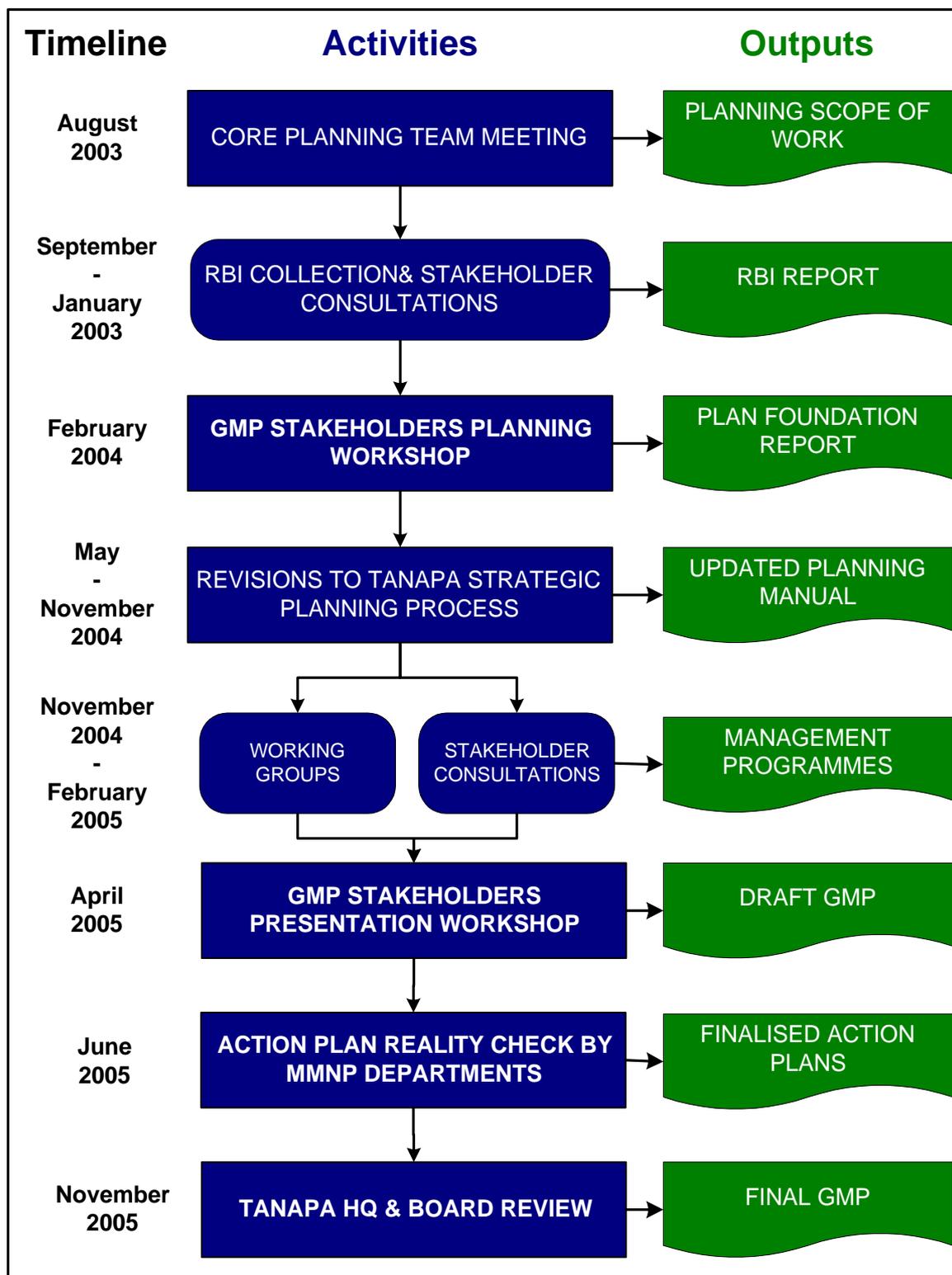
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Annex 2 MMNP GMP planning timeframe



Annex 3 Overnight accommodation definitions

1. Permanent Accommodation

A **Permanent Tented Camp** has one level, cement or wood platform, tented structure with reception, dining room and bar. There are a series of one level, cement or wood platform, and separated permanent tented bedroom structures.

2. Non-permanent tented camps

Public Campsites:

- ▶ All temporary tented camps, numbered and designated tent sites with perimeter definition for tent locations, fire rings, and parking area
- ▶ Permanent toilet structures
- ▶ TANAPA regularly scheduled waste pickup collection system and toilet maintenance

Wilderness Campsites:

- ▶ Non-designated (may be designated under special circumstances) tented campsites and foot trails
- ▶ Access by foot only
- ▶ No permanent structures or roads of any type
- ▶ Tour operator or individual user responsible for packing out all waste
- ▶ Camouflage camping techniques

Annex 4 MMNP Staff training needs

Staff Members	Educational Background & Training	Long-Term Training Needs	Short-Term Training Needs
Chief Park Warden	ACSSE Dip. Wildlife Management	BSc Ecology, Zoology, Wildlife Management, Conservation Biology, Wildlife Law	Intelligence/Investigation; Human Resource Development & Management; Materials Management
Park Ecologist	ACSSE BSc Wildlife Management	MSc Ecology, Wildlife Management or Conservation Biology	Intelligence/Investigation; Human Resource Development & Management; Materials Management
Protection Warden	ACSSE Dip. Wildlife Management	BSc Ecology, Zoology, Wildlife Management, Conservation Biology, Wildlife Law	Intelligence/Investigation; Human Resource Development & Management; Materials Management
Community Cons. Warden	ACSSE Dip. Wildlife Management	BSc Ecology, Zoology, Wildlife Management, Conservation Biology, Wildlife Law	Intelligence/Investigation; Human Resource Development & Management; Materials Management
Park Accountant	ACSSE Advanced Dip. Accountancy	Certified Public Accountant	Human Resource Development & Management; Computer Use
Rangers x 2	OCSSE	Certificate in Wildlife Management	Military; Legal Aspects of Prosecution; Presentation of Evidence in Court of Law; Mechanics; English Language; Radio; Communication; Diving; Computer use; GIS Use
Rangers x 22	Standard VII primary education	Certificate in Wildlife Management	Military; Legal Aspects of Prosecution; Presentation of Evidence in Court of Law; Mechanics; English Language; Radio; Communication; Diving; Computer use; GIS Use
Accounting Assistant x 1	OCSSE	Certificate in Accountancy	Computer Use; Basic Accountancy; Store

Staff Members	Educational Background & Training			Long-Term Training Needs	Short-Term Training Needs
					management
Accounting Assistants x 2	Standard Education	VII	primary	None	Computer Use; Basic Accountancy; Store management
Office Attendants x 3	Standard Education	VII	primary	None	Tour guide; Botany; Hotel Management & Customer Care
Secretary x 1	Standard Education	VII	primary	None	Secretarial; Computer Use; English Language
Guides x 5	Standard Education	VII	primary	None	Tour Guide; Computer Use; Hotel Management. & Customer Care; English
Clinical officer x 1	OCSSE Dip. Clinical Medicine			Advanced Dip. Social Sciences	Refreshers Courses in Clinical Medicine
Boat drivers x 4	Standard Education	VII	primary	None	Mechanics
Technicians x 2	Standard Education	VII	primary	None	Refresher Courses in Mechanics; Diving

Source: Mohamed and Lowassari (2004)

NB. The MMNP Tourism Warden was the only staff member who did not complete the training needs self-assessment.

Annex 5 MMNP GMP Planning Team

Name	Position/Organisation	Workshop		Working Groups			
		#1	#2	Ecosystem	Tourism	Community	Park Ops
A. Kasanga	Buhingu Village	4					
Abdallah Ahmadi	Nkonkwa Village		4			4	
Adam A. Missana	District Development Officer, Kigoma Rural District		4			4	
Adam Willcox	Community Conservation Advisor MEMP, FZS	4	4	4	4	4	4
Anne Pucey	Director of Primate Research, JGI Centre for Primate studies			4			
Bosco Kessi	Jr Community Conservation Officer MEMP, FZS		4			4	
Charles Mlingwa	Director General, TAWIRI				4		
Crispin Mwinuka	Ecologist MMNP	4	4	4	4	4	4
Dany Mockray	Fisheries Officer, Kigoma Rural District		4				
David John	Camp Manager, Kigoma Hilltop Hotel				4		
David Henson	Programme Officer, CDC		4	4	4	4	4
David Moyer	Wildlife Conservation Society, Iringa			4			
Elida Fundi	Jr Community Conservation Officer MEMP, FZS	4	4			4	
Emmanuel Mtiti	Project Manager, TACARE		4				
Emma Willcox	Project Ecologist/Administrator MEMP, FZS	4	4	4	4	4	4
Francis Alfred	Buhingu Village		4			4	
George Sabuni	Director of research, TAWIRI	4			4		
Greyson Maro	Protection Warden, MMNP		4			4	4
H. M. Mdayikeje	Land Officer, Kigoma Rural District	4	4				
Hamid Said	Nkokwa Village		4			4	
Hamisi Almase	Kashagulu Village		4			4	
Harunamahamudu	Igalula Village	4					
Hassan al Haji Mohamed	CPW MMNP	4	4		4	4	4
Henry O. Clemens	District Commissioner, Kigoma Rural District		4				
I. A. Lejora	MEM, TANAPA HQ	4	4		4		
Iddy Yusufu	Buhingu Village	4					
Imtiaz Lauji	Kigoma Hilltop Hotel	4			4		
Issa Zubery	Igalula Village		4			4	
James Wakibara	Ecologist Kilimanjaro NP	4	4	4			
Joseph M. Kessy	TANAPA Senior Planner				4	4	4
Joseph Marcco	Igalula Village		4			4	
Jumanna Ramadhani	Igalula Village	4					
Kareuga J. Selewaui	Sibwesa Village		4			4	
K. Siulapwa	AgDNRO Kigoma Rural District Council	4					
Kabanqwa Amani	Kasagulu Village		4			4	
Magus Moshu	Jr Wildlife Officer, FZS		4			4	
Markus Borner	Head Africa Department, FZS		4			4	4

Name	Position/Organisation	Workshop		Working Groups			
		#1	#2	Ecosystem	Tourism	Community	Park Ops
Michael Wilson	Director of Field Research, JGI Tanzania	4	4	4			
Michio Nakamura	Department of Zoology, Kyoto University	4		4			
Mohamed A. Masha	District Executive Director, Kigoma Rural District	4					
Moshi Sauze	Agriculturist, TACARE					4	
Nicholaus Kinyau	Sr Community Conservation Officer MEMP, FZS	4	4			4	
Noel Ole Lowassari	Protection Warden MMNP	4					
Noelia Myonga	Planning Department TANAPA HQ	4	4				
R. Rubase	Kalya Village		4			4	
Ramadhani EE Ruhomwa	Clinical Officer MMNP	4					
Rashid Maangako	Kalya Village	4					
Robert Malpas	CEO, Conservation Development Centre	4	4	4	4	4	4
Robert Ningangwa	Jr Community Conservation Officer MEMP, FZS	4					
Robert Talalai	Tourism Warden, MMNP		4			4	4
Roland Purcell	Nomad Tanzania	4	4		4		
S. I. Utiku	Park Accountant MMNP	4	4				4
Samuel Kimaro	Head of Garage MMNP	4	4				4
Simon Mduma	TAWIRI		4	4			
Simon Thirgood	Programme Officer, FZS	4			4		
Sixtus D. Mushi	Kigoma Hilltop Hotel		4				
Vallentine N. Kabodi	Fisheries Officer Kigoma Rural District	4					
Yuda Ruseni	Buhingu Village		4			4	
Yustin Njamasi	Community Conservation Warden, MMNP		4			4	4