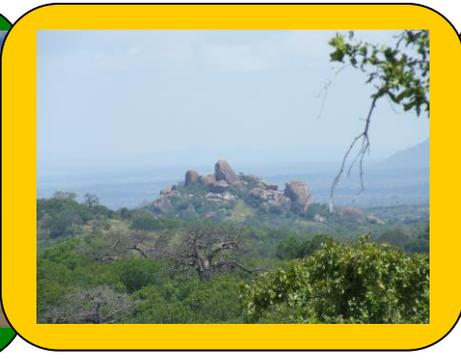




RUAHA NATIONAL PARK
GENERAL MANAGEMENT
PLAN

2009 TO 2019



PREFACE

Ruaha National Park (RUNAPA) is situated in the South Central part of Tanzania between the latitudes of seven and eight degrees south, comprising portions of Iringa and Mbeya Regions. It is approximately 20,300 km² in area and generally lies to the West of the Southern highlands, between the Great Ruaha River in the southeast and the Mzombe River in the north-west.

Ecologically, RUNAPA is interesting because it covers a transition zone where East and South African species of both flora and fauna meet. These zones together with the Usangu wetlands and the Great Ruaha River are among RUNAPA's tourist attractions.

The park faces a number of challenges that include drying up of the Great Ruaha River and its ecological effects in the Greater Ruaha Ecosystem. Another challenge is the eminent loss of ecological connectivity within the ecosystem, which is a result of human activities (agriculture and livestock keeping) taking place in areas adjacent to the park. Due to this fact, human – wildlife conflicts are severe. Rampant poaching, poor visitor access to the park from other strategic areas and inadequate visitor accommodation facilities are additional challenges that we need to strive to address.

Recently the Government has made a decision to annex the Usangu/Ihefu wetland and some of its surrounding catchment areas to the park in order to address the above issues and challenges. These concerted efforts by the Government aim at ensuring conservation of natural resources and the continuous flow of water in the Great Ruaha River. This is an important move to ensure constant production of hydroelectric power at Mtera dam throughout the year.

In order to address adequately all critical issues and problems identified in the process of preparing this General Management Plan (GMP) a multidisciplinary approach was used to involve different teams of experts and key stakeholders. Likewise, the implementation of this plan would be done in collaboration with all key stakeholders. In order to simplify the implementation of this GMP, the management programs are directly linked to specific RUNAPA Departments. Each program has used a “Logical Framework Approach” (LFA) to clearly present the program objectives, targets, and management actions in relation to the management issues they address. The Management plan has 3-year rolling action planning component, which helps to strategically implement the 10-year GMP strategic framework.

We are convinced that while preparing this GMP the dialogue held among the different stakeholders who were involved in the process, was an important step in addressing critical problems facing the Park. This implies that the Chief Park Warden of Ruaha National Park and his/her staff will continue with the same spirit to implement this plan by involving all key stakeholders.

Edward Kishe
Acting Director General
Tanzania National Parks

APPROVAL PAGE

The Board of Trustees and the Management of Tanzania National Parks has approved the implementation of this General Management Plan for Ruaha National Park.

.....
Chairman, Board of
Trustees
Tanzania National Parks

Date:

.....
Edward Kishe
Acting Director General
Tanzania National Parks

Date:

EXECUTIVE SUMMARY

This 10-year (2009-2019) General Management Plan (GMP) has been produced according to the TANAPA Strategic Planning Process, is the second for Ruaha National Park (RUNAPA). This GMP is expected to guide the day-to-day management needs of the Park.

A participatory planning approach was adopted to develop this GMP, which brought together key RUNAPA stakeholders TANAPA (Headquarters and Park management), Wildlife Department, RBWO, hotel operators, MBOMIPA, scientists, district government, NGOs, rice farms, and local communities. The process involved a series of specialist working groups and interdisciplinary planning team meetings, which enabled the diverse interest groups to work together constructively, aiming at achieving a sustainable conservation of park resources.

The GMP is organized into four major Management Programs, each of which is aligned with different RUNAPA Departments. These Management Programs 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 program consists of a long-term strategy, with management objectives, targets, actions and, where appropriate, management prescriptions for the full 10-years of the GMP. Potential environmental impacts of major program actions were evaluated, with mitigating measures identified to reduce, eliminate, or avoid any adverse affects.

A three years action plan was developed for each Management Program and is designed to be regularly rolled forward and monitored throughout the implementation of this 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 (AOP) to be developed by RUNAPA management.

Park Purpose and Exceptional Resource Values

The Park Purpose Statement summarises the importance of the protected area based on the Exceptional Resource Values (ERVs) of the Park, historical considerations, and prevailing national and TANAPA policies.

In this context, the primary purpose of the Ruaha National Park is:

Park Purpose: *To protect and preserve Park's ecological integrity and cultural resources ensuring that they are wisely used to continue improving livelihoods for present and future generations.*

The fulfilment of the Park Purpose and the maintenance of the Park's Exceptional Resource Values will be addressed in this GMP through four distinct management programs/strategies, described in the following sections:

- ❖ Ecosystem Management Program/strategy
- ❖ Tourism Management Program/strategy
- ❖ Community Outreach Program/strategy
- ❖ Park Operations Program/strategy

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 as indicated in the table below.

Category	Exceptional Resource Values
Natural	Great Ruaha, Mzombe Rivers and Usangu basin
	Unique and exceptional biodiversity associated with two (2) major vegetation communities.
	Vast wilderness and undisturbed areas
	Rare, threatened and endangered species
	The largest elephant population of any East African National Parks
	Riparian woodland and other riverine vegetation forms a significant resource for a large proportion of the park's wildlife.
	Population of greater and lesser kudu, roan and sable antelopes existing in a combination not found elsewhere in a Tanzanian National Park
	High Birdlife diversity including migratory and resident species in Usangu basin.
Social	Direct economic benefits from tourism to communities
	National economic benefits, particularly from tourism
	Community social services from community outreach
Cultural	Historical and cultural sites

Zoning Scheme

The zoning of RUNAPA 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.

High Use Zones

These zones cover parts of the park along the Great Ruaha River and eastern Ihefu in Usangu. These are parts of the Park with highest human activities and impacts.

Low Use Zones

These zones will have a lower number of visitors and activities than the High Use Zone, which will result in a low frequency of contact between tourists.

Wilderness Zone

The Wilderness Zone is subject to minimal disturbance. As a result, visitor access will be restricted to walking safaris and game viewing by vehicle will be prohibited. The only infrastructure permitted will be a limited number of tracks that can be used by RUNAPA management and support vehicles for walking safari operations.

Management Programs

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

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

The key features of these Programs are described below:

Ecosystem Management Program/Strategy

The Ecosystem Management Program identifies eight RUNAPA **Conservation Targets** - the ecological components that capture the unique biodiversity of the Park. The Conservation Targets identified for RUNAPA are:

Conservation Targets	Ecosystem Level
1. The Great Ruaha, Mzombe/Kizigo rivers, western and eastern (Ihefu) wetlands of Usangu basin 2. Corridor/dispersal areas 3. Geological (Rift valley and escarpment) and cultural resources (Nyanywa, Mapenza, N'Giriama)	System
4. Bio-geographical zones (Miombo, Savannah and Riverine vegetation) 5. Migratory bird species 6. Drypetes forests	Community
7. Elephant 8. Wild dogs	Species

The Ecosystem Management Program aims at ensuring that all RUNAPA resources are conserved through the implementation of strategies designed to reduce specific threats to the prioritised Conservation Targets and to restore the species-level Conservation Targets. Management actions to reduce threats to the Park will concentrate on using sound ecological understanding to inform, influence and collaborate with key stakeholders involved in management and decision-making within the Greater Ruaha ecosystem. A Fire Management Plan will be developed and implemented in order to control and minimise the damage caused by wildfires and direct the use of fire for management purposes.

The Program also provides a **framework** for the development of a simple and cost-effective Ecological Monitoring Plan for RUNAPA, based on the Park's Conservation Targets and their key ecological attributes. The Ecological Monitoring Plan developed will enable an assessment of management interventions as well as facilitating adaptive management.

Tourism Management Program/Strategy

The Tourism Management Program or strategy aims to provide an outstanding experience for both local and international visitors, optimal economic benefits to the nation, TANAPA, private sector partners and local communities, and minimal impacts on the Park's resource values. A high priority for this GMP will be the enhancement of visitor access and use, while at the same time minimising disturbance to key habitats and wildlife. One of the main ways of

achieving these dual aims will be the **diversification and dispersal** of tourism activities, especially in the northern, southern, western and parts of the park, which are presently underdeveloped. In addition, efforts to mitigate visitor impacts will be enhanced through the dissemination and enforcement of the **Code of Conduct for visitors (guidelines)**, which summarizes the park rules and regulations through a few general behavioural characteristics expected of visitors, their tour guides, and drivers.

This program aims at achieving a World class and environmentally responsible tourism experience by upgrading and expanding the existing visitor facilities. These improvements will be done in close consultation with the tourism industry, with priorities being to upgrade access to diverse Park attractions, water supply, and sanitation throughout the Park.

RUNAPA information services and administration support systems will be improved in order to enhance visitor experience. An expanded and enhanced network of visitor interpretation facilities will be developed, including a visitor centre.

Community Outreach Program/Strategy

The Community Outreach Program aims to enhance the support and collaboration of the communities surrounding the park in order to safeguard the ecological integrity of RUNAPA's resource values. The planned activities to achieve this will include scaling-up the conservation education program to all park-adjacent districts, and improving park-community communication and co-operation. Implementation of this Program will focus on improving the **Support to Community Initiated Projects** (SCIP) scheme.

Park Operations Program/Strategy

The Park Operations Program aims to enhance the efficiency and effectiveness of RUNAPA park operations. The GMP problem analysis identified poaching as the priority management issue to be addressed by this Program. In response, RUNAPA management will investigate and pilot modern **anti-poaching** techniques; re-equip the Protection Department with the necessary modern equipment and build ranger-local community cooperation and anti-poaching reward schemes.

Another priority for this Program is to achieve best practice in park administration and management systems. The first action to achieve this will be to build the capacity and motivation of the park staff - through relevant training, the provision of better medical services, and improved working environment for all personnel.

3-year Action Plans

This section provides the initial 3-year Action Plans for each of the four management programs. 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, the input requirements, and responsibility for implementation. Where appropriate, each action described under the management program 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.

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PLAN INTRODUCTION

This General Management Plan (GMP), which is the second for the Ruaha National Park (RUNAPA) covers the 10-year period from 2009 to 2019.

This GMP is intended to guide and facilitate the management of park resources, the uses permitted within the area, and the infrastructure development needed to support that management and use. An important underpinning of the GMP is the establishment of **long-term strategies** and **management objectives and targets** for addressing RUNAPA'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 **management actions** need to be implemented, when to tackle them and the human and other resource requirements needed to implement them. These management actions and the specific activities needed to accomplish them will be re-developed every three years according to the changing Park management needs.

The RUNAPA GMP follows the generic GMP structure established by TANAPA, as described in the TANAPA Strategic Planning Process Manual (1995a). However, the RUNAPA Core Planning Team has adjusted the planning process and plan structure to take into account lessons learnt on previous TANAPA Park planning exercises, and the special needs of RUNAPA. In particular, emphasis has been placed on making the plan more relevant to the day-to-day management needs of RUNAPA park managers.

The plan structure, as illustrated in Figure A.1 below, defines the main sections of the plan. The following sections describe some key aspects of the plan structure adopted for the Ruaha GMP.

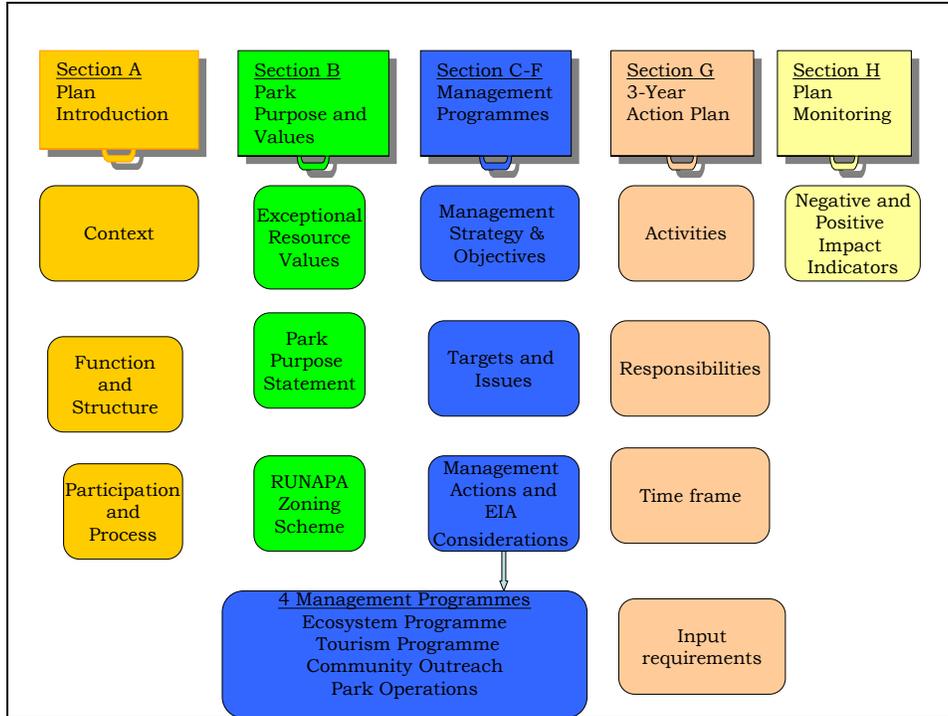
Alignment of GMP with RUNAPA Departments

The structure of the GMP puts emphasis on planning by **Management Programs**. These programs provide the long-term management strategies, objectives, targets, actions and, where appropriate, prescriptions for achieving the park purpose and maintaining the Park's Exceptional Resource Values (ERVs). The four Management Programs or strategies for RUNAPA are:

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

Structuring the GMP into these four discrete programs facilitates understanding and subsequent implementation.

Figure A.1: GMP structure



This is achieved through alignment of all programs with different Departments in RUNAPA, such as the Ecology and Tourism Departments. Allocating responsibility for implementing individual Management Programs to specific RUNAPA Departments also helps to build a sense of ownership and accountability for GMP success in the concerned Department. Finally, Management Programs also complement the Logical Framework Approach to park planning (see below).

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, such that the GMP remains relevant to the day-to-day management issues and needs of RUNAPA management staff. Specifically, the approach aims to ensure that there is a strong link between the actions prescribed by the GMP and the Annual Operations Plans (AOPs)

developed by park management, which is directly linked to the corporate annual budgeting cycle of TANAPA Headquarters. Figure A.2 below illustrates the linkages between the three main park-level planning mechanisms.

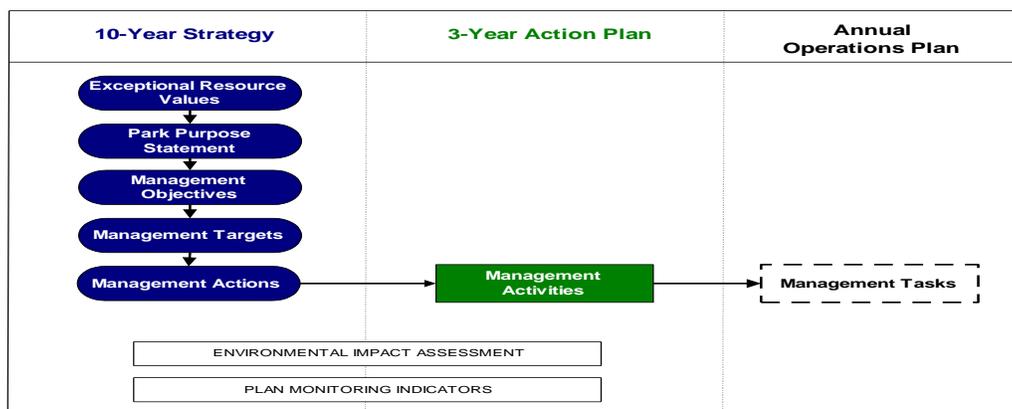
Logical Framework Approach (LFA)

The LFA is now the methodology of choice in development projects planning, and provides an efficient, accountable, and logical rationale for planning that 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 and the activities in the 3-Year Action Plan, and ultimately the management tasks in the Annual Operations Plan (see Figure A. 2 below).

Participation

The TANAPA strategic planning process aims to ensure that the national park’s stakeholders are given an appropriate opportunity to contribute to the design of the GMP. In this way, the 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.

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



At an early stage, the RUNAPA Core Planning Team carried out a Stakeholders Analysis as a basis for developing a simple participation and communications strategy for the planning process (see Table A.1 below).

Table A.1: RUNAPA GMP Planning Process Communications Strategy

Involve	Consult	Raise Awareness	No Action
Friends of Ruaha	Friends of Ruaha	Friends of Ruaha	Livestock development vs. Tsetse flies eradication
MBOMIPA	MBOMIPA	MBOMIPA	Agricultural development
WD	WD	Surrounding GRs	Hunting companies
KDU – Iringa	KDU – Iringa	KDU	Sources of energy
Investors	Investors	Investors	Tobacco farming and processing
District Councils – Dodoma Rural, Iringa Rural, Mbarali and Chunya	District Councils – Dodoma Rural, Iringa Rural, Mbarali and Chunya		Local communities
Local Communities	Local Communities	Local communities	
Tour Operators	Tour Operators	Tour operators	
WCS	WCS	WCS	
WWF	WWF	WWF	
CONCERN	CONCERN	CONCERN	
Student Partnership Worldwide (SPW)	Student Partnership Worldwide (SPW)	Student Partnership Worldwide (SPW)	
Politicians	Politicians		
TANAPA	Central Government – Treasury		
Staff	Universities		
Rufiji Basin	Tourists		
Hunting Companies	TANAPA		
CBOs – Livestock Keepers Association, Mapogoro	RUNAPA Staff		

Beekeepers Association			
	Rufiji Basin		
	Hunting Companies		
	CBOs – Livestock Keepers Association, Mapogoro Beekeepers Association		
TANESCO	TANESCO		
	Ministry of Agriculture and Food Security		
TANROADS	TANROADS		
	Ministry of Water and Livestock Development		
	Ministry of Energy and Mining		
	Tanzania Civil Aviation Authority		
Forest Division	Forest Division		
Ministry of Natural Resources and Tourism	Ministry of Natural Resources and Tourism		
Vice President's Office - Environment	Iringa Tourism Association		
Iringa Tourism Association	Tourism Division		
Tourism Division			

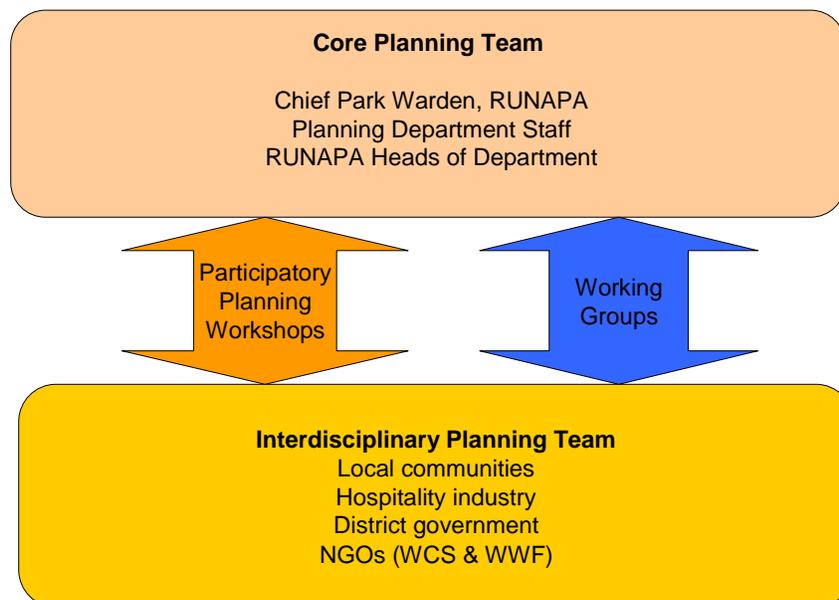
Stakeholders were assigned to categories according to their anticipated degree of participation in the planning process:

1. **Involve** – key stakeholders forming the Ruaha Planning Team (see Figure A.3 below), that were invited to participate in and contribute to the main GMP planning workshops and, as appropriate, the management program working groups.
- ▶ **Consult** – important stakeholders who were actively consulted during the planning process, and whose inputs were directly incorporated. Consultation was carried out through one-on-one interviews.

- ▶ **Raise Awareness** – stakeholders who were sensitized about the planning process and given an opportunity to provide feedback, but were not directly involved or consulted.
- ▶ **No Action** – stakeholders for whom there was no immediate benefit in targeting for their involvement in the planning process.

The planning process consequently adopted for the Ruaha GMP involved a multi-layered approach to participation, the objective being to provide an opportunity for as many stakeholders as possible to contribute to the planning process in realistic and appropriate ways. Figure A.3 illustrates the interactions between the various stakeholders making up the GMP Planning Team.

Figure A.3: Ruaha GMP Planning Team



The Process

As detailed above, this GMP has been developed through a participatory process to ensure that it has wide support from among the Park's varied stakeholders and is both realistic and implement able.

The planning process began with a meeting of the RUNAPA Core Planning Team, which was followed by an intensive period of information collection and

stakeholder consultations leading to the production of a **Resource Base Inventory** (RBI) report. The RBI presents an up-to-date synthesis of key background information and the state of knowledge on RUNAPA that is useful in the development of the GMP, and covers the following main topics:

- ▶ New collations of *fauna and flora inventories*
- ▶ Available information on topography, wildlife distribution, river networks, fire events, park infrastructure and park-adjacent developments and activities
- ▶ Outputs from *stakeholder consultations*
- ▶ An analysis of *RUNAPA management issues*
- ▶ Information on *research published* on the Ruaha

The full GMP Planning Team used the RBI report and the first **GMP Stakeholders Planning Workshop** held in June 2005 to develop the long-term strategic framework for managing RUNAPA. The GMP planning process involved developing the Park's purpose and resource values and the identification and prioritisation of the main management issues and opportunities that influence the Park's values and the achievement of the Park's purpose. The GMP Planning Team developed provisional 10-year management objectives and targets for the RUNAPA management programs, which provided the framework for further plan development.

Specialist Working Groups made up of the appropriate RUNAPA and TANAPA HQ managers, selected resource people and relevant stakeholders, subsequently developed the specific details of the management programs. Each group elaborated the overall strategy, or general statement of policy, guidelines and prescriptions where necessary, and the 3-year Action Plans for the relevant management program.

B

PARK VALUES AND PURPOSE

RUNAPA Exceptional Resource Values

Exceptional Resource Values (ERVs) are the biophysical features of a national park that are assessed as being 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 RUNAPA's ERVs provides a foundation for formulating the Park's purpose statement, identifying the Park's management problems and opportunities, and generating management objectives and targets.

Table B.1 below shows the top twelve ERVs prioritised by the GMP Planning Team. The ERVs are grouped according to four main categories: *natural*, *scenic*, *social* and *cultural*. Each of these ERVs is described below.

Table B.1: RUNAPA Exceptional Resource Values by category

Category	Exceptional Resource Value
Natural	Great Ruaha, Mzombe Rivers and Usangu Basin
	Unique and exceptional biodiversity associated with two (2) major vegetation communities.
	Vast wilderness and undisturbed areas
	Rare, threatened and endangered species
	The largest elephant population in any east African national parks
	Riparian woodland and other riverine vegetation forms a significant resource for a large proportion of the park's wildlife.
	Population of greater and lesser kudu, roan and sable antelopes existing in a combination not found elsewhere in a Tanzanian National Parks
	High birdlife diversity including migratory and resident species in Usangu basin.

Scenic	The limitless landscape of rolling hills, inselbergs, mbugas and sand rivers
Social	Direct economic benefits from tourism to communities
	National economic benefits, particularly from tourism
	Community social services from community outreach
Cultural	Historical and cultural sites

NATURAL

Great Ruaha, Mzombe Rivers and Usangu Basin

The Great Ruaha River is on the south and south-eastern boundary of the park, and Mzombe River is on the northern boundary with Rungwa Game Reserve. These two rivers are fed from several tributaries that criss – cross the park and form some of the most important permanent source of drinking water for both wildlife and people in the entire ecosystem throughout the year. The Great Ruaha River is an important tourist attraction in itself with its cascades and numerous aquatic fauna including fish, hippos, crocodiles, and water birds.

Usangu/Ihefu wetlands are on the southern part of the park. Conservation of the wetland ensures the continuous flow of water in the Great Ruaha River and constant production of hydroelectric power at Mtera dam.

Unique and exceptional biodiversity associated with two major vegetation communities

The vegetation of Ruaha National Park represents the southernmost point for some of the typical East Africa semi arid savannah vegetation types and most northerly distribution of the *brachystegia* zone of the Zambezian Miombo woodland of the Southern Africa. This interface of two vegetation communities with its associated wildlife species makes Ruaha a unique park containing a variety and combination of important fauna and flora from two communities. Some of the most important of these combinations are presence of sable and roan antelope; lesser and greater kudu; *acacia*, *combretum*, *commiphora* and *brachystegia* (Miombo) woodland. The interface allows the existence of uniquely higher biodiversity than other similar sized areas in East Africa. The opportunity to explore and enjoy this unique interface by visitors and local people can only be experienced in Ruaha National Park.

Vast wilderness and undisturbed areas

One of the major values of Ruaha National Park is its remoteness, which has been partly attributed to long distance from major tourist entrance points at Dar es Salaam and Kilimanjaro International Airports, and to its topographical features. The undulating terrain criss – crossed by deep ravines because of the rift wall and the escarpment makes it quite inaccessible for a greater part of the year. These natural barriers have favoured Ruaha National Park so much that it contains one of the most vast wilderness areas in the entire parks system in Tanzania.

Rare, threatened and endangered species

Ruaha National Park contains wide-ranging species of flora and fauna some of which appear in the IUCN red list of Threatened and Endangered Species. The following wildlife species present in Ruaha National Park fall under this category:

African Hunting Dog (<i>Lycaon pictus</i>)	Endangered
Elephant (<i>Loxodonta africana</i>)	Vulnerable
Cheetah (<i>Acinonyx jubatus</i>)	Vulnerable

Gerenuk and topi are rare animals in Ruaha National Park. Gerenuk was last seen in Lunda area in 2003. Status of the animal would be established.

The largest elephant population in any East African National Parks

During the periods from between 1977 to 1987 elephant population were reduced by more than 50% in most of the protected areas in East Africa. Despite these elephant massacres, Ruaha National Park has been able to maintain the highest number of elephants in the National Parks System in the whole region. Recent wildlife surveys indicate that elephant population estimates presently in the Ruaha – Rungwa – Kizigo ecosystem lie between 12,900 and 15,600 with approximately between 6,000 and 8,000 being found inside the park (TWCM, 1994). Ruaha National Park has been able to sustain such a high elephant population due to its terrain as well as an increase in surveillance by rangers.

Population of greater and lesser kudu, roan, and sable antelopes existing in a combination not found elsewhere in Tanzanian National Parks

Ruaha National Park is the only park in the country where you encounter flora and fauna characteristic of the dry East African savannah and the Southern African (Zambezian) miombo woodland. Of particular interest in Ruaha are the species associated with the unique wildlife habitat represented by *Acacia*,

Combretum, *Commiphora* and *Brachystegia* (miombo) woodland and perennial grasses. The wildlife species include the greater and lesser kudu, the roan and sable antelope. The combination of these wildlife and their habitats, which is not found in any other national park in the country makes a lasting memory to all visitors to Ruaha National Park. Similarly, Ruaha National Park represents the southernmost range of grants gazelle in East Africa and the sighting of these antelopes in Ruaha reminds visitors of the fact they are still in the Eastern African region.

Riparian woodland and other riverine vegetation forms a significant resource for a large proportion of the park's wildlife

Ruaha National Park is situated in central Tanzania where the climate is semi – arid, characterised by low rainfall, scorching sunlight, dry and with desiccating, sometimes gusting winds and the landscape is dominated by deciduous vegetation. Along the perennial rivers are found broad-leafed trees, which form an important wildlife habitat. They provide shade and cover and act as a food reservoir for the majority of the wildlife in the park during the dry season when all the surrounding vegetation in the savannah and miombo woodland have shed their leaves. This situation is especially favourable for visitors to the park who will always be assured of a concentration of game at short distances along riverine vegetation. The sight of such riparian vegetation in a semi arid environment is an exciting tourist concentration.

High birdlife diversity including migratory and resident species in Usangu basin

RUNAPA is an important habitat for migratory bird species; Birdlife International recognizes the area as an Important Birdlife Area (IBA) and has declared the Usangu wetland as one of Tanzania's IBAs. Up to 540 species of birds may be found here, about 80% resident and 20% migratory; some 350 species have so far been recorded.

The wetland contains species which are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) e.g. the grey crowned crane (*Balearica regulorum*).

Threatened species e.g. wattled crane; endemic bird species e.g. ashy starling; vulnerable bird species e.g. the pallid harrier and black winged praticole are also found in RUNAPA.

Ihefu wetland is also an important breeding, feeding and resting site for a vast of waterfowl. Overall, Usangu contains some of the highest concentrations of waterfowl in Tanzania.

SCENIC

The limitless landscape of rolling hills, inselbergs, mbugas and Sand Rivers

Ruaha National Park possesses one of the most important wilderness areas in Tanzania. The geography is dramatic with areas of flat grassland and with the shining and cascading waters of the Great Ruaha River, fringed by tall tamarind, wild figs, and *Acacia albida* trees, winding through the south and south – eastern section of the park. Much of the park is made up of rolling hills, rocky outcrops (inselbergs), sand rivers and seasonally water logged mbugas interspersed with different types of woodland forest. The view of the landscape in Ruaha conjures image of a never – ending solitude and remoteness while the hills’ blue shades in the horizon inject new hope for life in most visitors to Ruaha National Park.

SOCIAL

Direct economic benefits to communities

The communities neighbouring the Park receive direct economic benefit predominantly through employment within RUNAPA Departments and tourist facilities both within the Park and within the neighbouring community areas. Another area of direct economic benefit comes from the RUNAPA revenue sharing program, which provides a percentage of Park fees through the Support to Community Initiated Projects (SCIP), described below.

National economic benefits

The RUNAPA is one of the famous tourist destinations in central Tanzania with 28,067 visitors in the financial year 2005/06. This tourism contributes considerable economic benefit to the nation, with revenues from RUNAPA amounting to Tshs 349,772,675 for the financial year 2005/6. RUNAPA has four private tourist accommodation facilities. All these companies pay different government taxes.

Community social services from community outreach

In line with TANAPA’s Support for Community Initiated Projects (SCIP), the communities adjacent to the Park are given technical, material and financial assistance to implement community based development projects, such as the construction of school, health and water facilities, and feeder roads to villages. The total value of the SCIP projects contributed to by the Park since the start of the scheme in 1994 is more than Tshs 326,542,507.20

CULTURAL

Historic and cultural sites

Cultural resources existing in Ruaha include Mapenza graveyard, Jiwe la Kanga, and Ganga la Mafunyo. Other cultural resources include Mkwawa springs, Nyanywa, Hussman's Bridge, old ferry, Milima ya Ikiri paintings and Ngiriama. There are many similar resources outside the park including Isimila stone age site, Lugalo, Kalenga, Nyamahana and Daraja ya Mungu on Little Ruaha River.

RUNAPA 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 Ruaha National Park is:

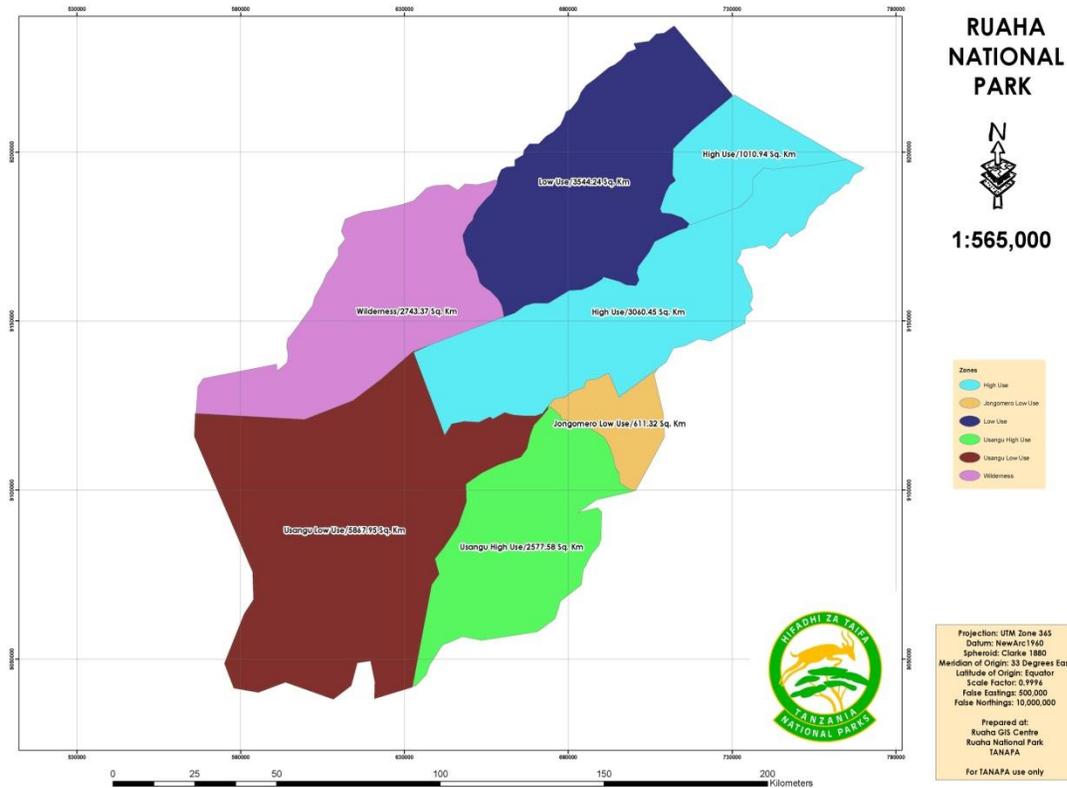
Park Purpose: To protect and preserve Park's ecological integrity and cultural resources ensuring that they are wisely used to continue improving livelihoods for present and future generations.

The fulfilment of the park purpose and the maintenance of the Park's exceptional resource values will be addressed in this GMP through four distinct management programs/strategies, described in the following sections:

- ❖ Ecosystem Management Program/strategy
- ❖ Tourism Management Program/strategy
- ❖ Community Outreach Program/strategy
- ❖ Park Operations Program/strategy

RUNAPA Zoning Scheme

Figure B.2: Ruaha National Park Zonation



The RUNAPA 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.

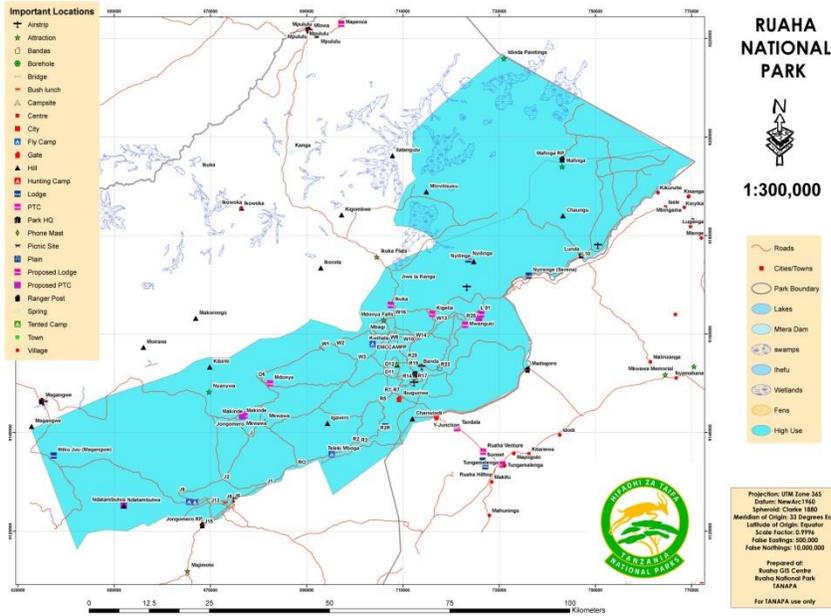
Figure B.2 above defines the zones spatially. Simple zone demarcations are used for easy identification of each zone for administrative purposes. As far as possible, zone boundaries follow roads or clear topographic features, such as rivers, streams, and hills.

The three zones are characterised below, with a brief description of the types and levels of visitor use permitted. The Tourism Program contains the specific details regarding visitor activities, prescriptions, and limits of acceptable use for each zone.

High Use Zones:

These zones are centres of visitor activity and they contain the highest levels of tourism infrastructure and facilities. The zones will continue to form the major park attraction and will absorb the main concentration of tourists

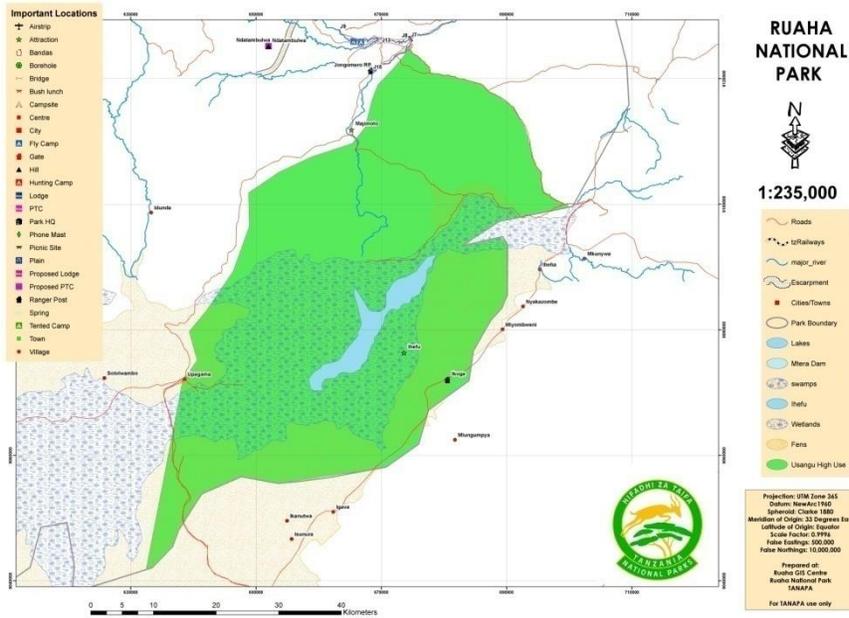
North High Use Zone



This zone covers 3060 sq. km and lies on the north eastern part of the Park along the Great Ruaha River. This is part of the Park with highest human activities and impacts on the north.

Game viewing by vehicle along designated roads constitutes the principal visitor activity. Other activities including ballooning, night game drives, scientific/research tourism and short and long walks will be introduced.

South High Use Zone



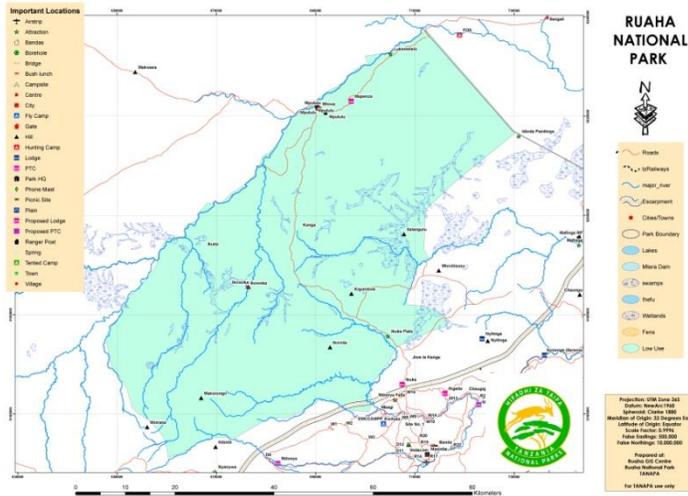
This zone covers 2577.58 sq. km of the eastern part of Ihefu in Usungu. This is part of the Park with highest human activities and impacts in the south.

Game viewing by vehicle along designated roads will also be the principal visitor activity in this zone, other activities including ballooning, boating, scientific/research tourism, night game drives and short and long walks will be introduced.

Low Use Zones:

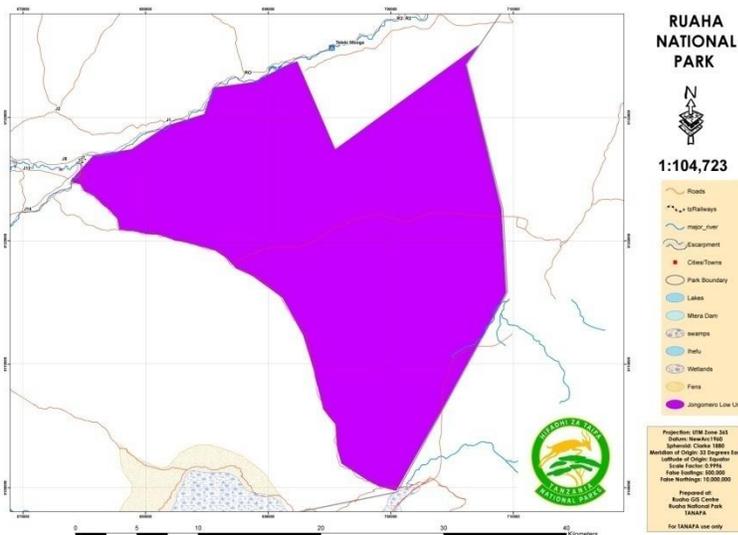
These zones will have lower numbers and density of visitors than the High Use Zones, which will result in low frequency of contact between tourists and moderate to high opportunities for exclusivity and solitude.

North Low Use Zone



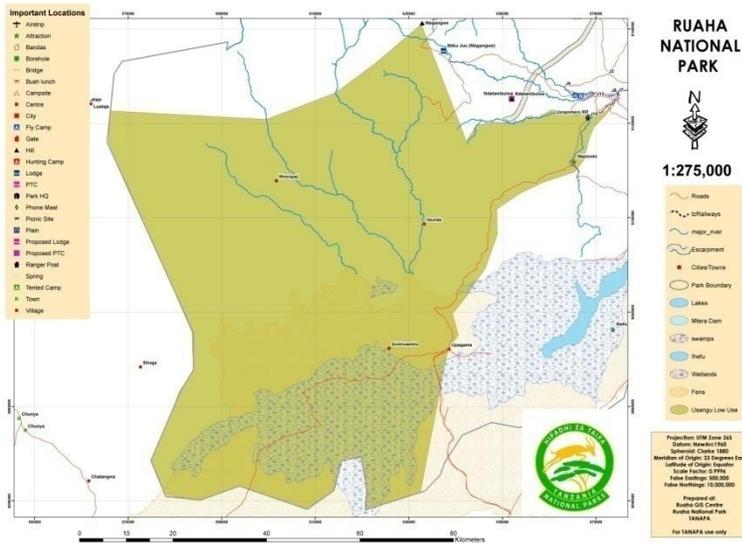
This zone covers 3544.24 sq. km of the northern part of the Park. Visitor activities in this zone include game viewing by vehicles (max. 2 tonnes), short and half-day guided walks, long walking safaris (fly camping, vehicle-supported wilderness camping), night game drives and scientific/Research tourism.

South East Low Use Zone



This zone covers 611.32 sq. km of the eastern part of the Park. Visitor activities in this zone also include game viewing by vehicles (max. 2 tonnes), short and half-day guided walks, long walking safaris (fly camping, vehicle-supported wilderness camping), night game drives and scientific/Research tourism.

South West Low Use Zone



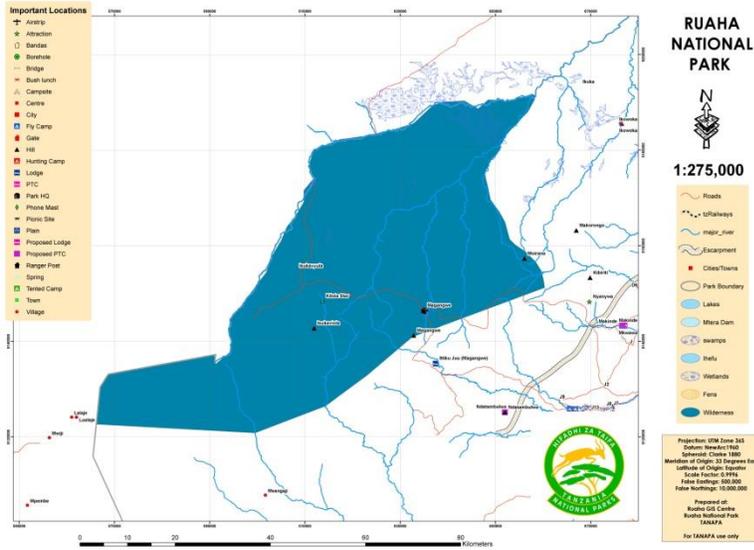
This zone covers 5867.95 sq. km of the southern part of the Park on the western side of Ihefu in Usangu.

Visitor activities in this zone will include game viewing by vehicles (max. 2 tonnes), short and half-day guided walks, long walking safaris (fly camping, vehicle-supported wilderness camping), night game drives and scientific/Research tourism.

Any use of motorised machinery is not permitted for tourists in Ihefu except in special cases e.g. patrols and rescue

Wilderness Zone

This zone covers about 2743.37 sq. km of wild western part of RUNAPA. The zone incorporates the mountainous and forested areas of the Park in the west, where there is very limited road network and facilities.



The Wilderness Zone is subject to minimal disturbance. As a result, visitor access will be restricted to walking safaris, scientific/research tourism and game viewing by vehicle prohibited. The only infrastructure permitted will be a limited number of access roads that can be used by RUNAPA management and support vehicles for walking safari operations. Due to the low presence of visitors in this zone, the Resource Protection Department will invest more resources to ensure poaching, other illegal activities are controlled, and visitor safety is ensured.



ECOSYSTEM MANAGEMENT PROGRAMME

Ecosystem Management Strategy

Programme Purpose: *Promote sound management of a healthy and functioning ecosystem through provision, collation, and dissemination of scientifically based information for Ruaha National Park (RUNAPA) and all others linked to the ecosystem.*

The ecosystem management strategy seeks to align the long-term management of the RUNAPA ecosystem with the Programme purpose defined above and with the relevant national policies. The aim of this strategy is to provide a general statement of principles and policy to guide the ecosystem management Programme over the next 10 years.

The principal national policy instruments that the RUNAPA ecosystem management strategy has been based upon are the National Policies for National Parks in Tanzania (1994) and the Wildlife Policy of Tanzania (2007). The strategy also builds on the previously approved RUNAPA Management Zone Plan (1996) and the General Management Plan (1997) to ensure continuity where appropriate and to account for the specific context and management needs of the Ruaha ecosystem.

There are five general guiding principles, drawn from National Policies for National Parks in Tanzania (1994), which provide the foundation for this Ecosystem Management Programme:

- ▶ **RUNAPA management will work to maintain all components and processes of the naturally evolving Park ecosystem**, including the natural abundance, diversity, and ecological integrity of plants and animals
- ▶ **Change is recognised as an integral part of the functioning of the Ruaha ecosystem**
- ▶ Although a **non-intervention policy will be pursued**, interference with natural processes may occur in order to maintain wildlife and plant species diversity, preserve sensitive species and restore native ecosystem functioning.

- ▶ RUNAPA 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**, through District planning, water catchments committees and board forums
- ▶ Research and monitoring will provide an accurate scientific basis for planning, development and management decisions in pursuit of park objectives.

Conserving ecosystem processes

In line with TANAPA policy, the Ecosystem Management Programme will seek to minimise human impacts on natural wildlife population dynamics. In particular, this will involve ensuring the conservation of the migratory wildlife (especially elephants) and their habitats inside the Park, and initiating cooperation wherever possible with others to ensure the conservation of their populations, preferred migration corridors, and habitats outside the Park.

RUNAPA Management will collaborate with other stakeholders in ensuring sound management of the catchment areas which are important for existence of RUNAPA wetlands in particular Usangu(2,000 sq.kms) which is a critical habitat for bird species. This site is internationally recognised as an Important Bird Area (IBA).

Protecting genetic diversity of native wildlife and plant life

The Ecosystem Programme will endeavour to realise the TANAPA policy of “protecting the full range of genetic types native to plant and animal populations in the Park by perpetuating natural evolutionary processes and minimising human interference with evolving genetic diversity”. The need to maintain appropriate levels of genetic diversity will guide decisions on what actions to take for managing isolated populations of species or to enhance populations of *threatened, endangered, rare, and endemic species* in order to perpetuate their natural distribution and abundances. RUNAPA management will control visitor access and use of critical habitats for these species, and may close such areas to entry, except for official purposes.

The manipulation of native plants may be carried out (where it is ecologically feasible) in small, selected areas in a manner designed to restore or enhance the functioning of the plant and animal community of which endangered species are a natural part, provided it does not alter major processes or key park values. Conversely, the introduction of new exotic species of animal and plants will be prohibited and efforts will be taken to eradicate all exotic species within the Park, especially those that threaten park resources or public health.

Managing fire regimes

Fire plays a critical role in the shaping of the Ruaha ecosystem, therefore RUNAPA management will seek to bring under control and minimise the damage caused by wildfires and to promote **best practises for fire management (such as fire breaks/lines)**. The specific objectives and strategies to be pursued will be stipulated in the Fire Management Plan (Technical Detail Plan) for RUNAPA.

Maintaining hydrological cycles

RUNAPA management will maintain the integrity of riverine systems, permanent water sources, springs, floodplains, wetlands, and riverine forest within the Park, with particular focus on the Usangu and associated wetland systems. Management of the Usangu hydrological cycle will be done by involving all key stakeholders, especially in upper catchment areas, downstream and where irrigation takes place. Surface water will only be withdrawn for consumptive use *where necessary* during exceptional conditions (e.g. drought), and provided it does not significantly alter natural processes and ecosystems.

In order to convert these guiding principles into practical actions on the ground, this GMP introduces a conservation planning technique that prioritises conservation actions and monitoring of ecosystem components, as described below.

Prioritisation of ecosystem components and threats

As stated in the ecosystem management strategy, RUNAPA management will work 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 not possible for the RUNAPA Ecology Department to monitor and manage each individual ecosystem component. In response, an ecosystem management planning process has been developed to identify representative ecosystem components and prioritise strategic decisions regarding their conservation. This approach will ensure the optimal allocation of time and resources for implementing conservation strategies to protect and monitor the long-term health and functions of the RUNAPA ecosystem. The key features and outputs of this planning process are outlined below.

RUNAPA Conservation Targets

The RUNAPA Conservation Targets, listed in Table C.1 below, cover the various spatial scales and levels of biological organisation that the ecosystem functions from ecological systems and processes to individual species. Together the targets represent and summarize the unique biodiversity of the Ruaha

ecosystem and the components that require special management actions. The underlying assumption behind establishing these Conservation Targets is that, if they are truly representative, then focusing efforts on their conservation will also ensure the conservation of all co-occurring ecosystem components and therefore the maintenance of a healthy ecosystem. The co-occurring ecosystem species, or ‘Subsidiary Targets’, are listed alongside the eight Conservation Targets in Table C.1 below.

Table C.1: List of RUNAPA Conservation Targets

Conservation Targets	Ecosystem Level
1. The Great Ruaha, Mzombe/Kizigo Rivers and Usangu basin 2. Corridor/Dispersal areas 3. Geological (Rift valley and escarpment) and cultural resources (Nyanywa, Mapenza, N’Giriama)	System
4. Bio-geographical zones (Miombo, Savannah and Riverine vegetation) 5. Migratory bird species 6. Drypetes woodlands	Community
7. Elephant 8. Wild dogs	Species

The final column in Table C.2 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. The elephants and wild dogs Conservation Targets have been identified as requiring special management attention and specific actions are needed to bring their KEAs within their minimum threshold level.

Table C.2: RUNAPA Conservation Targets and Key Ecological Attributes

Conservation Target	Subsidiary Targets	Key Ecological Attribute
The Great Ruaha River, Mzombe/Kizigo Rivers and Usangu Basin	<ul style="list-style-type: none"> ▪ Upper catchments (Chunya, Mpanga- 	Water levels and flow
		Water quality and quantity (surface and ground water)

	<p>Kipengere), Kitulo and Mufindi</p> <ul style="list-style-type: none"> ▪ Eastern and Western Usangu wetlands ▪ Ihefu wetland and its floating vegetation 	<p>Climate</p> <p>Sediment</p> <p>Species diversity and abundance (Flora)</p>
Corridor/dispersal areas	<ul style="list-style-type: none"> ▪ Migratory animal species 	<p>Traditional migratory routes, and access to critical areas</p> <p>Buffer zones</p> <p>Population size of key species</p> <p>Productivity of key species</p> <p>Forage quality and spatial availability (Range condition)</p>
Geological (Rift valley and escarpment) and cultural (Nyanywa, Mapenza, N'Giriama) resources	<ul style="list-style-type: none"> ▪ Natural water springs ▪ Hot water springs (Majimoto) ▪ Soils and rock types ▪ Landscape 	<p>Majimoto hot springs (quality and quantity)</p> <p>Water chemical, physical and biological properties</p> <p>Soil and rock properties</p> <p>Scenery properties</p>
	<ul style="list-style-type: none"> ▪ Mkwawa spring ▪ Nyanywa ritual site ▪ Mapenza cave ▪ Telekimboga ▪ Kimilamatonge ▪ Ikili rock painting ▪ Hussman's bridge ▪ N'Giriama 	<p>Status of cultural resources</p>
Bio-geographical zones	<ul style="list-style-type: none"> ▪ Miombo woodland ▪ Savannah (<i>Acacia-commiphora</i> woodland) ▪ Riverine vegetation 	<p>Diversity, abundance, and distribution of key plant species</p>
Migratory bird species	<ul style="list-style-type: none"> ▪ Eurasian bee eater ▪ Eurasian roller 	<p>Population size</p> <p>Productivity (recruitment)</p>

	<ul style="list-style-type: none"> ▪ Asian lesser cuckoo ▪ Eurasian hobby ▪ Booted eagle ▪ European white stork ▪ Woolly-necked stork ▪ Abdim's stork 	
Drypetes woodlands		Forest size
		Productivity (recruitment)
Elephants		Population size and distribution
		Productivity (recruitment)
		Suitable woodland habitat
Wild dogs		Population size and distribution
		Productivity (recruitment)

Ecosystem threats

For 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 below. The threats identified will be monitored by the RUNAPA Ecology Department and form the basis for the development of management actions in this Programme.

Table C. 3: Threats to RUNAPA Conservation Targets

Target	Threat	Severity	Scope	Ranking
The Great Ruaha River, Mzombe/Kizigo Rivers and Usangu Basin	Inappropriate irrigation practices	Very High	Very High	Very High
	Exotic species	Very High	Very High	Very High
	Overgrazing	Very High	Very High	Very High
	Uncontrolled settlements	High	High	High
	Illegal fishing	High	High	High
	Siltation	High	High	High

	Erosion	High	High	High
	Sedimentation	High	High	High
	Wild fires	Very High	Very High	Very High
	Poaching	High	High	High
	Deforestation	Medium	Medium	Medium
	Inappropriate agricultural systems	Very High	Very high	Very High
Corridor/dispersal areas	Blockage of migratory routes due to human settlements and agriculture activities	Very High	Very high	Very high
	Poaching	High	High	High
	Destruction of vegetation	Medium	Medium	Medium
	Wild fires	High	High	High
Geological (Rift valley and escarpment) and cultural (Nyanywa, Mapenza, N'Giriama)	Lack of enough information about the resources	High	High	High
	Inadequate management	Medium	Medium	Medium
	Wildfires	Medium	Medium	Medium
	Infrastructure development	Medium	Medium	Medium
	Unplanned human activities (Agriculture, Settlements)	High	High	High
Bio-geographical zones (Miombo, savannah and riverine)	Wildfires	Very High	Very High	Very High
	Unplanned human activities (Agriculture, Settlements)	High	High	High
	Illegal harvesting of forests	High	High	High
	Wildfires	High	High	High
	Erosion	High	Medium	Medium
	Overgrazing	Medium	Medium	Medium
Migratory bird species	Habitat destruction	High	High	High

	Toxic chemicals	Medium	Medium	Medium
	Poaching	Medium	High	High
Drypetes woodlands	Wild fires	High	High	High
Elephant	Poaching	High	High	High
	Inadequate water availability	Medium	Medium	Medium
	Diseases(e.g. anthrax)	Medium	Medium	Medium
	Blockage of migratory routes and dispersal areas	Very High	Very High	Very High
	Human-elephant conflicts	Very high	Very high	Very high
Wild dogs	Habitat destruction	High	High	High
	Diseases(e.g. rabies)	High	High	High
	In breeding	Very high	Very high	Very High
	Lack of information	Very High	Very High	Very High
	Human-wild dog conflicts	Very High	Very High	Very High
	Killing of cubs by other predators	High	High	High
	Wild fires	Medium	Medium	Medium

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.4 below. It shows that fire is the only crosscutting threat, affecting all eight Conservation Targets. The remaining threats, which in most cases present a very high risk, are specific to few Conservation Targets.

Table C. 4: RUNAPA threat analysis matrix

Target	The Great Ruaha River, Mzombe/Kizigo Rivers and Usangu Basin	Corridor/dispersal areas	Geological (Rift valley and escarpment) and cultural resources (Nyanywa, Mapenza, N'Giriama)	Bio-geographical zones (Miombo, savannah and riverine)	Migratory bird species	Elephant	Wild dogs	Drypetes forests
Threats								
Inappropriate irrigation practices	Dark Red							
Exotic species	Dark Red	Red		Yellow				
Overgrazing	Dark Red	Dark Red		Yellow	Yellow			
Uncontrolled settlements	Red	Red		Yellow		Yellow		
Illegal fishing	Red				Yellow			
Wild fires	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Red
Poaching	Red	Dark Red		Red	Red	Dark Red	Yellow	
Deforestation	Red	Yellow		Yellow	Yellow	Yellow		
Lack of enough information about the resources		Yellow					Red	
Infrastructure development	Yellow	Yellow	Yellow	Yellow				
Mining	Yellow	Yellow	Red	Yellow				
Unplanned human activities (agriculture)		Yellow		Red				
Habitat destruction		Yellow		Yellow	Dark Red		Red	
Diseases (e.g. anthrax, rabies)					Yellow	Yellow	Dark Red	

Blockage of migratory routes and dispersal areas								
Human-elephant conflicts								
In breeding								
Human-carnivore conflicts								
Lack of information								
Destruction of baobabs by elephants								

KEY

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

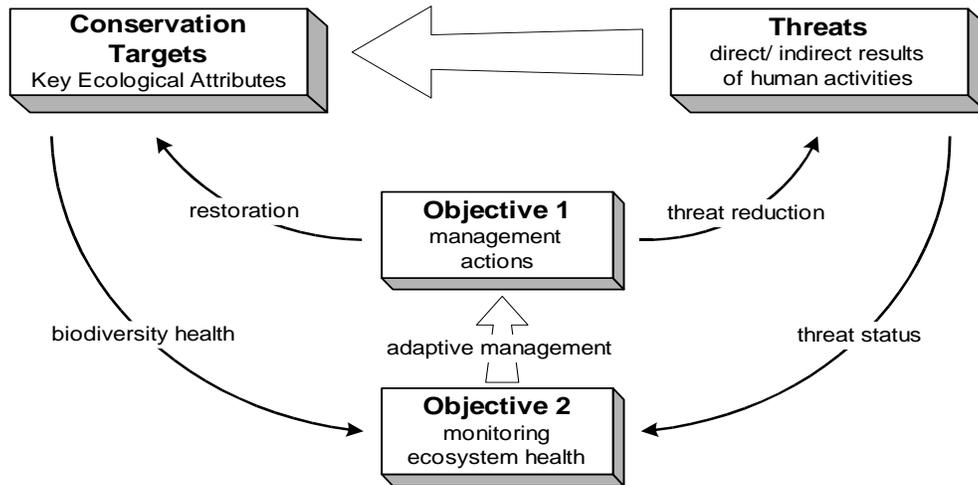
RUNAPA Ecosystem Management Programme Objectives

The prioritised Conservation Targets, Key Ecological Attributes (KEA), and threats provide the foundation for designing 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. The conservation and ecological status of **RUNAPA Conservation Targets enhanced and threats reduced**
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.

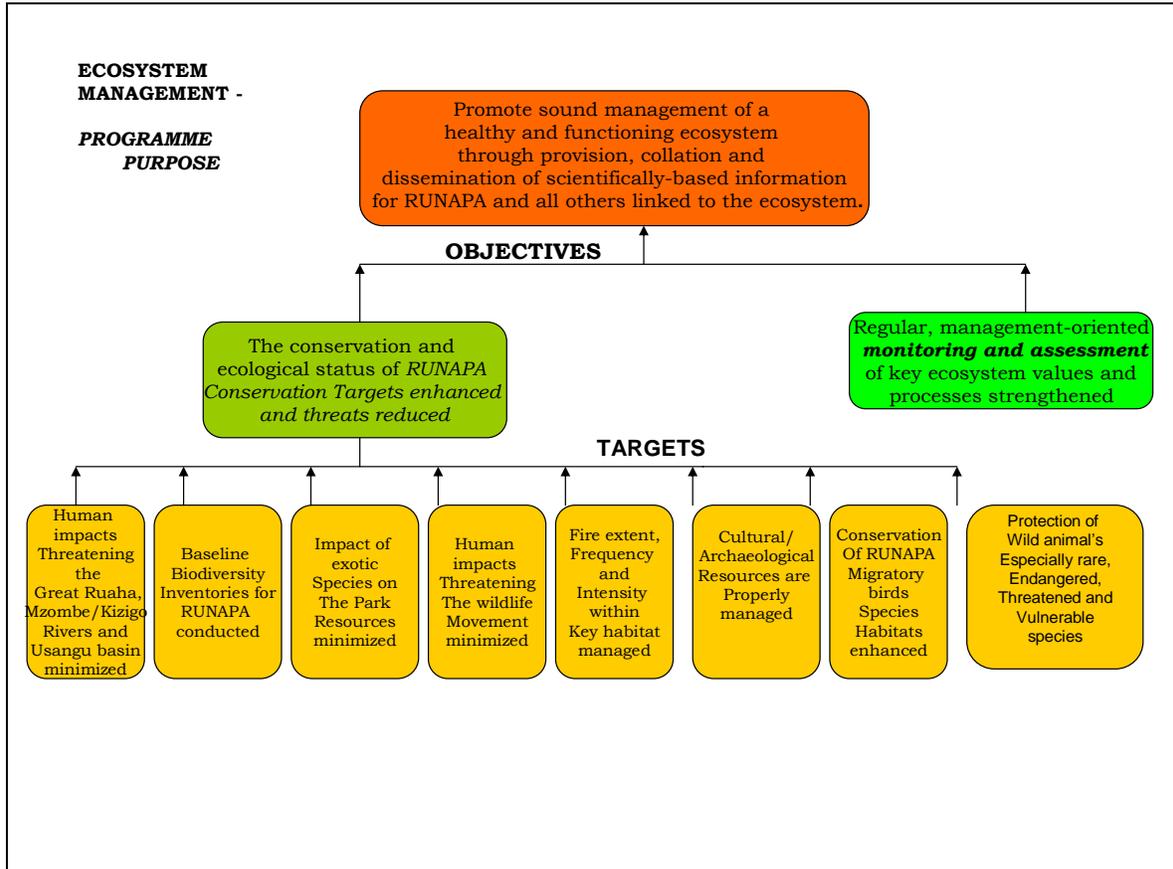
Figure C.1: Ecosystem Management Programme Overview



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.4 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 for the period 2010-2012 is provided, which lists the necessary activities, input requirements, responsibilities and timeframe (see Table G.2 in Section G).

To achieve Objective 2, a framework has been provided for monitoring the health of the Ruaha ecosystem, based on measuring the Key Ecological Attributes and threats to the Conservation Targets. Figure C.2 below shows the logical framework for the Ecosystem Management Programme.

Figure C.2: Logical Framework for the Ecosystem Management Programme



Objective 1: The conservation and ecological status of RUNAPA Conservation Targets enhanced and threats reduced

The desired future state of RUNAPA is one where the threats to the functioning of the Ruaha ecosystem are eliminated and all components and processes are restored to their natural evolving levels.

To achieve this desired state, a series of management targets and associated management actions have been formulated, which adopt one of two main strategies, as illustrated in Figure C.1 above.

Target 1.1: Human impacts threatening the Great Ruaha River, Mzombe/Kizigo Rivers and Usangu Basin minimised

Generally all significant rivers rise in the highlands and flow into the central plain, i.e. the Usangu wetlands. Only five rivers are recorded to be perennial and these are Chimala, Great Ruaha, Kimani, Mbarali and Ndembera. Several other small rivers are known to be annual. These include the Kioga, Mkoji, Mfyamba, Nyakadete, Mvanga, Meru, Kimbi and Nyakapembe. Other rivers are

ephemeral with small catchments. Some of these rivers pass through a heavily human populated area within the Basin.

The growing human populations and changing land use practices are having an increasing impact on the Great Ruaha River and its tributaries and Usangu Wetlands. The greatest impact is in the upper catchments; Chunya, Mpanga-Kipengere, Uporoto mountains, Kitulo, Mufindi, Iringa and Njombe areas which are threatened by unsustainable agricultural practices (e.g. vinyungu¹), increasing loss of forest cover in the river's upper catchments and watercourse. The lower catchment areas experience overgrazing and poor irrigation practices (small and large scale farming).

Besides the threats mentioned above, poor coordination on implementation of different policies at local, regional, and national levels intensifies the problems explained above for example, promotion of irrigation farming in the Usangu Basin without considering availability of water for environmental conservation and other uses. The management actions designed to address these threats and enhance the conservation status of the Great Ruaha River, Mzombe/Kizigo Rivers, and Usangu Basin are as follows:

Action 1.1.1: Raise awareness on issues affecting the Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin and advocate for catchments-wide responses at regional and national levels

Currently there is inadequate information concerning the status and predicted trends of the Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin. This information is necessary to provide guidance to policy and decision makers on how best to sustainably manage the Basin. This management action intend to collect information that will be used to raise awareness and advocate for appropriate interventions that ensure the flow rate is not compromised by activities outside the Park (such as the rice irrigation farms). In order to obtain information RUNAPA management will collaborate with stakeholders to conduct research/monitoring to understand the human impacts on key parameters of the Great Ruaha, Mzombe/Kizigo Rivers, and Usangu Basin, which are:

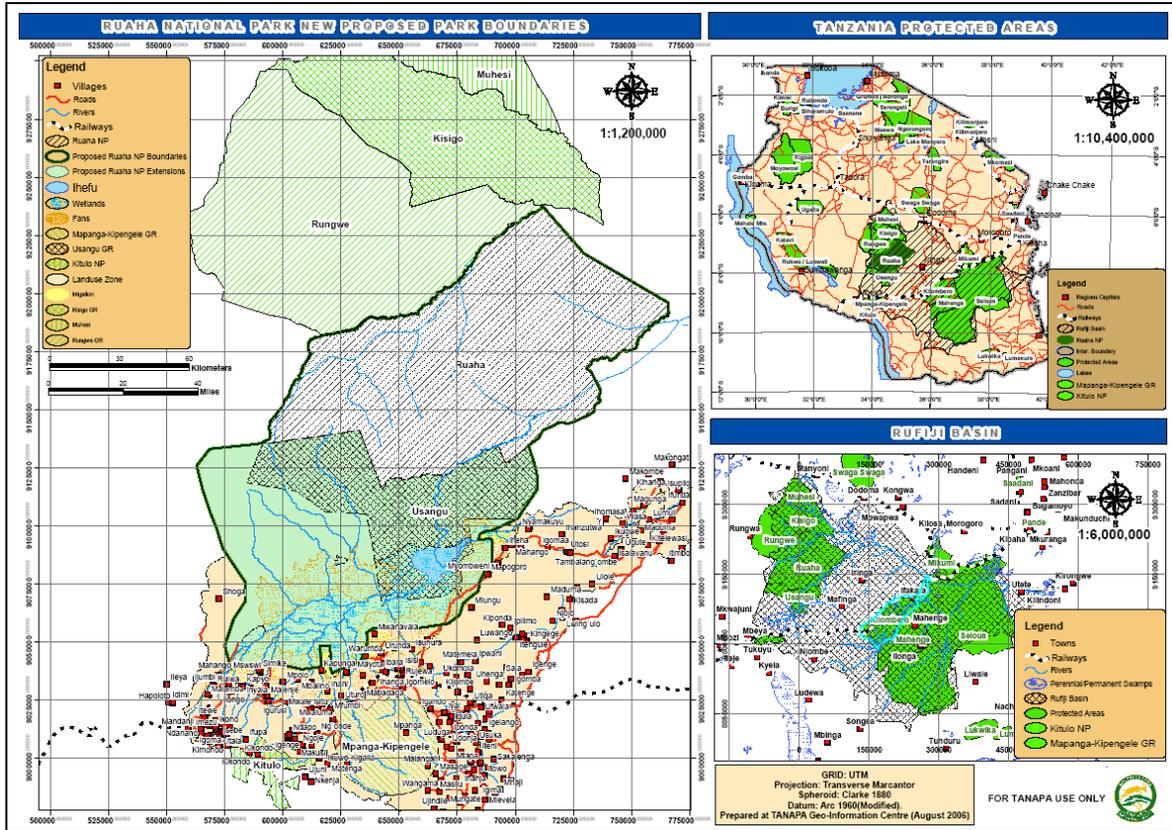
- ▶ Water flow - including major rivers and streams feeding into the rivers, such as the Great Ruaha, Kimani, Chimala, Ndembera, Mkoji, Mswiswi, Meru, Mbarali, Kimbi, Mdonya, Jongomero, Mzombe, Kizigo, Nyakapembe, Mwagusi, Ikuka, Itiku and other key rivers.
- ▶ Water quality - especially relating to agricultural chemicals e.g. fertilizer
- ▶ Water abstraction – for irrigation and domestic uses
- ▶ Water for HEP generation- water requirements for electricity generation
- ▶ Other uses such as livestock, fishing practices, brick making

¹ “Vinyungu” is a traditional farming practice in southern highland areas, where farming takes place in wetlands and marshes. This activity affects the water sources.

► Water for environmental requirements

This information will be collected and analysed through the Monitoring Plan, as outlined under Objective 2 of this Ecosystem Programme. RUNAPA will collaborate with relevant stakeholders on matters pertaining land use management and economic developments within area.

Figure C.3: Settlement distribution around Ruaha National Park



Action 1.1.2: Collaborate with relevant stakeholders to promote sound management of Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin

RUNAPA will identify and liaise with key stakeholders in addressing management challenges that are currently facing the Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin. Such challenges among others include excessive abstraction of water for irrigation, abuse of water rights and use of water without water rights, unsustainable agriculture practices, destruction of forest cover and overgrazing.

Target 1.2: Baseline biodiversity inventories for RUNAPA conducted

RUNAPA is endowed with various wild animal species due to its diversity of habitats. The significant animal species include topi, impala, zebra, reedbuck, oribi, warthog, sable, hartebeest, elephant, giraffe, crocodile, leopard, lion, cheetah, wild dog, dik dik, duiker, roan antelope, greater kudu and jackal. Elephant, (*Loxodonta africana*), wild dog (*Lycaon pictus*) and cheetah (*Acinonyx jubatus*) are listed in Appendix I of the Convention on International Trade in Endangered species of Flora and Fauna (CITES). Lion (*Panthera leo*), leopard (*Panthera pardus*) and Nile crocodile (*Crocodylus niloticus*) are listed in CITES Appendix II. Species listed in CITES appendices raise the national and international conservation concern.



RUNAPA supports a great diversity of vegetation types. The vegetation types of the park fall under main communities, namely:

Miombo woodland: This occurs on high elevations including hills of the swamp. The main species include *Brachystegia spiciformis*, *Julbernardia globiflora*, *Pterocarpus angolensis*, *Combretum psidioides*, *Cassipourea mollis*, *Gardenia ternifolia*, *Catunaregan taylorii* and *Phyllanthus inflata*. The ground floor is devoid of grass cover, but in open miombo grass, 17 species are conspicuous. Principal genera are *Themeda*, *Hyparrhenia* and *Andropogon*.

Miombo transition zone: This large, centrally situated zone forms the interface between the true miombo of the southern central Africa and the East African savannas dominated by *Acacia-commiphora*. The portions of the park to the east and west of this zone are markedly different ecologically, with distinct landscapes, climate, flora and fauna.

The vegetation and topography in this zone are fairly heterogeneous, with typical miombo and common *Combretum-Commiphora* species intermixed. Small stretches of true miombo are found in slightly higher localities but they are not continuous. *Acacia* species follow drainage lines. Common forbs include *Leucas*, *Aspila*, *Leonotis* and *Barleria*. As would be expected there is a large range of grasses with *Panicum*, *Aristida*, *Echinochloa* and *Urochloa species* that commonly occur in the park.



Combretum woodland: This is a zone in the catena below the limit of the miombo woodland. The woodland contains a number of genera most of which are fire tolerant. Common species include *Combretum collinum*, *C. adenogonium*, *C. zeyheri*, *Terminalia sericea*, *Euphorbia candelabrum*, *Lonchocarpus capassa*, *Lannea schimperi*, *Dalbergia nitidula*, *Commiphora africana*, *Sclerocarya birrea*, *Markhamia obtusifolia* and *Sterculia africana*. *Hyparrhenia* and *Andropogon* species dominate the grass cover.

Seasonally inundated grassland: The tree layer is dominated by *Acacia seyal*. There are two vars. These are var *seyal*, which has reddish bark, but without ant-galls and var *fistula* which has whitish to greenish bark and with ant-gall. Herbs include *Ormocarpum trichocarpum*, *Hygrophilla auriculata* and *Blepharis affinis*. Dominant grasses are *Andropogon gayanus*, *Andropogon mannii* and *Exothea abyssinica*. Areas with black cotton soils, frequently waterlogged support galled *Acacia drepanolobium* (Black gall), *Setaria incrassata* and *Themeda triandra*. *Hygrophilla auriculata* is also present and is an indicator of constant wetness. *Acacia repanolobium* grows in similar conditions with *Acacia seyal* var. *fistula* with white gall.

The aquatic and swamp vegetation (Ihefu): This is an important habitat, which occupies the semi-permanent swamp where fresh water accumulates as reservoir from rivers and streams flowing from the highlands of Mpanga/Kipengere and other adjacent mountains. The flora of the aquatic vegetation contains herbaceous plants of both forbs and grasses except for the woody species of *Ascchynomene* and *Syzygium* near the outlet of Ruaha River to the north. The dominant plants in the Swamp are rooted in the muddy soil in the main aquatic zone and are either completely submerged or their leaves float on the water surface. Main monocotyledons include *Phragmites mauritianus*, *Typha species*, *Echinochloa scabra* and *Vossia cuspidata*. *Nymphaea* is an important submerged aquatic genus.



However, there is a need to have more information on flora species that are found in RUNAPA. It is therefore important to carry out multidisciplinary survey to identify quantify and document the details of the known and unknown species.

Hyphaene palm woodland: This small zone is located in the far north eastern corner of the park at the lowest point. It is found on alluvial deposits and comprises thick belt of riparian woodland. Other prominent species are *Faidherbia (Acacia) albida*, *Tamarindus indica*, *Newtonia hilderbrandtii* and *kigeria africana*. Shrubs include *Cordia gharaf* and *Vernonia*. The course long grass *Imperata cylindrical* is most common on the flood plains.

Acacia savannah: This is also located in the northeast corner of the park at low altitude in the Rift Valley. It is a fairly flat area and dominated by poorly drained black cotton soils. The most common tree is *Acacia tortilis*, but larger areas are dominated by bush with *A. dreponolobium*, *A. mellifera*, *A.*

stuhlamnani, *A. kirkii*, *A. nigrescens* and *A. tanganyicensis* all common. Common forbs include *Solanum*, *Leonotis*, *Vernonia*, *Hygrophyla*, and *Sesamum*. The grass layer is dominated by annuals including *Aristida*, *Dactyloctenium*, *Urochloa* and *Dacanthium* species.

Combretum-Acacia bush and woodland: This zone extends along the eastern half of the rift valley to just west of Msembe. On the valley floor where poorly drained soils are common *A. tortilis*, *A. tanganyicensis*, *combretum hereroense*, *C. purpureiflorum* and *C. gragrans* predominate, but on the better draining slopes *C. apiculatum* and *C. mollae* are more common. Other common trees are valley-riverine species such as *K. africana*, *T. indica*, *N. hilderbrandtii* and *Lonchocarpus capassa* with *Adansonia digitata*, *Entandophragma bussei* and *Sclerocarya birrea* in better drained areas. Some significant short grass area occurs, mainly dominated by *Sporobolus ioclados* and *Chloris gayana*. In other areas common grasses are *Urochloa*, *Aristida*, *Dicanthium* and *Cynodon* species.

Mixed Combretum-Commiphora zone: It appears that this has largely replaced the *Commiphora ugogensis* woodland described by Bjornstadt as covering much of the eastern half of the park on leached red-brown sandy soils. In most areas, the *Combretum* species described above are now dominant depending on soil type and drainage. As well as *C. ugogenesis*, *C. stolonifera*, and *C. africana* also occur. *A. digitata* is very conspicuous and widespread occurring in pronounced concentrations in many localities. Other common larger trees include *E. busei* and *S. birrea*, with *A. tortilis* often associated with many small drainage channels. Common shrubs are *Premna senensis*, *Grevia* species, *Capparis tomentosa* and *Cordia* species. Grasses vary throughout with local edaphic conditions, but *S. ioclados*, *C. gayana*, *Aristida*, *Heteropogon* and *hyparrhenia* are wide spread.

Commiphora woodland: This is densely wooded community found mainly south of the Great Ruaha River and may be the remnants of much more widespread deciduous woodland according to Bjornstad. *C. ugogensis* dominates, but *C. stolonifera*, *C. africana* and *C. mollis* also occur. The shrub layer also contains many *combretum* and *Grevia* species.

Drypetes zone: This small zone occurs on the Insukavyola Plateau striding the park's boundary over 1800m above sea level. It is characterised by an evergreen sub-montane forest dominated by small patches of *Drypetes gerrardii*.

Action 1.2.1: Collaborate with stakeholders to carry out plant and animal inventories

RUNAPA will collaborate with various experts to carry out biodiversity surveys in the Park.

Action 1.2.2: Document and disseminate the information on identified plant and animal species

Information of the results of the inventory will be disseminated to RUNAPA management for making informed decisions and also to other relevant key stakeholders.

Target 1.3: Impact of exotic species on Park resources minimized

Exotic and domestic species can have potentially devastating ecological effects directly and indirectly through the introduction of diseases. Some exotic plants and weed are able to invade habitats and replace indigenous plant species. As a result, plant species diversity and the aesthetic value of the area to tourists are reduced. There is a loss of “wilderness appeal” and the research value of the area as a natural system is compromised. Such plants therefore are undesirable. Permanent camps and lodges will be encouraged to plant and protect seedlings of tree species already present in the same ecological zone of the park in lieu of exotics. The intention here is to make the park free of exotic species.

Some of the undesirable plant species that have been found within the park are the rubber tree (*Euphorbia tirucalli*), bamboo (*Bambuseae* species.), tomato (*Lycopersicon esculentum*), maize (*Zea mays*), sorghum (*Sorghum bicolor*), cassava (*Manihot esculenta*), pumpkin (*Cucurbita* species), melon (*Cucumis melo*), pawpaw (*Carica papaya*), guava (*Psidium guajava*), banana (*Musa* species), syringa (*Melia azedarach*), and jacaranda (*Jacaranda mimosifolia*).

However, RUNAPA sets the following actions in order to address this problem.

Action 1.3.1: Control exotic species in the Park

RUNAPA management will collaborate with stakeholders to identify and mechanically remove all exotic species. Where necessary herbicides will be used if mechanical methods will be unsuccessful and the park management is satisfied that there is no potential for dangerous side effects on non-targeted species. Inevitably, however, different exotic species will require different approaches, and so the park management in due course will come up with a number of species-by-species control plans. In support of these, RUNAPA will make efforts to increase the awareness of staff, tour operators and visitors on

potential risks of exotic weeds and undesirable plants in the park and the applicable regulations.

RUNAPA management will also collaborate with stakeholders to create awareness to investors, tourists and park dwellers not to introduce exotic species in the park.

Target 1.4: Human impacts threatening the wildlife movement minimised

Major threats to the corridors and dispersal areas are from human activities such as habitat destruction through removal of vegetation for cultivation, settlements and fuel wood, uncontrolled fires and poaching.

Traditionally, animals used to move seasonally from Mpanga/Kipengere Game Reserve to and from RUNAPA. In addition, animals used to move between Ruaha-Mikumi, Ruaha-Udzungwa National Parks, Ruaha-Swagaswaga-Mkungunero-Tarangire National Park and Ruaha-Rungwa-Rukwa/Lukwati. Nevertheless, due to high human population growth in these areas in recent years, unfortunately, the wildlife corridors or migratory routes and dispersal areas have eventually been highly threatened and some have been blocked. As a result wild animals' movement between neighboring ecosystems is restricted. If the situation would be allowed to continue like this, the sustainability of the park in terms of wildlife will be questioned. Collaboration with key stakeholders is vital in addressing RUNAPA corridor and dispersal areas.

Action 1.4.1: To improve understanding of wildlife movements, population dynamics, and disease prevalence

In collaboration with other key stakeholders, RUNAPA will conduct research and monitor wildlife movements, population dynamics, and disease outbreaks. Of great concern is the status of buffalo populations that have been noted to decrease over the years.

Action 1.4.2: Advocate and collaborate with partners to protect RUNAPA corridors and dispersal areas

RUNAPA management will seek to advocate for the protection of corridors and dispersal areas using the monitoring information collected on animal movement patterns, poaching, human population settlement, cultivation, and livestock. In support of this advocacy, RUNAPA management will influence issues effecting the wildlife movement by taking a proactive role in efforts to collaborate in the conservation and management corridors and dispersal areas. The park will also facilitate the local authorities to develop by-laws to protect the identified corridors. In addition, stakeholders meetings to discuss the WMA approach and to provide technical advice on establishment of WMAs will be

conducted. RUNAPA will also facilitate capacity building through training of Authorized Associations of WMAs

Target 5.1: Fire extent, frequency and intensity within key habitats managed

Fire is a major management issue because of the impacts it has on the vegetation categories found in RUNAPA. Some of the vegetation categories include; *Hyphaenae* palm, *Acacia* woodland, Mixed *Combretum-Commiphora*, Miombo (*Brachystegia* and *Jurbenadia*) woodland, Miombo transition, *Drypetes* and *Acacia – Combretum*, Aquatic and swamp vegetation and seasonally inundated grassland vegetation. A Programme of early burning has been implemented for many years in some parts of the park in order to reduce the incidences and impacts of late hot burns. In Ruaha, fire has played a part in natural ecology for very long time. Poachers, especially the honey gatherers tend to use fire to harvest honey in the park. Through either carelessness or malice has often caused fires to spread over large areas. Such non-prescribed fires are supposedly hotter. This logic has been used to justify early burning as a strategy for reducing the incidence and impact of late hot burns; this has been part of accepted management practices in the park for many years.

In view of this, RUNAPA will conform to TANAPA's policy of minimum intervention and allowing natural ecosystem processes to proceed. The objectives of the fire management plan will therefore be; to manage the incidences and impact of hot burns; to maintain the plant cover needed to conserve soil or water in areas where these functions are a priority; to maintain habitats critical for other approved management objectives and to develop a strategic network of firebreaks. The management actions designed to address these threats and enhance the conservation status of the critical habitats are as follows.

Action 1.5.1: Prioritise critical habitats and areas for fire protection.

RUNAPA does not have adequate financial or human resources to actively protect against fire across all critical habitats. Instead, sensitive, representative and important areas within these habitats e.g. the *Drypetes* forests, Riverine vegetation and Ihefu swamps will be selected for concentrating efforts in fire management, to be identified in the RUNAPA Fire Management Plan.

Action 1.5.2: Develop and Implement Fire Management Plan for RUNAPA

In line with the GMP, the RUNAPA Fire Management Plan (Technical Detail Plan) will be developed and implemented in collaboration with key stakeholders. The plan will set the objectives for fire management within the RUNAPA and surrounding areas and will outline on how these objectives will be

achieved. Fire management methods will include firebreaks set through early burning and fire beating. These methods will be implemented for specific areas through strategic *fire burning regimes*.

The Fire Management Plan will include provisions for the enhancement of anti-poaching efforts within the Park. This is in response to poachers' camps that have been found in each of the five large remaining forest fragments. Poachers routinely burn the area surrounding these forest fragments and inside the fire breaks to lure animals into the forest. This will be addressed in collaboration with the Resource Protection Department.

RUNAPA fire management plan will also address fire monitoring using the appropriate and updated technology such as Satellite based techniques coupled with ground truthing.

Target 1.6: Cultural resources are properly managed

Within RUNAPA there are several cultural/archaeological resources but their status as well as the extent of use is not well known and documented. The indigenous people especially the Sangu and Hehe are known for their historical and traditional beliefs and customs. There are some cultural sites in the Usangu wetland (N'Giriama ritual site) that are still used by the local people living adjacent the park.

Other cultural, ritual and historical sites inside the park include Mapenza graveyards, Telekimboga, Kimilamatonge, Ganga la Mafunyo, Hussman's Bridge, Mkwawa spring, Ikili paintings and Nyanywa ritual site. The documentation and dissemination of information about the sites would promote cultural tourism

Action 1.6.1 Inventory of cultural sites developed for tourism and ritual activities

(Refer Tourism Programme)

Target 1.7: Conservation of RUNAPA migratory bird species habitats enhanced

RUNAPA is an important habitat for migratory bird species in particular the Usangu wetland. Owing to the rich diversity of bird species, Birdlife International recognizes the area as an Important Birdlife Area (IBA) has declared the Usangu wetland as one of Tanzania's IBA. The avian fauna is of particular interest in the Usangu plain and is especially important in the Eastern wetland (Ihefu). The permanent and seasonal wetlands, surrounded by savannah thorn scrub, and backed by escarpments rising 1000 meters above the plain provide an area with a range of habitats rarely replicated elsewhere.

Up to 540 species of birds may be found here, about 80% resident and 20% migratory; some 350 species have so far been recorded. By comparison, Europe has only about 200 different species.

The wetland contains grey crowned crane (*Balearica regulorum*), a species which is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Wattled crane (*Grus carunculatus*) is one of the 49 species in East Africa out of a global total of 1186 species listed by IBA network as threatened species. Wattled crane has one of the lowest recruitment rates among African cranes. Endemic bird species are also found in RUNAPA. These species include ashy starling (*Cosmopsarus unicolor*) and yellow collared lovebird (*Agapornis personata*).

Several bird species found in the area are nearly threatened or vulnerable- the pallid harrier, black winged praticole, great snipe, basra reed warbler, lesser kestrel, and wattled crane. Usangu is also thought to contain significant percentages of the populations of a number of other species. It also contains a number of birds whose distribution in Tanzania is very limited- the white throated swallow, yellow bishop, crowned crane, wattled crane, Denham's bustard, and saker falcon.

Ihefu wetland is an important breeding, feeding and resting site for a vast of waterfowl. Overall, Usangu contains some of the highest concentrations of waterfowl in Tanzania.

Action 1.7.1 Establish and implement monitoring protocol for the migratory bird species in collaboration with key stakeholders

RUNAPA will identify key stakeholders and work out mechanisms for monitoring migratory bird species.

Action 1.7.2 Protect the habitat for RUNAPA migratory bird species

Usangu and associated wetlands within RUNAPA are on a migratory bird route, but its link to other important migratory routes is currently unknown. One of the most important tasks that need to be carried out is the identification of all key migratory routes and habitats, which are used by the migratory bird species, as well as establishing status of the routes/habitats.

RUNAPA in collaboration with key stakeholders will develop strategies for protection of the important migratory bird species habitats.

Target 1.8: Protection of wild animals especially rare, endangered, threatened, and vulnerable species in RUNAPA is enhanced

Based on scientific information, the protection of wild animals will be enhanced (Park Operations Programme)

Action 1.8.1: Collaborate with TAWIRI and other stakeholders to establish status of rare, endangered, threatened, vulnerable and significant species

RUNAPA in collaboration with other stakeholders will collect data on abundance and distribution of elephants, wild dogs and other wild animals. Data will be analysed and will disseminate results to relevant stakeholders.

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

The desired future state of RUNAPA is one where the evolving ecosystem functioning and status are 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 future monitoring of the health of the RUNAPA ecosystem, and to provide the basis for the development of a comprehensive RUNAPA Ecological Monitoring Plan (Technical Detail Plan).

The RUNAPA Ecological Monitoring Plan will monitor the health of the Ruaha ecosystem; i.e. the sustained maintenance or enhancement of the viability of the Conservation Targets. The plan will also monitor both the 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 not to simply focus on monitoring *per se*, but also on analysing and using the information collected to better inform management decisions. As the Ruaha ecosystem is broader than the boundaries of RUNAPA, it is important that the monitoring include areas outside RUNAPA wherever possible. These activities will be coordinated with natural resource managers and researchers from the Greater Ruaha ecosystem. Where necessary the managers from adjacent PAs (Rungwa-Kizigo-Muhesi Game Reserve, Mpanga-Kipengere Game Reserve, Kitulo National Park and Wildlife Management Areas) will be involved.

The framework for the Monitoring Plan is set out in Table C.5 over page. 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.

Development of the Ecological Monitoring Plan firstly requires a baseline 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 use. The limits of acceptable use 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.

Table C.5: Framework for the RUNAPA Ecological Monitoring Plan (Technical Detail Plan)

Key Ecological Attribute	Indicator of attribute for the threat/change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently Collected?
Conservation Target 1: The Great Ruaha River, Mzombe/Kizigo Rivers and Usangu Basin						
<u>KEA</u> : Water levels and flow	Flow rates	Discharge measurement using current meter Data logger for water levels	Monthly (flow rate) Daily monitoring	Research/monitoring data	RUNAPA Ecological Monitoring Dept. RBWO/WWF	Yes (but needs improvement)
<u>KEA</u> : Groundwater	Quantity and quality	Mapping of groundwater Hydro-geological surveys	Bi-annual	Research/Monitoring	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
<u>KEA</u> : Climate	Temperature, rainfall, humidity, wind speed, sunshine recorded, evapotranspiration, radiation	Manual and automatic recorders	Daily	Monitoring report	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
<u>KEA</u> : Sediment	Sedimentation load levels	Manual	Annually	Research/monitoring	RUNAPA Ecological Monitoring Dept.	NO
<u>KEA</u> : Water quality	Dissolved oxygen, PH, salinity, turbidity, temperature, and dissolved chemicals	Manual using appropriated gadgets	Monthly	Research/monitoring	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
<u>KEA</u> : Wetland vegetation	Vegetation composition and extent	Photo points, with markers to be placed as reference points and Sampling	Twice a year	Monitoring report	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
		Aerial photos	Three years			

		Satellite images	Three years			
<u>KEA:</u> Species diversity and abundance (Flora)	Changes in tree density	Photo points, with markers to be placed as reference points	Twice a year	Existing records, vegetation map, GIS, (field groundwork)	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
		Permanent Transects/plots	Two years			
		Aerial photos	Three years			
		Satellite images	Three years			
<u>Threat:</u> Inappropriate irrigation practices	Flow rates	Assessment of water flow records regarding irrigation at rice farms control gates (in and out)	Dry and wet seasons(July-August and March-April)	Control Monitoring reports	RUNAPA Ecological Monitoring Dept. and RBWO	Yes (but needs improvement)
	Water quality- dissolved oxygen, ph, salinity, clarity, temperature and dissolved chemical	Manual, automatic and laboratory analysis	Monthly/Bi-annual	Monitoring reports	RUNAPA Ecological Monitoring Dept. and RBWO	Yes (but needs improvement)
<u>Threat:</u> Exotic species	Extent of exotic species	Ground work	Continuous	Monitoring reports	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat:</u> Soil erosion	Extent of Siltation and sedimentation	Run-off measurement and sediment sampling	Wet season	Research/Monitoring report	RUNAPA Ecological Monitoring Dept. and RBWO	No
<u>Threat:</u> Overgrazing	Extent of vegetation cover, erosion, herd size	Satellite images	Wet and dry season	Research/Monitoring reports	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
		Ground sampling				
		Aerial surveys				
<u>Threat:</u> Uncontrolled settlements	Extent of settlements in areas adjacent to the park	Satellite images	Three years	Monitoring reports	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
		Ground work				
		Aerial surveys				
<u>Threat:</u> Illegal fishing	Fish stock	Fish stock surveys	Bi-annual	Research/Monitoring	RUNAPA Ecological	Yes (but needs improvement)

		Visiting fish markets		reports	Monitoring Dept.	
	Fish camps and extent	Aerial surveys				
	Removal of vegetations in fishing areas	Satellite images/ Ground work				
	Chemicals	Laboratory analysis				
Threat: Wild fires	Sources, extent, frequency and heat of fire	Satellite based monitoring(FIRMS and MODIS), Field observation, permanent fire plots	Dry season	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
Threat: Poaching	Mortality rate, animal behaviour change, extent of poaching, exhibits/ trophies and number of poachers	Intelligence information, Field Patrols, operation and number of new cases	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Depart.	Yes (but needs improvement)
Threat: Deforestation	Extent of removal of tree/shrubs	Field observation, aerial surveys, satellite images	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Depart.	Yes (but needs improvement)
Conservation Target 2: Corridor/Dispersal areas						
KEA: Traditional migratory routes and access to critical areas	Seasonal Animal movement, distribution patterns , density, abundance, absence of human activities on the corridors, vegetation changes and extent of human elephant conflicts	Collars, DNA test, aerial, ground surveys and satellite images	Two years	Research/ monitoring reports	Protection and Ecology Dept.	Yes (but needs improvement)
				Maps indicating distribution and pattern		
KEA: Population size of key species	Elephants abundance and distribution	Collars, DNA test, aerial, ground surveys and satellite images	Two years	Research/Monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
KEA: Forage quality and spatial availability	Nutrient contents, extent of herbivore utilization and dominance	Transects/plots	Two years	Research/Monitoring reports	Ecological Monitoring Dept.	No
		Laboratory analysis				
Threat: Blockage of migratory corridors due to human activities	Presence of human activities and vegetation changes	Satellite images, ground and aerial surveys	Three years	Research/Monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)

<u>Threat:</u> Poaching	Mortality rate, animal behaviour change, extent of poaching exhibits	Field observation	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Depart.	Yes
<u>Threat:</u> Wild fires	Sources, extent, frequency and heat of fire	Satellite based monitoring(FIRMS and MODIS), Field observation, permanent fire plots	Dry season	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
Conservation Targets 3: : Geological (Rift valley and escarpment) and Cultural resources						
<u>KEA:</u> Cultural resources	Status of cultural resources	Visual	Annually	Survey and monitoring reports	Ecological Monitoring Dept., Local communities	Yes (but needs improvement)
		Frequency of use				
		Surveys				
<u>Threat:</u> Wild fires	Sources, extent, frequency and heat of fire	Satellite based monitoring(FIRMS and MODIS), Field observation, permanent fire plots	Dry season	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat:</u> Lack of Information.	Poor visitation	Surveys	Annually	Research monitoring reports	Ecological Monitoring Dept. Tourism Dept.	Yes (but needs improvement)
<u>KEA:</u> Maji moto hot springs (quality and quantity)	Chemical ,Physical and Biological contents	Physical, Biological and chemical analysis	Bi-annual	Research/Monitoring	Ecological Monitoring Dept.	Yes (but needs improvement)
	Flow rates	Physical flow rate and pressure/ temperature	Bi-annual	Research/Monitoring	Ecological Monitoring Dept.	No
<u>KEA:</u> Soil and rock properties	Soil physical, chemistry and biology	Soil sampling and analysis	Once in five years	Research/Monitoring	Ecological Monitoring Dept.	No
<u>KEA:</u> Scenery						
<i>See under tourism Programme</i>						
<u>Threat:</u> Mining	Vegetation , Landscape destruction, Pollution and animal mortality	Ground and aerial survey, Water analysis	Once in two years	Research/Monitoring	Ecological Monitoring Dept.	No
Conservation Target 4: Bio-geographical zones (Miombo, Savannah and Riverine vegetation)						

<u>KEA</u> : Diversity, abundance and distribution of key plant and animal species	Density, abundance and trends	Photo points; Satellite imagery involving GIS and related to the vegetation maps, Plots and camera traps	One to three years	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
	Size and fragmentation					
<u>Threat</u> : Wild fires	Sources, extent, frequency and heat of fire	Satellite based monitoring(FIRMS and MODIS), Field observation, permanent fire plots	Dry season	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat</u> : Deforestation	Extent of removal of tree/shrubs	Field observation, aerial surveys, satellite images	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Dept.	Yes (but needs improvement)
Conservation Target 5: Migratory bird species						
<u>KEA</u> : Population size	Density and abundance	Census	Once per year per species	Ecological monitoring report	Ecological Monitoring Dept.	No
<u>KEA</u> : Productivity (recruitment)	Sex ratio and age structure	Survey	Annually	Ecological monitoring report	Ecology Dept.	No
<u>Threat</u> : Habitat destruction	Extent of settlements and habitat destruction in areas adjacent to the park	Satellite images, visual, aerial surveys, census	Two years (wet and dry season)	Monitoring reports	RUNAPA Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat</u> : Poaching	Mortality rate, animal behaviour change, extent of poaching, exhibits/ trophies and number of poachers	Intelligence information, Field Patrols, operation and number of new cases	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Dept.	Yes (but needs improvement)
Conservation Target 6: Drypetes						
<u>KEA</u> : Forest size	Density and distribution	Survey/ inventory & mapping	Three Years	Research & Monitoring Reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>KEA</u> : Productivity (recruitment)	Stand size and age structure	Sampling	Three years	Research & Monitoring Reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat</u> : Wild fires	Sources, extent, frequency and heat of fire	Satellite based monitoring(FIRMS and MODIS), Field observation, permanent fire plots	Dry season	Research monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
Conservation Target 7: Elephants						

<u>KEA</u> : Suitable woodland habitat	Extent of vegetation cover	Aerial photos	Three to four years	Existing records, vegetation maps, GIS, TAWIRI	RUNAPA Ecological Monitoring Dept.	
<u>KEA</u> : Population size	Elephant density and abundance	Survey	Three years	Elephant survey report	Ecology Dept.	
<u>KEA</u> : Productivity (recruitment)	Sex ratio and age structure	Research/survey	Three years	Elephant research/survey report	Ecology Dept.	
<u>Threat</u> : Poaching	Mortality rate, animal behaviour change, extent of poaching, exhibits	Field observation	Routine collection, annual analysis	Protection and ecological monitoring reports	Protection and Ecology Dept.	Yes
<u>Threat</u> : Diseases (e.g. anthrax)	Mortality	Field observation, Diagnosis	Routine collection	Elephant Monitoring report	Ecology Dept.	Yes (but needs improvement)
<u>Threat</u> : Blockage of migratory corridors due to human activities	Presence of human activities and vegetation changes	Satellite images, ground and aerial surveys	Three years	Research/Monitoring reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat</u> : Human-elephant conflicts	Extent of settlements and farms in areas adjacent to the park	Satellite images, visual, aerial surveys, census	Two years (wet and dry season)	Monitoring reports	RUNAPA Ecological Monitoring Dept.	No
Conservation Target 8: Wild dog						
<u>KEA</u> : Population size	Wild dog density and abundance	Survey, Photo IDs, collaring	Continuous	Research & Monitoring Reports	Ecology Dept.	Yes (but needs improvement)
<u>KEA</u> : Productivity (recruitment)	Pack size, sex ratio and age structure	Survey, Photo IDs, collaring	Continuous	Research & Monitoring Reports	Ecological Monitoring Dept.	Yes (but needs improvement)
<u>Threat</u> : Disease	Disease incidences in domestic dogs	Surveys	Continuously	Research & Monitoring Reports	Ecological Monitoring Dept.	Yes (but needs improvement)
	Disease prevalence in wild dogs, immunological history	Field observation, Diagnosis	Routine collection	Research & Monitoring Reports	Ecological Monitoring Dept.	No
	Population sub group relationship and diseases agents identification	DNA analysis	Continuously	Research & Monitoring Reports	Ecological Monitoring Dept.	No
<u>Threat</u> : Competition with other predators	Density and abundance of other predators	Census	Two - three Years	Research & Monitoring Reports	Ecological Monitoring Dept.	No.

<u>Threat:</u> Human – Wild dog conflict	Extent of incidences (e.g. poisoning, spearing, human attacks, livestock predation)	Surveys and casual observation	Continuously	Research & Monitoring Reports	Ecological Monitoring Dept.	No
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TOURISM MANAGEMENT PROGRAM

Tourism Strategy

Program Purpose: *RUNAPA tourism managed and developed in order to provide an outstanding experience for both local and international visitors, optimal economic benefits to the nation, TANAPA, private sector partners, local communities and minimal impacts on the Park's resource values*

The RUNAPA tourism strategy seeks to align the long-term development of tourism in the Ruaha with the program purpose described above and with national tourism policies and action plans. The aim of this strategy is to provide a general statement of principles and policy to guide the Tourism Program over the next 10 years.

The principal national policy-level instruments that the RUNAPA tourism strategy are based on the National Policies for National Parks in Tanzania (1994); the Wildlife Policy of Tanzania (1998); the revised National Tourism Policy (1999) and the Integrated Tourism Master Plan (2002). The strategy also builds on the previously approved RUNAPA Management Plan (1996), to ensure continuity where appropriate and to account for the specific context and management needs for the park.

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 Integrated Tourism Master Plan was formulated to implement this policy, with its core strategy being to develop *'an integrated tourism product that is capable of attracting a low volume, high yield segment of the international tourism market'*. In conjunction with this strategy, and in compliance with the National Tourism Policy, *'deliberate plans will be put in place to promote domestic tourism'*.

In response to these national policies, tourism at RUNAPA will be enhanced, diversified, and dispersed in order to increase visitor numbers and optimise revenue. This policy is in line with the previous RUNAPA Management Plan and provides a contrast with the high value tourism opportunities available in the protected areas and other attractions in the Southern circuit.

To be able to achieve an outstanding visitor experience with minimal impacts, all tourism facilities, and activities must be compatible with RUNAPA's conservation objectives and regularly monitored to ensure that environmental quality is maintained. In this respect, only those types of tourism activities that contribute to the understanding and appreciation of park resources and minimise impact on natural, cultural, aesthetic, and scenic values will be allowed. In essence, it is intended that *tourism will be seen as a conservation tool that proactively assists the RUNAPA park management.*

The RUNAPA tourism strategy incorporates a set of principles designed to promote the achievement of the tourism program purpose and to ensure alignment with national policies and strategies, as described below:

Diverse visitor experience

RUNAPA will offer a diverse range of appropriate visitor experiences to a wider range of landscapes and resources within the Park. In particular, non-vehicle based opportunities such as canoeing and/or air boating in Usangu, night game drives, walking safaris and balloon safaris inside the park, will be developed where visitors can safely experience outstanding natural and cultural features.

RUNAPA management will increase the tourists' road network of suitable quality to give visitors more opportunities to experience park attractions. This should be done in such a way that park resources will not be impaired.

Limits of acceptable use (LAU)

The National Tourism Policy recognises that in order to ensure the continued satisfaction of visitors, it is essential to '*put into place mechanisms that will ensure tourist activities respect the use of biodiversity and wildlife conservation*'. The types and levels of appropriate recreational use will be determined through the RUNAPA Zoning Scheme (see Section B) and the associated tourism prescriptions and limits of acceptable change. This zoning scheme will restrict and sympathetically locate recreation activities to those directly associated with the park's resources and consistent with their protection. In keeping with the wilderness character of the Park, "high profile" activities will continue to be prohibited (e.g. hang gliding or marathon races). In addition, tourist use will be further restricted and controlled in areas encompassing endangered, rare and threatened wildlife and habitats.

Appropriate and adequate facilities

Within RUNAPA, no development can happen unless it is in accordance with the park's Zonation Scheme, or fits within the overall strategy of the GMP. According to management zones, the Tourism Program will determine the number, type, location, and size of all tourism facilities located in the Park.

The park will ensure that the existing visitor facilities are improved to high standards and more developed to meet the increasing number of visitors.

Outside of the Park, RUNAPA will seek to influence the development of tourist facilities and services, in order to ensure that they complement what is being developed in the Park and to encourage neighbouring ecosystem partners to cooperate and integrate with the RUNAPA Management Objectives.

A learning experience for visitors

Tourism in RUNAPA will offer interpretative and educational services and facilities to visitors who wish to learn about the resources within the Park and its role in national conservation and environmental strategies. A program of additional complementary interpretative and public information facilities will be developed and coordinated at the Ruaha Visitor Centre that will be situated at main entry gate. Another visitor centre for Usangu will be developed at the proposed Madibira entrance gate.

Partnerships and cooperation

Opportunities will be developed to improve the interactions between RUNAPA management, visitors, and the tourism industry, in order to improve the service provided and the quality of the visitor experience. In accordance with the National Tourism Policy, the private sector will take responsibility for developing tourism, while TANAPA will provide a catalytic role to regulate, promote, and facilitate this development. In this respect, RUNAPA management will enhance public-private partnerships to encourage tourism professionals to invest and operate suitable tourism products within RUNAPA; and where appropriate, will play an advisory role for transparent negotiations between private-community tourism ventures bordering the Park.

These guiding principles of the RUNAPA tourism strategy provide the basis for the **objectives** of the Tourism Program that define the future desirable state at RUNAPA and address the relevant problems and issues facing the RUNAPA management. The six objectives are:

1. **Visitor access, use and satisfaction** enhanced
2. RUNAPA **visitor facilities** improved in order to provide an optimal tourism experience with minimal environmental impact
3. RUNAPA **interpretive centres and materials** are of high quality, relevant, informative and educational
4. **Tourism management** strengthened in collaboration with tourism industry partners
5. **Historical and cultural** tourism well developed
6. The **park is adequately promoted** locally and internationally.

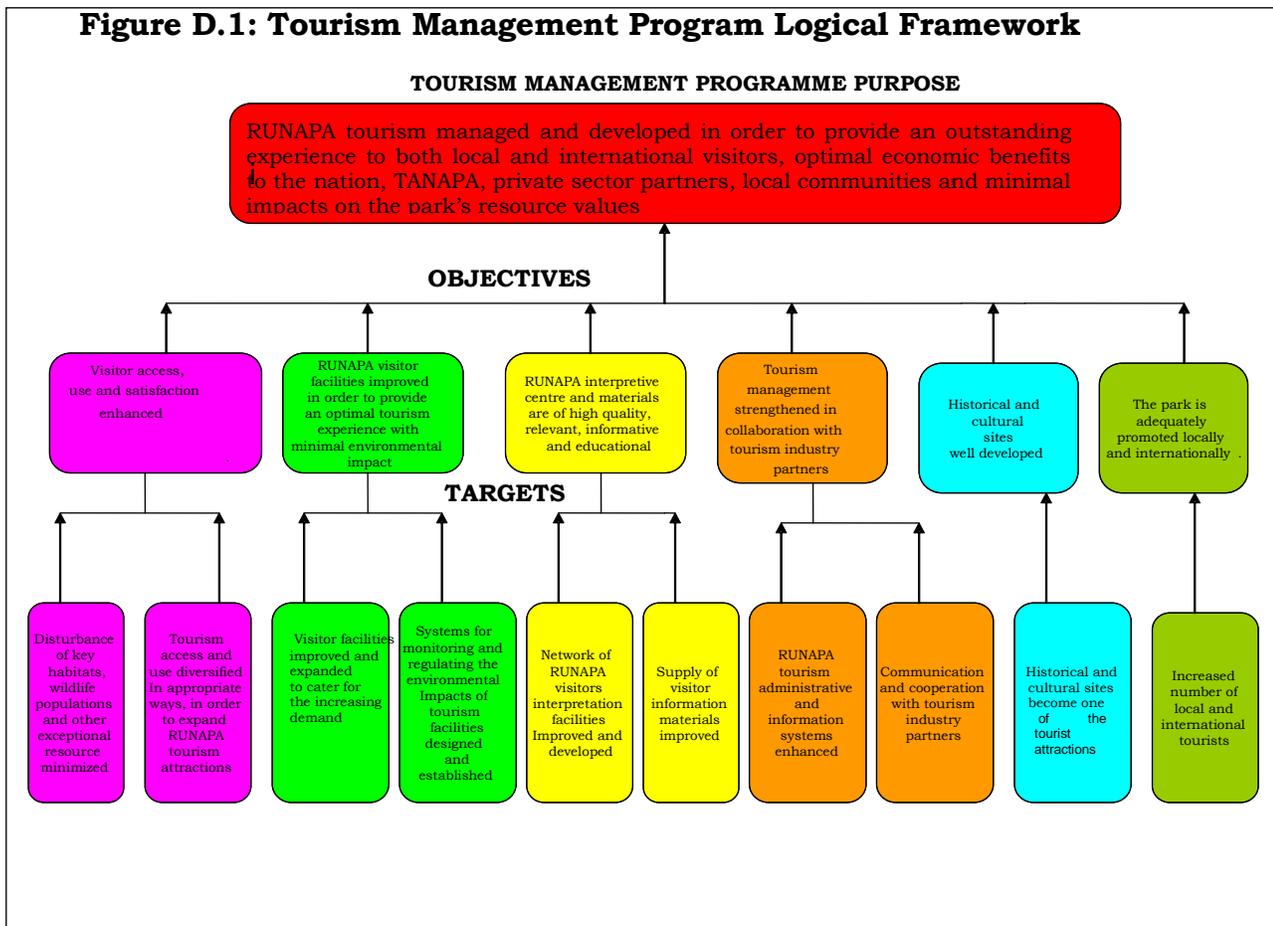
In order to meet these objectives for the Tourism Program, a series of 10-year **management targets**, with accompanying **management actions**, have been formulated, as described in the following sections. For each management target there is a brief description of the relevant management issues and 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 Tourism Program for the period 2010-2013, which lists the activities, responsibilities, timeframe, and input requirements necessary for the completion of the management actions.

Figure D.1 over page shows the logical framework for the Tourism Management Program.

Objective 1: Visitor access, use and satisfaction enhanced

The desired future state of RUNAPA is one where visitors can enjoy the wilderness character of the Ruaha and have the opportunity to observe the full diversity of wildlife in its natural habitats. The two complementary management targets to achieve this desired state are firstly to minimise visitor impact and secondly to diversify activities, as described below.

Figure D.1: Tourism Management Program Logical Framework



Target 1.1: Disturbance of key habitats, wildlife populations and other exceptional resources minimised

When vehicles and air boats are wrongly used may cause disturbance to sensitive habitats and wildlife in RUNAPA. The establishment of comprehensive, clear and enforceable guidelines and mechanisms that will ensure the well-being of Ruaha's wildlife and the maintenance of key habitats; at the same time providing a high level of visitor satisfaction and safety, are a high priority of this GMP. In order to meet this management target, the following management actions have been formulated:

Action 1.1.1: Implement Zonal and park-wide prescriptions to regulate visitor use and impact

In the High and Low Use Zones, game viewing and night game drives using vehicles will be the main visitor activity permitted, with driving restricted to designated roads and tracks. Certain non-vehicle based activities will be permitted in the High and Low Use Zones, including short guided trail walks, long walks, ballooning, air boating/canoeing.

No game viewing by vehicles will be permitted in the *Wilderness Zone*, with visitor use being restricted to walking safaris. Two types of walking safaris will be permitted. Firstly, fly camping, where all the equipment and supplies will be carried by the walking group and secondly, vehicle-supported camping, where camping equipment and supplies will be driven in on designated access tracks. Within the *Wilderness Zone*, the "*Leave No Trace*" Principles of outdoor ethics will apply. These are:

1. Plan Ahead and Prepare
2. Travel and Camp on designated Surfaces
3. Dispose Waste Properly
4. Leave Natural things as you find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors
8. Minimize noise pollution

Table D.1. Tourist Activities and Prescriptions by Zone

Zone	High Use Zone	Low Use Zone	Wilderness Zone
Activities	<ul style="list-style-type: none"> ▶ Game viewing by vehicles ▶ Short guided walks from lodges and special features ▶ Night game drives ▶ Balloon safaris ▶ Canoeing/air boating ▶ Scientific/Research tourism ▶ Rock climbing 	<ul style="list-style-type: none"> ▶ Game viewing by vehicles (max. 2 tonnes) ▶ Short and half-day guided walks ▶ Long Walking safaris • Fly camping • Vehicle-supported wilderness camping ▶ Night game drives ▶ Scientific/Research tourism ▶ Rock climbing 	<ul style="list-style-type: none"> ▶ Long Walking safaris <ul style="list-style-type: none"> • Fly camping • Vehicle-supported wilderness camping ▶ Scientific/Research tourism ▶ Rock climbing
Use Prescriptions	<ul style="list-style-type: none"> ▶ Only on-road driving is permitted ▶ Vehicles on unmade tracks must weigh 2 tonnes or 	<ul style="list-style-type: none"> ▶ Unmade tracks for game viewing (2 tonnes vehicle maximum) ▶ Any use of motorised machinery is not permitted for tourists in Ihefu except in 	<ul style="list-style-type: none"> ▶ Only light, mobile and self-reliant wilderness campsites permitted, using camouflaged camping techniques ▶ Wilderness camps to be located near zone edges

Zone	High Use Zone	Low Use Zone	Wilderness Zone
	<p>less</p> <ul style="list-style-type: none"> ▶ Refer to TANAPA guidelines for night game drives, rock climbing, canoeing/ air boating, and balloon safaris. 	<p>special cases e.g. patrols and rescue</p>	<ul style="list-style-type: none"> ▶ Park management can relocate camping areas that are overused ▶ Walking fees will apply for all nights spent at wilderness camps whether or not walking takes place ▶ Walking groups will be accompanied by an armed professional walking guide (who has responsibility for the group) and an armed TANAPA Ranger ▶ 2 tonne vehicle maximum for access roads ▶ “Leave No Trace” Principles for camping apply ▶ Rubbish must be carried out from campsites ▶ Sewerage to be emptied at designated areas, although biological waste can be disposed on site using agreed low impact techniques

Zone	High Use Zone	Low Use Zone	Wilderness Zone
Infrastructure Prescriptions	<ul style="list-style-type: none"> ▶ No more bed capacity without equivalent expansion of facilities and roads 	<ul style="list-style-type: none"> ▶ Only permanent and non-permanent tented camps allowed ▶ Permanent access roads permitted to facilities ▶ Commercial airstrip development to be determined on merit 	<ul style="list-style-type: none"> ▶ No permanent structures permitted, apart from access roads to wilderness campsites and administrative purposes.

In addition to the zone prescriptions there are general park-wide tourism prescriptions that must be observed in all zones. These are outlined in the box below:

Park-wide Tourism Use & Impact Regulations
<ul style="list-style-type: none"> ▶ Maximum of single axle 7-tonne vehicles for all access roads, unless otherwise stated ▶ Discourage use of deadwood for heating and cooking (specific guidelines under development by TATO) ▶ RUNAPA management may at any time designate areas in any park zone that are off limits to tourists and tour operators for reasons such as: <ul style="list-style-type: none"> • Preventing disturbance for breeding or reintroduced animals, e.g. wild dogs • Allowing recovery of vegetation • Minimising security risks e.g. in park border areas neighbouring hunting zones ▶ RUNAPA management will make every effort where practical to give sufficient notice to tour operators of the designation of such off-limits areas, together with a clear description of the location and extent of such areas, and the expected time that the area will remain off limits ▶ No vehicle access is permitted in a 2km exclusion strip adjacent to all of RUNAPA's boundaries. In addition, the Park boundary may only be crossed at designated Park entry points. ▶ Refer to TANAPA guidelines on canoeing/air boating, ballooning, night

game drives and walking safaris.

It will be necessary to make sure that all users of RUNAPA are fully aware of the zone and park-wide prescriptions, to ensure that there are no excuses for non-compliance. Under this management action, efforts will focus on ensuring that all park staff, tour operators, and drivers are made aware of the zone boundaries, and the implications for their day-to-day activities and operations. RUNAPA management will collaborate with tour operators in training guides and drivers in the Zoning Scheme. This training will focus on all zones with emphasis on the Wilderness Zone which is the most challenging (in terms of use) of all the zones and requires high-levels of specialised skills from the approved tour operators in the zone.

Action 1.1.2: Implement a code of conduct for tour operators and visitors

It is vital that visitors are made aware of the park rules and regulations, and that they actively support and encourage their tour guides and drivers to follow them. However, a long list of rules and regulations is often intimidating and difficult for visitors to internalise during the short period of time that they spend in the Park. Therefore, a basic Code of Conduct for the Ruaha has been established (see box over page), which encapsulates the park regulations through a few general behavioural characteristics expected of visitors. Following these few simple behavioural characteristics should naturally lead to compliance with the park regulations.

As with the Zoning Scheme and prescriptions outlined in Action 1.1.1, it will be necessary to ensure that all park users are made aware of the Code of Conduct. This management action will concentrate on making sure that park staff, tour operators and drivers understand the Code of Conduct, the underlying park rules and regulations, and the requirement that they set an example to visitors. Action 1.1.3 outlines steps to ensure the dissemination of information explaining the code of conduct, alongside raising awareness about the RUNAPA Zoning Scheme.

Action 1.1.3: Produce and widely disseminate information explaining the Zoning Scheme and Code of Conduct to park users

Visitors will only follow the Zoning Scheme's tourism prescriptions and Code of Conduct if they are made aware of them. This management action will make sure all park visitors are aware of these guidelines, through producing and distributing simple and understandable information materials, which include:

- RUNAPA Zoning Scheme map,
- Tourism prescriptions

- The Code of Conduct.

Other materials such as posters will be displayed at Park gates, accommodation facilities and other strategic and visible places. Leaflets will also be produced for distribution by tour operators/ concessionaires to their clients as well as by RUNAPA staff at entrance gates.

The Ruaha Code of Conduct

Welcome to Ruaha - the park takes its name from the Great Ruaha River. The word "Ruaha" is a linguistic corruption of the word, "Luvaha", which means a river, a brook, or stream in the language of the Wahehe people who live in the vicinity. The Great Ruaha River begins in the high catchment mountains, which feed it through the Usangu basin. The impression gained of Ruaha is of a world existing almost untouched and apart, and is indeed one of Tanzania's famous wilderness areas. Your support through your park entrance fees is helping us to protect this global heritage, but you can help us still further by observing a few simple rules that will also make your own visit and those of others more enjoyable and safe:

- ▶ ***Please do not disturb!***

Many wild animals become distressed when surrounded by vehicles or when vehicles come too close to them. Please keep noise to a minimum and never try to attract animals' attention, especially at sightings. Remember, all wild animals have right of way. If your driver approaches a dangerous animal closer than five metres, or if the animal moves towards you, please ask the driver to move away. If there are already several vehicles at a sighting, it's probably best to ask your driver to go elsewhere, unless you enjoy traffic jams. Remember, the Ruaha is at its best when you are alone, and there is much else to see!

- ▶ ***Do not feed!***

Feeding wild animals can upset their diet and lead to an unnatural dependence upon people.

- ▶ ***Drive carefully!***

Please observe the 50 km/h speed limit and, except in designated off-road driving areas, keep to the established roads to minimise damage to grass and woodland habitats. .

- ▶ ***Don't be a road hog!***

When viewing wildlife keep to the roads, but allow space for other vehicles to pass. When approaching other vehicles at a sighting, slow down and pass slowly or wait until they move on. Avoid driving between other visitors and the sighting if possible.

▶ **... Or a litter bug!**

Litter and garbage can be extremely harmful to wild animals. Please dispose of rubbish at your accommodation or at designated RUNAPA collection points.

▶ **Take care with fire!**

Please be very careful with cigarettes and matches, as accidentally started bush fires are a major threat to the Ruaha. No campfires are permitted away from authorised campsites.

▶ **Be safe!**

Unless you are at a designated picnic site or other visitor attraction, stay in your car whenever possible, and never move more than 10 metres from your car, especially when large animals are nearby. Objects such as animal skulls may carry diseases dangerous to people, so please leave them where they are.

➤ *Time in and out*

Gate opens 6.00 a.m and closes at 7.00 p.m

Thanks for your contribution to the protection of the Ruaha. With your help, the wildlife and habitats will still be here when your grand children come to visit us!

The Management of Ruaha National Park

Visitor activities take place mostly in central of RUNAPA, especially around Msembe and Usangu areas in High Use Zone. This management target will diversify tourist activities away from the High Use Zone. As the number of visitors keep on increasing, this will reduce pressure on the High Use Zone and provide more diverse visitor experience covering more of the Park.

Figure D.3 below (under Objective 4), shows a continuing upward trend in visitor numbers to the Ruaha in the past eight years. In response, the dispersal of visitors to other areas of the Park is required, through providing amenities such as visitor centres, night game drives, ballooning, canoeing/air boating, walking safaris; and an improved and expanded game-viewing road network.

The full range of permissible tourist activities by zone that will be offered within the Ruaha during the implementation of this GMP are listed for Target 1.1 in Table D.1 above. The following management actions have been formulated to meet Management Target 1.2:

Target 1.2: Tourist access and use diversified in appropriate ways, in order to expand RUNAPA tourism attractions

Action 1.2.1: Introduce New Tourist Products

In order to diversify visitor experience the park will introduce night game drives, canoeing, ballooning, rock climbing and scientific/research tourism as new products.

Night game drives

Night game drives will be introduced using experiences from Lake Manyara National Park and in accordance with the TANAPA night game drive guidelines. This activity will take place in the High Use Zone.

Canoeing/Air boating

RUNAPA will consider introducing canoeing in specific areas in Ihefu. This activity is permitted all year round depending on the water level. Specific guidelines for this activity will be developed before the activity starts.

Balloon safaris

This activity will be introduced using experience from Serengeti National Park. Guidelines for ballooning will be used to monitor and control the activity. Areas for ballooning will be identified.

Scientific/Research tourism

This activity will be introduced in appropriate areas in accordance with the park research priorities.

Rock climbing

RUNAPA will consider introducing this activity in appropriate areas. Guidelines for rock climbing will be developed to monitor and control the activity. Areas for this activity will be identified.

Action 1.2.2: Develop walking safaris according to the Limits of acceptable use

Walking safaris are a new product in our National Parks and are in high demand by the tourism industry. This activity has been taking place in this

park on trial basis since 2001. Experience gained from the trial walking safaris will be used to improve this activity in order to attract more tourists.

The Limits of acceptable use for Walking Safaris in the Wilderness Zone and the High use Zone are provided in Table D.2 below, but it is important to note that they are subject to the TANAPA Walking Safari Guidelines and the collection of additional information, which may result in modifications.

Table D.2: Wilderness and High Use Zone LAU: walking safaris

Operational Parameters	Limits
Maximum number groups per day	4
Maximum number of clients per group	8
Maximum number of groups per walking safari block	1

Fly camping will be the major type of accommodation that will be used in the wilderness for walking safari visitors. Campsite locations will be situated in such a way that groups will be able to walk in a day from one to the next. In addition, these locations will cover a relatively large area, within which the walking group will be able to select where to set up their camp. The task of identifying a workable network of campsite locations will involve the specialist knowledge of TANAPA, Tour Operators, and the RUNAPA Resource Protection Department. The walking safari blocks will be booked for the exclusive use of one walking safari group at any one time.

Action 1.2.3: Develop interpretative materials in designated points, as appropriate

The park will develop interpretative materials in specific sites such as entry gates, picnic sites and in cultural/historical sites. The interpretive material should be based on special themes related to the areas.

Action 1.2.4: Develop new entry points

In order to improve accessibility into the park, new entry gates will be constructed at Mpululu, Madibira (Ikoga), Luhanga, Chunya (Lualaje) Lunda and Majimoto.

Objective 2: RUNAPA visitor facilities improved in order to provide an optimal tourism experience with minimal environmental impact

The future desired state of RUNAPA is one where the visitor facilities are in keeping with zone prescriptions, meet the expectations and requirements of

visitors, and do not negatively influence the ecological or visual integrity of the Park. The two management targets to achieve this objective will firstly, *improve and expand the park facilities*, and secondly, *develop procedures to ensure that the tourism facilities of concession holders and tour operators comply with TANAPA standards*.

Target 2.1: Visitor facilities improved and expanded to cater for the increasing demand

Within RUNAPA, accommodation facilities include one lodge, three permanent tented camps, three seasonal/mobile camps, rest house, park bandas (old and New) and special and public campsites (see Table D.1 and D.2 for more details). There is also an increasing number of permanent accommodation facilities around the park see table D.3.

Table D. 3: Permanent accommodation facilities in the Park

S/NO	Name of the facility	Type of Facility	Existing Number of beds
1	Ruaha River Lodge	Lodge	100
2	Mwagusi Safari Camp	Tented Camp	16
3	Jongomero Tented Camp	Tented Camp	24
4	Mdonya River Tented Camp	Tented Camp	16
5	Park Bandas	Bandas	26
6	Park Hostel	Hostel	35
7	Park Rest House	Rest house	7
TOTAL			224

Table D.4: Public and Special Campsites

S/NO	Name/Type	Area	Existing Facilities	Needs/remarks
1	Public Campsite No 2	Mdonya	Pit latrines Water tank (2000 litres)	<ul style="list-style-type: none"> Needs relocation and new modern facilities Rubbish bin
2	Public Camp Site No. 2	Msembe	Flush toilets and showers	<ul style="list-style-type: none"> Rubbish bin
3	Public Camp Site No. 1	Msembe	Pit latrines	<ul style="list-style-type: none"> Relocation Rubbish bin Flush toilets and showers
4	Special Camp Site	Mbagi	Camping ground	Improve access road
5	Special Camp Site	Ikuka	Camping ground	Improve access road
6	Special Camp Site	Ifuguru	Camping ground	Improve access road
7	Special Camp Site	Wimbwa	Camping ground	Improve access road
8	Special Camp Site	Kimilamatonge	Camping ground	Improve access road

Table D.5: Permanent accommodation facilities outside the park

S/NO	Name of the Facility	Type of Facility	Location/Name	Existing Number of Beds	Maximum Planned Capacity
1	Ruaha Hill Top Lodge	Lodge	Idelemle Mnt Tungamalenga	20	30
2	Tungamalenga Lodge & Campsite	Lodge 20 +8 Campsite 20	Tungamalenga	40	48
3	Tandala Tented Camp	Permanent Tented Camp	Mdweka	20	20

4	Ruaha Venture Lodge(Sunset lodge)	Lodge	Idelemle Mnt Tungamalenga		20
5	Chogela Campsite	Campsite	Tungamalenga	40	40
Total					158

Action 2.1.1: Increase the number of permanent and non permanent accommodation facilities

In order to cope with the increasing number of visitors, more additional tourist accommodation facilities will be constructed.

Action 2.1.2: Increase road network for both tourism and administrative purposes

The park management will ensure that all tourism attractions are accessible by tourists throughout the year. Tourism circuits will be distributed to all potential tourist attraction to reduce concentration of tourist to Msembe area.

Table D.6: Limits of acceptable use for accommodation in the High and Low Use Zones

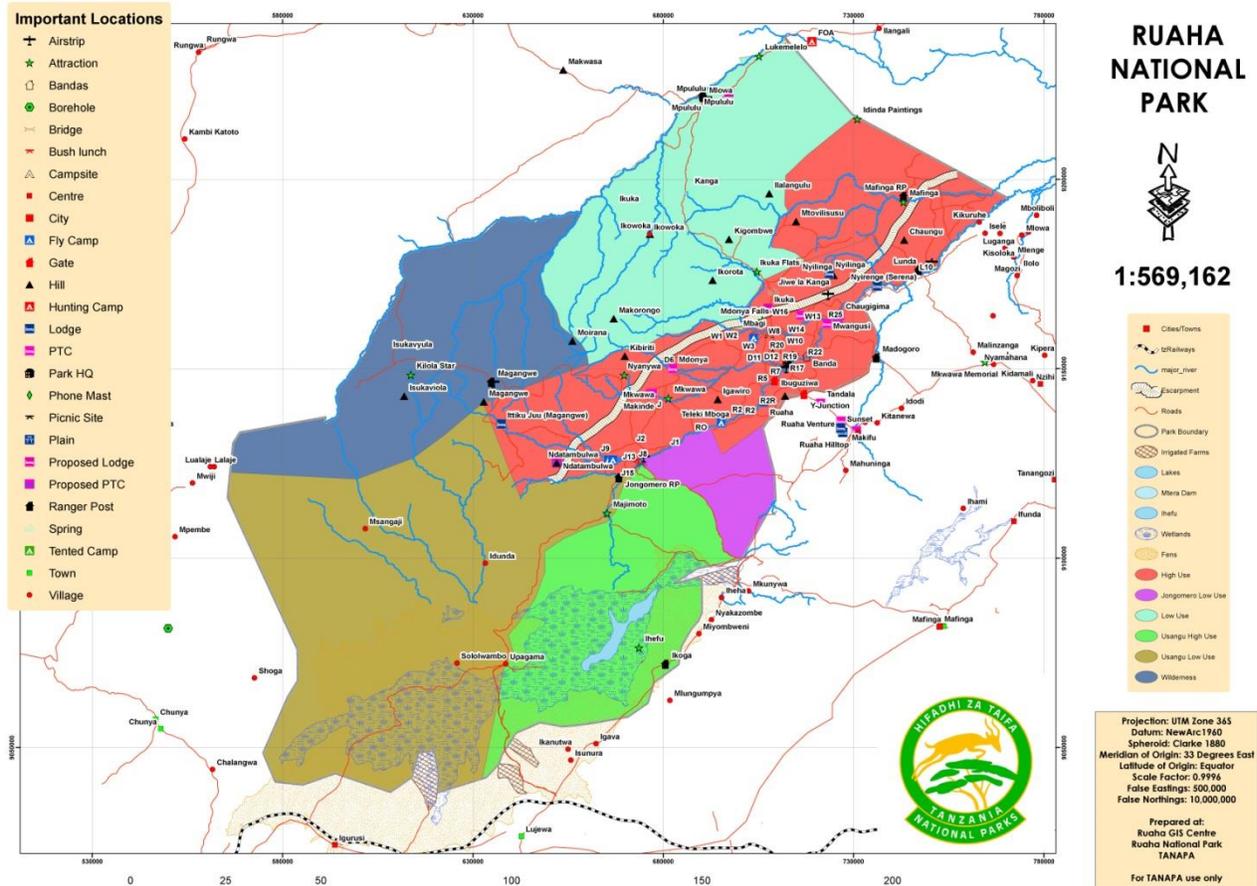
Facility Zone	High Use Zone				Low Use Zone		
	Name	Existing beds	Maximum bed capacity	Proposed beds	Name	Maximum bed Capacity	Proposed beds
Lodge	Ruaha River	100	100	0	Mapenza (Mpululu)	50	50
	Nyiringa	0	50	50	Matekenya	50	50
	Itiku Juu (Magangwe)	0	50	50	Mwayembe A or B	50	50
	Serena (Nyirenge)	0	50	50	Ikuka Escarpment	50	50
					Makorongo	50	50

					Nyamayungi	50	50
					Ngiriamama (Maliyabwana)	50	50
					Mlungu	100	100
					Chaugigima	50	50
					Wimbwa	50	50
	TOTAL	100	250	150		550	550
Permanen t Tented Camps	Mwagusi	24	24	0	Lower Lupati Mzombe	40	40
	Jongomero	24	24	0	Msangaji	40	40
					Kimbi	40	40
	Mdonya	24	24	0	Nyamakuyu	40	40
					Mkupule	40	40
					Ndatambulw a	40	40
					Makinde	40	40
		Sub Total	72	72	0		280
Special Campsite s	Ifuguru	20	20	0	Ilalangulu 1	20	20
	Msembe	20	20	0	Ilalangulu 2	20	20
	Mbagi	20	20	0	Campsite 1	20	20
	Kimila- matonge	20	20	0	Campsite 2	20	20
					Campsite 3	20	20
					Campsite 4	20	20
					Campsite 5	20	20
					Campsite 6	20	20
					Campsite 7	20	20
					Campsite 8	20	20

					Campsites Usangu	100	100
					Serengeti ndogo	20	20
					Chaluwindi	20	20
					Mabata Makali	20	20
					Nyaluhunza	20	20
					Ikuka 1	20	20
					Ikuka 2	20	20
					Kinyangesi	20	20
					Mafinga	20	20
	Sub Total	80	80	0		460	460
Banda, Hostels and Rest House	Banda	23	25	2	Majimoto bandas Usangu	50	50
	Hostel	35	100	65	Bandas Msembe	30	30
	Rest House	7	10	3	Rest House Usangu	10	10
					Hostel Usangu	100	100
	Sub Total	65	135	70		190	190
Public Campsites	Mdonya 2	20	40	20	Public Campsite Usangu	120	120
	Campsite 1	40	40	0			
	Campsite 2	40	40	0			
	Campsite 3	40	40	0			
	Campsite 4	40	40	0			
	Sub total	180	200	20	Sub Total	120	120
GRAND TOTAL		377	737	240		1600	1600

Currently, RUNAPA has 377 beds in the High Use Zone. The plan is proposing a maximum of 737 bed capacity in this zone over the next ten-year's period. This means an addition of 240 beds. Similarly, the plan proposes a maximum of 1600 beds in the Low Use Zone over the next 10 years. Therefore the plan proposes a total of 2337 beds in the park. Allocation of the sites will take into consideration the effects of density and yield for the proposed accommodation facilities as shown in Figure D.2.

Figure D.2: RUNAPA map of accommodation sites in the High and Low Use Zones



Action 2.1.2: Implement limits of acceptable use for accommodation in the High and Low Use Zones

The Limits of acceptable use (LAU) for accommodation in this GMP define the future desired conditions as regards facility development rather than the maximum amount of use and development the Park can tolerate. Table D.5 above defines the LAU for accommodation in the High and Low Use Zones.

High Use Zones

For the High Use Zone, the LAU is set at the existing bed capacities. However, if subsequent Action Plans under this GMP are developed, sufficient RUNAPA facilities can be established without affecting high use zone characteristics.

Low Use Zones

For the Low Use Zones, the LAU for accommodation is set for the existing and proposed bed capacities, as listed in Table D.5 above. There is still potential to increase the bed capacity within areas of this zone, whilst still maintaining the low use characteristics.

Target 2.2: Systems for monitoring and regulating the environmental impacts of tourism facilities designed and established

Waste management systems throughout the Park are generally poor. Systems for monitoring and regulating the environmental impact of tourist facilities are essential to ensure that the development of tourist facilities at RUNAPA are in alignment with the RUNAPA Tourism Program Strategy and have minimal impact on the park's environment. In order to meet this target, the following management actions have been formulated and are described below.

Action 2.2.1: Ensure implementation of DALP environmental impact guidelines for all new facilities

For the development of the proposed new facilities a basic requirement will be that, they conform to TANAPA's Development-Action-Lease Procedure (DALP). This will involve incorporating and satisfactorily meeting the DALP's criteria for site selection, proposal preparation, and environmental impact assessment.

Action 2.2.2: Establish environmental impact standards (including waste, water, and fuel wood management) for RUNAPA tourism facilities and a system of incentives and penalties to ensure compliance

Under this GMP, all tourist facilities will be required to meet the set environmental impact standards. Appropriate standards will be set for lodges and permanent tented camps. These standards will include the requirements to monitor and efficiently manage the disposal of waste and the use of water and fuel wood. This system will require that concessionaires consistently meet these standards and demonstrate that they are improving their environmental performance on a regular basis, and in line with TANAPA and National EIA guidelines. Assessment of performance will be done by concessionaires themselves using self-evaluation score-sheets, and periodically verified externally. TANAPA Environmental Auditing team may enter at any premises without prior information.

Objective 3: RUNAPA interpretative centres and materials are of high quality, relevant, informative and educational

The desired future state of RUNAPA 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 use and behaviour in relation to these resources. Visitors who are provided this information will be stimulated to develop an interest in and support for the importance of RUNAPA and of conservation issues in general. The two management targets to achieve this desired state will firstly improve and expand upon the RUNAPA visitor interpretation facilities and secondly, improve the information material available, as described below.

Target 3.1: Network of RUNAPA visitor interpretation facilities improved and developed

Currently there are inadequate tourist facilities and interpretative materials and some are of poor quality. The Visitor centre will be developed at Y-junction, Ikoga and Majimoto that will be used as interpretation facility at the main entrance gates and at the relevant airstrips. Majimoto visitor centre will provide information on water in Usangu area and wildlife.

Action 3.1.1: Develop Visitor Centre at Main entrance gates and relevant airstrips

This GMP has identified the need to develop a visitor centre at main entrance gates and relevant airstrips in order to provide park's resource information to the visitors before entering the park.

Action 3.1.2: Develop mini-interpretative centres and high quality interpretation leaflets at selected tourism sites.

In support of the development of tourism sites, the park management will identify all the tourism sites and develop interpretive information that explains the key features and importance of these sites. This interpretive information will be written up in leaflets and disseminated at park gates, relevant airstrips and at accommodation facilities and, if practical, at the tourism sites itself.

Action 3.1.3: Provide appropriate short-course training to strengthen interpretation capacity of assistant tourism officers and other relevant staff

It is intended that Assistant Tourism Officers and other relevant staff will be trained on interpretation, multilingual and basic mechanical skills. These staff will be responsible for providing the interpretative information at the facilities, as well as for going out with visitors into the Park. This management action is focused at strengthening the interpretation capacity of these officers through short-course training and on job training.

Target 3.2: Supply of visitor information materials improved

Currently there is a lack of interpretative information available for RUNAPA visitors. However, there is a recognised need to improve the quality and range of books, maps, videos and other interpretative information at these outlets. Information on potential visitor attractions, both cultural and historical is not currently available. It is important to provide up-to-date materials on these attractions (i.e. tourist maps, brochures and walking guidelines) at strategic locations, such as at main park entrance gates and relevant airstrips. This will be an important effort to diversify and disperse tourism opportunities in the park.

In order to ensure the availability of information to visitors is improved and of a high quality, the following management actions have been developed:

Action 3.2.1: Work with TANAPA Desk Top Publishing Unit, GIS Unit and other publishers to develop information for RUNAPA.

RUNAPA will work with the TANAPA Desk Top Publishing Unit, GIS Unit and other publishers to develop brochures, leaflets, calendars, tourist maps, guidelines, promotional CDs and posters that would be used to provide information about the Park.

The aim of this management action will be to provide all RUNAPA users with easy access to the information they need, in order to have a safe and enjoyable park experience. This will involve producing and disseminating information on the park attractions, with an accurate map, as well as incorporating a summary of the relevant Zoning Scheme tourism prescriptions and Code of Conduct (see Action 1.1.3). This information will be distributed freely or for sale.

Action 3.2.2: Ensure the wider dissemination of information about the Park.

The final management action for this Target will ensure that the information materials developed are made readily available to the public. This will be achieved by ensuring that the full range of information materials is made available at outlets inside and outside of RUNAPA. It is expected that these improved information materials along with other products will attract more visitors and enhance their experience.

Objective 4: Tourism management strengthened in collaboration with tourism industry partners

The future desired state of RUNAPA is one where tourism is effectively managed, in close collaboration with the tourism industry, to provide an outstanding visitor experience. This entails supporting management systems that effectively and efficiently coordinate bookings, collect revenue, and monitor environmental impacts of tourism use. This desired future state will be achieved through the following two management targets that firstly, address issues of management systems and secondly, the communication and cooperation with tourism industry partners.

Target 4.1: RUNAPA tourism administrative and information systems enhanced

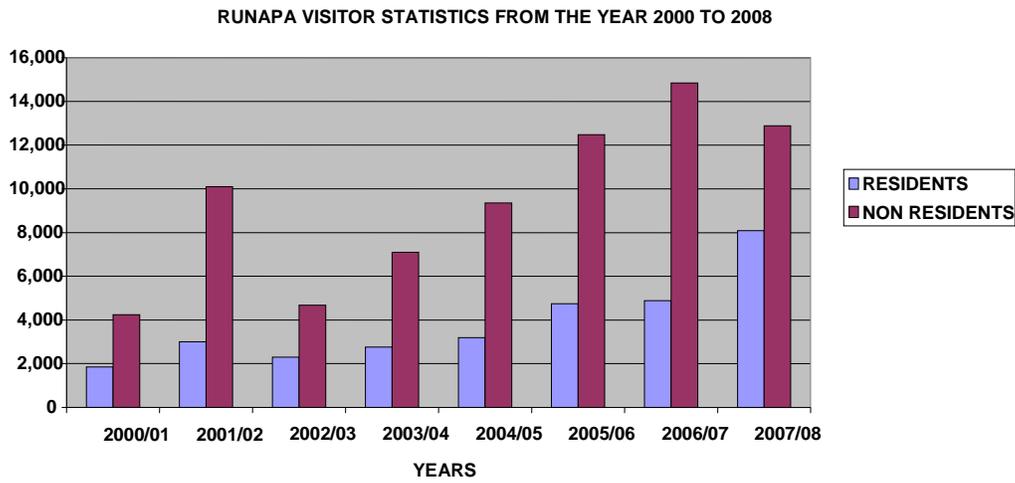
The Park Management will ensure all relevant and essential information with regards to tourism are collected and analysed and used by management to improve visitors' services.

Action 4.1.1: Develop and implement a system of collecting information about visitors

Information concerning visitor use and satisfaction is essential if the RUNAPA Tourism Department is to respond and adapt to changing circumstances and requirements. Simple ways of measuring visitor use and satisfaction will be developed at key sites. To ensure the full cross section of visitor satisfaction is captured, annual visitor surveys will be conducted using random sampling techniques. RUNAPA management will also strive to collect and monitor visitors' number to know the trends (Figure: D.3). The data generated will be analysed by the Tourism Department and fed back to management for decision-making.

Figure D.3 shows the total RUNAPA visitor numbers (resident and non-resident) from July 2000 to June 2008.

Figure D.3: RUNAPA visitor statistics



Target 4.2: Communication and cooperation with tourism industry partners

The Park Management in collaboration with all relevant tourism stakeholders will make sure that the issues of communication and cooperation are given priority to maximise contribution of the sector to the economy. In order to ensure that the target is achieved the following management actions will be undertaken:

Action 4.2.1: Enhance coordination and cooperation between RUNAPA and Community Based Organisations in all aspects of planning to improve the linkages and connectivity between communities and conservation authorities both within and outside the park

This Management action intends to create awareness on community benefits from tourism investments and other related activities and provide support to communities in negotiations concerning tourism planning and operation in their areas.

Action 4.2.2: Improve communication with all stakeholders on tourism operations

To ensure adequate communication with tourism industry partners, the Park Management will organize at least biannual meetings with relevant stakeholders (investors, Tour operators, CBO, etc.).

Action 4.2.3: Enforce Wildlife Law and Regulations as regards to development and hunting near RUNAPA.

This Management action will address all issues related to hunting and development activities near the park boundary to ensure that park resources are conserved.

Objective 5: Historical and Cultural Sites are well managed and promoted

RUNAPA in collaboration with local communities and other government agencies will promote cultural and historical tourism inside and outside the park. The initiative will help to diversify the tourism opportunity, as the area is rich in terms of historical and cultural sites.

Target 5.1: Historical and cultural sites become one of the tourist attractions

The Park management in collaboration with Local Authorities and the Department of Antiquity will identify and document all cultural and historical sites inside and outside the park for education and tourism purposes.

Action 5.1.1: Document and develop cultural and historical sites inside and outside the park

Cultural and historical sites inside the park include Idinda, Mkwawa springs, Nyanywa, Mapenza (grave/ritual site), Hussman's Bridge, Ganga la Mafunyo and N'Giriama(Usangu). Cultural and historical sites outside the park include Kalenga, Lugalo, Isimila, Mkwawa (Nyamahana) and Daraja la Mungu (Kikongoma) and Gangilonga. However, more sites will be identified after thorough studies in the newly added Usangu area.

Objective 6: Ensure that the park is adequately promoted locally and internationally.

The Park Management in collaboration with all relevant stakeholders will aggressively promote the park to attract more visitations.

Target 6.1: Increase number of Local and international tourists

Presently, the park is poorly promoted/ marketed as a result the number of tourists is increasing at a lower rate and the area is underutilized. In order to increase the number of tourists, two management actions will be carried out.

Action 6.2.1: Prepare and disseminate promotional materials in collaboration with TANAPA HQ and Stakeholders.

The promotional materials to be developed will consist of major tourist attractions, the best time to visit the park and other important information to potential tourists. The promotional materials will include brochures, video/DVDs, posters, calendars, guidebooks, maps and diaries. Information will be disseminated by the park and stakeholders.

Action 6.2.2: Promote local tourism through local media

In addition to the above promotional materials, the park will also use radio and television programs to promote local tourism. The park will attend local trade fairs as a promotional strategy.

Action 6.2.3: Promote and influence investments in identified areas in and around the park

RUNAPA management will develop identified areas in and outside the park in collaboration with stakeholders and other investors so as to increase the number of visitors.

Mitigation of environmental impacts of major Tourism Program actions

This section evaluates the potential environmental impacts of the major Tourism Management Program actions and identifies mitigation measures to reduce, eliminate, or offset adverse effects, which will be incorporated into the implementation of the Action Plan. The major Program actions included in this assessment were selected because they were either potentially controversial, represented a major capital expenditure, and/or required significant expenditures of TANAPA funding/staffing resources.

Table D.7 below highlights the environmental aspects that are likely to be negatively affected by the major actions of this Program and the proposed mitigation measures and recommendations. It will be the responsibility of RUNAPA management to ensure that the proposed measures are implemented.

Table D.7: Mitigation measures for major Tourism Program actions

Major action	Potential negative impact	Mitigation measure
<p>Introduce New Tourist Products</p>	<p>Night game drives: Night game drives will cause disturbance to wildlife</p> <p>The spot lights may cause disturbance to other visitors staying in the Park</p> <p>Canoeing: Disturbance to vegetation, aquatic and bird lives.</p> <p>Pollution and littering.</p> <p>Potential injury/loss of human life.</p>	<ul style="list-style-type: none"> • Night game drive operators must adhere to night game drive guidelines and other park rules and regulations. • Night game drive activities should take place away from visitor accommodation facilities • Specific guidelines will be developed for canoeing in Ihefu • Areas/special zones will be identified for this activity • Activity should be monitored regularly • Waste management guidelines will be enforced • Guides will be trained on life saving techniques/ Rescue

		<p>team</p> <ul style="list-style-type: none"> • Safety gears will be provided • All participants of this activity will be required to sign an indemnity form
	<p>Balloon safaris:</p> <p>Disturbance to wildlife</p> <p>Pollution and littering</p> <p>Potential injuries and loss of life</p>	<ul style="list-style-type: none"> • Specific guidelines will be developed for ballooning. • Areas/special zones in Serengeti ndogo and Usangu will be potential areas for this activity • Waste management guidelines will be enforced • Activity should be monitored regularly • Guides will be trained on life saving techniques/ Rescue team • Safety gears will be provided by operators

		<ul style="list-style-type: none"> • All participants of this activity will be required to sign an indemnity form
	<p>Scientific/Research Tourism:</p> <p>Disturbance causing behavioural change in wildlife and habitat destructions</p> <p>Pollution and littering</p> <p>Challenges in implementation</p> <p>Rock Climbing:</p> <p>Habitat destruction and wildlife disturbance</p> <p>Littering</p>	<ul style="list-style-type: none"> • Specific guidelines will be developed for this activity. • Waste management guidelines will be enforced • Needs further studies for its implementation • Potential areas for this activity will be identified at Chaliwimbi and Kimilamatonge. • Specific guidelines will be developed for this activity • Waste management guidelines will be enforced

	<p>Potential injury/loss of life</p>	<ul style="list-style-type: none"> • Training for guides in life saving techniques • Rescue teams will be placed
<p>Develop interpretation facilities at entry gates, picnic sites and cultural/historical sites</p>	<p>The facilities detract from the wilderness character of the landscape</p> <p>Pollution and degradation of water in the locality</p> <p>Pollution and waste will be generated at facilities</p>	<ul style="list-style-type: none"> • Ensure that EIAs are conducted and that facilities are developed in manners that reflect the natural character of the site in terms of scale and architectural shape and style. • Consideration should be given to purification requirements, desalination and disinfection • Regular samples should be tested at the storage facility and point of disposal • If toilet facilities are necessary they should be constructed at least 100m away from closest river system

<p>Walking safaris in the park</p>	<p>Disturbance to wildlife and potential habituation</p> <p>Littering will be generated by activities</p> <p>Introduction of exotic species which may change the natural habitat</p>	<ul style="list-style-type: none"> • Guidelines for this activity will be enforced • Waste management guidelines will be enforced • Close monitoring on introduction of exotic species especially from fruit seeds should take place. Fruit seeds should be taken off the park • All exotic species should be removed from the park.
<p>Increase the number of permanent and non permanent accommodation facilities</p>	<p>Excessive use of resources (water)</p> <p>Loss of habitat and species disappearance (at local level)</p> <p>Introduction of exotic species</p> <p>Waste will be</p>	<ul style="list-style-type: none"> • Conduct EIAs and hydrological surveys before all developments • Development of the accommodation facilities should avoid sensitive habitats as much as possible. • Enforce TANAPA regulations on exotic species • Survey, identify and control • Proper waste

	<p>generated from the use of the facilities</p> <p>Feeding and habituation</p> <p>The facilities have an adverse impact on the scenic view of the park</p>	<p>management system should be developed and put in use in all accommodation facilities</p> <ul style="list-style-type: none"> • New facilities should blend with the park environment
<p>Increase and improve the quality of road network for both tourism and administrative activities</p>	<p>Loss of habitat and species disappearance (at local level)</p> <p>Introduction of exotic species which may change the natural habitat</p> <p>Pollution from vehicles, machines and equipment e.g. oil spills, dust, etc.</p> <p>Localised scenic impacts from burrow pits</p>	<ul style="list-style-type: none"> • All roads should be developed in accordance with the TANAPA PEA Guidelines • Enforce TANAPA regulations on exotic species • Survey, identify and control • Waste management guidelines will be enforced • Rehabilitation after use • Adhere to PEA guidelines.



COMMUNITY OUTREACH PROGRAMME

Community outreach strategy

Programme Purpose: To improve livelihood of local communities surrounding the park through sustainable use of natural resources

The RUNAPA outreach strategy strives to align the long-term development of community outreach in RUNAPA with the programme purpose as defined 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.

The principle National Policy-level instruments that form the basis for the RUNAPA Outreach strategy are the National Policies for National Parks in Tanzania (1994), the Wildlife Policy of Tanzania (1998), National Environmental Management Act (2004) and the TANAPA Strategic Action Plan for Outreach Programme (2005), National Strategy for Growth and Reduction of Poverty (NSGRP/MKUKUTA) and Tanzania Development Vision 2025.

Of particular relevance to the Outreach strategy is the mission statement of TANAPA's Outreach Programme Strategic Action Plan for 2001-2004, which states:

“Outreach Programme is a field programme supported by a department in TANAPA headquarters, which aims to identify and implement opportunities for sharing parks’ benefits with adjacent communities. Outreach Programme seeks to protect the integrity of National Parks by reducing conflicts between wildlife and surrounding communities, by improving relations with those communities and by helping to solve problems of mutual concern”.

The importance of increasing the value of the national parks to local people is recognised in the National Policies for National Parks in Tanzania. This policy states that TANAPA will extend its activities “into surrounding human communities with a focus on the local people living adjacent to the park and

village governments up to the district level. This outreach programme will be accompanied by mechanisms to ensure that the benefits of conservation are shared with local communities in appropriate ways". The policy encourages "*compromise and flexibility*" in order to meet the needs of both the park and local people.

The RUNAPA Community Outreach Programme strategy has recognised the limitations of the resources available and consequently concentrates on a few key aspects of the above national policies in order to guide the implementation of this programme and the achievement of the programme purpose, as described below:

Good relations between RUNAPA and local communities/ government

RUNAPA is intricately linked and affected by the incompatible human activities and land-uses occurring on its boundaries and *vice versa*. Poor park-community relationships in the past have both initiated and led to the escalation of conflicts over access to land and natural resources utilisation. Therefore, RUNAPA management will develop and elaborate mechanisms to promote dialogue and improved communication with local communities and government in order to enable conflicts to be amicably resolved and to develop modes of cooperation for mutual benefit.

Benefits sharing with local communities

RUNAPA management recognises that park-adjacent local communities bear direct and indirect costs of wildlife conservation. This is done through human-wildlife conflicts and the loss of access to land and natural resources utilisation. This plan addresses the aforementioned costs in order to attain the necessary community support for sustainable conservation.

RUNAPA management will ensure that the surrounding local communities are receiving benefits from the Park to help counter the costs they incur, and increase community support for the continued conservation of the RUNAPA. This is in line with national policy, which states, '*TANAPA will seek ways to share the benefits of conservation with local communities in ways that are sustainable and promote sound development*' (TANAPA Policy, 1994).

Conservation and Environmental Education

Conflict and disputes between RUNAPA and adjacent local communities have often arisen from misunderstandings and lack of communication concerning park regulations and boundaries. This lack of knowledge results in communities feeling distrustful of the Park, dis-empowered and unsure of their rights. To address these issues, RUNAPA management will conduct

conservation education and raise awareness in the surrounding communities (e.g. villages, schools and other institutions); in particular RUNAPA will clarify park rules, regulations and boundaries, through a well-structured education programme.

Community Based Conservation (CBC) Initiatives

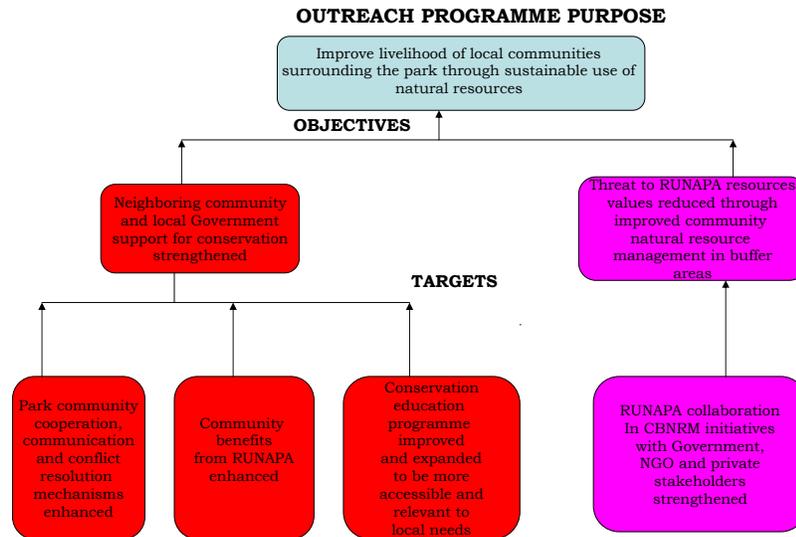
The sharing of park benefits with communities will be complemented by efforts of RUNAPA management in collaboration with other stakeholders to improve land use and livelihood to local communities surrounding the Park. This will reduce negative impacts on RUNAPA natural resources and increase the conservation compatibility of neighbouring land uses.

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

1. **Strengthening support** for conservation by key stakeholders (local communities, **NGOs/CBOs and local government authorities**).
2. Threats to RUNAPA resource values reduced through **improved CBC initiatives** within buffer areas in collaboration with key stakeholders.

In order to meet these objectives for the Community Outreach Programme, a series of 10-years **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.4 in Section E contains the **3-Year Action Plan** for the Community Outreach Programme for the period of 2009-2012, which lists the activities, responsibilities, timeframe, and input requirements necessary for the completion of the management actions.

Logical framework for the community outreach programme



Objective 1: Key stakeholders (local communities, NGOs/CBOs and local government authorities support for conservation strengthened

The desired future state of RUNAPA is one where the neighbouring communities and local government are fully aware and supportive of the aims and objectives of RUNAPA in terms of natural resources conservation. The three management targets to achieve this desired state involve enhancing park-community communication mechanisms, readdressing the imbalance between conservation costs and benefits for neighbouring communities, and improving the educational programme.

Target 1.1: Conservation education programme improved, expanded and relevant to local community needs

Conservation education in RUNAPA has been part of Community Outreach activities since 1991 when extension programmes were initiated. Conservation education activities in neighbouring villages involve showing of conservation films to schools, developing tree nurseries and tree planting programme in various schools, communities and village lands.

At the same time, RUNAPA will improve and expand conservation education in various schools, by distributing conservation education materials and equipment for the programme. RUNAPA will also provide budget to other identified conservation education needs from the communities to cater for their planned activities.

Action 1.1.1: Improve the scope and content of conservation education materials

RUNAPA will work with the Desktop Publishing Unit at TANAPA HQs and other relevant stakeholders in developing conservation education materials. This will enable local newsletters and educational materials such as leaflets and posters to be written, published and disseminated to the public in general.

RUNAPA in collaboration with other stakeholders will be involved in updating the existing educational materials by searching modern ways in promoting conservation education. This includes the uses of PowerPoint projectors and the redesigning of video films, DVD, posters and leaflets to be used in community conservation education programme.

Action 1.1.2: Scale-up education programme to all park-adjacent districts

Conservation education activities to some extent have been carried out in a small scale in Iringa District. The scope to extend these activities to all districts around the Park is quite important. However, other districts such as, Mbarali, Chunya and Chamwino should be the future targets for conservation education programme. Collaboration with relevant stakeholders (NGOs/CBO) and local governments in implementing the conservation education program is a key to success.

Action 1.1.3: Expand the scope of environmental education activities in selected areas

For the past six years since 2003, RUNAPA Outreach Department facilitated the introduction of environmental conservation program in some primary and secondary schools in Idodi and Pawaga Divisions in collaboration with Friends of Ruaha Society. Through the programme, seeds have been provided in schools as part of the schools greening programme and seedlings were raised; also teaching materials were developed and distributed to targeted schools in Idodi and Pawaga Divisions. Following the expansion of the park also this

programme will be expanded to include villages within Mbarali, Chamwino and Chunya District.

In the next three years, Outreach Department will continue to collaborate with different stakeholders in conducting conservation education programmes.

Action 1.1.4: Organise park visits for targeted community groups

Visits by community groups such as schools, village, political and traditional leaders, youth, women and disabled persons have been a regular feature of the Outreach Department's activities for many years. The department in collaboration with relevant stakeholders will organise park visits to targeted community. Additionally, the department will budget for such visits in order to instil knowledge, understanding on the environmental management, conservation and provision for enjoyment and recreation.

Action 1.1.5: Incorporate the promotion of family planning and HIV preventions into the education programme

Family planning is a very important issue to communities living adjacent to RUNAPA; this is due to human population increase every year. The population increase creates pressure towards natural resources adjacent to villages bordering RUNAPA.

HIV/AIDS, TB and Malaria are diseases of World concern; its awareness should be incorporated in conservation education programme. The department in collaboration with relevant stakeholders and other institutions will work together during the implementation of the education and prevention programme in the selected villages.

Target 1.2: Park-community cooperation, communication and conflict resolution mechanisms enhanced

The RUNAPA Outreach Department is responsible for liaising with villages, wards, and districts that are outlined in the Table G.1. More emphasis of Community Outreach programme will be given to villages surrounding the areas annexed to the park.

The department currently carries out the following activities.

Coordinating the Outreach Programme with local government, villagers, village game scouts, as well as NGOs and private stakeholders around the Park. Many of these activities are formal and at present, there is an official forum to coordinate stakeholders involved in Community Outreach programme. In addition, RUNAPA will work with MBOMIPA that manage North Eastern, East,

and South East areas of the park and Waga-Nyamakuyu proposed WMA and Usangu-Mpanga-Kipengere WMAs. More efforts will be given to other potential areas for WMAs in Chunya and Chamwino districts. As the representative of the key player in the ecosystem, the Outreach Department will take the leading role in the coordination of all these stakeholders, as outlined in the following management actions:

Action 1.2.1: Collaborate with key stakeholders in conducting conservation awareness to communities adjacent to the park

RUNAPA will collaborate with other key stakeholders in provision of conservation education and awareness raising programme through conducting seminars, workshops and meetings in the surrounding communities. The park will also participate in awareness programmes organised by other stakeholders.

Action 1.2.2: Collaborate with key stakeholders to develop a strategy to deal with problem animals

RUNAPA will work with Wildlife Management Areas (WMAs), District Councils, KDU, and local communities in gathering information on problem animals in areas surrounding the park. Strategies to deal with problem animals will be developed, implemented, monitored and evaluated in collaboration with key stakeholders.

Action 1.2.3: Enhance flow of information between park, local communities and other stakeholders

In order to build trust, respect, and support for RUNAPA, it is quite important that regular informal and formal communication with stakeholders be done. Indeed, good communication is the basis on which all good relationships are built; simply listening often goes a long way to mitigating problems. If communication channels are open and the Park is ready to accept and work on complaints, discussion, suggestions, and opinions from communities; then information flow between the Park and communities will be enhanced. Interaction between the park and community in social activities will as well lead into better relationship.

This management action will involve the Outreach Department participating in village, ward and district meetings as well as instigating a series of regular meetings; including an annual stakeholders meeting hosted by RUNAPA to discuss community-related issues between Outreach staff and local communities.

To complement these coordination activities, the RUNAPA Outreach Department will disseminate newsletters to local stakeholders to improve their

understanding on Outreach Department objectives and to provide a more realistic assessment of the available resources.

Action 1.2.4: Collaborate with key stakeholders to influence, the establishment and implementation of land use plans in villages adjacent to the Park.

Currently all 21 villages that are under MBOMIPA programme have land use plans. RUNAPA will collaborate with other stakeholders to influence the use of existing land use plans and establishment of new ones in other villages that do not have.

Action 1.2.5: Collaborate with key stakeholders to survey and demarcate the park boundary

The Outreach Programme department will collaborate with relevant park staff, village government officials and district authority to survey and demarcate the park boundary (*Refer park operation programme*).

Action 1.2.6: Carry out training on communication and conflict resolution to improve community liaison skills of wardens and rangers

In fact, all wardens and rangers are ambassadors for RUNAPA and that all interactions with local communities (and indeed other stakeholders such as tourists) contribute to good park-community relations. However, current training of rangers and wardens concentrate more on military and adversarial skills and thus community policing and social skills are often lacking. The instigation of a training programme under this management action will help to improve communication, conflict resolution, and policing skills of all park staff.

Action 1.2.7: Conduct dialogue and meetings with neighbouring villages

Problems of mutual concerns usually arise when there are conflicting needs on the resource-use in order to resolve such problems there is a need to conduct dialogue and meetings among interested parts whenever appropriate. This is important to establish better grounds for cooperation and conflict resolution.

RUNAPA has to initiate dialogue on issues, problems that threaten conservation and conducting meetings by involving key stakeholders.

Target 1.3: Community benefits from RUNAPA enhanced

Through the “Support for Community Initiated Project” (SCIP) the Park has worked with surrounding villages in contributing to village development projects, mostly in the area of school improvement, environmental conservation projects, income generating projects, water, health services and infrastructure

development. In line with the SCIP guidelines, the Park has worked with district authorities and villages to ensure that the chosen projects are appropriate and match with district and village development plan priorities. The total annual value of the SCIP projects contributed to the communities by the Park is about TShs 646,039,527.36 from 1994-2008.

However, the current problems include a high demand for benefits from the park by local communities, lack of mechanisms and capacity to identify and formulate income generating projects and creating markets for local products; low community contribution during project implementation, insufficient obvious benefits from community based eco-tourism ventures and inadequate training institutions to train local communities as well as provision of employment opportunities. In order to address these issues and meet this management target, the following management actions have been formulated:

Action 1.3.1: Improve SCIP planning mechanisms with communities and districts

The Support for Community Initiated Projects (SCIP) initiative was launched in 1994 and is the major focus of TANAPA's programme for sharing park benefits over the last decade. Unfortunately, there are indications that some of the SCIP projects that have been supported are not those perceived by villagers as being the most important or appropriate. Instead, local and/or national elites together with politicians appear at times to have sought to intervene and take advantage of the SCIP initiative for development priorities more beneficial from their own perspective.

In addition, in some areas, only influential persons can influence the projects selected as community priorities, and thus less emphasis has been given to the concerns of the majority (i.e. pastoralists, youths and women). The other emerging major issue is that, communities have very high expectations of the level of benefits they might receive. In some cases, this has led decision makers to dismiss the efforts by RUNAPA as being insignificant.

This management action will strive to share these benefits in a more transparent and realistic manner that addresses actual priority community needs. This will be achieved by ensuring that the procedures developed by TANAPA for SCIP are clearly laid out and strictly adhered to. The Outreach Department will disseminate these SCIP guidelines and educate communities in both the wide range of projects that may be implemented (not just big building projects) and by canvassing the opinions and concerns of less vocal sectors of communities. This approach in turn will help to ensure that community needs and aspirations are met.

Action 1.3.2: Implement priority community-initiated projects as identified in planning

In order that benefits from RUNAPA are clearly understood and appreciated by communities, it is important to ensure that all SCIP projects (identified under Action 1.2.1) are officially handed over to communities and that the responsibilities for project implementation is clearly defined and agreed. Linkage with conservation will be clearly emphasised, SCIP sign (SCIP Logo) should be placed to the completed projects, and appropriate publicity events will be hosted to improve RUNAPA's public relations.

Action 1.3.3: Provide support for conservation-friendly, income generating activities (e.g. beekeeping, tree planting and fish farming)

Currently, RUNAPA is supporting conservation - friendly activities such as beekeeping in Mapogoro village, hunting and photographic safari in collaboration with MBOMIPA and other community based income-generating activities in areas adjacent the park.

In future, RUNAPA will continue to support conservation friendly and income generating activities such as fish farming as stipulated in resource management plan (2006) for Lunda-Mkwambi WMA. This support will also be extended to other villages adjacent to the park.

RUNAPA will explore possibilities of introducing and encouraging the use of energy serving stoves and alternative energy sources like biogas, production of green charcoal from rice husks, saw dust to adjacent communities as part of income generating activity. In addition to this, RUNAPA will encourage communities to use other alternative building materials and sources of energy.

RUNAPA will also discourage the use of charcoal and fuel wood to park staff and will encourage use of other alternative sources of energy, which are environmentally friendly.

Most of the tourist lodges and camps in RUNAPA still import most of the fresh food products in areas far away from adjacent villages to the park. Ways of encouraging local producers to provide the right type of fresh produce in the right quality and quantity will therefore be sought. RUNAPA in collaboration with tour operators will explore the potential of improving liaison between producers and consumers of local products and foodstuffs.

In fact, local communities lack adequate knowledge to understand type and quality of local products preferred by tourists. Although there are several local products, which are preferred by the tourists visiting the park, not much are in

adequate supply and quality. To improve this situation, RUNAPA will assist in providing the necessary knowledge towards better and quality local products for the lodges.

Action 1.3.4: To promote Community – Based Tourism in communities

To promote eco-tourism in local community's land is very important in order to increase income to the community. Communities are encouraged to start tourism related facilities such as camp sites, curio shops, etc. Where possible, communities will be encouraged to learn from success initiatives.

Action 1.3.5: Assist communities in mitigating human-wildlife conflicts

Crop raiding by elephants and other animals, such as baboons and buffaloes are a considerable problem at certain times of the year. In a few cases, predators have killed livestock and people. Occasionally, communities raise complaints against wild problem animals roaming in the villages. In response, RUNAPA management has frequently assisted villagers in scaring problem animals. So far, there are fewer scientifically documented studies to identify the extent of existing human-wildlife conflicts in communities adjacent to RUNAPA. Therefore, there is a need to carry out researches to assess the magnitude of the problem and identify strategies to mitigate the situation. Currently, the park is collaborating with other stakeholders such as Wildlife Conservation Society (WCS), MBOMIPA, Iringa District Council, and village government authorities in problem animal control and communicable diseases between livestock, wildlife and human beings e.g Rabies.

Action 1.3.6: Promote employment of local people by park stakeholders

RUNAPA in collaboration with other stakeholders will help to create employment opportunities among communities living adjacent the national park. RUNAPA will introduce the idea of self-employment to villagers and encourage them to do so (such as handicraft making and selling, producing good quality agricultural products preferred by tourists).

In addition, private stakeholders in RUNAPA are not so strictly bound by government regulations in employing people from local communities adjacent to the park. As of now, a few community members are engaged in tourism activities. RUNAPA Outreach Department will assist in facilitating and liaise with other tour operators and other stakeholders to create mechanisms of promoting employment to the local people living adjacent to the park.

RUNAPA outreach department will encourage investors from inside and outside the park (such as tourist hotel and lodge owners) to provide markets for local

community products. This will encourage self-employment and create a situation that will raise income to the local communities.

Action 1.3.7: Encourage local community to conduct cultural tourism

Cultural tourism in Africa is growing fast, when tourist visits the park, most of the visitors are interested to learn different cultures, and life styles of the communities living adjacent to national parks apart from game viewing and hunting tourism. This type of tourism activity is advanced in northern Tanzania. In order to enable cultural tourism to take place, Outreach Programme department would plan to visit some selected local communities in the northern parks to learn how these activities are conducted.

RUNAPA will encourage local communities to initiate cultural tourism activities like traditional dances, walking safaris, provision of traditional food and beverages.

Action 1.3.8: Communities to liaise with relevant stakeholders to support training on local product initiatives

RUNAPA Outreach department will assist in coordinating village governments to liaise with relevant stakeholders to conduct training on entrepreneurship to improve quality and quantity of production.

Objective 2: Threats to RUNAPA resource values reduced through improved Community based Conservation (CBC) in buffer areas

The desired future state of RUNAPA is one where surrounding areas are sustainably managed in a manner that supports the maintenance of biodiversity in the park. The management target to achieve this desired state seeks to improve the community management of natural resources in the adjoining land, as described below.

Target 2.1: RUNAPA collaboration in CBC initiatives with government, NGOs/CBOs and private stakeholders strengthened

In order to address the problems of growing incompatible land-use systems and human population increase that create pressure to natural resources, RUNAPA has been collaborating with other ecosystem stakeholders in promoting initiatives aimed at empowering local communities on better ways of improving management of natural resources in the areas of their jurisdiction.

Since 1993, there has been a new CBC initiative namely MBOMIPA (Matumizi Bora ya Maliasili Idodi na Pawaga) which comprises of 21 villages on the north East and Eastern parts of RUNAPA and is the only registered Wildlife Management Area. The WMA provides opportunity for villages to be empowered to manage natural resources in their areas and accrue sustainable benefits from wildlife. The proposed Waga-Nyamakuyu Wildlife Management Area (WMA) is another area in the south eastern part of the Park, which is in progress.

RUNAPA in collaboration with other relevant stakeholders will continue to participate in the formation of these WMAs initiatives and other environmentally friendly activities in order to empower local communities on natural resources management. In order to meet this management target, the following management actions have been formulated:

Action 2.1.1: Work with stakeholders to identify promising CBC initiatives

The Outreach Department will work closely with the district authorities, politicians, NGOs, CBOs and key stakeholders in identifying appropriate target communities adjacent to the park in order to develop CBC initiatives and sustainable income-generating activities.

□

Action 2.1.2: Support and participate in planning and management capacity building for CBC initiatives

The support for CBC initiatives is an important factor for enabling sustainable natural resources utilisation. RUNAPA through the Outreach department will support such activities through its annual budget after identifying different CBC initiatives that are environmentally friendly. Where possible other environmentally sound initiatives that are not represented by RUNAPA, it will seek full participation in such initiatives in planning, implementation and its management to represent TANAPA's interests.

The Outreach Programme department will support and participate in educating communities on CBC initiatives by providing relevant educational materials, empowerment of different individuals within the communities living adjacent RUNAPA.

Action 2.1.3: Train village game scouts in collaboration with other stakeholders

RUNAPA will collaborate with relevant stakeholders to provide training for village game scouts on natural resources protection, utilisation, and basic field

gears in order to facilitate smooth operations. The Resource Protection Department in collaboration with the outreach department will conduct training to the selected village game scouts in the identified areas (see Park Operations Programme Action 1.1.5).

Action 2.1.4: Collaborate with RUNAPA Veterinary Unit and other key stakeholders in implementing veterinary outreach activities in local communities

There is interaction between wildlife and domesticated animals at the wildlife - livestock interface. Therefore, this interaction leads to disease transmission in either direction.

The focus of this management action is to address priority animal health and wildlife-domestic animal disease transmission issues. Villages and Wards that are adjacent to the park have livestock and agricultural officers responsible for monitoring and prevention of livestock diseases. RUNAPA through Outreach Department and Veterinary Unit may provide support in dealing with livestock diseases.

Action 2.1.5: Work with relevant stakeholders in furthering the establishment and development of neighbouring WMAs as appropriate

RUNAPA will actively contribute by encouraging and supporting MBOMIPA and other stakeholders, where practical, to facilitate the establishment of WMAs in areas adjacent to the park. In particular, this will involve reassuring communities that all stakeholders are working together and that the WMA process does not confer management rights to RUNAPA.

RUNAPA will also collaborate with other key stakeholders in carrying out the resource inventories and where possible will provide its technical expertise in potential areas for establishment of WMAs.

Target 2.2: Sustainable utilization of water resources and improved agriculture and livestock keeping practices

In order to address the problem of water sources degradation which creates shortage of water to the Great Ruaha River (GRR), RUNAPA will collaborate with relevant stakeholders in promoting initiatives aimed at sustainable uses of water resources. Excessive uses of water by large scale farmers and livestock pose negative impact in ecological processes in the park and availability of water in Mtera and Kidatu Dams. In order to address the problem, RUNAPA will do the following:

Action 2.2.1: Adequately liaise with relevant district authorities and other stakeholders

RUNAPA will collaborate with relevant district officers and other stakeholders (Rufiji Water Basin Office, Rukwa Water Office, WWF) dealing with water resources management to local communities and other users (Rice schemes) in raising awareness on water resources management.

RUNAPA will also support the existing and encourage the establishment of water users committees and associations.

Action 2.2.2: Adequately consult relevant district authorities and other stakeholders dealing with agriculture and livestock development.

RUNAPA will expand extension services on best agricultural and livestock practices to Chunya, Mbarali and Chamwino Districts. Through Outreach Department, RUNAPA will establish reasons for incursion and act on the control measures. However, the park will collaborate with law enforcement agencies such as Village Governments, District Council, Region, Police Force and Judiciary in controlling livestock entering the park.

Action 2.2.3: Collaborate with relevant authorities to control and manage livestock population

RUNAPA will collaborate with the livestock Extension Officers in designing mechanisms that will convince livestock keepers to reduce number of animals as to the livestock carrying capacity of respective District.



PARK OPERATIONS PROGRAMME

Park operations strategy

Programme purpose: *Efficiency and effectiveness of RUNAPA park operations enhanced, such that RUNAPA becomes a role model nationally and internationally*

The RUNAPA Park operations strategy seeks to align the 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 RUNAPA park operations strategy needs to take into account are the National Policies for National Parks in Tanzania (TANAPA, 1994); the Development-Action-Lease Procedures (DALP, TANAPA 1995b), the Environmental Impact Assessment (EIA) and the Pragmatic Environmental Assessment (PEA) guidelines. Other instruments include NEMC EIA guidelines (1997), Wildlife Policy (1998), Code of Conduct for rangers and the Financial Regulations and Procurement Act of 2001, 2004. 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 resources and use

RUNAPA is famous for its natural resources in southern Tanzania; however, local communities who are traditional hunters surround the Park and some are involved in the illegal and unsustainable extraction of these wild resources. In response, RUNAPA management will protect these resources for present and future generations by supporting non-consumptive activities in the park, strengthening law enforcement and influencing best hunting practices in surrounding protected areas. RUNAPA management will influence and support the improvement of small-scale mining practices in Chunya district which can be associated with water and environmental pollution in the park. The Mining Act (No.5 of 1998) and TANAPA policy do not allow mining in National Parks except with the written consent of the authority having control over the Park. In line with the recommendations of the Committee on Mining in Protected Areas (established by TANAPA) and the conservation strategy of the Wildlife Policy (1998), permission will not be granted for exploration or mining within the Park for the duration of this GMP.

Visitor safety in the Park

Funds needed to manage the Park rely on the revenue generated by the tourists that annually visit RUNAPA to experience the Park's resources. RUNAPA management appreciates the importance of visitors and recognizes that if their safety is not assured, visitor numbers and the revenue needed to maintain the park would fall. Therefore, ensuring the security for visitors in the park, whether they are in a lodge, hotel, campsite or a game drive, etc is a high priority to RUNAPA management in their day-to-day operations.

Staff motivation

RUNAPA management appreciates facts that the effectiveness and efficiency of park operations is related to individual and group commitments. Therefore, RUNAPA management will provide incentives such as; work facilities, equipment, salaries, housing, training and social amenities to assist staff in better undertaking their assignments. RUNAPA management will use all means possible to develop a dedicated, committed and disciplined workforce to achieve the Park Operations Programme purpose.

Maximization of park revenues and supplies

Since conservation must pay for itself, RUNAPA management endeavours to diversify tourism activities, which are a major source of revenue in the park. The objective is to collect adequate revenues from entrance gates, concessions, sale of guidebooks, landing fees, ballooning, night game drive, walking safaris and so on in order to fund the costs of managing the park. These operational costs include administration, field patrols, road and building works, equipment, uniforms, and maintenance.

Improved park infrastructure and services

Over the years, there has not been considerable investment in the park infrastructure, especially the road network. In addition, the park buildings especially the entrance gates are inadequate and the existing one is of poor standard. RUNAPA will work to maintain the existing roads and building infrastructure and will strategically locate new tracks roads/circuits in Usangu area for administration and tourist use. Establishment of a reliable link between the former RUNAPA and the annexed Usangu at Hussman's point will be a priority for the park.

Services for visitors including entrance gates for Usangu at Ikoga, Lualaje (Chunya), Luhanga and Madibira will be established. The current gate facility at Y-Junction will be improved and maintained to meet visitor's needs and expectations. Accommodation facilities for tourists and staff will be improved

in particular telephone communication, water, internet services, and public toilets. New facilities for tourists and staff will be established in Usangu area **(Refer Tourism programme)**

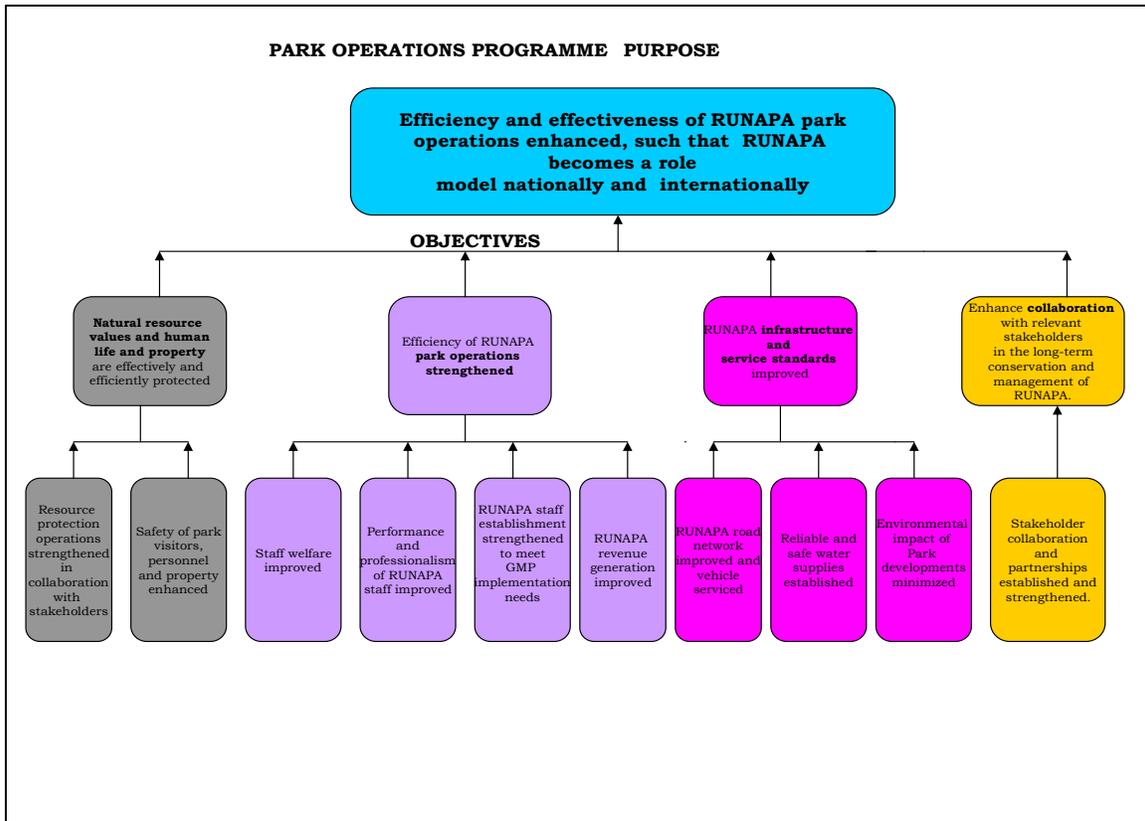
Working with others

The wild animals know no boundaries and depend on the broader ecosystem outside of RUNAPA for their survival during seasonal movements. In addition, there are many neighbouring land-users that are affected by the presence of the park and numerous other stakeholders interested in the future of the park. Therefore, RUNAPA will cooperate and collaborate with other stakeholders in order to understand their perspectives, expand RUNAPA's sphere of influence and to ensure the survival of the Park within the Greater Ruaha ecosystem.

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

1. **Natural resource values, human life and property** are effectively and efficiently protected.
2. Efficiency of RUNAPA **operations strengthened**.
3. RUNAPA **infrastructure and service standards** improved
4. Enhance **collaboration** with relevant stakeholders in the long-term conservation and management of RUNAPA.

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 contains the **3-Year Action Plan** for the Park Operations Programme for the period 2008-2010, which lists the activities, responsibilities, timeframe, and input requirements necessary for the completion of the management actions.

Figure F.1: Park Operations Programme Logical Framework

Objective 1: Natural resource values, human life and property are effectively and efficiently protected

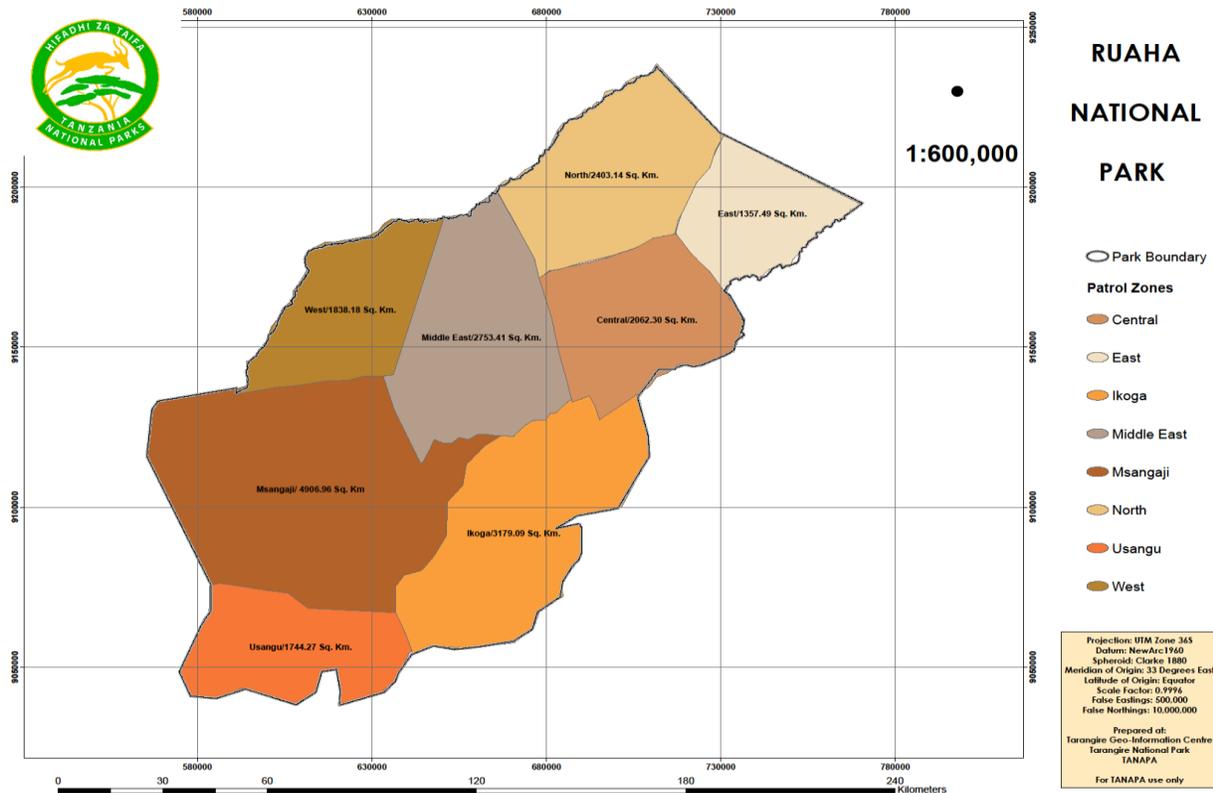
The desired future state of RUNAPA is one where natural resources are protected and the safety to park visitors, personnel and their property is ensured by a well-coordinated and committed ranger force. The two management targets to achieve this desired state are firstly to strengthen resource protection operations and secondly to improve security and communication networks.

Target 1.1: Resource protection operations strengthened in collaboration with stakeholders

The Resource Protection Department is the largest Department in the Park, employing 120 out of the 183 park staff, and has the responsibility for addressing this target. To effectively manage the spatially extensive resources at RUNAPA, three additional resource protection zones at Ikoga (Ikoga, Nyota and Majimoto ranger posts), Msangaji (Msangaji, Lualaje and Idunda ranger posts) and Luhanga (Luhanga, Kiwale and Ulanga/Upagama ranger posts) will be established to the existing three zones. A Zonal Warden (see Figure F2 below) will head each resource protection zone. Sub-headquarter for Usangu zones will be established in order to coordinate the operations in the zones.

Resource protection patrols are carried out from eight ranger posts, which are located at strategic locations throughout the Park. In order to have effective anti poaching operations four new patrol posts will be needed.

Figure F.2: RUNAPA Patrol zones



In order to cope up with the increasing challenges for resource protection, RUNAPA management will revise its strategies to take on board new innovative ways that will strike a proper balance between the needs of adjacent communities and other stakeholders and the preservation of park resources. In order to meet this target, seven management actions have been formulated and are described below.

Action 1.1.1: Provide sufficient equipment for anti-poaching unit

Anti-poaching operations are high risk and dangerous, therefore it is critical that the rangers are properly equipped to maximize their safety as well as their effectiveness. The resources available at certain ranger posts are insufficient for effective anti-poaching operations. This action will ensure that all the park ranger posts are properly supplied with the working equipment needed to conduct their law enforcement activities and that this equipment is maintained

to a high standard. Due to the increased size of the park and level of operations, RUNAPA management will ensure the availability of light aircrafts, airboat and canoes for resource protection and administrative purposes.

Action 1.1.2: To develop and adopt new anti-poaching techniques

In recent years, a great deal of progress has been made to develop techniques in conservation that utilize emerging technologies, such as Geographical Information System (GIS), and the use of night vision goggles. This action will develop techniques such as swimming/diving and life saving techniques. Promising new or improved technologies will be tested through a rigorous piloting, before scaling up for adoption across the Park.

Action 1.1.3: Establish cooperation with village leaders in raising local community awareness

Enlisting the cooperation and support of local communities will be an important preventative approach that the Resource Protection Department will adopt in tackling the threat of poaching. By forming better relationships with the local communities, it is hoped that progress will be made to change the attitudes that lead to poaching practices. This action will concentrate on building awareness amongst the neighbouring communities on the national and international conservation importance of the park resources and establishing a sense of ownership for their conservation. This will principally be achieved by strengthening the relationship and trust with the village leaders and encouraging them to instil discipline and responsibility in their young members towards conservation of park resources within the ecosystem.

Action 1.1.4: Liaise with Community Outreach Department in building ranger - local community cooperation and reward schemes regarding anti-poaching activities

Building on the relationships and trust established between the local communities and the rangers, this management action will seek innovative ways to encourage and reward communities who support the anti-poaching efforts of the Resource Protection Department. This action will be done in close collaboration with the Community Outreach Department.

Action 1.1.5: Provide support to village governments in training VGS for protection of community conserved areas

It is recognised that the Resource Protection Department, at its current size and with the existing poaching levels, will never be able to adequately protect all the resources under its responsibility. In fact, it is unlikely that there will ever be sufficient resources to achieve this mandate, until the root causes of

poaching are addressed. Therefore, this management action will concentrate on enlisting community members residing within the Greater Ruaha ecosystem to enforce natural resource bylaws and regulations. The Community Outreach Department will facilitate the Resource Protection Department to provide support in developing and conducting the Village Game Scouts training programmes.

Action 1.1.6: Demarcate park boundary

RUNAPA will collaborate with key stakeholders to re-survey and demarcate the park boundary. Key stakeholders include representatives from the Ministry of Land and Development of Settlement (Survey and Mapping Division), land officers from relevant districts, divisions, wards and village government representatives.

Action 1.1.7: Collaborate with other law enforcement agencies

This action will seek to increase the spatial extent and effectiveness of anti-poaching operations, problem animal control and human wildlife conflicts by improving collaboration with neighbouring protected areas (PAs), law enforcement agencies such as Rukwa-Lukwati, Rungwa/Kizigo/Muhesi, Swagaswaga Game Reserves (GRs), Iringa and Manyoni anti-poaching units, existing WMAs of MBOMIPA and other proposed WMAs of Waga and “Uhifadhi na Matumizi Endelevu ya Maliasili Rujewa na Wanging’ombe” (UMEMARUWA), security officers, police force, judiciary etc. Joint operations will be undertaken whenever necessary, depending on the magnitude of the problem and availability of funds. In addition, efforts will be made to follow-up on arrested persons, to ensure that the legal procedures are satisfactorily completed.

Target 1.2: Safety of park visitors, personnel and property enhanced

Due to increase in the number of visitors in the park, it is important for the Park Management to ensure that the issue of safety is given necessary attention. As stated in the Park Operations Strategy above, the security to visitors and staff is a high priority to RUNAPA management. At present rangers are posted continually at some visitor accommodation facilities.

Another aspect of security around RUNAPA that will be addressed by this GMP is cattle rustling which continues to be a problem from Iringa, Manyoni, Mbarali, Chunya, Chamwino, etc. A cooperative agreement between village leaders and stakeholders from the areas concerned needs to be initiated to coordinate anti-cattle rustling.

During the implementation of the GMP, RUNAPA management will enhance the existing initiative to ensure that the achievements in security are sustained and improved upon. The management actions to achieve this target are described below.

Action 1.2.1: Strengthen surveillance patrols in prone areas

To ensure park resources and visitors' safety, surveillance patrols will be frequently conducted, and special attention will be given to ensuring that the patrols are properly equipped. The surveillance operations in general will also adopt better screening processes for people entering the park as well as monitoring suspicious actions in the surrounding communities and tourist facilities.

Action 1.2.2: Improve communication network

A good communication network is one of the key foundations of the RUNAPA security operation. Rapid and appropriate responses to illegal activities are only possible when information of incidences can be communicated immediately throughout the park and the surrounding area to a centralized system. Wherever possible, the park management will explore the possibility of mobile telecommunication and satellite dishes installations.

Action 1.2.3: Install radio secrecy and minimise frequency interference

Radios are a major form of communication for security operations and to ensure the success and safety of these operations, it is essential that unauthorized persons cannot access these communication channels. This action will ensure that all park radio communication is properly protected from outside interference and unauthorized access.

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Objective 2: Efficiency of RUNAPA operations strengthened

The desired future state of RUNAPA is one where there are optimal numbers of well-trained and motivated personnel, who are performing their functions to a high standard and have the necessary facilities and management systems in place to achieve this. Described below are three management targets to achieve this desired state.

Target 2.1: Staff welfare improved

RUNAPA management aims at improving staff welfare - in terms of having better services, especially fresh water, education for staff children, social interaction, food supplies, access to public transport and expanded health

facilities. Currently, park personnel lack most of essential services that are located outside the park. Given an increase of population inside the park, relocation of most of the park and investors' staff will minimize negative environmental impact. The five management actions to achieve this target are described below.

Action 2.1.1: Capacity building of staff

RUNAPA management recognizes that a well-motivated staff force is likely to be more committed and accountable in carrying out its obligations to a high standard. To achieve this RUNAPA staff will be provided with the necessary training as well as good infrastructure and working equipment, based on a thorough assessment of capacity needs.

Action 2.1.2: Improve medical services

RUNAPA management is particularly aware of the importance of undertaking measures to protect staff from diseases prevalent in the area, such as malaria, HIV/AIDS, typhoid, tuberculosis, etc. RUNAPA management will ensure that all personnel are properly informed on how best to protect themselves against these diseases, and that the appropriate supplies and equipment are available in collaboration with relevant health institutions.

Action 2.1.3: Improved staff accommodation

The management of RUNAPA will focus on improving the standard of staff accommodation and rehabilitate the existing ones. The move of staff outside the park will be given a higher priority. The level of development will be determined by the management in due course for park operations.

Action 2.1.4: Improve education opportunities for RUNAPA staff

Promotion of further education for park staff will be emphasized during the implementation of the GMP, and options will be investigated for introducing further staff education programmes. Where possible, options for distance learning will be encouraged.

Action 2.1.5: Relocation of most of park staff to adjacent villages

The present park headquarters for Ruaha North (RN) will remain at Msembe but most of park staff will be relocated to Tungamalenga village in Idodi ward. The park headquarters for Ruaha South (RS) is proposed to be in Madibira ward. The two administrative zones are aimed at facilitating logistical and park operations. The two park headquarters are located

respectively in order to improve staff welfare and reduce negative environmental impact caused by increased number of people inside the park. Earlier, Kitisi village area was suggested but was rejected due to its remoteness and long distance from Msembe. Therefore, the site is reserved for other uses such as tourism development by investors.

Target 2.2: Performance and professionalism of RUNAPA staff improved

RUNAPA management recognizes that offering incentives to improve staff morale is only one side of the equation. To complement this, there is a need for an established and enforceable system that will enhance performance and professionalism in various cadres through capacity building. Code of conduct for rangers needs improvement and enforcement also this will take into consideration of the new code of conduct and proposed new scheme for rangers and wardens.

This target will be addressed by the following two management actions, as described below.

Action 2.2.1: Revise and disseminate TANAPA Code of Conduct for rangers and ensure compliance

TANAPA headquarters will be responsible for updating and issuing updated rangers and wardens' code of conducts. However, the subsequent day-to-day enforcement of this professional code of conduct for rangers and wardens will be the responsibility of RUNAPA management.

Action 2.2.2: Participate in updating and disseminate the TANAPA staff regulations

RUNAPA management will provide inputs to update the TANAPA staff regulations and once approved, will be disseminated to all staff and enforced.

Target 2.3: RUNAPA staff establishment strengthened to meet GMP implementation needs

RUNAPA will ensure that staffing levels, as per the scheme of service, are established and gaps are filled to effectively implement this GMP. The provisional assessment of these staffing needs will be presented to the TANAPA headquarters for implementation.

Action 2.3.1: RUNAPA staff establishment strengthened

Additional RUNAPA staff establishment priorities to enable GMP implementation will be agreed upon during the development of Annual Operation Plans and budgets.

Target 2.4: RUNAPA revenue generation improved

The sustainable conservation of RUNAPA depends largely on the revenues generated from tourism, which are then ploughed back into undertaking the necessary conservation activities. Currently, the park revenues do not meet the park operational costs. In view of this, the optimization of economic benefits is crucial and a priority for this GMP. Maximization of revenue collection from different sources will also be promoted through tourism diversification.

The financial management improvements being implemented by the following management actions, as described below, are all required to adhere to the Procurement Act of 2001 and 2004 TANAPA and National Financial Policies and Regulations.

Action 2.4.1: Minimise loss of revenues by improving internal controls

To ensure that revenues accrued from tourism are properly collected, recorded and stored, TANAPA management will review its current financial management practices and control systems and staff training requirements, with the view to plugging loopholes for revenue losses.

Action 2.4.2: Computerise financial accounts, with back-up written records

Full computerization of park accounting is an emerging solution that is being adopted by TANAPA Headquarter to prevent financial mismanagement. A computerized accounting system is being developed now with an aim to improve collection, documentation, and security of revenue from gates and accommodation facilities within RUNAPA. This action will install this electronic accounting system at the Park Headquarter and all collection centres.

Action 2.4.3: Implement new ways of collecting and monitoring revenue

TANAPA has introduced a point of sale (POS) system using local banks. The electronic system is being tested in northern Parks. RUNAPA management will adopt the electronic system. All revenues will be collected through closer cooperation with tour and hotel operators.

Objective 3: RUNAPA infrastructure and service standards improved

The desired future state of RUNAPA is one where appropriate and well-maintained infrastructure supports and enables a high standard of services within the Park without impairing park resources and values. These high

standards will provide an improved tourism experience and enable increased visitor numbers, whilst not compromising the status of the Park resources and values. The three management targets to achieve this desired state focus on the road network, water supplies, staff houses, rest house, hostel, visitor centres, and airstrips.

Target 3.1: RUNAPA road network improved and vehicles serviced.

RUNAPA management will keep new roads and buildings to a minimum, due to the costs involved and the desire to maintain the wilderness characteristics of the Park. The main management focus for this target is therefore to ensure that maintenance of the existing road network is in line with the GMP Zoning Scheme outlined in Section B. However, if RUNAPA management will need to have additional roads to support expanded tourism opportunities or management operations, then a full site-specific environmental impact study will be conducted as per the DALP and PEA. In order to meet this management target, the following management actions have been formulated, as described below.

Action 3.1.1: Monitor road tear and wear and carry out necessary maintenance and construction

It is critically important that roads be routinely maintained, because once the condition of a road deteriorates beyond a certain point, restoration becomes extremely costly and labour intensive. The routine maintenance of roads will require the upgrading and purchasing of heavy machines and equipment.

Action 3.1.2: Design and implement a new road construction programme

The RUNAPA management will ensure that appropriate development of tracks and circuits that support the diversification and dispersed use within the Park is in place. In the Wilderness Zone, the maintenance and construction of access roads to zone edge camps and ranger posts may be required. In the Low and High Use Zones, game viewing tracks and loops will be developed as appropriate for tourist activities.

In order to guide this development, a comprehensive road construction programme will be designed and established based on the assessment of the environmental impact and minimum requirements for implementing the Tourism Management Programme and anti-poaching activities of the Resource Protection Department. Wherever possible, new tracks will be constructed on the condition that they meet all the requirements of the PEA.

Action 3.1.3: Develop Msembe (Kiganga) airstrip as the main airstrip for the park

Msembe HQ will remain as the main airstrip to serve all scheduled and charter flights in the park as it is registered by DCA. The Mpululu airstrip will be improved for tourism purposes. Meanwhile, Jongomero airstrip will be used for tourism until a new airstrip at Maji Moto is developed in the Usangu area and improved accessibility. Lunda, Magangwe, Sololwambo and Msangaji airstrips will be improved for administration purposes. The management will relocate the Lunda airstrip to an appropriate place but not very far from the existing one.

Action 3.1.4: To ensure regular maintenance of facilities, infrastructure and equipments

Park management will develop a maintenance programme for equipments, vehicles, heavy plants, roads, and buildings in the park. Annual maintenance plan will be budgeted by each department and the park management will ensure implementation and monitoring on quarterly basis.

Target 3.2: Reliable and safe water supplies established

Scarcity of freshwater at RUNAPA is a long-term management critical issue. Msembe HQ presently consumes approximately 45,000 litres per day and demand is predicted to rise to approximately 90,000 litres per day. RUNAPA management has already begun to install rain water-harvesting mechanisms that collect water from the roofs of buildings, which is then stored in underground water tanks. RUNAPA will continue to explore and implement rainwater harvesting techniques. In order to achieve year-round water supply, a combination of management actions have been designed that will improve the water harvesting capacity in the Park and identify new potential water sources, as described below.

Action 3.2.1: Carry out feasibility study on reliable water sources in and outside the park

RUNAPA management will commission a feasibility study on identifying new potential water sources in order to complement the existing inadequate water supply. This management action will carry out a detailed feasibility study of the potential freshwater sources identified by the hydro-geological survey. A set of criteria will be utilized, in line with Tanzanian EIA guidelines (1997), including; cost, environmental impact on the natural resource values of the Park; and practicality for adequately servicing the Park and tourism facilities. This assessment will not be limited to water sources identified within the Park, but will also consider sources that can be utilized from outside.

Action 3.2.2: Install water harvesting mechanisms in all buildings

Based on the initial success of the water harvesting mechanisms, RUNAPA management will scale-up the application of this technology to all buildings.

Action 3.2.3: Maintain Msembe HQ and explore boreholes for water supply in ranger posts and other tourists and administrative areas

RUNAPA management will maintain the existing Msembe HQ borehole water supply system and establish new water sources in order to ensure reliable water supply to its staff and park visitors.

Action 3.2.4: Establish reliable water reservoirs for animals during dry season

On ensuring that animals are supplied with reliable water during dry season, RUNAPA management will rehabilitate the existing water reservoirs (pools) at Ilalangulu and Kinyantupa swamps and construct new ones at Nyaluhunza, Mwayembe, Jiwe la Kanga, Ukwaheri and Maji Moto dam in Usangu area.

Target 3.3: Environmental impacts of park developments minimised

Lack of proper waste and pollution management systems is a major concern to RUNAPA management as the existing systems are generally insufficient to cope with the high and increasing level of use. In response, RUNAPA management will assess all existing infrastructure and ensure that proper waste and pollution management systems are installed throughout the Park.

In order to meet this management target, the following management actions have been formulated, as described below.

Action 3.3.1: Improve waste and pollution management systems

RUNAPA management will phase out the existing pit latrines and adopt French drain/soak away pits for hygienic disposal of waste. Moreover, the park will commission a study on the effects of agrochemicals pollution in Ruaha River in order to assess the impact on natural resources. The current solid waste management system is poorly functioning because the incinerators and shallow rubbish pits have proved to be inefficient. To address this problem, Park management will conduct a thorough study on the best ways of managing solid wastes generated in the park.

Action 3.3.2: Manage all infrastructure work-related machines and wastes

Heavy machines and other tools are essential for development and maintenance of infrastructure in the Park. This management action will ensure

that all park machinery and equipment are properly maintained and, where necessary, replaced when it is no longer economical to continue with the maintenance work. Another aspect of this management action will be to ensure that the waste generated from the maintenance of the equipments, such as oils and greases, are properly and safely disposed.

Action 3.3.3: Carry out site specific EIA/PEA for all infrastructures

Non-compliance with Tanzanian Environmental Standards and any unplanned developments will not be permitted under this GMP. Based on the Development-Action-Lease Procedures (TANAPA, 1995b) all developments that involve the construction of buildings or roads must be carried out after a report has been made available on the site-specific environmental impact assessment (EIA) and Pragmatic Environmental Assessment (PEA). No development in the Park, by either RUNAPA management or private investors, will be carried out without these studies. Once provisional approval has been given for the construction of tourist or staff accommodation facilities, further actions will need to be taken; including, hydrological surveys and the inclusion of water harvesting mechanisms in all buildings.

In addition, an EIA/PEA will be required for all existing infrastructures, to ensure conformity to environmental standards. The EIA/PEA will follow the criteria and guidelines established by the National Environment Management Council (NEMC, 1997).

Objective 4: Enhance collaboration with relevant stakeholders in the long-term conservation and management of RUNAPA.

The desired future state of RUNAPA is one where the full spectrum of stakeholders within the ecosystem are coordinated and effectively working together to ensure the long-term conservation of RUNAPA. The RUNAPA management will play a central role in coordinating this cooperation. The management target to achieve this desired state will focus on forming national and international partnerships and exchange programmes.

Target 4.1: Stakeholder collaboration and partnerships established and strengthened

A healthy and sustainable RUNAPA is very much dependent on coordinated collaboration and management with relevant stakeholders within the ecosystem. Therefore, RUNAPA management will work to establish and strengthen collaboration and partnerships between and among key stakeholders.

RUNAPA management already has a good history of forming partnerships with local and regional institutions. For instance, RUNAPA management collaborates closely with the Zonal Anti-poaching Units in Iringa and Manyoni, Rungwa/Kizigo/Muhesi Game Reserves, district authorities, local communities, private initiatives, and researchers.

In order to achieve the target, two management actions have been formulated and are described below.

Action 4.1.1: Build stakeholder collaboration both within and outside the country

This GMP encourages the involvement of different stakeholders from the local, national, regional, and international levels. This management action will focus on strengthening the existing collaborative mechanisms and establishing new partnerships in order to create synergies in the sustainable management of the ecosystem.

Action 4.1.2: Develop exchange programmes with other protected areas

The need to share knowledge and experiences to better understand and apply global best practices for addressing conservation challenges currently facing protected areas will also be an important focus of this management action. To achieve this, exchange programmes will be established and developed with other protected areas. The detailed 3-Year Action Plan addressing these four objectives is outlined in Table G.5 of Section G.

Mitigation of environmental impacts of major Park Operations Programme actions

The potential negative environmental influences of the major Park Operations Programme actions and proposed mitigating measures to reduce; eliminate, or offset adverse affects are highlighted in Table F.1 below

Table F.1: Mitigation measures for major Park Operations Programme actions

Major action	Potential negative impact	Mitigation measure
1.1.6: Demarcate park boundaries in key areas	<ul style="list-style-type: none"> ▶ Disturbance of wildlife due to clearance and construction of beacons ▶ Resistance of communities in demarcating the boundary at the annexed areas to the park 	<ul style="list-style-type: none"> ▶ Demarcate using beacons that blend with the park environment ▶ Collaborate with all key relevant stakeholders in carrying out the exercise to avoid any misunderstanding while demarcating the park boundary
1.2.2: Improved communication network	<p>Noise from use of generators</p> <p>Destruction of habitat</p> <p>Visual Impact from the communication towers</p> <p>Uncontrolled use mobile phone may disturb visitors</p>	<ul style="list-style-type: none"> ▶ Solar should be used as a source of power ▶ Sensitive habitats should be avoided ▶ The communication towers should blend with the surrounding environment. ▶ The park in collaboration with the tour operators should design a system of regulating use of mobile phones in the park.
3.1.1: Regularly monitor road tear and wear and carry out necessary maintenance and construction	Noise pollution from construction work disturbing animals, birds or insects	▶ All construction road works should be done during the normal working hours of the day
	Contamination of soils and river systems from oil and diesel spills	▶ Oils should be properly stored and safely disposed of outside of the Park

3.2.2: Install water harvesting mechanisms in all buildings	Destruction of Habitat The water harvest systems may attract wildlife especially in the dry season	<ul style="list-style-type: none"> ▶ The sites should be restored after the construction of the water harvesting system. ▶ Prevent water leakages ▶ The water storage systems should be strong enough to withstand wildlife destruction.
3.2.3 Maintain Msembe HQ , staff and tourists facilities water supply systems	Pollution from oil spill and noise from the generator Leakages from broken pipes will attract wildlife, behavioural and habitat changes	<ul style="list-style-type: none"> ▶ Prevent oil leakages and noise from the generator ▶ Broken pipes should be replaced immediately. Areas disturbed when doing the repairs should be restored.
3.3.1 Improve waste and pollution management systems	Use of some chemicals in the flush toilets may pollute the soils and ground water. Improper disposal of solid waste may pollute the soils and ground water, as well as cause adverse effect on wildlife health	<ul style="list-style-type: none"> ▶ Bio-degradable chemicals should be used ▶ Proper solid waste disposal system should be designed and implemented

The specific programme actions that will require a detailed Action/Development Site Specific EIA² prior to implementation are:

- Design and implement new roads and main crossings construction programme for establishing and maintaining game viewing tracks and loops, anti-poaching operations and administration in line with the GMP Zoning Scheme and in collaboration with the Tourism and Ecology Departments (action 3.1.2)
- Develop Msembe (Kiganga) as the main airstrip servicing the central zone, Maji moto for south eastern zone and Msangaji, Sololwambo and Magangwe western zone and Mpululu northern zone.
- Establishment of sub-headquarter for staff operating in Usangu at Madibira ward

² Guidelines and document format are provided in the TANAPA (1994b) as well as the TANAPA Strategic Planning Manual (1995a)

- Relocation of most of the staff from Msembe area to Tungamalenga village and Madibira ward.
- Establishment of wildlife watering points at Ilalangulu, Kinyantupa, Nyaluhunza, Mwayembe, Jiwe la kanga, Maji Moto and Ukwaheri

THREE-YEAR OPERATION 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 Programs to provide a guideline for those who manage RUNAPA on a daily basis.

Each Action Plan is organised by Program 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 programs, 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: Abbreviations used in Action Plan allocation of responsibility

Action Plan Abbreviation	Details
ADM	Administrative Manager - RUNAPA
AI	Accountant In-charge - RUNAPA
BI	Building Inspector – RUNAPA
CE	Civil Engineer – TANAPA HQ
PWI/C	Park Warden-in-Charge- RUNAPA
ME	Mechanical Engineer – RUNAPA
MEM	Manager Ecological Monitoring – TANAPA HQ
OPM	Outreach Program Manager – TANAPA HQ
PE	Park Ecologist – RUNAPA

RI	Road Inspector – RUNAPA
TATO	Tanzania Association of Tour Operators
VO	Veterinary Officer – RUNAPA
PWO	Warden Outreach – RUNAPA
WP	Warden Protection – RUNAPA
ZPW	Zonal Park Warden – RUNAPA
DLNRO	District, Land and Natural Resources Officer
DCDO	District Community Development Officer
CHACC	AIDS Control Coordinator
DPLO	District Planning Officer
DCO	District Cultural Officer
DALDO	District Agriculture and Livestock Development Officer
DTO	District Trade Officer
DWE	District Water Engineer
DC	District Commissioner
DED	District Executive Director
WEO	Ward Executive Officer
VEO	Village Executive Officer

Table G.2: Ecosystem Three Years Action Plan															
Management Targets	Management Actions/ Activities	Inputs required	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: The conservation and ecological status of RUNAPA Conservation Targets enhanced and threats reduced															
Target 1.1: Human impacts threatening the Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin minimized	Action 1.1.1: Raise awareness on issues affecting the Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin and advocate for catchment-wide responses at regional and national levels														
	1.1.1.1 Identify research needs and priorities	Allowances, fuel, stationeries, meals & refreshments.	PE												
	1.1.1.2 Carry out research on the human effects on key parameters of the rivers system and the Usangu Basin	Funds, consultancy costs, transport, allowances, stationery	PE												
	1.1.1.3 Monitor human effects on the rivers system and the Usangu	Funds, transport, allowances, stationery	PE												

	Basin																
	1.1.1.4 Conduct meetings with relevant stakeholders on matters pertaining land use management and economic developments.	Funds, consultant, transport, allowances, stationery	PWi/c, PE, DLPO, PWO, WMAs														
	Action 1.1.2: Collaborate with relevant stakeholders to promote sound management of Great Ruaha, Mzombe/Kizigo Rivers and Usangu Basin																
	1.1.2.1 Identify and liaise with key stakeholders in addressing management challenges facing the river systems and Usangu Basin	Funds, transport, allowances, stationery	PE, WWF, RBWO, relevant Districts														

	1.1.2.2 Acquire water quality and quantity monitoring equipment and utilities	Funds	PE, PO																	
	1.1.2.3 Carry out water quality and quantity monitoring	Funds, fuel, transport, allowances	PE, RBWO																	
Target 1.2: Baseline biodiversity inventories for RUNAPA conducted	Action 1.2.1 Collaborate with stakeholders to carry out plant and animal inventories																			
	1.2.1.1 Carry out biodiversity surveys in RUNAPA	Funds, consultancy costs, transport, allowances, stationeries	PE, TAWIRI, WWF, WCS, SUA, UDSM																	
	1.2.2 Document and disseminate the information on identified plant and animal species																			
	1.2.2.1 Establish a database system (ICT/GIS)	Consultant, equipment (computers software) stationery	PE, GIS Expert																	
	1.2.2.2 Establish and maintain literature database and library	Expert, allowances, stationery	PE																	

	1.2.2.3 Update herbarium plant specimens and checklists.	Consultancy costs, transport, allowances, stationery	PE																
	1.2.2.4 Disseminate plant and animal inventory results to RUNAPA decision makers and other relevant key stakeholders.	Funds, transport, allowances, stationery	PE																
Target 1.3: Impact of exotic species on Park resources minimized	Action 1.3.1 Control exotic species in the Park																		
	1.3.1.1 Identify and eliminate exotic species in the Park	Funds, transport, allowances	PE, PWP																
	1.3.2.1 Prepare and implement strategies to control introduction of exotics in the Park	Funds, transport, allowances, stationery	PE																
Target 1.4: Human impacts threatening the wildlife movement minimized	Action 1.4.1: To improve understanding of wildlife movements, population dynamics and disease prevalence																		

	1.4.1.1 Identify wildlife corridors and dispersal areas	Allowances, transport, fuel	PE, PWP, PWO																
	1.4.1.2 Monitor wildlife movement on corridors and dispersal areas	Allowances, transport, fuel	PE																
	Action 1.4.2: Advocate and collaborate with partners to protect RUNAPA corridors and dispersal areas																		
	1.4.2.1 Carryout monitoring of corridors in collaboration with stakeholders.	Allowances, transport, fuel	PE																
Target 1.5: Fire extent, frequency and intensity within key habitats managed	Action 1.5.1: Prioritize critical habitats and areas for fire protection																		
	1.5.1.1 Identify critical habitats that needs protection	Allowances, transport, fuel	PE																
	1.5.1.2 Map the identified	Allowance, GIS, stationeries	PE																

Target 1.7: Conservation of RUNAPA migratory bird species habitats enhanced	Action 1.7.1 Establish and Implement monitoring protocol for the migratory bird species in collaboration with key stakeholders																	
	1.7.1.1 Hire a consultant to develop a bird monitoring protocol	Consultant, allowances, transport, stationery	PWi/c, PE															
	1.7.1.2 Conduct a workshop to discuss and agree on the bird monitoring protocol developed by the consultant	Allowances, transport, stationery	PE															
	1.7.1.3 Implement the bird monitoring protocol	Allowances, transport, stationery	PE															
	Action 1.7.2 Protect the RUNAPA migratory bird species habitat																	
	1.7.2.1 Carry out survey to identify critical habitats for migratory bird species	Allowances, transport, stationery	PE															

	1.7.3.2 Develop and implement strategies to protect critical habitats for migratory bird species	Allowances, transport, stationery	PE														
Target 1.8: Protection of rare, endangered, threatened and vulnerable species in RUNAPA is enhanced	Action 1.8.1 Collaborate with TAWIRI and other stakeholders to establish status of rare, endangered, threatened, vulnerable and significant species																
	1.8.1.1 Carry out regular surveys and to identify rare, endangered, threatened and vulnerable species	Allowances, transport, stationery	PE														
	1.8.1.2 Carry out research on factors influencing general status of the rare, endangered, threatened and vulnerable species	Allowances, consultancy costs, transport, stationery	PE														

Table G.3: Tourism 3-Year Action Plan

Management Targets	Management Actions/ Activities	Input requirements	Responsible	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: Visitor access, use and satisfaction enhanced in environmentally appropriate and sustainable ways															
Target 1.1: Disturbance of key habitats, wildlife populations and other exceptional resources minimised	Action 1.1.1: Implement zone and park-wide prescriptions to regulate visitor use and impact														
	1.1.1.1: Implement park policy on the use of deadwood for heating and cooking	allowances	PWT, PE	*	*	*	*	*	*	*	*	*	*	*	
	1.1.1.2: Carry out meetings/visits for raising awareness to park staff, tour operators and drivers on new zoning boundaries and prescriptions	Booklets, Brochures, maps, fuel, allowances	PWT, PE	*	*	*	*								
	1.1.1.3: Collaborate with tour operators in carrying out driver and guide training on the Zoning Scheme	fuel, refreshments/meals, allowances	PWT, PWi/c, Departmental heads		*				*				*		

	Action 1.1.2: Ensure that the Park Zoning Scheme and Codes of Conduct are known to park users														
	1.1.2.1 Organise meetings to develop the codes of conduct	Stationery, fuel, refreshments/meals	PWT/pwi/c												
	1.1.2.2: Publish the RUNAPA Code of Conduct and Zoning Scheme in user-friendly formats after approval	fuel, allowances, publication costs	PWi/c, PWT			*									
	1.1.2.3: Introduce the Code of Conduct and Zoning Scheme to park staff, tour operators and drivers	Stationary, allowance, fuel, transportation	PWT, PWi/c				*		*				*		
	1.1.2.4: Implement Code of Conduct	Allowance, fuel, transportation	PWT, PE, PWP	*	*	*	*	*	*	*	*	*	*	*	*
Target 1.2: Tourism access and use diversified in appropriate ways, in order to expand RUNAPA tourism attractions	Action 1.2.1: Introduce New Tourist Products														
	1.2.1.1: Identify areas suitable for night game drives, rock climbing, canoeing, balloon safaris and scientific/res	Allowances, fuel, transport	PWT, PE, PWP, PWW	*	*	*	*								

	earch tourism and wooden walking trails in Southern zone														
1.2.1.2	Organize meetings to develop guidelines for operating the new tourist products	Fuel, allowance s, stationery, refreshme nts/meals	PWT, PE, PWP, PWW, PWi/c												
1.2.1.3:	Training of relevant staff on new activities	Allowance s, transport, fees, stationary	PWi/c, PWT	*	*	*	*	*	*	*	*	*	*	*	*
1.2.1.3 :	Operationaliz e the approved new tourist products in accordance to TANAPA guidelines	Allowance s, fuel, transport	PWT		*	*	*	*	*	*	*	*	*	*	*
Action 1.2.2: Develop walking safaris according to the Limits of Acceptable Change															
1.2.2.1:	Ground truth and designate walking safari blocks, with the walking route and camping locations defined.	Fuel, transport, allowance s	PWP, PWT, PE, Tour operators	*	*	*									

	1.2.1.3: Design and implement a booking system for use of the walking safari blocks.	Allowances, Stationary	PWT	*	*	*	*	*	*	*	*	*	*	*	*
	1.2.1.4: Manage walking safaris in accordance to TANAPA guidelines.	Allowances, fuel, transport	PWT		*	*	*	*	*	*	*	*	*	*	*
	Action 1.2.3: Develop new entry points														
	1.2.4.1: Survey Mpululu, Ikoga(Madibira) , Lunda, Luhanga/Ute ngule and Lualaje areas for suitable site to construct entry gates and airstrips at Majimoto, Msangaji, Mpululu and Kiganga.	Allowances, Fuel, stationary , Transport, consultancy costs	PWi/c, Heads of Department	*											
	1.2.4.2: Improve and construct new entry gates and airstrips.	Allowances, fuel, stationary , transport, machinery , construction costs	PWi/c, PWW, PE, PWT					*	*	*	*				
Objective 2: RUNAPA visitor facilities improved in order to provide an optimal tourism experience with minimal environmental impact															

Target 2.1: Visitor facilities improved and expanded to cater for the increasing demand	Action 2.1.1: Increase the number of permanent and non permanent accommodation facilities																	
	2.1.1.1: Identify sites for permanent and non permanent facilities	allowances, fuel, transport	PWi/c, PWT, PE, PWP.	*	*	*	*											
				*	*	*	*											
	2.1.1.2: Facilitate investors to prepare project proposal and EIA	Allowances, fuel, transport, stationary	PWi/c, PWT, PWP, PE		*	*	*											
	2.1.1.3: Facilitate construction of the proposed accommodation facilities	allowances, fuel, transport,	PWi/c, PWP, PWT, PE, PWW		*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Action 2.1.2: Increase road network for both tourism and administrative purposes																	
	2.1.2.1: Survey areas for new road network	allowances, consultancy costs, fuel, transport	PWT, PWP, PE, PWW	*	*	*	*											
	2.1.2.2: Construct the new road network	allowances, fuel, transport, machinery, construction costs	PWW,		*				*						*			

	Action 2.1.3: Ensure that the LAC are adhered to.			*	*	*	*	*	*	*	*	*	*	*	*
	2.1.3.1: Implement limits of acceptable change for accommodation in the High and Low Use Zones	Allowances, fuel, transport	PWi/c, PWT, stakeholders												
Target 2.2: Systems for monitoring and regulating the environmental impacts of tourism facilities designed and established	Action 2.2.1: Ensure implementation of DALP environmental impact guidelines for all new facilities			*	*	*	*	*	*	*	*	*	*	*	*
	2.2.1.1: Monitor and take mitigation measures on impacts during and after establishment of activities	Allowances, fuel, transport	PWi/c, PWT, PE, PWW												
	2.2.1.2: Routine repair and maintenance of infrastructures and systems	Allowances, fuel, transport, maintenance and repair costs	PWi/c, PWT, PE, PWW												

	<p>Action 2.2.2: Establish environmental impact standards (including waste, water and fuel wood management) for RUNAPA tourism facilities and a system of incentives and penalties to ensure compliance</p>														
	<p>2.2.2.1 Organize meetings with stakeholders to set environmental standards</p>	<p>Stationary , refreshments/meals , transport, fuel</p>	<p>PWT, PWi/c, PE</p>												
	<p>2.2.2.2: Work with existing and new concessionaires to enable environmental standards to be continuously attained</p>	<p>Allowances, fuel, transport</p>	<p>PWT, PE</p>	<p>*</p>											
	<p>2.2.2.3: Develop a system for self evaluation with investors and the park management</p>	<p>Allowances, fuel, transport, stationery.</p>	<p>PWT, PE</p>	<p>*</p>											

	should ensure compliance .																	
Objective 3: RUNAPA interpretative centres and materials are of high quality, relevant, informative and educational																		
Target 3.1: Network of RUNAPA visitor interpretation facilities improved and developed	Action 3.1.1: Develop Visitor Centre at Y-Junction, Madibira ward, Ikoga																	
	3.1.1.1: Survey the area	Fuel, allowances, stationary	PE, PWT, PWW	*														
	3.1.1.2: Prepare the architectural design and plan	Consultancy costs and funds for development	PWW	*														
	3.1.1.3: Carry out EIA for the proposed Visitor Centre	Fuel, transport, stationary	PE, PWW, PWT	*														
	3.1.1.4: Prepare tender documents	Consultancy costs	PWi/c, PSM	*														
	3.1.1.5: Construct the Visitor Centre	Construction costs	PWi/c, Civil Eng		*	*	*											
	Action 3.1.2: Ensure that mini-interpretation sites and high quality interpretative materials in designated points are in place																	
	3.1.2.1 Identify mini –	Fuel, transport, stationary	PWi/c, PWT, PWP, PE	*	*													

	interpretative sites.														
	3.1.2.2: Prepare interpretative themes and display	Fuel, stationary, transport	PWi/c, PWT, PE, PWO	*	*	*	*								
	Action: 3.1.3: Provide appropriate short-course training to strengthen interpretational capacity of tourism officers and other staff														
	3.1.3.1: Identify staff to be trained		PAO, Heads of Department												
	3.1.3.2: Provide appropriate training	Fees, allowances, stationeries, transport, fuel	PWi/c, PAO,HRM												
Target 3.2: Visitor information materials available	Action 3.2.1: Work with TANAPA Desk Top Publishing Unit, GIS Unit and other publishers to develop information for RUNAPA														
	3.2.1.1: Prepare and print materials describing park attractions.	Printing costs, allowances	PWT		*				*					*	
	Action 3.2.2: Ensure the wider dissemination of information														

	about the park																
	3.2.2.1: Disseminate information materials at outlets in and outside RUNAPA	Transport, allowance, media, stationary	PWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Objective 4: Tourism management strengthened in collaboration with tourism industry partners																	
Target 4.1: RUNAPA tourism administrative and information systems enhanced	Action 4.1.1: Visitors' information collection enhanced.																
	4.1.1.1: Design appropriate system for data collection	Stationeries, allowances, consultancy costs	PWT	*	*	*	*										
	4.1.1.2: Carry out visitor surveys and keep data for use in reports	Allowances, stationeries, fuel, transport	PWT	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Target 4.2: communication and cooperation with tourism industry partners	Action 4.2.1: Enhance collaboration with RUNAPA and relevant CBOs on tourism activities			*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4.2.1.1: Organise meetings/visits	Fuel, transport, allowances, stationary, refreshments/meals	PWT, PWi/c, PWO		*				*				*				

	Action 4.2.2: Improve communication with all stakeholders on tourism operations													
	4.2.2.1: Carry out meetings with stakeholders	Allowances, fuel, transport, refreshments/meals	PWi/c, Stakeholders	*			*	*			*	*		*
	Action 4.2.2: Enforce Wildlife Law and regulations as regards to development and hunting near RUNAPA													
	4.2.2.1: Organize awareness meetings among stakeholders on Wildlife Law and regulations with regard to developments around the park.	Allowances, fuel, transport, refreshments/meals	PWO,PWT, PWP		*									
	4.2.2.2: Monitor development activities outside the park.	Fuel, transport, allowances	PWP, PWO, PWT, PE	*	*	*	*	*	*	*	*	*	*	*
Objective 5: Historical and Cultural Sites are well managed and promoted														
Target 5.1: Historical and cultural sites become	Action 5.1.1: Ensure historical and cultural sites are known.													

one of the tourist attractions	5.1.1.1: Identify cultural and historical sites inside and outside the park	Allowance, fuel, transport, stationary	PWO, PWT		*									
	5.1.1.2: Document and disseminate information on cultural and historical sites	Allowance, fuel, transport, stationary	PWO, PWT			*								
	5.1.1.3: Improve and facilitate access to cultural and historical sites.	Allowance, fuel, transport, construction cost.	PWO, PWT, PWW.											

Objective 6: Ensure that the park is adequately promoted locally and internationally.

Target 6.1: Increased number of Local and international tourist	Action 6.2.1: Promotional materials become available.													
	6.2.1.1: Collect information about the Park	Allowance, Fuel, Transport, Stationary	PWT, PWO	*	*									
	6.2.1.2: Design and print promotional materials in various languages	Printing cost, allowances	PWT, Publishing unit			*	*	*	*		*	*		
	6.2.1.3: Disseminate promotional materials to relevant stakeholders and the public.	Fuel, transport, allowances, promotional costs, stationary	PWT	*	*	*	*	*	*	*	*	*	*	*
	Action 6.2.2: Enhance promotion of local tourism													

	through local media														
	6.2.2.1: Prepare TV and Radio Programs	Fuel, air time cost, Transport, allowances, stationary	PWT, PRM		*				*				*		
	6.2.2.2: Invite Journalists to write and report about the park.	Fuel, transport, allowances, stationary	PWT, PRM			*			*					*	
	6.2.2.3: Participate in local tourism trade fairs.(Saba Saba, Nane Nane, Utalii-Day, Karibu Fair, Mei Mosi etc)	Fuel, transport, allowances, stationary	PWi/c, Heads of Departments.												

Table G.4: Outreach Program Three Years Action Plan															
Management Targets	Management Actions/ Activities	Inputs required	Responsibility	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: Key stakeholders (local communities, NGOs/CBOs and local government authorities support for conservation strengthened)															
Target 1.1: Conservation education programme improved, expanded and relevant to local community needs	1.1.1: Improve the scope and content of conservation education materials														
	1.1.1.1: Identify target stakeholders and relevant conservation education materials	Stationery, fuel, allowances	PWO												
	1.1.1.2: Design, develop and produce conservation education materials	Stationeries, fuel, allowances, production cost, consulting fee	PWO												
	1.1.2: Expand the scope of conservation education programme in adjacent communities														

	1.1.2.1 Identify the target areas and stakeholders	Stationery, fuel, allowances	PWO															
	1.1.2.2: Conduct conservation education activities in selected areas	Fuel, allowances, stationery	PWO, DCDO															
	1.1.3: Organize park visits for targeted community groups																	
	1.1.3.1: Construct a modern hostel facility	Fuel, funds, allowances	PWO, Works, PO															
	1.3.3.2: Acquire a reliable truck to cater for organized community groups visits to the park	Fuel, funds, allowances	PO, PWO															
	1.1.3.3: Organize park visits for targeted community groups	Fuel, allowances, stationery	PWO, PWT,															
	1.1.4: Incorporate the promotion of reproductive health, HIV/AIDS, TB and Malaria preventions into the education program																	
	1.1.4.1: Acquire, produce and disseminate reproductive health, HIV/AIDS, TB	Consultant, funds, allowances, fuel	PWO, DACC, CO & other Doctors in neighbouring villages															

	and Malaria prevention educational materials to communities adjacent to the park																		
	1.1.4.2: Facilitate awareness campaigns	Consultation cost, funds, allowances, fuel, stationery	PWO, DACC, DCDO and Health Officers																
	1.1.4.3: Collaborate with other stakeholders to support the affected communities in minimizing the impacts of HIV/AIDS, TB and Malaria.	Funds, allowances, fuel	PWO, DACC, CDOs and Health Officers.																
Target 1.2: Park-community cooperation, communication and conflict resolution mechanisms enhanced	Action: 1.2.1: Collaborate with key stakeholders in conducting conservation awareness to communities adjacent to the park																		
	1.2.1.1: organize and conduct stakeholders meetings	Fuel, allowance	PWO, DCDO, NGOs/CBOs																
	1.2.1.2: Conduct film/video show and distribution of leaflets, posters	Fuel, allowances, film van, generator, combo projector, video	PWO, DCDO, DLNRO																

		camera													
	1.2.2: Collaborate with key stakeholders to develop a strategy to deal with problem animals														
	1.2.2.2: Gather information on problem animals in collaboration with MBOMIPA Association, Iringa, Chunya, Mbarali and Chamwino District councils, KDU and local communities	Fuel, allowances, stationary	PWO, DLNRO, DALDO												
	1.2.2.3: Develop, implement, monitor and evaluate strategies to deal with problem animals in collaboration with key stakeholders	Fuel, allowances, stationary	PWO, DLNRO, DALDO												
	1.2.3: Enhance flow of information between park, local communities and other stakeholders														
	1.2.3.1 To conduct socio-economic surveys in adjacent communities (Knowledge, Attitude and	Fuel, allowances, stationary	PWO, DCDO, DED, DPLO, DALDO												

Practice (KAP), Profile surveys)															
1.2.3.2: Participate in village, ward, district and other stakeholders meetings	Fuel, allowances, stationary	PWO, DCDO													
1.2.3.3: Host annual stakeholder meeting to discuss community-related issues between Outreach staff and local communities	Fuel, allowances, stationary	PWO, DCDO, DLNRO, DALDO													
1.2.3.4: Disseminate Departmental reports and newsletters to local stakeholders	Fuel, allowances, stationary, fax, emails	PWO, DCDO													
1.2.4: Establishing and implementing land use plans in villages adjacent to the Park in collaboration with key stakeholders															
2.1.4.1 Participating in survey for land use establishments	Multidisciplinary team, fuel, allowances, stationary, funds	PWO, DLNRO, DCDO, DALDO													
1.2.4.2 Mobilize communities to participate in land use plans	Multidisciplinary team, fuel, allowan	PWO, DLNRO, DCDO													

	preparation	ces, stationery, funds												
	1.2.4.3: Participate in implementation of established land use plans	Multidisciplinary team, fuel, allowances, stationery, funds	PWO, DLNRO, DCDO											
	1.2.5: Collaborate with key stakeholders to survey and demarcate the park boundary													
	1.2.5.1: Mobilize communities to participate in boundary demarcation	Fuel, stationery, allowances	PWO, DLNRO, DCDO, DC											
	1.2.5.2: Carry out boundary demarcation(beacons setting)	Fuel, stationery, allowances, beacons	PWO, DC, DLNRO, PWP											
	1.2.6: Carry out training on communication and conflict resolution to improve community liaison skills of wardens and rangers													
	1.2.6.1 Conduct training needs assessment	Consultant costs, Fuel, allowances, stationery	PWO, PW											

		ry																
	1.2.6.2 Carry out training	Consultant costs, Fuel, allowances, stationery	PWO,PW															
	1.2.7: Conduct dialogue and meetings with neighboring villages																	
	1.2.7.1: Attend village/WDC meetings and full council	Fuel, allowances, stationery	CPW, PWO															
	1.2.7.2 Attend stakeholders' meetings	Fuel, allowances, stationery	PWO															
Target 1.3: Community benefits from RUNAPA enhanced	1.3.1: Improve SCIP planning mechanisms with communities and districts																	
	1.3.1.1: Disseminate SCIP guidelines and procedures to communities and District Authorities	Fuel, allowances, stationery	PWO															
	1.3.1.2 Implement SCIP programme																	
	1.3.2.: Provide support for conservation-friendly income generating activities (e.g.																	

	tree planting, beekeeping and fish farming)																	
	1.3.2.1: Identify income generating activities undertaken in adjacent communities	Funds	PWO, DCDO															
	1.3.3.2: Identify income generating groups	Funds	PWO, DCDO															
	1.3.3.3: Conduct trainings need assessment to adjacent communities	Funds	PWO, DCDO															
	1.3.2.4: Liaise with relevant stakeholders to support training on local communities initiatives	Funds Fuel Allowance	PWO															
	1.3.2.5: Explore and introduce energy serving stoves to adjacent communities.	Funds, fuel, allowances	PWO, DLNRO, DCDO															
	1.3.2.6: Encourage communities to adopt and use alternative building materials and energy sources (solar energy, biogas)	Funds	PWO, DCDO															
	1.3.2.7: provide loans to identified IGP	Funds	PWO, DCDO															

	1.3.3.8: Supervise and Monitor IGP	Funds, fuel, allowances	PWO, DCDO, DLNRO																
	1.3.2.9: Explore the potential of improving links between producers and consumers of local products and foodstuffs.	Fuel, allowances	PWO, PWT																
	1.3.2.10: Provide support in disseminating knowledge on types and quality of products preferred by tourists	Fuel, allowances	PWO, PWT																
	1.3.2.11: Facilitate promotion and marketing of local products	Fuel, allowance, funds, stationary	PWO, PWT, DPLO, DTO																
	1.3.3.: To promote eco-tourism in communities																		
	1.3.3.1 Identify potential eco-tourism activities in target communities	Consultation cost, fuel, allowances	PWO																
	1.3.3.2: To conduct meetings with village government authorities and other stakeholders for initiation of eco-tourism activities	Fuel, allowance, stationary	PWO																
	1.3.3.3: Conduct study tours to visit	Fuel, funds and	PWO,																

	areas that practice eco-tourism	allowance																	
	1.3.3.4. Establish eco-tourism activities	Fuel, funds and allowance	PWO																
	1.3.4: Assist communities in mitigating human-wildlife conflicts																		
	1.3.4.1: Collect information on research findings for dealing with the problem animal	Multidisciplinary team, fuel, allowances, stationary, fax, emails	PWO, PWP, PE																
	1.3.4.2: Continue to collaborate with stakeholders in controlling problem animals	Fuel, allowances, stationary	PWO, PWP																
	1.3.5: Promote employment of local people by park and park stakeholders																		
	1.3.5.1: Inform and give priority to local communities on employment opportunities available in the Park	Fuel, allowances, stationary	PWO																
	1.3.5.2: Facilitate and liaise with tour operators and other stakeholders	Fuel, allowances, stationary	PWO																

	to find ways of promoting local employment in and around the park.																	
Objective 2: Threats to RUNAPA resource values reduced through improved community based conservation in buffer areas																		
Target 2.1: RUNAPA collaboration in CBC initiatives with government, NGO and other stakeholders strengthened	2.1.1: Work with stakeholders to identify promising CBC initiatives																	
	2.1.1.1: Attend and participate to different stakeholders forums on community based conservation	allowances, fuel	PWO, DCDO, DLNRO															
	2.1.2: Support and participate in planning and management capacity building for CBC initiatives																	
	2.1.2.1: Identify potential areas for establishment of CBC	Funds, fuel, allowances, stationary	PWO, DCDO, DLNRO															
	2.1.2.2: Participate in resource inventory survey	Funds, fuel, allowances, stationary	PWO, DCDO, DLNRO															
	2.1.2.3: Participate in establishment of CBC	Funds, fuel, allowances, stationary	PWO, DCDO, DLNRO															
	2.1.3: Train village game scouts in collaboration																	

	with other stakeholders													
	2.1.3.1 Participate in conducting law enforcement training on weapon safety, rules, regulations and first aid.	Trainer, funds, allowances, fuel	PWO, PWP, DGO											
	2.1.3.2: Support in provision of basic field gears (equipment/facilities) whenever possible.	Funds	PWO, PO, PWP											
	2.1.4: Organise and conduct veterinary outreach activities to local communities in collaboration with key stakeholders													
	2.1.4.1 Provide support in dealing with livestock diseases	Allowances, fuel, stationery	PWO, PE, DALDO, Vet Officers											
	2.1.4.2 To support livestock vaccination programs	Funds, allowances, fuel, vaccines	PWO, PE, DALDO, Vet Officers											
	2.1.5: Work with stakeholders to promote establishment and development of WMAs													
	2.1.5.1: Identify potential areas	Allowances, fuel,	PWO, PE, DLNRO											

	for WMAs establishment	stationery												
	2.1.5.2: Provide support for resource inventories in the WMAs in collaboration with other stakeholders	Allowances, fuel, stationery	PWO, PE, DLNRO											
Target 2.2: Sustainable utilization of water resources and improved agriculture and livestock keeping practices	Action 2.2.1: Adequately liaise with relevant district authorities and other stakeholders													
	2.2.1.1: Collaborate with relevant district officers and other stakeholders in raising awareness on water resources management.	Allowances, fuel, stationery	Rufiji Water Basin Office, Rukwa Water Office, WWF, Rice schemes, WE, DCDOs, PWO											
	2.2.1.2: Support the existing and encourage the establishment of water users committees and associations.	Allowances, fuel, stationery	Rufiji Water Basin Office, Rukwa Water Office, WWF, DWE, PWO											
	2.2.2: Adequately consult relevant district authorities and other stakeholders													

	for extension services in agriculture and livestock development.													
	3.2.2.1 Expand extension services on best agricultural and livestock practices to Chunya, Mbarali and Chamwino Districts	Allowances, fuel, stationery	DALDO, DWE, Rice Schemes, PWO											
	3.2.2.2 Identify and implement projects on water supply for agriculture and livestock.	Allowances, fuel, stationery	DALDO, DWE, Rice Schemes, PWO											
	3.2.3: Collaborate with relevant authorities to control and manage livestock population													
	3.2.3.1: Conduct awareness meetings with communities on land uses practices	PWO, DCDO, DLNRO												
	3.2.3.2: Facilitate establishment of village land use plans	PWO, DCDO, DLNRO												
	3.2.3.3: Conduct focus meeting with farmers and livestock keepers on best land uses practices	PWO, DCDO, DLNRO												

Table G.5: Park Operations Action Plan

Management Targets	Management Actions/ Activities	Input requirements	Responsible	Timeframe											
				Year 1				Year 2				Year 3			
				1	2	3	4	1	2	3	4	1	2	3	4
Objective 1: Natural resource values and human life and property are effectively and efficiently protected															
Target 1.1: Resource protection operations strengthened in collaboration with stakeholders	Action 1.1.1: Provide sufficient equipment for anti-poaching unit														
	1.1.1.1 To acquire equipment	Fire arms, Tents and field gears, GPS, computers, binoculars, camera, night vision goggles, Vehicles , Air boats, canoe, Radio VHF/HF	PWP,PM, PO, PW i/c PSM												
	1.1.1.2 Staff training	Consultant costs, Fuel, Allowances, Fees, training equipment and stationeries	PWP, PW i/c, PM												
	Action 1.1.2: To develop and adopt new anti-poaching techniques														
	1.1.2.1: To acquire equipment	Life saving jackets , GPS, binoculars, camera, night vision goggles , Air boats, canoe, Radio VHF/HF, Scuba, frogman shoes and masks	PW i/c, PWP												
	1.1.2.2: Staff training	Consultant costs, Fuel, Allowances, Fees, training equipment and stationeries	PWP,PO, PW i/c, PM												

	<p>Action 1.1.3: Establish cooperation with village leaders in raising local community awareness</p>															
	<p>1.1.3.1:Village visits and attend meetings</p>	<p>Fuel, transport, allowances</p>	<p>PWP, PWO</p>													
	<p>Action 1.1.4: Liaise with Community Outreach Department in building ranger - local community cooperation and reward schemes regarding anti-poaching activities</p>															
	<p>1.1.4.1 Village visits and attend meetings</p>	<p>Fuel, transport, allowances</p>	<p>PWP</p>													
	<p>1.1.4.2 Park visits by village leaders</p>	<p>Fuel, refreshments and meals</p>	<p>PWP,PWO</p>													

	Action 1.1.5: Provide support to village governments in training VGS for protection of community conserved areas																		
	1.1.5.1 Develop programmes and train VGS	Fuel, transport, allowances, consultancy fees	PWP, PWO																
Target 1.2: Safety of park visitors, personnel and property enhanced	Action 1.2.1: Strengthen surveillance patrols in prone areas																		
	1.2.1.1 Conduct frequent aerial and water patrols	Fuel, transport, allowances	PWP																
	1.2.1.2 Increase patrol mandays	Fuel, transport, allowances	PWP																
	Action 1.2.2: Improve communication network																		
	1.2.2.1:Acquire communication equipment	Repeaters (VHF radio), Fuel, transport, allowances, cell and satellite phones	PW i/c, PWP,PO,																
	1.2.2.2: Install radio secrecy and minimize frequency interference	Fuel, transport, allowances, Computer, Installation costs	PWP, PW i/c, PM																
Objective 2: Efficiency of RUNAPA park operations strengthened																			
Target 2.1: Staff welfare improved	Action 2.1.1: Capacity building of staff																		

	2.1.1.1: Identify training needs and develop park training plan	Stationeries	PAO, PW i/c																
	2.1.1.2 Conduct educational trips	Fuel, Allowances	PAO, PW i/c																
	Action 2.1.2: Improve medical services																		
	2.1.2.1 Acquire necessary medical equipment	Fuel, transport, allowances, laboratory instruments	PAO																
	2.1.2.2 Employ and motivate medical staff	Remuneration	HRDM																
	2.1.2.3 Provide first aid kits at outpost	Medicine, ant venom	MDO																
	Action 2.1.3: Improve education opportunities for RUNAPA staff																		
	2.1.3.1 Facilitate staff to pursue further education through distance learning	Fuel, allowances	PAO, PW i/c																
	Action 2.1.4: Relocation of most of park staff to adjacent villages																		
	2.1.4.1 Acquire land and survey	Survey and lease costs,	PW i/c																
	2.1.4.2 Develop the area	Site plan and construction costs	PW i/c DPDPTS																

Target 2.2: Performance and professionalism of RUNAPA staff improved	Action 2.2.1: Disseminate TANAPA Code of Conduct for rangers and ensure its compliance																		
	2.2.1.1 Conduct meetings	Fuel, transport, allowances	PWP																
	Action 2.2.2: Participate in updating and disseminate the TANAPA staff regulations																		
	2.2.2.1 Conduct meetings	Fuel, transport, allowances	PW i/c, Heads of Department																
Target 2.3: RUNAPA staff establishment strengthened to meet GMP implementation needs	Action 2.3.1: RUNAPA staff strengthened																		
	2.3.1.1 Identify staff levels and needs	Fuel, stationary, allowances	PW i/c, PAO, Heads of Department																
Target 2.4: RUNAPA revenue generation improved	Action 2.4.1: Minimise loss of revenues by improving internal controls																		
	2.4.1.1 Review existing internal control systems.	Fuel, transport, allowances	PA, PWT, PW i/c																

	2.4.1.2 Improve internal control systems	Fuels, allowances, transport	PA, PWT, PW i/c																	
	Action 2.4.2: Computerise financial accounts, with back-up written records																			
	2.4.2 .1 Staff training	Fuel, transport, allowances	PA,PAO, PW i/c ,PICT																	
	Action 2.4.3: Introduce and Implement new ways of collecting and monitoring revenue																			
	2.4.3.1 Introduce and operationalize point of sale (POS) system	Fuel, Transport and maintenance costs	PA,PAO, PW i/c ,PICT																	
Objective 3: RUNAPA infrastructure and service standards improved																				
Target 3.1: RUNAPA road network improved	Action 3.1.1: Monitor road tear and wear and carry out routine maintenance and construction																			
	3.1.1.1 Carry out routine roads repair and maintenance	Fuel, transport, allowances, lorries, road machines and equipment, wages for casual laborers	PWW, Senior Technician, Roads foreman,																	
	3.1.1.2 Construction of bridges and drifts (Hussman's bridge, Jongomero, Lunda, Kimbi, Muvanga, Nyaluhanga etc	Consultant costs, construction costs ,fuel, transport, etc	DPDPTS, Consulting Engineer, PSM, PWi/c																	

3.1.1.3 Acquire new machine and equipment for road work	D6, Gradder, Wheel loader, Excavator, compactor, tractor and trailer, Water bowzer	DPDPTS,PS M, PWi/c													
Action: 3.1.2 To ensure regular maintenance of facilities, infrastructure and equipment															
3.1.2.1 Develop site plan and institute EIAs	Consultancy costs, fuel, allowances	PWW, PWi/c													
3.1. 2.2 Improve and maintain staff houses	Rehabilitation and maintenance cost	PWW, PWi/c													
3.1. 2.3 Construct new staff houses (including ranger posts) and entry gates	Construction costs	PWW, PWi/c													
3.1.2.4 Develop and implement facilities, infrastructure and equipment maintenance schedule	Expertise costs, training costs, parts, fuel, transport, materials and allowances	PWi/c, Head of departments													
Action 3.1.3: Design and implement a new road construction programme															

	3.1.3.1 Survey and design for new roads and crossings1	Consultancy costs, fuel, ,transport, allowances	PWW, PE, PWT, PWP, PWi/c																
	3.1.3.2 Carry out actual construction works	Fuel, transport , construction costs, allowances, wages for casual laborers	PWW, PWi/c, DPDPTS																
	Action 3.1.4: Develop and improve airstrips in RUNAPA																		
	3.1.4:1 Survey and design proposed airstrips (Msembe, Maji moto, Msangaji, Mpululu etc)	Consultancy costs, transport, allowances,	CP, PWT, PWi/c																
	3.1.4:2 Construct and maintain approved airstrips (Msembe, Maji moto, Msangaji, Mpululu etc)	Construction costs	PWW, PWi/c																
Target 3.2: Reliable and safe water supplies established	Action 3.2.1 Develop mechanisms to access reliable water sources in and outside the park																		
	3.2.1.1 Carry out feasibility study on reliable water sources	Consultancy costs, transport, fuel, allowances	PWi/c, PWW																
	3.2.1.2 establish water harvesting mechanisms (rainwater harvesting, boreholes, surface water etc)	Fuel, transport, allowances, contractor/ consultant	PWW, Civil Technician																
	Action 3.2.2: Establish reliable water reservoirs for animals during dry season																		

	3.2.2.1 Assess and repair existing dams (Ilalangulu, Kinyantupa and Mwayembe and Majimoto)	Fuel, transport, machines, materials, allowances, construction costs	PWW, PWT, PE																
	3.2.2.2 Survey and construct new dams (Jiwe la Kanga, Ukwaheri, Nyaluhunza and Makinde area, etc)	Fuel, transport, machines, materials, allowances, construction costs	PWW, PWT, PE																
Target 3.3: Environmental impacts of Park developments minimised	Action 3.3.1: Improve waste and pollution management systems																		
	3.3.1.1 Develop and implement waste management plan	Fuel, transport, contractor costs, construction materials, allowances	PE, PWT, PWW, Civil Technician, Stakeholders																
	3.3.1.2 Conduct studies on rivers water pollution (effect of agrochemicals)	Consultancy costs, fuel, allowances, transport, tools and equipment	PE,																
	Action 3.3.2: Manage all infrastructure work-related machines and wastes																		
	3.3.2.1 Carry out regular service of machine/equipment	Fuel, transport, allowances	PWW , PE,PWT Investors, machine operators																
	Action 3.3.3: Enforce EIA/PEA for all infrastructures																		
	3.3.3.1 Carry out site specific EIA/ PEA for all infrastructures	Consultants, Fuel, transport, allowances	PE, PWW,PWT, Investors																
Objective 4: Enhance collaboration with relevant stakeholders in the long-term conservation and management of RUNAPA.																			

Target 4.1: Stakeholder collaboration and partnerships established and strengthened	Action 4.1.1: Build stakeholder collaboration both within and outside the country																		
	4.1.1.1 Organize visits/meetings	Fuel, transport, allowances	PW i/c, Heads of Department																
	Action 4.1.2: Improve knowledge and experience sharing with relevant stakeholders																		
	4.1.2.1 Develop and implement exchange programme	Fuel, transport, allowances	PW i/c																