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# CONSERVATION AND MANAGEMENT STRATEGY FOR THE BLACK RHINO (*Diceros bicornis michaeli*) IN KENYA (2001-2005)



Χοθερ πήρε το χρεότ: Δρ. Ροφαν Αμιν, 1996, Λ. Ν



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## EXECUTIVE SUMMARY

The black rhino (*Diceros bicornis*) has drastically declined across Africa in both numbers and in the extent of its range. Continental numbers plummeted from about 65,000 in 1970 to 2,475 in 1992. Between 1992 and 1995, the numbers stabilised and since then they have been steadily increasing. By 1999 the numbers in Africa had increased to 2,700 and 3100 by the end of 2001. However, in spite of these recent increases, the situation is still serious in all areas where black rhinos are found in the wild. While illegal demand for horn continues to be the major threat facing rhino by stimulating poaching, the lack of sufficiently concentrated law enforcement in some areas has also been a major contributory factor. Poaching for horn has been, and continues to be the major cause of black rhino losses.

In Kenya, numbers of the Eastern sub species of black rhino (*D.b.michaeli*) dropped from an estimated 20,000 in 1970 to less than 500 animals in the early 1980s. This drastic decline was due to poaching which took place unabatedly inside and outside National Parks and Reserves. Through various conservation initiatives, the remaining rhino population has been protected from further poaching and the current total population is estimated to be between 341 and 430 animals. Kenya was at the fore front of efforts to offer rhinos concentrated and effective protection in sanctuaries, a strategy that has been a major factor in the increase in numbers of black and white rhinos in the wild. Although the black rhino numbers were estimated at 420 in 1993, it is important to note that this figure included all the three categories of Recent Census, Probables, and Speculative Guesstimates while the figure (430) in the current strategy focuses on the first two categories.

The 1993 Black Rhino Conservation Strategy and Management Plan contained the guiding management policies for the conservation of black rhino in Kenya up until 1998. The main policy during this period was to protect the remaining black rhinos and enhance rapid population growth through active management. While the protection of the remaining black rhinos was largely achieved through this management plan, the anticipated rapid growth in their numbers was achieved to a lesser extent. This was because the remaining rhino populations were not to a large extent managed for maximum sustained growth through the application of active biological management principles. Broadly, active biological management entails ensuring maximum growth rates are attained through proper stocking rates, movement of animals to alter age and sex structure and minimisation of competition from other browsing species.

The overall goal of the current strategy is to enhance rapid population growth of the black rhino population in Kenya through increased attention to biological management, in addition to law enforcement. Specifically, **the goal is to increase the black rhino numbers by at least 5% per annum and reach a confirmed total of 500 rhinos by 2005, 650 rhinos by 2010 and 1000 rhinos by 2020.**

This strategy was developed through a strategic planning workshop held from 11<sup>th</sup>-14<sup>th</sup> September 2000 at Kenya Wildlife Service Training Institute (KWSTI), Naivasha, with financial assistance from the WorldWide Fund for Nature (WWF). The workshop participants comprised stakeholders involved in every aspect of black rhino conservation, including staff of Kenya Wildlife Service (KWS), private

landowners, communities, donors and technical experts. During the workshop the obstacles or problems that were experienced during the implementation of the previous management plan (1993) as well as available opportunities were identified. Based on these, a new vision, overall goal, strategic objectives and strategy for achieving these were formulated. The workshop team also identified most of the desired outcomes. This strategy also incorporates all the recommendations of an independent rhino survey in the Kenyan Sanctuaries that was conducted in mid 2002 by Mr Pieter Demmers and funded by International Fund for Animal Welfare (IFAW).

The following six strategic objectives were identified during the workshop:

1. Development and implementation of an effective co-ordination framework for decision making.
2. Implementation of biological management that will result in an overall population growth rate of at least 5% per annum leading to a confirmed population of 500 in 2005,
3. Minimisation of poaching losses through appropriate management action, improved laws and sentences, effective prosecution, co-operative intelligence, detection, law enforcement and community support.
4. Development of a standardised integrated monitoring system through which the necessary information for protection, meta-population management and programme implementation will be provided.
5. Mobilisation of the resources necessary for the effective and efficient management of designated rhino areas.
6. Promotion of sustainable mutual support and shared responsibilities of all rhino conservation stakeholders for effective implementation of this strategy.

This document provides full details of the strategy including a definition of the strategic objectives, as well as the rationale, indicators, actions, targets and responsibilities for each strategic objective.

It is believed that this document offers a realistic and manageable strategy for the conservation and regeneration of the Black Rhino in Kenya. It is recommended that the strategy be implemented through preparation of annual work plans. The implementation process and the successes and failures of this strategy will be reviewed and revised in the third year by the Director of KWS and all key stakeholders. Lastly, the Director of Kenya Wildlife Service will be responsible for the implementation and monitoring of this strategy.

**STATEMENT FROM MR COLLIN CHURCH, CHAIRMAN,  
KENYA WILDLIFE SERVICE BOARD OF TRUSTEES**

The Kenya Wildlife Service (KWS) operates as a semi-autonomous state corporation under CAP 376 and Amendment No.16 of 1989 with a mandate for wildlife conservation and management in Kenya. Since its inception in 1990, the service has achieved much in curbing poaching which is the biggest threat to our most endangered species such as the rhino and elephant.

Because of its central mandate of conserving wildlife throughout the Country and the importance it attaches to ecosystem conservation, KWS has developed special programmes to address threatened species and habitats. Rhino Programme has been instrumental in providing effective rhino conservation & management in the country.

Any successful initiative for the conservation of black rhinos in Kenya calls for specialist knowledge, trained manpower, and money. Therefore we look forward to other partners in this field to co-operate with us in this important global task.

The Board of Trustees supports and recommends this five year Conservation and Management strategy for the black rhinos to the Government of Kenya, donors, our collaborators and to all those who view rhino conservation as an important undertaking for the present and future generations.

**COLLIN CHURCH  
CHAIRMAN, KWS, BOARD OF TRUSTEES**

**STATEMENT FROM MR MICHEAL WAMITHI DIRECTOR,**  
**KENYA WILDLIFE SERVICE**

The fate of the black rhino in Africa has been a matter of serious concern for many since the calamitous decline of the species in the 1970's. Kenya was not spared from the catastrophic decimation, which occurred across the African continent. We lost thousands of rhinos and the species was almost eliminated.

Through various conservation initiatives, the remaining rhino population in Kenya has been protected from acute poaching. It now forms the only substantial wild breeding population of the eastern sub species. Kenya now aims at securing all its remaining black rhino populations, and developing from these, a genetically viable population of at least 2,000 animals for conservation in the long term.

Since the mid 1980's, Kenya has pioneered the protection and breeding of the black rhinos in relatively small areas or sanctuaries. The strategy has been cost effective in conservation terms.

Having had great success with the protection of the remaining black rhino population through the sanctuary approach, Kenya Wildlife Service through this strategic document, aims at enhancing rapid growth rate by adopting active biological management. The strategy will also help to address the up coming challenges in rhino conservation. Enhanced protection, effective co-ordination, and mutual support from all rhino conservation stakeholders are some of the key elements in operationalising this strategy.

Adequate funding is clearly a corollary of this and the improved fortune of KWS aided by donors is gratefully acknowledged.

**MICHEAL WAMITHI**  
**DIRECTOR**

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## ACRONYMS

AD-PA	Assistant Director Protected Areas
AfRSG	African Rhino Specialist Group
AW	Area Warden
H-VS	Head Veterinary Service
H-R	Head Research
DDS	Deputy Director Security
DW	District Warden
KWS	Kenya Wildlife Service
NGO	Non-Governmental Organisation
PLO	Principal Legal Officer
PW	Park Warden
SS-RC	Senior Scientist-Rhino Conservation
REC	Rhino Executive Committee
RMC	Rhino Management Committee
RO	Rhino Officer
RTC	Rhino Technical Committee
WWF-EARPO	World Wide Fund for Nature – East Africa Regional Programme Office

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# **GLOSSARY**

## **Words and Terms commonly used throughout this Strategy**

**Biological Growth Rate** - the natural increase in a population's size, being the net result of additions from breeding and losses from natural mortalities, expressed as a percentage of the population size at the start of a year.

**Biological Management** - management of rhino populations (primarily through adjusting rhino stocking densities, but also managing the densities of other browsers and habitat management) to maintain rapid, healthy population growth, to minimise inbreeding and loss of genetic diversity. Rhino removal and introduction decisions are based on a population's breeding performance, social behaviour, genetic relationships, the rhino density relative to an area's habitat carrying capacity, vegetation conditions etc.

**Breeding Performance** - Primarily the female reproductive performance of a population. Measured by female ages at first calving, intervals between calving and the average proportion of adult females calving per year. These indicators are affected by habitat quality, stocking densities, adult female to male ratios and age of the females. High rates of biological growth result from good breeding performance.

**Ecological Carrying Capacity (ECC)** - the maximum number of rhino that can be supported by the resources of a specific area. ECC is a practical tool to help managers estimate MPCC (maximum productivity carrying capacity: the desirable stocking rate at which the highest possible growth rate at which the highest possible growth rates can be attained).

**Founders** - rhinos used to establish a new population. Effective founder number refers to the number of founders which breed, i.e. those that contribute to the population's original gene pool.

**Guesstimates** - guesstimates indicate the poorest quality of population estimate which are either guesses based on little or no information or where an existing population estimate is now out of date (i.e. it has been four years since it was updated). Since 1995 guesstimates have been excluded from the official continental statistics compiled by the AfRSG.

**Home range** - the area in which an animal usually resides and moves in search of water, food and shelter.

**Meta-population** - a number of populations of a species considered collectively as one big 'herd'. A metapopulation is made up of a number of discrete subpopulations, and animals are sometimes moved from one population to another.

**Notching** - a method of clipping a small section or sections (usually in a small 'v' shape) from a rhino's ear to allow the animal to be easily identified (and monitored) in the wild.

**Outlier** - 'outlying rhinos' or 'outliers' are low numbers of rhinos occurring in highly dispersed situations outside an area where any form of protection is provided.

**Range state** - a country or state in which rhinos occur.

**Translocation** - movement of individual rhinos from one area to establish new populations, to keep established populations productive (i.e. or below estimated MPCC), or to introduce new blood into a population. Rhinos may be translocated to other areas of suitable habitat and to where they may be better protected from poachers.

## DECLARATION

Those attending the workshop in which this strategy was discussed and formulated agreed on the following declaration.

Recognising the achievements of all of those dedicated to the effective conservation of Kenya's black rhinos;

And realising that a sustained strategic and co-operative approach to conservation and management of this species is necessary for continued success;

We, the participants at the stakeholders' workshop to formulate the elements of a new Conservation Strategy for the black rhino in Kenya;

Unanimously commit ourselves to working together to remove threats and obstacles to effective rhino conservation in Kenya, and to implement this strategy to achieve the overall goal, namely that:

**Black rhino numbers will increase by at least 5% per annum, and will reach a confirmed total of 500 rhinos by 2005, 650 rhinos by 2010 and 1000 rhinos by 2020, using conservation management approaches that are biologically, socially, economically and politically sustainable.**

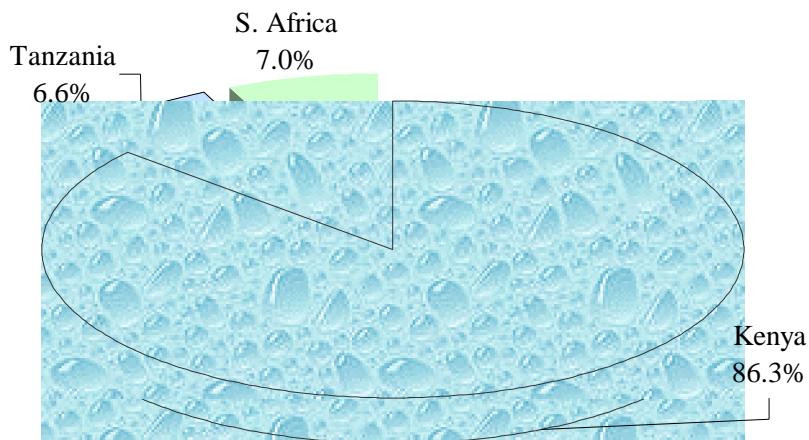
## 1.0: INTRODUCTION

The black rhino (*Diceros bicornis*) has drastically declined across Africa in both numbers and in the extent of its range. Its numbers plummeted from about 65,000 in 1970 to about 10,000 in the early 1980s. Although the rate of decline has reduced since late 1980s, the situation is still serious in all areas where the black rhino is still found in the wild. Poaching for the horn has been, and continues to be, the major cause of the black rhino population decline. Currently, the total population of black rhino in Africa is estimated at 3100 (Brooks, 2002).

The decline in the Eastern sub-species of black rhino (*D.b. michaeli*) numbers has been particularly severe in Eastern Africa, where very large national parks and reserves such as the Tsavo National Park and Selous Game Reserve each used to hold more black rhino population than those surviving today across the entire African continent. In Kenya, black rhino numbers dropped from an estimated 20,000 in 1970 to an estimated 550 in 1984, 381 in 1987 and 398 in 1991 (Brett, 1993; Emslie and Brooks, 1999). This drastic decline was mainly due to poaching for the horn, which took place unabatedly inside and outside Protected Areas Parks and Reserves. Since 1993 (previous plan) the conservation of the species has shown modest success and reversed the trend of losses experienced through out the country in the 1970s and early 1980s. The population was estimated at 421 at the end of 1999 and 430 at the end of 2001 (Brooks, 2002), indicating that Kenya is currently one of the “Big 4” rhino range states and is the stronghold for the eastern black rhino (*D.b. michaeli*) as indicated in Figure 1.

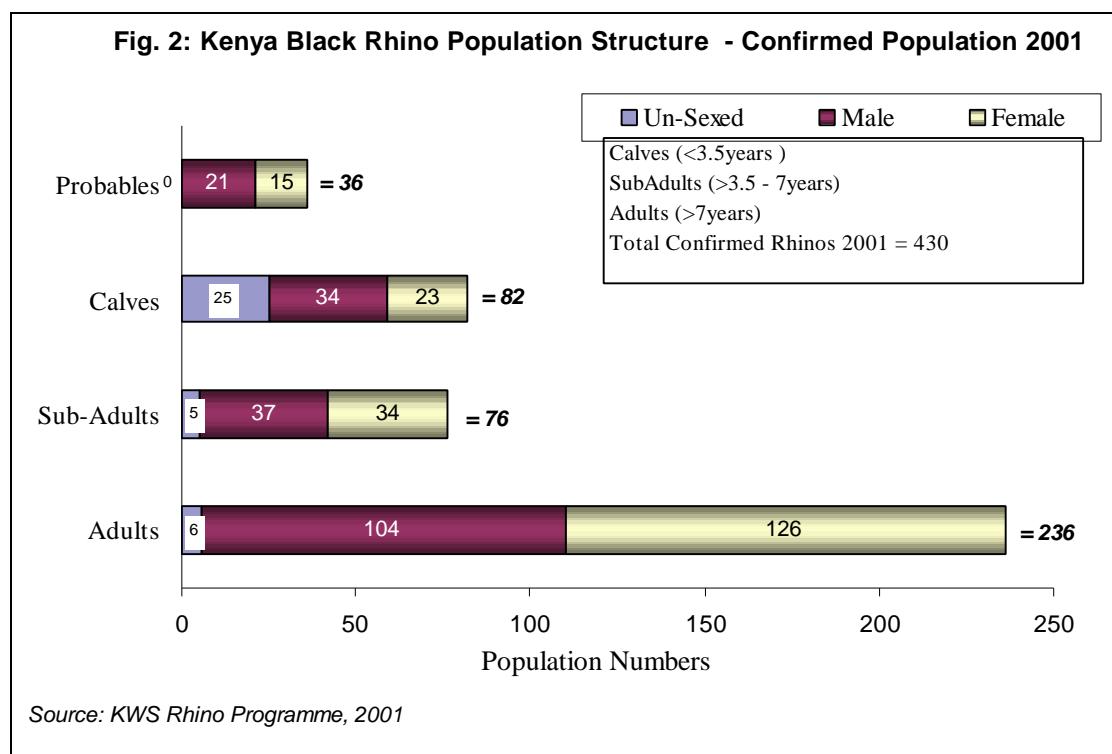
A four months rapid survey was carried out in mid 2002 by an independent consultant, Mr Pieter Demmers, at the request of KWS. The survey's main aim of estimating the population of the black rhinos in each sanctuary was achieved through analysis of historical data and interviews with the rhino staff at sanctuaries visited. The eight sanctuaries visited were Nairobi, Nakuru, Ol Jogi, Ol Pejeta, Aberdares, Masai Mara, Tsavo East and Ngulia. The survey estimated black rhino numbers to be between 341 and 419 (Demmers, 2002). This figure was within 12% of that quoted by KWS Rhino Programme (384 confirmed rhinos) at the end of 2001. The report also noted that in most of the sanctuaries the difference between the survey estimates and the KWS totals were not significantly different. Considering the search effort in the sanctuaries, the results of this survey could be considered as a minimum estimate.

**Fig 1: *Diceros bicornis michaeli* Population Proportions in Africa 2001**



Through such conservation endeavours as the "National Save the Rhino Project" (1984), Kenya Rhino Rescue Project (KRRP, 1985) and the Conservation Strategy and Management Plan for the Black Rhinoceros (1993), the remaining black rhino population in Kenya has been protected from further poaching. The numbers of rhinos continue to increase within major sanctuaries (both KWS and the private sanctuaries) at an annual rate of 4-5%, while rhino numbers in the large and difficult areas have remained stable. Some sanctuaries did not attain this growth rate since a large proportion of rhinos believed to be alive in those areas in 1993 were either not alive, non-existent or not part of breeding populations.

A breakdown of the black rhino population structure in Kenya at the end of 2001 is shown in Figure. 2.



## 2.0: APPROACH TO THE DEVELOPMENT OF THIS STRATEGY

This strategy was developed through a strategic planning workshop. During the workshop the obstacles or problems that had been experienced during the implementation of the previous management plan as well as available opportunities were identified. Some of the key obstacles or problems that were experienced during the implementation of the previous management plan were identified as:

- i. Shortage of rangers leading to inadequate rhino surveillance and protection.
- ii. Individual rhino identification problems caused by increasing proportions of "clean" animals and a failure to use clean population estimation techniques (e.g. RHINO)
- iii. Lack of community participation in rhino conservation programmes
- iv. Competition for food resources with other wildlife herbivores
- v. Lack of updated scientific information on stocking rates for different rhino sanctuaries and conservation areas
- vi. Inadequate funds for the rhino conservation programme
- vii. Inadequate transport and general lack of appropriate surveillance equipment
- viii. Decreasing appropriate sites outside protected areas for further re-stocking
- ix. Inadequate water resources in rhino sanctuaries
- x. The problem of inbreeding, social aggression and miscalculation of ecosystem carrying capacity
- xi. Problems in monitoring and protecting animals which began to range widely after being released into large unfenced areas.
- xii. Insufficient capacity to take required management actions, such as necessary movement of rhinos between conservation areas.

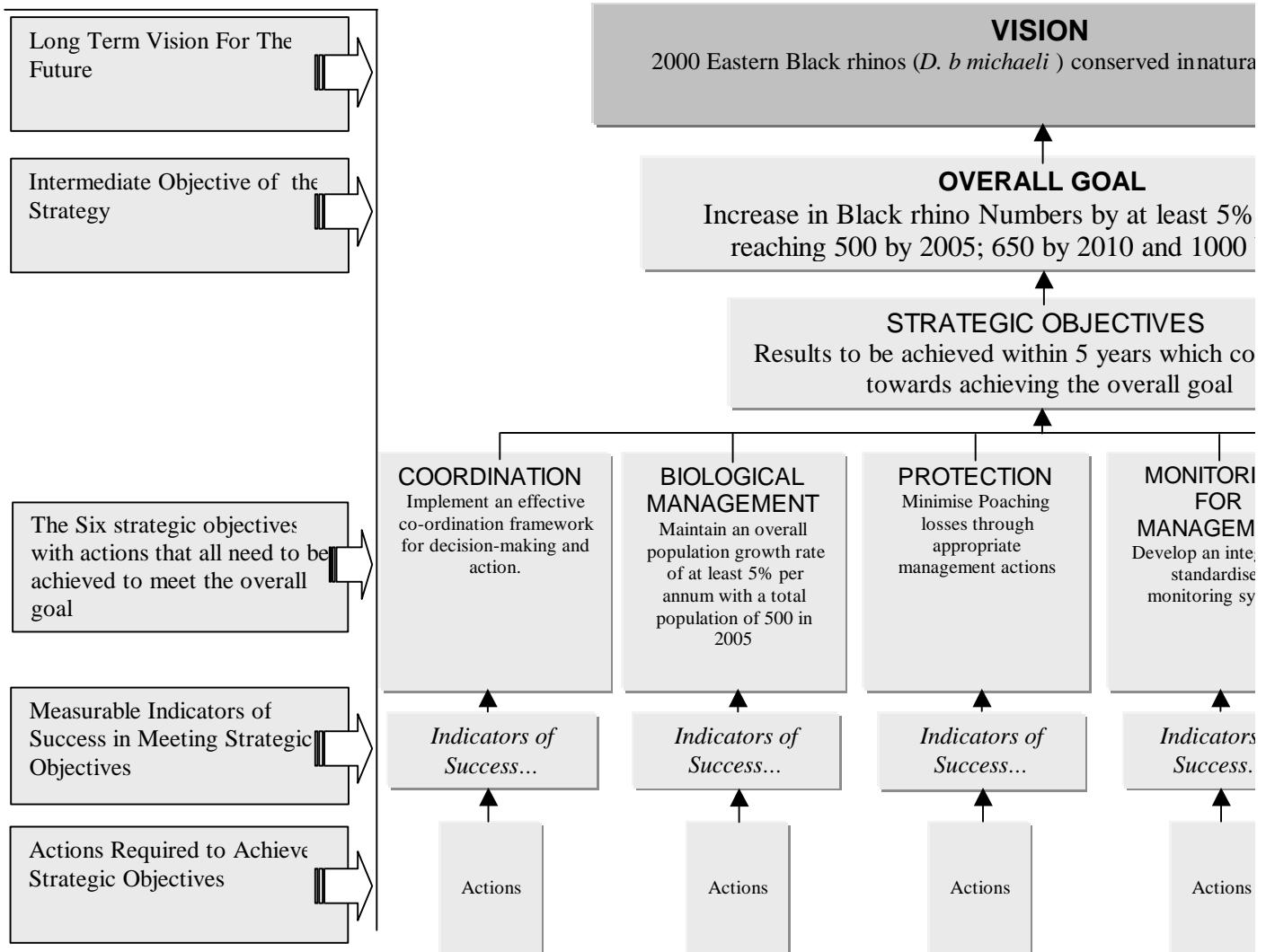
Similarly, some of the opportunities identified during the workshop were:

- i. The interest shown by private landowners and ranchers to participate in rhino conservation.
- ii. The sustained interest by donors and NGOs to fund rhino conservation programmes.
- iii. The government of Kenya's commitment to conserve and increase numbers of the remaining rhino population and the dedicated commitment of KWS rhino programme staff at all levels.
- iv. Potential to earn revenue from rhino viewing and photography through tourism activities.

Based on the above obstacles and opportunities, a new vision, overall goal and six strategic objectives were formulated. Each of the six strategic objectives has specific actions. Many of the desired actions, which are necessary to achieve the overall goal, were also identified at the workshop, and are listed in this strategy to help ensure that important steps are not left out. It will be necessary to attain **ALL** actions for the six strategic objectives so as to achieve the overall goal. The various rhino committees will identify additional required actions, as this list is not exhaustive and must be updated regularly.

Figure 3 illustrates the hierarchical structure of the strategy. By undertaking the listed actions one can achieve each of the strategic objectives. Meeting **ALL** six will enable the overall goal to be met and in the process make significant progress towards the stated long-term vision for rhino conservation in Kenya. Progress towards meeting the overall goal can be assessed using the indicators of success set out in this strategy. Thus the process moves from actions to meeting the strategic objectives and the overall goal, thereby progressing towards the vision.

**Fig. 3: Strategy's Organogram**



## 3.0: MANAGEMENT POLICIES

### 3.1: PREVIOUS POLICIES

The 1993 Black Rhino Conservation Strategy and Management Plan contained the guiding management policies for the conservation of black rhino in Kenya up to the year 1998, and were extended to cover the period between 1999 and 2000. The main policy was to protect the remaining black rhinos and enhance their rapid growth through active management. Thus the period between 1993 and 2000 was primarily one of consolidation of non-breeding and nonviable breeding groups (outlier rhinos), protecting existing animals in designated sanctuaries as well as undertaking some translocations to set up and complete the stocking of other areas, with a view to also enhancing breeding through removals in some heavily stocked key donor populations (e.g. Solio). Efforts to halt the illegal trade in all rhino products were also vigorously supported. During this period, “highland” and “lowland” populations were considered separate for management purposes. In this strategy, a review will be undertaken to determine whether or not the two types must be managed separately. Similarly, the criteria for establishing new rhino conservation areas and translocation outlined in the 1993 plan will be reviewed and updated by the Rhino Technical Committee (RTC).

### 3.2: THE GUIDING POLICIES

In this strategy, management policies that will enhance rapid growth rates and protection of the current black rhino population will be pursued. In particular the policies will focus on the following:

- i. **Maximum Sustained Growth:** All rhino populations will be managed for maximum sustained growth, according to generally accepted rhino management principles as outlined by the IUCN African Rhino Specialist Group (AfRSG).
- ii. **Minimum Founder Population:** Any new populations should ideally be established with a minimum founder population of 20 unrelated rhinos, in an area that could carry at least 50 or, which could readily be expanded to achieve this capacity.
- iii. **Maximise Reproduction:** Rhino stocking rates and other browsers within sanctuaries will be kept at levels that maximise rhino reproduction.
- iv. **Annual Work Plans:** The overall strategy (principles, goals, objectives, activities and intended outputs) will serve as the framework for preparation and review of annual work plans.
- v. **Effective Co-ordination:** The implementation of this conservation and management strategy will be undertaken in accordance with the specified co-ordination mechanisms and expected outputs.
- vi. **Biological Management:** Emphasis will be placed on the biological management of each sub-population, and the metapopulation as a whole, with the aim of understanding factors affecting the population performance and taking appropriate corrective measures.
- vii. **Rhino Security:** Security of the rhino population will be strengthened through an increase in the ranger force and legislative reforms to further protect rhinos.
- viii. **Capacity Building:** Security and population monitoring standards and techniques will be strengthened through capacity building and motivation of those involved.
- ix. **Sustained Funding:** A sustainable-funding strategy will be put in place to ensure the implementation of this conservation and management strategy for the next five years and beyond.

## 4.0: STRATEGY VISION

There will be a metapopulation in Kenya of 2000 of the Eastern African race/subspecies of the black rhino (*Diceros bicornis michaeli*) managed in natural habitat in the long-term.

### 4.1: OVERALL GOAL

The overall goal is the immediate concern of this strategy and is achievable within the time frame and with the resources available. In turn, by meeting the overall goal of this strategy, significant progress will be made towards achieving the long-term vision.

**In this strategy, black rhino numbers are projected to increase by at least 5% per annum, and will reach a confirmed total of 500 rhinos by 2005, 650 rhinos by 2010 and 1000 rhinos by 2020, using conservation management approaches that are biologically, socially, economically and politically sustainable. To achieve this, the strategy will be to enhance rapid population growth of the current black rhino population in Kenya mainly through emphasis on a combination of both biological management and law enforcement that formed the basis of the 1993 plan.**

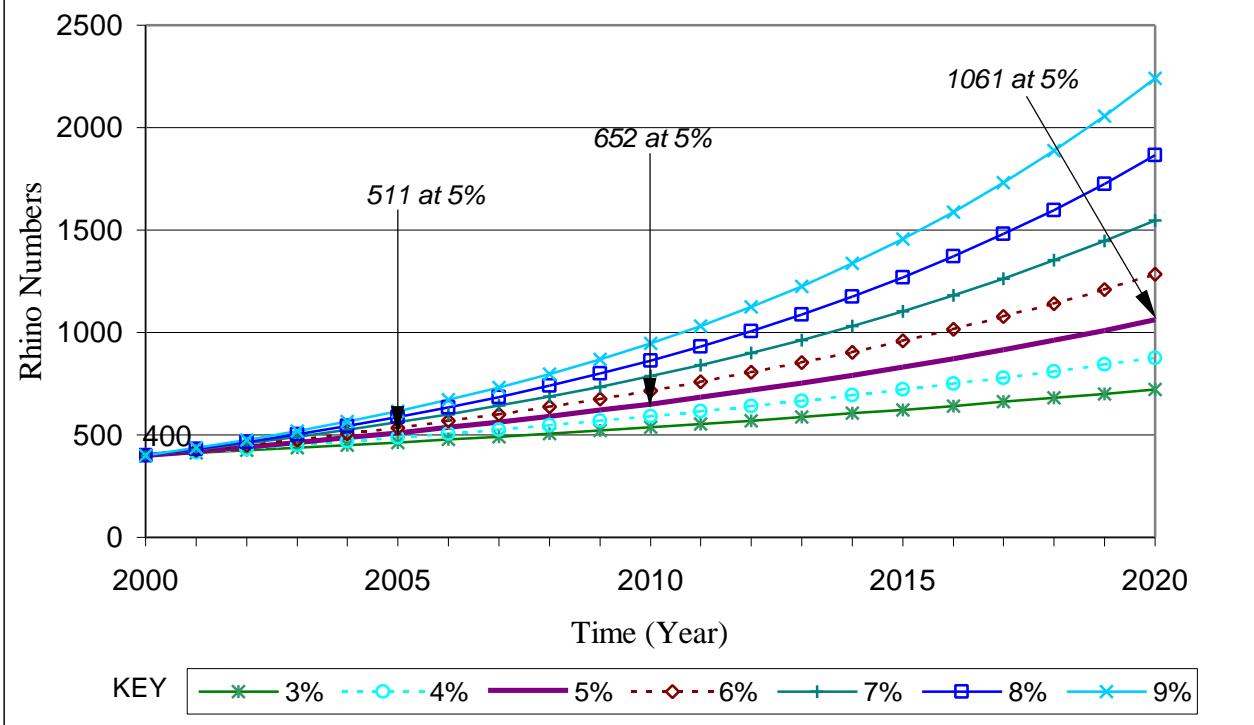
However, it should be noted from the on-set that there are some challenges and obstacles that may hinder the achievement of this goal. These include but are not limited to:

- i. Finding suitable new areas for re-establishment where law enforcement efforts can be concentrated enough to be effective.
- ii. Security and monitoring in the unfenced release areas.
- iii. The indications that a number of fenced sanctuaries are possibly overstocked with black rhino and possibly other browsers.
- iv. Lack of standardised annual status reporting.
- v. Limitation of manpower and resources.
- vi. The need to deal with "clean" animals.

Figure 4 shows the projected compounded population growth for the period 2000 to 2020 at the growth rates of 3%, 4%, 5%, 6%, 7%, 8% and 9%. The figure shows that if a metapopulation growth rate of 7% is achieved, the vision would be attained by 2024. By way of contrast, it would take 33 years to reach the vision at a conservative minimum target of 5%, 42 and 55 years at 4% and 3% respectively. Increasing the growth rate above 5%, it will take 28 years at 6%, 24 years at 7%, 21 years at 8%, and 19 years at 9%.

Thus increasing growth rates from 3% to 6% will halve the time to reach the vision. After 33 years when 5% will produce 2,001 black rhinos, 3% and 4% would only have 1,061 and 1,459 respectively. The difference between 3% and 5% after 33 years is therefore almost 1,000 animals. Similar numbers after 33 years at 6%, 7%, 8%, and 9% would be 2,736, 3,730, 5,070, and 6,873. The difference between 4% and 7% over 33 years is a staggering additional 2,271 rhinos. Increased growth rates could also provide a critical buffer to withstand limited poaching outbreaks.

**Fig. 4: Kenya Black Rhino Population Projections at Different Growth Rates**



#### 4.2: RATIONALE

There is an urgent need to sustainably maintain high annual growth rates in order to develop and conserve a genetically viable population of black rhinos of East African race/subspecies (*Diceros bicornis michaeli*) in their natural habitats in Kenya. In the 1993 conservation strategy and management plan for the black rhino, it was targeted that the population would increase at an annual rate of 4-5% thereby attaining 450 black rhinos by 1995 and 600 by the year 2000. However the country estimate in 2000 was 420 black rhinos. The projected targets were not achieved due to different reasons, which included but were not limited to the following:

- Lack of integrated and focused management approach in the implementation of the management plan
- Inability to effectively monitor progress towards conservation goal
- Biological management for maximum productivity was not fully implemented
- Inadequate funding
- The starting population size in 1993, against which population performance was assessed, was probably an overestimate as it included a number of “ghost” outlier rhinos that may not have existed.

This new strategy aims at overcoming these problems by setting out clear strategic objectives, indicators, actions, targets and responsibilities. Similarly, more emphasis is placed on biological management to achieve the proposed population growth rate.

#### 4.3: INDICATORS OF SUCCESS

- A population of 500 rhinos in Kenya is achieved by the year 2005
- Minimum population growth rate of 5% per annum is achieved in all sub-populations
- The number of rhinos residing in the natural habitats increase by 10% by the year 2005.

#### **4.4: ASSUMPTIONS AND EXTERNAL FACTORS**

Success of this strategy will depend on the following:

- i. The Government of Kenya approves the implementation of this conservation and management strategy and KWS ensures its effective co-ordination.
- ii. Adequate financial, human and other resources available for the full implementation of the strategy.
- iii. An enabling environment (political, economic and social) prevails for the effective and efficient implementation of the strategy.
- iv. Positive engagement of and participation by local communities in rhino conservation increases.

## **5.0 STRATEGIC OBJECTIVES**

Six strategic objectives were identified at the strategic planning workshop. By meeting ALL of these strategic objectives over the plan period, the overall goal will be achieved. This will in turn make significant progress towards the stated long-term vision for rhino conservation in Kenya. The six strategic objectives are as follows:

**i. Strategic Objective 1: Co-ordination**

An effective co-ordination framework for decision-making and action will be implemented, encompassing management, research and security considerations, and involving all stakeholders.

**ii. Strategic Objective 2: Biological Management**

An overall population growth rate of at least 5% per annum with a total population of 500 in 2005 will be maintained in the full range of habitats (forest lowland/savannah; tsetse/non-tsetse) through informed, adaptive meta-population management.

**iii. Strategic Objective 3: Protection**

Poaching losses will be minimised through appropriate management action, improved laws and sentences, effective prosecution, co-operative intelligence, detection, law enforcement and community support.

**iv. Strategic Objective 4: Monitoring for Management**

An integrated, standardised monitoring system for rhino numbers and status, and for habitat change and community dynamics will be developed which through continuous and annual status reporting and feedback, will provide the necessary information for protection, meta-population management and programme implementation.

**v. Strategic Objective 5: Capacity**

The resources necessary for the effective and efficient management of designated rhino areas will, through collaborative effort, be sustainably secured and strategically allocated.

**vi. Strategic Objective 6: Support**

The sustainable mutual support and shared responsibility of all rhino conservation stakeholders for effective implementation of this strategy will be achieved.

## **5.1: CO-ORDINATION**

### **5.1.1: Strategic Objective**

An effective co-ordination framework for decision-making and action will be implemented, encompassing management, research and security considerations, and involving all stakeholders.

### **5.1.2: Rationale and Considerations**

The conservation and management of wildlife in Kenya is vested in Kenya Wildlife Service (KWS), a parastatal organisation under the Ministry of Environment, Natural Resources and Wildlife. It is charged with the implementation of the Wildlife Policy (1975) and the Wildlife Act (revised in 1989) and general planning and management of wildlife in Kenya. It is therefore responsible for the implementation and monitoring of this conservation and management strategy. However, to achieve the overall goal of this strategy all stakeholders (private sector plus NGO partners, donors and KWS) will be required to work together under a well co-ordinated and managed system. The aim will be to ensure the following:

- i. Implementation of the strategy through the setting of actions, targets and responsibilities by Rhino Committees and private land rhino custodians.
- ii. Decision-making is co-ordinated at a national meta-population level and all stakeholders participate in the implementation of the strategy.
- iii. The overall black rhino conservation goal is countrywide in outlook and encourages stakeholders to focus beyond “their” own conservation interests.
- iv. Informed biological management decisions are made at a meta-population level.

To achieve the co-ordination objective, proper organisational and management structures will be put in place. This will include the continuation of a National Rhino Programme within KWS structure and the formation of various Co-ordination Committees. The co-ordination committees that must be established will be; Rhino Executive Committee (REC) which will be responsible for policy formulation and all executive decisions on implementation of technical issues, a Rhino Technical Committee (RTC) to provide technical advice to REC, and a Rhino Management Committee (RMC) which will form a forum for all stakeholders to consult on all rhino related matters. The Association of Private Land Rhino Sanctuaries (APLRS) that was registered in 1990 will continue to operate according to its articles of association. Members of REC and RTC will be appointed by the Director of KWS while the RMC will be constituted by the RC.

### **5.1.3: Indicators**

The following indicators will demonstrate progress towards the achievement of the strategic objective:

- i. An organogram is produced and agreed, and shows the structures and reporting lines for all components of the National Rhino Programme. Each appointed committee will operate from clear Terms of Reference (Annex I)

- ii. A Rhino Executive Committee (REC), responsible for overall implementation of this strategy, is established and meets twice a year.
- iii. The decisions of the REC are documented and implemented.
- iv A Rhino Management Committee (RMC) is established and includes representation from all rhino conservation areas, and meets regularly.
- v. Annual rhino status report summaries are distributed to all relevant stakeholders in the National Rhino Programme.
- vi National Rhino Programme partners report on the effectiveness of District wardens.
- vii A Rhino Technical Committee (RTC) is established to advise the REC regarding technical aspects of the rhino conservation programme.
- viii Veterinary response times improve and decreased rhino mortality rates following veterinary interventions are reported.
- ix Trans-boundary meetings involving all concerned stakeholders are held regularly with Tanzanian authorities.
- x Site or Sanctuary Specific management plans are developed guided by this overall strategy.

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **5.2: BIOLOGICAL MANAGEMENT**

### **5.2.1: Strategic Objective**

An overall population growth rate of at least 5% per annum with a total population of 500 in 2005 will be maintained in the full range of habitats (forest/lowland savannah; tsetse/non-tsetse) through informed, adaptive meta-population management

### **5.2.2: Rationale and Considerations**

The primary goal of biological management is to breed rhinos as rapidly as possible in order to benefit from compounded growth rates and preserving their genetic diversity in the long term. This will also enhance their ability to withstand limited poaching incidents. To achieve this, biological management must ensure maximum growth rates are attained through proper stocking rates and minimisation of competition from other browsing species. Ecological and /or social overstocking of parks or sanctuaries can impact negatively on rhino reproductive performance (through social or ecological) and long-term carrying capacity, with major impacts on:

- Overall rhino numbers.
- The potential to withstand poaching incidents.
- Potential future production from the rhino conservation area or sanctuary
- Ability to meet the overall goal of this strategy.

It is important to note that without proper biological management, the overall goal of this strategy would most likely not be met even with excellent law enforcement that eliminates all poaching.

A number of activities will be undertaken throughout the plan to enable this strategic objective be achieved. First, the RTC will be established to assess and propose biological management actions for different sanctuaries and areas. The biological management actions will include, but not be limited to, management of stocking rates of rhino and other browsers, determination of ecological carrying capacities, habitat management, assessment of genetic and demographic problems, rhino condition assessment, intra-specific competition assessment and reviewing experience with trypanosomiasis.

### **5.2.3: Indicators**

The following indicators will demonstrate progress towards the achievement of the strategic objective:

- i. At least two populations in forest habitats with a combined total of at least 40 confirmed individuals within 5 years (2005) and 50 confirmed individuals within 10 years (2010)
- ii. All other populations increasing to a confirmed total of 460 individuals within 5 years (2005) and 600 individuals within 10 years (2010).

- iii. Annual standardised status reviews provided to REC and RMC by Rhino Co-ordinator. The status reviews to include summaries of:
  - age/sex structures
  - population sizes and densities
  - mortalities (and causes)
  - rhino body condition
  - inter-calving intervals
  - carrying capacities/constraints
- iv. Management records show that decisions are guided by the status reviews.
- v. Annual status reviews are provided to managers of state and private rhino conservation areas.
- vi. All areas for potential extension or establishment of rhino conservation areas over the next five years are identified by end 2001.

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **5.3: PROTECTION**

### **5.3.1: Strategic Objective**

Poaching losses will be minimised, through appropriate management action, improved laws and sentences, effective prosecution, co-operative intelligence, detection, law enforcement and community support.

### **5.3.2: Rationale and Considerations**

Poaching is a serious threat to black rhino conservation in Kenya and other rhino range states. Therefore, one of the key aims of this strategic objective is to eliminate or minimise poaching in order to allow the remaining population to build up to target numbers and eventually achieve the vision of this strategy. Also the survival of black rhino will depend on whether disincentives to hunt rhino illegally and trade illegally in rhino horn can be increased. Hence this calls for not only putting in to place procedures for effective investigation and prosecution of rhino poachers, but also dealing with cases related to illegal international trade.

Historical lessons indicate that the shortcomings in previous efforts to protect the black rhino were mainly due to lack of capacity in investigation and prosecution, poor and slow dissemination of intelligence information, lenient sentences for the poachers, poor and uncoordinated law enforcement and lack of adequate manpower and equipment.

This strategy aims at addressing these shortcomings. First it is proposed that KWS should train its security staff in investigation, prosecution and intelligence work. Second, KWS should initiate mechanisms for the amendment of the current Act to strengthen penalties. Third, analysis and dissemination of intelligence information should be done quickly. Fourth, rhino security units should be established and manpower and equipment increased to the level where effective protection can be provided.

### **5.3.3: Indicators**

The following indicators will demonstrate progress towards the achievement of the strategic objective:

- i. Mortalities per year due to poaching are reduced/minimised.
- ii. The law reviewed, with stiffer sentences and penalties.
- iii. The law is enacted and is enforced.
- iv. There is an increased proportion of maximum sentences applied per annum.
- v. There is an increasing number of joint law enforcement operations between KWS and other Kenya Government security forces.

- vi. There is an increased number of cases of cross border co-operation on law enforcement matters by Kenya and Tanzania authorities.
- vii. There is an increased proportion of convictions resulting from informers.
- viii. There is decline in rhino carcasses detected per unit patrol effort.

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **5.4: MONITORING FOR MANAGEMENT**

### **5.4.1: Strategic Objective**

An integrated, standardised monitoring system will be developed which through continuous and annual reporting and feedback will provide the information for protection, meta-population management and programme implementation.

### **5.4.2: Rationale and Considerations**

Monitoring is done primarily to assist and improve decision-making. Successful biological management of each population's status and performance in terms of population dynamics (number of rhinos and population growth rates), reproductive health (age at first calving, average inter-calving intervals, ratio of numbers of calves less than 3.5 years per adult female) and condition as well as factors that may be affecting performance (e.g. density of other browsers, rainfall etc). Further monitoring of their movements, changes in social behaviour and home range sizes, habitat carrying capacities and changes in diets are also important. All these variables help managers assess whether rhino densities in a park need to be reduced to increase population performances, and hence contribute to meeting the overall goal.

Without decent monitoring data, one can not make informed biological management decisions, and one also cannot properly assess progress towards meeting the overall goal. The monitoring of populations should be undertaken using recognised, individual identification techniques. To be able to compare data over time and between parks within and outside of Kenya, it is essential that the AfRSG recommended standardised age and condition classes be used in all rhino conservation areas. Law enforcement efforts must be monitored to provide information to help guide patrol deployment.

Due to various reasons, a well co-ordinated and managed monitoring programme was not established during the implementation of the previous plan. In this strategy, monitoring forms one of the core elements. The monitoring activities will focus on:

- i. The implementation of an effective reporting and decision making cycle,
- ii. Implementation of the Kenya Black Rhino Management Information System,
- iii. Collection and timely analysis of biological and law enforcement data,
- iv. Evaluation of the need and cost/benefit of conducting intensive ear-notching programmes to improve individual rhino identification monitoring.
- v. Relevant capacity building for all those involved in rhino monitoring.

This strategy also calls for commitment of resources and individuals to the programme.

### **5.4.3: Indicators**

The following indicators will demonstrate progress towards the achievement of the strategic objective:

- i. The Kenya Black Rhino Management Information System is implemented for all rhino conservation areas in Kenya.
- ii. Monitoring guidelines for clean animals (animals with no established identification marks) are adopted and in use by end of 2001.
- iii. Guidelines are developed and implemented for indirect monitoring methods for relevant rhino conservation areas.
- iv. Rhino sighting frequency in open areas increases to at least 2 sightings per animal per month.
- v. The Bayesian Mark Recapture using RHINO software used in appropriate areas to estimate total population sizes (including clean animals and animals that are still to be seen) and results reported in annual status reports.
- vi. There is an increasing proportion of recognisable rhinos.
- vii. Number of carcasses detected per unit patrol effort is known.
- viii. The AfRSG Rhino Monitoring Training Programme is used in all rhino conservation areas.
- ix. There is an increasing number of skilled (accredited) observers.
- x. Detailed annual status reports with synthesised and interpreted results are produced for each rhino conservation area, and summarised at the national level.
- xi. Post-release monitoring guidelines are in use for all future translocations.
- xii. A reporting and decision-making cycle, including standardised status reporting and feedback, is implemented by end 2001.
- xiii. Population estimates with confidence categories are produced at least every 2 years to feed into AfRSG continental status reports for every rhino conservation area.

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **5.5: SUPPORT**

### **5.5.1: Strategic Objective**

The sustainable mutual support and shared responsibility of all rhino conservation stakeholders for effective implementation of this strategy will be achieved.

### **5.5.2: Rationale and Considerations**

The achievement of the strategic objectives set out in this strategy requires the mutual support and shared responsibility of all concerned stakeholders. This support is particularly crucial in the co-ordination and implementation of the programmes. The successful implementation of this strategy will therefore, depend largely on the involvement of all rhino stakeholders in its implementation and monitoring.

In implementing this strategic objective, special emphasis will be placed on identification of ways of involving local communities in rhino conservation programmes, address wildlife-community conflicts, build rhino conservation capacity in local communities and private sanctuaries and establish information sharing linkages while developing conservation incentives schemes.

### **5.5.3: Indicators**

The following indicators will demonstrate progress towards the achievement of the strategic objective:

- i. Rhino stakeholder participation in rhino conservation issues increasing and management conflicts minimised.
- ii. There is a declining number of snares per patrol effort.
- iii. There is an increasing allocation of funds from central government for rhino conservation.
- iv. The proportion of KWS budget allocated to rhino programmes is stable or increasing.
- v. There is an increasing number of positive public references by ministers, local authorities and senior government officials regarding rhino conservation.
- vi. Rhino mortality rates are decreasing.
- vii. The annual level of donor support to rhino programmes is maintained.
- viii. There is an increasing area of land allocated to rhino conservation.
- ix. There is an increasing trend in financial contribution by private sector to rhino conservation.

- x. Revenues generated from state rhino conservation areas are retained and used by the National Rhino Programme.
- xi. There is a clear KWS plan of action for achieving long-term financial sustainability for rhino conservation

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **5.6: CAPACITY**

### **5.6.1: Strategic Objective**

The resources necessary for the effective and efficient management of designated rhino areas will, through collaborative efforts, be sustainably secured and strategically allocated.

### **5.6.2: Rationale and considerations**

Due to previous drastic decline in their numbers and range, the recovery of viable black rhino population in natural habitats and sanctuaries is of great concern to Kenya. The survival of the remaining population and its enhancement is dependent on intensive security and active biological management. These forms of management require well-trained and highly motivated surveillance, monitoring, security, veterinary, capture, and research staff. Therefore, there is an urgent need to develop human resources capacity to effectively manage and conserve the remaining rhino population.

Suitable, internal and external, in-service training programmes for all cadres of personnel involved in rhino management are required. Also adequate and sustainable funds for purchase of appropriate equipment, development of required infrastructure and for all necessary operational costs are needed.

Development of human capacity and availability of financial resources is therefore crucial for the successful implementation of this strategy. During the implementation of this strategy, efforts will be made to raise funds from rhino conservation related activities and other sources as well as allocating them on priority basis. The possibility of establishing a rhino endowment fund will be investigated.

As regards human resources capacity building, the following will be implemented:

- i. Undertake human resource needs assessment.
- ii. Identify and prioritise training needs.
- iii. Train security staff in basic monitoring skills.
- iv. Increase the number of technical (scientists) staff within the National Rhino Programme.
- v. Build adequate management capacity e.g. capture team
- vi. Build conservation expertise in communities.
- vii. Develop merit/reward system.

Similarly, requirements for equipment and infrastructure will be established. The equipment will then be procured and infrastructure developed.

### **5.6.3: Indicators**

The following indicators will demonstrate progress towards the achievement of this strategic objective:

- i. An annual planning meeting involving partners/stakeholders is conducted to assess and recommend needed capacities.
- ii. An annual plan for implementation is developed (including finances, actions and responsibilities).
- iii. An annual report of the achievements of the previous year's plan is produced.
- iv. There is an improved score against a standardised rating system (being developed by KWS) for management effectiveness for each rhino conservation area.
- v. The proportion of "required" funds is increased.
- vi. The proportion of funds spent on planned actions, as opposed to unplanned actions, increases.
- vii. The proportion of required funding is clearly identified and available from the start of the financial year, and increases annually.
- viii. Staffing levels in National Rhino Programme are maintained or are increasing.
- ix. An increasing proportion of "required" staffing needs is met.
- x. There is reduced National Rhino Programme staff absenteeism.
- xi. There is reduced staff turnover.
- xii. There is timely and accurate reporting against requirements.
- xiii. There is an increasing proportion of "required" minimum equipment needs actually provided.
- xiv. All areas for potential extension or establishment of rhino conservation areas over the next five years are identified by end 2001.

The proposed Actions, Targets, Timeframes and Responsibilities for this strategic objective are given in Annex II

## **6.0: IMPLEMENTATION AND REVISION OF THIS STRATEGY**

This strategy will be implemented through preparation of annual work plans. The activities of each work plan will be prioritised according to rhino densities, rhino expansion capacity, and available financial resources and management capacity.

The implementation success and failure of the previous year's work plan will be evaluated prior to the preparation of a new one. This strategy will be reviewed and revised in the third year through a stakeholder process set in place by the Director of the Kenya Wildlife Service.

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