



Republic of Namibia

Ministry of Environment, Forestry and Tourism

# Black rhinoceros

*Diceros bicornis bicornis*

Management Strategy

2021/2022 – 2030/2031

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## Foreword

The previous black rhino management plan of 2003 surpassed expectations, and it was not the intention to replace the plan *per se*, but rather to assess the plan against a changing environment, and to make adjustments accordingly. The increase in poaching has placed an additional strain on the system and available resources, and shows no sign of abating. The increasing involvement of highly organised and well-structured crime syndicates both locally and internationally means that protection efforts will equally need to become more strategic, better organized and coordinated, pro-active, and focussed on shifting the 'front-line' away from the rhino populations, with the aim of intercepting illegal killing before it takes place.

This said, law enforcement is not the ultimate answer to the illegal hunting of rhinos. In fact, successful law enforcement leads to a reduction of supply, pushing prices up further, which in turn creates stronger incentives for illegal hunting and trade - a vicious circle. Efforts therefore need to be made to deal with the root cause of the problem, which is the demand. This needs to be addressed at international levels.

At a national level, unless stakeholders are able to realize the full benefits from rhino, their intrinsic value is undermined. There is therefore a need to increase the income from the sustainable use of rhinos, and to ensure that stakeholders are able to share in these benefits and become motivated to invest in rhino conservation.

Due to the escalating threat against rhinos worldwide and the potential of rapid catastrophic declines of rhinos as a result of poaching, the Ministry of Environment, Forestry and Tourism recognized the need for and importance of improving national coordination and maximizing the impact of conservation programmes in Namibia. Consequently, the Black Rhino Custodianship Programme was called to life in 1993. The Programme contributes significantly to the achievement of Vision 2030 for black rhino in Namibia, with its potential to facilitate the re-establishment of the south-western black rhino in viable, healthy breeding populations throughout its former range in Namibia.

I want to commend the officials, past and present, of the Ministry of Environment, Forestry and Tourism for the outstanding work that they have done for rhino conservation. I also want to commend the rural communities in our communal conservancies who have set aside much of their land for wildlife, as well as our freehold landowners and conservation partners for their significant contributions to wildlife conservation.

**Pohamba Shifeta, MP**  
**MINISTER**

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## Preface

The black rhino once occurred throughout most of southern Africa. Total numbers have decreased drastically over the past centuries and the black rhino is currently classified as critically endangered on the IUCN Red List of Threatened Species and is listed as an Appendix I CITES species.

This strategy will for the next ten years guide the Ministry of Environment, Forestry and Tourism in its conservation management of the black rhino population of Namibia. This plan is based on extensive consultation with all key stakeholders, and their rich input is much appreciated.

Namibia's Black Rhinoceros Conservation Strategy concentrates on maximizing population growth rates through biological management and range expansion. Its vision and mission are to conserve and sustainably manage a growing free ranging metapopulation of black rhinoceros of the sub-species *Diceros bicornis bicornis* within Namibia that by 2030, the subspecies *D. b. bicornis* is re-established in viable, healthy breeding populations throughout its former range, and is sustainably utilized; contributing to the species conservation costs and to improve livelihoods. The overall goal is a commitment to collectively manage the black rhinos of Namibia as a metapopulation, that continues to show a positive growth trend.

The original six Strategic Objectives (range expansion; biological management; protection; policy and legislative framework; support, awareness and incentives; and coordination, cooperation and collaboration) have been retained / revised from the previous management strategy, and an additional complementary Strategic Objective has been added to align to increasing emphasis towards knowledge and awareness as a tool to counteract the growing demand for rhino horn driving illegal killing of black rhino throughout their range. The objective, about protection, is currently at risk, due to the poaching crisis in Africa, and is now impacting Namibia.

The Ministry of Environment, Forestry and Tourism would like to thank all its staff members, partners and stakeholders who participated in developing this management plan.

**Teofilus Nghitila**  
**Executive Director**

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## List of acronyms

AfRSG	African Rhino Specialist Group of the SSC of IUCN
BRREP	Black Rhino Range Expansion Programme
CBD	Convention on Biological Diversity
CITES	Convention in International Trade in Endangered Species
COP	Conference of Parties
DRSPM	Directorate of Regional Services and Park Management
DSS	Directorate of Scientific Services
ECC	Ecological carrying capacity
ED	Executive Director
IUCN	International Union for Conservation of Nature
MEFT	Ministry of Environment, Forestry and Tourism
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
RESG	Rhino & Elephant Security Group which is now formally linked with the Interpol
SADC	Southern African Development Community
SADC RMG	SADC Rhino Management Group
SADC RPRC	SADC Regional Programme for Rhino Conservation (not currently operational)
SADC RRG	SADC Rhino Recovery Group (not currently operational)
SASUSG	Southern Africa Sustainable Use Specialist Group
SRT	Save the Rhino Trust
SSC	Species Survival Commission (of the IUCN)
TRAFFIC	Trade and Records Analysis of Fauna and Flora in Commerce
WWF	World Wide Fund for Nature

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## Glossary of Terms

**Biodiversity Management Plan for Species or Conservation plan:** - A tool to guide the management of indigenous species (and any sub-specific taxa) and groupings of indigenous species that are adversely affected by similar threats and enables the evaluation of progress with regard to such management.

**The IUCN Red List of Threatened Species:** - (also known as the IUCN Red List or Red Data List), is a comprehensive inventory of the global conservation status of plant and animal species which provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those plants and animals that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable) as well as to examine trends in numbers and status of listed threatened species over time.

**Species:** - A kind of animal, plant or other organism that does not normally interbreed with individuals of another kind, and includes any sub-species, cultivar, variety, geographic race, strain, hybrid or geographically separate population.

**Subspecies:** - Any natural subdivision of a species that exhibits small, but persistent, morphological variations from other subdivisions of the same species living in different geographical regions or times, but which are likely to interbreed and produce viable offspring if put together with another subspecies of the same species.

**Metapopulation:** - Consists of a group of spatially separated populations of the same species which interact at some level (Levins R. 1969. Some demographic and genetic consequences of environmental heterogeneity for biological control. Bulletin of the Entomological Society of America 15: 237-240). Rhino meta-populations can be actively managed using translocation of animals between sub-populations.

**Native Species/Indigenous species:** - A species is defined as indigenous or native to a given region or ecosystem, if its presence in that region is the result of only natural resources, with no human intervention: a species that occurs, or has historically occurred, naturally in a free state in nature within the borders of the Republic, but excludes a species that has been introduced in the Republic as a result of human activity. It thus excludes agricultural and domesticated livestock and plants.



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## Executive Summary

Namibia holds more than a third of all the black rhinos remaining globally, and is the stronghold of the south-western subspecies (*Diceros bicornis bicornis*), whose historical range also included southern Angola, western Botswana and the northern and western Cape of South Africa. With more than 90% of the total population of this taxon found in Namibia, and rhino numbers increasing steadily under an well-established and innovative conservation and management programme, the future of the south-western black rhino will depend on Namibia's ability to maintain adequate standards of protection, management, monitoring and sustainable utilisation of rhinos, and expand available areas of range to accommodate further population increase.

The Ministry of Environment, Forestry and Tourism's last management plan for black rhino was produced in 2001 and approved in 2003 when the rhino population was estimated at 750 animals. All of the Strategic Objectives in 2003 Plan were achieved, including an expansion of the range available to black rhino, a significant increase in the numbers of rhino, the building of support for rhino conservation, the continued protection of the metapopulation, policy and legislative frameworks are in place, coordination of the diverse stakeholders and sufficient capacity in place to carry out the management needed.

The implementation of the previous black rhino management plan therefore surpassed expectations, and it was not the intention to replace the plan *per se*, but rather to assess the plan against a changing environment, and to make adjustments accordingly.

Since 2014, the increase in poaching has placed an additional strain on the system and available resources, and shows no sign of abating. The *modus operandi* being utilised both locally and internationally in the illegal killing of rhino and the smuggling of their horns in recent years suggests the increasing involvement of highly organised and well-structured crime syndicates. The root cause of the problem being demand which needs to be addresses at international levels.

Nationally stakeholders need to realize the full benefits from rhino to appreciate their intrinsic value. This strategy promotes the increase in income from the sustainable use of rhinos to ensure that stakeholders are able to share in these benefits, and become motivated to invest in rhino conservation.

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## Introduction and Background

### Conservation status and significance

The historic natural range of the black rhino (*Diceros bicornis*) (hereafter referred to as black rhino) included most of southern and eastern Africa (excluding the Congo Basin, the tropical rainforest areas along the Bight of Benin, the Ethiopian Highlands, and the Horn of Africa). Illegal hunting for rhino horn was primarily responsible for the crash in black rhino numbers from perhaps 100,000 animals in the 1960s to a low of about 2,410 in 1995. Through strict conservation programmes, the numbers in Africa have since increased, reaching 4,880 by the beginning of 2011<sup>1</sup>. The species has become extinct in many countries in which it once occurred, especially in the west and north of its former range, and the remaining populations are now scattered, and in many cases geographically isolated.

The black rhino has been listed as Critically Endangered in the IUCN Red List of Threatened Species (IUCN 2012) since 1996. It is also listed on Appendix I of CITES and classified as Endangered under the United States Endangered Species Act of 1973 (as amended since 1973). Under Namibian legislation (Ordinance 4 of 1975), black rhino is listed as specially protected, and its parts as a “controlled wildlife product” under the Controlled Wildlife Products and Trade Act, 2008 (Act No. 9 of 2008).

Namibia is the stronghold of one of the three remaining ecotypes of black rhinos, namely the south-western *Diceros bicornis bicornis* black rhino. There is some indication that the north eastern Zambezi region of Namibia would have historically been home to *Diceros bicornis minor*<sup>2</sup> and a conscious decision has been taken by the Namibian authorities to restrict their distribution to above the 500mm rainfall isohyet. Cross breeding between ecotypes of black rhinos will only be considered in north eastern Kavango and Zambezi regions above the 500mm rainfall isohyet where historic overlap would have occurred naturally.

The Background Study for Black Rhinoceros (Martin 2010 a, 2010 b) provides in detail the taxonomic and biological information of the species, as well as historical insight. Earlier management plans should remain a part of the reference work, as they provide an important record of thinking and management actions applied over time.

The current black rhino population of Namibia consists of distinct populations occurring within formally protected areas; as well as on communal and private land. All black rhinos in Namibia remain the property of the State, and those occurring on private land, as well as some communal conservancies have been placed there under the black rhino custodianship program (in some conservancies black rhino occurred naturally). Despite being separated by space, the population is managed as a metapopulation, through management interventions, to achieve the objectives of the National Strategy.

### A review of the previous black rhino management plan

The last approved black rhino management plan spanned the period 2002-2006, but has provided the basis for black rhino management activities in Namibia since then.

The main components of the strategy logical framework were:

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<sup>1</sup> National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004). Biodiversity management plan for the Black rhinoceros (*Diceros bicornis*) in South Africa 2011-2020. Government notice No. 49, 25 January 2013

<sup>2</sup> Hall-Martin & Knight, unpublished

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- ✧ **Vision:** *By 2030, the subspecies *D.b. bicornis* is re-established in viable, healthy breeding populations throughout its former range, and is sustainably utilized.*

Target: A metapopulation of at least 2 000 *D.b.bicornis*.

Progress: By 2015 the population estimate had reached 2062, already exceeding the 2030 Vision expectations.

- ✧ **Goal or mission:** *We are committed to collectively manage the black rhinos of Namibia as a metapopulation, increasing by at least 5% per year.*

Key Performance Indicator: Numbers of *D.b.bicornis* in Namibia are increasing by at least 5% per year, and the *D.b.bicornis* metapopulation reaches 1500 animals in Namibia by the end of 2011.

Progress: This target was already exceeded by 2009 when the population was estimated at 1665.

The implementation of the previous black rhino management plan therefore surpassed expectations, and it was therefore not the intention to replace the plan *per se*, but rather to assess the plan against a changing environment, and to make adjustments accordingly.

Six strategic objectives and one enabling objective were identified in the previous management plan, with specific indicators. Although overall the specific goal of the previous black rhino management plan was achieved, a number of the objective indicators were not realized, or could not be measured. In a number of cases, indicators identified were not accompanied by SMART criteria (specific, measurable, assignable, realistic and time-bound), or the criteria were not developed as had been proposed. The major gaps/challenges have been:

- ✧ Although the range expansion target was achieved, delays in preparing new areas for receiving black rhinos, and a slowing of applications for the rhino custodianship scheme has constrained the options available for further expansion. A more aggressive and pro-active strategy will be needed going forward to continue to expand available range;
- ✧ A breakdown in the coordination of activities occurred at a time when the Ministerial structure was changed, and certain responsibilities related to black rhino management were decentralized. This resulted in sub-optimal coordination in developing annual plans, and the dilution of a centralized database of information that feeds in to decision making and adaptive management;
- ✧ Carrying capacity of various areas has not been defined, making biological management targets difficult to quantify. At least an approximate value will need to be agreed on that can be refined over time;
- ✧ The onset of illegal killing of black rhinos since 2014 pushed the level of illegal killing beyond the target threshold of 1%. This will require additional efforts and a combination of existing and new techniques to minimize the impact of illegal killing, and bring levels back to less than 1% of the population, or at least contain them below the population growth rate;
- ✧ It was not possible to determine the incidence of mortalities due to disturbance;
- ✧ Budgetary constraints were experienced in some areas, meaning that a financing strategy will be required to ensure that planned activities can be fully implemented going forward;
- ✧ Outcome of law enforcement efforts were not systematically recorded such that success trends could be analysed and reported on.

These challenges and gaps have been considered in developing the revised management strategy. In particular, much more emphasis is now placed on protection. The operating environment is likely to change rapidly, and therefore an adaptive management approach becomes imperative, and the management strategy should not be so prescriptive to stifle innovative approaches towards achieving the ultimate goals. Furthermore, monitoring and evaluation systems will be essential to gauge efficacy of actions in individual populations and metapopulation

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management, and ensuring that law enforcement actions are effective in containing losses within acceptable limits.

In this strategy, the aim is to achieve a black rhino metapopulation growing at a rate greater than the losses incurred from illegal activities.

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## Logical Framework

The Vision and Mission from the previous Management Plan remain unchanged, being longer term statements of intent.

### Vision

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To conserve and sustainably manage a growing free ranging metapopulation of black rhinoceros of the sub-species *Diceros bicornis bicornis* within Namibia

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### Mission

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By 2030, the subspecies *D.b.bicornis* is re-established in viable, healthy breeding populations throughout its former range, and is sustainably utilized, contributing to the species conservation costs and to improved livelihoods.

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### Targets

The following adjusted targets are specified for the total number of black rhino in Namibia

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A metapopulation of *D.b. bicornis* that continues to show a positive growth trend.

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### Strategic Objectives

The original six *Strategic Objectives* and *Enabling Objective* have been retained / revised from the previous management strategy, and an additional complementary Strategic Objective has been added to align to increasing emphasis towards knowledge and awareness as a tool to counteract the growing demand for rhino horn driving illegal killing of black rhino throughout their range. Under each objective, strategies have been reviewed and adjusted according to current conditions, and for each Objective, *Indicators* are listed which can be used in monitoring progress and achieved, and to guide adaptive management decisions.

The *Strategies/Activities* describe the types of actions that will be taken and can be used to develop detailed annual action plans.

- Expansion of range: The range area available for *D.b. bicornis* in Namibia is significantly expanded.
- Biological management: The black rhino metapopulation is actively and adaptively managed to achieve sustained and positive population growth (based on sound biological principles and information).
- Protection: Losses of black rhinos due to illegal killing, and preventable natural mortalities (fighting and disease) are minimized and contained within sustainable levels.
- Policy and legislative framework: An enabling policy and legislative framework in place and implemented.
- Support, awareness and incentives: Support and awareness (political and public) and incentives for black rhino conservation are in place and fostered for the long term sustainability of the black rhino programme.

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A communication and awareness strategy is developed and implemented to ensure that all stakeholders are updated and to create awareness of black rhinoceros conservation issues, with the specific aim of changing peoples' perceptions and behaviour along the legal and illegal value chain.

- Coordination, cooperation and collaboration: for management of black rhinos by all stakeholders are secured.
- Research: is undertaken to improve the understanding of the impacts of biological management as well as security interventions on black rhino populations, as well as factors affecting their productivity.
- Enabling objective: Capacity and sustainability: Resources (financial, human, physical) for effective and efficient rhino management sustainably secured and strategically used.

## Limiting factors and threats

- ✧ The greatest threat to the Namibian black rhino population is the inception of intense illegal hunting for rhino.
- ✧ International constraints on the ability to maximize the economic value of black rhino (by trading legally in rhino horn) are an opportunity cost to Namibia.
- ✧ The level of resources required to effectively counter the illegal killing of black rhino far exceed available budgets without substantial external funding,

## Assumptions

- ✧ Security situation will not compromise access to rhino areas, or limit the availability of areas for expanding the rhino range;
- ✧ Relations between neighbouring states remain cordial and impact positively on rhino conservation efforts in the former rhino range;
- ✧ Disease outbreaks do not threaten health and viability of Namibia's rhino populations;
- ✧ Effects of Global Climate Change on frequency of extreme drought, or periodic global weather events do not have negative long-term effects on key rhino habitats in Namibia;
- ✧ MEFT budgets will be sufficient to allow for implementation of annual action plans;
- ✧ Increased support is available from the international community for Namibia's rhino conservation effort and plans.

## Adaptive management

Adaptive management is *"a structured, iterative process of robust decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring"*. Figure 1 provides an overview of the cycle for implementation and revision of the strategy, using an adaptive management approach. This approach acknowledges that it is not always possible to predict the exact response to a management action in a complex environment influenced by multiple factors, but that over time understanding can be improved and actions adjusted accordingly with the best available knowledge.



Figure 1 Graphic showing the cycle for implementation and revision of the strategy

## Strategies to achieve objectives

### 1 Expansion of range

#### 1.1 Strategic Objective

The range area available for *D.b. bicornis* in Namibia is significantly expanded

#### 1.2 Rationale and context

In order to achieve the population target outlined, it is imperative that expansion in the available area of suitable and protected habitat within former or historical range of the subspecies be secured. This will become more challenging over time, as the most suited areas will have already been used. Over the past three years, areas formally used for black rhinos have become unsuited due to high levels of illegal killing and related security issues, and unless this trend can be effectively reversed, available range will continue to shrink. Furthermore, recently fewer applications for the black rhino custodianship scheme on private land are being received. This is attributed to remaining farms not meeting the minimum criteria in terms of size or fencing, as well as possible concerns by potential custodians regarding risks of illegal activities. A more proactive approach will therefore be required to secure land, and to convince private land-owners to consider becoming custodians, including financial support and incentives to help counter the costs associated with the monitoring and protection of black rhino.

Spreading the population is a mitigating strategy against illegal killing, especially if animals can be placed in more secure areas. Emphasis should also be placed on large contiguous ranges, which in the long run will reduce the management costs arising from translocations when populations reach carrying capacity.

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## 1.3 Indicators

### 1.3.1 Protected areas

Increase in range by selection and development of protected areas with suitable and secure habitat, using existing selection criteria developed by MEFT. Areas likely to satisfy criteria for selection and development include:

- ✧ Khaudum National Park (3 840 km<sup>2</sup>)

Khaudum NP was already previously identified and work has commenced on preparing the necessary infrastructure for receiving, managing and protecting black rhino.

- ✧ Fish River/Ai-Ais and adjoining state land (farms) (1 960 km<sup>2</sup>) (as joint venture with areas selected as part of the custodianship scheme).
- ✧ Naute Game Park (343 km<sup>2</sup>)

### 1.3.2 Communal Land Areas

Until the security and protection of black rhinos can be guaranteed, strict criteria and screening will need to be introduced before considering the translocation of any black rhinos onto communal land.

### 1.3.3 Private Land Areas (custodianship scheme)

Expansion in the size and number of custodianship areas on private land (using revised selection criteria and approaches); total area increased by at least 1 100 km<sup>2</sup>

- ✧ Pro-actively targeting land owners with suitable land identified in terms of habitat and size;
- ✧ Pro-actively engaging farms neighboring existing custodians, as a means of expanding range;
- ✧ Making it more attractive to become or remain a custodian by introducing mechanisms to assist custodians to cover some of the management costs, as well as considering innovative incentive mechanisms.

## 1.4 Activities

### 1.4.1 All areas

- ✧ Review and where necessary revise the existing criteria and guidelines for the placement of black rhinos on land (protected areas, communal conservancies and private land) to provide a framework for both the qualification and development of individual areas as suitable for rhino conservation and for the allocation of rhinos. Criteria and guidelines should take into consideration the changing dynamics linked to increased poaching pressures.
- ✧ Annually assess composition of small populations to ensure that they remain viable breeding populations.

### 1.4.2 Protected areas

- ✧ Khaudum National Park:
  - i. Review feasibility in light of infrastructure needs (eg fencing) and capacity needs;



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- ii. Complete management infrastructure development according to schedule, including development of waters, roads and housing for staff (2021/2022);
  - iii. Develop management, monitoring and protection protocols (2021/2022);
  - iv. Identify staff to be stationed in Khaudum NP, and provide specific training for black rhino management, monitoring and protection (2021/2022);
  - v. Translocate founder population of black rhinos to Khaudum NP (2022/2023).
- ✧ Fish River/Ai-Ais and adjoining state land (farms)
    - i. Conduct a needs assessment and a feasibility study (including capacity on ground);
    - ii. Develop a plan;
    - iii. Develop a budget;
    - iv. Implement plan within three years.
  - ✧ Naute Game Park
    - i. Conduct a feasibility study (including capacity on ground).

#### 1.4.3 Communal Land Areas

- ✧ All areas
  - i. Review status of each communal land area with black rhinos and assess in particular the security of remaining populations of black rhinos;
  - ii. Develop action plans for existing populations for approval;
  - iii. Budget for and implement approved action plans.

#### 1.4.4 Custodianship Areas on freehold land

- ✧ Develop and submit for approval mechanisms for providing management fee – distribution from trophy hunting revenue;
- ✧ Develop a positive incentive model to be partially funded from GPTF, with match funding secured through donors. An example could be a once off payment for every calf reaching 1 year of age on the farm;
- ✧ Investigate options for donor financing to provide match funding to expenses incurred by custodians to secure safety of black rhinos (e.g. payment of rhino guards);
- ✧ Proactively identify and approach suitable farms to attract more custodians, and target farms bordering existing custodians. Develop an action plan accordingly, and implement;
- ✧ Develop structures to provide custodian representation on Rhino Technical Advisory Group (Annex 1)
- ✧ Undertake its obligations under the custodianship agreement, including but not restricted to:
  - Providing veterinary and security support as may be required;
  - Undertake regular inspections;
  - Undertake marking and where appropriate dehorning of animals on a three-year cycle (this also acts as a census and check of the status of custodianship populations);
  - Investigate the most efficient and cost effective security option to support custodian farmers in mitigating the current threat.

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## 2 Biological management

### 2.1 Strategic Objective

The black rhino metapopulation is actively and adaptively managed to achieve sustained and positive population growth (based on sound biological principles and information)

### 2.2 Rationale and context

In order to achieve the targets, and in light of the increase in illegal killings, now more than ever it is imperative that the black rhino population is managed for maximum biological growth in order to counter the impact of increased mortalities. Maintenance of high growth rates can be achieved by keeping population densities at or below preferred management densities; by removal of rhinos in order to stimulate growth in areas where it is evident that density dependent effects are reducing recruitment and survival of rhinos; by ensuring genetic integrity of particularly small populations; managing disease; and by ensuring that animals have reliable access to water at all times.

Successful biological management depends on good data. Adequate monitoring is required to understand numbers, distribution and trends as a basis for informed management actions and decision-making, and monitoring of a number of parameters is therefore essential, and forms part of this objective.

The dual objectives of expanding the rhino range and increasing rhino numbers should be pursued as long as populations show a positive growth trend.

### 2.3 Indicators

- ✧ Monitoring criteria to be collected are defined for every population, and protocols defined;
- ✧ Monitoring and annual census data from every population are captured on a national database within two months of actions, and are analyzed and available for adaptive management decisions in the form of a dashboard showing trends against historic values and targets, and in the form of annual status reports;
- ✧ Capacity is in place to maintain the national rhino database;
- ✧ Performance of each population is monitored regularly and assessed on an annual basis and action plans developed accordingly using an adaptive management approach;
- ✧ Annual action plans are developed to maintain predicted growth; budgets are secured and at least 90% of planned activities are successfully implemented;
- ✧ Populations are adaptively managed and the metapopulation is increasing at 3% (or more) per annum.

### 2.4 Activities

#### 2.4.1 Monitoring

- ✧ Define criteria and monitoring protocols for each population, including but not restricted to:
  - i. Annual population survey methodology
  - ii. Population structure monitoring
  - iii. Body condition scoring
  - iv. Database of marked animals
  - v. Routine patrolling and sightings
  - vi. Births

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- vii. Parentage (small populations / custodians)
  - viii. Mortalities
  - ix. DNA profiling of individuals
  - ✧ Collate all existing data into a consolidated database and dashboard showing trends;
  - ✧ Develop annual monitoring schedule for each population;
  - ✧ Budget for implementation of monitoring schedules;
  - ✧ Implement annual monitoring programme in each population, and develop reporting mechanisms to ensure data reaches the National database.

#### 2.4.2 Adaptive management

- ✧ Redefine and revise Rhino Technical Advisory Group terms of reference and convene meetings on quarterly basis to oversee black rhino metapopulation management;
- ✧ On an annual basis, assess each population and develop action plan for strategic removals / translocations to promote growth, avoid losses, and retain genetic integrity of the national population:
  - i. Translocations – strategically used to achieve metapopulation and biological management objectives;
  - ii. Sustainably utilize surplus black rhino and black rhino products to the best advantage of black rhino conservation:
    - a. Hunt surplus males in compliance with CITES and MEFT regulations and recommendations;
    - b. Identify animals for sale to former range outside Namibia.
  - iii. In smaller areas, plan sex/age of removals/introductions, and use parentage to take strategic decisions in support of genetic integrity– avoiding in-breeding;
  - iv. Other management actions required in support of objectives.
- ✧ Using available information, adaptively refine carrying capacity estimates for each population on an annual basis;
- ✧ Maintain population below biological carrying capacity – and use excess animals to populate new or alternate areas;
- ✧ Ensure healthy and productive population structure – e.g. removal of excess bulls;
- ✧ Ensure infrastructure is maintained in support of maximum growth – waters, fencing;
- ✧ Manage health and diseases, including the potential impacts of poisonous plants;
- ✧ Identify needs-driven applied research programmes.

#### 2.4.3 Injured and orphaned animals

- ✧ Develop guideline for dealing with injured and orphaned animals that takes into consideration the cost/benefit – with emphasis on welfare of animal and investment must lead to release of animal which is able to integrate into a breeding population.

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## 3 Protection

### 3.1 Strategic Objective

Losses of black rhinos due to illegal killing and preventable natural mortalities (fighting and disease) are minimized.

### 3.2 Rationale and Context

As had been the case in the past, and following a period of relatively low levels of illegal killing of black rhinos in Namibia, once again the major threat to black rhino numbers is poaching and illegal trade in rhino horn. Since 2014, Namibia has experienced a dramatic increase in losses of black rhinos from illegal killing, and over this period levels based on detected cases have exceeded the target threshold of 1% of the metapopulation. A concerted effort will need to be made to reverse the trend, in order to sustain population growth and maintain the economic, tourism, social and community value/benefits of rhino.

The modus operandi being utilised both locally and internationally in the illegal killing of rhino and the smuggling of their horns in recent years clearly indicates the increasing involvement of highly organised and well-structured crime syndicates that are operating a lucrative international enterprise<sup>3</sup>. This means that protection efforts will equally need to be scaled up, better organized and coordinated, pro-active, and focussed on shifting the 'front-line' away from the rhino populations, with the aim of intercepting illegal killing before it takes place. This will require a combination of appropriate management action, improved legislation and sentences, cooperative wildlife crime related intelligence, detection, effective investigation and prosecution, law enforcement and community support.

Preventing the theft of legally acquired horn and their leakage onto illegal market is also important and requires good horn stockpile management.

The costs of protection have and can be expected to continue to escalate, increasingly making rhinos a liability to conservation authorities, private and communal landowners. Existing benefit streams from tourism, limited trophy hunting and live sales of rhinos are not sufficient to offset these security costs, and it will therefore become essential for the International community to mobilize increasingly more external financing to help the State deal with security, and to provide incentives to private landowners to keep black rhinos under the custodianship scheme.

At an international level, efforts are needed to reduce the market demand for illegal horn in order to diminish the driving force behind the illegal killing. The study by Ferreira *et al.* (2014)<sup>4</sup>, outlined the complex relationships that different management strategies can have in affecting the price of horn and thus the incentive to poach, given that the incentive to poach is influenced by the potential returns versus the risk (likelihood of detection, and magnitude of punishment). Demand for horn is driven by traditional and new uses, and the supply of horn is affected by attempts to restrict illegal activities (or provide horn by legal means). Whilst demand remains constant, restricting supply will increase illegal price, thus increasing the incentives to poach, unless the risk of detection and consequences are equally increasing (ie conservation authorities forced to engage in progressively more aggressive and costly law enforcement activities). At some point, the price for horn is so high that the incentive to poach exceeds all disincentives.

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<sup>3</sup> National Strategy for the safety and security of rhinoceros populations in South Africa. Department of Environmental Affairs, Republic of South Africa.

<sup>4</sup> Ferreira, S.M., Pfab, M. & Knight, M. 2014. Management Strategies to curb rhino poaching: Alternative options using a cost-benefit approach. South African Journal of Science. Volume 110, Number 5/6.

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This study concluded that curbing rhino poaching will require a variety of responses, as rhino poaching is driven by a complex interaction between risks and rewards. Unrestricted legal trade in rhino horn emerged as the strategy with the highest benefit score, but is a strategy that is not currently readily available under CITES provisions. Reactive responses such as enhanced law enforcement and dehorning focus on the symptoms of the problems, without addressing the cause. Thus an adaptive approach is needed that will tackle the challenge along the entire value chain – aiming to reduce the demand for (illegal) horn, whilst curbing the illegal off take.

### 3.3 Indicators

- ✧ A national rhino security committee is operational and active;
- ✧ Poaching mortalities are maintained below 1% of the meta-population, or at least below the annual growth rate of the population;
- ✧ Mortalities from disease minimized.

### 3.4 Activities

#### 3.4.1 Coordination and collaboration

- ✧ Implement management and reporting structures that include the Rhino Security Committee that will among others, develop and implement regular security risk assessments and make recommendations;
- ✧ Revise/develop and implement Rhino Security Plans and Standard Operating Procedures (SOPs) based on “principles of best practice” for each black rhino population;
- ✧ Strategically identify key partners/players in the security of black rhinos and deploy according to key areas of function/expertise, to ensure optimum utilization of resources, and maximum impact.

#### 3.4.2 Pro-active security and effective anti-poaching

- ✧ Conduct foot, horseback, aerial and/or vehicle patrols in all rhino population areas;
- ✧ Maintain track log records of all patrols, and use for planning and analysing effort;
- ✧ Maintain aircraft surveillance and patrols in large wild populations;
- ✧ Strategically plan areas and intensity of patrol coverage in all rhino areas, based on law enforcement monitoring (patrol reports, wildlife crime related intelligence) and aerial surveillance. Keep records of patrolling efforts;
- ✧ Establish and maintain observation and monitoring points as appropriate for the detection of illegal activities;
- ✧ Develop and maintain patrols of boundaries (e.g. fence lines) and peripheral areas to all rhino populations;
- ✧ Investigate and introduce new tools to improve efficiency and effectiveness of rhino security efforts, such as:
  - Dog unit for detection and tracking
  - Horse patrols
  - Special reactive field units trained in Special Forces techniques
  - Operational rooms
  - Technological systems to improve control over movements of vehicles and people (e.g. e-toll type electronic system for vehicles and electronic access cards for staff and visitors)
  - Entry/exit point screening
  - Helicopter on call for rapid response

- ✧ Zone populations into high, medium and low security zones, and move reproductive animals to areas of higher security.

Table 1 Levels of security measures

Within parks / populations	<ul style="list-style-type: none"> <li>• Population management</li> <li>• Monitoring</li> <li>• Pro-active anti-poaching</li> <li>• Surveillance</li> <li>• Wildlife crime related intelligence</li> <li>• Patrolling</li> <li>• Control room</li> </ul>
Boundary of parks/populations	<ul style="list-style-type: none"> <li>• Control of entry exit</li> <li>• Detection products/ firearms/ ammunition</li> </ul>
Surrounding areas	<ul style="list-style-type: none"> <li>• Wildlife crime related intelligence</li> </ul>
National borders	<ul style="list-style-type: none"> <li>• Compliance</li> <li>• Detection products – use of dogs</li> </ul>
Regional	<ul style="list-style-type: none"> <li>• Cooperation in security, intelligence and law enforcement</li> </ul>
International	<ul style="list-style-type: none"> <li>• Cooperation in security, intelligence and law enforcement</li> <li>• CITES</li> <li>• IUCN</li> </ul>

#### 3.4.3 Encourage neighbor/community involvement and buffer areas

Security and protection of the rhino population should become a combined effort, and land users and communities neighboring important populations can become important partners in the efforts.

- ✧ Know the neighbours: Map out and classify land neighbouring key populations (Etosha, Waterberg, Mangetti), with contact details of owners/managers;
- ✧ Develop strategies for different land categories – considering how land users can be engaged and involved in protection efforts;
- ✧ Undertake a targeted awareness campaign with neighbours.

#### 3.4.4 Dehorning

Dehorning of black rhino as a security measure is a contentious and expensive intervention, and it is therefore prudent to have a clear policy and guideline for dehorning in Namibia:

- ✧ Develop a policy guideline on dehorning of rhinos, outlining the criteria and target for each black rhino population in Namibia;
- ✧ Review and update standard operating protocols for dehorning;
- ✧ Plan and budget for dehorning activities as part of annual plans;
- ✧ Implement dehorning activities according to annual plans;
- ✧ Monitor dehorned animals as a means of identifying any negative biological impacts.

#### 3.4.5 Capacity building

- ✧ Provide training to enhance the skills of the anti-poaching and law enforcement efforts;
- ✧ Provide specialized scene-of-crime training courses/workshops for MEFT law enforcement staff;
- ✧ Provide preservation of crime scene training to MEFT staff, farmers and community game scouts;
- ✧ Acknowledge staff involved in the rhino protection efforts and ensure they are properly equipped for the job. Aim to promote a feeling of pride and mutual loyalty (*esprit de corps*) among staff involved in black rhino protection and management;

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- ✧ Promote cooperation, sharing and a common understanding of best practices on security, crime prevention, combating poaching, illegal or unethical hunting.

#### 3.4.6 Improved wildlife crime related intelligence

- ✧ Develop and maintain wildlife crime related intelligence networks, in order to detect and pre-empt incipient poaching activity;
- ✧ Foster positive interactions and relationships with communities, private rhino custodians and other stakeholders;
- ✧ Introduce effective communications structures, public awareness and education campaigns and incentive schemes to facilitate effective and efficient information exchange;
- ✧ Establish a database and information sharing mechanisms for available information in respect of rhino poaching incidents in the country

#### 3.4.7 Securing stockpiles of rhino horn

- ✧ Maintain stockpiles of rhino horn secure and well documented (marked, registered and DNA typed)
- ✧ Maintain mechanisms to ensure that all black rhino horn collected, whether from natural mortalities, seizures or dehorning, are deposited in the National stockpile;
- ✧ Declare rhino horn stockpiles to the CITES Secretariat on an annual basis, before 28 February, according to format defined by the Secretariat;
- ✧ Annual reregistration of rhino horn in private ownership.

#### 3.4.8 International cooperation

- ✧ Co-ordination and cooperation on wildlife crime related intelligence in security work with other southern African range states.

## 4 Policy and legislative framework

### 4.1 Strategic Objective

An enabling policy and legislative framework in place and implemented that is adaptive to a changing environment.

### 4.2 Rationale and Context

A strong and effective legislative foundation is needed to enable and support key components of Namibia's rhino conservation effort. In view of the escalation of illegal killing of black rhino since 2014, it is imperative that efforts are in place to ensure that the probability of an offender being caught and convicted (with a significant sentence) is high.

### 4.3 Activities

#### 4.3.1 Legislative framework

- ✧ Periodically review the legislative framework to ensure that sentences and fines remain relevant. Penalties must be sufficiently severe to act as a disincentive – aim for no option for bail or fines;

- 
- ✧ Revise and strengthen specific regulations under the Protected area and wildlife Act related to rhino conservation;
  - ✧ Follow up and ensure approval and enactment of the Parks and Wildlife Management Bill 2008.

#### 4.3.2 Advocacy

- ✧ Advocate for the engagement of individual prosecutors with background and experience in cases of wildlife-related crime and work closely with prosecutors to strengthen cases in order to secure a high rate of conviction;
- ✧ Advocate for the use of specialized investigation techniques in the investigation of wildlife-crime-related offences, as appropriate, in support of conventional investigation techniques;
- ✧ Advocate to the Prosecutor General to ensure that all cases of rhino-related crime are referred to the High Court.

#### 4.3.3 Strengthen prosecution processes

- ✧ Prosecute members of organized crime groups implicated in rhinoceros related crimes under a combination of relevant legislation which carry appropriate penalties;
- ✧ Conduct regular sensitization of magistrates and ensure they are aware and supportive of national efforts to counter the illegal poaching of black rhinos and illegal trade in rhino products, in order to secure a high rate of conviction;
- ✧ Investigate and improve use of forensic science to the fullest extent.

#### 4.3.4 Monitoring

- ✧ Maintain a database of all poaching or illegal trade cases and a record of the outcome of investigations and convictions.

#### 4.3.5 Regional and International cooperation

- ✧ Continue to build international relationships and partnerships with nations, counterpart organizations and individuals;
- ✧ Retain CITES quotas for live sales for export and trophy hunting of black rhinos;
- ✧ Lobby potential importing countries to allow import of rhino trophies;
- ✧ Use CITES mechanisms to pressurize non-range states implicated in the illegal trade of rhinoceros horn as a consumer state to implement demand reduction strategies according to Decision 16.86 on rhinoceros, and to increase surveillance at ports and airports.



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## 5 Support, awareness and incentives

### 5.1 Strategic Objective

Support and awareness (political and public) and incentives for black rhino conservation are in place and fostered for the long term sustainability of the black rhino programme.

### 5.2 Rationale and Context

The long term sustainability of the black rhino management programme depends on support at all levels of Namibian society, from the top political level (to provide the necessary resources and legislative backing), to the poorest communities neighboring black rhino populations. It is therefore imperative that adequate and active support from politicians and the Namibian public, both those living with or in close proximity to rhinos, and other citizens who value the continued existence of rhinos in Namibia, be secured. This support can be fostered by creating and improving opportunities for people living on communal land or community conservancies to benefit in some way from the presence and growth of a rhino population close to or in the same area as they live, and also where this benefit stimulates improved efforts by communities to monitor and protect these animals. Rhinos can and should be used as an important ingredient in increasing the value communities place on wildlife resident in conservancies on communal land. This is also applicable to the private sector black rhino custodians.

Communication and awareness plays an important role in nurturing support. *“Creating awareness of the negative consequences and impacts of illegal harvest and illegal trade of wildlife and plants, particularly on wild populations and the ecosystems in which they exist”* is identified as one of the demand reduction strategies to combat illegal trade in species (CITES CoP 17 Doc 18.1). Furthermore, publicizing successful law enforcement efforts and convictions can act as a deterrent to other potential poachers/traffickers.

Good communication and awareness aims to change peoples’ perceptions and behaviour along the legal and illegal value chain through:

- ✧ Increasing awareness and appreciation of the black rhino; its conservation status; the importance of Namibia’s black rhino at global scale; and the importance of Rhino conservation management;
- ✧ Strengthening the legal and enforcement deterrent by creating greater awareness of legislative provisions and penalties prohibiting trade in rhino products;
- ✧ Raising awareness of the negative consequences and impact of poaching and consumption of illegal rhino products, particularly on wild rhino populations;
- ✧ Raising awareness of communities on the economic, social and environmental impacts of illicit activities
- ✧ Encouraging the general public to report activities related to the illegal killing of rhinos and the trafficking of rhino horns to appropriate authorities for further investigation.

It is particularly important that the “message” is correct in communications. Often inadvertently the wrong message can be sent when publicizing the high value of horn, demand levels, poor apprehension or sentencing rates<sup>5</sup> (Annex 6).

### 5.3 Indicators

- ✧ Government budget allocated to MEFT is stable or increasing over time and is sufficient to finance the annual plans for black rhino conservation under the Ministry;

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<sup>5</sup> Mike Knight, presentation at International Wildlife Ranching Symposium, 2016

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- ✧ Benefits to stakeholders are increased through the sustainable utilization of rhinos (tourism, positive incentives, and sustainable consumptive utilization);
  - ✧ Diversity of stakeholders in active rhino management is increased;
  - ✧ A communication and awareness strategy is developed and implemented.

## 5.4 Activities

### 5.4.1 Stakeholder involvement

- ✧ Revise composition of coordinating structures to ensure that all direct stakeholders in the management of Namibia's rhinos are represented;
- ✧ Provide regular updates on the status of black rhino conservation efforts to stakeholders, including at Political level;
- ✧ Strongly motivate government budget allocations for black rhino conservation activities.

### 5.4.2 Incentives

- ✧ Channel revenues generated from black rhinos to the GPTF to be used for black rhino conservation;
- ✧ Develop mechanisms and recommended options for providing incentives for rhino conservation outside protected areas in Namibia (applying incentives for successes (e.g. calves born, poachers apprehended), and penalties for mortalities);
- ✧ Continue to promote and maximize benefits to communities through tourism, sustainable utilization and incentives;
- ✧ Continue to engage within CITES for sustainable use of black rhinos (trophy hunting, live exports within range);
- ✧ Lobby for controlled trade in rhino horn stockpiles, with proceeds going to rhino conservation;
- ✧ Initiate framework on future private ownership/utilization of rhinos which does not compromise collaborative management of Namibia's black rhino metapopulation.

### 5.4.3 Awareness

- ✧ Create a communications and awareness working group, as a subcommittee of RTAG;
- ✧ Develop a communication and awareness strategy for approval by RMC, which ensures the correct message is communicated;
- ✧ Implement rhino awareness campaigns within and around all black rhino populations using various media (printed, radio, TV, events);
- ✧ Conduct and publish case studies on issues of rhino conservation and benefits (social & financial);
- ✧ Facilitate exchange visits between communities and stakeholders;
- ✧ Emphasize rhino issues in submissions to cabinet, speeches, reports;
- ✧ Facilitate exposure of politicians to rhino conservation activities in Namibia;
- ✧ Train conservancy representatives in rhino monitoring (by dedicated NGOs – SRT, and MEFT);
- ✧ Train conservancy representatives in rhino-related tourism services (by dedicated NGOs – SRT, and MEFT);
- ✧ Develop information materials.

### 5.4.4 Publicity and public relations

- ✧ Publicize successes in law enforcement: apprehensions, seizures, convictions;
- ✧ Actively monitor and manage media tone on issues related to black rhino conservation.

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#### 5.4.5 Confidentiality

- ✧ Information will only be disseminated according to the guidelines provided on confidentiality of information strictly on a need to know basis;
- ✧ A declaration of confidentiality on sensitive rhino information will be drawn up and signed by MEFT staff, custodianship farms owners, and representatives of conservancies and NGOs participating in rhino conservation.

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## 6 Coordination, cooperation and collaboration

### 6.1 Strategic Objective

Coordination, cooperation and collaboration for management of black rhinos by all stakeholders are secured to ensure biological functionality and landscape level conservation.

### 6.2 Rationale and Context

With the increasing diversification of land regimes where rhinos are protected and managed, and the increase in the stake-holding in rhino conservation in Namibia, coordination and collaboration between Government and all participants are essential. This will be dependent on institution and successful operation of coordination structures (e.g. consultative committees, means for interaction between stakeholders), and regulation and control of human activities that may negatively impact on rhino survival or breeding health.

The following structures are therefore developed to facilitate coordination, cooperation and collaboration, and deal with the existing challenges:

#### ✧ **Rhino Unit**

The Rhino Unit (consisting of members with appropriate experience and integrity and well-defined functions and responsibilities) is responsible for all monitoring activities, coordination of all donor funding for state owned rhino and for providing the measures, trends and indicators required for adaptive management. The Rhino Unit will coordinate and manage all surveys, capture and translocations activities, using teams and expertise drawn from the respective components of the Ministry of Environment, Forestry and Tourism. The Rhino Unit also provides the coordinating and secretarial support to the other structures, and is an essential component for ensuring cohesion in the rhino management efforts.

#### ✧ **Rhino Technical Advisory Group (RTAG)**

The RTAG is the advisory body for the biological / metapopulation management aspects of the black rhino strategy – including surveys and translocations. The RTAG is chaired by the Director Scientific Services.

#### ✧ **Rhino Security Committee (RSC)**

The RSC is the coordinating and advisory committee on rhino security, chaired by the Director Wildlife and National Parks.

#### ✧ **Rhino Management Committee (RMC)**

Decision making body that exists to advise top management in the Ministry on rhino issues and to endorse the annual work plans.

Organizational structure and terms of reference for coordinating committees and staff to be operative under this plan are provided in Annex 1.

An adaptive management approach will provide the flexibility to adjust management actions as may become necessary based on evaluation of outcomes and trends.

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## 6.3 Indicators

### 6.3.1 Coordination

- ✧ Coordinating structures and mechanisms in place, representing the interests of all stakeholders (Government, Private farmers, Community conservancies, Traditional, Regional and Local Authorities, NGO actors, Concessionaires and tourist operators).

### 6.3.2 Cooperation and Collaboration

- ✧ Number of agreed stakeholder meetings actually held;
- ✧ Work plan for individual populations agreed by all relevant stakeholders and approved by RMC/Minister of Environment, Forestry and Tourism;
- ✧ 90% of activities in the agreed work-plans are implemented.

## 6.4 Activities

### 6.4.1 Coordination

- ✧ Appoint a Rhino Coordination Unit with a Rhino Coordinator and core support staff (full time Park and Communal Land Rhino Manager, full time Rhino Custodianship Scheme Manager and a full time Private White Rhino Coordinator);
- ✧ Review terms of reference and representation in, and re-establish the *Rhino Technical Advisory Group* (RTAG), and convene quarterly meetings;
- ✧ Encourage rhino custodians to organize themselves to represent the needs of custodians, and to nominate a representative for the RTAG;
- ✧ Re-establish the Rhino Management Committee, and convene bi-annual meetings;
- ✧ Delegate responsibility for consistent representation at international and regional rhino conservation bodies (e.g. AfrSG, RMG, RESG, SADC).

### 6.4.2 Cooperation and Collaboration

- ✧ Develop and sign memorandum of understanding with all non-government direct stakeholders (e.g. SRT, custodians);
- ✧ Adopt an adaptive management approach to allow for adjustments to plans if and when needed;
- ✧ Assess and evaluate previous year's action plans by area, and develop collaborative annual action plans and budgets for individual rhino areas, based on strategy and informed by monitoring information and trends, using adaptive management;
- ✧ Delegate roles and responsibilities for each component of the area action plans;
- ✧ Gain approval for action plans through RMC or Minister;
- ✧ Gain approval for donor funding for state owned rhino through RMC or Minister;
- ✧ Actively pursue national, regional and international cooperation and collaboration.

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## 7 Research

### 7.1 Strategic Objective

Research is undertaken to improve the understanding of the impacts of biological management as well as security interventions (such as Intensive Protection Zones, dehorning) on black rhino populations, as well as factors affecting their productivity.

### 7.2 Rationale and Context

Increasing the understanding and impact of various management interventions can help assess the long term suitability of appropriateness of various approaches. In many cases, this can be achieved by identifying and monitoring key parameters at the time of introducing an intervention, and analyzing trends over time. This is an essential requirement for adaptive management. Other times, specific questions need to be answered, and such may require more than simple monitoring.

### 7.3 Indicators

Research has been identified and is undertaken according to schedules

### 7.4 Activities

- ✧ Identify applied research to address information needs identified as part of the decision-making process of the RTAG and approved by the RMC;
- ✧ Plan, budget and implement research.

#### 7.4.1 Research topics

Potential research topics should be discussed and identified at the RTAG meetings, based on gaps in knowledge or data identified during discussions. Some possible research topics already identified include:

- ✧ Impacts of dehorning on behaviour / biology;
- ✧ Mangetti – potential impact of gifblaar (*Dichapetalum cymosum*) on black rhinos and other wildlife;
- ✧ Genetic analysis of populations and genetic diversity index (determination of levels of inbreeding);
- ✧ Fine-tuning of carcase aging techniques.

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## 8 Enabling objective: Capacity and sustainability

### 8.1 Strategic Objective

Resources (financial, human, physical) for effective and efficient rhino management sustainably secured and strategically used.

### 8.2 Rationale and Context

All the key strategic objectives of the rhino conservation strategy will be enabled by provision of adequate capacity within Namibia to carry out specified activities, and budgeting for adequate funding within Government and the private sector involved in rhino conservation in Namibia. However, in the interest of long term sustainability, options for increasing income from the sustainable use of rhino through live sales, trophy hunting and ultimately legal trade in rhino horn need to be pursued. If non-government stakeholders in rhino conservation receive direct benefits, they will be more motivated to invest in rhino conservation, lessening the burden on Government.

### 8.3 Indicators

- ✧ Positive trend in cost efficiency (decreasing cost per additional rhino);
- ✧ At least 90% of skills base required to implement activities in annual plans are available;
- ✧ Increasing trend in monetary benefits distributed to direct stakeholders;
- ✧ External funds for positive, result driven incentives increasing over time.

### 8.4 Activities

#### 8.4.1 Financing strategy

- ✧ Develop annual plans together with financial plan;
- ✧ Develop mechanisms to ensure that funding for rhino conservation is sufficient, well-directed and adequately tracked;
- ✧ Monitor costs per activity in order and population, in order to calculate cost indices and trends over time;
- ✧ Maximise revenue from the sustainable use of black rhino (trophy hunting, live sales, tourism);
- ✧ Explore the feasibility of initiating a legal trade in rhino horn;
- ✧ Explore options for incentivizing rhino custodians.

#### 8.4.2 Capacity building

- ✧ Revisit and revise establishment structure and staffing needs for rhino conservation within MEFT, based on the rhino strategy and associated activities;
- ✧ Revise/develop job descriptions for all key duties (e.g. rhino coordination; custodianship scheme management, section rangers/rhino monitors);
- ✧ Based on annual plans, identify skills needs and develop training requirements and training programmes (including stakeholders and implementers) to fill skills gaps.

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## Conservation guidelines and operational principles

To inform the activities outlined in the Logical Framework of this strategy, this section provides guidelines or operational principles for rhino conservation in Namibia, including explanatory detail not included in the Logical Framework. Some of these principles have been drawn from the previous conservation strategy (MET 1997), from relevant legislation or conservation developed since 1997, and from discussion of a number of key issues during the Technical Workshop (June 2001).

### Legal Protection

Black rhinos have the same legal status in Namibia regardless of their origin or locality.

### Present Regulations

- a) Black and white rhinos are designated Specially Protected Game in Ordinance No. 4 of 1975 as amended, definition of this category specifying that no person may hunt such game without a permit from the Minister (excluding Section 26 (3) (a)) with a fine not exceeding N\$ 25 000 000 or to imprisonment 25 years imprisonment if they should do so.
- b) The Controlled Wildlife Products and Trade Act (Act No. 9 of 2008) as amended defines rhino and rhino products as “controlled wildlife products”, and prohibits possession of or dealing with controlled wildlife products, except with a permit. On conviction, offenders are liable to a fine not exceeding N\$ 25 000 000 or to imprisonment for a period not exceeding 25 years or to both such fine and imprisonment.
- c) All aspects of possession, transport, sale, capture, hunting and disturbance in game reserves of rhino are under legal control through the above-mentioned legislation while certain other aspects are also covered by veterinary legislation.
- d) Legislation on disturbing rhinos: if a rhino is wilfully disturbed it confirms to the definition of “hunt” in the Ordinance No. 4 of 1975 and if found guilty the fine in paragraph (a) above is applicable.
- e) The current legislation is contained within the Nature Conservation Ordinance of 1975. This is under revision within a new Wildlife and Protected Areas Management Bill, and the updated legislation will contain updated definitions for categories of protected areas (based on the IUCN PA Management categories (IUCN 1994)), and provision for selection and declaration of new protected areas. Other wildlife policies relevant to rhino conservation which have been developed by MEFT and approved since 1997 include:
  - ✧ Policy on the Management and Control of trade in parts and derivatives of elephants and rhinos (MET 1999);
  - ✧ Policy on Categories of Protection of Wildlife and the Taxonomic Coverage of Future Legislation on Wildlife (MET 2001, in draft).

### Population estimation and monitoring

Monitoring of rhino and patrolling of their range are established management practices in all rhino populations in Namibia, providing the basis for estimating population sizes and trends, and tracking breeding performance of individuals and populations. Monitoring also provides a valuable surveillance function, and serves to prevent poaching. Aerial patrols, waterhole counts using identification photographs and special anti-poaching units are used routinely for this purpose.

For all areas except Etosha, rhino monitoring is principally based on individual identification. The effectiveness of this method for use in population estimation is improved by ear-notching of most or the entire un-marked or ‘clean’ segment of the adult population. High frequency monitoring and patrolling routines have to be maintained



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for the foreseeable future for all unit populations, supplemented by indirect methods using incidence of rhino sign.

In Etosha National Park, the use of sample aerial block counts was tested in 2002, initially using fixed wing aircraft, and since 2007 using a helicopter. This method has proven effective, providing an estimate with confidence limits. Counts take place every second year.

## Genetic and Demographic Management of Rhinos

In addition to the imperative of maintaining the distinct subspecies/ecotypes of the black rhino, as recommended by the AfRSG (Emslie & Brooks 1999), it is important for the long term survival of small populations of endangered taxa that residual genetic diversity is conserved, and that the availability of this diversity is maximised as an insurance policy for future evolutionary adaptation. This process can be promoted through achieving rapid growth of populations. As well as avoiding inbreeding and outbreeding depression, loss of rare and valuable genes (e.g. providing rhinos with local adaptation to arid environments, disease resistance, etc.) needs to be prevented. To this end the following principles will be applied in management of Namibia's black rhinos:

- *D.b.bicornis* of Namibian origin may only be used for mixing with other recognized subspecies above the 500mm rainfall isohyet in isolated populations in north eastern Namibia where a natural overlap would have historically occurred, and none will be provided for translocation to areas in neighbouring countries outside of the recognised former range of this subspecies and vice versa.
- In populations of less than 100 breeding individuals, provision will be made for the exchange of individuals, or managed migration, at the rate of one per generation (8 years). The probability of survival and breeding contribution of migrants in recipient populations will be managed through judicious selection of the age/sex composition of groups of rhinos for translocation. These manipulations will only succeed if accurate records are kept in a national "studbook" on a compulsory basis.
- DNA sampling of all animals immobilized for management purposes, or from mortalities, will continue to be collected, and efforts will be made to use the results to better understand inbreeding levels in different populations (potentially as part of PhD/MSc studies).

In order to promote sustained and rapid growth of the metapopulation of black rhinos in Namibia, the following principles will also apply:

- Founder populations in new areas will be stocked at less than 50% of preferred management densities.
- Priority for introductions will be given to those areas with potential for larger founder populations.
- All rhino populations will be managed for rapid growth (>5% per year), as well as genetic and demographic viability/health.
- Rhinos will be removed from populations when they are at or over their preferred management densities (to keep them productive).
- Habitat for black rhinos may be managed to their benefit as necessary/permitted, by: (i), management of vegetation; (ii), removal of browsers; (iii), Removal of predators; (iv), Reduction of browsers and/or predators to lower numbers; and (v) fenced areas of ideal habitat within or adjacent to larger protected areas are accessed and additional areas identified as required (Kaross).

## Disease Risks and Management Impact on Rhino Conservation

Risks to black rhinos from disease will be minimized through adequate monitoring of individual rhinos, and preventive inoculation and/or treatment as deemed necessary by MEFT. There will be need for assessment (and acceptance) of disease risks to inform decisions on translocation of animals within Namibia, and between Namibia and neighbouring countries, and coordination between regional rhino management authorities for information

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exchange, definition of current disease risks, and development of guidelines to minimize disease transmission between rhino populations.

Efforts will be made to minimize negative impacts of management and monitoring activities on rhino health and breeding performance. Translocations and immobilizations of black rhinos are essential activities as part of routine management, and the possible risks of management operations and interventions must be related to consequent benefits (e.g. in terms of improved protection or population performance). Frequency of immobilisations and over-intrusive monitoring may affect rhino behaviour, and ear-notching operations, and their frequency will be related to its requirement for monitoring individual populations. A code of practice for rhino management operations will be maintained in order to minimise negative effects.

## Sustainable utilization of the black rhino in Namibia

Utilization of black rhinos (including for trophy hunting) will be undertaken within the framework of existing CITES provisions, and efforts will be made to counter any attempt to reduce or remove this quota. Animals for trophy hunts will be individually identified based on selected criteria.

As part of the process of maximizing sustainable yield from breeding populations of black rhinos, existing populations may be used as donor populations for supplementing existing populations, or starting new populations within Namibia, as approved. This harvest of rhinos from breeding populations will carry particular benefit to donor populations (or sub-populations) which have reached local carrying capacity and where breeding performance may be stimulated through removal of rhinos. These actions will require definition of preferred management densities of rhinos in donor populations (or subunits of large populations), or using an indicator such as declining growth and recruitment in individual populations.

## Translocation of black rhinos to neighbouring countries

Namibian black rhinos may be provided to neighbouring countries for establishment within former range, through live sales or barter/exchange for other game animals. Proposals for such transactions need to be approved within Namibia and recipient countries.

## Custodianship of rhinos

Custodianship of black rhinos in Namibia will be regulated and informed by the existing Framework for private sector participation (MET 1998), the updated Memorandum of Agreement for black rhino custodianship, and the protocol for assessment of areas for placement. The current Framework will be updated to include guidelines for the recommended future proportion of Namibia's black rhinos to be held on private land. The formal custodianship agreement between private land owners and Government offers advantages over private ownership of rhinos, since it continues to guarantee adequate control by MEFT over the animals provided and ensures that metapopulation management can proceed including rhino populations in all sectors: protected areas, communal land/conservancies and private farms. The revised framework for private custodianship will aim to promote the expansion of current areas to enable larger rhino populations to be developed, and to encourage neighbouring land holdings to aggregate into larger combined areas as private conservancies with rhinos as the focus of their wildlife conservation effort and consequent management priorities.

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## Confidentiality of Information

Namibia recognises the vulnerability of its large wild populations of black rhinos, and the increasing number of locations where rhinos are managed within its borders. A policy of confidentiality on information related to the size and locations of rhino populations will be maintained, with summary national totals provided to national, regional and international conservation organisations and the media. If population size data are provided (e.g. to regional or continental rhino conservation bodies), the names or locations of the areas will not be provided. In addition, a declaration of confidentiality on sensitive rhino information will be drawn up and signed by MEFT staff, custodianship farms owners, and representatives of conservancies and NGOs participating in rhino conservation. Although the main body of this Conservation Strategy may be freely circulated, its Annexes (which contain detailed information on size and locations of black rhino populations in Namibia) will have restricted circulation. Action plans, status reports, population data, databases and studbooks, wildlife crime related intelligence and law enforcement databases, and any information on the distribution and densities of law enforcement staff will also remain confidential, and restricted to Government (MEFT/PRD) staff or non-governmental representatives directly involved in collection and use of these data or information.

## External Relationships

Namibia will maintain cooperative relationships with other parties involved in conservation of its black rhinos, and other *D.b. bicornis* conserved in the Southern African Region. In addition to observing its obligations as a signatory to CITES, representation will be provided to international, continental and regional bodies involved in rhino conservation (AfrSG, SADC RMG, RESG). Activities and support from regional and national NGOs (WWF, NNF, SRT, IRDNC, TRAFFIC, EWT, etc) will be encouraged, particularly as part of development and implementation of a sustainable strategy for funding the conservation of black rhinos in Namibia in partnership between Government, NGOs and the private sector.

## Implementation process

The management strategy provides the overarching guidance for the development of annual action plans for the National rhino management programme and each of the populations. This process will be overseen by the management and coordination structure outlined in Annex 1. Developing annual action plans for the following financial year should generally begin ahead of the budgeting cycle, in the previous year, in order to ensure that budgetary allocations are made accordingly.

An annual review of action plans and indicators will be undertaken, and where necessary for the purpose of adaptive management, the strategy will be revised.

		Rhino Unit		Rhino Technical Advisory Group	Rhino Security Committee	Rhino Management Committee	Individual action plans implemented
Financial year cycle	Apr	Coordinate action plans Maintain databases Monitoring and evaluation	Convene RTAG meeting	Review of previous year action plans Operationalize current year action plans			Implementation according to approved action plans
	May	Coordinate action plans Maintain databases Monitoring and evaluation	Preparations for RTAG meeting: Analysis of previous years' action plans Review of indicators and trends		Review and plan		Implementation according to approved action plans
	Jun	Coordinate action plans Maintain databases Monitoring and evaluation	Proposals for biological management for following years' action plans				Implementation according to approved action plans
	Jul	Coordinate action plans Maintain databases Monitoring and evaluation	Convene RTAG meeting	Discussion and development of following years' action plans for submission to RMC for approval	Review and plan Prepare submission for RMC		Implementation according to approved action plans
	Aug	Coordinate action plans Maintain databases Monitoring and evaluation	Convene RMC			Discussion and approval of following years' action plans	Implementation according to approved action plans
	Sep	Coordinate action plans Maintain databases Monitoring and evaluation	Budgeting based on following years' approved action plan		Review and plan		Implementation according to approved action plans
	Oct	Coordinate action plans Maintain databases Monitoring and evaluation	Convene RTAG meeting	Mid-year review of action plans - adaptive management where required Review of proposed budget			Implementation according to approved action plans
	Nov	Coordinate action plans Maintain databases Monitoring and evaluation			Review and plan		Implementation according to approved action plans
	Dec	Coordinate action plans Maintain databases Monitoring and evaluation					Implementation according to approved action plans
	Jan	Coordinate action plans Maintain databases Monitoring and evaluation	Convene RTAG meeting	Review of action plan - trends and indicators Adaptive management Planning for year ahead	Review and plan Prepare submission for RMC		Implementation according to approved action plans
	Feb	Coordinate action plans Maintain databases Monitoring and evaluation					Implementation according to approved action plans
	Mar	Coordinate action plans Maintain databases Monitoring and evaluation	Prepare annual report and submit to RMC Convene RMC		Review and plan Prepare annual report and submit to RMC	Presentation of annual reports Review of achievements, trends, indicators Review of strategy and approval of adjustments Recap of action plans for following financial year	Implementation according to approved action plans

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## Annex 1: Management and Coordination Structure

The decision-making body for the implementation of the Rhino Management Strategy is the Rhino Management Committee which is chaired by the Deputy Executive Director of the Ministry of Environment, Forestry and Tourism (Figure A1-1).

The following two technical groups report to the RMC:

✧ **Rhino Technical Advisory Group (RTAG)**

The RTAG is the advisory body for the biological / metapopulation management aspects of the black and white rhino strategy – including surveys and translocations. The RTAG is chaired by the Director of Scientific Services.

✧ **Rhino Security Committee (RSC)**

The RSC is the coordinating and advisory committee on rhino security, chaired by the Director of Wildlife and National Parks.



Figure A1-1 Management and coordination structure for rhino management

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## Rhino Unit

The implementation of the black and white rhino strategies and annual work plans requires careful coordination to maintain cohesion and focus. The “Rhino Unit” (Figure A1-2) is not a separate organizational structure, but an allocation of functions to specific individuals, residing under the Directorate of Scientific Services, Sub-Division of Wildlife Research.

The Rhino Unit is responsible for all monitoring activities, coordination of donor funding for state owned rhino and for providing the measures, trends and indicators required for adaptive management. The Rhino Unit will coordinate and manage all surveys, capture and translocations activities, using teams and expertise drawn from the respective components of the Ministry of Environment, Forestry and Tourism.

The Rhino Unit will also monitor and report on achievements of annual work plans.



Figure A1-2 Graphics presenting proposed structure/distinct functions for the Rhino Unit

## National Rhino Coordinator/Coordination

This position/function heads the Rhino Unit, which is also the depository of all rhino data. The National Rhino Coordinator is responsible to coordinate the entire rhino program, with particular focus on the aspects related to biological / metapopulation management.

The function of National Rhino Coordinator will be assigned in writing by the Executive Director of the Ministry of Environment, Forestry and Tourism.

The function of the National Rhino Coordinator is to ensure that the National Management Strategy and Plans for black and white rhinoceros are implemented in a coordinated and consultative manner, and to represent Namibia at International Fora dealing with rhino biological management and conservation issues.

The National Rhino Coordinator reports to the Rhino Management Committee (RMC) through the Director of Scientific Services. The function of rhino coordination is not seen as exclusive, therefore, despite this list of duties, the official duty sheet of the incumbent remains applicable.

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## Duties

The duties of the National Rhino Coordinator are to:

1. Maintain the national database of rhino information to monitor trends and inform adaptive management decisions.
2. Convene the Rhino Technical Advisory Group to:
  - 2.1. Oversee implementation of the national management Strategy and population management plans.
  - 2.2. Compile and submit reports and recommendations to the Rhino Management Committee on:
    - 2.2.1. Annual management and work plans.
    - 2.3. Population performance and status reports for each population:
      - 2.3.1. Farm inspections;
      - 2.3.2. Monitoring programs;
      - 2.3.3. Ear notching/other marking programs.
3. Identify training needs and coordinate training activities.
4. Ensure the effective coordination of all stakeholders in rhino conservation.
5. Secure and coordinate funding for rhino management.
6. Manage the national rhino population database from which Namibia's rhino numbers and growth rates can be derived, and meta-population decisions taken.
7. Represent Namibia on the:
  - 7.1. IUCN/African Rhino Specialist Group (AfRSG);
  - 7.2. SADC Rhino Programme;
  - 7.3. Rhino Management Group.
8. Convene, facilitate and provide secretariat for Rhino Management Committee.

## Park and Communal Land rhino management

The park and communal land rhino manager reports to the National Rhino Coordinator, and is responsible for monitoring and data management of populations within protected areas and on communal land (including communal conservancies).

### Duties

The duties of the Park and Communal Land rhino manager are to:

1. Maintain comprehensive records of all rhino populations in parks and communal land, including marked individuals, population numbers, population demography, births and mortalities, densities, movements, interactions (fighting).
2. Analyse data and trends, and make recommendations accordingly.
3. Coordinate and ensure that annual surveys are conducted according to approved action plans.
4. Coordinate and ensure that marking, capture and translocations take place according to approved action plans.
5. Make recommendations to National Rhino Coordinator based on actions.
6. Serve on the Rhino Technical Advisory Group, to provide feedback and recommendations on biological rhino management issues on State Land.



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## Rhino Custodianship management

The rhino custodianship scheme has become a significant component of rhino management in Namibia. Currently consisting of 27 freehold custodians, the program requires a dedicated manager.

The function of the rhino custodianship manager is to liaise with all current and potential rhino custodians, both on commercial and communal areas, and to ensure that the program runs smoothly.

The duties of the rhino custodianship manager are to:

1. Serve as the contact person for all custodians, and potential custodians of black rhino in Namibia.
2. Maintain comprehensive records, including quarterly returns from the custodians, database of custodianship metapopulation, and all related documents.
3. Maintain comprehensive records of all black rhino populations on private land, including marked individuals, population numbers, population demography, births and mortalities, densities, movements, interactions (fighting).
4. Identify and actively engage new potential custodians as efforts to expand rhino area.
5. Coordinate the assessment procedures for new applicants to the custodianship scheme.
6. Ensure that custodians comply with custodianship Memoranda of Understanding, and that the Ministry of Environment, Forestry and Tourism complies with its responsibilities as well.
7. Coordinate inspections on custodianship farms according to agreed schedules, and ensure that animals and populations are healthy.
8. Coordinate four-yearly survey and marking exercise on custodianship farms (25% of farms every year)
9. Liaise with Game Capture regarding boma care, feeding, release and post release monitoring of founder animals.
10. Serve on the Rhino Technical Advisory Group, to provide feedback and recommendations on the rhino custodianship scheme.

## Private owned rhino management

The situation of white rhinos in private ownership is currently not well recorded, due to loopholes and inadequate reporting requirements. Although imports and exports are well controlled, movements within the country sometimes take place without the necessary documentation, and there is currently no requirement for private owners to report mortalities or births, although animals and their parts and derivatives are considered controlled wildlife products requiring permits under the Controlled Wildlife Products and Trade Act (Act No. 9 of 2008). This has created a situation where there is no accurate information on the white rhinos in private ownership, creating some challenges and weaknesses for Namibia's rhino management programme.

The duties of the private owned rhino manager are to:

1. To collate and maintain a more accurate record of the privately owned white rhinos and white rhino products;
2. To make recommendations on guidelines and regulations to improve control measures for privately owned white rhinos and their products;
3. To work closely with the Permit Office to manage the issuing of permits for white rhino and their products.

## Terms of Reference: Rhino Technical Advisory Group (RTAG)

Chair	Director: Scientific Services
Composition	<p>DSS Deputy Directors or designates            DWNP Director &amp; Deputy Directors or designates            Veterinarians            CCS EEI and CCS Bwabwata Ecological Institute            Rhino Unit Members            Save the Rhino Trust            Custodianship Scheme Representative            Donor funding representative            Individuals and NGOs can be co-opted as need arises as permanent or temporary members</p> <p><i>The group may co-opt on a temporary or permanent basis any other member who can provide relevant expertise (e.g. the MEFT representative on the elephant and rhino security group, and other specialists).</i></p> <p><i>The RTAG shall endeavour to consult as widely as possible with various stakeholders, by convening meetings and forming working groups and sub-committees with stakeholders on a regular basis, or as required.</i></p>
Secretariat	Rhino Unit
Objective	The rhino technical advisory group will exist to provide input into the biological management of rhinos in Namibia. It is tasked with overseeing the implementation of the national management plan, and providing technical support to the Rhino Management Committee.
Meetings	<p>The RTAG shall meet every three months or as the need arises, in which case an extraordinary meeting shall be called.</p> <p>Much of the work of the RTAG can be expected to be carried out using e-mail thereby reducing the need for meetings.</p>

The RTAG will be responsible for:

1. Compiling and submitting reports and recommendations to the Rhino Management Committee on:
  - 1.1. *Annual management and work plans;*
  - 1.2. *Coordinating externally funded rhino projects and programmes;*
  - 1.3. *Population performance and status reports for each population;*
  - 1.4. *Farm inspections;*
  - 1.5. *Monitoring programs;*
  - 1.6. *Ear notching/other marking programs;*
  - 1.7. *Training.*
2. Any other technical matter related to the conservation and management of rhinos.
3. Ensuring the effective coordination of all stakeholders in rhino conservation.
4. Securing the necessary funding for rhino management.

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## Terms of Reference: Rhino Security Committee

Chair	Director: Wildlife and National Parks
Composition	DSS Director & Deputy Directors or designates DWNP Deputy Directors or designates NAMPOL: Protected Resources Division + 1 Representatives from Customs; Prosecutors & Central Intelligence National Rhino Coordinator  <i>Individuals and NGOs can be co-opted as need arises as permanent or temporary members</i>
Secretariat	WPD
Objective	The RSC is the coordinating and advisory committee on rhino security, chaired by the Director: Wildlife and National Parks
Meetings	Bi-Monthly

The RSC will be responsible for:

1. Coordinating all rhino security and law enforcement efforts.
2. Maintaining records of all events, actions and outcomes.
3. Making recommendations on new approaches for rhino security.
4. Coordinating training and capacity building for anti-poaching teams, intelligence and other activities linked to rhino security and protection.
5. Developing annual management and work plans for rhino protection, and securing the budget.
6. Maintaining liaison with all stakeholders involved in rhino protection.
7. Meeting on a bi-monthly basis in order to:
  - 7.1. *Share information related to rhino security, illegal activities, intelligence, law enforcement and prosecutions;*
  - 7.2. *Developing strategies for rhino protection;*
  - 7.3. *Adapting activities and approaches according to lessons learnt.*
8. Any other technical matter related to the security and protection of rhinos.

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## Terms of Reference: Rhino Management Committee

Chair	Deputy Executive Director: Natural Resource Management
Composition	Director and Deputy Directors: Directorate Scientific Services Director and Deputy Directors: Directorate Wildlife and National Parks NAMPOL: Protected Resources Division National Rhino Coordinator  <i>The group may co-opt on a temporary or permanent basis any other person who can provide a significant contribution.</i>
Secretariat	CCS: Rhino Unit, Scientific Services, Ministry of Environment, Forestry and Tourism
Objective	The RMC will exist to advise top management in the Ministry on rhino issues, and to endorse the annual work-plans.
Meetings	The RMC shall meet bi-annually or as the need arises, in which case an extraordinary meeting shall be called.

The RMC will be responsible for:

1. Advising top management in the Ministry on rhino issues.
2. Approving:
  - a. Annual management and work plans
  - b. Placement of animals on custodianship farms
  - c. Rhino projects
  - d. Funding proposals for state rhinos
  - e. Rhino related research
3. Making decisions concerning international matters regarding rhinos.

## Annex 2: Getting the message right

The following graphic is an extract from a presentation by Dr Mike Knight regarding the importance of getting the message right, in order to curb rather than fuel poaching activities.

