



**Zimbabwe Parks and Wildlife
Management Authority**

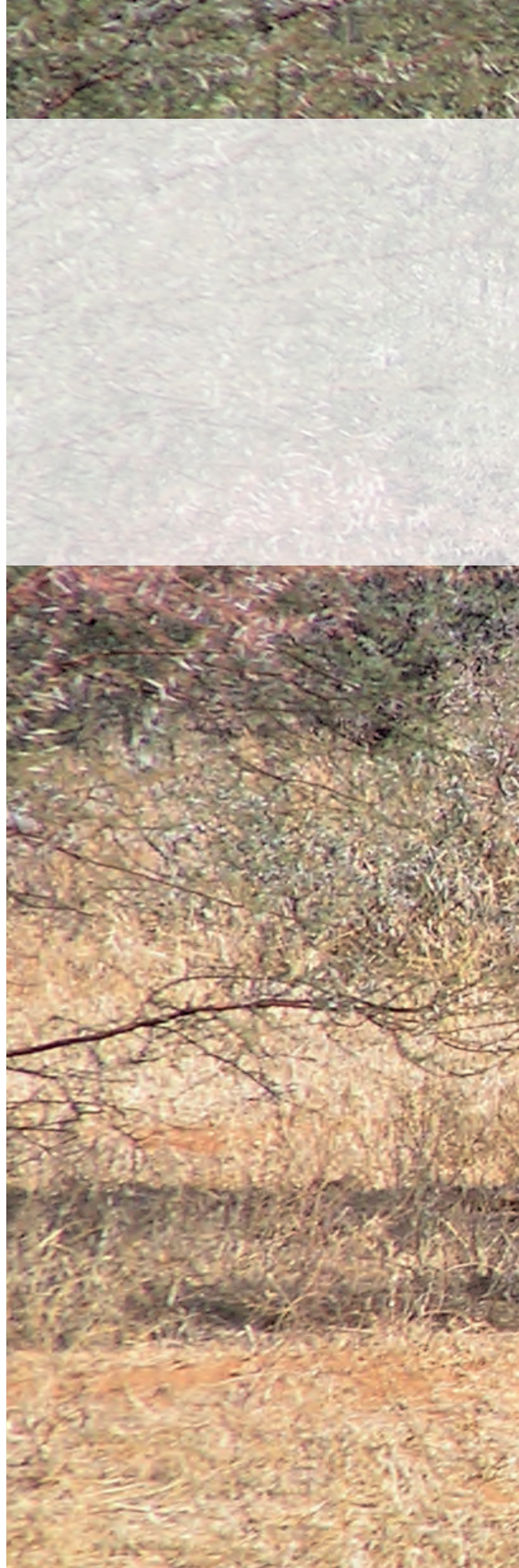
Head Office, National Botanic Gardens
Corner Borrowdale Road and Sandringham Drive
PO Box CY 140
Causeway, Harare
Zimbabwe

Telephone +263-4-792 786-9/707 624-9

Fax +263-4-708 180/793 867/250 658

Email info@zimparks.co.zw

Website www.zimparks.org





Rhino Management Strategy for Zimbabwe

2020–2024







Rhino Management Strategy for Zimbabwe 2020–2024

Foreword by the Minister of Environment, Climate, Tourism and Hospitality Industry	2
Rationale for the Rhino Management Strategy	4
Assessment of progress within the period of the previous Framework	5
Strategy framework 2020–2024	8
Specific considerations within the major components of the Strategy	10
Acknowledgments	16
Appendix 1 Acronyms and definitions	17

Foreword by the Minister of Environment, Climate, Tourism and Hospitality Industry



The Government of Zimbabwe regards rhinoceros as one of the flagship species for wildlife conservation and wildlife-based tourism. It is imperative

that strong measures are put in place for rhino conservation, particularly where they survive in viable populations. These measures concurrently afford necessary levels of security and management for a wide array of other wildlife species.

Our *Rhino Management Strategy for Zimbabwe* reflects the level of our collective effort to conserve this charismatic specie for future generations, ensuring inclusivity of all relevant national and international stakeholders in order to maximise our conservation efforts. This Strategy guides Zimbabwe's engagement in regional efforts, such as genetic reinforcement of founder populations that are restocked into former ranges, and efforts to tackle cross-border poaching and illegal horn-trading syndicates. At an international level, we have to be mindful of our obligations under relevant international conventions and treaties that Zimbabwe is party to, such as the Convention on International Trade in Endangered Species, and Convention on Biological Diversity, which implore us to sustainably manage our wildlife populations.

In the 1970s, the black rhino population was approximately 3,500 and was the largest in the world. However, this population was drastically reduced to about 1,750 in 1989 and to only 300 in 1994 due to poaching. By the end of 2017, Zimbabwe had only 496 black rhinos and 374 white rhinos. The Ministry of Environment, Climate, Tourism and Hospitality Industry, through Parks and Wildlife Management Authority and various stakeholders and law enforcement agencies, has increased anti-poaching collaborations, which has seen rhino populations steadily increasing. The major priority is to reduce the demand for rhino horn within Zimbabwe, whose high value globally drives rhino poaching. This strategy thus aims to outline methodologies and approaches to stop poachers from continuing with this devastating trend.

Our approach is simply to make sure that we recognize and implement sustainable conservation measures to ensure the survival of these species. In line with the *African Rhino Range States' African Rhino Conservation Plan*, I believe that Zimbabwe can reinforce its local efforts towards increasing the rhino populations. This Strategy, which I hereby endorse, is therefore both science-based and performance-based and I urge all stakeholders to commit to its implementation.

A handwritten signature in blue ink, appearing to read 'M. Ndhlovu', written over a horizontal line.

Honourable M. Ndhlovu (MP)

Minister of Environment, Climate, Tourism and Hospitality Industry



Rationale for the Rhino Management Strategy

This Strategy is developed in accordance with the requirement for Zimbabwe, along with all other rhino range states, to periodically review progress in the national rhino conservation effort, whilst also demonstrating constructive engagement in regional rhino conservation issues. Successes and failures need to be evaluated, lessons learned, and conservation priorities revised accordingly, through an adaptive management approach.

To be able to critically review progress, this management approach must be based upon clearly-expressed objectives and indicators of achievement, constituting a logical, integrated Strategy for rhino conservation in Zimbabwe.

This updated five-year Rhino Management Strategy expresses the consensus of relevant Zimbabwean stakeholders, guided by technical advice on best practice (provided by the African Rhino Specialist Group of the International Union for the Conservation of Nature). It was developed at a workshop held for this purpose in Harare in September 2017, under the auspices of the Zimbabwe Parks and Wildlife Management Authority (ZPWMA).

The Strategy can be summarized as reducing the killing of rhinos (stopping poachers from scoring in the rhino conservation battle), improving the breeding of rhinos (scoring our

own gains in the battle), and achieving more awareness, coordination and capacity amongst stakeholders (improving teamwork). These requirements, and the actions that are specified to tackle them, are not fundamentally different to those of the Zimbabwe rhino policy and management framework 2011–16, hence this current version is an update rather than a significant revision.

The other major priority for achieving long-term survival of rhinos is to reduce demand for rhino horn, the high value of which is driving rhino poaching. There is no evidence of any consumption of rhino horn within Zimbabwe and therefore actions to deal with illegal horn markets are mainly in the international realm instead of in the national Strategy. Zimbabwe as a major rhino range state, and in line with the African Rhino Range States' African Rhino Conservation Plan, can add its weight behind efforts to reduce demand for rhino horn being supplied illegally from poached rhinos, including encouraging implicated consumer and transit states to do more to combat horn smuggling and illegal horn trade that drive rhino poaching in range states.

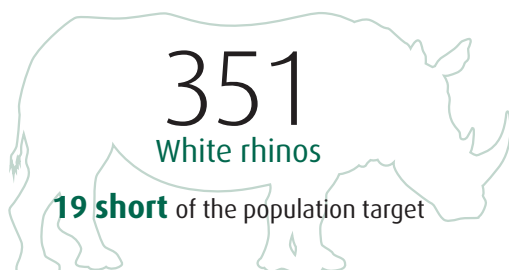
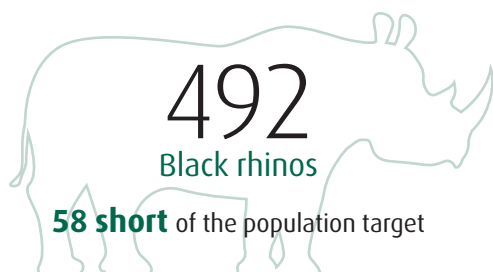
The Zimbabwean rhino conservation Strategy will be implemented through annually developed action plans that allocate stakeholder roles and responsibilities, under the overall coordination of the ZPWMA. The Key Performance Indicators (KPIs) that are specified to monitor progress in the Strategy's implementation will be assessed annually by the primary stakeholders, convened by the Authority. The overall success of this national Strategy will be critically reviewed after five years.

Assessment of progress within the period of the previous Framework

The previous rhino policy and management framework covered the period 2011–2016, during which the following targets aimed:

- To achieve metapopulations of 550 black rhinos and 370 white rhinos in Zimbabwe (based on average net growth of 5% per annum);
- To increase the numbers of black and white rhinos, under sustainable conservation initiatives, to a combined total of 1,000 rhinos within 7 years.

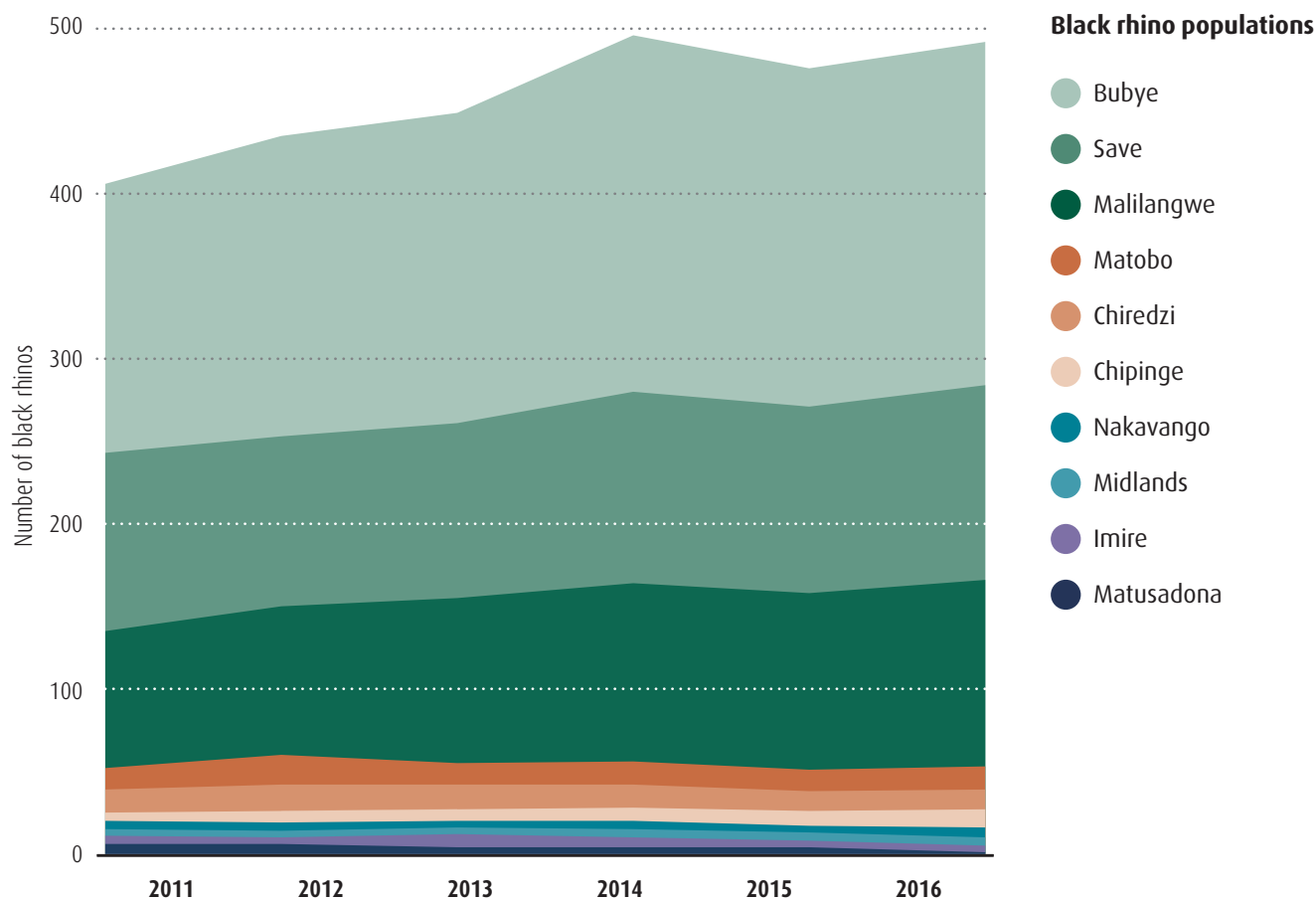
By end-2016, the Zimbabwean rhino status was



Much of the shortfall was due to poaching, which eliminated at least 130 black rhinos and 59 white rhinos during the five-year period. Some poaching attrition is inevitable under current conditions, so was taken into account when specifying an average annual population growth rate of 5% which is lower than the achievable biological growth rate of ~9–10% (with a conducive age/sex structure of the population). The fact that this modest target was still not met on a national basis gives rise to the need to critically examine past law-enforcement effort and, during the next five years, squarely address any shortcomings identified.

At fora such as the workshop to update the national rhino Strategy, stakeholders have invariably expressed major concern over the generally unsatisfactory outcomes of recent criminal cases against rhino poachers, apart from one internationally-publicized case in Masvingo, in which a serial rhino poacher, Tavengwa Machona, was sentenced to 35 years in jail on several charges of rhino poaching. A review of the cases involving 90 alleged rhino poachers were arrested in Zimbabwe over the period 2011–2016 showed that: only 19 were convicted on rhino poaching charges; 39 escaped sentences through acquittals (on the basis of lack of evidence, etc.); 22 cases were still pending (some over a period of several years, with the accused persons on bail although it is uncertain how many met bail conditions); and 12 were awarded bail and then absconded (although two were eventually re-arrested).

The poor rate of sentencing in rhino poaching cases makes it imperative that improving the conviction rate becomes a major focus of the current five-year Strategy. Most of Zimbabwe's rhinos currently survive on private land, but official agencies rather than rhino custodians have the law-enforcement powers and investigative tools necessary to prosecute poachers. Therefore, more professional teamwork is needed between the relevant law-enforcement agencies and the private custodians, to build and prosecute adequately strong cases against poachers who are arrested as they increasingly target the relatively large populations that remain in some conservancies, having already decimated rhinos elsewhere.

Figure 1 Zimbabwe black rhino populations, end 2011 to end 2016

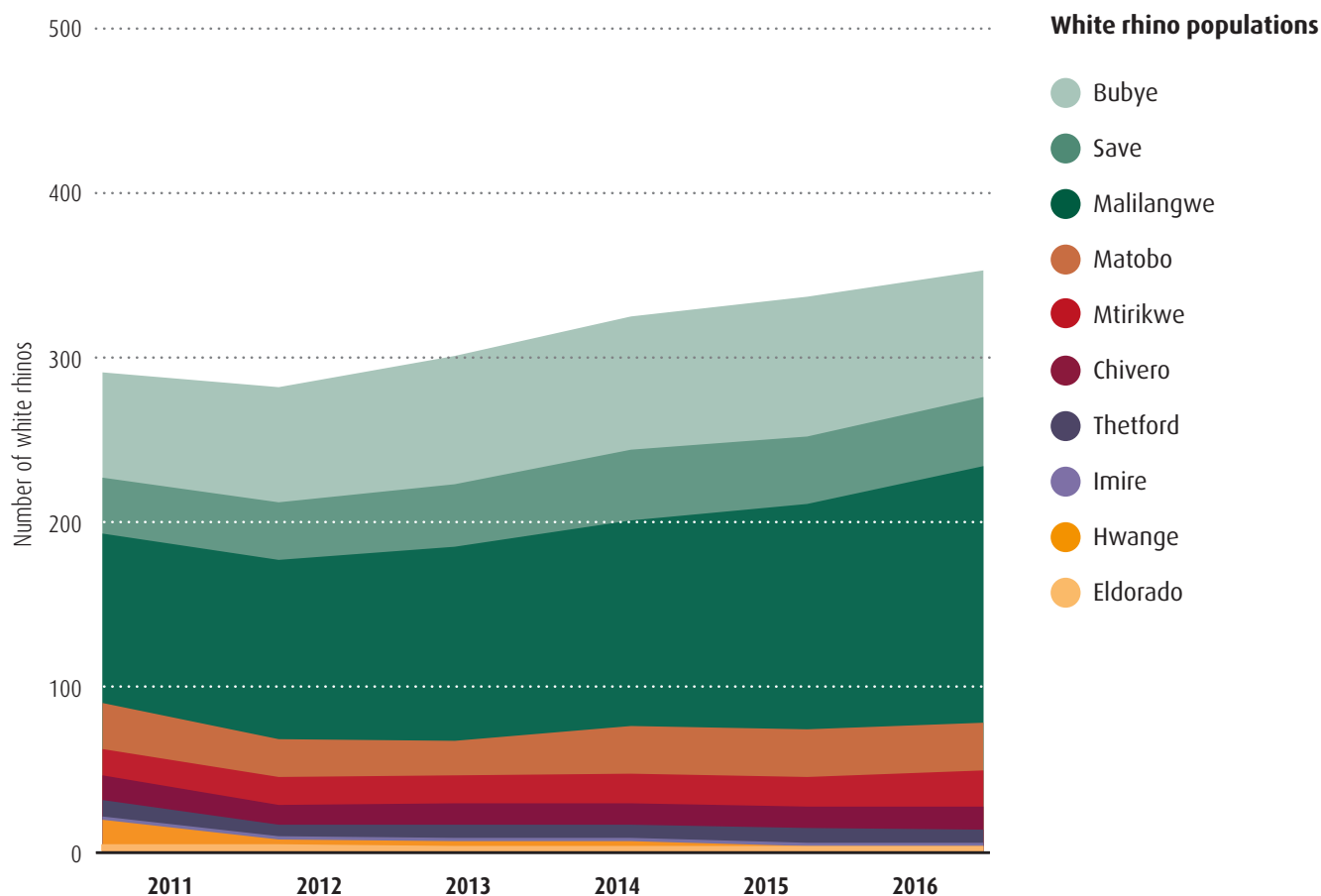
The second major reason for the failure to meet the demographic targets during the 2011–2016 period is insufficient biological management. The majority of the small rhino populations fail to achieve even 5% biological growth (i.e. the rate of population growth that would be achieved without poaching). The failure of a rhino calf to be born because of a poor breeding rate is as much of a setback in terms of attaining the demographic targets as the shooting of a rhino by a poacher. When rhinos are fragmented into very small populations, such as several in Zimbabwe that are the remnants left after heavy poaching, small-population effects such as skewed sex or age ratios and social distortions typically arise. In addition to the reduced rate of reproduction, hidden genetic problems develop. There can be no doubt that some of Zimbabwe’s rhino populations, particularly white rhinos in small reserves, have already reached a significant degree of inbreeding.

In terms of the definitions established by the African Rhino Specialist Group of the International Union for the Conservation of Nature, a ‘Key 1 population’ has more than

100 individuals and can be expected to maintain a healthy level of genetic diversity as well as a rate of reproduction that will generally exceed poaching offtakes.

There are only three such populations of black rhinos in Zimbabwe (*Bubyie, Save, Malilangwe*: see Figure 1), all in conservancies, which together added more than 100 black rhinos and 85 white rhinos to the national population growth during the five-year period, compared to a loss of -28 black rhinos and -33 white rhinos in all other areas that contained rhinos in Zimbabwe. Since 2011, the white rhino population in Hwange NP has declined to extinction, while black rhinos have almost reached extinction in Matusadona NP and in Sinamatella Intensive Protection Zone, and Chiredzi River Conservancy had to be terminated as a black rhino breeding option owing to resettlement pressure. Consolidation of the remaining fragmented populations is clearly a biological management imperative that is long overdue.

Bubyie Valley Conservancy, despite heavy poaching pressure in recent years, remains an example of how successful

Figure 2 Zimbabwe white rhino populations, end 2011 to end 2016

consolidation of rhinos and resources can be in achieving conservation success. Before 2002, this conservancy had no black rhino population at all. The declining populations of Bubiana Conservancy, Gourlays Ranch and Chiredzi River Conservancy were translocated into this more secure area and today Bubye Valley contains the fourth-largest black rhino population in the world. The overall distribution of Zimbabwe's rhinos remained much the same at end 2019 as depicted in Figure 1 and Figure 2.

Zimbabwe contributed ten black rhinos to regional rhino recovery as state-to-state gifts, eight to Botswana in 2015 and two to Zambia in 2018. This aligns with the African Rhino Range States' Conservation Plan that calls for cooperatively managing and expanding rhino populations across the continent. Apart from those translocations, there were no movements of rhinos between state-land areas and private conservancies or vice versa, or any other translocations other than of a few orphaned calves. Therefore, the current status and trends of Zimbabwe's rhino populations in the different

areas during recent years reflect the combination of biological management (to maximize reproduction) and security efforts (to minimize poaching) in each area, rather than any re-allocations of rhinos between these areas.

During the past five years considerable progress was made in Gonarezhou NP, under a new co-management agreement between ZPWMA and the Frankfurt Zoological Society, to create conducive conditions for a black rhino Intensive Protection Zone (IPZ) to be developed and restocked. This is one of the expected outcomes of the current five-year Strategy.

Another desired outcome is that planning should commence for a similar co-managed IPZ to build up a Key 1 white rhino population in an adequately large area of state land with suitable grazing habitat that can be made secure (possibly in Hwange NP). Other areas of Parks' Estate that currently contain white rhinos are too small to build up populations of this size, but could persist as satellite breeding groups provided genetic exchange is ensured soon.

Strategy framework 2020–2024

Long-term vision	Increases in Zimbabwe's black and white rhino populations achieved, to levels of at least 2,000 individuals of each species through meta-population management in suitable habitats throughout the country				
Targets	<ul style="list-style-type: none"> ■ To achieve metapopulations of 730 black rhinos and 520 white rhinos in Zimbabwe by end of 2024 (based on net growth of 5% per annum) ■ To increase the numbers of black and white rhinos, under sustainable conservation initiatives, to a combined total of 1,100 rhinos within 2.5 years 				
Strategic Components	SC 1 Effective protection and law enforcement	SC 2 Biological management and monitoring	SC 3 Socio-economic sustainability	SC 4 Building conservation capacity	SC 5 Coordination, collaboration and programme management
Objectives	Objective 1 Ensuring the effective protection of all sub-populations of both species, if necessary consolidating vulnerable sub-populations into more secure areas if a given population cannot be effectively protected with available resources	Objective 2 Implementing effective biological and ecological management and monitoring of each rhino population and their respective habitats to achieve optimum population growth rates	Objective 3 Facilitating the development of social and economic policies and activities that serve to enhance and incentivize rhino conservation and its sustainability	Objective 4 Ensuring that sufficient and appropriately trained human resources, equipment and financing are mobilized, available, and deployed efficiently	Objective 5 Ensuring effective coordination and collaboration nationally, regionally and internationally to achieve these strategic objectives, including accountability monitoring and evaluation
Outcomes	Outcome 1 Effective management actions, security and law-enforcement effectively implemented to keep poaching losses below reproductive gains in all rhino areas	Outcome 2 Average net growth rates of at least 5% per annum for all key and important rhino populations and positive growth rates proven for smaller sub-populations	Outcome 3 Sustainable financing of rhino conservation through income generation and conservation incentive schemes and partnerships for all rhino areas, reinforced by education and awareness schemes	Outcome 4 Sufficient and effective staff in place, equipped, trained, indemnified and motivated in each rhino area, and necessary capacities in place to manage intelligence and rhino monitoring systems	Outcome 5 Appropriate coordination structures for rhino metapopulation management functional including national strategic planning, regional collaboration and information flow as needs indicate
Specific Outputs 2020–2024	Output 1.1 Action plans deriving from ICCWC Forest & Wildlife Crime Toolkit process implemented and operational, including functional Wildlife Crime Task Force(s) that are meshed with private sector support mechanisms Output 1.2 DNA samples from all rhino material in the country submitted to RhODIS	Output 2.1 New population of black rhinos established in Gonarezhou NP with at least 20 founders Output 2.2 Metapopulation management plan in place, operational and achieving its targets for white rhinos, including identification of site, and necessary preconditions in place, for the establishment of a potential Key population of white rhinos	Output 3.1 Sustainable financing agreements in place for at least two rhino areas which are or have the potential to be key or important rhino areas	Output 4.1 Top five rhino criminals operational in Zimbabwe identified, arrested and sentenced through a Task Force approach (see Output 1.1) that puts emphasis on developing long-term law-enforcement capacity and teamwork to deal with rhino crimes	Output 5.1 See Output 1.1
Key activities	Activity 1.1 Reviewing and updating law-enforcement issues that are identified as requiring attention through the ICCWC Forest and Wildlife Crime Toolkit process	Activity 2.1 Maintaining rhino population monitoring for all populations on the basis of individual recognition of their rhinos	Activity 3.1 Facilitating sales of privately purchased rhinos from areas that require a return on investment and income to meet conservation costs, especially if over-stocked	Activity 4.1 Attending to indemnification and, if necessary, attestation of privately employed conservancy staff to engage in firefights with poachers	Activity 5.1 Participating in business of relevant regional bodies (IUCN-AIRSG, SADC-RMG, and collaborative processes arising from SADC-LEAP and/or Interpol)

KPIs Performance Indicators	<p>Activity 1.2 Maintaining anti-poaching units in IPZs and other rhino areas with adequately trained, equipped and indemnified staff, where necessary consolidating remnant populations to concentrate manpower and other resources to specified levels</p> <p>Activity 1.3 Improving investigation and prosecution of crimes to the level that most poachers arrested are appropriately sentenced, with oversight mechanism(s) to achieve greater accountability for the outcomes of court cases</p>	<p>Activity 2.2 Assessing inbreeding levels and transferring at least one unrelated rhino into each sub-population every generation, provided that this sub-population is showing positive growth</p> <p>Activity 2.3 Restocking black rhinos into a secure IPZ in Gonarezhou NP and planning an equivalent option for the development of a Key white rhino population under a sustainably funded co-management arrangement for another area of suitable habitat and size</p>	<p>Activity 3.2 Enhancing incentives for rhino conservation through public-private-community partnerships where feasible</p> <p>Activity 3.3 Expanding environmental education programmes (EEPs) for schools/communities surrounding key rhino populations</p>	<p>Activity 4.2 Keeping appropriately trained staff in rhino areas in the longer term (minimize loss of capacity through staff transfers between rhino and non-rhino areas, if not strictly necessary)</p> <p>Activity 4.3 Establishing and deploying a baseline level of anti-poaching kit/equipment within IPZs</p> <p>Activity 5.3 Facilitating regional rhino restocking projects by adding limited numbers of Zimbabwean black rhinos for genetic diversity when appropriate (as recommended by SADC-RMG)</p>	<p>Activity 5.2 Convening a national rhino conservation coordinating committee to meet at least annually to review progress, as well as three regional rhino conservation coordinating committees to meet as substantive issues arise</p>
	<p>KPI 1.1 Percentage of total year-end rhino population in each area poached or missing per annum</p> <p>KPI 1.2 Total poaching rate (including wounded/snared rhinos) as percentage of year-end population in each area</p> <p>KPI 1.3 Incursions per 100km² during the year in each area</p> <p>KPI 1.4 Percentage of incursions intercepted whilst underway in each area</p> <p>KPI 1.5 Rhino/elephant poachers arrested or killed per incursion in each area</p> <p>KPI 1.6 Firearms recovered per incursion in each area</p> <p>KPI 1.7 Percentage of arrests resulting in sentences (even if less than mandatory)</p> <p>KPI 1.8 Percentage of arrests resulting in mandatory sentences</p> <p>KPI 1.9 Percentage of arrested rhino/elephant poachers awarded bail</p>	<p>KPI 2.1 Net population growth rates of at least 5% per annum realized in at least 3 Key or Important populations of each species</p> <p>KPI 2.2 Positive growth rates proven for all other sub-populations through monitoring</p> <p>KPI 2.3 Net annual rhino population growth (%) during the year in each area, corrected for translocations in/out</p> <p>KPI 2.4 Average net annual rhino population growth (%) during the past 5 years (rolling mean) in each area, corrected for translocations in/out</p> <p>KPI 2.5 Underlying (biological) annual growth rate (%) during the year in each area</p> <p>KPI 2.6 Non-poaching mortality rate (%) during the year in each area</p> <p>KPI 2.7 Missing rate as percentage of year-end population in each area</p> <p>KPI 2.8 Median age of carcasses found in the year in each area (effectiveness of carcass detection)</p>	<p>KPI 3.1 Percentage of incursions reported by or reacted to by local community in/around each area</p>	<p>KPI 4.1 Effective manpower density/km² of rhino range in each area (men must be appropriately trained, equipped and legally indemnified)</p> <p>KPI 4.2 Patrol days per 100km² in the year in each area</p> <p>KPI 4.3 Vehicle months per 100km² in the year in each area</p> <p>KPI 4.4 Percentage effectiveness of radio system (coverage x functional time) in each area</p> <p>KPI 4.5 Rhino ID records/population size (averaged from start and end) in each area</p>	<p>KPI 5.1 Annual rhino planning meeting held, KPIs for all areas reviewed, with annual action plan produced by 31 March and ratified by 1 May each year</p> <p>KPI 5.2 Proportion of relevant regional meetings at which Zimbabwe had official representation during the year</p>

Specific considerations within the major components of the Strategy

The five primary components of the national rhino Strategy remain unchanged from the previous Framework. Within each component, some current considerations that require emphasis are as follows.

Component 1 Effective protection and law enforcement

Zimbabwe's rhino Intensive Protection Zones (IPZs) were originally defined in the 1993 *Black Rhino Conservation Project Emergency Plan* with the intention of **concentrating manpower and equipment for anti-poaching** in those areas, as is suggested by that designation. In the planning for the four state-land IPZs (Matobo, Chipinge, Sinamatella and Matusadona), a guideline was that the number of actively patrolling men (i.e. excluding staff on leave or off sick) in each area should be equivalent to the square root of the area. This would mean that, for example, an IPZ of 1,000 km² should have 32 men on active duty, with sufficient vehicles, radios and other patrol gear. However, these levels of protection are not in place in the IPZs and therefore their designation requires review. The discontinuation of inadequately protected IPZs would be in conformity with the biological management imperative that non-viable rhino populations should be consolidated.

For private rhino custodians, the problem of maintaining sufficient manpower densities also exists but an even greater concern to them is that when conservancy units apprehend rhino poachers, these cases are often dealt with very weakly by the judicial system. The frequent awarding of bail or the dropping of charges against poachers is demoralizing for anti-poaching staff who have to make considerable effort and incur risks to apprehend them, and the demonstration of lenient outcomes from the prosecution of high-reward rhino crimes tempts staff to become poaching accomplices.

The application of wildlife law must be reviewed to ensure, on the one hand, that it is aligned with citizens' rights entrenched in the national constitution, but on the other

hand that it closes loopholes which currently result in bail being regularly awarded to rhino poachers or sentences being imposed that are below mandatory levels. The awarding of bail by the High Court is never intended to be automatic but has tended to become so, partly through insufficient communication between this Court and law-enforcement officials at district level. The High Court needs to be advised that alleged rhino poachers awarded bail are not only a flight risk because of the serious sentences that should apply, but are also often compelled to return quickly to rhino poaching in order to generate cash needed to pay legal fees and bribes. These are issues that do not necessarily require changes to legislation; rather, they require stricter policies to be developed and adopted within the High Court regarding rhino crimes (e.g. that if bail is awarded, it should equate to the gazetted compensation value of a rhino).

To add greater professionalism to investigations and prosecutions, opportunities should be taken for the hearing of **expert evidence** in aggravation of sentence after convictions or when opposing bail, and the law-enforcement efforts need to include more forensics capacity for scene-of-crime investigations. At present, the **use of forensic tools in rhino crime investigations** is at a much lower level in Zimbabwe than in South Africa or Namibia. One of the obvious requirements to improve this is for Zimbabwe to contribute more DNA samples to the RhODIS DNA profiling and database system, based in South Africa, to enable samples of horns seized from smugglers to be matched to a DNA reference collection in order to confirm their origin. Other forensic samples, such as contact DNA on items left by poachers, can and should be submitted via Interpol for analysis by Forensic Science laboratory facilities available to SADC countries.

Commitment to this kind of regional collaboration is expressed by Zimbabwe and its neighbouring states in the **SADC Law Enforcement and Anti-Poaching (LEAP) Strategy, 2016–2021**. The LEAP Strategy recognizes the following issues as being broadly relevant to wildlife crime in southern Africa, needing SADC-level actions as well as national actions to improve the overall situation.

“Most countries have good legislation with poor implementation. Legislation needs to include mandatory minimum penalties for poaching. This removes the discretion of the courts to give light penalties. Effective magistrates and prosecutors, not the legislation, determine success. Targeted actions should ensure the judiciary is knowledgeable of the seriousness of wildlife offences and the appropriate sentencing guidelines. Effective operationalization and implementation of relevant laws and regulations is crucial and appropriate penalties, prosecution and sentencing must be in place. Penalties prescribed should be appropriate and sufficient to deter re-offending. Wildlife legislation must adequately cover all key issues of wildlife crime and trafficking including the classification of key offences as serious crime. Wildlife crime enforcement needs to be harmonized with other legislation and international wildlife trafficking enforcement mechanisms should be domesticated.

“Wildlife crime is often not considered ‘serious crime’ and police pursue other crimes more vigorously. Magistrates need to be well versed in the relevant legislation, and understand the effect of wildlife crime on the local and national economy. The monitoring and tracking of court cases can motivate judges and maintain momentum in court proceedings.

“The purpose of the LEAP strategy is to provide a framework for country and regional cooperation, together with international engagement on natural resource management and wildlife-related law enforcement and anti-poaching issues.

*“To this end all SADC Member States are actively encouraged to participate in the government-led application and use of the UNODC ICCWC Wildlife and Forest Crime Analytic Toolkit. Moreover, the Member States are encouraged to establish **Task Forces** at the national level to coordinate wildlife-related law enforcement and anti-poaching issues.”*

*(See under **Component 5** for more on this.)*

Commitment to this kind of regional collaboration is further expressed by Zimbabwe and its neighbouring states in a forum for Defence and Security Chiefs on Anti-poaching, which brings these countries together to jointly tackle wildlife poaching

Given the high proportion of Zimbabwe’s rhinos conserved on private land, it is important that these custodians are assisted by government agencies, to the fullest extent possible under Zimbabwean laws, with issues such as securing semi-automatic weapons and **establishing streamlined procedures for private rhino security staff** to be deemed to be operating under the authority of indemnified officers. Security vetting of such staff is desirable before they are engaged, and periodic polygraph testing of them should be undertaken if possible.

Component 2 Biological management and monitoring

The term ‘metapopulation’, as referred within this Strategy, must be clearly understood to refer not simply to a set of separate rhino breeding groups within a region. Instead, it is defined by the fact that there is **interchange of genetic material between subpopulations**, i.e. breeding animals (or, potentially, their semen, ova or embryos) are transferred between geographically separated groups so that they amount to a single population in genetic terms. The reason for maintaining a metapopulation is to avoid the loss (through inbreeding and genetic drift) of genetic diversity that is essential for the long-term evolutionary potential of rhino species, which means the ability to adapt to changing environments and challenges such as disease outbreaks.

A specific **metapopulation management plan for white rhinos in state-land areas** is particularly urgent since they have not been managed as a metapopulation to date, despite being fragmented into groups with small founder numbers, and are therefore prone to inbreeding and random effects such as sex skews. It is important to start **monitoring the genetic health of all rhino populations** (both black and white) in Zimbabwe as part of basic biological management, and this can be done concurrently with genotype profiling as part of RhODIS’ forensic work.



Every re-introduction process should follow ‘best practice’ as recommended by the IUCN SSC African Rhino Specialist Group, including the following guidelines:

- Each rhino re-introduction project should involve at least 20 rhinos, that are, as far as is known, unrelated and able to breed (effective founders).
- Founder breeding groups for introductions should, where possible, and taking all other potential conflicting factors into account (e.g. ecological, disease, behavioural, adaptation), be sourced from different original genetic sources. Thus a founder group may be sourced from more than one population and sometimes more than one country/management authority.
- Rhinos should be introduced into an area that has sufficient rhino carrying capacity to allow rapid population growth (which minimizes loss of genetic diversity). For this reason it is recommended that new areas should not be stocked at higher than half of estimated maximum productivity carrying capacity (MPCC). MPCC is usually estimated as 75–80% of estimated ecological carrying capacity (ECC). Therefore, if the ECC for a new reserve is 50 rhinos then no more than 20 rhinos should ideally be introduced to allow sufficient room for population growth before expensive future removals will be required to maintain population productivity.
- Ideally, each new population should be created in an area that has an estimated ECC of at least 50, and preferably more than 100 animals. If a carrying capacity of 100 cannot be achieved, then the less desirable alternative is to maintain at least one such population within a national or regional metapopulation of this size, whilst actively managing smaller populations as part of a metapopulation.
- The carrying capacity of a recipient area is only one criterion that needs to be considered when deciding where to translocate rhinos to. Rhinos should not be translocated to any area (no matter what its ECC is) if sufficient security is not yet in place. Less-secure, higher-risk areas should only be tested if available secure space to set up new populations becomes limited, and there is a clear need to remove animals from existing populations showing signs of density-dependent reductions in performance.

- In smaller populations, surplus rhino should be removed to limit/avoid inbreeding between closely related individuals (i.e. prevent fathers mating with daughters).
- One new breeding individual per generation (approximately every 10–15 years) should be introduced into each smaller population from a different donor area to compensate for inbreeding, genetic drift, etc.
- Rapid rates of population growth must be quickly achieved and maintained (particularly in the smaller populations) as rapid population growth minimizes loss of genetic heterozygosity (in addition to enabling conservation target numbers to be reached sooner and creating a bigger buffer against the negative effects of poaching).

A population growth rate of at least 5% per annum (as a rolling five-year average) will be expected for each population, failing which the reasons for inadequate breeding must be assessed, with relevant independent professional input sought in contentious situations. If this professional assessment identifies feasible measures to overcome breeding constraints, such as translocating rhinos elsewhere, then such measures should be firmly implemented in the interests of the species.

The population growth rate will inevitably fall as a population approaches the ecological carrying capacity of the area that it occupies. Therefore the objective of increasing rhino numbers at the maximum growth rate can only be achieved through **pro-active management** that keeps the population density consistently below ecological carrying capacity. With rhinos, the build-up of a population density close to carrying capacity is typically reflected in an increased level of infighting or other aberrant social interactions, as well as higher ages of first calving and longer inter-calving intervals. However, by the time these indications are detected, the demographic consequences will already be negative.

The strategic perspective on captive or **semi-captive breeding of black rhinos** remains unchanged from previous national rhino strategies; net breeding rates in such facilities have generally been low, both locally and internationally, and where breeding has been achieved it has then proven difficult to integrate human-habituated offspring into wild

populations. Because this approach has not proven to be cost-effective, it should not be given precedence over any opportunities for free-range breeding within Zimbabwe that could be developed with the same breeding stock and resources.

Genetic differences between populations require consideration. Although they are all within the same sub-species (*Diceros bicornis minor*), Zimbabwe's black rhinos have been derived from two different sources: most originated from the Zambezi Valley in northern Zimbabwe (designated as the 'SN haplogroup'), but some were also imported from South Africa ('SE haplogroup') to establish the Malilangwe population. Recent genetic research indicates that these haplogroups are very similar, with the primary difference being that the SE rhinos are genetically less diverse than the SN population as they were reduced to a much lower number historically (about 110 in Kwazulu-Natal in 1930).

Mixing of SN black rhinos with SE rhinos is appropriate to maximize founder genetic diversity in South Africa, Botswana, Zambia and Malawi (and potentially some other states such as Mozambique in future), as well as for the restocking project in Gonarezhou National Park. However, as long as there is no compelling reason to do so and if there are other management options available, SE rhinos should not, as a precautionary issue pending further analyses, be introduced into the two Key 1 populations of SN rhinos in the Zimbabwean Lowveld.

Since demographic targets remain as crucial for the current national rhino Strategy as they have for previous strategies, it is essential that all rhino populations are assessed annually using the same set of **standardized Key Performance Indicators**, and are managed adaptively and objectively for maximum growth.

A policy of **monitoring all rhinos** through individual recognition will be maintained under this Strategy. This will require ear-notching of rhinos, along with the use of tracking devices, and specialized teams will be mandated to undertake the monitoring of the larger populations in ways that achieve reliable records while minimizing the disturbance of rhinos. Dehorning of rhinos does not constitute a stand-alone response to poaching pressures but may be carried out in conjunction with other measures if resources permit.

Component 3

Socio-economic sustainability

Rhino conservation under poaching pressure in various countries has conventionally involved a sanctuary approach (preserving small populations in fortified, state-managed enclaves with high dependency on donor funds). However, the diversity of **commercial and community-based approaches** to wildlife production that has arisen in southern Africa creates the challenge and the opportunity to integrate rhinos more widely and more sustainably within these production systems.

Stakeholders must be encouraged to **explore innovative, incentives-based funding mechanisms** that develop economic sustainability for rhino breeding projects. The opportunities for commercial and community-based schemes (such as Public-Private-Community Partnerships) for rhino management must be reinforced by external funding support, but along business-like lines rather than as unleveraged grants. A recent international trend in the funding of rhino conservation is performance-based financing that allocates funding according to rhino breeding success. The demographic Key Performance Indicators in the 2020–2024 Strategy have been aligned with this funding opportunity.

A grey area under previous strategies, requiring ongoing attention under the current Strategy, is the question of the **asset rights of those who invest in rhinos** (e.g. white rhinos purchased from South Africa, or the black rhinos imported to Malilangwe at considerable expense). Such investors may seek to trade some of these animals in order to recover some investment and to help meet very onerous conservation costs. While Zimbabwe upholds the same conservation philosophy as South Africa and Namibia, entailing a sustainable-use approach, this approach in Zimbabwe does not currently extend as far as the economically important trading rights for wildlife (including rhinos) that exist in those two countries. This anomalous situation requires clarification at a policy level rather than at a legislative level, since basic Zimbabwean wildlife law is sufficiently conducive to private or community investment in wildlife.

Benefit-sharing arrangements to encourage communities to support the cause of rhino conservation, either within their areas or more realistically in adjacent protected areas and conservancies, can include the allocation of economic incentives derived from the performance-based financing mechanisms referred to above. This kind of arrangement is in place adjacent to two large Lowveld conservancies, where communities receive inputs to their schools in proportion to the annual rhino population growth in each conservancy. It has been found that **community awareness of rhino conservation** can be effectively stimulated by these schools programmes, especially at primary schools where the largest (and most impressionable) sector of the population can be accessed.

To create additional community buy-in, local employment must be maximized within the staff structures that are established for wildlife-based tourism, monitoring and security of the rhinos, and other community benefits must also be generated.

Component 4

Building conservation capacity

As outlined under Component 2, primary steps in identifying and addressing capacity issues that need attention in Zimbabwe's law-enforcement effort must be extracted from the SADC-LEAP Strategy, 2016–2021. One of the most important of these steps is the application of the **UNODC ICCWC Wildlife and Forest Crime Analytic Toolkit**, which is specifically designed to achieve self-critical, government-led assessment of capacity, legislation and operational constraints. Capacity issues would be more comprehensively identified through this systematic process than through the more wide-ranging workshop of stakeholders that updated the national rhino Strategy.

Component 5

Coordination, collaboration and programme management

This Strategy must be a ‘living document’ rather than one that is drafted merely for occasional reference. Its **main components must be reviewed each year at stakeholders’ planning meetings** convened by ZPWMA. Guided by this Strategy and the annual review of its Key Performance Indicators and intended outcomes, **annual rhino action plans** will be produced.

Regional meetings of rhino stakeholders may also be held, but because they entail a lot of travel for participants they will only be called to discuss substantive issues and, as far as possible, will be dovetailed with other ZPWMA-related meetings (such as those required for the implementation of the national elephant conservation strategy). For Bulyebe Valley Conservancy, which straddles two ZPWMA management regions, meetings of the Southern Region shall be the primary ones to attend, since this region includes the other large conservancies that deal with similar rhino conservation issues.

Every effort will be made to ensure **that permits required for agreed annual rhino management interventions** are issued by 1 May of each year, in order that NGOs and private custodians involved in these expensive and logistically complicated operations are able to plan them in time for the cool, dry winter months.

To maintain continuity and technical capacity, the appointment of the **national rhino co-ordinator(s)** for coordination and representation within national and regional structures should be on a reasonably consistent basis, rather than changing this position too often. **Relevant regional bodies** at which Zimbabwe will be represented will include the IUCN SSC African Rhino Specialist Group and the SADC Rhino Management Group.

As has been stressed above, Zimbabwe will also engage in the SADC-LEAP regional law-enforcement process through the establishment of a **National Wildlife Crime Prevention Task Force** in Zimbabwe. This coordination process will integrate the roles of the private sector, while not diluting the primary law-enforcement mandate of the relevant state agencies. Not only do conservancy staff play a direct role in protecting rhinos in the field, but several NGOs also play supportive roles in facilitating investigations and prosecutions through logistical and technical support. The integration of these roles within a task-force approach is especially important for the Lowveld region that contained 86% of Zimbabwe’s rhinos by end-2016.

In view of the desirability of contributing additional genetic diversity of Zimbabwean black rhinos to well-planned **restocking projects in the southern African region**, Zimbabwe will consider allocating small numbers of rhinos as additional founder stock for such projects including those endorsed by the SADC Rhino Management Group.

Export of any rhinos to captive or semi-captive facilities will be only to facilities that are regionally or internationally coordinated ones that ensure metapopulation management amongst a number of such facilities including those endorsed by the IUCN African Rhino Specialist Group. Linkages with these international programmes and their member facilities should result in a flow of conservation funding and other support back to the areas from which rhinos are sourced.

The current Strategy not only maintains a concise set of Key Performance Indicators that must be derived annually for each rhino area, but also identifies some specific Outcomes that are intended to be achieved within the period January 2020 to December 2024.

Acknowledgments

A wide range of Zimbabwean stakeholders gave up time to participate in the workshop to update this Strategy.

The workshop and the production of this document were funded by the Bama Green Conservation Fund and International Rhino Foundation via the Lowveld Rhino Trust.

The workshop was facilitated by Dr David Cumming, with technical support from Dr Richard Emslie and Dr Rob Brett of the IUCN SSC African Rhino Specialist Group. Dr Brett's input was agreed by Fauna and Flora International and partly funded by the Rhino Impact Investment Project of the Zoological Society of London.

All images courtesy Lowveld Rhino Trust.



Appendix 1 Acronyms and definitions

AfRSG	African Rhino Specialist Group (of IUCN Species Survival Commission)
ECC	Ecological Carrying Capacity (at which natural deaths balance births)
EEP	Environmental Education Programme
Haplogroup	Rhinos whose DNA has remained very similar over thousands of years
ICCWC	International Consortium on Combating Wildlife Crime
Important population	Population of 20–50 rhinos (has sub-definitions)
IPZ	Intensive Protection Zone
IUCN	International Union for the Conservation of Nature
Key population	Population of more than 50 rhinos (has sub-definitions)
Key 1 population	Population rated by AfRSG as being of continental significance, for either conserving more than 50% of a subspecies or having an increasing or stable population of greater than 100 rhinos
KPI	Key Performance Indicator
LEAP	SADC Law Enforcement and Anti-Poaching Strategy
Metapopulation	Two or more sub-populations between which gene flow is ensured
MPC	Maximum production carrying capacity (for best population growth)
NP	National Park
RhODIS	Rhino DNA Index System (for forensically matching rhino samples)
RMG	Rhino Management Group (of SADC)
SADC	Southern African Development Community
SSC	Species Survival Commission (of IUCN)
Sub-population	A group of rhinos that is managed as part of a metapopulation
UNODC	United Nations Office on Drugs and Crime
ZPWMA	Zimbabwe Parks and Wildlife Management Authority

Definitions and terminology are detailed further in:

Emslie RH, Amin R and Kock R (editors) (2009). *Guidelines for the in situ Re-introduction and Translocation of African and Asian Rhinoceros*. Gland, Switzerland: IUCN. vi+115p

Strategy framework 2020–2024

Long-term vision	Increases in Zimbabwe’s black and white rhino populations achieved, to levels of at least 2,000 individuals of each species through meta-population management in suitable habitats throughout the country				
Targets	<div>■ To achieve metapopulations of 730 black rhinos and 520 white rhinos in Zimbabwe by end of 2024 (based on net growth of 5% per annum)</div> <div>■ To increase the numbers of black and white rhinos, under sustainable conservation initiatives, to a combined total of 1,100 rhinos within 2.5 years</div>				
Strategic Components	SC 1 Effective protection and law enforcement	SC 2 Biological management and monitoring	SC 3 Socio-economic sustainability	SC 4 Building conservation capacity	SC 5 Coordination, collaboration and programme management
Objectives	Objective 1 Ensuring the effective protection of all sub-populations of both species, if necessary consolidating vulnerable sub-populations into more secure areas if a given population cannot be effectively protected with available resources	Objective 2 Implementing effective biological and ecological management and monitoring of each rhino population and their respective habitats to achieve optimum population growth rates	Objective 3 Facilitating the development of social and economic policies and activities that serve to enhance and incentivize rhino conservation and its sustainability	Objective 4 Ensuring that sufficient and appropriately trained human resources, equipment and financing are mobilized, available, and deployed efficiently	Objective 5 Ensuring effective coordination and collaboration nationally, regionally and internationally to achieve these strategic objectives, including accountability monitoring and evaluation
Outputs	Output 1 Effective management actions, security and law-enforcement effectively implemented to keep poaching losses below reproductive gains in all rhino areas	Output 2 Average net growth rates of at least 5% per annum for all Key and Important rhino populations and positive growth rates proven for smaller sub-populations	Output 3 Sustainable financing of rhino conservation through income generation and conservation incentive schemes and partnerships for all rhino areas, reinforced by education and awareness schemes	Output 4 Sufficient and effective staff in place, equipped, trained, indemnified and motivated in each rhino area, and necessary capacities in place to manage intelligence and rhino monitoring systems	Output 5 Appropriate coordination structures for rhino metapopulation management functional including national strategic planning, regional collaboration and information flow as needs indicate
Specific Outcomes 2020–2024	Outcome 1.1 Action plans deriving from ICCWC Forest & Wildlife Crime Toolkit process implemented and operational, including functional Wildlife Crime Task Force(s) that are meshed with private sector support mechanisms Outcome 1.2 DNA samples from all rhino material in the country submitted to RhODIS	Outcome 2.1 New population of black rhinos established in Gonarezhou NP with at least 20 founders Outcome 2.2 Metapopulation management plan in place, operational and achieving its targets for white rhinos, including identification of site, and necessary preconditions in place, for the establishment of a potential Key population of white rhinos	Outcome 3.1 Sustainable financing agreements in place for at least two rhino areas which are or have the potential to be key or important rhino areas	Outcome 4.1 Top five rhino criminals operational in Zimbabwe identified, arrested and sentenced through a Task Force approach (see Outcome 1.1) that puts emphasis on developing long-term law-enforcement capacity and teamwork to deal with rhino crimes	Outcome 5.1 See Outcome 1.1
Key activities	Activity 1.1 Reviewing and updating law-enforcement issues that are identified as requiring attention through the ICCWC Forest and Wildlife Crime Toolkit process Activity 1.2 Maintaining anti-poaching units in IPZs and other rhino areas with adequately trained, equipped and indemnified staff, where necessary consolidating remnant populations to concentrate manpower and other resources to specified levels Activity 1.3 Improving investigation and prosecution of crimes to the level that most poachers arrested are appropriately sentenced, with oversight mechanism(s) to achieve greater accountability for the outcomes of court cases	Activity 2.1 Maintaining rhino population monitoring for all populations on the basis of individual recognition of their rhinos Activity 2.2 Assessing inbreeding levels and transferring at least one unrelated rhino into each sub-population every generation, provided that this sub-population is showing positive growth Activity 2.3 Restocking black rhinos into a secure IPZ in Gonarezhou NP and planning an equivalent option for the development of a Key white rhino population under a sustainably funded co-management arrangement for another area of suitable habitat and size	Activity 3.1 Facilitating sales of privately purchased rhinos from areas that require a return on investment and income to meet conservation costs, especially if over-stocked Activity 3.2 Enhancing incentives for rhino conservation through public-private-community partnerships where feasible Activity 3.3 Expanding environmental education programmes (EEPs) for schools/communities surrounding key rhino populations	Activity 4.1 Attending to indemnification and, if necessary, attestation of privately employed conservancy staff to engage in firefights with poachers Activity 4.2 Keeping appropriately trained staff in rhino areas in the longer term (minimize loss of capacity through staff transfers between rhino and non-rhino areas, if not strictly necessary) Activity 4.3 Establishing and deploying a baseline level of anti-poaching kit/equipment within IPZs	Activity 5.1 Participating in business of relevant regional bodies (IUCN-AfRSG, SADC-RMG, and collaborative processes arising from SADC-LEAP and/or Interpol) Activity 5.2 Convening a national rhino conservation coordinating committee to meet at least annually to review progress, as well as three regional rhino conservation coordinating committees to meet as substantive issues arise Activity 5.3 Facilitating regional rhino restocking projects by adding limited numbers of Zimbabwean black rhinos for genetic diversity when appropriate (as recommended by SADC-RMG)
KPIs Performance Indicators	KPI 1.1 Percentage of total year-end rhino population in each area poached or missing per annum KPI 1.2 Total poaching rate (including wounded/snared rhinos) as percentage of year-end population in each area KPI 1.3 Incursions per 100km² during the year in each area KPI 1.4 Percentage of incursions intercepted whilst underway in each area KPI 1.5 Rhino/elephant poachers arrested or killed per incursion in each area KPI 1.6 Firearms recovered per incursion in each area KPI 1.7 Percentage of arrests resulting in sentences (even if less than mandatory) KPI 1.8 Percentage of arrests resulting in mandatory sentences KPI 1.9 Percentage of arrested rhino/elephant poachers awarded bail	KPI 2.1 Net population growth rates of at least 5% per annum realized in at least 3 Key or Important populations of each species KPI 2.2 Positive growth rates proven for all other sub-populations through monitoring KPI 2.3 Net annual rhino population growth (%) during the year in each area, corrected for translocations in/out KPI 2.4 Average net annual rhino population growth (%) during the past 5 years (rolling mean) in each area, corrected for translocations in/out KPI 2.5 Underlying (biological) annual growth rate (%) during the year in each area KPI 2.6 Non-poaching mortality rate (%) during the year in each area KPI 2.7 Missing rate as percentage of year-end population in each area KPI 2.8 Median age of carcasses found in the year in each area (effectiveness of carcass detection)	KPI 3.1 Percentage of incursions reported by or reacted to by local community in/around each area	KPI 4.1 Effective manpower density/ km² of rhino range in each area (men must be appropriately trained, equipped and legally indemnified) KPI 4.2 Patrol days per 100km² in the year in each area KPI 4.3 Vehicle months per 100km² in the year in each area KPI 4.4 Percentage effectiveness of radio system (coverage x functional time) in each area KPI 4.5 Rhino ID records/population size (averaged from start and end) in each area	KPI 5.1 Annual rhino planning meeting held, KPIs for all areas reviewed, with annual action plan produced by 31 March and ratified by 1 May each year KPI 5.2 Proportion of relevant regional meetings at which Zimbabwe had official representation during the year

Approval Page

The Minister for Environment, Climate, Tourism and Hospitality Industry, Secretary for Environment, Climate, Tourism and Hospitality Industry, Parks and Wildlife Management Authority Board of Directors and the Director General have approved the implementation of the Rhino Management Strategy for Zimbabwe 2020–2024

Signature: 
Dr. Fulton Upenyu Mangwanya

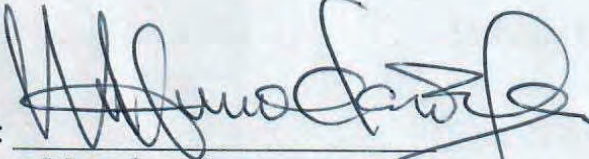
Date: 24.02.2022

DIRECTOR-GENERAL - ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY

Signature: 
Dr. Agrippa Golden Sora

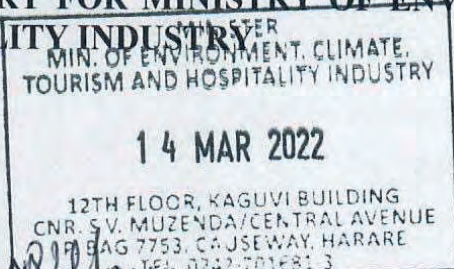
Date: 24.02.22


BOARD CHAIR - ZIMBABWE PARKS AND WILDLIFE MANAGEMENT AUTHORITY

Signature: 
Mr. Munesu Munodawafa

Date: 28/02/22

SECRETARY FOR MINISTRY OF ENVIRONMENT, CLIMATE, TOURISM AND HOSPITALITY INDUSTRY



Signature: 
Hon. Mangaliso Ndhlovu (MP)

Date: 12/03/22

MINISTER FOR ENVIRONMENT, CLIMATE, TOURISM AND HOSPITALITY INDUSTRY