African and Asian Rhinoceroses – Status, Conservation and Trade

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in Endangered Species of Wild Fauna and Flora (CITES)
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African Rhino Specialist Group, Asian Rhino Specialist Groups and TRAFFIC

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Executive Summary

Status of rhinos

Africa

- By the end of December 2024, Africa had an estimated 22,540 rhinoceroses (rhinos) comprising of 6,788 black rhinos (*Diceros bicornis*) and 15,752 white rhinos *(Ceratotherium simum*). This is similar to the figures for African rhinos at the end of 2021 reported at the 19th meeting of the Conference of the Parties (CoP19; Panama City, 2022) (22,137 rhinos comprising 6,195 black and 15,942 white rhinos).
- There were a further 214 black rhinos (*D. bicornis*) and 1,299 white rhinos (*C. simum*) in zoos and other facilities in other continents.
- Eastern (*D. b. michaeli*) and South-central (*D. b. minor*) black rhinos increased, while increases in South-western black (*D. b. bicornis*) and Southern white (*C. s. simum*) were offset by losses in the same period since 2021.
- By 2024, black rhino numbers had increased by 5.2% since 2023 while white rhinos had declined by 11.2% over the same period
- In addition to illegal killing, African rhino losses were driven by factors such as extended droughts, management limitations including restricted access to specialized support due to policy shifts favouring national service providers, population corrections to previous surveys, and/or poor population reporting from some countries or jurisdictions.
- Apart from a few sites, rhinos live mostly in small, fragmented populations that occur in restricted and isolated areas. Strategic management efforts are required to maintain their demographic and genetic viability.

Asia

- By the end of March 2025, the greater one-horned rhinos (*Rhinoceros unicornis*) had an estimated population of 4,075, with 3,323 in India and 752 in Nepal. This was slightly higher than that reported at CoP19 (4,014 greater one-horned rhinos), due to a population increase of 61 greater one-horned rhinos.
- In 2023, Indonesian authorities reported a population of 76 Javan rhinoceroses (*Rhinoceros sondaicus*) in the country, but since then it was determined that as many as 26 Javan rhinoceroses were illegally killed in the period 2019 and 2023. The current minimum estimated number of Javan rhinoceroses is thus 50, a significant decline from the figure reported at CoP19.
- The Sumatran rhino (*Dicerorhinus sumatrensis*) population is estimated at 34 to 47 individuals, as reported at CITES CoP19. Northern Sumatra shows promise for the species, while records from southern Sumatra have been scarce in recent years.
- According to the International Studbook published in 2022, there are 230 greater one-horned rhinos (*R. unicornis*) in captivity, spread across 83 locations worldwide.
- Eleven Sumatran rhinos (*D. sumatrensis*) are currently in captivity: ten at the Sumatran Rhino Sanctuary and one in Kelian, East Kalimantan, Indonesia.

Trade dynamics

Illegal trade

- Between 2021 and 2023, an estimated 676 - 853 rhino horns were sourced into the illegal trade annually, a decline from the 1,531 – 1,729 reported at CoP19. However, this reduction is partly attributable to methodological adjustments accounting for widespread dehorning (covering ~48% of the rhino population; Section 3.1.1.1), and should not be interpreted as a reduction in poaching. Without such adjustments, the estimated annual average would have been 1,160–1,289 horns, underscoring the need for caution when interpreting trends.
- A total of 921 seizures were collected from the CITES Illegal Trade Database and TRAFFIC's database to inform the analysis of Parties most impacted by illegal trade. Of these, 750 seizures reported quantities of rhino horn specimens and were included in analysis. Up to 2023, the estimated number of whole horns and total seized weight decreased by 81% and 77%, respectively, since their peak in 2019.
- For the analysis of most affected Parties in this CoP period from 2021–2023, the seizures relating to rhino horn specimens totalled 1.8 tonnes (equivalent to approximately 716 whole horns[1]). The largest seizures were 160 kg by South Africa (en route to Malaysia) and 139 kg by Viet Nam (originating from South Africa).
- South Africa remained the most affected Party, accounting for 66% of global seizure weight and 90% among African range States. Most seizures involving the Party were made by authorities in-country, with South Africa often representing the origin country on the illegal trade chain. The Party had the highest number of illegal trade links, with Malaysia representing the strongest-weight trade link followed by Viet Nam.
- Malaysia and Viet Nam emerged as the second and third most affected Parties, respectively, with a large cumulative illegal horn weight in seizures involving the Parties, including large-scale seizures implicating the Parties as destination countries based on seizure reports, which does not necessarily indicate end-market demand. While not always having

[1] Species-specific estimates of average horn weight are used to convert between weight and equivalent whole horns. See Annexure 5 for details.

an opportunity to seize the illegal consignments, the prevalence of large-scale seizures, at times associated with other illegal wildlife specimens, may indicate the potential involvement of organized criminal networks.

- Qatar and United Arab Emirates were the fourth and fifth most affected Parties, serving as transit hubs. Seizures involving the Parties from 2021 – 2023 were of large scale averaging an estimated weight of 26 kg, and each Party had only one seizure pass undetected. In addition to their illegal trade links with South Africa being the most prominent by seized weight, Angola was also noted as an illegal trade link.
- A few patterns observed in the seizure data were of note: an emerging illegal trade link between Mongolia and South Africa in 2023 was highlighted as it was not previously observed in seizure data. Hong Kong Special Administrative Region (SAR) of China and mainland China as well as Mozambique were among the most affected in the last analysis to CoP19, whereas in the analysis conducted to prepare the report for the present meeting, the Parties appear to be less affected. Because of the lack of consistent reporting and bias-adjustment in the analysis, it is unclear if the observed decline is genuine, although a concurrent decline in implicating seizures may indicate support for a genuine decline in illegal rhino horn trade. This potential shift could be the result of effective enforcement and demand-reduction measures, but the limited resources available for the preparation of this report did not allow further exploration of these issues.

Legal trade: Africa

- In total, 276 live African rhinos were traded during the reporting period since CoP19 (2022-2024). This comprised of six Eastern black (*D. b. michaeli*), 15 South-central black *(D. b. minor*) and 255 Southern white (*C. s. simum*) rhinos.
- Black rhinos traded were solely for conservation purposes, with 12 to Mozambique, six to Chad and three to the United Republic of Tanzania exported by South Africa (18) and Kenya (3).
- Fifty-seven Southern white rhinos (*C. s. simum*) were exported to Zambia, and 55 to the United States of America. The exporting countries were Namibia (107) and South Africa (5).
- There were six black (*D. bicornis*) and 373 white rhino (*C. simum*) hunts in the reporting period (2022-2024). These took place in Namibia (6 South-western black rhinos – *D. b. bicornis*; 43 Southern white rhinos – *C. s. simum*); and South Africa (330 Southern white rhinos – *C. s. simum*).
- Hunters of black rhino in Namibia originated from four countries, while hunters of white rhinos in Namibia and South Africa came from 11 and 32 countries respectively.
- In Namibia, most hunters originated from the United States of America (44.9%), Spain (14.3%) and Hungary (10.2%), while in South Africa hunters originated from the United States of America (66.4%) and Hungary (6.4%).
- Rhino hunting in Namibia and South Africa occurs at low levels relative to national populations (0.05% to 0.18% of black rhinos and 0.5% to 1.3% of white rhinos in Namibia hunted each year, while South Africa reported 0.79% to 0.91% of white rhinos hunted each year) and, while limited in scale, contributes measurable revenue that can support conservation when transparently reinvested (US$170,000 to S$250,000 per black rhino hunt; most recent for white rhino was US$88,208 per hunt in 2018).
- Case studies show that well-regulated legal hunting can generate significant revenue—often surpassing eco-tourism—for community conservancies, reinforcing the shift toward participatory conservation models that prioritize fair socio-economic benefits for local communities as essential to long-term rhino conservation success.
- In 2022, the World Bank launched the Wildlife Conservation Bond (Rhino Bond), mobilizing over $150 million USD to support black rhino conservation in South Africa. This results-based financing model—where investor returns depend on rhino population growth—set a precedent for linking biodiversity outcomes to financial incentives, despite initially slow uptake.
- By the end of 2024, rhino conservation was increasingly seen as needing to generate revenue to cover costs and thus viewed as a trade-linked enterprise, whereby financial instruments, ecotourism, and community-based ventures transform wildlife protection into a valued land-use that also contributes to local development (Section 3.2.4).
- Beyond ecological importance, rhino conservation increasingly shows economic value by boosting land worth, tourism, and related services.

Legal trade: Asia

- No legal trade in rhinos was reported by Asian countries during the period, 2022-2024. The sale of rhino horn in Asian countries is not permitted.

Stockpiles of specimens of rhinos

- Data to inform the analysis of stockpiles was obtained from the CITES Secretariat based on reports by the Parties in response to an annual Notification. For African range-States, CITES stockpile data was augmented and cross-referenced with data submitted by range State representatives of the International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) African Rhino Specialist Group (AfRSG).
- Large reporting gaps, inconsistencies in the format of reported stockpile data, and the lack of documentation of thefts or destruction events resulted in substantial data limitations, hindering meaningful inference and comparisons with previous CoP reports.

African range-States

- Significant discrepancies existed between the total rhino horn stockpile data reported to the CITES Secretariat (36.2 tonnes) and that submitted to the AfRSG (85.1 tonnes), primarily due to underreporting by South Africa of privately held stocks and the absence of Namibian stockpile data from the CITES database shared for this analysis.
- South Africa accounted for the majority of the region's stockpiles, holding between 72% and 78% depending on the data source. AfRSG data indicated that 48% of South Africa's stockpiles were privately held, while CITES data summarized between 2021 – 2023 showed that 60% of the additions to South Africa's stockpiles were made into privately held stockpiles.
- A theft event occurring in South Africa in 2023 was recorded from open sources but was not disclosed in the reports submitted to the CITES Secretariat. It was noted that the Party also reported to the AfRSG a total of 712 horns that were stolen in 2024.

Asian range States

- No data were available for an updated analysis since CoP19 as Indonesia's last report was in 2020 and India and Nepal have not submitted stockpile data to the CITES Secretariat. Destruction events were noted from open sources.

Non-range States

- Of the 21 non-range States that reported at least once to the CITES' rhino stockpile database to date, only eight Parties reported their stockpiles for all years from 2021 – 2023, and an additional four Parties reported once during this period. Among non-range States most affected by illegal trade, only Malaysia updated its stockpile reports through 2023; Viet Nam last reported in 2017, and Qatar in 2018; no stockpile reports were available from the United Arab Emirates.
- The combined stockpiles for the 12 reporting Parties totalled 1,489 kg of rhino horn specimens. Including the latest known data from other non-reporting Parties, the minimum estimated stockpiles of non-range States totalled 2,144 kg.
- Examination of seizure data, especially those of large-scale weight, revealed discrepancies between the total seized weight and reported stockpiles. It is unclear whether seized specimens were included in national stockpiles, or recorded and destroyed, as some of the affected Parties did not submit or update their stockpile data.

Incidents of illegal killing (poaching)

Africa

- In Africa, 516 incidents of illegal killing (poaching) were recorded in 2024 (lower than the 540 reported for 2021 at CoP19), with 81.4% of these incidents reported from South Africa. The average annual continent-wide poaching rate dropped to 2.15% of the continental population in 2024 — the lowest rate since 2011.
- At a subspecies level, from the end of 2021 to the end of 2024, no Northern white rhinos (*C. s. simum*) were lost to poaching but 1,849 Southern white rhinos (*C. s. simum*) were lost. This represents an annual average of 2.79% of the continental population.
- Eastern black rhinos (*D. b. michaeli*) experienced the loss of eight (0.15% of the continental population) while 143 (1.47%) South-central black rhinos (*D. b. minor*) and 212 (2.06%) South-western black rhinos (*D. b. bicornis*) were lost.
- In 2024, the continental rhino population growth was lower than expected considering the 2.16% poaching rate. This is due to the impacts of drought, policy impacts on access to service providers for critical biological management, and poor population reporting. Stability for both species needs poaching mortalities to be 3.5% of the population. To meet growth targets of 5% per annum, poaching rate should be 1.2% or lower.
- In early 2025, there appeared to be an increase in the rate of rhinos being lost to poaching. For instance, South Africa had 91 rhinos killed between the end of December 2024 and the end of March 2025 and Chad lost two female black rhinos in March 2025.

Asia

- In India, nine greater one-horned rhinos (*R. unicornis*) were illegally killed between January 2021 and December 2024.
- In Nepal, four greater one-horned rhinos (*R. unicornis*) were killed during the same period.
- Investigations by Indonesian police in 2024 revealed that as many as 26 Javan rhinos (*R. sondaicus*) were reportedly killed by two poaching groups in Ujung Kulon National Park between 2019 and 2023.

Enforcement issues

Africa

- Challenges in curbing rhino poaching and trafficking include corruption, limited resources, slow prosecutorial processes, and the presence of organized, well-armed poaching and trafficking networks.

- Many range States have improved laws and anti-poaching strategies, but still struggle with corruption, coordination, cross-border crime, prosecution and community engagement in a context where effective enforcement relies on strong legal penalties, intelligence-driven operations, inter-agency cooperation, and active involvement of local communities.
- Addressing the above-mentioned challenges like corruption, lack of effective enforcement, limited resources, and low community engagement, which all reduce the impact of efforts to curb rhino poaching and horn trafficking, requires political will, improved funding, modern tools, community involvement and more tangible community benefits to protect rhinos and support long-term conservation.
- Best practices highlighted that enforcement requires planning and cross-border cooperation and teamwork as being key, along with good leadership for motivated, competent and committed players, to achieve long-term success in addressing the trafficking of rhino specimens.

Asia

- Despite the ongoing threat from poaching to the greater one-horned rhino (*R. unicornis*), both India and Nepal have strengthened surveillance and monitoring efforts to prevent further incidents.
- For the Javan rhino (*R. sondaicus*), stronger law enforcement and monitoring are needed. In response to poaching at Ujung Kulon National Park, Indonesia secured convictions, with the court issuing prison sentences of 12 years.
- Sustainable funding is urgently needed in Asian rhino range States, particularly in Indonesia, to improve law enforcement and protect the Critically Endangered Javan (*R. sondaicus*) and Sumatran rhinos (*D. sumatrensis*).

Conservation management

- A comprehensive assessment of conservation management could not be undertaken due to limited resources and capacity constraints.
- Rhino conservation in Africa is evolving amid ecological, genetic, climatic, and socio-political complexity. Key opportunities include the Rewild Rhino initiative by African Parks, using captive and zoo-held rhinos to restore wild populations, while addressing risks of fragmentation, gene flow loss, and climate-induced habitat shifts.
- The African Rhino Conservation Framework (2025–2035) marks a shift to a people-centred, rights-based approach. It integrates Indigenous Peoples and Local Communities (IPLCs), advances proactive security, and embraces collaborative, adaptive strategies to ensure rhino and community resilience in a rapidly changing landscape.

Efforts to reduce illegal use

- A comprehensive assessment of the illegal use of rhino horn could not be undertaken due to limited resources and capacity constraints.

Southern white rhino (*Ceratotherium simum simum*) calf following its mother[2].

[2] Image by Sam Ferreira

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Southern white rhino (*Ceratotherium simum simum*)[3].

[3] Image by the late Rudi van Aarde

1. Introduction

Poaching, to meet demand for rhinoceros (rhino) horn, threatens the survival of the world's rhinos. At the 19th meeting of the Conference of the Parties (CoP19) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2022, the International Union for the Conservation of Nature (IUCN) African Rhino Specialist Group (AfRSG) reported that the African continental population of rhinos had declined by 6.2% since CoP18. Their numbers dropped from an estimated 23,562 individuals at the end of 2017 to 22,137 at the end of 2021. The Africa population of rhinos includes two subspecies of white rhino (*Ceratotherium simum*) and three subspecies of black rhino (*Diceros bicornis*). The Asian Rhino Specialist Group (AsRSG) reported at CoP19 that only 4,124-4,137 Asian rhinos remained at the beginning of 2022. This included greater one-horned (*Rhinoceros unicornis*), Javan (*Rhinoceros sondaicus*), and two subspecies of Sumatran rhinos (*Dicerorhinus sumatrensis*) (CoP19 Doc. 75 (Rev.1))[4]. Illegal killing (poaching) associated with illegal trade in rhino horns remain the largest threat to their survival, and together with climate change, habitat loss, pollution, and / or novel diseases leave these species under serious risk of extinction[4].

The Parties agreed on the importance of addressing key threats to rhinos, as stated in Paragraph 7 of Resolution Conf. 9.14 (Rev. CoP19) on the *Conservation and Trade of African and Asian rhinos*. They instructed the CITES Secretariat to work with the IUCN/SSC African (AfRSG) and Asian Rhino Specialist Groups (AsRSG) and TRAFFIC to create a report covering: a) the national and continental conservation status of African and Asian rhino species; b) trade in specimens of rhinos; c) stocks of specimens of rhinos and stock management; d) incidents of illegal killing of rhinos; e) enforcement issues, including information on challenges and best practices associated with addressing rhinoceros poaching and horn trafficking; f) conservation actions and management strategies with an evaluation of their effectiveness; and g) measures implemented by implicated States to end the illegal use and consumption of rhino parts and derivatives. The Resolution further states that the report should include information from range States[5] as well implicated states involved in illegal trade, and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). The African and Asian Rhino Specialist Groups, along with TRAFFIC, should collect and review this information as outlined in Paragraph 8 of Resolution Conf. 9.14 (Rev. CoP19).

For this report, the CITES Secretariat were unable to raise all the funds required to support the work to be conducted by the African and Asian Rhino Specialist Groups and TRAFFIC as outlined in the Resolution. TRAFFIC was able to raise additional funding from the German government and WWF-Germany to augment the funds available for the report, however funds were still insufficient to deliver the full report as outlined in Res. Conf. 9.14 (Rev. CoP19). For this reason, the report covers only some portion of the required content as specified in the Resolution. The report starts by discussing the national and continental conservation status of African and Asian rhino species (Paragraph 7(a) of Resolution Conf. 9.14 (Rev. CoP19)). This is followed by consideration of the trade in rhino specimens (Paragraph 7(b)), the management of rhino specimen stocks and stockpiles (Paragraph 7(c)), and updates on illegal rhino killings (Paragraph 7(d)). Next, the report considers strategies to reduce risks and create opportunities, including law enforcement (Paragraph 7(e)). It additionally provides information on challenges and effective practices in combating rhino poaching and horn trafficking. The report briefly discusses some other points in Paragraph 7 of the Resolution, such as conservation actions and how effective they are (Paragraph 7(f)), and tersely reflect on steps taken by countries to stop the illegal use and consumption of rhino parts (Paragraph 7(g)).

1.1 Taxonomic and distribution notes

Genetic diversity is a core attribute of a species and is important for a species' survival as it enables populations to adapt to environmental change and to resist existing and novel diseases. Historically rhino populations and their gene pools were shaped by genetic drift, movement (dispersal and migration) and natural selection. During the past few centuries, human activities such as unsustainable levels of harvesting (*e.g.* hunting and poaching), habitat fragmentation and land-use changes have severely reduced population sizes and disrupted gene flow in African rhino populations. This has led to the extinction of some historic genetic populations[6] and increased the extent of genetic drift in the isolated populations that remained. These human actions have led to the genetic erosion of the remaining rhino populations. In at least one case, conservation efforts (movement of rhinos between isolated sites) have led to the admixture of distinct gene pools. Conservation efforts should seek to focus on maintaining and managing genetic structure and genetic diversity to improve rhino population resilience.

[4] Ferreira SM, Ellis S, Burgess G, Baruch-Mordo S, Talukdar B, Knight MH. 2022. The African and Asian rhinoceroses – status, conservation and trade: A report from the IUCN Species Survival Commission (IUCN/SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP15). CoP19 Doc. 75 (Rev. 1), CITES Secretariat, Geneva, Switzerland. https://cites.org/sites/default/files/documents/E-CoP19-75-R1.pdf

[5] A State whose territory is within the natural range of distribution of a species. https://cites.org/eng/node/130983

[6] A group of interbreeding individuals that share a common gene pool and are genetically more similar to each other than to individuals in other groups. Avise, J.C., 2000. *Phylogeography: the history and formation of species*. Harvard University Press.

Black rhinos: Genetic research using whole genomes suggests that there were once at least nine genetic populations, or subspecies, of black rhinos[7,8]. Initially, a range-wide genetic study using nuclear microsatellites, and mitochondrial (mt) DNA of old and modern samples found that populations were highly structured across the species range and were more genetically diverse in the past than they are today, losing about 69% of their historic mitochondrial genetic diversity[9]. More recently, a range-wide whole genome study confirmed the existence of at least nine historical black rhino genetic populations, with modern samples from surviving black rhinoceros fitting into five or six of these. Therefore, the pragmatic subspecies delineation and historic distributions documented in this, and previous, reports are brought into question by the high-resolution genetic evidence. An updated classification and approximate distribution map, which draws on taxonomic, biogeographic and genetic evidence, is now available[10].

White rhinos: Genetic research shows that northern and southern white rhinos are closely related but different. They are treated as subspecies: the Northern white rhino (*C. s. cottoni*) and the Southern white rhino (*C. s. simum*)[11]. DNA studies suggest the two lineages split between 500,000 and 1.5 million years ago[12,13], but have come into secondary contact since then, exchanging genes with each other during Pleistocene glacial periods (ice ages) when the extent of grassland was continuous between their ranges, until as recently as the last glacial period (LGP, 100-200 thousand years ago)[14]. Evidence of the presence of white rhinos prehistorically in at least three locations outside their historic sub-Saharan range (Kenya, United Republic of Tanzania and Zambia) supports the idea of continuously distributed white rhino during the Middle to Late Pleistocene[15,16,17]. Both subspecies lost genetic diversity when their numbers dropped in the 1900s. Southern white rhinos have grown in number, but they still have low genetic diversity[12,18,] which could cause problems for their future ability to adapt. Some scientists debate whether the two genetic populations should be treated as subspecies or separate species, however genetic contact between the two during the LGP and a known hybrid produced in captivity suggest they were not reproductively isolated.

For this report, we retain the existing subspecies categorization of black and white rhinos and report on status of the South-western black rhino (*D. b. bicornis*), Eastern black rhino (*D. b. michaeli*), South-central black rhino (*D. b. minor*), Northern white rhino (*C. s. cottoni*) and Southern white rhino (*C. s. simum*), and how they are distributed across Africa (Fig. 1).

[7] Moodley, Y., Russo, I.R.M., Dalton, D.L., Kotzé, A., Muya, S., Haubensak, P., Bálint, B., Munimanda, G.K., Deimel, C., Setzer, A. and Dicks, K., 2017. Extinctions, genetic erosion and conservation options for the black rhinoceros (*Diceros bicornis*). *Scientific Reports*, *7*(1), p.41417. https://doi.org/10.1038/srep41417

[8] Sánchez-Barreiro, F., De Cahsan, B., Westbury, M.V., Sun, X., Margaryan, A., Fontsere, C., Bruford, M.W., Russo, I.R.M., Kalthoff, D.C., Sicheritz-Pontén, T. and Petersen, B., 2023. Historic sampling of a vanishing beast: population structure and diversity in the black rhinoceros. *Molecular Biology and Evolution*, *40*(9), p.msad180. https://doi.org/10.1093/molbev/msad180

[9] Moodley, Y., Russo, I.R.M., Dalton, D.L., Kotzé, A., Muya, S., Haubensak, P., Bálint, B., Munimanda, G.K., Deimel, C., Setzer, A. and Dicks, K., 2017. Extinctions, genetic erosion and conservation options for the black rhinoceros (*Diceros bicornis*). *Scientific Reports*, *7*(1), p.41417. https://doi.org/10.1038/srep41417

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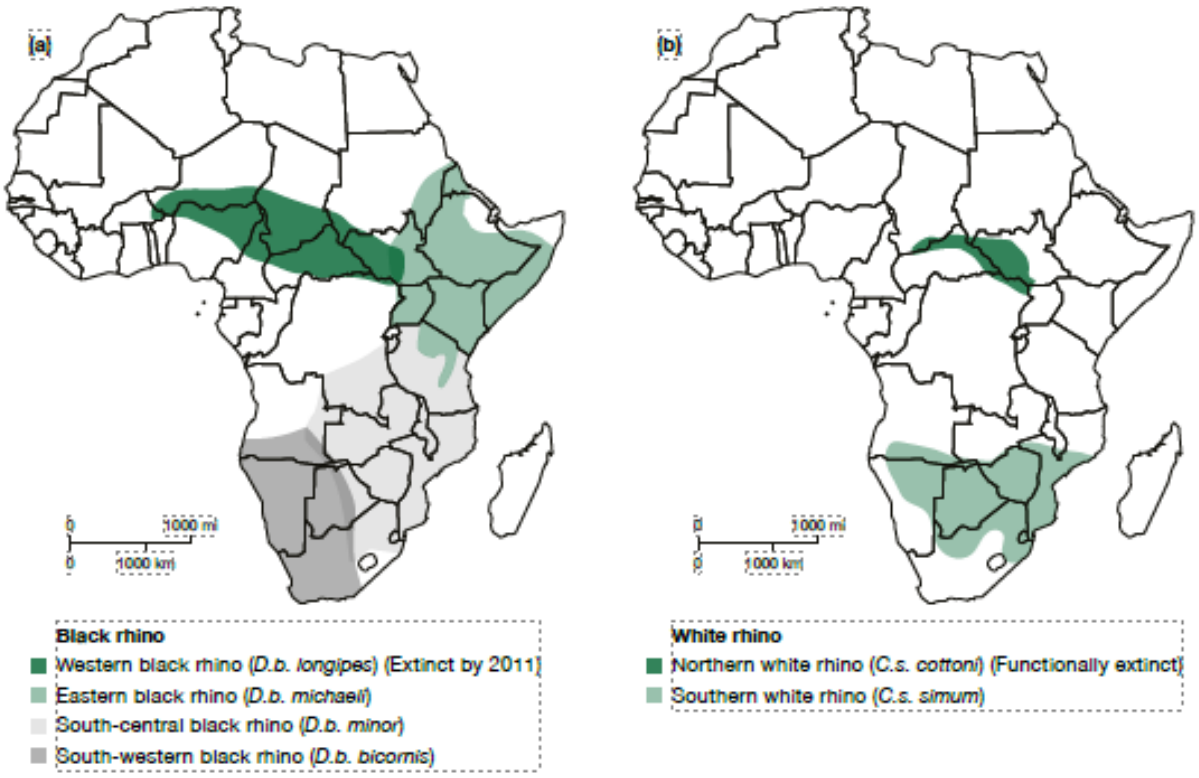

Figure 1. The contemporary distribution of African rhino subspecies for (a) black[19] and (b) white rhinos[20] as illustrated in the African contemporary strategic framework[21].

Asian rhinos consist of three extant species: the greater one-horned rhino (*Rhinoceros unicornis*), the Javan rhino (*Rhinoceros sondaicus*), and the Sumatran rhino (*Dicerorhinus sumatrensis*). These three species are distributed across South and Southeast Asia. The greater one-horned rhino primarily found in India and Nepal in riverine floodplain grasslands and adjacent woodlands. The Javan rhino is restricted to Ujung Kulon National Park in Indonesia, and the Sumatran rhino survives in small populations in Sumatra and Kalimantan, Indonesia[22,23,24]. Taxonomically, they are grouped into two genera: *Rhinoceros*, which includes *R. unicornis* and *R. sondaicus*, and *Dicerorhinus*, which includes *D. sumatrensis*[25].

Subspecies differentiation is also recognized in Asian rhinos. The Javan rhino once had three subspecies, but only the Sunda Javan rhino (*R. s. sondaicus*) survives, while the Vietnamese Javan rhino (*R. s. annamiticus*) and Indian Javan rhino (*R. s. inermis*) are extinct[26]. The Sumatran rhino has two living subspecies: the Western Sumatran rhino (*D. s. sumatrensis*) in Sumatra and the Bornean rhino (*D. s. harrissoni*) in Kalimantan, while the Northern Sumatran rhino (*D. s. lasiotis*) is likely extinct[27,28].

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These species represent the remnants of a once diverse lineage that roamed much of Asia, but habitat loss, hunting and poaching have driven them to the brink of extinction[29,30] (Fig. 2).

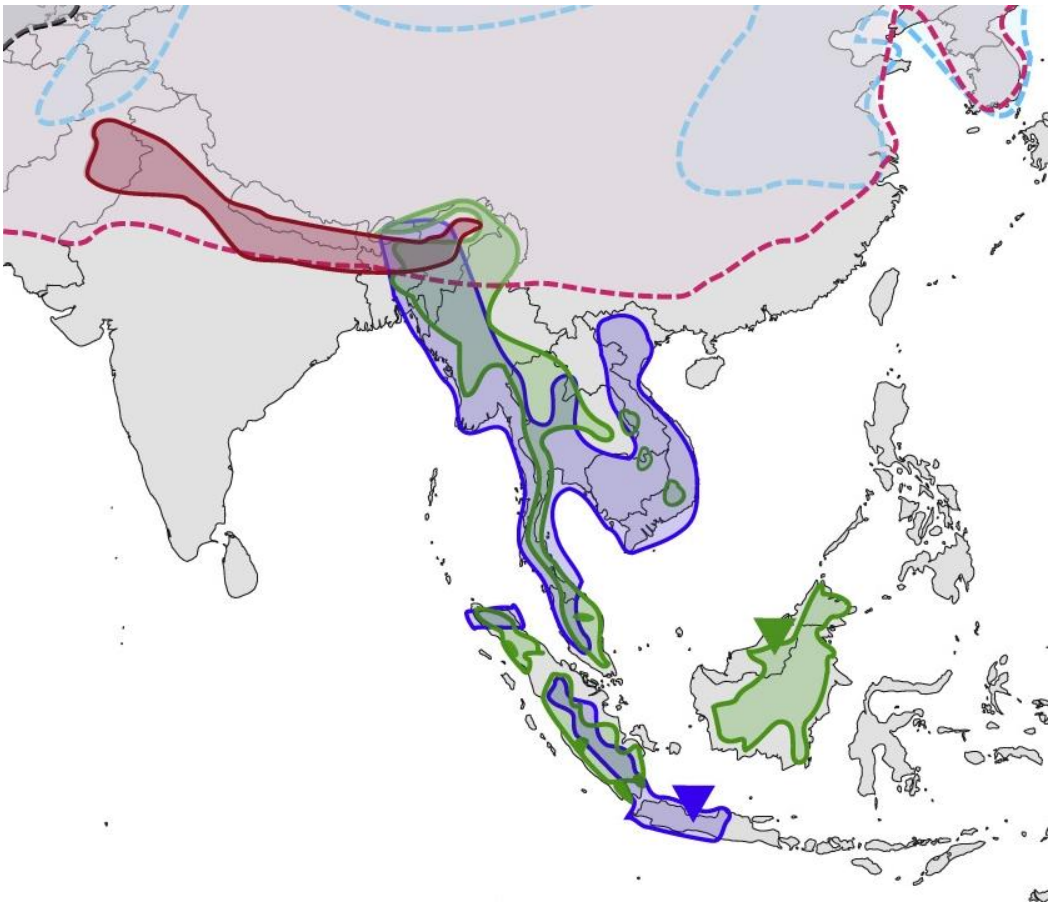

Figure 2. The historical distribution of Asian rhino species[31]. Red reflects the greater one-horned rhino (*Rhinoceros unicornis*), blue the Javan rhino (*Rhinoceros sondaicus*), and green the Sumatran rhino (*Dicerorhinus sumatrensis*). The red dotted (Merck's rhino - *Stephanorhinus kirchbergensis*), blue dotted (Woolly rhino - *Coelodonta antiquitatis*), and black dotted (Siberian unicorn - *Elasmotherium sibiricum*) lines reflect the southern limit of the relevant extinct rhino species.

1.2 Note on the precision of African rhino population estimates

Current rhino populations in Africa are generally small (most are under 300 individual rhinos). To estimate the size of each population, different methods are used depending in part on the population size and in part on the country and authority. For smaller populations, individual identification and life-history tracking approaches provide the most accurate estimates. Medium-sized populations are commonly counted in their totality, either from the ground or using aerial surveys. Generally, it is only the large populations that are estimated using sampling techniques[32].

All estimates are affected by three main types of bias[33]. The first is availability bias, which occurs when rhinos are present in an area but not visible. For example, a rhino may be sleeping under thick vegetation, making it impossible to count. The second is detectability bias, where some rhinos may not be hidden but are still difficult to spot. For instance, a rhino located further from an aircraft's flight path is harder to see. Distance sampling techniques[34] help adjust for this problem. The final source of bias is

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observer bias, as different observers have varying levels of skill, which affects their ability to detect rhinos. These biases can also change depending on the type of observation platform used, such as ground or aerial surveys, and how each method is applied—for example, flights at different speeds or the use of raised game drive vehicles.

Only one locality has formally evaluated all three biases for South-central black rhinos and Southern white rhinos. The study found that availability bias resulted in up to 26.4% of South-central black rhinos and 17.1% of Southern white rhinos being missed during helicopter surveys, depending on how much vegetation covered the landscape. Detectability bias was minimized by using narrow survey strips[35], while double observer techniques showed that 3.8% of available and visible rhinos were still missed[36]. Another site used distance sampling to formally account for detectability bias[37].

Statistical errors also introduce uncertainty in total counts and sample surveys[38], especially if the survey is spread over multiple days. Since rhinos move across the landscape, a rhino may be absent from a survey block one day but present the next day after that block has already been counted. By the same logic, a rhino may be counted more than once. Total counts do not adjust for these errors, whereas sample surveys provide confidence intervals to show the possible range of error in population estimates[39].

Accuracy and precision are important considerations when conducting rhino surveys. Accurate population estimates closely match the true number of rhinos at a locality. Precision means that repeated surveys give similar results, even if they are not necessarily accurate[40]. In general, Accuracy=Precision+(Bias)^2. In practice, precision refers to how narrow the confidence levels are around an estimate. To detect real changes in rhino numbers over time, the difference must be larger than the variation caused by how estimates are made. Estimates based on individual identification are the most accurate. Total survey counts provide an estimate of the minimum number of rhinos known to be alive at the time of the survey, but they do not correct for bias and thus lack precision. Sample surveys report precision but may not fully account for all biases. Attempting to apply correction factors to deal with biases not formally evaluated can become contentious.

For the estimates reported at the end of 2024, six methods had been used to obtain rhino numbers (Table 1). Most estimates relied on identifying individual rhinos. However, some estimates came from total counts or sample surveys. Total counts contributed 2.9% of South-central black rhino estimates and 4.6% of Southern white rhino estimates. These are considered the minimum number of rhinos observed at the time of the survey. Sample-based estimates played a more significant role in some cases. One sample-based estimate of South-western black rhinos accounted for 38.4% of the continental total for the subspecies, with a coefficient of variation (CV) of 20.1%. A sample-based estimate for South-central black rhinos contributed 9.9% to the continental estimate, with a high CV of 61.4%. Three sample-based estimates for Southern white rhinos contributed 21.8% of the continental total, with CVs of 63.2%, 17.7%, and 53.7%, respectively.

In this report, we assume exact precision for estimates based on individual identification or total counts - meaning the standard error (SE) was set to 0. However, for sample-based estimates, we used the reported SEs to calculate confidence intervals for Southwestern black rhinos, South-central black rhinos, and Southern white rhinos. This method allowed us to estimate a confidence interval for free-ranging rhino populations at the end of 2024[41]. Similar data was available for 2015, 2017 and 2021, from previous CoPs (CoP17, CoP18 and CoP19 respectively). This meant that comparisons of population size changes at a continental level and assessing their significance was possible[42]. For the rest of the analyses, we used point estimates[43] to compare populations.

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[38] e.g., Peter D, W., White, L.J., Mbina, C., Idiata, D., Mihindou, Y., Maisels, F. and Thibault, M., 2001. Estimates of forest elephant abundance: projecting the relationship between precision and effort. *Journal of Applied Ecology*, *38*(1), pp.217-228.

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[40] Thompson, S.K., 2012. *Sampling* (Vol. 755). John Wiley & Sons.

[41] We approximate variance of totals ($var(\widehat{N_t})$) for the combined estimates ($\widehat{N_t}$) as $var(\widehat{N_t}) = \frac{\sum_{i=1}^{k}(n_i-1)var(n_i)}{\sum_{i=1}^{k}(n_i-1)}$ where $var(n_i) = SE_i^2$ and $SE_i = \frac{UCL_i - LCL_i}{2\times 1.96}$ with n_i the estimated population size, and LCL_i and UCL_i the lower and upper bounds of the 95% confidence interval for n_i. From this $SE(\widehat{N_t}) = \sqrt[2]{var(\widehat{N_t})}$ with confidence intervals defined as $\widehat{N_t} \pm 1.96 \times SE(\widehat{N_t})$.

[42] We used bootstrapping to estimate annual population growth between two survey years. Each population estimate was treated as a statistical distribution, based on its mean and confidence interval. We randomly drew values from both distributions and calculated the annual exponential growth rate using the time between surveys - $r = \frac{lnN_{t+x} - lnN_t}{x}$ where N_t is the population size at time t and N_{t+x} is the population size x years later. This was repeated many times to build a distribution of possible growth rates. From this, we took the median and the 2.5% and 97.5% percentiles to give the estimated annual growth rate and its 95% confidence interval.

[43] A point estimate of a population is a single value calculated from sample data that serves as the best estimate of an unknown true population parameter (such as the population size, mean, or proportion).

Table 1. A summary of the survey methods used in various populations of the five extant African rhino species reported at the end of 2024. ID-CK – Completely known population based on individual identities of rhinos. ID-Min – Minimum number of rhinos based on number of seen rhinos with a confirmed individual identity. T-H – Total number of rhinos counted covering 100% of an area using a helicopter-based observation platform. T-FW – Total number of rhinos counted covering 100% of an area using a fixed-wing-based observation platform. D-G – Distance sampling using ground-based observations. B-H – Surveys of randomly placed sample blocks using a helicopter-based observation platform. n – the number of populations using a specific technique. % N reflect the % of the total estimates of rhinos in estimates derived from a specific methodology.

Survey Method	*D. b. bicornis*		*D. b. michaeli*		*D. b. minor*		*C. s. simum*		*C. s. cottoni*	
	n	% N	n	% N	n	% N	n	% N	n	% N
ID-CK	14	58.1%	21	90.0%	68	79.3%	326	59.9%	1	100%
ID-Min	2	3.4%	2	10.0%	4	7.9%	4	13.7%	0	-
T-H	0	-	0	-	1	2.9%	1	2.2%	0	-
T-FW	0	-	0	-	0	-	1	2.4%	0	-
D-G	0	-	0	-	0	-	1	6.4%	0	-
B-H	1	38.4%	0	-	1	9.9%	2	15.4%	0	-

2. The status of rhinoceros species

2.1 Global population trends in African rhinoceroses

Rhino numbers in Africa have varied since the end of 2021. In 2022, the total number of rhinos increased across several African countries and by the end of that year, there were 23,321 rhinos in Africa, an increase of 5.2% since 2021. This total included 6,487 black rhinos (up by 4.2%) and 16,834 white rhinos (up by 5.8%). This was the first year since 2012 that white rhino numbers had increased continentally. Including rhinos living in zoos and other facilities outside Africa, the total number of African rhinos globally was 24,955 by the end of 2022[44].

By the end of 2023, Africa's rhino population had again increased, this time by 2.4% to 23,885. This included 6,421 black rhinos (1.0% decrease) and 17,464 white rhinos (3.7% increase) since 2022. The decrease in continental black rhino numbers was mainly driven by losses in Namibia and South Africa. Some countries reflected an increase in Eastern black rhinos, but this was not sufficient to prevent the overall decline. Zoos around the world reported keeping 33 South-central black rhinos, 317 Eastern black rhinos and 1,262 Southern white rhinos (332 of which were in facilities in China). Fourteen of the black rhinos, of unknown subspecies, were in China. By the end of 2023, the global population of African rhinos was 25,511[45].

By the end of 2024, reported estimates reflected 22,540 rhinos in Africa. This included 6,788 black rhinos and 15,752 white rhinos. Black rhino numbers had increased by 5.2% since 2023 while white rhinos had declined by 11.2% over the same period (Fig. 3). Overall, rhinos on the continent declined by 6.7% in 2024. The decline is attributed to a combination of factors, including increased poaching pressure on rhino populations in Namibia and South Africa; challenges related to biological management (e.g. Eswatini which started implementing policies that favour national service providers that inadvertently limited access to rhino specialist services provided by other neighbouring countries); the absence of updated surveys for 2024 in several populations across Uganda, Zambia, Mozambique and some provinces in South Africa; and possible previous overestimations. Outside Africa, 1,299 white rhinos and 214 black rhinos lived in zoos or semi-wild areas (Table 2). By the end of 2024, the global African rhino population was 24,053.

[44] Knight, M., Mosweu, K. and Ferreira, S., 2022. African Rhino Specialist Group report/Rapport du Groupe de Spécialistes du Rhinocéros d'Afrique. *Pachyderm*, *63*, pp.17-32. https://pachydermjournal.org/index.php/pachyderm/article/view/509

[45] Balfour, D., Makoma, K. and Ferreira, S.M., 2024. African Rhino Specialist Group Chair report/Rapport du Groupe de Spécialistes du Rhinocéros d'Afrique. *Pachyderm*, *65*, pp.20-34. https://pachydermjournal.org/index.php/pachyderm/article/view/1311

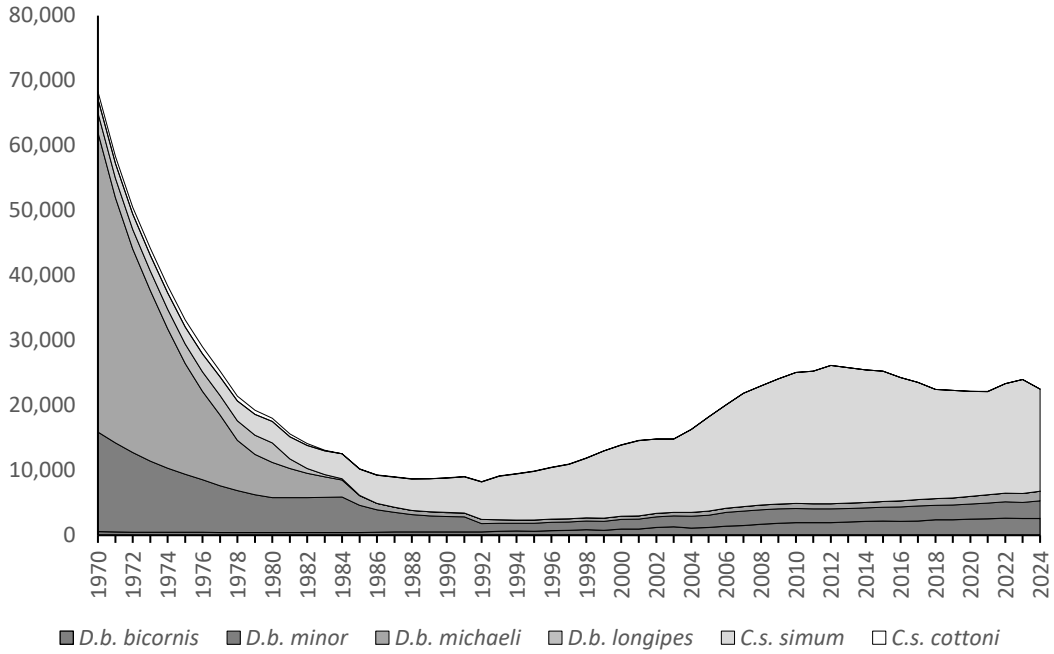

Figure 3. Estimates[46] of African rhinoceroses since 1970 by species and subspecies within Africa. Note that by 2024, one white rhino subspecies, the Northern white rhino (*C. s. cottoni*), is functionally extinct with only two individuals surviving. One black rhino subspecies, the Western black rhino (*D. b. longipes*), was extinct by 2011.

Table 2. Records of African rhinos reported to be held in zoos and other facilities beyond the continent at the end of 2024.

	Black rhinoceros				**White rhinoceros**	
Zoos and facilities outside Africa	*D. b. bicornis*	*D. b. michaeli*	*D. b. minor*	*D. b.* unknown	*C.s. cottoni*	*C.s. simum*
European Association of Zoos and Acquaria (EAZA) Ex-situ Programmes	-	87	-	-	-	362
Association of Zoos and Aquariums (AZA) Species Survival Plan	-	54	-	-	-	341
United State of America outside AZA	-	-	32	-	-	-
Australia	-	-	11	-	-	49
Asia	-	-	-	15	-	176
South America	1	-	-	-	-	15
China	-	-	-	14	-	356
Total	**1**	**141**	**43**	**29**	**-**	**1,299**

[46] Point estimates derived from the sum of the best available estimates for range States. Missing data in a time series for a range state came from interpolation between time *t* and *t+x* using the model $N_{t+x} = e^{rx}N_t$, and pooled per species and subspecies. The year 1970 was the base year. To obtain estimates back to 1970, the analysis used the first 10 and eight available estimates of black and white rhinoceros in a time series respectively (based on half the generation length) to calculate exponential population change per annum (r). For this purpose, generation length (*T*) used a definition of the time it takes for the population to grow by a factor of its net reproductive rate. $T = \log\frac{R_0}{r}$, where R_0 is the number of female calves a cow is expected to produce in a lifetime. Age at first birth was 6.75 years old, age at last birth was 35.00 years old translating to on average 28.25 reproductive years irrespective of species. Calving interval was every 2.5 years. The population growth (*r*) is when there is no resource limitations set at 8% and 10% per annum for black and white rhinoceros respectively. The analysis then used the exponential model above assuming exponential population change to predict populations back in time.

Overall, several factors resulted in reporting at the end of 2024 reflecting a loss in the gains made since those figures reported for 2021 at CoP19[4]. Including the precision of key sample-based estimates suggests that between 21,813 and 23,063 rhinos lived in Africa at the end of 2021. Between 22,078 and 23,408 rhinos lived in the continent by the end of 2024 reflecting a change of between -0.5% and 1.7% annually since 2021 (Fig. 4). Put simply, the gains made in 2022 and 2023 were largely offset by the losses in 2024. A key lesson learnt is that obtaining annual national estimates has proved important to help identify key impacts of interventions (*e.g.* broadscale dehorning of rhinos – see Section 3.1.1.1) and threats (*e.g.* increased risks to poisoning – see Section 6.1.2) during a shorter time scale.

2.2 Species population trends in African rhinoceroses

2.2.1 Black rhinos (*Diceros bicornis*)

During 2022, the population of black rhinos in Africa increased despite ongoing poaching threats. By the end of 2022, the black rhino population had increased by 3.9% compared to 2021, bringing the total number to 6,468 individuals. This growth was attributed to ongoing improvement in conservation management and strategies, reduced poaching rates in most range States, and successful translocations leading to range expansion[47].

In 2023, the population of black rhinos in Africa experienced a slight decline compared to the previous year. By the end of 2023, there were an estimated 6,421 black rhinos, representing a 1.0% decrease from that at the end of 2022. This drop was primarily attributed to poaching related losses in Namibia and South Africa. Despite some increases in other range States, these gains were insufficient to offset the overall decline[45].

As of the end of 2024, there were 6,788 black rhinos, including all subspecies, living in 13 African countries. This reflected an increase of 5.2% compared to 2023. Together with the 214 black rhinos in zoos and semi-wild conditions elsewhere off the continent (Table 2), there were at least 7,002 black rhinos globally.

Considering the precision in key population estimates, Africa had between 6,268 and 6,549 black rhinos at the end of 2021 reported at CoP19. By the end of 2024, the global estimate for black rhino was between 6,686 and 7,047 living on the continent, indicating an increase of between 1.7% and 4.1% since the end of 2021 (Fig. 4). Despite these increases, black rhinos remain classified as Critically Endangered on the IUCN Red List of Threatened Species. This is largely due to severe poaching driven population declines in the past and ongoing habitat loss[48]. Despite encouraging conservation efforts leading to population growth in recent decades, black rhinos remain at high risk of extinction.

The IUCN Green Status assessment is a recent conservation tool that evaluates a species' recovery potential and the impact of conservation efforts[49]. The results of a Green Status exercise conducted on black rhino show that the species is Largely Depleted but has significant recovery potential if conservation actions continue[50]. Without the collective conservation efforts, the estimated population in 2022 might have been as low as 296 individuals, indicating a conservation legacy of over 6,100 rhinos which have been saved. The same exercise clearly indicates that if protection efforts were to stop today, the population could decline to 3,354 by 2032, indicating a conservation dependence of 3,133 rhinos. However, the reverse is also true; if current levels of conservation management persist, the population could grow to 8,943 by 2032, which would be a conservation gain of 2,456 rhinos.

Looking ahead, the recovery potential suggests that 20,952 black rhinos could inhabit Africa by 2122 if habitat is restored and ecological equivalents replace extinct subspecies.

[47] Knight, M., Mosweu, K. and Ferreira, S.M., 2023. African Rhino Specialist Group Chair report Rapport du Groupe de Spécialistes du Rhinocéros d'Afrique. *Pachyderm*, *64*, pp.13-30.

[48] Emslie, R. 2020. *Diceros bicornis* ssp. *minor*. *The IUCN Red List of Threatened Species* 2020: e.T39321A152729173. https://dx.doi.org/10.2305/IUCN.UK.2020-1.RLTS.T39321A152729173.en.

[49] Akçakaya, H.R., Bennett, E.L., Brooks, T.M., Grace, M.K., Heath, A., Hedges, S., Hilton-Taylor, C., Hoffmann, M., Keith, D.A. and Long, B., 2018. Quantifying species recovery and conservation success to develop an IUCN Green List of Species. *Conservation Biology*, 32(5), pp.1128–1138. https://doi.org/10.1111/cobi.13112

[50] Ferreira, S.M., Goodman, P., Balfour, D., Vigne, L., Knight, M., & Mosweu, K. (2024). Conservation impacts and the future of the black rhinoceros (*Diceros bicornis*). *African Journal of Wildlife Research*, 54, pp. 81–91. https://doi.org/10.3957/056.054.0081

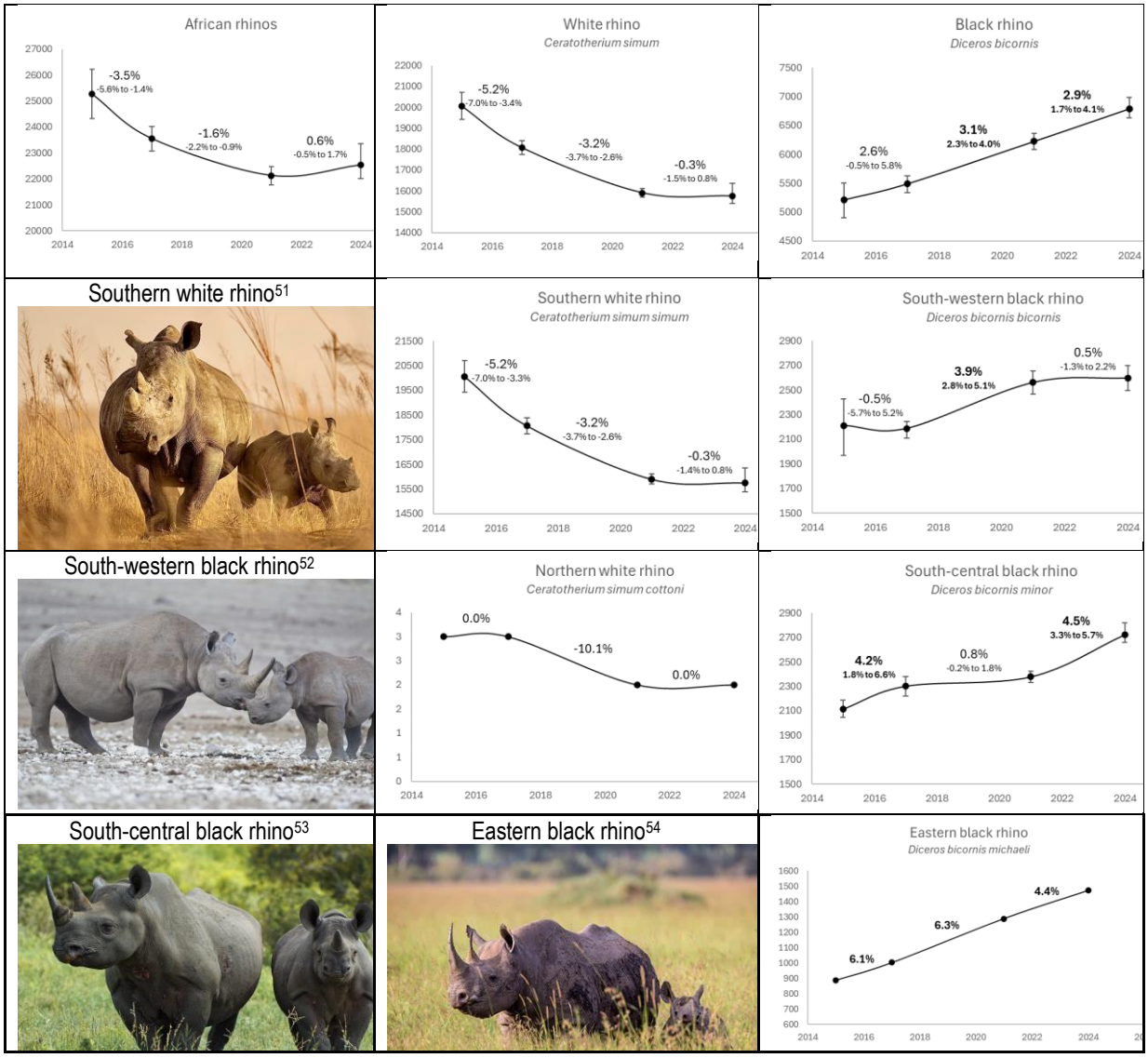

Figure 4. Continental estimates and 95% confidence intervals for African rhinos reported at CoP17 (data for 2015), CoP18 (data for 2017), CoP19 (data for 2021) and CoP20 (data for 2024). We also provide the estimate annual growth between CoPs with the 95% confidence interval. Bold annual growth rates reflect significant increases where the 95% confidence interval excludes zero.

2.2.1.1 South-western black rhino (*D. b. bicornis*)

At the end of 2022, the population of South-western black rhinos in Africa was 2,636 individuals reflecting an increase from 2021. However, by the end of 2023, the number had decreased to 2,583, marking a decline of 2.0%. This population decline was particularly notable in Namibia, the primary range State for the subspecies, where conservationists had previously reported stability or slight increases in numbers. The decline was attributed to increasing poaching pressures, drought and natural mortality rates exceeding birth rates[45].

By the end of 2024, there were 2,597 South-western black rhinos living in two countries namely Namibia (80.8%) and South Africa (19.2%) (Table 3). These rhinos were distributed between eight populations in Namibia and seven in South Africa. Overall, South-western black rhinos did not change much over the reporting period with a weighted growth of 0.5% (95% Ci: -3.8% to 4.8%) since 2023. Namibia continued to report a decline, but growth in South Africa compensated for those losses. Note: authorities in Namibia make use of sample counts for a key population and thus report estimates with confidence intervals. The other populations make use of identifying individual rhinos to obtain estimates. Considering this, the overall estimate for South-

[51] https://worldanimalnews.com/wp-content/uploads/2023/09/22aa88ef-6f97-4add-a818-f0a85b1d9f4c-1.jpeg
[52] https://s3.animalia.bio/animals/photos/medium/original/1781px-diceros-bicornis-etoshajpg.webp
[53] https://th.bing.com/th/id/OIP.HnsKyp7SGGMvfAxcq7csrwHaE5?cb=iwp1&rs=1&pid=ImgDetMain
[54] https://th.bing.com/th/id/OIP.CuAUMjZWU6zFkOzHkaTiTAHaE8?cb=iwp1&rs=1&pid=ImgDetMain

western black rhino on the continent had a 95% confidence interval ranging from 2,555 to 2,757. This was not a substantial improvement since 2021 with annual growth since then 0.5% (95% CI: -1.3% to 2.2%) (Fig. 4).

Since 2021, the Namibian population changed by -1.2% (95% CI: -2.6% to 0.3%) and the South African population by 6.8% (95% CI: 6.0% to 7.6%) per annum with the overall change 0.5% (95% CI: -1.3% to 3.7%). At the end of 2024, 98.2% South-western black rhinos lived in wild ranging conditions. State (60.2% of individual rhinos) and partnership management models (36.0%) were protecting South-western black rhinos. The median area available to South-western black rhinos at a locality was 680 km^2 but population sizes were generally small with a median of 28 individuals (Fig. 5).

There was one identified South-western black rhino outside the continent (0.04% of the global population, Table 2) although the individuals of unknown subspecies of black rhinos in several zoos may include some South-western black rhinos.

Table 3. Estimates of African rhinoceroses species within Africa as of the end of 2024[55]. * denotes latest estimates were in 2023.

	Black rhinoceros				White rhinoceros			African Rhinoceroses
Range State	*D. b. bicornis*	*D. b. michaeli*	*D. b. minor*	*Diceros bicornis*	*C. s. cottoni*	*C. s. Simum*	*Ceratotherium simum*	Rhinocerotidae
Botswana	-	-	25	25	-	320	320	345
Chad	-	5*	2*	7*	-	-	-	7*
Côte d'Ivoire	-	-	-	-	-	1*	1*	1*
The Democratic Republic of Congo	-	-	-	-	-	31*	31*	31*
Eswatini	-	-	62	62	-	62	62	124
Kenya	-	1,059	-	1,059	2	1,041	1,043	2,102
Malawi	-	-	66	66	-	-	-	66
Mozambique	-	-	18*	18*	-	40*	40*	58*
Namibia	2,097	-	1	2,098	-	1,500	1,500	3,598
Rwanda	-	34	-	34	-	37	37	71
Senegal	-	-	-	-	-	3*	3*	3*
South Africa	500	110	1,697	2,307	-	12,082	12,082	14,389
United Republic of Tanzania	-	263	5	268	-	-	-	268
Uganda	-	-	-	-	-	43*	43*	43*
Zambia	-	-	60	60	-	54	54	114
Zimbabwe	-	-	784	784	-	536	536	1,320
Total	**2,597**	**1,471**	**2,720**	**6,788**	**2**	**15,750**	**15,752**	**22,540**

2.2.1.2 Eastern black rhino (*D. b. michaeli*)

The population of Eastern black rhinos showed continued growth in 2022 and in 2023. In 2022, there were 1,319 individuals in Africa, an increase of 2.1% since 2021. By the end of 2023, the growth rate was noted as 5.1%, when authorities reported 1,388 Eastern black rhinos on the continent. A notable portion of the population is managed outside its natural range, and particularly beyond the African continent. In 2022, an estimated 20.9% of the total global Eastern black rhinos (~348 of 1,667 individuals) were housed in facilities outside Africa, primarily in zoos[47]. That proportion remained at that level in 2023, with an estimated 20% of the global Eastern black rhino population (~347 of 1,735) in zoos, especially in Europe[45]. Meanwhile, the number of individuals held in semi-wild conditions in South Africa, but outside their historic range, decreased from 115 in 2021 to 100 in 2022.

There were 1,471 Eastern black rhinos living in five countries – Kenya (72.0%), the United Republic of Tanzania (17.9%), South Africa (7.5%), Rwanda (2.3%) and Chad (0.3%) – at the end of 2024 (Table 3). This represents a weighted population growth of 5.8% (95% CI: 5.0% to 6.6%) since the year before.

[55] Estimates make use of definite and probable estimates collated through various sources. See Annexure 4 for details.

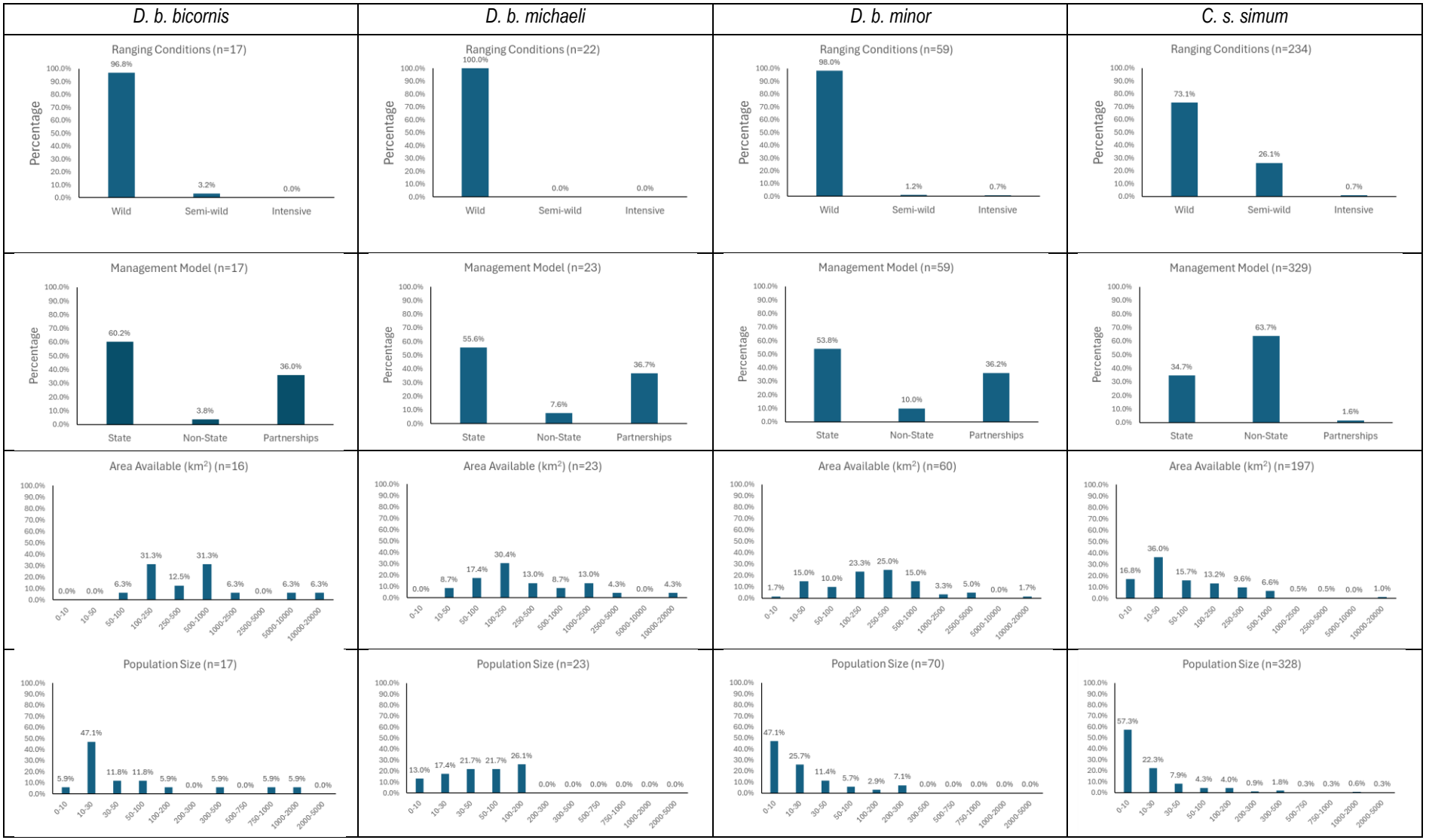

Figure 5. A summary of the ranging conditions, management models, areas available and population sizes of extant African rhinos (South-western back rhino – *D. b. bicornis*; Eastern black rhino – *D. b. michaeli*; South-central black rhino – *D. b. minor*; Southern white rhino – *C. s. simum*). Note that the Northern white rhino (*C. s. cottoni*) is functionally extinct with two cows in semi-wild conditions remaining and is thus not presented.

Range States reported a total of 25 Eastern black rhino localities comprising 16 in Kenya, six in the United Republic of Tanzania and one in South Africa, Rwanda and Chad. Two of these countries (South Africa and Chad) are outside the known range of the subspecies. Introduction of rhinos in one locality in Chad is part of an experiment of introducing ecological equivalents in extinct subspecies ranges, in this case the extinct Western black rhino (*D. b longipes*). Chad has admixed Eastern black rhino (*D. b. michaeli*) with South-central black rhinos (*D. b. minor*).

At the end of 2024, all Eastern black rhinos on the continent lived in wild conditions. Just over half (55.6%) of all Eastern black rhinos on the continent were State owned and 36.7% under partnership management models. including state–NGO co-management (*e.g.* Kenya Wildlife Services with Lewa and Ol Pejeta), community and private conservancies under national oversight (*e.g.* Sera Conservancy through the Northern Rangeland Trust), population coordination across secure sites guided by Kenya's national strategy, and emerging zoo-to-wild collaborations particularly in the United Republic of Tanzania, all combining security, genetic management, and local stewardship to support species recovery. The median area available to Eastern black rhinos at a locality was 247 km^2, but population sizes were generally small with a median of 45 individuals (Fig. 5).

Overall, there were 141 Eastern black rhinos living in captive or semi-wild conditions beyond the African continent (Table 2) where captive breeding operation principles are adhered too – managing all the vital or most of the vital rates. Within the 8.75% that are in captive or semi-captive conditions off the continent, some genetic haplotypes are present that are absent from the wild[56]. Note that collation of annual zoo records started in 2021, but considerable variation relates to new information being acquired as the collation process improves. It is anticipated that this will become more precise in future. Even so, these trends reflect both conservation gains and continuing challenges for the conservation of the subspecies.

2.2.1.3 South-central black rhino (*D. b. minor*)

The South-central black rhino numbers experienced modest growth during 2022 and 2023. By the end of 2022, the population was estimated at 2,531 individuals, reflecting a 6.3% increase from 2021. In 2023, numbers declined to 2,474, showing a decrease of 2.3%. Much of this relates to South Africa, which reported 2,205 in 2022 and 2,065 in 2023[45]. A total of 32 individuals of South-central black rhinos were held in facilities outside Africa by the end of 2022[47]. This figure remained consistent into 2023, with 33 individuals in non-African conservation facilities[Error! Bookmark not defined.]. A few individuals also lived in semi-wild conditions in South Africa and Zimbabwe, though these settings are limited.

At the end of 2024, there were 2,720 individuals living in 10 countries – South Africa contained the most (62.4%), followed by Zimbabwe (28.8%) and the other eight countries comprised 8.8% (Botswana, Chad, Eswatini, Malawi, Mozambique, Mozambique, the United Republic of Tanzania, and Zambia). These individuals comprised 79 populations, with most in South Africa (59) and Zimbabwe (10), and the rest of the range States comprising one or two populations. Note that Chad introduced six South-central black rhino (*D. b. minor*) in 2018, of which four died within a year due to probable nutritional stress[57]. During 2024, five Eastern black rhinos (*D. b. michaeli)* were introduced as an admixture experiment of establishing equivalent subspecies into ranges where a local subspecies had gone extinct[58].

Note that one key locality makes use of sample counts and thus reports an estimate with confidence intervals. The other localities make use of registration studies using individual identification of all rhinos to obtain estimates. Considering this, the overall African population estimate for South-central black rhino ranged from 2,660 to 2,819 at the end of 2024 and increased at 4.5% (95% CI: 3.3% to 5.7%) since 2021 (Fig. 4).

Most South-central black rhinos lived in wild conditions (98.0%), with 53.8% of individuals under state management. Partnerships were stewarding 36.2% of individuals, with non-state (comprising private and community ownership) playing a less important role. Note that many of the state management models include managing with government contractual partners including the African Parks Network, the Frankfurt Zoological Society and the Peace Parks Foundation. Disregarding the management model, the median area available at a locality was 200 km^2. Even so, the median population size was relatively small at 11 individuals (Fig. 5).

[56] Sánchez-Barreiro, F., De Cahsan, B., Westbury, M.V., Sun, X., Margaryan, A., Fontsere, C., Bruford, M.W., Russo, I.R.M., Kalthoff, D.C., Sicheritz-Pontén, T. and Petersen, B., 2023. Historic sampling of a vanishing beast: population structure and diversity in the black rhinoceros. *Molecular Biology and Evolution*, *40*(9), p.msad180. https://doi.org/10.1093/molbev/msad180

[57] African Parks. 2021. Update on the underlying cause(s) of the mortalities of four Black Rhino (*D. bicornis minor*) translocated to Zakouma National Park (Chad) from South Africa in October 2018 – seasonal nutrient content of browse in different parts of the landscape. African Parks, Johannesburg, South Africa. Available from Dr Angela Gaylard, angelag@africanparks.org

[58] Hubbell, S.P., 2006. Neutral theory and the evolution of ecological equivalence. *Ecology*, 87(6), pp.1387–1398.

Irrespective of the year-to-year changes noted above, since 2021, South-central black rhinos in South Africa changed at 3.1% (95% CI: 0.6% to 5.5%) and Zimbabwe at 7.5% (95% CI: 6.7% to 8.3%) per annum. The rest noted highly variable annual changes – 3.2% (95% C I: -5.0% to 11.3%).

Within captive and other facilities beyond the continent, there were 43 confirmed South-central black rhinos, although some individuals of unknown subspecies may be South-central black rhinos (Table 2).

2.2.2 White rhinos (*Ceratotherium simum*)

The white rhino population increased from 2021 (15,942) to 16,801 in 2022, showing a 3.5% growth[47]. In 2023, the population reached 17,464 reflecting a reported growth of 3.7% from the previous year[45]. In 2022, 1,241 individuals were in facilities outside Africa, with 1,262 in these by the end of 2023.

By the end of 2024, there were 15,752 white rhinos of both subspecies, living in 13 countries on the continent. Together with the 1,299 white rhinos in zoos and semi-wild conditions elsewhere off the continent (Table 2), the world had at least 17,051 white rhinos. The number of white rhinos on the African continent reflects a decline of 11.2% since 2023. The decline mostly relates to decreases in South Africa and Eswatini. Three localities use sample-based methods to obtain population estimates. Given the precision of these, there were between 15,392 and 16,361 white rhinos living in Africa at the end of 2024. This does not reflect much improvement since CoP19 (-1.5% to 0.8% change per annum since 2021, Fig. 4) when Africa had an estimated 15,543 to 16,512 white rhinos at the end of 2021.

Note that despite poaching and habitat loss driving population declines in the past, recovery in more recent times resulted in the white rhino classified as Near Threatened on the IUCN Red List of Threatened Species[59].

2.2.2.1 Northern white rhino (*C. s. cottoni*)

There remain only two individuals. They are non-reproductive females (a cow and her calf) living in out-of-range, semi-wild conditions in Kenya. An assisted reproductive technology (ART) project focuses on attempting to help the recovery of this subspecies. Researchers have developed techniques such as ovum pick-up, in-vitro fertilization, and stem-cell-derived gametes to create viable embryos using preserved genetic material from deceased males[60]. Projects like BioRescue[61] aim to implant these embryos into Southern white rhino surrogate mothers. While promising, these efforts also raise complex ethical, financial and logistical challenges[62].

2.2.2.2 Southern white rhino (*C. s. simum*)

Southern white rhino numbers reflect a slight recovery during 2022 and 2023. In 2021, the population was estimated at 15,940 individuals. By the end of 2022, numbers rose to 16,799, a 5.4% growth. In 2023, the population reached 17,462 animals, reflecting a slower growth rate of 3.9%[45]. Although still the most numerous rhino subspecies, Southern white rhinos remain under pressure from poaching and habitat challenges. Rhinos in facilities beyond Africa play a small but steady role: in 2022, 1,241 were kept in zoos and other facilities outside Africa. This number remained largely unchanged in 2023, with around 1,262 individuals . Additionally, a significant number were housed in semi-wild conditions in South Africa, particularly at the Rewilding Rhino initiative owned by African Parks (previously the Platinum Rhino facility), which once held over 2,000 Southern white rhinos but is actively reducing that number through translocations into free ranging conditions over time.

By the end of 2024, there were 15,750 Southern white rhinos living in 13 countries on the continent. This reflects a decline of 11.2% (95% CI: -16.2% to -6.3%) since 2023. The decline is mostly a consequence of losses experienced in South Africa, where the population declined to 14,074 white rhinos in 2023, a decline of 15.3%. There are three main reasons for the recorded decline. First, 420 white rhinos were poached, with 47.1% of those losses occurring in Hluhluwe-iMfolozi Park in South Africa's KwaZulu Natal province. This followed a shift in poaching pressure after a dehorning program was implemented in the Kruger National Park. Despite the dehorning, 88 rhinos – most were dehorned – were still reported poached in the Kruger National Park during 2024. In response to the poaching pressure, Hluhluwe-iMfolozi Park also began dehorning. Second, some provinces did not update their population estimates after 2023. Third, there is uncertainty about whether distance sampling methods overestimated the population size in Hluhluwe-iMfolozi Park.

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[59] Emslie, R. 2020. *Ceratotherium simum.* The IUCN Red List of Threatened Species 2020: e.T4185A45813880. https://dx.doi.org/10.2305/IUCN.UK.2020-1.RLTS.T4185A45813880.en

[60] Hildebrandt, T.B., Holtze, S., Colleoni, S., Hermes, R., & Göritz, F., 2023. In vitro fertilization program in white rhinoceros. *Reproduction*, 166(6): 383-399. Available at: https://rep.bioscientifica.com/view/journals/rep/aop/rep-23-0087/rep-23-0087.xml

[61] www.biorescue.org

[62] Biasetti, P., Hildebrandt, T.B., Göritz, F., Holtze, S., & Colleoni, S., 2022. Ethical analysis of the application of assisted reproduction technologies in biodiversity conservation. *Frontiers in Veterinary Science*, 9, p.831675. Available at: https://www.frontiersin.org/articles/10.3389/fvets.2022.831675/full

Eswatini also reported a substantial decline from 2023 to 2024. The sixty-two white rhinos reported at the end of 2024 reflects a 38.4% decline from the numbers reported at the end of 2021. These relates to challenges linked to environmental conditions and a sudden inability to effectively manage rhinos and competing herbivores due to new regulations. These regulations only allow Eswatini registered aerial support to operate in the country and have disenabled the use of affordable non-Eswatini registered wildlife air services. Implementing cost-effective various biological management interventions is thus limited.

South Africa had the most Southern white rhinos (76.7%), followed by Namibia (9.5%), Kenya (6.6%), Zimbabwe (3.4%) and Botswana (2.0%). The other eight range states (Côte d'Ivoire, the Democratic Republic of Congo, Eswatini, , Mozambique, Rwanda, Senegal, Uganda and Zambia) each had fewer than 100 Southern white rhinos and in total made up 1.7% of the continental population. Note that the populations in Côte d'Ivoire, Kenya, and Senegal are outside the species' natural range and are thus novel elements in the ecosystems in which they live[63]. The populations in the Democratic Republic of Congo, Rwanda and Uganda are within or on the very edge of the contemporary range of Northern white rhinos (*C. s. cottoni*) and can be considered as equivalents[64].

Despite the above changes and challenges, there are 336 localities with Southern white rhinos, most of which are in South Africa (290), Kenya (13), Botswana (12) and Zimbabwe (7). Of interest is that Zambia reported six localities, four more than previously reported while Namibia reported five localities. Note that Namibia provided a total sum of individuals living on privately owned properties with Southern white rhinos in the country as one of the "localities".

During 2024, 26.1% of Southern white rhino individuals were living in semi-wild conditions, with 63.7% of all Southern white rhinos on the continent owned and managed by non-state entities – mostly private but there is some community ownership. Disregarding the management model, the median area available at a locality was 46 km^2, while the median population size was small at seven individuals (Fig. 5).

Given that three localities make use of sample counts and report confidence intervals, an estimated 15,390 to 16,359 Southern white rhinos lived on the African continent at the end of 2024. At the end of 2021, there were an estimated 15,543 to 16,512. Despite the gains in 2022 and 2023, the setbacks in 2024 resulted in virtually no change compared to 2021, *i.e.* -0.3% (95% CI: -1.4% to 0.8%) per annum (Fig. 4).

At the end of 2024, there were 1,299 Southern white rhinos in zoos and other facilities beyond Africa (Table 2).

2.3 Country trends in Africa

African rhino range States reported rhino numbers since 1992 to the AfRSG. Recent trends since 2005 reported at CITES CoPs are useful. From a high of 25,628 rhinos on the continent at the end of 2015, the continent experienced a decline to a low of 22,137 in 2017 (Table 4). These trends largely reflect the trends within key range States.

South Africa, with most of the continent's rhinos, experienced declines from 2010 until 2024. This is largely due to declines in Southern white rhinos in state-protected areas and particularly in one large National Park (Kruger National Park) as well as some provincial reserves. Most recently, this included a relatively large provincial protected area (Hluhluwe-Imfolozi Park). The decline of South-central black rhinos in Kruger National Park also played a role, especially between 2017 and 2021, when poaching effects were observed in Kruger[65]. Zimbabwe experienced substantial declines between 2007 and 2010 due to high poaching pressures on Southern white rhino as well as South-central black rhinos. Botswana experienced substantial decreases in rhino numbers between 2017 to 2021 related to illegal killing targeting both rhino species. Namibia experienced poaching pressure that led to declines from 2021 to 2024.

It is worth noting that the loss of rhinos due to illegal killing is accompanied by two key factors. One study highlighted that detection of poached carcasses is at around 80% in large, protected areas[66], and the loss of an adult cow results in 0.5 dependent calves also being lost and the potential loss of 4.5 future calves[67]. The impacts of these additional effects can be

[63] E.g. Hobbs, R.J., Arico, S., Aronson, J., Baron, J.S., Bridgewater, P., Cramer, V.A., Epstein, P.R., Ewel, J.J., Klink, C.A., Lugo, A.E. and Norton, D., 2006. Novel ecosystems: theoretical and management aspects of the new ecological world order. *Global ecology and biogeography*, *15*(1), pp.1-7. https://doi.org/10.1111/j.1466-822X.2006.00212.x

[64] Hubbell, S.P., 2006. Neutral theory and the evolution of ecological equivalence. *Ecology*, 87(6), pp.1387–1398.

[65] Ferreira, S.M., Greaver, C., Nhleko, Z. and Simms, C., 2018. Realization of poaching effects on rhinoceroses in Kruger National Park, South Africa. *African Journal of Wildlife Research*, *48*(1), pp.1-7. https://journals.co.za/doi/pdf/10.3957/056.048.013001

[66] Ferreira, S.M. and Dziba, L., 2023. Rhinoceros accounting in Kruger National Park, South Africa. *Journal for Nature Conservation*, *72*, p.126359. http://www.rhinoresourcecenter.com/pdf_files/168/1687256069.pdf

[67] Nhleko, Z.N., Ahrens, R., Ferreira, S.M. and McCleery, R.A., 2022. Poaching is directly and indirectly driving the decline of South Africa's large population of white rhinos. *Animal Conservation*, *25*(2), pp.151-163. https://doi.org/10.1111/acv.12720

severe – for instance, annual recruitment rates seldom exceeded total loss rates in Kruger National Park in the decade preceding 2020[68].

The localities with poaching driven declines have at least one common feature – they are relatively large areas. It has been speculated that cost-efficient access control, situational awareness, staff integrity and knowledge of individual rhinos are key factors influencing effective protection[69] and that reduce poaching rates to below a critical threshold of 3.5% poaching rate for both species per annum[4]. An additional element, particularly in South Africa, reflects on the state of regional safety in areas abutting protected areas where rhinos live. In at least one case, regional criminality may play a key role in facilitating illegal activities linked to wildlife[70].

Although illegal killings (poaching) are key drivers of rhino declines, at least three countries reported other causes. Notably, the impact of drought on Southern white rhino population dynamics in Kruger National Park[71] during 2015/2016. Eswatini reported similar constraints on Southern white rhinos, while Namibia reported an extended drought since 2015/2016[72] that impacted on South-western black rhinos, specifically in north-western Namibia.

Impact on management responses through regulatory changes are also important – for instance, Eswatini reported that the decline of Southern white rhino is linked to regulations that have effectively excluded the use of non-Eswatini-registered air services to manage competing herbivores as well as rhinos. This leaves very little scope to source competent and affordable aerial support with wildlife or rhino experience in-country. The white rhino losses have occurred despite exemplary rhino protection efforts resulting in not a single rhino having been poached in Eswatini since 2014. Eswatini illustrates the unintended risks of policy decisions that can have long-term consequences in rhino conservation.

In addition, authorities in the Greater Kruger region implemented a broadscale dehorning programme,[73] which displaced the poachers and stimulated Hluhluwe-Imfolozi Park to follow suit in 2024 when approximately 1,000 rhinos were dehorned in half a year. Displacement of poaching pressure can have substantive local impact on live rhinos. Detecting these impacts can be influenced by accuracy and precision of population estimates. For instance, sample-based estimates, while useful, can carry risks of over-estimation depending on the method used. Techniques such as distance sampling, for example, may overestimate populations if key assumptions are not fully met or if detection rates are lower than expected. This highlights the importance of careful method selection and validation when estimating wildlife numbers.

Most noteworthy is the sustained increase in rhino numbers that the other range States maintained across varying conditions on the continent. Much of this relates to good protection and innovative partnerships as well as the restoration of rhinos into localities where they previously existed. A new development is the introduction of rhinos into areas where they have not been present in relatively recent historic times, although it is noteworthy that the Southern white rhinos of Kenya, which is outside the historic range of Southern white rhinos, make a key contribution to the numbers the subspecies.

[68] Ferreira, S.M., Greaver, C., Simms, C. and Dziba, L., 2021. The impact of COVID-19 government responses on rhinoceroses in Kruger National Park. *African Journal of Wildlife Research*, *51*(1), pp.100-110. https://journals.co.za/doi/pdf/10.3957/056.051.0100

[69] Ferreira, S.M. and Dziba, L., 2021. Where are rhinos safest? *South African Journal of Science*, *117*(9-10).

[70] Rademeyer, J., 2023, *Landscape of fear: Crime, corruption and murder in greater Kruger*. ENACT Africa.

[71] Ferreira, S.M., le Roex, N. and Greaver, C., 2019. Species-specific drought impacts on black and white rhinoceroses. *PLoS One*, *14*(1), p.e0209678. https://doi.org/10.1371/journal.pone.0209678

[72] Liu, X. and Zhou, J., 2021. Assessment of the continuous extreme drought events in Namibia during the last decade. *Water*, *13*(20), p.2942. https://doi.org/10.3390/w13202942

[73] Kuiper, T., Hausmann, S., Whitfield, S., Altwegg, R., Ferreira, S., Shaw, J., Polakow, D., Hofmeyer, M., Pierce, E., Nowak, I., Rowles, C., Zowitsky, H., Olivier, I., Boyd, W., Bird, J., Worth, E., van Tonder, M., Bourn, M., Greef, Z., Hartman, Z. (2023). *Evaluating the cost & effectiveness of rhino conservation interventions in the Greater Kruger*. A Greater Kruger Environmental Protection Foundation Report.

Table 4. Population estimates for African rhinos within range States reported at Conferences of the Parties since before the poaching of rhinoceroses escalated in 2007. * indicates estimates provided in 2023.

		White rhinoceros *Ceratotherium simum*			Black rhinoceros *Diceros bicornis*				Rhinocerotidae
Range State	Year	*C. s. cottoni*	*C. s. simum*	Total	*D. b. bicornis*	*D. b. michaeli*	*D. b. minor*	Total	Total
Angola	2021	-	3	3	-	-	-	-	3
	2024	-	0	0	-	-	-	-	0
Botswana	2005	-	99	99	-	-	5	5	104
	2007	-	106	106	-	-	7	7	113
	2010	-	135	135	-	-	7	7	142
	2015	-	239	239	-	-	48	48	287
	2017	-	452	452	-	-	50	50	502
	2021	-	242	242	-	-	23	23	265
	2024	-	320	320	-	-	25	25	345
Chad	2021	-	-	-	-	-	2	2	2
	2024	-	-	-	-	5*	2*	7*	7*
Côte d'Ivoire	2017	-	1	1	-	-	-	-	1
	2021	-	1	1	-		1	1	2
	2024	-	1*	1*	-	-	0*	0*	1*
The Democratic Republic of Congo	2005	4	-	4	-	-	-	-	4
	2007	4	-	4	-	-	-	-	4
	2010	-	-	-	-	-	-	-	-
	2015	-	-	-	-	-	-	-	-
	2017	-	-	-	-	-	-	-	-
	2021	-	20	20	-	-	-	-	20
	2024	-	31*	31*	-	-	-	-	31*
Eswatini	2005	-	75	75	-	-	16	16	91
	2007	-	89	89	-	-	18	18	107
	2010	-	88	88	-	-	17	17	105
	2015	-	76	76	-	-	20	20	96
	2017	-	66	66	-	-	21	21	87
	2021	-	98	98	-	-	48	48	146
	2024	-	62	62	-	-	62	62	124
Kenya	2005	-	234	234	-	540	-	540	774
	2007	-	303	303	-	577	-	577	880
	2010	4	361	365	-	594	-	594	959
	2015	3	441	444	-	678	-	678	1,122
	2017	3	510	513	-	745	-	745	1,258
	2021	2	871	873	-	938	-	938	1,811
	2024	2	1,041	1,043	-	1,059	-	1,059	2,102
Malawi	2005	-	-	-	-	-	10	10	10
	2007	-	-	-	-	-	16	16	16
	2010	-	-	-	-	-	24	24	24
	2015	-	-	-	-	-	26	26	26
	2017	-	-	-	-	-	28	28	28
	2021	-	-	-	-	-	56	56	56
	2024	-	-	-	-	-	66	66	66
Mozambique	2005	-	7	7	-	-	-	-	7
	2007	-	9	9	-	-	-	-	9
	2010	-	6	6	-	-	1	1	7
	2015	-	29	29	-	-	2	2	31
	2017	-	29	29	-	-	1	1	30
	2021	-	14	14	-	-	2	2	16
	2024	-	40*	40*	-	-	18*	18*	58*
Namibia	2005	-	293	293	1,141	-	-	1,141	1,434
	2007	-	370	370	1,435	-	-	1,435	1,805
	2010	-	469	469	1,750	-	-	1,750	2,219
	2015	-	822	822	1,946	-	-	1,946	2,768
	2017	-	975	975	1,857	-	-	1,857	2,832
	2021	-	1,234	1,234	2,155	-	1	2,156	3,390
	2024	-	1,500	1,500	2,097	-	1	2,098	3,598
Rwanda	2005	-	-	-	-	1	-	1	1
	2007	-	-	-	-	1	-	1	1
	2010	-	-	-	-	-	-	-	-
	2015	-	-	-	-	-	-	-	-
	2017	-	-	-	-	19	-	19	19
	2021	-	30	30	-	28	-	28	58
	2024	-	37	37	-	34	-	34	71
Senegal	2017	-	3	3	-	-	-		3
	2021	-	3	3	-	3	-	3	3
	2024	-	3*	3*	-	0	-	0	3*

		White rhinoceros *Ceratotherium simum*			Black rhinoceros *Diceros bicornis*				Rhinocerotidae
South Africa	2005	-	13,521	13,521	80	41	1,258	1,379	14,900
	2007	-	16,273	16,273	113	54	1,321	1,488	17,761
	2010	-	18,796	18,796	171	60	1,684	1,915	20,711
	2015	-	18,413	18,413	254	79	1,560	1,893	20,306
	2017	-	15,625	15,625	331	83	1,632	2,046	17,671
	2021	-	12,968	12,968	406	115	1,535	2,056	15,024
	2024	-	12,082	12,082	500	110	1,697	2,307	14,389
United Republic of Tanzania	2005	-	-	-	-	57	44	101	101
	2007	-	-	-	-	67	56	123	123
	2010	-	-	-	-	88	25	113	113
	2015	-	-	-	-	129	4	133	133
	2017	-	-	-	-	155	5	160	160
	2021	-	-	-	-	207	5	212	212
	2024	-	-	-	-	263	5	268	268
Uganda	2005	-	4	4	-	-	-	-	4
	2007	-	6	6	-	-	-	-	6
	2010	-	9	9	-	-	-	-	9
	2015	-	15	15	-	-	-	-	15
	2017	-	22	22	-	-	-	-	22
	2021	-	35	35	-	-	-	-	35
	2024	-	43*	43*	-	-	-	-	43*
Zambia	2005	-	2	2	-	-	6	6	8
	2007	-	1	1	-	-	16	16	17
	2010	-	7	7	-	-	27	27	34
	2015	-	10	10	-	-	32	32	42
	2017	-	14	14	-	-	48	48	62
	2021	-	8	8	-	-	58	58	66
	2024	-	54	54	-	-	60	60	114
Zimbabwe	2005	-	308	308	-	-	527	527	835
	2007	-	313	313	-	-	546	546	859
	2010	-	290	290	-	-	431	431	721
	2015	-	330	330	-	-	472	472	802
	2017	-	367	367	-	-	520	520	887
	2021	-	417	417	-	-	616	616	1,033
	2024	-	536	536	-	-	784	784	1,320
Africa	2005	4	14,543	14,547	1,221	639	1,866	3,726	18,273
	2007	4	17,470	17,474	1,548	699	1,980	4,227	21,701
	2010	4	20,161	20,165	1,921	742	2,216	4,879	25,044
	2015	3	20,375	20,378	2,200	886	2,164	5,250	25,628
	2017	3	18,064	18,067	2,188	1,002	2,305	5,495	23,562
	2021	2	15,940	15,942	2,561	1,288	2,346	6,195	22,137
	2024	2	15,750	15,752	2,597	1,471	2,720	6,788	22,540

2.4. National and continental population trends in Asian rhinoceroses

Asian rhino range States reported 4,159 to 4,172 rhinos living in India, Nepal and Indonesia by early 2025 (Table 5) higher than that reported in 2022 at CoP19 – 4,124 to 4,137[4]. This reflects an annual exponential change of 0.3% (95% CI: 0.2% to 0.4%) and gains made in India for greater one-horned rhinos *Rhinoceros unicornis*, that helped to offset losses in Indonesia (Javan rhinos, *Rhinoceros sondaicus*) (see below).

2.4.1 Greater one-horned rhino (*Rhinoceros unicornis*)

The current population of greater one-horned rhino is 4,075 with 3,323 in India and 752 in Nepal. In February 2025, authorities at Jaldapara and Gorumara National Parks in West Bengal, India, conducted rhino population estimates. Jaldapara recorded an increase of 44 rhinos compared to the previous count, while Gorumara recorded an increase of nine rhinos. Even so, range States reported that most populations did not have recent updated estimates (Table 6).

Table 5. Estimates of Asian rhino numbers[74] by country, species and subspecies by early 2025.

	Greater one-horned rhino	Javan (Lesser one-horned rhino)	Sumatran rhino			Asian Rhinoceroses
Range State	*Rhinoceros unicornis*	*Rhinoceros sondaicus*	*D. s. sumatrensis*	*D. s. harrisoni*	*Dicerorhinus sumatrensis*	Rhinocerotidae
India	3,323	-	-	-	-	3,323
Nepal	752	-	-	-	-	752
Indonesia	-	50	32 – 44	2-3	34 – 47	84 - 97
Asia	4,075	50	32 – 44	2-3	34 – 47	4,159 - 4,172

Table 6. Population estimates for greater one-horned rhinos in various areas within India and Nepal.

Areas within India and Nepal	Population in 2021-22	Population in April 2025
Kaziranga National Park	2613	2613 (No new estimation carried out)
Manas National Park	40	40 (No new estimation carried out)
Orang National Park	125	125 (No new estimation carried out, however, seven rhinos naturally dispersed to Laokhowa and Burhachapori Wildlife Sanctuary during 2023-24)
Pobitora Wildlife Sanctuary	107	107 (No new estimation carried out)
Laokhowa and Burhachapori Wildlife Sanctuary	0	7 (naturally dispersed from Orang NP during 2023-24 due to better habitat connectivity)
Jaldapara National Park	287	331
Gorumara National Park	52	61
Dudhwa National Park	42	46
Chitwan National Park	694	694 (No new estimation carried out, however, two rhinos were translocated to Koshi Tapu Wildlife Reserve in September 2023)
Bardia National Park	38	38 (No new estimation carried out)
Suklaphanta National Park	17	17 (No new estimation carried out)
Parsa Wildlife Reserve	3	3 (No new estimation carried out)
Koshi Tapu Wildlife Reserve	0	2 (translocated from Chitwan NP in September 2023)

2.4.2 Javan rhino (Rhinoceros sondaicus)

In 2023, authorities from Ujung Kulon National Park in Indonesia reported a population of 76 Critically Endangered Javan rhinos. However, scientists and conservation organizations raised concerns about the accuracy of this number, as 18 of the rhinos had not been seen on camera traps for the past three years. These concerns were confirmed when it was revealed that 26 of the 76 rhinos counted had been killed by two poaching groups between 2019 and 2023. Based on this, the current minimum estimated number of Javan rhinos is 50, a significant decline from the figure reported at CoP19 in Annex 4 to document CoP19 Doc. 75 (Rev. 1).

The Javan rhino poaching cases were detected after police in Banten Province, where Ujung Kulon National Park is located, received a report on 29 May 2023 about missing camera traps and fewer signs of Javan rhinos in the park. Camera traps are the main tool used to monitor these rhinos. Footage from remaining cameras later showed armed individuals in the park, apparently tracking rhinos.

Police eventually identified 13 residents from a nearby village, led by two brothers who headed separate poaching gangs operating in the park. Testimonies from the suspects revealed that 26 Javan rhinos were poached in Ujung Kulon National Park over the past five years. This represents a 33% decline in the total known population. Investigations by the Indonesian police in early 2024 led to the arrest and conviction of those involved, with sentences of up to 12 years in prison and additional fines being

[74] Based on data held by the AsRSG and World Wildlife Fund data. Chair AsRSG, Bibhab Talukdar, bibhab@aaranyak.org.

imposed. Most of the rhinos killed were males, targeted for their visible horns. This has disrupted the male-to-female ratio and reduced the number of breeding males. Already facing challenges such as low birth rates, habitat degradation, and the spread of invasive palm species, the species is now in crisis. In response, police and the army have increased security in the area.

2.4.2 Sumatran rhino (*Dicerorhinus sumatrensis*)

No concerted effort to estimate Sumatran rhino in Indonesia is known. However, during recent searches for of Sumatran rhino in Bukit Barisan Selatan and Way Kambas National Parks in southern Sumatra, Indonesia found no fresh rhino footprints. E-DNA tools are being used in Way Kambas National Park, but the results were not available at the time of reporting. As such 34-47 remains the likely population of Sumatran rhinos in Indonesia, as reported by AsRSG in Annex 4 to document CoP19 Doc. 75 (Rev. 1).

2.5 Country trends in Asia

Since 2007, rhino populations in India and Nepal have shown steady growth, while Indonesia's populations have remained small and highly threatened (Table 7). In India, the number of greater one-horned rhinos rose from 2,150 in 2007 to 3,323 by 2024, reflecting successful conservation efforts. Nepal's population of the same species also grew consistently, from 413 in 2007 to 752 in 2024. In contrast, Indonesia's rhino numbers remain critically low. The Javan rhino increased modestly from 40–50 individuals in 2007 to 76 by 2021, but dropped to an estimated 50 in 2024, due to poaching. The Sumatran rhino has seen ongoing declines, with total numbers falling from 180–200 in 2007 to just 34–47 in 2024. These trends highlight both the success of focused protection in India and Nepal, and the urgent need for stronger enforcement and recovery actions in Indonesia.

Table 7. Population estimates for Asian rhinos within range States reported at Conferences of the Parties since before the poaching of rhinoceroses escalated in 2007. * records based on estimates noted by March 2022. # denotes estimates noted by March 2025.

		Greater one-horned rhinoceros *Rhinoceros unicornis*	Javan rhinoceros *Rhinoceros sondaicus*			Sumatran rhinoceros *Dicerorhinus sumatrensis*			Rhinocerotidae
Range State	Year	*R. unicornis*	*R. s. sondaicus*	*R. s. annamiticus*	Total	*D.s. sumatrensis*	*D.s. harrisoni*	Total	
India	2007	2,150	-	-	-	-	-	-	2,150
	2009	2,364	-	-	-	-	-	-	2,364
	2012	2,730	-	-	-	-	-	-	2,730
	2016	2,912	-	-	-	-	-	-	2,912
	2018	2,939	-	-	-	-	-	-	2,939
	2021*	3,262	-	-	-	-	-	-	3,262
	2024#	**3,323**	**-**	**-**	**-**	**-**	**-**	**-**	**3,323**
Nepal	2007	413	-	-	-	-	-	-	413
	2009	435	-	-	-	-	-	-	435
	2012	534	-	-	-	-	-	-	534
	2016	645	-	-	-	-	-	-	645
	2018	649	-	-	-	-	-	-	649
	2021*	752	-	-	-	-	-	-	752
	2024#	**752**	**-**	**-**	**-**	**-**	**-**	**-**	**752**
Indonesia	2007	-	40-50	-	40-50	180-200	-	180-200	220-250
	2009	-	38-44	-	38-44	140-200	-	140-200	178-244
	2012	-	35-45	-	35-45	120-180	-	120-180	155-225
	2016	-	63	-	63	73	3	76	139
	2018	-	65-68	-	65-68	37-75	3	40-78	105-146
	2021*	-	76	-	76	32-44	2-3	34-47	110-123
	2024#	**-**	**50**	**-**	**50**	**32-44**	**2-3**	**34-47**	**84-97**
Pakistan	2007	2	-	-	-	-	-	-	2
	2009	2	-	-	-	-	-	-	2
	2012	Maybe Present	-	-	-	-	-	-	Maybe Present
Malaysia	2007	-	-	-	-	75-90	25-30	100-120	100-120
	2009	-	-	-	-	0-70	20-30	20-100	20-100
	2012	-	-	-	-	Maybe Present	20-30	20-30	20-30
Viet Nam	2007	-	-	3-5	3-5	-	-	-	3-5
	2009	-	-	0-5	0-5	-	-	-	0-5
	2012	-	-	Extinct	-	-	-	-	Extinct
Asia	2007	2,565	40-50	3-5	43-55	255-290	25-30	280-320	2,888-2,940
	2009	2,801	38-44	0-5	38-49	140-270	20-30	160-300	2,999-3,150
	2012	3,264	35-45	Extinct	35-45	120-180	20-30	140-210	3,439-3,519
	2016	3,557	63	-	63	73	3	76	3,696
	2018	3,588	65-68	-	65-68	37-75	3	40-78	3,693-3,734
	2021*	4,014	76	-	76	32-44	2-3	34-47	4,124-4,137
	2024#	**4,075**	**50**	**-**	**50**	**32-44**	**2-3**	**34-47**	**4,159-4,172**

3. Trade dynamics

3.1 Illegal trade

3.1.1 Estimates of rhino horns that enter into the illegal trade

Estimates of rhino horn sourced into the illegal trade have been included in the rhinoceros report since CoP15 (CoP15 Doc. 45.1 (Rev. 1)). Horns are sourced into illegal trade primarily from poached rhinos; additional sources include the theft of horns from natural mortalities, government or privately held stockpiles or from museums, and horns obtained from legal trophy hunts. Horns may be prevented from entering illegal trade by way of recovery *in situ* when a poached animal is discovered with the horn intact. Additionally, horns may be recovered from illegal trade when illegal consignments are seized or confiscated. Subtracting the total horns recovered from the total horns sourced into illegal trade allows the estimation of the total horns that remain in the illegal trade.

The latest estimates of the horns sourced into, recovered from, and remaining in illegal trade (Table 8) reflect an equivalent number of whole horns, as some of the sourced and recovered horns are partial. This is particularly pertinent to horns sourced from poached rhinos that were previously dehorned, and those recovered through seizures or confiscations of horn pieces. The latter are converted to whole-horn equivalents using the methodology described in Section 3.1.2.2. Table 9 provides the average rate of horns sourced into illegal trade per CoP period (calculated as the total horns sourced into illegal trade divided by the number of years in the CoP period).

The following sections describe the data sources and estimation methodologies for each category of source or recovery. Methodologies to estimate totals are similar to those last reported at CoP19, with two main differences: 1) the exclusion from Table 8 of estimates for which no data exists, namely thefts from natural mortality or from sources other than stockpiles, and horns illegally sold from private stockpiles; and 2) adjustment of the number of horns entering into illegal trade from poached rhinos to account for extensive dehorning operations of rhino populations. Data were summarized for the most recent CoP period of three years (2021 – 2023) that followed the last report to CoP on 'African and Asian Rhinoceroses – Status, Conservation and Trade'[4]. It is noted that while data on poached rhinos is available up to and including 2024, the time lag in obtaining seizure data precluded the addition of the most recent year into analysis.

3.1.1.1 Horns sourced into illegal trade

Horns sourced from poached rhinos

The reported number of poached African and Asian rhinoceroses from 2021 - 2023 was based on data collected by the AfRSG and the AsRSG (see Section 5 of this report). In total, 1,703 individuals were reportedly poached in African range States and an additional 37 were poached in Asian range States. It is noted however, that not all poached rhinos are detected, and a study at Kruger National Park in South Africa estimated that roughly 10% of carcass go undetected[75]. Therefore, like methods used for the CoP19 report, the reported number of poached individuals was adjusted by a factor of 0.9 to provide an upper estimate accounting for imperfect detection (*i.e.* 1,740 divided by 0.9, which equals 1,933 individuals).

Calculations used in the previous report to CoP19 multiplied the number of poached rhinos by a factor of two, which assumes that all poached rhinos had two intact horns that can be sourced into illegal trade. As more rhinos are being dehorned as a management intervention to protect them from illegal killing, the assumption that all horns are intact is no longer valid; thus further adjustments are needed to reflect this change. Recent studies from Namibia[76] and South Africa[73] report a large variability in the proportion of dehorning within local rhino populations (25% – 81.8 %). The dehorned proportion depends on the population size as well as the poaching pressure it experiences, making it difficult to predict and extrapolate for the overall rhino population based on these data. However, the mean of the reported values was used to provide an estimate that 48% of the individuals within a rhino population are assumed to be dehorned.

To estimate the proportion of the original horn available to poachers from a dehorned rhino, it is necessary to consider the proportion of horn left after dehorning, the rate of horn regrowth, and how often dehorning recurs. Accounting for variations across age and sex, dehorning studies suggest that approximately 90% of the horn is removed during dehorning operations[77], annual horn regrowth is approximately 10%[78], and dehorning maintenance typically recurs within a frequency of 18 months**Error! Bookmark not defined.**. Based on these values, it can be assumed that if a recently dehorned rhino is poached, only 10% of the original

[75] Ferreira SM, Dziba L. 2022. Rhinoceros accounting in Kruger National Park. Unpublished data, sam.ferreira@sanparks.org.
[76] Chimes, L.C., Beytell, P., Muntifering, J.R. *et al.* Effects of dehorning on population productivity in four Namibia sub-populations of black rhinoceros (*Diceros bicornis bicornis*). *Eur J Wildl Res* 68, 58 (2022)
[77] https://www.savetherhino.org/thorny-issues/de-horning/
[78] Patton, F. (2021). A rudimentary assessment of rhinoceros horn regrowth in Africa based on photographs. Pachyderm, 62, 135–142

horn would be available (the remaining stump after dehorning). If the rhino is poached at the 18-month mark just before dehorning maintenance recurred, the available horn to poachers would consist of the initial 10% stump plus the portion of the horn that regrew at an annual rate of 10% for 1.5 years (i.e., 15%), for a total portion of 25% of the original horn.

With the above information in mind, that 1,740 African rhinos were reportedly poached between 2021 – 2023 with a possible 90% detection rate, that approximately 48% of the rhino population is assumed to be dehorned at a given time, and that poachers can recover between 10 – 25% of the original horn from dehorned rhinos, the estimated range of horns sourced into illegal trade from poached rhinos was estimated as follows:

- Among the 52% of poached rhinos that were not dehorned (1,740 x 0.52 = 905 individuals), each contributed two full horns, yielding 1,810 horns.
- Among the 48% of poached rhinos that were dehorned (1,740 x 0.48 = 835 individuals), each contributed between 0.2 horns (10% of two horns) and 0.5 horns (25% of two horns), yielding between 167 and 418 horns.
- This gives a total estimated range of between 1,977 (1,810 + 167) and 2,227 (1,810 + 418) horns from poached rhinos.
- Adjusting for 90% carcass detection, the estimated range becomes 2,196 (1,977 divided by 0.9) to 2,475 (2,227 divided by 0.9) horns.

Therefore, incorporating uncertainty from both dehorning and detection rate results in a minimum estimate of 1,977 (no adjustment for detection rate and 10% recovery of original horn by poachers) and a maximum estimate of 2,475 (adjustment for 90% carcass detection and 25% recovery of original horn by poachers) for the number of horns sourced into illegal trade from poached rhinos. It should be noted that this methodology does not distinguish between anterior and posterior horns, despite differences in their typical size and the possibility that only the anterior horn may be removed during dehorning interventions. As our data sources do not differentiate between the two horns, all reported and estimated figures represent average values which incorporate horns and horn pieces of varying sizes. Furthermore, although most Asian rhino species have only a single horn, their contribution to the overall poaching figures was relatively minimal, with only 37 individuals reported compared to 1,703 African rhinos.

Horns sourced from stockpile thefts

No thefts were reported by the Parties from State or privately-owned stockpiles for the period between 2021 – 2023. However, searching open sources indicates that in June 2023, 51 horns were stolen from a secured stockpile storage room managed by the North West Parks and Tourism Board in South Africa[79]. While arrests were made, including a parks employee who allegedly cooperated with the perpetrators[80], it is not apparent from reporting that the horns have been recovered. Recent updates suggested that two of the suspects were released on bail of ZAR 5000 (approximately USD $270) in May of 2024[81], but the status of the stolen horns remains unclear as no further information on the case was available.

Horns sourced from legal trophy hunts

Trophy hunting is permitted in South Africa and Namibia (see Section 3.2.1 of this report). However, no official data were centrally collected on the number of horns from legal trophy hunts that were sourced into illegal trade. Hence a minimum estimate of zero is used.

A proxy estimate for the maximum number was derived from reported discrepancies between trophy rhino products that were imported and exported in the CITES Trade Database, which maintains records of exports and imports reported by Parties in their Annual Reports. Permits for trophy specimens and horns exported or imported for hunting, personal or commercial purposes were obtained, and the number of trophies and horns recorded as imported by each Party were calculated annually and compared against the number of trophies and horns exported by South Africa (Table A3.1 in Annexure 3) or Namibia (Table A3.2 in Annexure 3). The total number of permits that were not accounted for were tallied across Parties, and, assuming a trophy represented two horns, the tally was converted into horns potentially sourced into illegal trade from trophy hunts (n = 33) between 2021 – 2023.

It is noted that there can be limitations in the approach to use the differences between exported and imported permits as an estimate for horns sourced into illegal trade from legal trophy hunting. The number of permits may not match each year because a hunt may have not been undertaken, or if it has been undertaken, it may have been unsuccessful. Additionally, permits may not match because of the time lag between export and import permit issuance and reporting (*e.g.*, an export may be issued at the end of year t, and the import may be issued at the beginning of year t + 1) or simply because of reporting errors or differences

[79] https://pmg.org.za/files/230802_Presentation_NWPTB_Rhino_horn_theft.pptx
[80] https://www.saps.gov.za/newsroom/msspeechdetail.php?nid=53080
[81] https://www.youtube.com/watch?v=8K2Lprc0XPg

in the use of codes by exporters and importers, which are common. While no data were available to assess the rates of undertaken or unsuccessful hunts, an attempt to minimize bias from reporting lags was undertaken by calculating the difference between imports and exports only if the Party has reported to the CITES trade reports database in the given year[82].

Estimated total and annual average horns sourced into illegal trade
Combining the minimum and maximum estimates from the different sources of horns entering illegal trade resulted in a total of 2,058 – 2,559 horns (Table 8). Averaging the estimate over the analysis period of three years, the annual average estimated horns sourced into illegal trade ranged between 676 and 853, which, like the estimate reported at CoP19, continues to decline since that reported at CoP16 (Table 9). However, it is noted that due to methodology changes adjusting for dehorning practices, caution should be taken in comparing the statistics across CoP periods. Without adjusting for dehorning, a total of 3,480 – 3,867 horns would be estimated as sourced into illegal trade, which represents an annual average of 1,160 – 1,289.

3.1.1.2 Estimated horns recovered from illegal trade

Horns recovered in situ from poached rhinos

The minimum number (*n* = 76) of horns recovered *in situ* when a poached rhino carcass is detected was summarized based on data available from Kruger National Park from 2021 – 2023[83]. Extrapolating from the same dataset, an estimated average of 9.2% of the horns from poached carcasses were recovered by rangers in the field. To estimate the maximum number of horns recovered *in situ* for all poached rhinos, the total number of horns sourced from poaching was multiplied by 0.092, resulting in 178 horns recovered from poached rhinos.

Horns recovered from confiscations or seizures

The number of horns recovered from confiscations or seizures is based on the reported seizure data and the methodologies to estimate the number of horns (if not reported) as described in detail in section 3.1.2. The numbers were collated for African and Asian rhino species for a total of 716 recovered horns from confiscations or seizures in 2021 – 2023.

3.1.1.3 Estimated horns remaining in the illegal trade

In total, 2,028 – 2,559 horns were estimated as intended for illegal trade from 2021 – 2023 (Table 8). Of these, 792 – 894 were estimated as recovered by law enforcement efforts, through the recovery of horns *in situ* as well as through seizures and confiscations. Accounting for the recovered horns, it is estimated that a total of 1,134 – 1,767 horns remained in the illegal trade from 2021 – 2023. Averaged per year, 378 – 589 horns remained in the illegal trade annually from 2021 – 2023 (Table 8).

3.1.1.4 Summary of trends in estimated horns sourced into the illegal trade

The average annual number of horns sourced into the illegal trade (676 – 853) continues to decline, being the lowest annual estimate since pre-CoP16 (Table 9). The observed decline in the average annual number of horns entering illegal trade is encouraging but partly reflects methodological adjustments accounting for widespread dehorning; without the adjustments it is noted that the annual average estimates would be 1,160 – 1,289, which represents the lowest annual estimate since pre-CoP16 (Table 9). While dehorning likely reduces horn availability, poachers may still preferentially target rhinos with intact horns. Data from Kruger National Park (2022–2024) indicate that 56% (163 of 290) of poached rhinos were dehorned[83] – close to the 48% assumed in this report, but notably lower than the estimated 80% dehorning rate in the park**Error! Bookmark not defined.**. This discrepancy suggests a potential bias in poacher selection and implies that the reported estimates may underrepresent the actual number of horns sourced into illegal trade. Caution is therefore warranted when comparing estimates across CoP periods and inferring the magnitude of a reduction in annual average estimates (Table 9).

Further underestimation may result from incomplete reporting of horn thefts. This report documents that 51 stolen horns were not reported by CITES Parties between 2021 - 2023. Additionally, Annexure 6 section A.6.1.5 documents the theft of 712 horns in South Africa in 2024, with only two horns being confirmed as sourced from stockpiles. Although beyond the analysis period, the lack of source information for 710 stolen horns underscores the limitations in assessing the relative contribution of different sources to the illegal rhino horn trade under current reporting practices. As emphasized in Section 4, accurate reporting of thefts and routine stockpile audits are essential for effective monitoring and prevention of stockpile horns being sourced into the illegal trade.

The continued decline in estimated sourced horns is likely attributed to the successful implementation of dehorning by range-State Parties and private owners as a means to reduce poaching pressures. However, dehorning is a resource-intensive

[82] https://cites.org/sites/default/files/reports/annual-reports/annual-reports.pdf
[83] Sandra Snelling, SANParks Data, 25 April 2025, sandra.snelling@sanparks.org

management intervention and represents a temporary measure to combat illegal trade. Moreover, dynamics can change rapidly; for example, in Section 2 of this report it is suggested that 2024 poaching pressure has contributed to losses that offset African rhino population growth since 2021. Ultimately, to reduce the sourcing of horns into the illegal trade there's a need to dismantle crime syndicates while at the same time addressing the illegal use of rhino horn.

Table 8. Estimated number of rhino horns sourced into, recovered from, and remaining in illegal trade from 2021 – 2023.

	Description	No. of horns		Data source and estimation methods
		Min.	Max.	
Horns sourced into illegal trade	Horns from poached rhinos	1,977	2,475	Minimum estimate based on 2021–2023 poaching data presented in this report, adjusted for dehorning (assuming 48% of rhinos dehorned with 10% horn remaining) and multiplied by a factor of two horns per poached rhino; maximum estimate based on poaching data corrected for a carcass detection probability of 0.90 and assuming 25% horn recovery from dehorned rhinos
	Thefts from government stockpiles	51	51	South Africa police report[79,80]
	Horns obtained from legal trophy hunts that may have entered illegal trade	0	33	No data to inform minimum estimate. In the absence of other information, a proxy was used for maximum estimate based on discrepancies in 2021-2023 of trophy and horn trade data for hunting, personal, and commercial purposes from the CITES Trade Database while accounting for the reporting by Parties as reported by the CITES Annual Reports reporting table (Annexure 3).
	Source Total	**2,028**	**2,559**	Total horns sourced into illegal trade under methodology that attempts to capture increasing dehorning interventions.
	Sourced annual average (2021 – 2023)	**676**	**853**	Total rhino horns sourced into illegal trade divided by the three years analysed.
Horns recovered from illegal trade	Recoveries of illegally obtained horns *in situ*	-178	-76	Lower estimate (maximum column) based on data from Kruger National Park (KNP), South Africa; upper estimate comes from minimum poached horns reported in this table times the proportion of poached horns (9.2%) that are recovered *in situ* based on KNP estimates[83].
	Confiscations/seizures	-716	-716	Based on data obtained from the CITES Illegal Trade Reports and TRAFFIC's wildlife trade database. If not reported, number of horns were estimated using a species-specific weight per horn conversion factor as described in the main text (Section 3.1.2.2) and Annexure 5.
	Recovery Total	**-894**	**-792**	Total horns recovered from illegal trade
	Recovery annual average (2021 – 2023)	**-298**	**-264**	Total rhino horns recovered from illegal trade divided by the three years analysed
Horns remaining in illegal trade	**Remaining Total**	**1,134**	**1,767**	Total horns sourced for illegal trade minus total horns recovered
	Remaining annual average (2021 – 2023)	**378**	**589**	Total rhino horns remaining in illegal trade divided by the three years analysed

Table 9: Estimated annual average of African and Asian rhino horns sourced into illegal trade from 2000-2023[84]. Asterisk denotes that estimates for CoP20 period introduce a methodology that attempts to capture increasing dehorning interventions which results in a smaller estimate compared to the annual average if previous methodologies were used (i.e., 1,160 – 1,289).

[84] Extracted from several reports including: CoP14 Inf. 41, Annex of CoP15 Doc. 45.1 (Rev. 1), Annex 2 of CoP16 Dco. 54.2 (Rev. 1), Annex 2 of CoP16 Doc. 54.2 (Rev. 1), Annex 5 of CoP17 Doc. 68, Annex 2 of CoP18 Doc. 83.1, , Annex 4 of CoP19 Doc. 75 (Rev. 1)

Time period	Jan'00-Dec'05 (Pre-**CoP 14**)	Jan'06-Sept'09 (Pre-**CoP15**)	Jan'09-Sept'12 (Pre-**CoP16**)	Oct'12-Dec'15 (Pre-**CoP17**)	Jan'16-Dec'17 (Pre-**CoP18**)	Jan'18-Dec'20 (Pre-**CoP19**) (Min – Max)	Jan'21-Dec'23 (Pre-**CoP20**) (Min – Max)
Estimated horns sourced into the illegal trade per year in time period	106	408	1,140	2,674	2,378	1,531 – 1,729	676 – 853*

3.1.2 Illegal trade flows and Parties most affected

3.1.2.1 Input seizure data

Database sources

This report draws on two primary data sources for seizures of illegally traded rhino specimens. First, 618 seizure records from 2016–2023 were obtained from Parties' Annual Illegal Trade Reports (AITR) via the CITES Illegal Trade Database maintained by the United Nations Office on Drugs and Crime (UNODC)[85]. Second, 1,431 records from 1987–2025 were sourced from TRAFFIC's illegal wildlife trade database. To allow a 10-year analysis period, and due to the availability of AITR data up to 2023, TRAFFIC records were only included for the years 2014–2023. Furthermore, a careful validation process to ensure multiple sources and reporting traceable to government sources resulted in 538 validated records from TRAFFIC's database which were retained for the analysis to augment the CITES Illegal Trade Database records. TRAFFIC's database provided added value, as it captured seizure activity in many Parties that are unrepresented in the CITES Illegal Trade Database (see analysis in Annexure 4 – *Preparation of seizure data for analysis: methodology, assumptions, and limitations*).

Merging databases and addressing duplicates

The records from the two databases were combined and merged into records of unique seizures. To avoid overestimation, duplicates across databases (*i.e.*, seizure records reported to the CITES Secretariat and data collected by TRAFFIC) as well as within databases (*i.e.*, multiple row entries representing multiple specimens reported from a single seizure) were identified and merged. Duplicates across databases (n = 155 seizures) were addressed such that data from the CITES Illegal Trade Database records were always retained and augmented with information from TRAFFIC's records to provide the most detailed seizure records possible (*e.g.*, additional quantity information or trade route was reported). To address duplicates within each database, CITES Illegal Trade Database records relating to the same seizure were identified by equivalence of the reporting Party, date of seizure, and national reference number; for TRAFFIC's database, records relating to the same seizure were identified by the similarity of key fields including the date and location of the seizure, suspect details, and the seized specimens and quantities. It is noted that where possible CITES Illegal Trade Database records that represented multiple specimens for the same seizure were merged to avoid overestimation; Annexure 4 provides additional details on de-duplication methodologies.

The resulting merged database consists of 921 unique seizures of rhinoceros specimens from 2014 – 2023. It is noted that two factors should be considered when evaluating results based on the consolidated database: 1) the composite database consists of records collected with differing methods and time frames, and 2) despite best efforts, Parties may seize and report illegal consignments at differing rates due to resource allocation, capacity constraints, *etc*. Therefore, caution is warranted when comparing data aggregates across Parties. Annexure 4 provides a more detailed discussion of the existing biases within and across databases. It is noted that the inclusion of the CITES Illegal Trade Database records in the analyses informing the rhino report to CoP presents an opportunity to improve on previous methodologies and to strengthen the results presented to the Parties. Annexure 4 provides for detailed explanations on possible biases in current analyses and methodologies that can be explored to address them.

Specimen types seized

Consistent with field 14 of the data collection form in the Annex of Resolution Conf. 9.14 (Rev. CoP19), data were categorized into seizures by specimen type including: whole horns or horn pieces (number and weight), worked horn (number and weight),

[85] Of these 618 records, 50 were removed as they confirmed to be duplicates, and 3 were removed as they contained only artificial or non-rhinoceros specimens, leaving 565 valid records from the CITES Illegal Trade Database.

skin specimens (number and weight), powdered horn (weight only), and other specimens. Of the 921 seizures, 646 contained whole rhino horns; 119 contained pieces of raw horn; 28 contained worked horn products; seven contained skin specimens; seven contained horn powder products; and 132 contained other rhino specimens such as body, head, teeth, bones, etc. (Fig. 6)[86]. Like previous CoP reports, the illegal trade flows analysis presented here is focused on illegal trade in horns (whole or pieces) which was the most prevalent specimen type (n = 762; Fig. 6); however, 12 seizure records did not have any quantity information and were henceforth omitted, leaving 750 records of whole horn and horn pieces from 2014 – 2023 in the analysis.

3.1.2.2 Estimation of weight and number of whole horns

Despite merging and augmenting data from both databases, reported seizures often contained incomplete quantity information whereby only the number of horns, number of pieces, or their weight was reported. To summarize illegal trade flows and consistent with previous analyses to the CoP, *weight* was estimated for: 1) records with a number of whole horns but no weight reported, and 2) records with a number of horn pieces but no weight reported. Additionally, the *number of whole horns* was estimated for: 1) records with whole horn weight reported but no number of whole horns, and 2) records with reported or estimated weight from horn pieces. Table 10 provides an overview of the estimation methods used for each case of missing quantity data. Following these methods, every seizure of rhino horn specimens, whether whole horns or horn pieces, is attributed a reported or estimated weight and a reported or estimated number of whole horns. Further details of the estimation methodology can be found in Annexure 5.

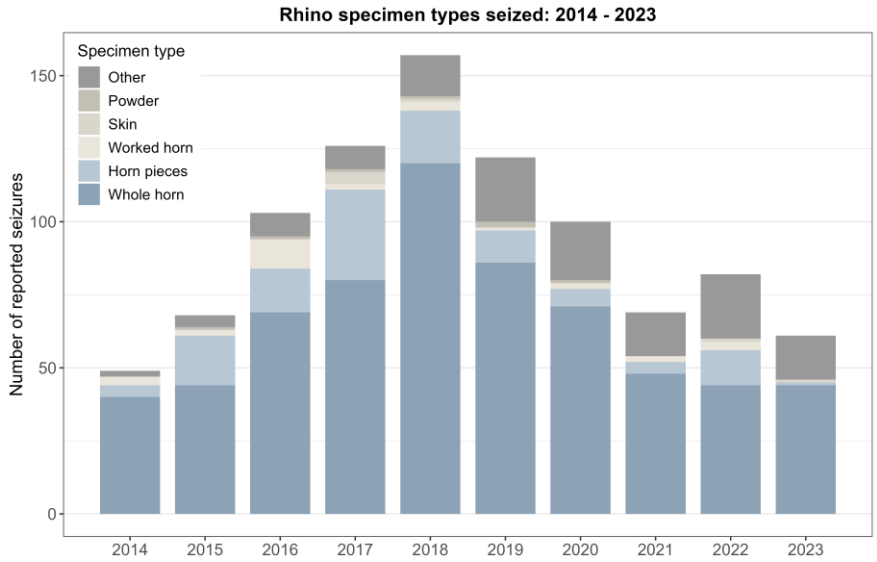

Figure 6. The number of rhino specimen seizures reported each year from 2014 to 2023 containing each specimen type.

Table 10: A summary of weight and whole horn estimation methods for seizures of whole horns and horn pieces reporting only number of horns/pieces, weight, or both. Conversion factor refers to the species-specific weight per whole horn reported or derived as detailed in Annexure 5. Regression refers to a regression model used to estimate weight from number of horn pieces. NA indicates where estimation is not required.

Reported specimen	Reported quantities		Estimated quantities	
	Reported number	Reported weight	Estimated number of whole horns	Estimated weight
Whole horns	x	x	NA	NA
	x		NA	Reported number * Conversion factor
		x	Reported weight / Conversion factor	NA
Horn pieces	x	x	Reported weight / Conversion factor	NA
	x		Regression-estimated weight / Conversion factor	By regression
		x	Reported weight / Conversion factor	NA

3.1.2.3 Summary of illegal trade flows

Yearly estimates of total weight and number of horns seized

[86] Note that seizures can contain multiple specimen types (e.g. a seizure might contain whole horn and worked horn) and would therefore be summarized more than once in the tallies provided. Hence the total of 646+119+28+7+7+132 = 939 is greater than the 921 seizures spanning 2014-2023.

A decline in the estimated total weight and horns seized over the three years since the previous report to CoP (2021 – 2023) is noted (Fig. 7), despite the number of reported horn seizures remaining relatively stable during these years (Fig. 6). This suggests a reduction in the average size of individual seizures, which may be explained by the fact that more partial horns retrieved from dehorned rhinos are entering the illegal trade as described throughout this report. The trend also corresponds with an increasing proportion of rhino horn seizures that are believed - either reported or inferred based on the country of seizure or origin - to involve Asian rhino horn specimens, which are typically of lower whole horn weight, as the proportion of such seizures rose from 6% in 2021 to 16% in 2022, and further to 20% in 2023.

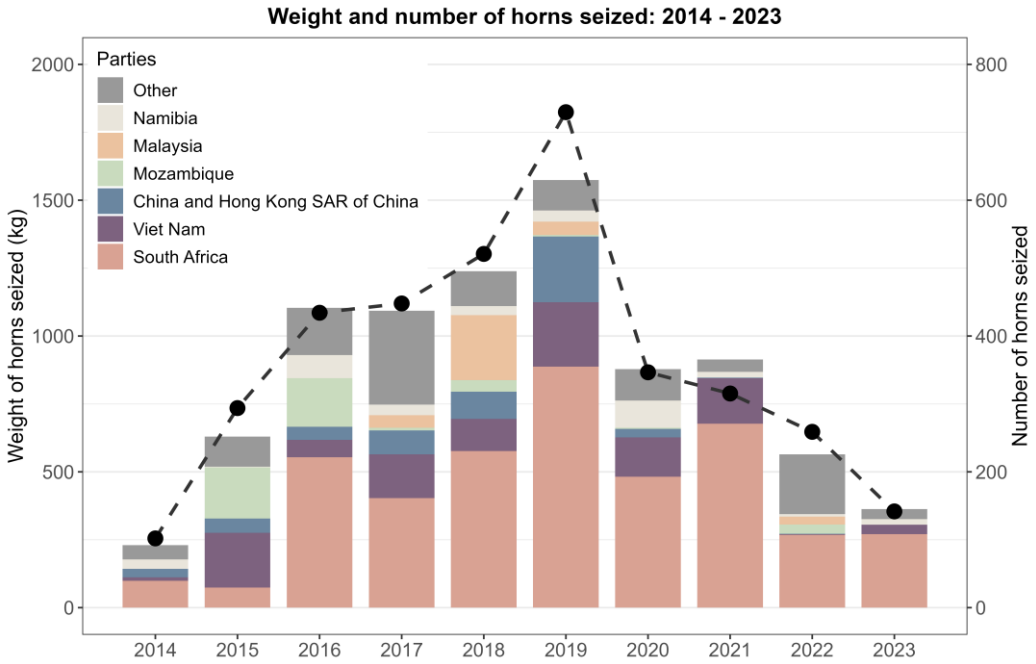

Figure 7. The total annual weight (bars; left-hand axis) and the equivalent number of whole horns (line; right-hand axis) from seizures included in the analyses from 2014 – 2023. Totals are a combination of reported and estimated quantities based on the estimation methodology described in Annexure 5. The weight breakdown is shown for the countries and territories seizing the six highest total weights of rhino horns over the 10-year period, constituting around 85% of the total seized weight.

Summaries of illegal trade flows

Illegal trade flows were summarized per year for each of the 58 Parties (Table 11) represented in the analysed dataset for the following variables:

1. *Seizures In:* The number of seizures made by the Party
2. *Horns In*: The equivalent total number of whole horns seized by the Party, reported or estimated based on the procedures described in Section 3.1.2.2 and Annexure 5
3. *Weight In*: The total weight (kg) of seizures made by the Party, reported or estimated based on the procedures described in Section 3.1.2.2 and Annexure 5
4. *Seizures Out:* The number of seizures that implicated the Party as the country of origin or transit where the illegal consignment may have passed undetected, or as the intended country of destination
5. *Horns Out:* The total number of whole horns in seizures that implicated the Party
6. *Weight Out:* The total weight (kg) of seizures that implicated the Party.

Table 11 presents data summaries for these six variables for the last three years since CoP19, and the preceding seven years before this. It is noted that in the report to CoP19, four variables were presented to summarise illegal trade flows. These variables were *Seizures In* (variable 1 in the list above), *Seizures Out* (variable 4), *Weight In* + *Weight Out* (variable 3 + variable 6), and *Horns In* + *Horns Out* (variable 2 + variable 5). In this report, these latter two variables are disaggregated to provide additional transparency and insights.

Table 11. Total numbers of seizures of rhino horn specimens by Party, and their reported or estimated[87] weight and equivalent number of whole horns. Data are presented for the most recent three-year period since the last CoP19 report (2021 – 2023) and

[87] Using methodologies described in Section 3.1.2.2 and Annexure 5.

for the preceding seven years in the analysed dataset (2014 – 2020). The first three columns of each table summarise the seizures made by each Party (*Seizures In*), and the last three columns summarise the seizures made elsewhere which implicate each Party, by naming it as the country of origin, transit, or destination in the reported trade chain (*Seizures Out*). Within each column, the shading of the cells reflects the relative magnitude of each value, with darker shading indicating a higher value. Note that all displayed values have been rounded to integer numbers. The Parties are sorted from highest to lowest based on their total weight involvement in 2021 – 2023 (*Weight In* + *Weight Out*). The total number of seizures, as well as the total number of horns and total weight seized during each period, are shown in the bottom row of the tables.

	2021 - 2023						2014 - 2020						
	Seizures In	Horns In	Weight In	Seizures Out	Horns Out	Weight Out	Seizures In	Horns In	Weight In	Seizures Out	Horns Out	Weight Out	
South Africa	65	442	1216	8	112	267	241	1308	3076	63	440	1064	South Africa
Malaysia*	1	11	29	8	167	410	5	131	335	10	245	658	Malaysia
Viet Nam	10	74	205	9	31	83	40	364	940	36	309	697	Viet Nam
Qatar	4	51	123	1	4	12	2	7	20	20	150	357	Qatar
UAE	0	0	0	4	38	103	4	25	71	12	130	337	UAE
Singapore	2	21	36	1	14	26	3	14	37	4	14	34	Singapore
Lao PDR	1	2	4	2	28	58	3	10	27	7	13	28	Lao PDR
Zimbabwe	2	7	14	1	18	46	8	30	45	2	5	7	Zimbabwe
Namibia	10	19	51	0	0	0	58	122	335	8	32	81	Namibia
Mozambique	3	19	34	1	4	10	20	204	428	23	153	385	Mozambique
Angola	1	4	7	4	10	27	1	8	20	6	13	29	Angola
Mongolia	0	0	0	4	11	33	0	0	0	0	0	0	Mongolia
USA	1	1	3	3	12	30	6	9	18	1	0	0	USA
France	4	9	24	1	2	6	13	35	94	4	10	25	France
Philippines	0	0	0	1	4	20	0	0	0	1	32	93	Philippines
Portugal	2	4	3	1	5	15	3	3	9	0	0	0	Portugal
Uganda	1	6	15	0	0	0	3	16	35	2	18	29	Uganda
Egypt	0	0	0	1	6	15	0	0	0	0	0	0	Egypt
India	14	16	13	0	0	0	36	35	23	1	1	1	India
China**	5	2	4	2	5	7	84	230	593	84	572	1075	China**
Nigeria	3	3	11	0	0	0	0	0	0	5	4	9	Nigeria
Germany	3	4	10	0	0	0	1	1	1	0	0	0	Germany
Kenya	3	6	10	0	0	0	5	14	24	7	119	298	Kenya
DRC	0	0	0	2	5	8	1	2	6	0	0	0	DRC
Netherlands	2	3	7	0	0	0	2	12	17	0	0	0	Netherlands
Canada	2	2	6	0	0	0	0	0	0	2	3	5	Canada
Spain	1	2	5	0	0	0	7	9	22	0	0	0	Spain
Switzerland	0	0	0	1	1	3	1	2	5	1	3	8	Switzerland
Nepal	5	6	3	0	0	0	5	5	3	2	1	1	Nepal
Somalia	0	0	0	1	2	3	0	0	0	0	0	0	Somalia
UK	1	1	3	0	0	0	7	10	21	0	0	0	UK
Belgium	1	1	3	0	0	0	1	1	3	0	0	0	Belgium
Australia	1	1	3	0	0	0	1	2	5	0	0	0	Australia
Tanzania	0	0	0	1	1	1	1	11	28	0	0	0	Tanzania
Italy	1	0	0	0	0	0	2	5	13	0	0	0	Italy
Malawi	1	0	0	0	0	0	5	40	61	2	51	130	Malawi
Other***	0	0	0	0	0	0	31	211	432	45	220	525	Other***
Total	**150**	**716**	**1841**				**600**	**2875**	**6748**				**Total**

*An additional seizure of rhinoceros specimens was reported by Malaysia in the CITES Illegal Trade Database, described only as "parts" and therefore excluded from our analysis. However, verification through other sources suggests that the seizure contained 50 rhino horn specimens, corresponding to an estimated additional 12.7 kg and 5 whole horns that would contribute to Malaysia's *Seizure In* totals for 2021–2023.

**Includes Hong Kong SAR of China

****Other* countries are determined as those that recorded no *Seizures In* or *Seizures Out* during 2021 – 2023, but had at least one *Seizure In* or *Seizure Out* during 2014 – 2020. These countries are Aruba, Bhutan, Botswana, Cambodia, Cameroon, Czech Republic, Côte d'Ivoire, Eswatini, Ethiopia, Hungary, Indonesia, Japan, Lebanon, Myanmar, Republic of Korea, Russian Federation, Rwanda, Senegal, Thailand, Türkiye, Yemen, and Zambia.

Assessing Parties most affected by illegal trade

It is reiterated that caution is warranted when comparing the aggregates of seizure data across Party and time (see also Annexure 4), such as presented in Table 11. This is because factors such as resource availability, law enforcement capacity, and training, may result in Parties making different efforts to seize and report rhino specimens. Additionally, the determination of a Party's *Seizure Out* (similarly *Horns Out* and *Weight Out*) values relies on illegal trade route information, which is not always reported[88]. With these limitations in mind, Parties were nevertheless ordered according to their total weight involvement (*Weight In* + *Weight Out*) over the recent 2021 – 2023 period; this corresponds to the order of Parties presented in Table 11, and is consistent with the methodology used in the report to CoP19. With this ordering, the most affected Party is South Africa, a result consistent with the previous report to CoP19 which reflects the large illegal trade volume associated with the Party. However, it

[88] 104 out of the 150 seizures during the period 2021 – 2023 did not report an international trade route. In some of these cases, an international trade route may not exist. However, in other cases, an international trade route may be unknown or may be known but not reported.

is noted that the majority of South Africa's illegal trade involvement consisted of seizures made in-country (65 seizures totalling 1,216 kg out of 73 seizures totalling 1,483 kg; Table 11), demonstrating substantial effort by the Party to intercept illegal trade.

Continuing with the ordering described above, the second most affected Party is Malaysia (previously fourth most affected in CoP19 report), for which the majority of illegal trade involvement consisted of implicating seizures (eight *Seizures Out* totalling 410 kg compared to one *Seizure In* totalling 29 kg; Table 11). It is noted that these implicating seizures all named Malaysia as the final country on the trade chain (mainly as the destination[89]), and hence the Party did not have an opportunity to seize the illegal consignments. The third most affected Party is Viet Nam (previously also third), while Qatar and the United Arab Emirates emerge as the fourth and fifth most affected, respectively. These five most-affected Parties each showed involvement in illegal rhino horn trade over the period 2021 – 2023 which totalled over 100 kg.

To provide additional insight into the dynamics of the illegal trade, the trade routes reported with seizure data were mapped and summarized. It is noted that of the 150 rhino horn seizure records over the period 2021 – 2023, only 46 included international trade route information. Nonetheless, these reported illegal trade links are displayed in Fig. 8, along with a detailed list of the specific trade links reported for each of the five most-affected Parties.

Party	Incoming illegal trade from listed Parties (volume of trade in kg)	Outgoing illegal trade to listed Parties (volume of trade in kg)	Total Parties with illegal trade links
South Africa (ZA)	Nigeria (1)	Malaysia (362), Viet Nam (139), UAE (68), Qatar (67), Singapore (60), Mongolia (33), USA (30), Lao PDR (24), Mozambique (18), Netherlands (6), China (4), Switzerland (3), Australia (3)	14
Malaysia (MY)	South Africa (362), UAE (29), Singapore (26), Qatar (22)		4
Viet Nam (VN)	South Africa (139), UAE (51), Qatar (22), Philippines (20), Germany (10), Nigeria (10), Angola (8), Singapore (2)		8
Qatar (QA)	South Africa (67), Zimbabwe (46), Angola (12), Mozambique (10)	Malaysia (22), Viet Nam (22)	6
UAE (AE)	South Africa (68), Angola (7)	Viet Nam (51), Malaysia (29)	4

Figure 8. Reported links of illegal trade consignments of rhinoceros horn specimens during the inter-CoP period 2021 – 2023. The map visualizes reported illegal trade routes, with Parties identified by their ISO alpha-2 codes. Link thickness corresponds to the number of transactions, while colour indicates the total reported or estimated weight. Directionality is indicated by a transition from light to dark along each link, representing the flow of illegal trade. The accompanying table lists the *Incoming* and *Outgoing* illegal trade links for the five Parties most affected by illegal trade volume. Within each list, Parties are ordered by decreasing weight, as shown in brackets (kg). It is noted that incoming and outgoing illegal trade links only reflect adjacency on the reported trade routes (i.e., origin to transit, transit to transit, or transit to destination) and do not necessarily indicate shipment origins or destinations. The *Total Parties with illegal trade links* column counts the number of distinct Parties with which each Party was reported to have either incoming or outgoing illegal trade.

[89] Malaysia was named as final or destination Party on illegal horn trade chain in the seizure reports, which does not necessarily indicate end-market demand.

The following sections provide additional Party-specific details on the characteristics of illegal trade and contextual supportive information for each of the five most-affected Parties over the 2021 – 2023 period. Parties with emerging trends, i.e., those who reported or were implicated by seized illegal activity for the first time, or whose volume of illegal trade constituted a larger portion than previously reported, are also noted.

South Africa

South Africa, which is home to the vast majority of the world's rhinos, continues to be the Party most affected by illegal trade with the highest number of seizures and highest illegal trade volume in the recent period (2021 – 2023), as well as in the years prior to this (2014 – 2020). In seizures made by South Africa, 442 whole horns were reported or estimated to have been seized in this analysis period, accounting for 66% of the total seized weight worldwide. Additionally, seizures made by South African authorities represented over 90% of the total rhino horn weight seized by all African range States.

Analysis of large-scale seizures (with reported or estimated weight[90] that is equal to or greater than 10 kg) during 2021–2023 identified South Africa as the most affected country, being involved in thirty out of forty reported seizures. Of these, twenty-five seizures occurred within South Africa, while five implicated South Africa as part of the trafficking chain. All seven seizures of rhino horn with reported or estimated weight equal to or greater than 50 kg during the period involved South Africa; six were made by South Africa and one implicated the Party. The latter seizure implicating South Africa is the second-largest weight reportedly seized during the analysis period, where Viet Nam intercepted a sea freight shipment originating from South Africa that contained 139 kg of rhino horn along with 3.1 tonnes of animal bones. It is noted that this seizure was a controlled delivery following information provided by the South African Police Service, Directorate for Priority Crime Investigation, and represents law enforcement collaboration between authorities in South Africa and Viet Nam where information sharing and joint action between the two Parties culminated in the successful seizure made by Viet Nam.

The above seizure summaries indicate that while South Africa is most affected by illegal trade in rhino specimens, the Party is also responsible for intercepting a large proportion of these illegal consignments. Commendable policy, law enforcement and prosecutions efforts aimed at addressing illegal trade in rhino specimens have been reported by South Africa. Notably, the National Integrated Strategy to Combat Wildlife Trafficking (NISCWT) adopted in 2023 aimed to increase "law enforcement and government commitment towards combating wildlife trafficking". It is possible that such national law enforcement initiatives by the Party have contributed to the increase in the percentage of seizures made by South Africa[91] from 2014 – 2020 (80%) to 2021 – 2023 (90%); however, the lack of bias-adjustment methodology limits such inference across time periods (see Annexure 4).

The relative increase in seizures made by South Africa correlates with the reported 509 convictions for rhino poaching and related matters in the three years prior to 2023 (Annex in SC77 Doc. 45). Despite the high number of reported convictions, South Africa continues to be affected by large-scale seizures that indicate the prevalence of organized crime. Similar to trends reported by all African range Parties (Section 6 of this report), it is possible that the reported arrests, prosecutions and convictions are focused on lower-level crimes associated with poaching, rather than the higher-level crimes associated with intermediate and high-level organized crime. Integrated and multi-agency investigations, such as South Africa's project 'Blood Orange', and high-level arrests and convictions, such as the recent 18 years imprisonment of a Democratic Republic of Congo national[92], are likely to be an essential step towards dismantling organized crime syndicates operating in South Africa, and thus reducing the prevalence of large-scale seizures made by or implicating the Party.

In addition to national efforts, international law enforcement cooperation and investigation are essential to the dismantling of organized illegal rhino trade networks[93]. The need to strengthen engagement by South Africa with other Parties was identified under Decision 19.118. The Party detailed on-going engagements with China, Mozambique and Viet Nam in its reports to SC77 (SC77 Doc. 45) and SC78 (SC78 Doc. 45). The Party also participated in Operation Golden Strike initiated by INTERPOL in 2021[94]. Despite on-going efforts, the Party had the largest number of illegal trade links (with 14 other Parties) compared to the other four most-affected Parties, and its illegal rhino horn trade is well connected to Parties predominantly in Asia, but also in North America, Europe and Oceania (Figure 8).

The illegal rhino horn trade volume that reported an international trade route (n = 60 seizures) and linked South Africa to other Parties consisted of 29 seizures totalling 850 kg. Malaysia was the most commonly reported illegal trade link, with 362 kg of

[90] i.e., where only number of horns or horn pieces are reported, and weight is estimated in accordance with procedures described in Annexure 5.
[91] Calculated as *Seizure In* divided by the total seizures involving the Party (*Seizure In* + *Seizure Out*) using data from Table 11.
[92] https://www.saps.gov.za/newsroom/msspeechdetail.php?nid=58293
[93] Anagnostou M. and B. Doberstein (2022) Illegal wildlife trade and other organised crime: A scoping review. Ambio 51:1615 – 1631.
[94] https://www.interpol.int/News-and-Events/News/2022/Ivory-rhino-horns-pangolin-and-tiger-parts-seized-in-transit-from-Africa-to-Asia

rhino horn specimens travelling from South Africa to Malaysia representing the strongest-weight illegal trade link observed during 2021 – 2023. This included a single seizure of 160 kg of rhino horn in 2021, which is the largest by weight recorded in the analysis period. Other strong illegal trade links were noted with Viet Nam, consisting of a single seizure of 139 kg, and transit Parties in the Middle East (United Arab Emirates with 68 kg and Qatar with 67 kg).

It is noted that compared to the illegal trade links identified in the report to CoP19, whereby over half of the records that reported trade with South Africa were destined for China, only 1 seizure totalling 4 kg was destined for China and was intercepted by South African authorities in 2023. At the same time, a newly reported link between South Africa and Mongolia was noted. The latter consisted of four seizures[95], all occurring between May and September of 2023 and consisting of 4 – 19 kg in weight; while two of the seizures were reportedly made by air transport and the other two by land, the similar concealment methodology might indicate a single trafficker. Regardless, this illegal trade route with Mongolia represents an emerging trend to watch.

Malaysia

Malaysia is the Party second most affected by the illegal rhino horn trade during the period from 2021 to 2023, moving up from its fourth-place position as reported at CoP19. The Party was involved in seizures that accounted for 24% of the total seized weight worldwide (Table 11). During the analysis period, the majority (8 out of 9) of the seizures involving Malaysia implicated the Party along the illegal trade chain and amounted to an estimated 410 kg of illegally traded rhino horn. Since all implicating seizure records listed the Party as the final country on the illegal trade chain (either as a transit or destination), Malaysia did not have an opportunity to seize these illegal consignments as they were intercepted by other Parties before reaching them. Malaysia did report one seizure in 2022, where a sea freight shipment from United Arab Emirates was intercepted by Malaysian authorities and 29 kg of rhino horn specimens was seized. Seizure data also linked the Party to Singapore and Qatar along the illegal trade chain (Figure 8). Finally, it is noted that two additional seizures were excluded from the Party's seizure summaries due to data uncertainties in the AITR reports[96].

All but one[97] of the seizures involving Malaysia had listed South Africa as the first country in the illegal trade chain, suggesting strong illegal trade links between the two Parties (Figure 8). In line with Decision 19.119, the Party has demonstrated commendable efforts to combat illegal wildlife trade, including taking part in 'Operation Golden Strike'[94] in 2021 which led to the arrest and prosecution of two suspects smuggling 45 kg of rhino horns between South Africa and Malaysia. Furthermore, the Party has participated in the Regional Investigative and Analytical Case Meeting (RIACM) on rhino horn trafficking held in March 2023, to exchange information with authorities from South Africa, Qatar and Mozambique on rhino horns trafficking (SC78 Doc. 45).

All seizures which involved Malaysia along the illegal trade chain during the analysis period were large-scale, with reported weights ranging from 21 kg to 160 kg, the latter representing the largest seizure recorded in both the CITES Illegal Trade and TRAFFIC databases since 2019. The presence of such substantial illegal consignments designating Malaysia as the country of destination suggests the potential involvement of a nationally coordinated organized criminal network capable of receiving and processing large shipments. To combat illegal wildlife trade nationally, Malaysia amended its Wildlife Conservation Act in 2022 to increase penalties and sentences for crimes involving wildlife specimens[98]. In 2024, trial proceedings commenced for two individuals arrested in connection with a 2021 seizure of 50 rhino horn pieces[99], and the case is still ongoing. Notably, no further seizures implicating Malaysia have been reported since 2022, which may reflect the impact of intensified national and international enforcement actions. Securing successful convictions in ongoing cases could play a critical role in reinforcing deterrence and disrupting organized criminal operations.

Viet Nam

Viet Nam is the third most affected Party based on seizure data from 2021 – 2023, and was implicated in almost as many seizures (*n* = 9) as those made by the Party (*n* = 10). An estimated total of 74 horns were seized by the Party, the second highest overall. Seizures made by Viet Nam totalled 205 kg, while seizures implicating the Party along the illegal trade chain totalled 83

[95] All seizures were sourced from the CITES Illegal Trade database and were reported by South Africa. Two records may have been a duplicate as they occurred on same date with similar weight quantity but because they were reported with two different national reference numbers they were treated as two separate seizures.

[96] A 2021 seizure by Malaysia recorded a quantity of 50 specimens that were listed as "parts", a code not recognized in the CITES' AITR guidelines, in the *Description of specimen* field. If interpreted as 50 rhino horn pieces, the estimated weight of the seizure would be 12.7 kg, increasing Malaysia's total *Weight In* in Table 11 to 42 kg. Additionally, a 2022 seizure of 28 kg by South Africa listed "LO" as the alleged origin, which is an unrecognized ISO code. Due to the ISO coding error, the trade chain for this seizure was excluded. However, the seizure also implicated Malaysia on the trade chain. If included in Table 11, this seizure would increase Malaysia's total *Weight Out* to 438 kg.

[97] The one seizure not listing South Africa on the illegal trade chain was reported by Malaysia to the CITES Illegal Trade Database and did not include any illegal trade chain information.

[98] https://faolex.fao.org/docs/pdf/mal217997.pdf

[99] https://www.traffic.org/news/trial-date-set-for-malaysias-first-court-case-on-trafficking-of-african-rhino-horns; likely the same seizure reported to the CITES Illegal Trade Database as 50 "parts" (see reference note 9696).

kg of rhino horn specimens (Table 11). All implicating seizures were intercepted by other Parties before reaching Viet Nam, hence the Party had no opportunity to seize the illegal rhino horn shipments. Viet Nam was listed as the country of destination in six out of the nine implicating seizures[100].

The largest seizure by Viet Nam occurred in 2021, involving 52 horns weighing 139 kg shipped from South Africa alongside 3.1 tonnes of animal bones, the latter a seizure following controlled delivery and collaboration by the Parties' law enforcement agencies. The second largest seizure by weight that was made by the Party involved 22 kg of rhino horn and 54 kg of elephant ivory. Overall, six seizures involving Viet Nam also included other illegal wildlife contraband, such as elephant ivory, pangolin scales, and bear bile, some consisting of large quantities or weight (e.g., 80 bottles of bear bile, or over 2,700 tusks and over 5 tonnes of pangolin scales). Viet Nam was also the second most connected Party along the illegal trade chain, with links to eight other Parties (Figure 8). African Parties linked to Viet Nam included Angola, Nigeria, and South Africa, presumably being the alleged origin or export country on the illegal trade chain. Qatar and the United Arab Emirates were reported as transit countries, and other Parties reported along the illegal trade chain included Singapore (which intercepted an illegal consignment from the DRC to Viet Nam), the Philippines (which failed to intercept a shipment seized in Viet Nam[101]), and Germany (which intercepted three parcels en route to Viet Nam, one from Angola).

It is noted that the numerous illegal trade links of Viet Nam with other Parties are not unique only to illegal rhino horn trade and have also been reported for illegal elephant ivory[102]. For the latter, the Angola–Viet Nam link was also highlighted in the Secretariat's report on Viet Nam's progress on its National Ivory and Rhino Action Plan (NIRAP; SC78 Doc. 33.13.1). Seizure data suggesting that Viet Nam is named as the destination for large illegal shipments of rhino horn specimens, that some of these shipments also contain multiple illicit wildlife specimens in large quantities, and that the Party is the second most connected in the illegal trade network, are an indication of the Party's important role in the illegal rhino horn trade that is likely connected to organized crime networks.

These findings are in line with the evidence that prompted the participation of Viet Nam in the NIRAP process to strengthen national mechanisms to combat illegal rhino horn trade and the adoptions of Decisions calling it to increase law enforcement collaboration with other Parties. In its report to the CITES Secretariat for SC78 (Annex 14 in SC78 Doc. 33.13.1), Viet Nam cited several convictions linked to large-scale seizures between 2021 and 2023, including a 13-year sentence related to the 139 kg seizure in 2021 and the destruction of a similar quantity of rhino horn in 2023. While these enforcement actions are notable, in its rating of Viet Nam's progress under its NIRAP, the Secretariat provided a "partial progress"[103] rating on Action 5.1 - *Establishing a national database on illegal trade, transport, possession, and case outcomes* and an "on track"[103] rating on Action 3.3 - *Cooperate with non-governmental and international organizations in receiving, transferring, processing information of early warning, arrests, suspects and other information*. In its report on Rhinoceros to SC78, the Secretariat also called on Viet Nam to increase its sharing of forensic samples to aid law enforcement investigations. It is noted that Viet Nam has not submitted its AITR to the CITES Secretariat since 2021[104] and has not reported on its stockpiles to the CITES Secretariat since 2017 (section 4 of this report). The lack of proper traceability of seized rhino horn specimens, and inconsistent reporting on the outcomes of arrests related to these seizures, hinders an assessment of the effectiveness of national law enforcement interventions against rhino horn trafficking.

Qatar

Qatar is the Party fourth most affected by illegal rhino horn trade between 2021 and 2023, which is three positions higher than its position in the previous CoP19 analysis. Although only five seizures were associated with the Party, they involved large illegal consignments (ranging from 10 kg to 46 kg), with a total weight of 135 kg (Table 11). Of these, four seizures were made by Qatari authorities, the largest involving 25 horn pieces weighing 46 kg shipped from Zimbabwe in 2022. The one seizure that implicated the Party was made by Viet Nam and consisted of 12 kg of horns that were shipped from Angola via air transport and that transited via Qatar undetected. Notably, a similar route (i.e., Angola through Qatar to Viet Nam) was reported for another 16 kg seizure made in Viet Nam in 2024, also apparently undetected during transit through Qatar[105]. In addition to Angola, Qatar had illegal trade links with African range States of Mozambique, South Africa, and Zimbabwe and non-range Parties of Malaysia and Viet Nam (Figure 8).

[100] All other seizure reports had listed Viet Nam last as a transit Party on the illegal trade chain but did not explicitly enter the Party in the field *Destination country*

[101] Seizure was not reported via the AITR to the CITES Illegal Trade Database but was collected by TRAFFIC from NGO and media sources including: https://haiquanonline.com.vn/bat-giu-gan-20-kg-sung-te-giac-van-chuyen-bang-duong-bien-ve-cang-hai-phong-156228.html

[102] https://etisonline.org/network-maps and SC78 Doc. 65.2 (Rev. 1): https://cites.org/sites/default/files/documents/E-SC78-65-02-R1_0.pdf

[103] Ratings are according to guidelines specified in Annex 3 of Res. Conf. 10.10 (Rev. CoP19) and follow the scale of: Achieved, Substantially achieved, On track, Partial progress, Pending completion of another action, and Not commenced.

[104] https://cites.org/sites/default/files/EST/List_of_Parties_Territories_submitted_AITR_12_11_2024.pdf

[105] https://cand.com.vn/Ban-tin-113/hanh-khach-nhap-canh-qua-noi-bai-mang-theo-hon-15kg-sung-te-giac-va-nga-voi-i691482/

Qatar had been identified as a transit Party in the previous report on rhinoceros to CoP19 and for other illegal wildlife specimens; for example, similar illegal trade links were noted for Qatar in the illegal trade in elephant ivory[106]. As is also evident by a recently reported large-scale seizure made in Qatar in 2025[107], illicit wildlife specimens might be consolidated into the same illegal consignment transiting though the country. Recognizing its role as a transit Party, Decision 19.119 encouraged Qatar to scale up its collaboration with Parties known to be associated with illegal rhinoceros specimens transiting the country. In its report to the Secretariat at SC78, Qatar reported it has increased collaboration as well as security in its international airport, and that it provided additional training and workshops to raise awareness of the issues. Similar responses were provided to the CITES Secretariat at SC78 as part of Qatar's progress report on the implementation of its National Ivory Action Plan (NIAP). For its NIAP report, the Secretariat concluded that Qatar has made no substantial progress since SC74 and SC77 and, following the Secretariat's recommendations, the Standing Committee "urged Qatar to step up its effort with a sense of greater urgency to advance implementation of its NIAP and provide sufficient detail of the activities delivered to justify the self-assessment progress ratings."

United Arab Emirates

The United Arab Emirates (UAE) is the Party fifth most affected by illegal rhino horn trade from 2021–2023 (up from sixth at CoP19), with four implicating seizures totalling over 100 kg of rhino horn specimens at an average reported or estimated weight of 26 kg. The largest seizure, intercepted by South Africa, consisted of 15 horns weighing 44 kg concealed in air luggage. South Africa was the most frequent illegal trade link with UAE (2 out of 4 seizures), with additional links reported with Angola[108], Malaysia, and Viet Nam (Figure 8).

In three of the four cases where UAE was listed as a transit country, the Party did not have an opportunity to intercept the shipments. However, the scale and repeated use of UAE in these trafficking routes, mostly via air, suggest that criminal networks perceive the country as a viable corridor for undetected consignments. Decision 19.119 encouraged the Party to scale up its collaboration with other affected Parties, and UAE has reported to SC77 and SC78 on several implemented and planned actions to promote law enforcement collaborations with the most affected Parties. However, the Secretariat concluded in its report to SC78 that UAE's report "does not clearly indicate whether these activities have already been conducted or must still be undertaken" and the Party continues to be among the most affected by illegal rhino horn trade based on the latest seizure data.

Other notable patterns in seizure data

China and Hong Kong SAR of China

Despite being the second most affected region in the report on rhinoceros to CoP19, Hong Kong SAR of China and mainland China recorded relatively lower illegal trade volumes from 2021–2023 (Table 11 and Figure 8). While China submits AITRs to the CITES Secretariat, no rhino horn seizures have been included in data extracted from the CITES Illegal Trade Database to inform the present report. This likely resulted from the fact that China for most of its AITRs submitted to the CITES Secretariat indicated by ticking the relevant box in the AITR, that information provided in its report may not be used for global research and analysis purposes. It is however noted that seizures have been reported on official government platforms[109]. Consequently, records for seizures made by authorities in Hong Kong SAR of China and mainland China were primarily drawn from TRAFFIC's database, which does not have mandatory reporting requirements like the AITR. Without applying bias-adjustment methods to data sourced from the CITES Illegal Trade and TRAFFIC's database (see Annexure 4), it is difficult to determine whether the observed decline reflects a genuine trend or data gaps. However, the similarly low number of seizures implicating Hong Kong SAR of China and mainland China (*Seizures Out*) over the recent period suggests that the observed trend may be a genuine decline. This decline may be indicating a reduced role in the illegal rhino horn trade due to effective enforcement and demand-reduction measures. However, because of the limited resources available for the preparation of this report, no data were available to reflect on these issues for non-African range Parties, including Hong Kong SAR of China and mainland China[110].

Mongolia

Mongolia emerged as a potentially new destination for rhino horn trafficking, with four seizures totalling 33 kg reported in its AITR by South Africa in 2023 that identified Mongolia as the intended destination. Mongolia was not implicated in any seizures

[106] https://etisonline.org/network-maps and CoP17 Doc. 57.6: https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-57-06-R1.pdf
[107] https://dohanews.co/qatari-authorities-seize-narcotics-bust-rhino-horn-ivory-smuggling/
[108] Reported on the official Facebook page of Serviço de Investigação Criminal de Angola – SIC: https://www.facebook.com/permalink.php?story_fbid=pfbid0242kaxQNooqufhcFchZvSu3cH3UrC6Tnd6fz1YyMvTy5mH6LmsNuV7WwUopyPPMBdl&id=100064424156540&comment_id=842663670421063&notif_id=1664097203804998&notif_t=comment_mention&ref=notif
[109] e.g., http://www.shandong.gov.cn/art/2021/11/9/art_97290_10297258.html
[110] As noted in Section 1, this report does not include data on best practices and challenges of poaching and trafficking from non-African range States nor does it include a review of *measures implemented by implicated States to end the illegal use and consumption of rhinoceros parts and derivatives* as detailed in paragraph 7.g of Res. Conf. 9.14 (Rev. CoP19).

prior to 2023, and it is unclear if this represents in-country demand or a shift in illegal trade routes from other Parties. While details across some records suggest possible duplication[111], resources did not allow for clarification whether these were in fact two distinct seizures which were each reported twice. Regardless, the emergence of Mongolia as an intended destination may warrant further monitoring.

Mozambique

Mozambique was previously the fifth most affected Party in the illegal rhino horn trade and now is the ninth with 44 kg of rhino horn specimens seized by, or that implicated the Party between 2021–2023. This marks a significant decline from 2018–2020, when 18 seizures totalling 485 kg were reported. However, as with China and Hong Kong SAR of China, data for Mozambique is primarily available from TRAFFIC's database. No bias-adjustment was applied, although *Seizure Out* data for the Party from 2021 – 2023 were also lower, suggesting a possible genuine shift. It is possible that some of the reductions in seizures are due to increased efforts to curb illegal rhino horn trade. Notable enforcement actions include the 2024 conviction of a leading poaching figure and his accomplice, sentenced to 27 and 24 years, respectively[112]. Furthermore, in response to Decision 19.119 and as part of the implementation of Mozambique's National Ivory and Rhino Action Plan, the Party reported on several Memorandums of Understanding (MoUs) and cross-border law enforcement coordination with related affected Parties in the illegal rhino horn trade. In its report to SC78 on Rhinoceroses, the CITES Secretariat encouraged the Party to further expand these engagements.

3.2 Legal Trade

The report recognizes explicitly the CITES definition of trade as the export, re-export, import and introduction from the sea[113]. This consideration is irrespective of the purpose of the import.

3.2.1 Trophy hunting of rhinos

South Africa and Namibia have permitted legal hunting of Southern white rhinos since 1968 and 2011 respectively. CITES Parties approved the annual hunting of five adult male black rhinos each in Namibia and South Africa in 2004 (Resolution Conf. 13.5). At CoP18, Parties adopted a revised science-based quota for South Africa, such that the total number of hunting trophies of adult male black rhino is not exceeding 0.5% of the total black rhinos in the year of the export, and with the quota applied to 0.5% of the total of each subspecies (Resolution Conf. 13.5 (Rev. CoP18)).

From 2022 and 2024, Namibia reported a total of six South-western black rhinos hunted by individuals from four countries, while individuals from 11 countries hunted 43 Southern white rhinos from 2022 to 2024 (Table 12). Hunters from the United States of America made up 44.9% of all hunters of rhinos in Namibia followed by Spain (14.3%) and Hungary (10.2%). Although the number of rhinos hunted per year within the country fluctuated, it has been below 25 Southern white rhinos and five South-western black rhinos per year since 2021 (Fig. 9). The hunting market in Namibia has recovered after disruptions to international travel during the COVID-19 pandemic in 2020.

South Africa reported no applications for the hunting of black rhinos in the 2022 to 2024 reporting period. This is a trend continuing from 2019, since when South Africa has not made use of its approved annual quota (Resolution Conf. 13.5 (Rev. CoP18)). South Africa reported 330 Southern white rhinos hunted from 2022 to 2024, with clients coming from several countries (Table 13). Most hunters (66.4%) came from the United States of America, with hunters from Hungary (6.4%), Mexico (5.2%) and Germany (4.8%) forming the next-most important hunting markets.

South Africa declined a total of 11 (2022), nine (2023) and 14 (2024) applications to hunt Southern white rhinos. A total of five (2022), two (2023) and one (2024) approved applications did not result in a Southern white rhino being hunted. Nonetheless, the recovery of the hunting market of Southern white rhinos, following the global lockdown imposed by governments in response to the COVID-19 pandemic in 2020, was sustained (Fig. 9) with more than 90 Southern white rhinos hunted annually since then.

Rhino hunting in Namibia and South Africa takes place at relatively low levels when compared to national population sizes. In Namibia, annual hunting rates range from 0.05% to 0.18% of the country's black rhino population and from 0.5% to 1.3% of its white rhino population. In South Africa, white rhino hunting occurs at a similarly low scale, with reported annual offtakes between 0.79% and 0.91% of the national population. These figures indicate that, where permitted, hunting is applied conservatively and represents a small proportion of the total population in each country.

[111] Seizures were reported to AITR with different seizure dates and national reference numbers, while other key details such as location of incident, method of concealment and reporting agency closely aligned between two pairs of the four records.
[112] https://wildlifejustice.org/simon-valoi-convicted-and-sentenced-to-27-years-in-prison-a-major-blow-to-rhino-horn-trafficking-in-mozambique-and-south-africa
[113] https://cites.org/eng/disc/text.php#I

Average prices for hunting a South-western black rhino varied, fetching US$234,000, US$250,000 and US$170,000 during 2022, 2023 and 2024 respectively in Namibia. Namibia reported hunting revenues of US$270,000 to US$300,000 per rhino during 2018 to 2021. A collation of trophy hunting nominal fees noted US$300,299 per rhino in 2018[114]. The recent prices for hunts suggest that revenue from trophy hunting of black rhinos is reducing. It is noted as an important form of revenue to support conservation costs[115].

During 2018 to 2021, Namibia reported that revenue through hunting of white rhinos ranged from US$15,000 to US$60,216 per rhino hunted. In 2024, Namibia reported that the average price paid for hunting a white rhino was US$45,000. South Africa reported average hunting prices of US$31,500 and US$32,472 during 2022 and 2023 respectively. No information on prices paid for Southern white rhino hunts was reported for 2024. Note that an evaluation of hunting records in South Africa reported a nominal price of US$80,080 per hunt in 2018 and nominal price of US$88,208 during 2021[116]. Although fees paid can vary, as they include the price of a hunt, or the package associated with the costs of the hunting safari. The trends in South Africa may suggest that revenue linked to the cost of the hunt alone can also vary.

Evaluation of hunting in South Africa and Namibia[117] demonstrated that limited, targeted hunting — particularly of older, non-breeding males — can contribute to other conservation management goals such as mitigating demographic imbalances, reducing aggression-related mortality, and enhancing genetic diversity. Economically, hunting generates significant revenue for conservation, especially in the private context.

South-western black rhinos (*Diceros bicornis bicornis*) in Namibia[118].

[114] Michael t'Sas-Rolfe, Unpublished data, tsas.rolfes@gmail.com
[115] t Sas-Rolfes M, Emslie R, et al. 2022. Legal hunting for conservation of highly threatened species: The case of African rhinos. Conservation Letters 10.1111/conl.12877
[116] Michael t'Sas-Rolfe, Unpublished data, tsas.rolfes@gmail.com
[117] t Sas-Rolfes M, Emslie R, et al. 2022. Legal hunting for conservation of highly threatened species: The case of African rhinos. Conservation Letters 10.1111/conl.12877
[118] https://wildaid.org/wp-content/uploads/2018/06/Black-Rhino-Namibia-05-1200x801.jpg

Table 12. Hunting of rhinos reported for Namibia. Records of confirmed hunts, number of applications that were declined, as well as the number of hunts cancelled or withdrawn, are provided.

	South-western black rhino (*Diceros bicornis bicornis*)								
	2022			2023			2024		
Country of hunter	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn
Russian Federation	-	-	-	1	-	-	1	-	-
United States	2	-	-	-	-	-	-	-	-
Germany	1	-	-	-	-	-	-	-	-
Mexico	1	-	-	-	-	-	-	-	-
	Southern white rhinos (*Ceratotherium simum simum*)								
	2022			2023			2024		
Country of hunter	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn	Number Confirmed hunted	Number of Applications declined	Number of Hunts cancelled or withdrawn
Russian Federation	-	-	-	2	-	-	1	-	-
United States	2	-	-	8	-	-	10	-	-
Germany	1	-	-	-		-	1	-	-
Mexico	-	-	-	-	-	-	1	-	-
Denmark	1	-	-	-	-	-	-	-	-
Austria	1	-	-	-	-	-	-	-	-
Spain	2	-	-	3	-	-	2	-	-
France	-	-	-	1	-	-	-	-	-
Hungary	-	-	-	4	-	-	1	-	-
Malaysia	-	-	-	1	-	-	-	-	-
Italy	-	-	-	-	-	-	1	-	-

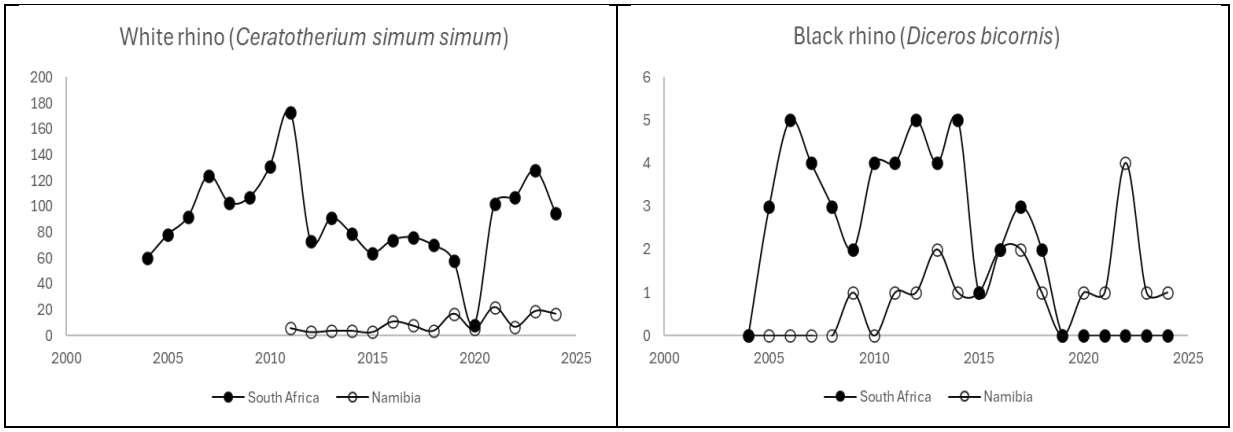

Figure 9. Number of white and black rhino hunted in South Africa and Namibia. Data up to 2021 extracted from previous reports.

Table 13. Hunting of rhinos reported for South Africa. Records of confirmed hunts, number of applications that were declined, as well as the number of hunts cancelled or withdrawn, are provided.

Country of hunter	Southern white rhinos (*Ceratotherium simum simum*)								
	2022			2023			2024		
	Number confirmed hunted	Number of applications declined	Number of hunts cancelled or withdrawn	Number confirmed hunted	Number of applications declined	Number of hunts cancelled or withdrawn	Number confirmed hunted	Number of applications declined	Number of hunts cancelled or withdrawn
Argentina	-	1	-	-	-	-	-	-	-
Australia	-	-	-	-	-	-	1	-	-
Austria	2	-	-	2	-	-	-	-	-
Belgium	-	1	-	-	-	-	1	-	-
Botswana	-	-	-	-	1	-	-	-	-
Brazil	1	-	-	-	-	-	-	-	-
Bulgaria	4	-	1	1	-	-	1	-	-
Canada	3	-	-	-	2	-	-	-	-
Czech Republic	-	-	-	-	-	-	1	-	-
Denmark	2	-	-	4	-	-	3	-	-
Estonia	1	-	-	-	-	-	-	-	-
France	2	-	-	4	-	-	2	-	-
Germany	4	-	-	3	1	-	6	2	-
Hungary	6	-	-	10	-	-	5	1	-
Italy	4	-	-	-	-	-	-	-	-
Latvia	-	-	-	3	-	-	-	-	-
Lithuania	1	-	-	-	-	-	-	-	-
Mexico	5	1	-	6	-	-	4	1	-
Norway	1	-	-	-	-	-	-	-	-
Pakistan	-	-	-	-	1	-	-	-	-
Poland	1	3	-	-	-	-	1	3	-
Romania	1	-	1	1	-	-	5	-	-
Russian Federation	3	-	-	5	-	1	3	-	-
Serbia	-	-	-	1	-	-	-	-	-
South Africa	-	-	-	1	-	-	-	-	-
Spain	2	-	-	3	3	-	3	1	-
Sweden	2	-	-	-	-	-	-	-	-
Tajikistan	-	-	-	1	-	-	-	-	-
Türkiye	-	-	-	1	-	-	-	-	-
United Kingdom of Great Britain and Northern Island	1	-	-	-	-	-	-	-	-
United States	61	5	3	82	1	1	59	6	1

3.2.2 Trade in live rhinos

African rhino range States reported 74 live rhino imports (three *D. b. michaeli*, and 71 *C. s. simum*) during the period 2022 to 2024. These imports all originated from African range States (Table 14). In contrast, Parties reported 216 exports from 2022 to 2024. These comprised six *D. b. michaeli*, 15 *D. b. minor* and 195 *C. s. simum*. The reported exports of black rhinos, irrespective of subspecies (*D. b. michaeli* and *D. b. minor*), were all to other range States.

The previous trend of Southern white rhinos exported to the Americas[4], specifically the United States of America, continued with 55 individuals exported by Namibia (50) and South Africa (five). The only other off-continent export was two Southern white rhinos from South Africa to Cyprus. In addition, range States within the recent historical distribution of rhinos, irrespective of subspecies, exported 68 Southern white rhinos to African countries outside of the historical white rhino distribution[119].

[119] See Moodley Y, Russo IRM, Robovský J, Dalton DL, Kotzé A, Smith S, Stejskal J, Ryder OA, Hermes R, Walzer C, Bruford MW. 2018. Contrasting evolutionary history, anthropogenic declines and genetic contact in the northern and southern white rhinoceros (*Ceratotherium simum*). Proceedings of the Royal Society B, 285, p.20181567.

A key concern is that cross-validation of reported exports from a specific range State did not always match reported imports by the importing range State or country. Only two cases had a matching import and export record. This may arise from populations of Southern white rhinos (*C. s. simum*) of Eswatini, Namibia and South Africa listed on Appendix II which does not require an import permit and thus no requirement to Report to CITES; mismatches in the timing of the issuing of CITES export and import permits; delay in implementation of the range State exchanges of rhinos; as well as unforeseen circumstances such as the death of a rhino as part of translocation operations. In addition, the collation of data in accordance with Resolution Conf. 9.14 (Rev. CoP19) focuses on range States. Even so, combining the records, 276 rhinos were traded as per the CITES' definition. These centred on interactions between range States as well as off-continent trade with the United States of America (Fig. 10).

Table 14. Records of imports and exports of live rhinos provided by range States.

	Import records provided by range States			Export records provided by range States		
Year	**Importing**	**Exporting**	**Number**	**Number**	**Exporting**	**Importing**
Eastern black rhinos (*Diceros bicornis michaeli*)						
2022	**United Republic of Tanzania**	**Kenya**	**3**	**3**	**Kenya**	**United Republic of Tanzania**
2023				3	South Africa	Chad
South-central black rhinos *(Diceros bicornis minor*)						
2022				7	South Africa	Mozambique
2023				5	South Africa	Mozambique
2023				3	South Africa	Chad
Southern white rhino (*Ceratotherium simum simum*)						
2022	Namibia	South Africa	27			
2022	Angola	Namibia	6			
2022				6	Namibia	United States
2022				22	South Africa	Mozambique
2022				5	South Africa	United States
2022				4	South Africa	Namibia
2023	Namibia	South Africa	12			
2023				9	Namibia	Zambia
2023				5	Namibia	United States
2023				2	South Africa	Cyprus
2023				16	South Africa	The Democratic Republic of Congo
2023				6	South Africa	Namibia
2023				5	South Africa	Mozambique
2024	Zambia	Namibia	16			
2024	**Botswana**	**South Africa**	**10**	**10**	**South Africa**	**Botswana**
2024				39	Namibia	United States
2024				32	Namibia	Zambia
2024				28	Namibia	South Africa
2024				5	Namibia	Angola

Figure 10. Export and import network for black rhinoceroses (*Diceros bicornis*, dark symbols) and white rhinoceros (*Ceratotherium simum*, light symbols) from 2022 to 2024.

Although prices for live Southern white rhinos dropped by an estimated 67% (adjusted for inflation) between 2007 and 2018[120], it's difficult to clearly track this trend. This is because rhinos are sold in different groups based on age, sex, and number. Nonetheless, auction data from South Africa showed average prices of US$26,937 in 2018 (based on four sales), US$10,023 in 2019 (38 sales), and US$10,595 in 2020 (36 sales) [121]. For 2024, rhino owners in South Africa reported US$3,175-US$3795 for Southern white rhino heifers 3-5 years old, while a cow with a calf reached US$7,937[122]. Southern white rhino bulls with horns of trophy quality sold at US$21,164 – US$23,810. Namibia reported prices for live rhinos between 2022 and 2024, with a steady value of US$19,000.

India and Nepal do not allow commercial trade in live greater one-horned rhinos (*R. unicornis*). Similarly, for Sumatran (*D. sumatrensis*) and Javan rhino (*R. sondaicus*). There was also no non-commercial live trade in these species.

3.2.3. Domestic commercial trade in rhino horns

South Africa is the only range State in the world that reported legal domestic trade in rhino horn. In 2017, the country lifted a moratorium on the domestic trade of rhino horn[123] and established regulations allowing a tightly controlled legal trade in rhino horn within the country. Between 2018 and 2021, South Africa issued 21 permits to sell nearly 575 kg of rhino horn comprising 689 pieces of horn[124], but actual sales were unclear amid low buyer interest and volatile prices ranging from US$1,693 to US$5,016 per kilogram[125].

For the 2022 to 2024 reporting period, South Africa reported permits issued for domestically trading 10.6 kg (2022), 1,079.0 kg (2023) and 203.7 kg (2024) of horn from Southern white rhinos, and 3.2 kg (2023) and 7.0 kg (2024) of horn from black rhinos. South Africa did not provide prices for these sales.

Within South Africa, Rhinomics[126] is a major new initiative which has established a tightly auditable and enabling legal mechanism for tracing domestic trade in rhino horn. Through centralized storage, DNA tracking, and a digital management system, Rhinomics ensures security and transparency in the transactions. Proceeds of sales profits go back to the rhino custodians, thus supporting conservation and local communities. Several other southern African countries have shown an interest in working with Rhinomics for managing stockpiles irrespective of domestic trading.

3.2.4 Contribution of rhinos to other socio-economic activities in Africa

3.2.4.1 Donor-based economic activities

Between 2022 and 2024, donor investment in African rhino conservation experienced a shift from traditional grant-based funding to more innovative financial instruments that aimed to better align conservation outcomes with financial returns. This period was marked by the introduction of mechanisms such as performance-based financing and impact investing, as well as the rise of community-centred conservation models.

A landmark development came in 2022 with the launch of the World Bank's Wildlife Conservation Bond, also known as the Rhino Bond, which mobilized more than $150 million USD specifically to support black rhino populations in South Africa[127]. The Bond is a results-based instrument: investors' returns depend on measurable growth in rhino populations. Although the uptake of the approach is slow, it not only attracted a new class of investors but also created a precedent for linking biodiversity outcomes directly to financial incentives.

Despite these financial innovations, financial challenges when managing rhinos persisted. Concerns about donor fatigue were increasing[44,45], especially in the wake of the COVID-19 pandemic. In addition to Western philanthropy, new players entered the

[120] Emslie RH, Milliken T, Talukdar B, Burgess G, Adcock K, Balfour D, Knight MH. 2018. African and Asian Rhinoceroses – Status, Conservation and Trade. A report from the IUCN Species Survival Commission (IUCN SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP17). COP18, Doc 83.1, Annex 2. Available at https://www.traffic.org/site/assets/files/12220/african-asian-rhinos-iucn-traffic.pdf

[121] https://www.wildlifeauctions.co.za/game_info.php

[122] Reported to AfRSG member Richard Emslie, rhemslie@gmail.com

[123] Collins A, Cox C, Marire J. 2020. On the judicial annulment of the 'domestic' trade moratorium in South African rhinoceros horn: a law and economics perspective. European Journal of Law and Economics, 49, 361-372.

[124] Emslie RH, Milliken T, Talukdar B, Burgess G, Adcock K, Balfour D, Knight MH. 2018. African and Asian Rhinoceroses – Status, Conservation and Trade. A report from the IUCN Species Survival Commission (IUCN SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP17). COP18, Doc 83.1, Annex 2. Available at https://www.traffic.org/site/assets/files/12220/african-asian-rhinos-iucn-traffic.pdf

[125] Private Rhino Owners Association, Pelham Jones, Pelham@vibe.co.za. Standardized to US dollar value at exchange rates on 31 December 2021 i.e. 0.0627 ZAR to 1 USD

[126] https://rhinomics.com/

[127] Medina, C. and Scales, I.R., 2024. Finance and biodiversity conservation: insights from rhinoceros conservation and the first wildlife conservation bond. *Oryx*, *58*(1), pp.90-99.

field with a growing involvement of Chinese not for profit organisations and philanthropists in African conservation, particularly in Kenya[128].

However, uncertainties in policy and regulatory environments across southern African countries posed a persistent barrier to donor confidence[129]. Changes in wildlife trade laws across the region generated hesitation among long-term funders, who feared that shifting regulations could undermine their investments or conservation outcomes.

During the reporting period, numerous non-government entities continued raising funds and awareness about rhinos globally – the exact number is not clear. The annual collective budget elements that focus on rhino conservation within numerous organizations is likely to be large, focusing on supporting anti-poaching and rhino conservation initiatives as well as reducing the illegal demand and use of rhino products or derivatives.

3.2.4.2 Nature-based economic activities

Rhinos, particularly in southern Africa, have become central to the developing formal wildlife economy, not only as flagship species for conservation but as powerful drivers of ecotourism and rural development. In South Africa, most white rhinos are now held in private or custodian ownership[130], with the associated responsibilities and financial burdens shaping the nature of wildlife management. These custodianship models bring both conservation obligations and economic opportunities, especially as South Africa undertakes the transformation of its wildlife economy to ensure broader participation and equitable benefit-sharing across historically marginalized communities. This transformation aims to diversify and energize the wildlife industry, placing species like the rhino at the centre of tourism and conservation enterprise. Rhinos draw high-value tourism and international attention, anchoring conservation-based economic activities such as guided wildlife experiences, conservation volunteering, photographic safaris, sustainable trophy hunting and specialized lodging services.

At the same time, rhinos are particularly vulnerable to poaching, which threatens not just the species but the broader economic infrastructure that relies on them[131]. Rhino poaching undermines the viability of wildlife tourism, directly affecting employment and revenue streams for communities and tourism operators. Poaching disrupts tourist demand, deters international investment, and damages the global reputation of destinations once known for their successful conservation models. These threats demonstrate the fragile link between biodiversity and economic security, reinforcing the need to integrate conservation efforts with local development strategies.

Beyond the ecological imperative, the economic rationale for rhino conservation is thus becoming more pronounced. The presence of rhinos enhances land value, stimulates tourism infrastructure, and supports related services from guiding to hospitality.

3.2.4.3 Leveraging-based socio-economic activities

African range States reported various methods to connect rhino and wildlife conservation with community development. Namibia, Kenya and Zimbabwe reported that they have community conservancies, which involve local people in managing land and wildlife. This gives the communities a real role in conservation as they are part of the process and with tangible benefits.

Malawi, Rwanda and Zimbabwe reported using projects that support local incomes. These include honey production, craft making, vegetable farming, and tourism-related jobs. The goal is to make conservation valuable to people by helping them earn a living from it.

Eswatini, Malawi, Rwanda and Zimbabwe shared that they focus on education and awareness. School programmes, junior ranger training, and community education activities are used to help young people and adults understand the importance of protecting wildlife. These efforts build long-term support for conservation.

Rwanda and Zimbabwe reported that they share tourism income with local communities. Some of this money is also used to improve clinics, schools, and water access. This makes conservation more meaningful to people by improving their daily lives.

[128] Masciaga, F., 2025. *Chinese non-profit engagement in wildlife conservation in Kenya: New dynamics in China-Africa relations and African conservation?* Doctoral dissertation, The Open University. https://oro.open.ac.uk/103032/1/Thesis%20-%20Francesca%20Masciaga.pdf

[129] Hiller, C. and 't Sas-Rolfes, M., 2025. Systematic review of the impact of restrictive wildlife trade measures on conservation of iconic species in southern Africa. *Conservation Biology*, *39*(1), p.e14262.

[130] Clements, H.S., Balfour, D. and Di Minin, E., 2023. Importance of private and communal lands to sustainable conservation of Africa's rhinoceroses. *Frontiers in Ecology and the Environment*, *21*(3), pp.140-147.

[131] Lubbe, B., 2022. The impact of rhino poaching on the economic dimension of sustainable development in wildlife tourism. In *Southern African Perspectives on Sustainable Tourism Management: Tourism and Changing Localities* (pp. 187-198). Cham: Springer International Publishing.

Botswana, Eswatini and Zimbabwe shared that they work to reduce human-wildlife conflict. They do this by offering damage compensation, increasing wildlife policing, and giving rewards to people who report poaching or other illegal activities. These steps help keep both people and animals safe.

Botswana, Malawi, Namibia and Zambia reported using a system called Community-Based Natural Resource Management (CBNRM). In this system, local committees help manage natural resources. This gives people a direct role in decision-making and helps them benefit from conservation.

Eswatini and Rwanda also reported using special events and cultural activities to support conservation. Events like the Rhino Velo race, the Imvelo mountain bike race and traditional ceremonies such as the Butimba build pride in local culture and brings value to wildlife.

At the same time, some donors are turning to impact investing and blended finance. These funding methods aim to create stronger environmental and social results. Work on great apes[132] reflects ideas that can translate to rhinos as well. Performance-based payments to communities near rhino habitats may help conservation succeed. This assumes that when local people receive clear benefits, they are more likely to support and protect wildlife.

The above reports from range States align with research demonstrating how indigenous people and local community involvement in rhino conservation is not only ethically important, but economically strategic. Recent studies have increasingly emphasized the socio-economic benefits of rhino conservation for local communities, highlighting the growing role of participatory approaches in conservation strategies. For instance, rhino-based tourism in north-west Namibia enhances local stewardship by providing livelihood alternatives[133]. Here, community involvement in rhino monitoring fosters a sense of pride and raises conservation awareness, reinforcing the link between economic benefit and environmental responsibility. Similarly, private and communal lands in rhino conservation across Africa demonstrate their importance, as such areas have become key sanctuaries for rhinos, where local landowners benefit from conservation incentives, tourism revenue, and co-management frameworks that directly support rural livelihoods[134].

Some outcomes link to the socio-economic roots of poaching - poverty and lack of opportunity are major drivers of illegal wildlife trade[135]. Economic empowerment is a critical tool in dismantling "poachernomics", through creating viable livelihood alternatives that can significantly reduce reliance on poaching. In a broader continental context, successful black rhino conservation efforts often correlate with strong community ownership and benefit-sharing mechanisms. Sustainable hunting and ecotourism revenues have been instrumental in supporting rural economies[136].

Complementing this perspective, case studies demonstrate that legal hunting, under effective regulation, can generate substantial revenue for community-run conservancies (far more than from eco-tourism in many instances)[137]. These findings suggest that when local people are empowered to manage and benefit from rhino conservation, the outcomes are more sustainable and equitable. Part of this also link to rewarding informants that enhances broader societal safety and security while also benefiting rhinos.

This brief reflection highlights a major shift in how rhino protection is approached. Instead of focusing solely on exclusionary methods, there's a growing emphasis on participatory conservation, in which local communities play a central role. This shift acknowledges that local people benefit in meaningful ways—through employment, eco-tourism, co-managed protected areas, conservation-linked businesses, and education opportunities. Importantly, studies show that inclusive governance and economic equity are essential to sustaining these conservation outcomes. It's no longer just about saving rhinos; the goal now is to align conservation efforts with broader human well-being[138]. Although debates continue over controversial strategies such as legal hunting or rhino horn trade, there's increasing agreement that the long-term success of rhino conservation depends on delivering tangible and fair socio-economic benefits to the communities who live alongside these iconic animals.

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[132] Braczkowski, A.R. & Biggs, D. 2024. Developing Innovative Financial Instruments for direct benefits to communities around Key Biodiversity Areas with a focus on Great Apes. A scoping report for UNEP GRASP - Available at: https://www.resilientconservation.org/media/#Reports

[133] Muntifering, J.R., Malherbe, A., Dax, L. and Beytell, P., 2023. From seeing to saving: How rhinoceros-based tourism in north-west Namibia strengthens local stewardship to help combat illegal hunting. *Frontiers in Sustainable Tourism*, *1*, p.1090309.

[134] Clements, H.S., Balfour, D. and Di Minin, E., 2023. Importance of private and communal lands to sustainable conservation of Africa's rhinoceroses. *Frontiers in Ecology and the Environment*, *21*(3), pp.140-147.

[135] Di Minin, E., Sas-Rolfes, M.T., Selier, J., Louis, M. and Bradshaw, C.J., 2022. Dismantling the poachernomics of the illegal wildlife trade. *Biological Conservation*, *265*, p.109418.

[136] Shaw, J.A., Adcock, K., Amin, R., Anderson, N., Banasiak, N., Beytell, P., Brett, R., du Toit, R., Emslie, R.H., Flamand, J. and Kariuki, L., 2025. Black Rhinoceros: Contrasting Conservation Actions and Outcomes Across the Continent. In *Rhinos of the World: Ecology, Conservation and Management* (pp. 237-273). Cham: Springer Nature Switzerland.

[137] 't Sas-Rolfes, M., Emslie, R., Adcock, K. and Knight, M., 2022. Legal hunting for conservation of highly threatened species: The case of African rhinos. *Conservation Letters*, *15*(3), p.e12877.

[138] Balfour, D. Ferreira, S. M., Gaymer, J., Lewis, C., Mafumo, H., Makoma, K., Mgoola, W., Reuben, M., Shaw, J. A., & Uri-Khob, S. (2025). *African rhino conservation 2025–2035: A contemporary strategic framework*. IUCN. https://doi.org/10.2305/RIGA8357

4. Stocks of specimens of rhinoceros and stock management

Paragraph 2.a of Res. Conf. 9.14 (Rev. CoP19) urges *all Parties that have stocks of rhinoceros horn to identify, mark, register and secure such stocks, and declare these to the Secretariat each year before 28 February, in a format to be defined by the Secretariat.* Paragraph 9 of the Resolution directs the Secretariat to *make an aggregated summary of the rhinoceros horn stock declarations of Parties available to the IUCN/SSC African and Asian Rhino Specialist Groups and TRAFFIC for analysis and inclusion in their reporting to the Secretariat pursuant to the Resolution.* This section overviews the latest data on stockpiles reported by the Parties.

4.1 African rhinos range States

4.1.1 Input data and methodology

For African range States, national rhino horn stockpile data were compiled by the IUCN SSC African Rhino Specialist Group (AfRSG) and used to augment and cross-reference information submitted by Parties to the CITES Secretariat. Eleven Parties submitted stockpile data to the CITES Secretariat, with eight Parties reporting data up to and including 2023 (Table 15). Twelve African range States submitted data to the AfRSG, with 10 Parties reporting data up to and including 2024. Namibia reported stockpile data to the Secretariat but indicated the data are confidential; therefore, they were not available from the CITES database. However, Namibia's stockpile data aggregates were summarized by the AfRSG.

For CITES data, some Parties reported stockpile tallies by legal or illegal sources (*Yes* in Table 15), while others reported it without differentiation (*Unkn* in Table 15). For both databases and because of the reporting structure, it was not always clear whether a zero-entry provided by stockpile category (*e.g.*, privately held stockpile, illegal sources) indicated a true zero, where no stockpile existed, or a false zero, where no reports were provided by the Party for the specific stockpile category. If the CITES data or AfRSG indicated that the Party has reported and no further clarification was provided in comments, it was assumed zeros were true zeros (*e.g.*, *Yes** in Table 15) unless the data for CoP19 indicated that a stockpile existed; in the latter case additional clarification was pursued with the Party.

To ensure the most up to date data are informing the Parties, South Africa and Namibia's stockpile tallies relied on the data submitted to the AfRSG. When data were available for a given Party from both databases, stockpile tallies were cross-checked for consistency. Additionally, consistency was checked compared to data last reported to CoP19 considering any reported destruction events. Finally, yearly reported illegal stockpiles added to the Parties cumulative tallies were checked against expected yearly illegal stockpiles based on seizure data in section 3 of this report.

Table 15 summarizes for African range States: 1) the most recent year of stockpile reporting by data source; 2) whether data were disaggregated by legal status and ownership (state or private); and 3) the average discrepancies between CITES and AfRSG stockpile records and between CITES reports and seizure-derived illegal stockpile estimates. Discrepancies between CITES and AfRSG records were calculated by subtracting AfRSG totals from CITES cumulative stockpiles, with negative values indicating higher AfRSG report stockpile figures and positive values indicating higher CITES report stockpile figures. Only Botswana, Mozambique, South Africa, and Zimbabwe consistently reported to both databases and were included in these comparisons. Discrepancies between data provided by the CITES Secretariat based on Parties reports and seizure-derived estimates were similarly calculated for Botswana, South Africa, and Zimbabwe, the only Parties that reportedly made seizures and reported stockpiles for the illegal category (Table 15). In Botswana, a zero discrepancy is a result of all seizure reports reporting non-horn specimens (*i.e.*, whole bodies, description code BOD); in Zimbabwe, a zero discrepancy indicates full concordance between seizure data and reported stockpiles.

4.1.2 Stockpile summaries

By the end of 2023, African range States reported to CITES approximately 36.2 tonnes of rhino horn held in State- and privately-owned stockpiles. In contrast, AfRSG member-submitted data indicated a substantially higher total of 85.1 tonnes by the end of 2023. This discrepancy was primarily due to underreporting from South Africa to the CITES Secretariat (approximately 40 tonnes lower) and the absence of Namibian stockpile data from the CITES Secretariat database shared for this analysis (available only via the AfRSG) (Table 15).

Further discrepancies were observed when comparing current submissions to previous reports to CoP19. For example, South Africa's reports to the AfRSG indicated a 14-tonne decrease in privately held stockpiles without any corresponding destruction events to explain the reduction; this discrepancy is under clarification with the Party's CITES Management Authority at the time of writing of this report. No destruction events were reported by African range States in the CITES Secretariat database. Similarly, no theft events were recorded, although AfRSG reports noted 712 horns stolen in South Africa, including two from stockpiles; these were not reported as part of the CITES database. Furthermore, a theft of 51 horns in 2023[79] was not reflected in either

the CITES or AfRSG stockpile data submitted by South Africa.

Table 15. Summary of data reporting for African rhino range States based on source – collected via annual Notification by the CITES Secretariat or submitted by member representatives to the AfRSG for the preparation of the present report. *Illegal* sources refer to stockpiles from seized or confiscated horns. *Legal* sources refer to imported, pre-Convention, donated, surrendered, dehorned and found horns. *Unkn* indicates data reported in an aggregate form without differentiation into legal or illegal status (based on last reported data not covering 2021 – 2023). *Yes** indicates data reported was a zero tally, and no previous reports exist for that entry, hence assumed it was a true zero. Double dash (--) indicates no reporting. Average discrepancy is calculated based on yearly differences between sources of data by: a) subtracting AfRSG from CITES cumulative stockpile reporting, and b) subtracting the expected stockpile based on reportedly seized horn by the Party from the CITES cumulative stockpile reporting. See main text in section 4.1 to understand discrepancy calculations and results.

Party	Year last reported:		Reported state-owned stockpiles from sources:				Average discrepancy (in tonnes) on yearly aggregates data (from 2021 – 2023 or last report) reported between sources of data:	
			Illegal (seized)		Legal			
	CITES	AfRSG	CITES	AfRSG	CITES	AfRSG	CITES and AfRSG stockpile data	CITES stockpile data and expected stockpiles from seizure data
Angola	2018	2024	Unkn	Yes*	Unkn	Yes	--	--
Botswana	2023	2024	Yes	Yes*	Yes	Yes	0.06	0
Chad	--	--	--	--	--	--	--	--
Côte d'Ivoire	2021	--	Unkn	--	Unkn	--	--	--
Democratic Republic of Congo	--	--	--	--	--	--	--	--
Eswatini	2021	2024	Yes*	Yes	Yes	Yes	--	--
Kenya	2023	--	Unkn	--	Unkn	--	--	--
Malawi	2023	--	Unkn	--	Unkn	--	--	--
Mozambique	2024	2024	Unkn	Yes	Unkn	Yes	0.14	--
Namibia	2023	2024	--	Yes*	--	Yes	--	--
Rwanda	--	2021	--	--	--	--	--	--
Senegal	--	--	--	--	--	--	--	--
South Africa	2023	2024	Yes	--	Yes	Yes	-40.31*	-0.01
United Republic of Tanzania	--	--	--	--	--	--	--	--
Uganda	2023	--	Unkn	--	Unkn	--	--	--
Zambia	2021	2024	Yes	Yes*	Yes	Yes	--	--
Zimbabwe	2024	2024	Yes	Yes*	Yes	Yes	0.09	0

* It is noted that after further engagement with the Party, the discrepancy was traced to the lack of reporting of stockpile information in 2016. The Party is working to amend the discrepancy by reporting to the CITES Secretariat.

Despite these reporting limitations, South Africa accounted for the majority of the region's stockpiles, holding between 72% and 78% depending on the data source. AfRSG data indicated that 48% of South Africa's stockpiles were privately held, while CITES data showed that 60% of the stockpile added between 2021–2023 was incorporated into privately held stockpiles. Given the scale of privately held stockpiles and initiatives such as Rhinomics to centralize privately held stockpiles (see Section 3.2.3), robust documentation and monitoring practices are essential, yet gaps remain in current reporting.

Discrepancies in state-owned stockpile data may result from variations in storage protocols and reporting timelines. Some Parties incorporate horns into national inventories immediately after seizures or carcass discoveries, while others delay additions until investigations conclude. A recent study[139] on the management of confiscated wildlife specimens across two transit and two range States highlighted significant variations and recurring challenges, particularly the substantial costs and security risks associated with maintaining stockpiles (see Annexure 6 Section A.6.1.5). For range States, these challenges are compounded by the ongoing need to manage horns removed through dehorning operations from both state- and privately-owned rhinos[140,141].

[139] Saito, A. (2025). Where the wild things are...stored? The management and return of seized wildlife. *Frontiers in Conservation Science, 5*: 1489314.
[140] Kuiper, T., Hausmann, S., Whitfield, S., Altwegg, R., Ferreira, S., Shaw, J., Polakow, D., Hofmeyer, M., Pierce, E., Nowak, I., Rowles, C., Zowitsky, H., Olivier, I., Boyd, W., Bird, J., Worth, E., van Tonder, M., Bourn, M., Greef, Z., Hartman, Z. (2023). *Evaluating the cost & effectiveness of rhino conservation interventions in the Greater Kruger*. A Greater Kruger Environmental Protection Foundation Report.
[141] Chimes, L.C., Beytell, P., Muntifering, J.R. *et al.* Effects of dehorning on population productivity in four Namibia sub-populations of black rhinoceros (*Diceros bicornis bicornis*). *Eur J Wildl Res* **68**, 58 (2022). https://doi.org/10.1007/s10344-022-01607-5

4.2 Asian rhinos range States

The stockpile database maintained by the CITES Secretariat was the only available source for assessing rhino horn stockpiles in the Asian range States. India and Nepal have not submitted stockpile data to the CITES Secretariat, and Indonesia's last report was in 2020. Thus, no updated figures were available for the region for the reported period of 2021 – 2023.

To assess expected stockpiles with an analysis of reported seizures made by the Parties, seizure data in section 3 of this report were explored. Nepal did not submit its AITR since 2017, and while India and Indonesia did submit AITR reports for the period of the analysis, those did not include records of seizures of rhino specimens, as none were provided for the preparation of this report. However, TRAFFIC's database included records from media sources documenting seizures by law enforcement officials in Nepal (n = 5) and India (n = 14), with an expected seized weight of 3 kg and 13 kg, respectively[142]. With no stockpile reporting by the Asian range States, it is unclear whether these seized specimens were added to national stockpiles.

It is also noted that no destruction events were reported to the Secretariat by Asian range Parties. However, a publicized event by the government of the State of Assam, India in 2021 documented the destruction of 2,479 horns (1,305.25 kg) near Kaziranga National Park. Ninety-four rhino horns were preserved for research and should amount to a stockpile of approximately 68 kg assuming the estimated weight of 0.72 kg per whole horn of the greater one-horned rhino. Additionally, 50 horns were related to pending legal cases and were not burnt[143] and should constitute a minimum portion of the national stockpile for the Party.

4.3 Non-range States

The stockpile database maintained by the CITES Secretariat was the only source of information to assess stockpiles for non-Range States, *i.e.*, Parties that do not have existing rhino populations as reported on by the AfRSG and AsRSG in section 2 of this report. Of the 21 non-range States[144] that reported at least once to the CITES Secretariat on their rhino horn stockpiles, only eight Parties[145] reported their stockpiles for all years from 2021 – 2023, and an additional four Parties[146] reported once during this period. The combined stockpile for these 12 reporting Parties totalled 1,489 kg of rhino horn specimens. Including the latest known data from other non-reporting Parties, the minimum estimated stockpile totals 2,144 kg. Based on rhino horn seizure records from 2021–2023, non-range Parties should have reported an additional 3,686–5,336 kg either as destroyed or added to national stockpiles[147].

Among non-range States most affected by illegal trade (Malaysia, Qatar and Viet Nam,; Table 16), only Malaysia updated its stockpile reports through 2023; Viet Nam last reported in 2017, and Qatar in 2018. Lao People's Democratic Republic (PDR) submitted an updated report in March 2023, indicating a decrease in cumulative stocks from 29.1 kg to 11.1 kg. Although the CITES Secretariat sought clarification, Lao PDR had not responded at the time of writing. The United Arab Emirates had no stockpile reports on file.

Several notable large seizures were made by non-range Parties during the reporting period (Table 16), including one Party that never reported rhino stockpile information to the CITES Secretariat before. Of the Parties listed as the countries of discovery, only Malaysia and Singapore reported to CITES, where the latter Party noted that seized horns are held until criminal investigations conclude and are then destroyed hence it did not provide detailed stockpile information. For the rest of the non-range State Parties with large seizures made between 2021 – 2023, it is unclear whether specimens were included in national stockpiles or recorded and destroyed as no stockpile reports were submitted to CITES.

No Parties reported destruction events within their stockpile submissions. However, in its progress report to SC78, Viet Nam reported two destruction events consisting of: 28 kg of rhino horn destroyed in 2021, and 138 kg destroyed in 2023. Best practices from the stockpile management guidelines adopted by the Parties[148] recommend that full inventory, reporting and forensic sampling are undertaken prior to destruction events. Without formal stockpile reporting by Viet Nam since 2017, it remains unclear, for example, whether the 138 kg destroyed were the seized specimens from an illegal consignment totalling 139 kg exported from South Africa and intercepted by Vietnamese law enforcement authorities in 2021 (Table 16). At its 78th meeting, the Standing Committee encouraged Viet Nam to strengthen its engagement with other Parties for intelligence exchange and "*requested Parties to actively scale up efforts to collect samples from rhinoceros horn seized within their territories for forensic analysis*"[149]. A key step is the consistent reporting of stockpile information by the Party.

[142] TRAFFIC's database also recorded a seizure made by Indonesia in 2024, but those reports are due to the AITR only on 31 October 2025.
[143] Himangshu, D. (2022) A historic event marks World Rhino Day 2021 in India. Oryx 56(3): pp. 331.
[144] Australia, Ethiopia, Germany, Greece, Italy, Japan, Lao PDR, Malaysia, Malta, New Zealand, Philippines, Qatar, Singapore, Slovakia, Spain, Sri Lanka, Sweden, Thailand, United Kingdom, United States of America, and Viet Nam.
[145] Ethiopia, Japan, Malaysia, New Zealand, Philippines, Slovakia, Thailand, and United States of America.
[146] Australia, Germany, Lao PDR, and Singapore.
[147] Range represents the reported weights (3,686 kg) and reported and estimated weights (5,336 kg) when estimating weight for records that reported number of horns and horn pieces but no weight in accordance with methodology described in section 3.1.2.2.
[148] https://cites.org/sites/default/files/eng/cop/18/inf/E-CoP18-Inf-072.pdf
[149] SC78 SR: https://cites.org/sites/default/files/eng/com/sc/78/E-SC78-SR-17March.pdf

Table 16. Seizures with reported or estimated total weight greater or equal to 10 kg that were reportedly made by non-range States from 2021 – 2023. Seizures are listed by total weight (as reported or estimated from the reported number of horn specimens seized; see section 3.1.2.2) in decreasing order. Source of information is reported as the CITES Illegal Trade Database (CITES) or TRAFFIC's database (TRAFFIC). URL is provided where open sources are available.

Country of discovery	Seizure year	Trade Chain reported	Total rhino horn weight seized	Source	URL
Viet Nam	2021	South Africa, Viet Nam	138.8	CITES, TRAFFIC	https://baochinhphu.vn/triet-pha-duong-day-buon-lau-dong-vat-hoang-da-xuyen-quoc-gia-102220622164945436.htm
Qatar	2022	Zimbabwe, Qatar	46.1	TRAFFIC	https://cites.org/sites/default/files/documents/E-SC77-45.pdf
Qatar	2022	South Africa, Qatar	44.7	TRAFFIC	https://cites.org/sites/default/files/documents/E-SC77-45.pdf
Singapore	2022	South Africa, Singapore, Lao PDR	34.3	CITES, TRAFFIC	https://www.nparks.gov.sg/news/news-detail/national-parks-board-seizes-34-kg-of-rhinoceros-horns--largest-seizure-of-rhinoceros-horns-in-singapore-to-date
Malaysia	2022	United Arab Emirates, Malaysia	29.1	CITES, TRAFFIC	https://www.traffic.org/news/massive-ivory-and-menagerie-of-wildlife-parts-seized-in-malaysian-port/
Qatar	2022	South Africa, Qatar, Malaysia	22.1	TRAFFIC	https://cites.org/sites/default/files/documents/E-SC77-45.pdf https://www.saps.gov.za/newsroom/msspeechdetail.php?nid=37894
Viet Nam	2023	--	22.6	TRAFFIC	https://cites.org/sites/default/files/documents/E-SC78-45.pdf
Viet Nam	2021	Philippines, Viet Nam	19.5	TRAFFIC	https://news.tuoitre.vn/vietnam-customs-seize-almost-20kg-of-rhino-horns-from-philippines-10364496.htm https://haiquanonline.com.vn/bat-giu-gan-20-kg-sung-te-giac-van-chuyen-bang-duong-bien-ve-cang-hai-phong-156228.html
France	2022	France, Portugal	15.4	CITES	
Viet Nam	2023	Angola, Qatar, Viet Nam	11.8	TRAFFIC	https://cand.com.vn/Ban-tin-113/hanh-khach-nhap-canh-qua-noi-bai-mang-theo-hon-15kg-sung-te-giac-va-nga-voi-i691482/ https://english.haiquanonline.com.vn/over-16kg-of-rhino-horn-and-ivory-were-seized-by-noi-bai-customs-26142.html
Qatar	2021	Mozambique, Qatar, Viet Nam	10.0	TRAFFIC	https://cites.org/sites/default/files/documents/E-CoP19-75.pdf https://www.interpol.int/en/News-and-Events/News/2022/Ivory-rhino-horns-pangolin-and-tiger-parts-seized-in-transit-from-Africa-to-Asia

4.4 Summary of stockpile information

Understanding illegal rhino horn trade dynamics over time presents important challenges, particularly when there is considerable uncertainty around stockpile data. Even though Resolution Conf. 9.14 (Rev. CoP19) urges the Parties to submit stockpile reports, reporting is poor, especially for Asian range States where none have reported their stockpiles to the CITES Secretariat in the period of analysis for this report (2021 – 2023). Tracing of stockpiles is also important for African range States, who are actively deploying dehorning as a management tool for State and privately held rhino populations in order to combat rhino poaching. The large discrepancies noted in the stockpile data and the inability to distinguish sources of stockpiles based on reporting (*e.g.*, state- or privately held, legal or illegal), make it difficult to fully understand the source of the discrepancies or match reported stockpiles with the expected weight that should have been added from seized specimens. The inability to trace stockpile tallies and cross-reference to other sources of information limits understanding on whether stockpile management practices might result in the sourcing of stockpile horns into illegal trade. Proper recording, reporting and monitoring of stockpiles is especially important as stockpile management may serve as a key consideration to allow for legal trade; for example, South Africa recently adopted a Policy Position on the Conservation and Sustainable Use of Elephant, Lion, Leopard, and Rhinoceros[150] which included a key requirement to "ensure that horn stockpiles are always adequately accounted for and secured" before considering legal international trade in rhino horn.

There are opportunities to strengthen stockpile reporting and data transparency over time. A survey examining current management practices outlined in Annex 1 of the stockpile guidelines adopted by the Parties[148], including for example – when specimens are incorporated into stockpiles, record keeping, and reporting practices – could help identify where capacity gaps, funding needs, or training requirements exist, and assist in rectifying reporting discrepancies. A more regular stockpile reporting to the Standing Committee, coupled with an analysis of seizure data, could improve understanding on challenges, best practices and trends associated with addressing rhinoceros poaching and horn trafficking as specified in paragraph 8 of Res. Conf. 9.14 (Rev. CoP19).

[150] https://www.dffe.gov.za/mediareleases/policyposition_elephantrhinoleopardlion#:~:text=Cabinet%20has%20approved%20the%20revised,with%20high%20levels%20of%20endemis

5. Incidents of illegal killing of rhinoceroses

5.1 African rhinos

5.1.1 Incidences of illegal killing

Between 2015 and the end of 2022, the loss of rhino to poaching in Africa showed an overall downward trend, with notable declines in several range States. Despite this, 567 rhinos were poached across the continent in 2022 (Table 17), reflecting a poaching rate of 2.56%, compared to the 2.44% recorded in 2021, but still below the critical threshold (3.5%) above which rhino populations are expected to decline[4].

In 2023, the total number of rhinos lost to poaching in Africa rose to 596, up from the previous year. South Africa accounted for most of these losses, with 499 rhinos poached, representing 83.7% of the continent's total losses and a rise from 2022 when South Africa reported 448 poaching losses. Namibia recorded 77 poaching incidents, showing a decline from the previous year's high of 93. The average continental poaching rate in 2023 was 2.56%, still below the critical mark.

In 2024, 81.4% of the 516 incidents of illegal killing were in South Africa. Namibia reported 83 detected rhino carcasses where the rhino had been poached. Incidences of illegal killing noted during 2024 were very similar to what was those noted in 2020 when government lockdown responses to the Covid-19 pandemic temporarily reduced poaching for about two months in that year[151]. The poaching rate of 2.15% during 2024 was the lowest it has been since 2011.

Although these trends are encouraging, gains can be rapidly reversed. During the first three months of 2025 (Not presented in Table 17), some range States experienced a surge in poaching. Chad had two black rhinos cows poached, with only two males remaining in the country. South Africa reported at least 83 Southern white rhinos, and eight South-central black rhinos poached. Kruger National Park had at least 52 Southern white and five South-central black rhinos poached despite ongoing anti-poaching and dehorning. Hluhluwe-iMfolozi Park had six Southern white and two South-central black rhinos poached – the park is also maintaining anti-poaching and dehorning.

Speculations for this surge links to (1) the recent political instability in Mozambique that required prioritizing security forces in key areas away from the border between South Africa and Mozambique; (2) the withdrawal of foreign funding aid supporting rhino conservation programmes at various localities resulted in protection and security capabilities being severely impacted; (3) the long-anticipated implementation of integrity management and lie-detection systems in Kruger National Park[152] leading to syndicated poaching operations cashing in while they can; and (4) the broadscale dehorning has largely led to a change in demand, with buyers now accepting cut horns entering the market – these are referred to as 'stompies".

Table 17: Detected African rhino poaching mortalities by range State since 2006[44]. Zeros reflect reports of no detected poached carcasses by a range State.

Range State	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Botswana	0	0	0	0	0	0	0	1	0	0	1	0	7	32	62	33	6	8	1
Chad	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	0	-
DR Congo	0	0	2	2	-	-	-	-	-	-	-	-	2	0	0	0	-	1	-
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	0	0
Eswatini	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0
Kenya	3	1	6	21	22	27	29	59	35	11	10	9	4	4	0	6	1	4	2
Malawi	0	0	0	0	0	0	2	1	1	1	1	1	0	0	0	0	0	0	2
Mozambique	0	9	5	15	16	10	16	15	19	13	5	5	8	6	2	0	0	1	-
Namibia	0	0	0	2	2	1	1	4	30	97	66	57	84	62	43	47	95	77	83
Rwanda	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0
Senegal	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0
South Africa	36	13	83	122	333	448	668	1004	1215	1175	1054	1028	769	594	394	450	448	499	420
United Republic of Tanzania	0	0	2	0	1	2	2	0	5	5	0	2	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	-
Zambia	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	2
Zimbabwe	21	38	164	39	52	42	31	38	20	50	35	36	34	82	12	4	16	5	6
Total	**60**	**62**	**262**	**201**	**426**	**532**	**749**	**1122**	**1326**	**1352**	**1172**	**1138**	**910**	**780**	**513**	**540**	**567**	**596**	**516**

[151] Ferreira, S.M., Greaver, C., Simms, C. and Dziba, L., 2021. The impact of COVID-19 government responses on rhinoceroses in Kruger National Park. *African Journal of Wildlife Research*, *51*(1), pp.100-110.

[152] DefenceWeb. 2023. Lie detector tests coming for SANParks rangers. https://www.defenceweb.co.za/featured/lie-detector-tests-coming-for-sanparks-rangers/

Because so many rhinos have been dehorned, rhinos with "stompies"—are now common. Poachers often target large, hard-to-monitor areas where it's difficult to maintain strong oversight. In these places, it is more challenging to ensure access control, cost-effective surveillance, staff honesty, and detailed knowledge of individual rhinos.[153]. There is also a risk that poachers may kill more than one rhino during a single incident. This often happens as an unintended consequence of their strategy to get more horn for the same risk. By targeting a cow, who is usually with at least one other rhino—often her calf—poachers can increase the total horn weight, especially since dehorned rhinos carry much less horn. This then may have significant compound effects on the population through loss of dependent calves as well as future calves[154].

5.1.2 Species-specific illegal killing

Since 2021, range States reported in more detail annual incidences of illegal killing to the level of subspecies allowing continental reflection species-specific impacts (Fig. 11). No Northern white rhino was poached, with only two highly protected individuals remaining. A total of eight Eastern black rhinos were killed across the range of the subspecies. This reflects a poaching rate of 0.15% (95% CI: 0.05% to 0.26%) of the number of rhinos available each year over the 2021 to 2024 period.

For South-central black rhinos, authorities reported 145 illegal killings in the period reflecting a poaching rate of 1.49% (95% CI: 1.31% to 1.68%) each year. South-western black rhinos had 212 illegal killings at a rate of 2.06% (95% CI: 1.36% to 2.75%), while Southern white rhinos were the hardest hit, with 1,849 killed over the 2021 to 2024 period (being easier targets inhabiting open grassland as opposed to thick bush generally preferred by black rhinos). This reflects for the Southern white rhinos an annual poaching rate of 2.79% (95% CI: 2.50% to 3.08%).

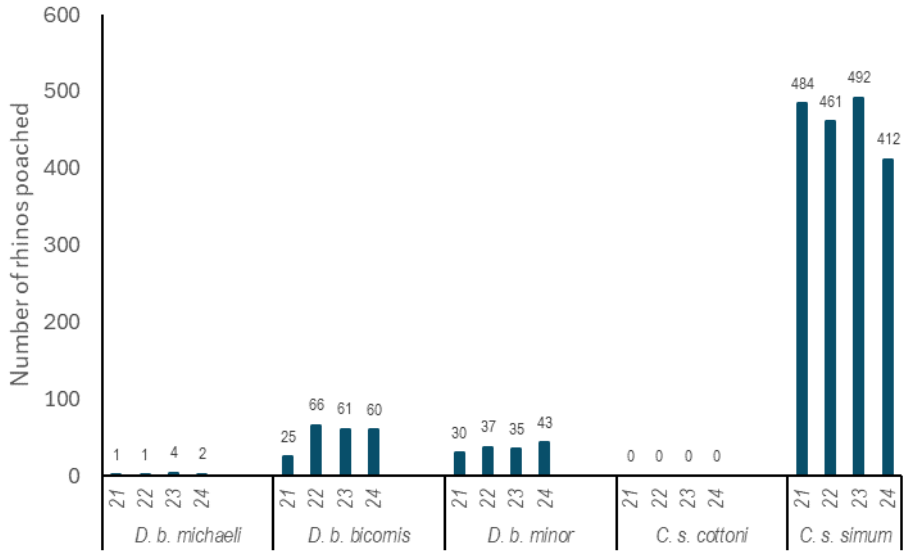

Figure 11. Poaching records reported by range States per subspecies since 2021. Eastern black rhino (*D. b. michaeli*), South-western black rhino (*D. b. bicornis*), South-central black rhino (*D. b. minor*), Northern white rhino (*C. s. cottoni*) and Southern white rhino (*C. s. simum*).

These poaching rates predicts a general increase for all subspecies except for the highly protected Northern white rhino, which comprises only two females. Increases were noted for Eastern and South-central black rhinos, while other influences resulted in South-western black and Southern white rhinos being similar in number to figures reported at the end of 2021. These additional influences include the consequences and lag effects of droughts – *e.g.* it seems to be that the likely synchronized births, with one year of high births followed by one or two years of low births linking to the gestation period of Southern white rhinos,[155] is realizing following the impacts on reduced birthing noted in the 2015/2016 drought in Kruger National Park[156]. The extended drought since 2015/2016 severely affected South-western black rhinos in north-western Namibia. Management issues also played a role, such as Eswatini's restricted access to local air services, to manage rhinos and competing herbivore populations by effectively disenabling affordable experienced aerial support. Potential over-estimation of rhino numbers in key localities making use of sample-based population estimates, as well as inadequate reporting of the latest updated estimates may also contribute to these trends in live rhinos.

[153] Ferreira, S.M. and Dziba, L., 2021. Where are rhinos safest?. *South African Journal of Science*, *117*(9-10).
[154] Nhleko, Z.N., Ahrens, R., Ferreira, S.M. and McCleery, R.A., 2022. Poaching is directly and indirectly driving the decline of South Africa's large population of white rhinos. *Animal Conservation*, *25*(2), pp.151-163.
[155] le Roex, N. and Ferreira, S.M., 2021. Rhino birth recovery and resilience to drought impact. *African Journal of Ecology*, *59*(2), pp.544-547.
[156] Ferreira, S.M., le Roex, N. and Greaver, C., 2019. Species-specific drought impacts on black and white rhinoceroses. *PLoS One*, *14*(1), p.e0209678.

5.1.3 Trends in illegal killing

With the above limitation to reported data in mind, poaching data shows a general trend of declining poaching rates at the start of each calendar year since 2015 (Fig. 12). Since the impact of government lockdowns and travel restrictions in 2020, poaching rates have fluctuated, although 2024 had the lowest-recorded rate since 2011. Note that these reflect the detected carcasses, as range States did not adjust poaching records for biases in carcass detection, which is often imperfect[157]. Factors include patrol intervals, carcass decay rates, and missed detections. Small populations in confined areas are closely monitored, allowing reconciliation of missing rhinos with carcasses — though detection can still be delayed. In larger areas, with less manpower, intense monitoring is harder, increasing the risk of undetected carcasses. Only South Africa's Kruger National Park formally estimated detection rates, with an overall chance of finding a carcass at 82.6% (95% CI: 72.0% to 93.2%)[158]. Some countries acknowledge this issue and update poaching figures as new information comes to light.

Even with lower poaching rates, rhino populations may not grow significantly due to indirect effects. Poaching reduces calf survival, as young rhinos rely on their mothers for milk and protection. As a result, a female's lifetime calf production could drop from about six to 0.7[159]. Poaching also affects recruitment by causing social disruption, reducing mating, and increasing predation, as seen in South African black rhinos[160]. Drought worsened the situation for white rhinos by increasing natural deaths and lowering births[161], though recovery began two to three years later[162]. Black rhinos showed no clear impact from the drought in South Africa. Namibia, however, noted substantial mortalities linked to drought conditions.

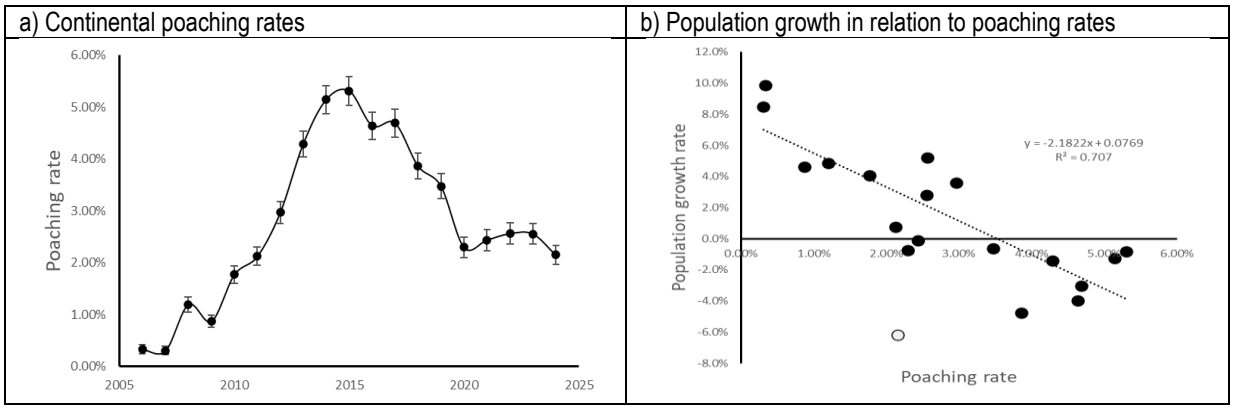

Figure 12. Continental poaching rates (a)[163] since the resurgence of poaching in the past generation of rhinos and the relationship between continental growths in rhino numbers, irrespective of subspecies, and poaching rates (b). Note that 2024 is identified as a significant outlier, because the population change from 2023 to 2024 was dictated by other significant factors (see the text).

To fully understand poaching's impact on rhinos, it's important to consider other factors, especially management actions such as translocations. From 2022 to 2024, 276 rhinos were moved across borders or to non-African nations. In 2024 alone, 360 rhinos were moved within a country. These interventions, together with poaching, have shaped population trends. In Kruger National Park, the largest affected population, models accounting for all factors explained most changes and aligned with survey data for 2020. However, recovery to pre-poaching levels is slow and not expected before 2030–2040[164].

The continental annual growth in rhinos declined as the continental annual poaching rate increased (Fig. 12) as reported at the end of 2021[4]. A key outlier, however, was 2024 when the growth rate noted from 2023 to 2024 was substantially lower than that expected for a poaching rate of 2.16%. In 2024, the delayed effects of past droughts became more evident, with Southern white rhino births showing continued fluctuations likely tied to earlier reductions in calving after the 2015/2016 drought. At the same time, intensified management actions—such as Hluhluwe Imfolozi Park's dehorning programme — highlighted ongoing challenges, including lower-than-expected rhino numbers due to earlier survey overestimates. Even so, a global threshold index – at an updated poaching rate of 3.5% (95% CI: 2.3% - 5.5%) the continental rhino population will remain stable. Given that

[157] Huso MM. 2011. An estimator of wildlife fatality from observed carcasses. Environmetrics, 22, 318-329.
[158] Ferreira SM, Dziba L. 2022. Rhinoceros accounting in Kruger National Park. Unpublished data, sam.ferreira@sanparks.org.
[159] Nhleko ZN, Ahrens R, Ferreira SM, McCleery RA. 2021. Poaching is directly and indirectly driving the decline of South Africa's large population of white rhinos. Animal Conservation, https://doi.org/10.1111/acv.12720.
[160] le Roex N, Ferreira SM. 2020. Age structure changes indicate direct and indirect population impacts in illegally harvested black rhino. PloS one, 15, p.e0236790.
[161] Ferreira SM, le Roex N, Greaver C. 2019. Species-specific drought impacts on black and white rhinoceroses. PLoS One, 14, p.e0209678.
[162] le Roex N, Ferreira SM. 2021. Rhino birth recovery and resilience to drought impact. African Journal of Ecology, 59, 544-547.
[163] Poaching rate is the number of detected carcasses within a calendar year expressed as a fraction of the population at the start of that calendar year. Several range States only reported subspecies-specific poaching since 2021.
[164] Ferreira SM, Dziba L. 2022. Rhinoceros accounting in Kruger National Park. Unpublished data, sam.ferreira@sanparks.org.

range States often have national targets of 5% annual population growth, this requires a poaching rate that is lower than 1.2% (95% CI: 0.2% - 2.5%) of the national population.

5.2 Asian rhinos

Asian countries reported 13 incidences of illegal killings of rhinos all being greater one-horned rhinos from January 2021 to December 2024. A further 26 Javan rhinos were most likely killed based on the information provided in a key court case in Indonesia[165].

6. Enforcement issues

6.1 Arrests, prosecutions, convictions and sentences

6.1.1 African rhinos

Data reported from 2022 to 2024 reveal several important and emerging trends in law-enforcement outcomes and legal procedures related specifically to crimes involving rhino across range States. Note that authorities recognize various levels in the rhino horn poaching and trafficking chain representing different roles within a criminal network, ranging from on-the-ground poaching to international trade. Level 1 refers to the poachers who physically enter protected areas, private reserves, or communal lands to kill rhinos and remove their horns. Level 2 includes transporters—individuals paid to move the horn from poachers to others in the network. Level 3 involves local intermediaries who manage multiple poaching teams and transporters, often coordinating logistics and payments. Level 4 comprises exporters who arrange or conduct the international movement of rhino horn, typically through airports or harbours. Finally, Level 5 consists of traders in consumer countries who sell the trafficked horn directly to end users. Each level plays a crucial role in sustaining the illegal trade, and disrupting any part of this chain can impact the entire trafficking system.

Arrests have been recorded across all levels of offenders from the poachers to those managing and organizing the illegal activities. The majority of these occurred at level two, which represents mid-level offenders who are paid for transporting rhino horn typically from the poachers to other key people within a criminal syndicate (Fig. 13). However, during the three-year period, there has been a noticeable and steady decline in the number of arrests made at each level. Despite this general decrease in total arrests, it is important to emphasize that law enforcement agencies have continued to make arrests even at the top levels of the illegal trade chain actors—levels four and five—indicating continued enforcement efforts even against high-level offenders.

When looking more closely at prosecution outcomes, the trends become more complex and somewhat mixed. Specifically, prosecution rates increased at levels one and three, suggesting more cases at these levels are moving forward into the court system. However, there has been a decrease in prosecutions at level two, which is particularly noteworthy given that this level accounts for many arrests. Interestingly, despite fewer prosecutions at this middle tier, conviction rates have increased across most levels of offenders. This trend suggests that once cases reach the courtroom, they are more likely to result in convictions, possibly due to improvements in investigation techniques, case building, or the presentation of stronger evidence during trials.

A critical caveat in interpreting these outcomes lies in the extremely variable duration of legal procedures. The time it takes for a case to move from the initial arrest stage to prosecution, and eventually to conviction, varies greatly depending on numerous factors. These include jurisdiction challenges (corruption, bribery, incompetence, lack of interest), the complexity of the case, and the capacity of national legal systems. Unfortunately, there is currently limited and inconsistent information on how these timelines differ across range States, offence levels, and over time. A more detailed understanding of the duration of legal proceedings would help to assess the efficiency, responsiveness, and overall effectiveness of legal enforcement systems in addressing rhino crime, noting that this will in the light of the complexity or circumstances of each case inevitably vary.

Information related to Namibia indicates good progress regarding enforcement, having reported a relatively high number of arrests that span across all levels of poaching-related offences. However, data regarding legal sanctions—such as fines and imprisonment—remain scarce or incomplete for many range States. Even so, some significant patterns can be identified. For example, in Kenya a particularly high fine was imposed for a level one offence, amounting to KSh3,000,000 (equivalent to c. US$23,000). This case shows that fines can be used as a strong deterrent and may vary widely depending on national policy and judicial discretion. In contrast, Namibia reported lower fines during the same period, ranging from N$4,000 to N$60,000 (equivalent to c. US$220 to US$3,200). These fines are lower than those recorded in 2021, which included a fine of N$212,466 (c. US$13,300). However, it is unclear which offence levels these fines were associated with, limiting the depth of interpretation.

[165] CBS News. 2024. 6 suspected poachers arrested over killing of 26 endangered Javan rhinos. https://www.cbsnews.com/news/javan-rhinos-poaching-arrests-six-suspects-endangered-species-indonesia/

Prison sentencing for crimes involving rhino also varied significantly, with sentences ranging from 24 months to as long as 288 months (24 years). There also does not appear to be a consistent or predictable link between the severity of the offence—based on the level of poaching—and the length of the prison sentences imposed (Fig. 13). This inconsistency suggests that sentencing practices may be influenced by other contextual or legal factors, such as prior criminal history, plea bargains, or regional differences in judicial interpretation. South Africa played a leading role in handing down prison sentences at all offence levels, further highlighting the country's active role in combating rhino crime through its legal system.

In addition to criminal penalties like fines and prison terms, some countries have used complementary legal tools to address illegal activities involving wildlife. A notable example comes from South Africa, where the Asset Forfeiture Unit successfully obtained a confiscation order of assets valued at ZAR5 million (US$265,607). This action demonstrates how financial legal mechanisms can be used to recover illegal proceeds, providing a different form of justice that complements traditional criminal sanctions. Such measures also help to disrupt the financial motivations behind organized wildlife crime.

The data show promising signs of increasing convictions and continued legal actions across various offence levels. However, substantial challenges remain that hinder effective enforcement. Key issues include persistent data gaps, such as the lack of accurate and updated price information. For example, outdated and exaggerated figures, often disseminated by the media, misinform the public, create misconceptions, and may even inadvertently incentivize illegal trade[166]. Improved tracking of price trends along the supply chain would greatly enhance understanding of trade dynamics.

In addition, inconsistencies in legal processes and varying enforcement capacities between countries continue to hinder progress. Greater transparency, better documentation, and stronger cooperation between national enforcement agencies and legal institutions are essential to address these gaps and to accurately assess the true impact of law enforcement efforts.

A further challenge is the need for clearer and more standardized Key Performance Indicators (KPIs) to support more effective tracking of progress and identification of issues. For example, simply recording the number of arrests without linking them to prosecutions or poaching incidents can result in misleading interpretations. More meaningful KPIs—such as arrests per poached rhino or prosecutions per arrest—would strengthen the reliability, comparability, and overall usefulness of reporting. These improvements are critical to better evaluate and understand the effectiveness of efforts to curb rhino crime.

Seized rhino horns[167].

[166] See Glenn, I., Ferreira, S.M. and Pienaar, D., 2019. Communication on rhino poaching: Precautionary lessons about backfires and boomerangs. *South African Journal of Science*, *115*(3-4), pp.1-4.
[167] Image from news.ctgn.com

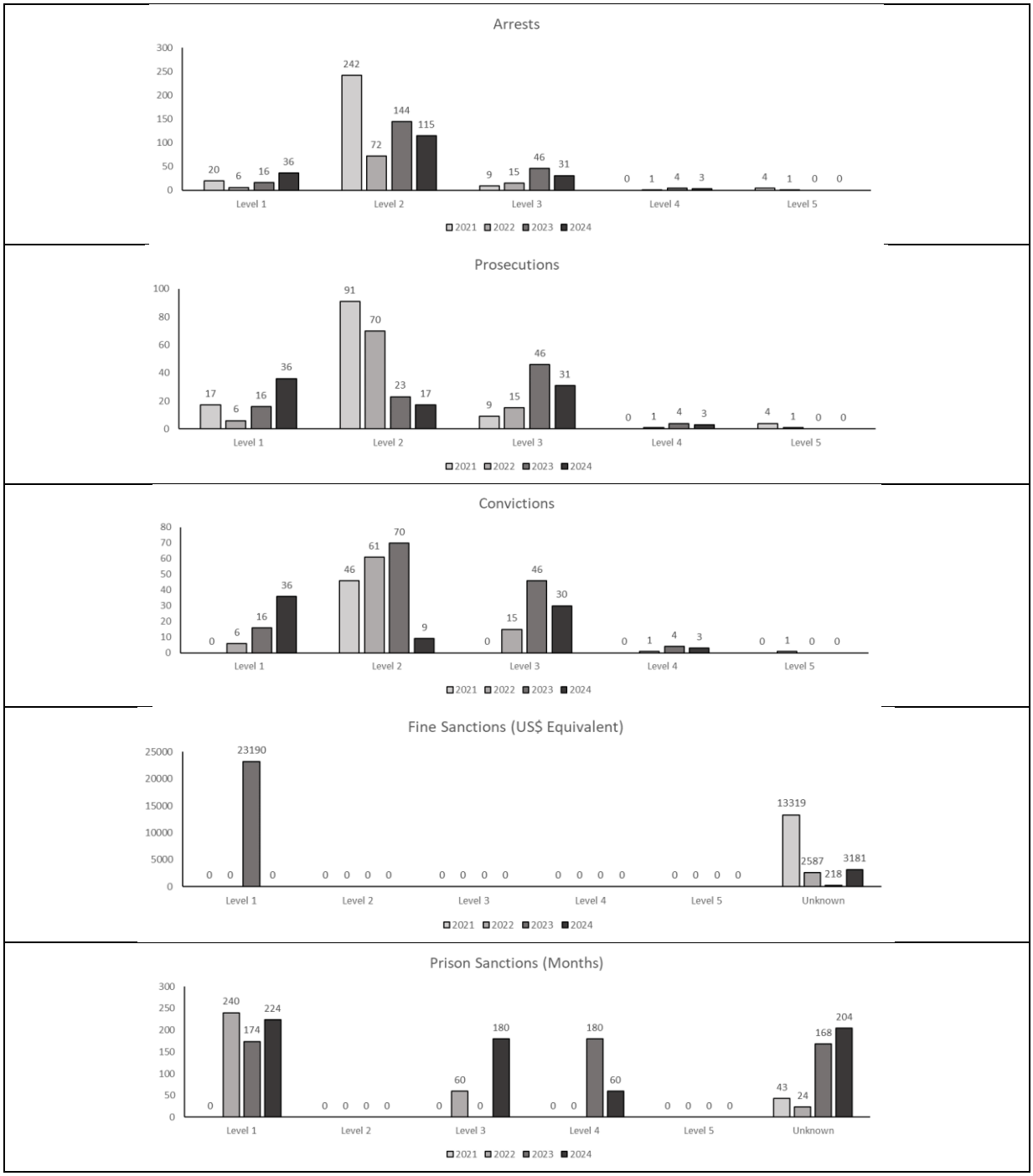

Figure 13. Summary of minimum number of arrests, prosecutions and convictions reported by range States from 2021 to 2024[168]. The sanctions imposed during sentencing are also presented[169]. Fines are the average reported by Parties and converted to US$ equivalent based on the exchange rate at the end of the relevant calendar year. Prison sentences are also the average per year. Level 1 - Poachers who typically enter protected areas, reserves, private or communal properties to hunt for rhino and poach them. Level 2 - People who act as transporters and are paid for transporting rhino horn typically from the poachers to other key people within a criminal syndicate. Level 3 - People who act as local intermediaries and often oversee several poaching teams and transporters. Level 4 - People who act as exporters who transport or facilitate transport of rhino horns via airports or harbours to international destinations. Level 5 - People who sell trafficked rhino horn directly to consumers in end-user states.

[168] Eleven range States provided information on arrests made. South Africa did not provide complete data on arrests for 2022, no data on prosecutions for 2022, 2023 and 2024, and only data for convictions for 2024. Malawi provided extensive data, but these include all wildlife crimes with no specific rhino crimes indicated – Malawi data were excluded.

[169] Four countries (Zambia, Kenya, Namibia and South Africa) reported legal sanctioning, but Namibia's report did not specify the poaching level at which the fines or prison sentences were made.

6.1.2 Key African cases

African range States provided examples of key cases (Table 18) that involved offenders across various levels of poaching and trafficking.

Table 18. Examples of key cases reported by African range States that involved offenders across all levels of poaching and trafficking.

Range State	Level	Case	Outcome
South Africa	1	SKUKUZA CASE 60/01/2019: In 2019 two suspects were arrested in the KNP, both were field rangers attached to the Crocodile bridge section of the KNP.	Both accused convicted on charges under the NEMBA (for illegal hunting of rhinoceros) and the Riotous Assemblies Act (conspiracy to commit a crime).
South Africa	1	DORSET CAS 10/12/2022 and TINMYNE CAS 37/12/2022: Four accused prosecuted for offences involving rhino poaching, possession of rhino horns, money laundering, possession of unlicensed firearms, possession of a prohibited firearm (serial no removed), possession of unlicensed ammunition, trespassing on a nature reserve and the Immigration Act.	Convictions in respect of all four accused.
Kenya	2	KITALE LAW COURT – CF E1763/2022: Three suspects arrested while in possession of two pieces of suspected rhino horns weighing approximately 0.48 kgs.	Accused acquitted under Section 215 of Penal Code Kenya CAP 63.
Kenya	2	KAHAWA LAW COURT- CF E078/2022: Two suspects arrested while trying to sell one worked rhino horn weighing 0.2 kgs.	Case pending warrant of arrest issued for the suspects.
Kenya	2	NYERI LAW COURT – CF E1789/2022: Two suspects arrested while dealing in one rhino horn weighing 0.3kgs.	One suspect convicted and a warrant of arrest issued for the other after absconding.
Kenya	2	KAHAWA LAW COURT – CF E 113/2022: A Vietnamese national was arrested on 16/11/2022. The following recoveries were made: 80 pieces of ivory, 116 craws, 65 lion teeth, two pieces of rhino horn and two pieces of worked ivory among other recoveries.	Acquitted.
Kenya	2	NYERI LAW COURT – CF E1757/2024: One suspect arrested inside a park while in possession of one rhino horn weighing 1.7 kgs. Confiscated three spears, one panga and two sacks stacked with five kgs of giant forest hog.	Case ongoing at Nyeri Law Court.
Kenya	2	KAHAWA LAW COURT - COURT FILE NO. E007/2024: Four suspects were arrested while in possession of two rhino horn weighing in total 3.3 kgs.	Case ongoing at Kahawa Law Court.
Kenya	2	KITALE LAW COURT – CF E 009/2024: Two suspects were arrested while in possession of one piece of rhino horn weighing 0.72 kgs.	Case ongoing at Kitale Law Court.
Kenya	2	NANYUKI LAW COURT – CF E 043/2024: Two suspects arrested while in possession of ten pieces of elephant tusks weighing 15.5 kgs in total, and one rhino horn weighing 0.2 kgs.	Case pending before Nanyuki Law Court.
Kenya	2	HOMA BAY LAW COURT CF 002/2025: Three suspects were arrested while illegally in possession of one piece of rhino horn weighing 2.9 kgs.	Case ongoing at Homa Bay Law Court.
Namibia	2	OSHAKATI MAGISTRATE COURT 3547/2022: Two suspects arrested.	One accused convicted.
Namibia	2	OTAVI MAGISTRATE COURT 486/2023: Four suspects arrested.	One accused convicted.
Namibia	2	OTAVI MAGISTRATE COURT 1760/2022: Four suspects arrested.	Four accused convicted.
Namibia	2	RUNDU MAGISTRATE COURT 295/2022: Five suspects arrested.	Two accused convicted.
Zambia	2	Three suspects charged with unlawful possession of prescribed trophy of two pieces of Rhino Horn with total weight of 3.93kg C/S 130 (2) of Wildlife Act No.14 of 2015 of the laws of Zambia. Source of horn was Namibia.	All convicted to a prison sentence with hard labour.
Zambia	2	Three suspects charged with unlawful possession of prescribed trophy of two pieces of Rhino horn with total weight of 3.92kg C/S 130 (2) of Wildlife Act No.14 of 2015 of the laws of Zambia. Source the Congo.	All convicted to a prison sentence with hard labour.
South Africa	3	KABOKWENI CAS 180/04/2020 and PRIMROSE CAS 287/01/2023: The cases involves third party money laundering, illegal immigration and conspiracy to illegally hunt rhinoceros. One suspect, a foreign national, facilitated the sale of rhino horns to Chinese nationals. This matter has not been finalised and is in the process of being considered as a racketeering prosecution.	Plea and sentence agreement – guilty. A suspect, a foreign national, who entered RSA as a refugee, was convicted as a third-party money launderer, as well as for the predicate crimes, for which he was deemed an accomplice.
South Africa	3	ERMELO CAS 112/12/2022 and PIET RETIEF CAS 104/03/2023: Possession of rhino horn on two occasions.	-
South Africa	4	ORTIA CAS 184/08/2018: In 2018 two suspects were arrested at OR Tambo Airport while they were enroute to Vietnam with two boxes containing 27 rhino horns with a total weight of 29.47kg. They absconded and were arrested again in 2020.	On 9 May 2024 both accused were found guilty on all eight counts.
South Africa	4	A courier on her way to Malaysia was arrested at OR Tambo International Airport, during the scanning of her suitcases, 12 rhino horns were found with a weight of 30.7kg. The DNA report compiled indicated that the rhino horns found in her possession could be linked to two poaching incidents in Skukuza and the Northwest Province.	Suspect convicted.

6.1.3 Asian rhinos

Between January 2022 and 30 April 2025, enforcement efforts in Chitwan National Park, Nepal, led to the arrest of 52 suspects in connection with crimes against the greater one-horned rhino. During this time, seven criminal cases were filed, naming 33 individuals. In three of those cases, Nepalese courts convicted 18 of the accused, demonstrating a strong legal response to rhino-related offences.

In Indonesia, enforcement challenges came to light in Ujung Kulon National Park, home to the Critically Endangered Javan rhino. On 29 May 2023, authorities received a report about missing camera traps and a noticeable decline in rhino activity. Camera traps, which are the main tool for monitoring the Javan rhino population, later captured footage of armed individuals inside the park. This led to the identification of 13 suspects from a nearby village, including two brothers who led separate poaching gangs. Testimonies confirmed that 26 Javan rhinos had been killed over a five-year period, resulting in a severe 33% loss of the known population. Following an investigation in early 2024, Indonesian police arrested and secured convictions against those involved, with courts issuing prison sentences of up to 12 years and imposing fines.

These cases highlight the growing capacity of enforcement agencies in Asian rhino range states to investigate, prosecute, and penalize wildlife crimes. However, they also underscore the ongoing threat that poaching poses and the critical importance of sustained monitoring and legal follow-through.

6.2 Challenges and best practices to address poaching and trafficking

See Annexure 6 for information collated from the African range States submissions for this report. Information was not available for Asian rhino range-States or non-rhino range States because available funding did not allow for a full assessment of challenges and best practices to address poaching and trafficking.

7. Rhino conservation management

See Annexure 7 for information collated from the African range States submissions for this report. Information was not available for Asian rhino range-States or non-rhino range States because available funding did not allow for a full assessment of rhino conservation management.

8. Measures to end the illegal use and consumption

A comprehensive assessment of the illegal use of rhino horn could not be undertaken due to limited resources and capacity constraints.

9. Conclusion

The conservation and trade status of African and Asian rhinoceroses reflects both progress and persistent threats. By the end of 2024, Africa had an estimated 22,540 rhinos—6,788 black and 15,752 white—marking a decline since 2021 driven by poaching, drought, and management shortfalls. In contrast, greater one-horned rhinos in India and Nepal continued to increase, reaching 4,075 individuals. However, Asia's Javan and Sumatran rhinos remain Critically Endangered, with only 50 Javan rhinos and an estimated 34–47 Sumatran rhinos surviving in Indonesia. The significant loss of 26 Javan rhinos to poaching between 2019 and 2023, equal to one-third of the known population, has severely impacted the species and increased its risk of extinction.

Illegal killing remains the most severe threat to rhino survival. Africa recorded 516 poaching incidents in 2024. India and Nepal reported eleven losses, but Indonesia experienced a setback with the mentioned Javan rhinos poached. Promising though, is that investigations led to convictions in the Javan rhino poaching case. Enforcement responses varied, with Nepal and Indonesia achieving notable prosecutions, including 12-year sentences in the Javan rhino case. Nonetheless, the demand for rhino horn continues to drive trafficking networks that undermine decades of conservation progress.

Fewer horns were sourced annually into illegal trade compared to previous CoP periods, although the magnitude of these differences is partly due to the updating of methodologies to account for extensive dehorning used as management interventions. Horns continue to be the most prevalent illegal specimen seized, although seized weight and estimated number of horns continue to decline from the high noted in 2019. Despite the decline, seizures of large weight, often in conjunction with other illegal wildlife specimens, suggest the continued involvement of organized crime networks.

South Africa, which holds the largest populations of African rhinos, continues to be the most affected Party by illegal rhino horn trade. The most common illegal trade links for the Party were with Malaysia and Viet Nam, the second and third most affected Parties, respectively. The large-scale illegal consignments associated with these illegal trade links, which often also included

the most affected transit Parties of Qatar and United Arab Emirates, suggest that targeting law enforcement efforts among these most affected Parties might dismantle criminal networks responsible for the majority of illegal rhino horn trade.

Seizure data revealed a new emerging trade link between South Africa and Mongolia (see also ref[101]), while other Parties that previously featured more prominently in the illegal trade chain had fewer reported seizures. For the latter Parties, it is possible that the observed declines are due to effective enforcement and demand-reduction measures that were undertaken. However, because of inconsistent reporting and the lack of bias-adjustment in the analysis, it is difficult to determine whether the declines are genuine. Coupled with the limited resources available for the preparation of this report, data did not allow further reflection on some of these issues, but suggestions for improving future analyses are provided in Annexure 4.

Large reporting gaps regarding stockpile data, inconsistencies in the format of reports, and lack of documentation of thefts or destruction events also resulted in limited inference and comparison to previous CoP reports. Most notable was the discrepancies reported between data sources for African range States, the lack of any updated data for Asian range States, and the discrepancies between seized weight and reported stockpile data for non-range States. Without consistent and detailed reporting on horn stocks, theft, and destruction events, the true scale of horns sourced or being removed from the illegal market remains uncertain. Discrepancies in stockpile records and the absence of standardized monitoring further limit transparency and complicate efforts to assess the effectiveness of enforcement and deterrence measures. Parties are encouraged to use the available reporting template published by the CITES Secretariat in its annual Notification to the Parties on the declaration of stockpiles of rhinoceros horn (e.g., Notification No. 2025/006).

Despite these challenges, there are promising examples of effective enforcement and conservation actions. Strategies that combine intelligence-led policing, community engagement, and secure habitat management have proven effective in stabilizing or growing some rhino populations. However, broader success depends on sustained investment, political commitment, and international collaboration to reduce poaching and dismantle trafficking networks. The contrasting trends—gains in South Asia and Eastern and parts of Southern Africa, losses in other parts of Southern Africa and Southeast Asia—underscore both what is possible and what is urgently needed. Without enhanced enforcement, improved trade monitoring, and strategic conservation funding, the long-term survival of some rhino species remains in jeopardy.

Acknowledgements

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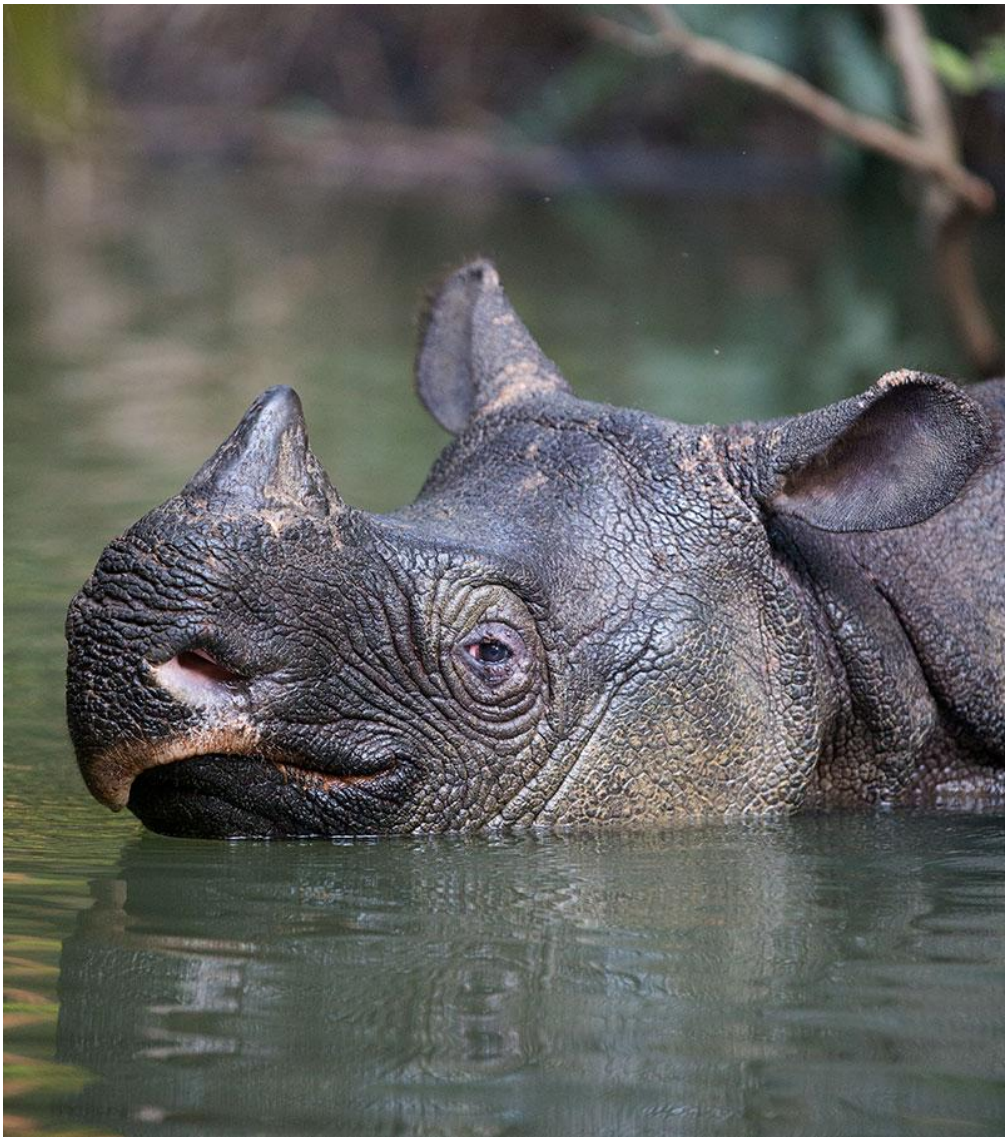

Javan rhino (*Rhinoceros sondaicus*)[170].

[170] https://rhinos.org/wp-content/uploads/2020/08/Java-Rhino-in-Water.jpg

Annexure 1. A summary of listings, resolutions, related resolutions, decisions and related decisions[171] associated with rhinos by CITES Parties.

Date	Type	Detail
1 Jul 1975	Listing	Appendix I: *Ceratotherium simum, Dicerorhinus sumatrensis, Rhinoceros sondaicus, Rhinoceros unicornis* Appendix II: *Diceros bicornis*
4 Feb 1977	Listing	Appendix I: Family listing Rhinocerotidae spp
CoP3, 1981	Resolution	Conf. 3.11 Trade in Rhinoceros Horn.
CoP6, 1987	Resolution	Conf. 6.10 Trade in Rhinoceros Products
16 Feb 1995	Listing	Appendix I: Family listing Rhinocerotidae spp excluding South African population of *Ceratotherium simum simum.* Appendix II: South African population of *Ceratotherium simum simum* for exclusive trade in live rhinos and hunting trophies.
CoP9, 1994	Resolution	Conf. 9.14 Conservation of Rhinoceros in Asia and Africa
CoP10, 1997	Decision	Decision 10.45 The range States should report at the 11th meeting of the Conference of the Parties, through the Secretariat, the measures that they have taken to conserve their rhinoceros populations.
CoP11, 2000	Resolution	Conf. 9.14 (Rev. CoP11) Conservation of and trade in African and Asian rhinoceros
CoP11, 2000	Related Resolution	Conf. 11.3 Compliance and enforcement
CoP13, 2004	Resolution	Conf. 9.14 (Rev. CoP13) Conservation of and trade in African and Asian rhinoceros
CoP13, 2004	Resolution	Conf. 13.5 Establishment of export quotas for black rhinoceros hunting trophies
CoP13, 2004	Related Resolution	Conf. 11.3 (Rev. CoP13) Compliance and enforcement
12 Jan 2005	Listing	Appendix I: Family listing Rhinocerotidae spp excluding South Africa and Swaziland populations of *Ceratotherium simum simum.* Appendix II: South African and Swaziland populations of *Ceratotherium simum simum* for exclusive trade in live rhinos and hunting trophies.
CoP14, 2007	Resolution	Conf. 9.14 (Rev. CoP14) Conservation of and trade in African and Asian rhinoceros
CoP14, 2007	Resolution	Conf. 13.5 (Rev. CoP14) Establishment of export quotas for black rhinoceros hunting trophies
CoP14, 2007	Related Resolution	Conf. 11.3 (Rev. CoP14) Compliance and enforcement
CoP15, 2010	Resolution	Conf. 9.14 (Rev. CoP15) Conservation of and trade in African and Asian rhinoceros
CoP15, 2010	Related Resolution	Conf. 11.3 (Rev. CoP15) Compliance and enforcement
CoP16, 2013	Related Resolution	Conf. 11.3 (Rev. CoP16) Compliance and enforcement
CoP17, 2016	Resolution	Conf. 9.14 (Rev. CoP17) Conservation of and trade in African and Asian rhinoceros
CoP17, 2016	Resolution	Annex to Res. Conf. 9.14 (Rev. CoP17) Form for collection and sharing of data on rhinoceros horn seizures and on samples for forensic analysis
CoP17, 2016	Related Resolution	Conf. 11.3 (Rev. CoP17) Compliance and enforcement
CoP17, 2016	Related Resolution	Conf. 17.4 Demand reduction strategies to combat illegal trade in CITES-listed species
CoP17, 2016	Related Resolution	Conf. 17.9 Trade in hunting trophies of species listed in Appendix I or II
CoP18, 2019	Resolution	Conf. 13.5 (Rev. CoP18) Establishment of export quotas for black rhinoceros hunting trophies
CoP18, 2019	Related Resolution	Conf. 11.3 (Rev. CoP18) Compliance and enforcement
CoP18, 2019	Decision	18.110 Parties should ensure the timely reporting of seizures and submission of DNA samples to range States, and continuously review trends associated with the illegal killing of rhinoceroses and illegal trade in rhinoceros specimens, and the measures and activities they are implementing to

[171] https://cites.org/eng/prog/terrestrial_fauna/Rhinoceroces

Date	Type	Detail
		address these crimes, to ensure that these measures and activities remain effective and are quickly adapted to respond to any newly identified trends, and report to the Secretariat in time for consideration by the Standing Committee on any activities conducted in this regard.
CoP18, 2019	Decision	18.111 China, Mozambique, Myanmar, Namibia, South Africa and Viet Nam are encouraged to make every effort to further strengthen their implementation of paragraphs 1 e) and 2 d) of Resolution Conf. 9.14 (Rev. CoP17) on Conservation of and trade in African and Asian rhinoceroses, including by pursuing the initiation of joint investigations and operations aimed at addressing members of organized crime networks across the entire illegal trade chain, and to report to the Secretariat on any activities conducted in this regard, in time for consideration by the Standing Committee.
CoP18, 2019	Decision	18.112 Zimbabwe is encouraged to pursue the expeditious finalization of outstanding cases in court related to rhinoceros poaching and rhinoceros horn smuggling, to consider measures that could be implemented to facilitate the swift processing of such cases in future, and to report to the Secretariat on any activities conducted in this regard, in time for consideration by the Standing Committee.
CoP18, 2019	Decision	18.113 At its 74th meeting, the Standing Committee shall review the recommendations of the Secretariat reported under Decision 18.115, and any issues of concern brought to its attention under Decision 18.114, and make any additional recommendations for further action and request additional reporting, as appropriate, and prepare proposals for consideration of the 19th meeting of the Conference of the Parties.
CoP18, 2019	Decision	18.114 The Secretariat shall review the reports received under Decisions 18.110, 18.111 and 18.112, and bring any issues of concern that may arise to the attention of the Standing Committee at its 74th meeting (SC74).
CoP18, 2019	Decision	18.115 The Secretariat shall, in consultation with interested Parties and the African and Asian Rhino Specialist Groups of the Species Survival Commission of the International Union for Conservation of Nature (IUCN/SSC) and TRAFFIC, explore options to reflect on challenges and best practices to assist in addressing rhinoceros poaching and rhinoceros horn trafficking in the report prepared for the Conference of the Parties in accordance with paragraph 7 of Resolution Conf. 9.14 (Rev. CoP17) and prepare recommendations for consideration by the Standing Committee, at SC74.
CoP18, 2019	Decision	18.116 Parties in which illegal markets for rhinoceros horn exist are encouraged to develop demand reduction programmes targeted at key identified audiences, taking into consideration the provisions in Resolution Conf. 17.4 on Demand reduction strategies to combat illegal trade in CITES-listed species and taking advantage of the experience and expertise developed in other jurisdictions and by other organizations. Parties are urged to close those markets that contribute to poaching or illegal trade.
CoP18, 2019	Related Decision	18.76 Parties are urged, in compliance with Resolution Conf. 11.17 (Rev. CoP18) on National reports, to submit an annual illegal trade report by 31 October 2020 and 31 October 2021 covering actions in the preceding years and in accordance with the report format distributed by the Secretariat.
CoP18, 2019	Related Decision	18.86 The Secretariat shall, subject to external funding: a) develop CITES guidance on demand-reduction strategies to combat illegal trade in CITES-listed species, taking into consideration the results of the study commissioned by the Secretariat in accordance with Decision 17.48, paragraph a), and any recommendations resulting from the workshop convened in accordance with Decision 17.48, paragraph b); b) convene a workshop for Parties and experts to review the guidance and to provide training to the Parties in designing and implementing demand-reduction campaigns to combat illegal trade in CITES-listed species; c) submit the draft CITES guidance on demand-reduction strategies to combat illegal trade in CITES-listed species to the Standing Committee for its consideration; and d) support interested Parties in implementing demand-reduction strategies to combat illegal trade in CITES-listed species and provide necessary technical cooperation to those Parties on an ongoing basis.
CoP18, 2019	Related Decision	18.87 The Standing Committee shall review the guidance developed in accordance with Decision 18.86 and make recommendations for consideration by the Conference of the Parties at its 19th meeting.
CoP18, 2019	Related Decision	18.147 Parties are invited to provide information to the Secretariat regarding: a) cases where they have issued, or received requests to issue, CITES permits and certificates for specimens produced through biotechnology; b) other situations when they have applied the interpretation of Resolution Conf. 9.6 (Rev. CoP16) on Trade in readily recognizable parts and derivatives to fauna and flora products produced through biotechnology; and c) technological developments and applications taking place, particularly in their jurisdiction, that may result in the manufacture of specimens produced through biotechnology that may have impact on the interpretation and implementation of the Convention.
CoP18, 2019	Related Decision	18.148 The Animals and Plants Committees shall: a) review the complete study on "Wildlife products produced from synthetic or cultured DNA", monitor the most recent scientific and technological advancements and applications that may lead to the synthetic production of specimens of CITES-listed species, and make recommendations for consideration by the Standing Committee, including appropriate revisions to existing resolutions; and

Date	Type	Detail
		b) provide any relevant scientific advice and guidance on matters relevant to international trade in specimens produced through biotechnology and communicate it to the Standing Committee, as appropriate.
CoP18, 2019	Related Decision	18.149 The Standing Committee shall: a) discuss whether and how to apply the term "readily recognizable part or derivative" to trade in products of biotechnology, which might potentially affect international trade in CITES-listed specimens in a way that would threaten their survival, including enforcement of CITES provisions; b) communicate to the Animals and Plants Committees any matters that may require scientific advice and guidance, as appropriate; and- c) make recommendations for consideration at the 19th meeting of the Conference of the Parties, including appropriate revisions to existing resolutions or the development of a new resolution on trade in specimens produced from biotechnology.
CoP18, 2019	Related Decision	18.150 The Secretariat shall: a) present the study on "Wildlife products produced from synthetic or cultured DNA", along with the Secretariat's findings and recommendations, to the Animals and Plants Committees; b) collate information received from Parties in relation to Decision 18.147, as well as any other information received from Parties, governmental, intergovernmental and nongovernmental organizations and other entities related to the issue of specimens produced through biotechnology; c) communicate with the Secretariat of the Convention on Biological Diversity (CBD), the Food and Agricultural Organization of the United Nations (FAO), the International Union for Conservation of Nature (IUCN) and other relevant organizations as appropriate, to keep abreast of the discussions taking place on other fora on issues that may be relevant to specimens produced through biotechnology; and d) share the information collated under paragraphs b) and c) and report progress on the implementation of this Decision to the Animals and Plants Committees, and the Standing Committee, as appropriate.
CoP18, 2019	Related Decision	18.171 The Secretariat shall, in consultation with Parties and stakeholders, prepare draft guidance on the use of the simplified procedures and on the use of the exemption for scientific exchange. The draft guidance shall be shared with the Standing Committee for review, amendment as appropriate, and endorsement. The guidance should include consideration of other types of specimens in addition to those identified in document CoP18 Doc. 56, paragraph 13 with a focus on the international movement of CITES specimens where the trade will have a negligible impact on the species concerned. The Secretariat shall also develop a dedicated page on the CITES website on simplified procedures. If so requested and subject to external funding, the Secretariat shall organize specific training workshops on simplified procedures.
26 Nov 2019	Listing	Appendix I: Family listing Rhinocerotidae spp excluding South Africa and Eswatini populations of *Ceratotherium simum simum.* Appendix II: South African and Eswatini populations of *Ceratotherium simum simum* for exclusive trade in live rhinos and hunting trophies.
CoP19, 2022	Resolution	Conf. 9.14 (Rev. CoP19) Conservation of and trade in African and Asian rhinoceroses
CoP19, 2022	Decision	18.116 Parties in which illegal markets for rhinoceros horn exist are encouraged to develop demand reduction programmes targeted at key identified audiences, taking into consideration the provisions in Resolution Conf. 17.4 (Rev. CoP19) on Demand reduction strategies to combat illegal trade in CITES-listed species and taking advantage of the experience and expertise developed in other jurisdictions and by other organizations. Parties are urged to close those markets that contribute to poaching or illegal trade.
CoP19, 2022	Decision	19.115 Parties are encouraged to: a) scale up efforts to collect samples from rhinoceros horn seized within their territories for forensic analysis, as anticipated by paragraph 1 g) of Resolution Conf. 9.14 (Rev. CoP19) on Conservation of and trade in African and Asian rhinoceroses; b) use the simplified procedures provided for under the Regarding the use of simplified procedures to issue permits and certificates in Resolution Conf. 12.3 (Rev. CoP19) on Permits and certificates for law enforcement purposes, to facilitate the exchange of rhinoceros horn samples for DNA analyses; and c) use the Form for collection and sharing of data on rhinoceros horn seizures and on samples for forensic analysis available in the Annex to Resolution Conf. 9.14 (Rev. CoP19), as appropriate, to facilitate exchange of information and samples for analyses.
CoP19, 2022	Decision	19.116 Parties are encouraged to: a) draw upon the Directory of illegal trade in rhinoceros horn focal points maintained by the CITES Secretariat, as may be needed, to facilitate contact between relevant agencies in different countries on matters related to rhinoceros poaching and illegal rhinoceros specimen trade; and b) if included in the directory, immediately inform the Secretariat if the details of their national focal point should be updated.
CoP19, 2022	Decision	19.117 Botswana and South Africa are encouraged to review trends associated with the illegal killing of rhinoceroses and illegal trade in rhinoceros' specimens affecting them, and the measures and activities they are implementing to address these crimes, to ensure that these measures and activities are effective and adapted as may be needed to respond to any newly identified trends.
CoP19, 2022	Decision	19.118 China (including Hong Kong SAR of China), Mozambique, South Africa and Viet Nam are encouraged to further strengthen their engagement, undertaking joint operations and further strengthening information and intelligence exchange, to build upon collaborative efforts, progress made, and successes achieved, and further expand their collaboration to address illegal rhinoceros horn trade.

Date	Type	Detail
CoP19, 2022	Decision	19.119 Malaysia, Qatar and the United Arab Emirates are encouraged to scale up their collaboration with Parties known to be associated with illegal rhinoceros specimens transiting their territories, and to review their risk management practices, developing rhinoceros specific risk profiles targeting cargo, luggage and passengers from and destined to these Parties.
CoP19, 2022	Decision	19.120 Subject to external funding, the Secretariat shall: a) convene a follow up CITES Rhinoceros Enforcement Task Force meeting consisting of representatives of national enforcement agencies, including those involved in combating organised crime from Parties affected by rhinoceros poaching and illegal trade in rhinoceros specimens and, as appropriate, other Parties and experts to develop strategies to further strengthen responses to address rhinoceros poaching and rhinoceros specimen trafficking, taking into consideration the key poaching and trafficking challenges and responses outlined in Annex 4 to document CoP19 Doc. 75, and the outcomes of the October 2013 CITES Rhinoceros Enforcement Task Force meeting presented in the Annex to Notification to the Parties No. 2014/006 of 23 January 2014, and any other relevant matters; and b) report to the Standing Committee on the results of the Task Force meeting, together with any recommendations it may have.
CoP19, 2022	Decision	19.121 The Standing Committee shall consider the reports of the Secretariat in accordance with Decisions 19.120 and 19.122 and make recommendations to the Parties and the 20th meeting of the Conference of the Parties as appropriate.
CoP19, 2022	Decision	19.122 The Secretariat shall: a) examine the implementation of Resolution Conf. 9.14 (Rev. CoP19) and Decisions 19.117, 19.118 and 19.119 regarding measures to address the illegal killing of rhinoceros and trafficking of rhinoceros horn, and; b) report to the 77th and 78th meetings of the Standing Committee.
CoP19, 2022	Related Decision	17.55 (Rev. CoP19) Parties are encouraged to strengthen synergies among biodiversity multilateral environmental agreements at the national level by, among others, improving coordination and cooperation between national focal points and strengthening capacity-building activities.
CoP19, 2022	Related Decision	17.56 (Rev. CoP19) The Standing Committee shall, with support of the Secretariat, explore options consistent with the CITES Strategic Vision to strengthen cooperation, collaboration and synergies at all relevant levels between CITES and the post-2020 global biodiversity framework, taking into account the outcomes of the Second Consultation Workshop of Biodiversity-related Conventions on the Post-2020 Global Biodiversity Framework (Bern II), as well as the 2030 Agenda for Sustainable Development and its Sustainable Development Goals. This should involve the members of the Liaison Group of Biodiversity-related Conventions, and, as appropriate, engagement with other relevant organizations and processes, including processes under the Rio Conventions. The Standing Committee shall report on the implementation of this Decision at the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	19.20 Subject to external funding, the Secretariat shall, prepare for consideration by the Standing Committee a partnership strategy for the Parties, the Permanent Committees and the Secretariat to identify priorities for collaboration that specifically enhance the implementation of the Convention, as well as its effectiveness and efficiency, through strategic partnerships.
CoP19, 2022	Related Decision	19.21 The Standing Committee shall review the draft partnership strategy developed by the Secretariat under Decision 19.20 and make recommendations for consideration at the 20th meeting of the Conference of Parties.
CoP19, 2022	Related Decision	19.26 Parties are invited to provide feedback to the Secretariat on ICCWC support and tools, to be drawn upon by the Consortium in its implementation of the ICCWC Vision 2030 to continue to enhance its interventions at national, regional and international level.
CoP19, 2022	Related Decision	19.27 Parties are encouraged to provide funding support to the International Consortium on Combating Wildlife Crime (ICCWC) for the implementation of the ICCWC Vision 2030 and its associated Strategic Action Plan for 2023-2026 to ensure that the Consortium continues to take a leading role in providing coordinated global support to the law-enforcement community.
CoP19, 2022	Related Decision	19.28 The Animals and Plants Committee shall review the scientific aspects of the thematic assessment of the sustainable use of wild species of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (PBES); consider their relevance to the implementation of the Convention; and provide the results of their review and any associated recommendations to the Standing Committee.
CoP19, 2022	Related Decision	19.29 The Standing Committee shall consider the review of the IPBES thematic assessment of the sustainable use of wild species and associated recommendations prepared by the Animals and Plants Committees; make additional recommendations as appropriate; and submit the resulting conclusions and any recommendations as appropriate to the 20th meeting of the Conference of the Parties for its consideration.
CoP19, 2022	Related Decision	19.30 The Secretariat shall: a) issue a Notification to the Parties providing the pilot World Wildlife Trade Report, seeking feedback and views on such a report and the potential utility and drawbacks of producing such a report periodically; and b) provide the responses received from the Notification to the Standing Committee and present findings and make recommendations for consideration by the Standing Committee.

Date	Type	Detail
CoP19, 2022	Related Decision	19.31 The Standing Committee shall review the responses to the Notification and the findings and recommendations of the Secretariat, consult with the Animals and Plants Committees as appropriate and make recommendations to the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	17.57 (Rev. CoP19) The Standing Committee shall: a) examine the terminology used in different Resolutions and Decisions when referring to "indigenous peoples", "local communities" or "rural communities"; and b) make recommendations to the 20th meeting of the Conference of the Parties on whether there is need for consistency of terminology across these Resolutions and Decisions.
CoP19, 2022	Related Decision	18.31 (Rev. CoP19) a) establish an intersessional working group to consider how to effectively engage indigenous peoples and local communities* in the CITES processes, taking into account the discussions from the previous intersessional periods, including the information contained in document SC74 Doc. 20.2 and SC70 Doc. 15, experiences shared by Parties and relevant Multilateral Environmental Agreements and international organizations, and any information provided pursuant to Decision 18.32 (Rev. CoP19); and present its findings and recommendations to the Standing Committee; b) when establishing the intersessional working group, endeavour to achieve regional balance of Parties and observers, and give special consideration to participation of representatives of indigenous peoples and local communities*; c) develop non-binding guidance that proponent Parties may use, as appropriate, in consulting with indigenous peoples and local communities* as part of the consultations that may take place on proposals to amend the Appendices; and d) make recommendations on the engagement of indigenous peoples and local communities* in CITES processes to the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	18.32 (Rev. CoP19) The Secretariat shall: a) issue a Notification inviting Parties to provide information on their experiences and lessons learned in engaging indigenous peoples and local communities* in CITES processes; and b) compile the information received from the Parties and provide a summary to the Standing Committee.
CoP19, 2022	Related Decision	19.54 Parties are invited to: a) engage indigenous peoples and local communities* in CITES decision-making and implementation processes at the national level to better achieve the objectives of the Convention; and b) share their experiences and lessons learned in engaging indigenous peoples and local communities* in CITES processes with the Secretariat and other Parties.
CoP19, 2022	Related Decision	18.33 (Rev. CoP19) Parties are invited to: a) collate or conduct new case studies, using the standard template, that demonstrate how sustainable use of CITES-listed species contributes to the wellbeing and livelihoods of the indigenous peoples and local communities* involved in such use, including trade, and to the conservation of the species. Include examples of facilitating such involvement by wildlife-related authorities and other stakeholders and submit them to the Secretariat; b) engage indigenous peoples and local communities* in CITES decision-making and implementation processes at the national level to better achieve the objectives of the Convention; and c) where appropriate, incorporate issues related to CITES implementation and livelihoods into national wildlife conservation and socio-economic development plans, as well as in relevant projects being developed for external funding, including funding from the Global Environment Facility (GEF) through the Wildlife Conservation for Development Integrated Program.
CoP19, 2022	Related Decision	18.34 (Rev. CoP19) The Standing Committee shall: a) establish an intersessional working group on CITES and livelihoods, which will work in collaboration with the Secretariat to: i) review new case studies on CITES and livelihoods to draw best practices and lessons learned; ii) review the draft Guidance on maximising benefits to Indigenous peoples and local communities from trade in CITES-listed species and provide recommendations to the Secretariat and the Standing Committee; iii) review the report on Exploring the use of registered marks of certification and other traceability mechanisms for products of CITES-listed species produced by indigenous peoples and local communities to enhance conservation and livelihood outcomes, and provide recommendations to the Standing Committee, including possible next steps, as appropriate; b) review the report of the working group on livelihoods and the report of the Secretariat on the progress made under Decisions 18.35 (Rev. CoP19) and on the implementation of Resolution Conf. 16.6 (Rev. CoP18) on CITES and livelihoods; and make recommendations, as appropriate, to the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	18.35 (Rev. CoP19) Subject to the availability of external financial resources, the Secretariat shall: a) support the collation of or conduct new case studies on CITES and livelihoods as described in Decision 18.33 (Rev. CoP19), paragraph a), and assist Parties to present the case studies in appropriate platforms, and in formats and manners that are most effective for targeted audiences, including on the CITES website; b) organize a joint meeting of the intersessional working group on engagement of indigenous peoples and local communities and the intersessional working group on CITES and livelihoods to support the implementation of Decisions 18.31 (Rev. CoP19) and 18.34 (Rev. CoP19); c) organize the production of outreach materials, including short videos based on the case studies, to raise awareness of and promote best practices in CITES implementation and

Date	Type	Detail
		livelihoods including its contribution to the United Nations Sustainable Development Goals (SDGs) and to share such materials on appropriate platforms, including the CITES website, social media channels, external media, and exhibitions; and d) report to the Standing Committee on progress made with regard to the implementation of paragraphs a) – c) and Resolution Conf. 16.6 (Rev. CoP18) on CITES and livelihoods.
CoP19, 2022	Related Decision	19.55 The Secretariat shall, subject to external funding: a) organize translation of the Guidance on demand reduction strategies to combat illegal trade in CITES-listed species into French and Spanish; b) organize regional training seminars on the use of the Guidance; c) organize pilot projects to promote the use of Guidance for selected species and countries, with necessary adaptation to suit local context when appropriate; d) support all interested Parties in implementing demand-reduction strategies to combat illegal trade in CITES-listed species and provide necessary technical support including the use of the guidance; and e) report to the Standing Committee on the progress made in the implementation of this Decision, and make recommendations on follow-up activities, including the identification of priority species and markets that may benefit from a demand reduction strategy and the use of the Guidance, taking into account national and regional priorities.
CoP19, 2022	Related Decision	19.56 The Standing Committee shall review the report of the Secretariat on the implementation of Decision 19.55 and make recommendations to the Conference of the Parties at its 20th meeting with regards to follow-up activities and priority species and markets that may benefit from the adoption of demand reduction strategies and the use of the Guidance on demand reduction strategies to combat illegal trade in CITES-listed species.
CoP19, 2022	Related Decision	19.57 Parties are encouraged, subject to available resources, to translate the Guidance on demand reduction strategies to combat illegal trade in CITES-listed species into local languages and share their experience in the implementation of the Guidance.
CoP19, 2022	Related Decision	19.77 Parties are encouraged to ensure that: a) corruption risk mitigation policies and strategies are in place to address corruption risks associated with wildlife crime; and b) collaboration mechanisms are in place between CITES and anti-corruption authorities to facilitate swift and decisive action where corrupt activities are detected.
CoP19, 2022	Related Decision	19.78 Parties are encouraged to, as appropriate, integrate financial crime investigations into the investigation of crimes involving wildlife, and to increase the use of financial investigation techniques to identify criminals involved in wildlife crime and their networks and address associated illicit financial flows from these crimes.
CoP19, 2022	Related Decision	19.79 Subject to external funding, the Secretariat shall work with its partners in the International Consortium on Combating Wildlife Crime (ICCWC) and other bodies such as the Financial Action Task Force (FATF) and the Egmont Centre of Financial Intelligence Unit Excellence and Leadership (ECOFEL), to provide Parties with guidance on the measures they can take to combat money laundering associated with wildlife crime, and to promote the integration of financial crime investigations into the investigation of crimes involving wildlife.
CoP19, 2022	Related Decision	19.132 The Secretariat shall: a) subject to external funding, address priorities in capacity-building related to non-detriment findings (NDF) agreed by the Secretariat and the Technical Advisory Group (TAG), in consultation with the Animals and Plants Committees and Parties, by: i) continuing to support the TAG through which the Animals and Plants Committees provide support and advice for implementation; ii) organizing in consultation with the TAG an international expert workshop on non-detriment findings to review, advance or complete draft guidance materials on NDFs; and iii) undertaking targeted research in support of the development of new or updated NDF guidance materials in close collaboration with the TAG, relevant experts, Parties and organizations to address the agreed workstreams, building on the inventory and gap analysis of existing guidance prepared by the Secretariat; b) compile and present the results of the work under paragraph a) to the Animals and Plants Committees for their review and make suggestions on how best to use the outputs to assist Scientific Authorities in the making of NDFs; c) make available to Parties on the CITES website the NDF guidance materials resulting from the implementation of the present Decision; d) develop a strategy and feedback mechanism for Parties and the wider CITES community to share experiences with using NDF guidance materials, which should allow the Animals and Plants Committees to make recommendations pertaining to review and update the NDF materials as may be needed; and e) consult the Animals and Plants Committees on the implementation of the present Decision and make recommendations to the Conference of the Parties as appropriate.
CoP19, 2022	Related Decision	19.133 The Animals and Plants Committees shall: a) continue the TAG established under the recommendations in document AC31/PC25 Com. 3 through which the Animals and Plants Committees provide support and advice for implementation, and make any appropriate decisions to ensure continued advice and assistance for the implementation of Decisions 19.132 to 19.134; b) participate as appropriate in the international expert workshop on NDFs where draft guidance materials are to be reviewed, advanced or completed; c) review and make recommendations concerning: the outcomes of the international expert workshop on NDFs; the use of its outputs in support of the making of NDFs by Scientific Authorities; and their publication on the CITES website; d) based on the strategy and feedback from Parties and the wider CITES community on experiences with

Date	Type	Detail
		using NDF guidance materials, review and update NDF materials as may be needed; and e) report on these activities at the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	19.134 Parties are encouraged to: a) provide any help and information regarding methodologies, tools, scientific information, expertise and any other resources used to formulate NDFs in order to contribute to such a workshop; b) make use of the guidance materials on NDFs resulting from the implementation of Decisions 19.132 and 19.133 and participate as appropriate in the feedback mechanism on NDF guidance, to be developed by the Secretariat as referred to in Decision 19.132, paragraph d); and c) provide financial and technical support for the implementation of Decision 19.132, including for an international expert workshop on non-detriment findings.
CoP19, 2022	Related Decision	19.135 The Secretariat shall invite Parties, other governments and stakeholders through a Notification to the Parties to submit information on their experiences in making non-detriment findings for specimens of CITES Appendix II-listed species taken from areas beyond national jurisdiction, to share any non-detriment findings (NDFs) produced, to highlight any difficulties encountered in the process and any suggestions they might have for improvements.
CoP19, 2022	Related Decision	17.170 (Rev. CoP19) The Standing Committee shall, with the assistance of the Secretariat, review the existing provisions agreed by the Parties concerning controls on stocks of specimens of CITES- listed species. It shall consider their objectives and implementation, the resource implications for Parties and the Secretariat, and the work conducted during the previous intersessional periods, and shall report its conclusions and recommendations at the 20th meeting of the Conference of the Parties.
CoP19, 2022	Related Decision	19.158 The Animals and Plants Committees, in consultation with the Standing Committee, Secretariat, and International Air Transport Association (IATA), shall hold a workshop to share best practices related to live animal and plant transport. The Animals and Plants Committees shall invite Parties with expertise in this area to present on their management of live animals and plants in trade and steps to support other Parties in meeting CITES requirements for live animal and plant transport consistent with Resolution Conf. 10.21 (Rev. CoP19) on Transport of live specimens.
CoP19, 2022	Related Decision	19.159 The Secretariat shall, in consultation with the Standing Committee, work with IATA to make relevant sections of the IATA Live Animal Regulations and IATA Perishable Cargo Regulations available to authorized representatives of Management Authorities and enforcement authorities as electronic or hard copies, depending on the needs of the Party and consider making them accessible to other relevant exporters, transporters and importers, free of charge.
CoP19, 2022	Related Decision	19.164 The Secretariat shall: a) issue a Notification to the Parties within one year of the close of the 19th meeting of the Conference of the Parties, inviting feedback on experience with using the guidance documents and other information provided on the CITES webpage “Appropriate and acceptable destinations”, and b) report on this feedback to the Animals Committee and the Standing Committee for their consideration and recommendations, as appropriate.
CoP19, 2022	Related Decision	19.165 The Animals Committee shall review the report from the Secretariat on feedback from Parties called for in Decision 19.164 and make recommendations, as appropriate, for consideration by the Standing Committee.
CoP19, 2022	Related Decision	19.166 The Standing Committee shall review the report from the Secretariat and any comments and recommendations coming from the Animals Committee on feedback from Parties called for in Decision 19.164 and make recommendations, as appropriate, for consideration by the Conference of the Parties at its 20th meeting.
CoP19, 2022	Related Decision	19.181 The Standing Committee shall, taking into consideration document CoP19 Doc. 55, review the application of Resolution Conf 12.10 (Rev. CoP15) on Registration of operations that breed Appendix-I animal species in captivity for commercial purposes, for situations where there is a change in the nature of the operation, or in the types of products being produced for export, and other matters raised in document CoP19 Doc. 55 as appropriate, and provide its recommendations to the 20th meeting of the Conference of the Parties.
25 Nov 2022	Listing	Appendix I: Family listing Rhinocerotidae spp excluding South Africa, Eswatini and Namibia populations of *Ceratotherium simum simum.* Appendix II: South African and Eswatini populations of *Ceratotherium simum simum* for exclusive trade in live rhinos and hunting trophies, Namibia populations of *Ceratotherium simum simum* for the exclusive trade in live rhinos.

Annexure 2: Methodology

Through Paragraph 8 of Resolution Conf. 9.14 (Rev. CoP17), Parties requested the AfRSG, AsRSG and TRAFFIC to engage with range and implicated States as appropriate, as well as with the UN Environment Programme World Conservation Monitoring Centre (UNEP WCMC), when producing the report. In addition, the report should reflect the outcomes of these consultations.

The AfRSG requested information from 12 African range States that have formal representation as members of the AfRSG. These include Botswana, Chad, Eswatini, Kenya, Malawi, Mozambique, Namibia, Rwanda, South Africa, United Republic of Tanzania, Zambia and Zimbabwe. Uganda is also a formal range State but has not allocated a representative to the AfRSG. The requests for information were made to these 12 Parties through the CITES Management Authority. Ten of the 12 formal range States with extant populations within the historical distribution of African rhinos responded to a questionnaire and provided detailed population data. Mozambique responded with some information on stockpile data only, while Chad and Uganda did not respond.

The AfRSG also requested information from four African Parties that have extant populations beyond the historical distribution (Angola, Côte d'Ivoire, the Democratic Republic of Congo and Senegal) through the respective CITES Management Authorities. Angola, Côte d'Ivoire and Senegal responded.

The AfRSG also requested information from the CITES Management Authorities of Guatemala, Malaysia and Vietnam given previous knowledge of rhinos moved to these Parties. Guatemala and Malaysia responded. In addition, information was requested from the CITES Management Authorities of China and Japan. Japan responded with information on stockpiles.

The AsRSG used the same format that it sent to African rhino range states, but the AsRSG put Asian rhino species in the tables to get information on three species of Asian rhinos. AsRSG members from the three range States submitted information which was used in this report.

The European Association of Zoos and Aquaria (EAZA) as well as the Association of Zoos and Aquariums (AZA) assisted the AfRSG and AsRSG in extracting information on rhinos held in zoo collections through summary information provided via the Zoological Information Management Systems. These represent six global regions (Africa, Asia, Europe, North America, South America and Oceania). The China Biodiversity Conservation and Green Development Foundation (CBCGDF)[172] provided information on African rhinos held in various collections in China.

TRAFFIC engaged with UNEP-WCMC to solicit additional information and contacted the CITES Secretariat where needed to obtain clarifications on stockpile data reported to the CITES Secretariat or data from the CITES Illegal Trade Database. Further methodology and limitations to inferring trends are discussed in the relevant sections on the analysis of seizure and stockpile data and related annexures.

These various sources of data gathered from the CITES Secretariat, range States, implicated States, Zoological Associations, UNEP-WCMC and CBCGDF provide the basis for analyses of the status, conservation and trade of Asian and African rhinos pursuant to Resolution Conf. 9.14 (Rev. CoP17).

Note, however, that uncertainties in rhino conservation data mainly stem from two key sources: rhino population status and law enforcement effort data. Errors can accumulate when range States compile estimates from multiple populations, each with its own margin of error. In addition, interventions like translocations, removals, dehorning, ear notching, and orphan management are often inconsistently recorded or reported, leading to gaps in understanding both population status and the effectiveness of conservation efforts.

The second major source of uncertainty lies in enforcement and protection data. Reporting of carcasses is affected by the difference between the actual date of death and the date of detection, which can distort calendar year summaries. Similarly, enforcement statistics such as arrests and convictions can be misleading, as cases often take years to conclude. Arrests recorded in one year may only result in convictions much later, making it difficult to assess enforcement success accurately over short time frames.

There is a significant opportunity to improve these information systems through standardized reporting frameworks. Automation and AI-assisted tools could increase data accuracy, improve consistency across time and regions, and allow for more reliable evaluations of rhino population trends, enforcement outcomes, and stockpile management.

[172] http://www.cbcgdf.org/English/

Annexure 3. Trade in African rhino horn trophies recorded in the CITES Trade Database

Data on trade in African rhino horn trophies was obtained from the CITES Trade Database (trade.cites.org), which is managed by the UN Environment World Conservation Monitoring Centre (UNEP-WCMC) on behalf of the CITES Secretariat. Data on exports and imports of trophies were downloaded on 08/04/2025 using the following search criteria:

Range:	2021 – 2023
Exporting countries:	Namibia, South Africa
Importing countries:	All Countries
Source:	C - Captive-bred animals, D - Captive-bred/artificially propagated (Appendix I), F - Born in captivity (F1 and subsequent), R - Ranched, U - Source unknown, W - Wild
Purpose:	H - Hunting trophy, P - Personal, T - Commercial
Trade Terms:	HOR - horns, TRO - trophies
Species:	Rhinocerotidae (Rhinoceroses)

Once downloaded, the number of trade records for each importing Party were tallied for every year against the number of exports from Namibia or South Africa. Tallies of trophy records were converted into horns using a factor of two horns per trophy and the numbers of horns entering the illegal trade was assumed as the difference between exported and imported number of horns. However, as specified in the main text, the latter can be considered as an upper limit estimate, as often there is a time lag between export and import permit issuance. Therefore, a corrected estimate was calculated using the most recent data collected from Annual Reports submitted by CITES Parties[173] where for each Party, the discrepancy in the reported export versus the imported records was only assumed if the Party has reported for that year. Table A7.1 presents the data for South Africa and Table A7.2 presents the data for Namibia.

[173] https://cites.org/sites/default/files/reports/annual-reports/annual-reports.pdf

Table A3.1: Direct trade of rhino horns as sport hunted trophies from South Africa reported by South Africa and importing Parties in 2021-2023. Trade reported as "trophies" has been converted to horns assuming two horns per trophy. An entry of 0 represents a year for which the Party has submitted a report to the CITES Annual Reports but did not report any *Rhinocerotidae* trade. A dash entry indicates no report was submitted and hence the difference between reported imports and exports will not be calculated for that year (source CITES Trade Database).

Importer	2021		2022		2023		Reported exports minus reported imports
	Reported exports by South Africa	Reported imports by Importer	Reported exports by South Africa	Reported imports by Importer	Reported exports by South Africa	Reported imports by Importer	
Russian Federation	38	0	34	0	0	0	72
Belgium	12	0	2	2	0	0	12
China	8	0	2	0	0	0	10
Ukraine	6	0	4	0	0	0	10
Sweden	8	0	2	2	0	0	8
Serbia	4	0	2	0	0	0	6
France	2	0	15	6	0	6	5
Australia	4	0	4	-	0	-	4
Canada	2	0	2	0	0	0	4
Saudi Arabia	4	0	4	4	0	0	4
Belarus	0	0	2	0	0	0	2
Bulgaria	8	0	6	6	0	6	2
Finland	0	0	2	0	0	0	2
Indonesia	2	2	2	0	0	0	2
Norway	4	2	0	0	0	0	2
Switzerland	4	4	4	2	0	-	2
Germany	6	6	10	6	0	4	0
Italy	0	0	2	0	0	2	0
Romania	0	2	8	2	0	4	0
Türkiye	4	4	0	0	0	0	0
Czech Republic	0	0	0	0	0	2	-2
Estonia	0	0	0	0	0	2	-2
Mexico	18	8	8	16	0	5	-3
Namibia	0	0	2	4	0	2	-4
Portugal	0	0	0	4	0	0	-4
Austria	4	4	4	4	0	6	-6
Poland	10	4	0	8	0	4	-6
Denmark	6	2	4	16	0	2	-10
United Arab Emirates	0	8	0	0	0	2	-10
Hungary	14	10	16	24	0	10	-14
Spain	6	6	12	10	0	24	-22
United States	64	40	74	54	0	98	-54
Total	238	102	227	170	0	179	10

Table A3.2: Direct trade of rhino horns as sport hunted trophies from Namibia reported by Namibia and by importing Parties in 2021-2023. Trade reported as "trophies" has been converted to horns assuming two horns per trophy. An entry of 0 number of horns represents a year for which the Party submitted a report to the CITES Annual Reports but did not report any *Rhinocerotidae* trade. A dash entry indicates no report was submitted and hence the difference between reported exports and imports will not be calculated for that year (source CITES Trade Database).

Importer	2021		2022		2023		Reported exports minus reported imports
	Reported exports by Namibia	Reported imports by Importer	Reported exports by Namibia	Reported imports by Importer	Reported exports by Namibia	Reported imports by Importer	
United States	10	8	10	8	25	16	13
Austria	0	0	0	0	7	2	5
Sweden	2	0	2	0	0	0	4
Serbia	0	0	0	0	2	0	2
Spain	4	2	2	2	0	0	2
Canada	0	0	0	2	2	0	0
Czech Republic	0	0	2	2	0	0	0
Denmark	0	0	0	0	2	2	0
Germany	0	0	2	2	2	2	0
Hungary	4	4	4	4	4	4	0
Lithuania	0	0	0	2	4	2	0
Luxembourg	0	0	0	0	1	-	0
Russian Federation	2	4	8	6	0	0	0
South Africa	0	0	2	2	0	0	0
Mexico	8	6	0	2	1	2	-1
Bulgaria	2	2	0	2	0	0	-2
Total	32	26	32	34	50	30	23

Annexure 4. Preparation of seizure data for analysis: methodology, assumptions, and limitations

Sources of seizure data

The primary source of seizure data used in the analysis detailed in Section 3.1 of this report is the CITES Illegal Trade Database. Submission of Annual Illegal Trade Reports (AITRs) is detailed in Resolution Conf. 11.17 (Rev. CoP19). However, not all Parties submit AITRs, some report with a time lag, and some tick a box making the data unavailable for use in the analysis to prepare this report. Furthermore, analysis for this report revealed that a few Parties that submit their AITRs did not account for seizures of rhinoceros specimens (seizures that were known from other sources available through the TRAFFIC database).

To address these gaps, data from the CITES Illegal Trade Database were augmented with information from TRAFFIC's database on rhino seizures, which compiles records from CITES reports, open-source media reports, law enforcement communications, and other channels. While the TRAFFIC database is largely based on publicly available information and does not adhere to standardized means of reporting, all seizure records incorporated into this analysis were carefully cross-checked and verified to ensure multiple independent and official government sources. Additionally, the database included data from sources such as the World Customs Organization (WCO), the Elephant Trade Information System (ETIS) where rhino specimens were reportedly seized with ivory, and other proprietary sources.

The country-level coverage of data from the CITES Illegal Trade Database and TRAFFIC's database for seizures of rhino horn specimens is shown in Figure A4.1. TRAFFIC's database provides rhino horn seizure information from several Parties across Central and Southern Africa and Southeast Asia which would otherwise be unrepresented through the data from the CITES Illegal Trade Database.

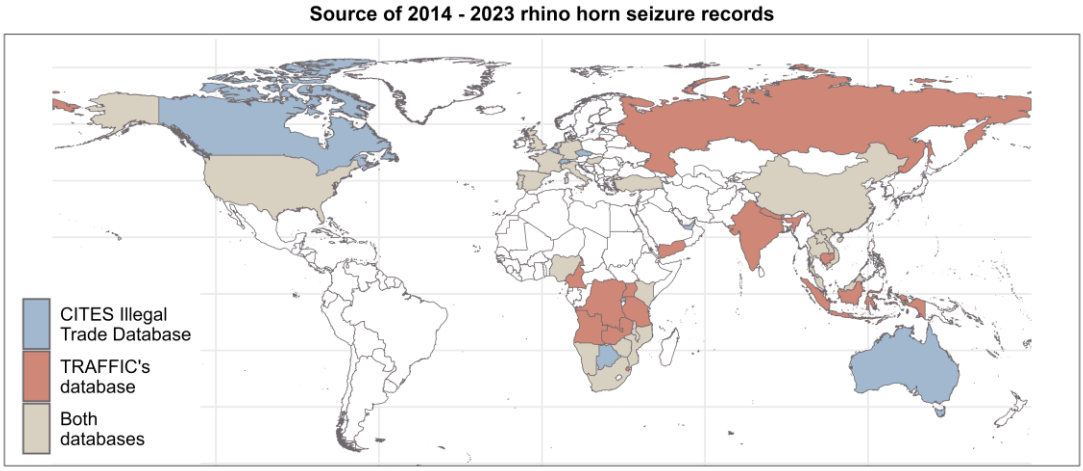

Figure A4.1. A world map showing the regional coverage of data sources across the analysed dataset. Colour indicates the countries for which rhino horn seizure data were obtained solely through the CITES Illegal Trade Database, solely through TRAFFIC's database, or through both sources.

Identifying unique seizures within the CITES Illegal Trade Database data

The dataset from the CITES Illegal Trade Database is specimen-based: if a seizure involves multiple specimens, this is reported in multiple records. To report on the number of seizures made by each Party, it was necessary to convert this reporting format into records of unique seizures, where each seizure record may contain multiple specimens. The following methodology was used to identify and merge CITES Illegal Trade Database records that pertained to the same seizure event.

Parties can report a national reference number to indicate when multiple records relate to the same seizure. However, there are limitations to the reliability of this field, since only 351 out of 618 records included a national reference number. In addition, some Parties reported non-unique national reference numbers, with the same reference number being assigned to seizures from different years (e.g., numbering 1 to 10 for seizures submitted for 2019 and again numbering from 1 to 10 for seizures submitted for 2020). Therefore, to link records within CITES Illegal Trade Database data as belonging to the same seizure, they were required to match for the following three data fields: Reporting country, Date of seizure, and National reference number. If all three of these fields matched, the records were merged as part of the same seizure. Otherwise (e.g., if the national reference number was missing or inconsistent), records were assumed to represent separate seizures, even if other fields were similar.

It is noted that this specimen-based reporting style can lead to potential overestimation of the number of seizures, since it is not always possible, particularly with inconsistent reporting of national reference numbers, to determine when multiple records refer to the same event. This is a potential limitation of specimen-based databases when they are used to report on seizure volumes.

Merging seizures between the CITES Illegal Trade Database and TRAFFIC database

To identify cases where the same seizure was recorded in both the CITES Illegal Trade Database and TRAFFIC's database, a comparison was made across several key fields, including the seizure country and location, trade route information, seizure date, means of transport, method of concealment, suspect details, and the quantities and specimens seized. Where strong similarities across these fields were found, records were considered to refer to the same seizure. In these cases, data from the two sources were merged with the following considerations:

- Data from the CITES Illegal Trade Database was always taken as the primary source of information. If there were discrepancies between the two sources for a given data field, data from the CITES Illegal Trade Database was accepted at the expense of TRAFFIC's data.
- Information from TRAFFIC's database was used to supplement the CITES Illegal Trade Database records if it provided additional details (e.g., more comprehensive trade route information). Additional information relating to seized quantities (e.g., weight information which was missing from the data in the CITES Illegal Trade Database) was only incorporated provided that the other specimen and quantity information aligned.
- If the sources reported different specimen types for the same event[174], the CITES Illegal Trade Database record was retained, and TRAFFIC's information was not added to avoid mixing inconsistent specimen data.

Despite the careful methodology applied to link and merge records, there remains a degree of uncertainty inherent in the seizure data. Inconsistencies in reporting practices across Parties, the specimen-based structure of the datasets, and occasional discrepancies between data sources introduce potential for both underestimation and overestimation of the number and characteristics of seizures. However, careful examination was conducted and, where necessary, clarification was sought with the CITES Secretariat.

Comparing Parties based on seizure data

While seizure data provide valuable insights into the illegal trade in rhinoceros specimens, caution must be advised when using such data to compare Parties or infer broader trends. Seizure records reflect not only the underlying level of illegal trade activity but also a range of other factors that can vary substantially between Parties. In particular, differences among Parties in law enforcement effort, reporting practices, and open-source media coverage can significantly influence the number and nature of their recorded seizures. A Party with a high number of reported seizures may have more effective enforcement and stronger reporting mechanisms, rather than necessarily being more heavily involved in illegal trade than a Party with fewer recorded seizures. Conversely, low seizure numbers could reflect weaker enforcement, poor reporting to the CITES Illegal Trade Database, or underrepresentation in media sources, rather than a lower level of illegal trade activity. This highlights the need for caution when interpreting raw seizure counts without considering these underlying biases.

To illustrate this, Figure A4.2 shows three hypothetical Parties with the same number of seizures recorded in the dataset, but where differences in seizure rates and reporting rates result in different levels of illegal trade activity being hidden. Comparing the hypothetical Parties based on reported data suggests that they are similarly affected by the illegal trade. However, when accounting for biases, it is evident that illegal trade affects Party C to a greater extent than Party A. Ultimately, an analysis of the most affected Parties should aim to understand the full picture of the illegal trade affecting the country without the biases introduced by seizure and reporting rates. Bias-adjustment methodologies, such as those developed for the ETIS analyses[175], explicitly model these sources of variation to provide more reliable comparisons between Parties.

To implement bias-adjustment with reporting rates requires meeting the assumptions that data are expected to be reported by the Parties. This is where the CITES Illegal Trade Database data, for which reporting is urged as specified in Resolution Conf. 11.17 (Rev. CoP19) and requested with an annual Notification to the Parties, provide a unique opportunity to apply bias-adjustment techniques to the data that inform the rhinoceros CoP report to the Parties. It would be prudent to explore the application of bias-adjustment approaches to the analysis of data from the CITES Illegal Trade Database in the future, as this may allow for more accurate assessments of Parties' relative involvement in the illegal trade.

[174] A recurring situation was noted in which the CITES Illegal Trade Database recorded a number of whole horns seized, while TRAFFIC's database recorded the same number as horn pieces and provided an accompanying weight. These discrepancies highlight potential inaccuracies in the specimen classification in AITR reporting. The description code "HOR" appears to be often used when "HOP" is meant. For example, the largest reported seizure in the CITES Illegal Trade Database was reported by South Africa with a weight of 160 kg and description code "HOR", despite a description under the method of concealment referring to "pieces of Rhinoceros Horns". Additional inconsistencies with the description code guidelines were also noted, for example seizures of "BOD" being recorded with a weight of 1 kg.

[175] Underwood FM, Burn RW, Milliken T (2013) Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data. PLoS ONE 8(10): e76539.

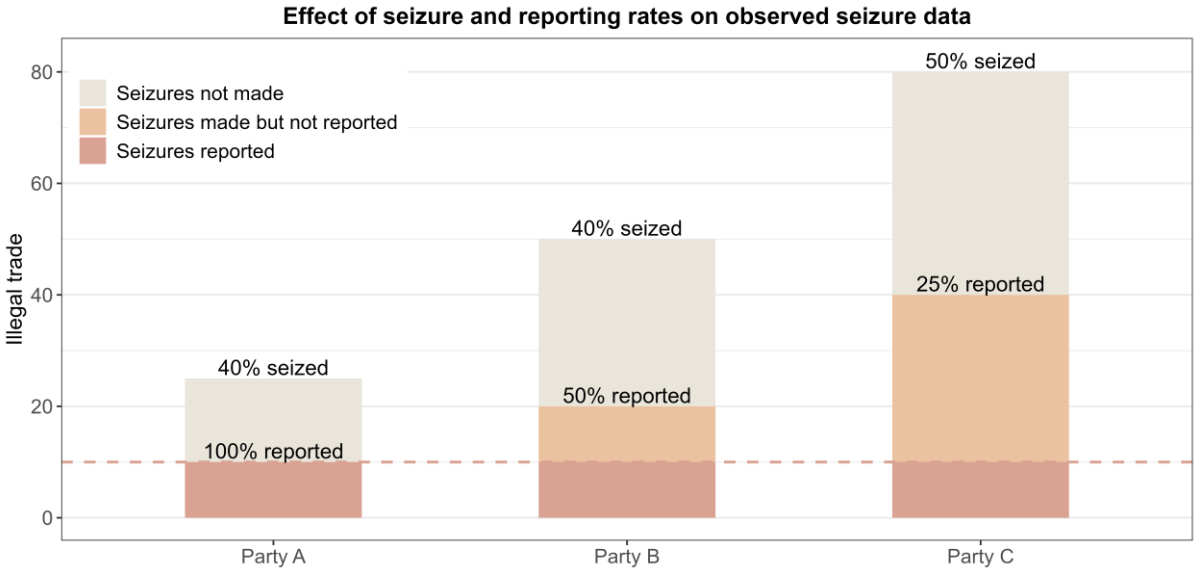

Figure A4.2. An example to illustrate the bias that can arise in seizure data. Three Parties with different numbers of transactions passing through them are represented in the data with the same number of seizure records due to having different seizure rates and reporting rates.

Annexure 5. Methodology for the estimations of weight and number of whole horns

Section 3.1 includes an analysis of data from the CITES Illegal Trade Database and TRAFFIC's database. As noted in the section, reporting of weight and horn quantities varied. Out of the 750 seizures in analysis, 635 reported to contain whole horns; of these, only 113 contained both the number of whole horns and their weight, 396 records recorded the number of whole horns but not their weight, and 126 recorded the weight of whole horns but not their number. For the 117 records that reported horn pieces[176], only 55 contained both the number of horn pieces and their weight, 28 records included the number of horn pieces but not their weight, and 34 recorded the weight of whole horns but not their number.

To estimate missing quantity information, weight was estimated for seizures that reported the number of whole horns but not their weight, and conversely, the number of whole horns was estimated for seizures that reported the weight of whole horns but not their number. Similarly, for seizures of horn pieces, reported or regression-estimated[177] weights were converted into an estimated equivalent number of whole horns. See Table 10 in Section 3.1.2.2 for an overview of the missing quantities and their means of estimation. These estimations relied on species-specific conversion factors of the estimated weight per whole horn. The estimates from Pienaar et al. (1991)[178] and Leader-Williams et al. (1992)[179] were used to attribute the average weight (kg) per whole horn for the five extant rhinoceros species. Weighted averages were then calculated separately for general African and Asian species using the formula

$$\frac{\sum_{i=1}^{n} w_i X_i}{\sum_{i=1}^{n} w_i},$$

where n is the number of species, w_i is the number of records of species i in the seizure dataset, and X_i is the estimated weight per whole horn for species i. The specific species estimates used in the analysis are detailed in Table A5.1.

Table A5.1. Estimated weights per whole horn taken from the literature for the five rhinoceros species, or derived as a weighted average based on the frequency of species in the analysed seizure dataset.

Species	**No. of seizures (w_i)**	**Estimated weight (kg) per whole horn (X_i)**	**Source of estimation**
Black (*Diceros bicornis*)	40	1.33	Pienaar et al. (1991)
White (*Ceratotherium simum*)	134	2.94	Pienaar et al. (1991)
African	504	2.57	Weighted average using the frequency of African rhino species in the seizure data and the estimated weights from Pienaar et al. (1991)
Greater one-horned (*Rhinoceros unicornis*)	6	0.72	Leader-Williams et al. (1992)
Javan (*Rhinoceros sondaicus*)	2	0.68	Leader-Williams et al. (1992)
Sumatran (*Dicerorhinus sumatrensis*)	3	0.27	Leader-Williams et al. (1992)
Asian	61	0.59	Weighted average using the frequency of Asian rhino species in the seizure data and the estimated weights from Leader-Williams et al. (1992)

With the estimates provided in Table A5.1, weight or whole-horn equivalence was estimated by using the appropriate conversion factor, identified through one of the following three cases:

[176] Two seizures reported to contain whole horns and horn pieces, hence 117 + 635 (the number of seizures containing whole horns) = 752.
[177] Weight estimation for seizures reporting number of horn pieces but not their weight was based on a regression model fitted from the 55 seizures reporting both quantities. A natural cubic spline model was used after logarithm transformations of both quantity variables to address their skewness.
[178] Pienaar DJ, Hall-Martin AJ, Hitchins PM. 1991. Horn growth rates of free-ranging white and black rhinoceros. *Koedoe*, 34, 97-105.
[179] Leader-Williams N. 1992. The World Trade in Rhino Horn: A Review. TRAFFIC International, Cambridge, U.K.

1. If the seizure record specified the species of rhino as one of the five extant species (subspecies were considered at the species level), the species' estimate of weight per whole horn was used as the conversion factor.
2. If more than one rhino species was specified, the appropriate African or Asian horn weight estimate was used as the conversion factor (no seizures reported a combination of both African and Asian species).
3. If only the family Rhinocerotidae was specified, it was assumed that if the country of discovery or the country of origin of the illegal consignment was a range State for Asian species (Nepal, India or Indonesia), then the specimens seized were of Asian species; otherwise, it was assumed that the seizure consisted of African species. The derived horn weight estimates for general African or Asian species were used as the conversion factor.

Annexure 6. Challenges and best practices to address poaching and trafficking

This section focuses on elements of Paragrah7(e) i.e. "….including information on challenges and best practices associated with addressing rhinoceros poaching and horn trafficking". CITES does not define poaching and trafficking. For this section we thus define poaching as the illegal hunting, capturing, or killing of wild animals, typically in violation of local or international conservation laws[180]. Trafficking is the illegal trade, smuggling, or exchange of wild animals and plants (or their parts/products) in violation of national or international laws. It involves the illegal commercial exploitation of flora and fauna[181].

A.6.1 Challenges related to poaching reported by African range States

A.6.1.1 Poaching patterns in Africa

Poaching methods employed across African rhino range States between 2022 and 2024 reflect a wide array of tactics, shaped by ecological conditions, access to weapons, enforcement pressure, and cross-border dynamics. While some methods are deliberate and sophisticated, others pose incidental threats to rhinos through broader wildlife harvesting practices.

In southern Africa, high-calibre rifles—particularly .375 and .458—remain the primary tools for rhino poaching. For example, South Africa reported that all rhinos killed in 2024 were shot with such firearms, typically by suspects operating on foot. Horns were then removed using knives or axes, with a noted increase in knife usage during the reporting period. These patterns are consistent with tactical adaptation to local terrain and swift extraction methods.

Similarly, in Botswana, most reported cases involved armed incursions by groups entering from across international borders. These groups demonstrated proficiency with firearms and operated as coordinated units, suggesting a high degree of organisation and access to regional trafficking networks.

Namibia reported no significant changes in poaching methodology during the period, with firearms continuing to dominate. This consistency may reflect both effective monitoring systems and deterrent effects associated with structured detection efforts. However, it also underscores the importance of maintaining high levels of vigilance to prevent the evolution of more covert methods.

In Eastern and Southern Africa, snares used primarily in bushmeat hunting—such as those reported in Kenya and Zimbabwe—pose indirect threats to rhinos. While these devices may not be intended for large-bodied species, their placement within rhino ranges creates a persistent risk. Zimbabwe also reported suspected use of poison in some unexplained rhino deaths, although confirmation remains pending. The potential use of toxins raises concerns about techniques that are difficult to detect and may leave few forensic traces.

The re-emergence of indiscriminate devices such as gin traps was noted in Malawi, particularly in areas like Liwonde National Park. At least one rhino calf was reportedly killed by such a device. These traps pose a broad risk to wildlife and prompt concerns about enforcement gaps and accessibility of illegal gear.

In Eswatini, threats are compounded by transboundary incursions. Some groups operating within the country are believed to originate from neighbouring regions and, in some instances, have involved collusion with corrupt officials. While Eswatini's detection and response systems remain robust, these incidents highlight the importance of regional cooperation and integrity management in enforcement networks.

Reports from Zambia indicate that poaching on private game ranches may involve insider facilitation. Although specific methods were not disclosed, the context implies targeted operations potentially involving firearms and premeditated access.

Taken together, the diversity of methods across range States underscores the need for both localised enforcement and cross-border coordination. While firearms remain the most prevalent tool, traps, poison, and indirect risks from non-targeted harvesting represent a growing concern. The evolving nature of these tactics requires ongoing adaptation and knowledge-sharing between range States.

A.6.1.2 Detecting carcasses in Africa

Timely detection of rhino carcasses is a critical aspect of conservation monitoring, yet it remains a persistent challenge across much of the continent. Detection capacity is shaped by landscape features, law enforcement effort, monitoring infrastructure,

[180] See Leader-Williams, N. and Milner-Gulland, E.J., 1993. Policies for the enforcement of wildlife laws: the balance between detection and penalties in Luangwa Valley, Zambia. *Conservation Biology*, *7*(3), pp.611-617.
[181] Wyatt, T., 2013. Wildlife Trafficking. A Deconstruction of the Crime. *Victims and Offenders*.

and local governance structures.

In countries with expansive unfenced areas or remote terrain, such as Botswana, the delay in noticing missing rhinos can span weeks or even months. In such settings, carcass discovery is often incidental or reliant on third-party indicators, including scavenger activity.

Namibia faces similar logistical challenges in areas such as Etosha National Park and the Kunene Region, where vast distances and limited road infrastructure reduce patrol frequency. Nevertheless, Namibia's use of ecological indicators—such as vulture behaviour—and its structured monitoring systems have supported relatively strong detection rates.

In South Africa, detection is supported by consistent aerial surveillance and ranger patrols. However, densely vegetated areas present ongoing barriers, with some carcasses only discovered after considerable delays. While the majority of poached rhinos are found within a week, data from the period show that a significant number are only located several months post-mortem, or with no clear date of death recorded.

In Zimbabwe and Zambia, detection is complicated by poaching associated with meat harvesting. In these cases, rhino deaths may be concealed, or misclassified, particularly where poisoning is suspected. This concealment hinders forensic analysis and reduces the likelihood of successful prosecution.

By contrast, Eswatini maintains highly structured surveillance systems, enabling rapid detection and reporting of rhino deaths—whether natural or poaching-related. This allows for swift response. However, the influence of corruption within law enforcement institutions has been flagged as a concern and may affect broader system integrity if left unaddressed.

In Malawi, detection challenges are not always reported directly, but the use of traps and other covert methods suggests a potential for undetected carcasses. Other countries such as Angola, Rwanda and the United Republic of Tanzania provided limited or no data on carcass detection, highlighting a potential gap in monitoring systems or reporting capacity.

Collectively, these findings point to uneven capabilities in carcass detection. While some countries have developed robust, responsive systems, others continue to face limitations that reduce their ability to accurately track poaching losses. Addressing these disparities is essential to improving situational awareness and conservation effectiveness across the continent.

A.6.1.3 Orphaned and injured rhinos linked to poaching attempts in Africa

Managing rhinos injured or orphaned by poaching remains a complex and resource-intensive task. Capacity varies widely across range States and is influenced by veterinary availability, rehabilitation infrastructure, and decision-making frameworks.

Botswana applies a triage approach to wounded rhinos, euthanising those with fatal injuries and providing treatment or boma care to those with a favourable prognosis. Orphaned calves are transferred to rehabilitation facilities until they are mature enough for relocation to secure areas. However, the process depends heavily on timely detection and coordination with enforcement agencies.

Namibia follows a dual system involving both public and private sector actors. State-managed interventions often involve in-field treatment, while orphans are placed with trained custodians. Private rhino owners typically rely on wildlife rehabilitation organisations for long-term care. This case-by-case flexibility has improved outcomes but requires sustained access to specialist resources.

South Africa has reported increasing numbers of orphans linked to poaching. Eleven permitted orphan facilities provide sanctuary and veterinary care, but there are concerns about whether this capacity is sufficient under current levels of poaching. Although survival and rewilding strategies are improving, the long-term outcomes for many individuals remain underreported.

In Eswatini and Zimbabwe, specialised centres provide treatment and care. Zimbabwe's approach combines in situ treatment with post-release monitoring. Orphans are often reared under close human supervision, which may aid survival but also raises behavioural and reintegration challenges.

Zambia provides limited detail on rehabilitation practices, though national reporting indicates some infrastructure is in place. Without transparent data, the scale and success of these efforts are difficult to evaluate. Other countries—such as Angola, Malawi, Rwanda and the United Republic of Tanzania—did not report specifically on orphan care, which may suggest either a low incidence or a gap in reporting or response systems.

The burden of managing wounded or orphaned rhinos is increasing. Where robust care systems exist, outcomes are generally more favourable. However, growing demand, coupled with operational limits, underscores the need for coordinated strategies, cross-sector partnerships, and sustainable funding.

A.6.1.4 Prosecutions in Africa

The prosecution of wildlife crimes, particularly those involving rhinos, presents a mixture of promising developments and persistent bottlenecks. Range States report challenges in maintaining legal momentum, especially in cases involving repeat offenders, bail-related absconding, and cross-border crime.

Kenya has established a national database to track rhino-related arrests and asset seizures. While conservation legislation supports strict penalties, bail remains a constitutional right, and efforts to oppose it are not always successful. Reports of re-arrests for similar offences suggest that deterrence is weakened when suspects return to criminal activity during pending trials.

In Eswatini, prosecution is supported by strong legal provisions, including minimum custodial sentences and asset forfeiture. Bail applications are actively contested, and foreign involvement in most rhino cases is acknowledged. Political commitment and coordinated efforts between prosecutors, investigators, and wildlife authorities have enhanced case preparation and outcomes.

Namibia's centralised wildlife crime database tracks court proceedings, bail hearings, and repeat offenders. This enables prosecutors to build stronger cases and monitor progress. The integration of case information into enforcement strategies has improved accountability, though results still depend on judicial capacity.

South Africa has established the Environmental Enforcement Fusion Centre and applies digital forensics to track organised networks. While these tools are improving investigative quality, prosecution delays and reoffending while on bail remain major issues. The need for more prosecutorial resources and case-tracking systems has been acknowledged.

Zimbabwe has experienced challenges in preventing suspects from fleeing post-release, often due to lack of monitoring or failure to oppose bail. These incidents reduce conviction rates and weaken public confidence in the justice process.

In contrast, Botswana reported no arrests during the period, and countries such as Angola, Rwanda and the United Republic of Tanzania Angola provided limited or no data on prosecutions. In Malawi, wildlife offences related to bushmeat are sometimes treated as minor crimes, despite strong legislative provisions. This misalignment between law and implementation reduces effectiveness.

Across the continent, progress in prosecuting wildlife crime depends on the consistent use of legal tools, trained personnel, and efficient case management. Countries with integrated systems and political support have demonstrated stronger outcomes, though gaps in capacity, bail management, and trial duration remain critical areas for improvement.

A.6.1.5 Rhino horn stockpiles in Africa

The secure management of rhino horn stockpiles presents both logistical and governance challenges across African range States. These challenges include high costs, the need for continuous tracking, the risk of diversion, and varying levels of institutional capacity. Several countries have developed structured systems to improve transparency and prevent illegal leakage, while others face gaps in oversight and reporting.

Namibia provides a leading example of traceability and control. The country uses an electronic database that monitors both state-held and privately held stockpiles. Approximately 70% of government-managed horns are genetically profiled and microchipped, with data integrated into the Rhino DNA Index System (RhODIS[182]). In the private sector, 80% of horns have been sampled, although only legally acquired historic horns are included under current permit frameworks. This approach enhances accountability and acts as a deterrent to illegal activity, though it depends on regular updates and cooperation from private custodians.

In Botswana, secure storage has become increasingly costly. Facilities are already at full capacity with both ivory and rhino horn, prompting the development of a national stockpile management system. While these efforts improve traceability, they add to the operational burden and require sustained resourcing.

[182] The Rhino DNA Indexing System (RhODIS®) is a forensic tool developed by the University of Pretoria's Veterinary Genetics Laboratory to combat rhino poaching. It creates a unique DNA profile for each rhino, enabling authorities to match confiscated horns to individual animals, thereby linking poachers and traffickers to specific crime scenes. This system has been instrumental in securing convictions and is supported by the eRhODIS® mobile application, which facilitates field data collection and ensures the integrity of evidence for legal proceedings. https://www.up.ac.za/media/shared/678/ZP_Files/One%20pagers/rhodis_onepager.zp104406.pdf

Eswatini reports that managing horn stockpiles is labour-intensive, expensive, and associated with high security risks. Tracking and verification demand skilled personnel and secure infrastructure, which can strain smaller national systems.

Zimbabwe faces similar constraints, with considerable financial pressure required to maintain high-security storage environments. Despite efforts to secure stockpiles, the country notes that sustained external support is essential to avoid vulnerabilities.

South Africa's context is more complex, with responsibility for stockpile management divided across provinces, national parks, and private landholders. Although figures are compiled nationally for CITES reporting, consistency depends on the accuracy and timeliness of data provided by multiple authorities. During the reporting period, 712 horns were reported stolen, of which only two were confirmed to have come from formal stockpiles. The sources of the remaining stolen horns were not disclosed, raising concerns over data gaps and internal controls.

Angola, supported by the Elephant Protection Initiative, has developed a centralised wildlife stockpiling programme that documents the origin and status of seized horns. The inclusion of law enforcement case details in storage records strengthens the link between seizures and criminal investigations.

By contrast, some countries did not report on rhino horn stockpile management. This absence may indicate capacity limitations or the need for more formal systems.

Across all range States, shared challenges include securing storage infrastructure, maintaining accurate inventories, and ensuring data integration with enforcement and legal systems. Enhanced collaboration, technological integration, and regular audits are key to maintaining the credibility and security of horn stockpiles across the continent.

A.6.1.6 Cooperation between national government departments in Africa

Effective rhino conservation depends not only on strong enforcement but also on coordinated action across government departments. However, many range States face persistent challenges in fostering interagency cooperation. These include misaligned mandates, competition for resources, varying institutional cultures, and practical barriers such as staffing and funding limitations.

Zambia illustrates the challenge of resource constraints. Although the country has established joint task forces involving wildlife authorities and other security sectors, limited budgets restrict implementation and sustainability. These constraints also affect public awareness initiatives and reduce the scope for interdepartmental collaboration.

Eswatini highlights the importance of maintaining shared ownership among participating agencies. While institutional roles are clearly defined, fostering a team spirit and avoiding competition for recognition remain ongoing challenges. The country promotes a culture of credit-sharing to support unity of purpose.

Kenya faces a more structural complexity in managing rhinos across county and national boundaries. Coordination between central government agencies and devolved authorities, as well as with neighbouring States such as the United Republic of Tanzania, requires constant engagement to ensure policy coherence and operational alignment. This complexity is further amplified in areas with shared wildlife corridors.

South Africa demonstrates an advanced level of strategic integration but still recognises the need for continual alignment. The implementation of the National Integrated Strategy to Combat Wildlife Trafficking requires consistent cooperation between national departments, provincial authorities, and enforcement agencies. While frameworks exist, ensuring they remain responsive to evolving threats demands regular review and coordination.

Namibia and Malawi have developed strong enforcement and intelligence networks that rely on contributions from multiple government bodies. However, these systems often depend on donor support and joint staffing arrangements, which could be vulnerable to future institutional or financial shifts.

In summary, while interdepartmental cooperation is widely acknowledged as essential, it is frequently constrained by competing priorities, institutional fragmentation, and resource shortages. Sustainable collaboration depends not only on technical frameworks but also on investment in relationships, leadership continuity, and aligned incentives.

A.6.1.7 Cooperation with local people in Africa

Engagement with local communities is increasingly recognised as a foundational pillar of rhino conservation. Many African range

States have adopted strategies to include local people in conservation, yet the degree of implementation varies, shaped by financial capacity, cultural context, and governance systems.

In Zimbabwe, community-based natural resource management initiatives—particularly those associated with the CAMPFIRE programme—are beginning to yield benefits. However, insufficient financial resourcing has limited their expansion. Although government and community interest remains high, the pace of implementation is constrained by funding and technical support needs.

Eswatini has adopted a holistic approach that emphasises realistic expectations and shared responsibilities. Communities are engaged not only as beneficiaries but also as co-managers of conservation areas. Projects include water access, school construction, cultural tourism, and informer incentives. This approach supports trust-building and long-term sustainability by avoiding overpromising and encouraging local ownership.

South Africa faces a unique context where a large proportion of rhinos occur on private land. While direct community conflict is not widely reported, collaboration with landowners and local populations is central to the success of initiatives like the Integrated Wildlife Zones. These zones promote partnerships between enforcement actors and communities through governance structures and shared safety networks.

Botswana continues to advance its community-based natural resource management (CBNRM) framework, particularly in addressing human-wildlife conflict and promoting local stewardship. Although best practices are still being formalised, the integration of communities into conservation planning remains a policy priority.

In Malawi, partnerships with local people are channelled through village committees, schools, and enterprise support initiatives. Livelihood projects such as chilli farming, honey production, and small-scale irrigation aim to reduce wildlife-related losses and support economic resilience. Education and awareness activities target youth engagement through school-based wildlife clubs.

Namibia's Conservancy Rhino Ranger Incentive Programme provides one of the clearest examples of community-led rhino protection. Rangers are drawn directly from local communities and supported with training, stipends, and recognition. This programme strengthens local responsibility and builds capacity for rhino monitoring at the landscape level.

Zambia's collaboration with Community Resource Boards and local scouts facilitates direct involvement of rural communities in rhino conservation, particularly in North Luangwa. The Landscape Integration Programme ties conservation objectives to locally identified needs and enhances accountability through participatory governance.

In Rwanda, a structured model based on Engagement, Education, and Enterprise guides community involvement. Activities such as the Rhino Velo race, a wildlife damage compensation fund, and a tourism revenue-sharing scheme provide social and economic incentives for conservation. These mechanisms have helped reduce conflict and foster community pride, particularly around Akagera National Park.

These examples collectively demonstrate that successful cooperation with local people depends not only on benefit distribution but also on participation in planning, monitoring, and governance. The most durable models embed conservation within broader development goals and reflect local priorities, values, and aspirations. By placing communities at the centre of rhino protection, range States are helping to ensure the long-term viability of conservation efforts.

A.6.2 Initiatives and best practices related to poaching reported by African range States

A.6.2.1 Improving legal processes in Africa

Across Africa, range States are pursuing legal reforms and institutional innovations to strengthen their responses to rhino crime. Shared strategies include enhancing the capacity of prosecutors, aligning legal frameworks with current threats, and increasing penalties for wildlife offences.

Namibia provides an example of structural innovation, having launched a dedicated Environmental Crime Court in Otjiwarongo in 2025 following the success of temporary wildlife courts. This specialised court handles high-profile wildlife cases more efficiently and is supported by inter-agency coordination mechanisms. Similarly, Kenya is improving its legal effectiveness through training for prosecutors and court users, the use of wildlife crime scene officers, and revisions to the Wildlife Conservation and Management Act to reflect current enforcement needs.

In Eswatini, the Game Act is under review to better address modern offences such as conspiracy and corruption. The country has also institutionalised minimum custodial sentences and opposed bail in wildlife crime cases. The use of asset forfeiture and

the exclusion of fines reflect a strategic effort to deter repeat offending and reduce the influence of illicit financial incentives.

South Africa continues to develop a national-level prosecutorial strategy under the National Prosecuting Authority's wildlife crime working group. This group supports implementation of anti-trafficking strategies, the Biodiversity Act, and CITES-related regulations. While coordination is improving, delays in court proceedings and repeat offences by suspects on bail remain pressing issues.

Malawi took a firm stance with its 2017 revision of the National Parks and Wildlife Act, eliminating the option of fines for serious offences and introducing sentencing guidelines to support the judiciary. In Zambia, legal instruments such as the Wildlife Act and firearms laws are used in combination to prosecute rhino crimes. Innovative efforts such as field visits by magistrates to conservation areas are being piloted to build legal understanding of ecological and enforcement contexts.

Overall, these examples reflect a growing commitment to legal reform. Progress is most evident where legal systems are supported by training, coordination, and institutional focus. However, the pace of reform remains uneven, and challenges such as resource constraints, legal backlogs, and jurisdictional complexity continue to limit full implementation.

A.6.2.2 Enforcement in Africa

Lessons from enforcement experiences across African range States show an increasing focus on proactive, intelligence-led approaches. Effective enforcement combines field patrols, legal deterrence, community partnerships, and inter-agency coordination.

In Eswatini, enforcement is underpinned by mandatory sentencing, inter-agency cooperation, and intelligence-led operations. The integration of police and wildlife investigators, supported by strong public messaging, enhances deterrence. Although legal updates are underway to better address organised crime, Eswatini's approach underscores the value of political will in enforcement success.

The United Republic of Tanzania operates daily ground patrols in high-risk zones and supports them with seasonal aerial surveillance. Rhino site management committees facilitate operational coordination. Recent investment in intelligence and prosecution units reflects a growing commitment to targeted enforcement, though aircraft availability and equipment remain limiting factors.

South Africa has adopted a multi-pronged model. Enforcement extends beyond traditional ranger duties and includes digital forensics and financial crime investigations under anti-money laundering frameworks. While centralized legal processes and inter-agency data-sharing have improved, consistent enforcement across provinces and slow prosecutions remain key constraints.

Zimbabwe reports reduced poaching levels, attributed to strong legal penalties and structured patrols. Nevertheless, the country has identified a need for greater investment in monitoring technologies and data systems to maintain momentum.

In Zambia, collaboration with the National Prosecutions Authority supports enforcement, but challenges in apprehending local offenders persist. The country also serves as a regional transit route for illicit rhino horn, complicating domestic enforcement efforts. Proposed legislative amendments aim to increase prison terms and eliminate fines for wildlife trafficking.

These experiences highlight the importance of strong penalties, unpredictable patrolling, and inter-agency alignment. Countries investing in coordinated, intelligence-driven enforcement and institutional capacity are better positioned to address sophisticated poaching networks.

A.6.2.3 Communication in Africa

Strategic communication is increasingly recognised as a critical enabler of rhino protection, although its development and documentation vary considerably across range States.

Eswatini illustrates the value of targeted communication, using press engagement and public messaging to reinforce legal deterrence. Media partnerships and outreach campaigns convey the seriousness of wildlife crime, support law enforcement, and build public trust in conservation efforts.

Namibia emphasises the importance of internal communication among enforcement agencies. Streamlined communication channels help align decisions and coordinate responses, especially in multi-agency operations such as the Blue Rhino Task Team.

In the United Republic of Tanzania, rhino site management committees facilitate ongoing communication between patrol units, intelligence officers, and managers. This structure supports efficient planning and real-time responsiveness to poaching risks.

Conversely, several countries did not provide specific reporting on communication strategies. This may reflect a lack of formal integration of communication into enforcement planning or limited institutional capacity to report on such activities.

The examples provided demonstrate that countries prioritising structured, transparent communication—both internally and with the public—are better able to support enforcement objectives and strengthen stakeholder engagement.

A.6.2.4 Governmental cooperation

Cooperation among government entities is fundamental to effective rhino conservation. As rhino protection becomes more complex and transnational, States that cultivate interdepartmental collaboration are seeing stronger, more adaptive responses.

Kenya offers an example of multi-level governance through its joint management of cross-border rhino populations with the United Republic of Tanzania. This is complemented by internal coordination across national, county, private, and community actors. Botswana similarly holds weekly meetings at both national and district levels to ensure continuity and responsiveness in enforcement efforts.

Namibia's Blue Rhino Task Team combines investigators from the police, Ministry of Environment, and other security agencies. The task team is supported by shared vehicles, intelligence systems, and donor contributions, enabling rapid response and data-driven decision-making.

South Africa's Integrated Wildlife Zones model brings together law enforcement, park authorities, and private stakeholders across designated high-risk areas. This zonal approach allows for shared risk analysis, coordinated enforcement, and targeted integrity management.

In Malawi, the Inter-Agency Committee on Combating Wildlife Crime convenes quarterly to align enforcement priorities. Joint deployments of wildlife and police officers, supported by sniffer dogs at key border points, help detect illegal trafficking.

Zambia's joint operations committees at district, provincial, and national levels promote integration of enforcement actions. The country also links enforcement to community education programmes, fostering wider support for conservation.

Together, these examples underscore that consistent coordination, sustained funding, and shared ownership across government sectors are critical to effective rhino conservation. Where these conditions are met, responses are more agile, data-driven, and impactful.

A.6.2.5 Cooperation and collaboration with local people in Africa

Range States increasingly view local people as essential partners in rhino conservation. Successful initiatives move beyond benefit-sharing and involve communities in planning, monitoring, and governance.

Namibia's Conservancy Rhino Ranger Incentive Programme stands out by giving communities a lead role in rhino protection. Incentives and training have helped build a locally driven monitoring system, improving both rhino security and community livelihoods.

In Kenya, community conservancies—such as the Sera Community Conservancy—provide direct benefits while hosting free-ranging rhinos. These initiatives blend conservation with education and enterprise, helping buffer communities against climate and economic shocks.

Rwanda has institutionalised a multi-pronged approach through its "Three E's" framework—Engagement, Education, and Enterprise. The Rhino Velo race, the Special Guarantee Fund for wildlife damage, and the Revenue Sharing Scheme have collectively enhanced local pride and reduced poaching in Akagera National Park.

Eswatini integrates traditional leadership and community policing into its conservation model. Projects in water access, school construction, and cultural tourism are paired with education and informer reward systems, helping reinforce community ownership.

In Zimbabwe, long-standing programmes such as CAMPFIRE return wildlife revenue to communities. Education, borehole provision, and junior ranger initiatives are used to cultivate local engagement. Zambia, through its Community Resource Boards and Landscape Integration Programme, encourages communities to co-lead planning and conservation efforts.

Malawi also engages through village committees and school-based wildlife clubs. Enterprise development in honey, chilli, and livestock supports alternative livelihoods while reducing pressure on natural ecosystems.

South Africa's Integrated Wildlife Zones recognise the role of private and communal landholders in rhino protection. The initiative promotes stakeholder coordination, law enforcement, and safety networks in areas with high rhino density.

These diverse approaches reflect a common shift from viewing communities as beneficiaries to recognising them as co-managers. Across contexts, the most effective models are those that embed community participation in decision-making, risk-sharing, and conservation leadership.

A.6.3 Challenges related to poaching reported by Asian range States

No information from Asian range States was available on challenges related to poaching.

A.6.4 Initiatives and best practices related to poaching reported by Asian range States

No information from Asian range States was available on initiatives and best practices related to poaching.

A.6.5 Consolidated insights related to poaching

The reflections on challenges and best practice with regards to curbing poaching highlights the key challenges faced by range States (Table A.6.5.1). Across these challenges, several common themes emerge, such as the need for reliable and adequate funding, better coordination, resources, and community involvement. Best practices that address these issues, include the use of aerial surveillance, databases on wildlife crime, and community-based conservation models like Community-Based Natural Resource Management (CBNRM). Initiatives like regular patrols, improved legal frameworks, and enhanced cooperation between government departments have been proven effective. The successful implementation of these best practices depends on sustained funding with good leadership, clear communication, and active community participation, which are key to overcoming the obstacles in rhino conservation efforts.

Table A.6.5.1. Key challenges, initiatives, and best practices associated with the poaching of rhinos.

Challenge Theme	Key Elements	Initiatives and Best Practices
Poaching Methods	Use of high-calibre firearms, snares, gin traps, and poaching across international borders. Emerging use of poison and insider threats.	Specialized patrols, cross-border coordination and communication, community awareness, removal of traps, intelligence sharing.
Carcass Detection	Delayed or missed detection due to vast areas, dense vegetation, or lack of reporting systems.	Aerial surveillance, observation and tracking of vultures fitted with satellite transmitters, partnerships with communities and private reserves, carcass detection systems.
Orphaned and Injured Rhinos	Inconsistent access to care and rehabilitation facilities and trained staff, lack of coordination between public and private sectors.	Use of boma facilities, rehabilitation centres, well trained rangers, and good wildlife veterinarians.
Prosecution	Lenient granting of bail to suspects, slow court processes, re-offending, lack of case follow-up, bribes.	Databases on wildlife crime, forensic evidence use, dedicated prosecutors and magistrates/judges, improved judicial training.
Stockpile Management	High storage costs, inconsistent record keeping, security threats, outdated stockpile management plans.	Electronic databases, microchipping, genetic sampling, secure storage facilities.
Interdepartmental Cooperation	Limited budgets, inconsistent coordination, differing priorities, over-reliance on donor funding.	Multi-agency task forces, regular meetings, national anti-poaching strategies, feedback loops.
Community Cooperation	Funding shortages, unmet expectations, land-use conflicts, lack of trust in authorities.	Community conservancies, fair revenue-sharing, CBNRM, education and lucrative livelihood projects, participatory planning.

A.6.6 Challenges and best practices to address trafficking

A.6.6.1 Challenges related to trafficking in Africa

Given that available information on rhino horn trafficking primarily comes from range States, it is both logical and necessary to include local site-level initiatives in reports on the challenges of curbing this trade. These are the areas where the trafficking chain begins—where poachers operate, and rhinos are most vulnerable. Local efforts, such as community engagement, improved ranger capacity, and targeted patrols, are often the first and only line of defence against illegal killing. Understanding and addressing the motivations behind poaching—such as poverty, limited opportunity, and organized crime—are essential to reducing illegal activity[183]. Since range States have direct control only over these early stages in the trafficking chain, reporting on their efforts provides critical insight into what interventions are working and where gaps remain.

In addition, highlighting local interventions helps build the case for a two-pronged strategy: reducing the motivation for illegal hunting and disrupting the trafficking networks that transport horn to global markets[184]. While the latter often lies beyond the jurisdiction of range States, the former is entirely within their reach. The dismantling criminal networks requires targeting the transport and financial infrastructure used by traffickers[185], but this work must be complemented by proactive, locally grounded measures. Including these site-level initiatives in reporting reflects both the scope of current knowledge and the realistic points of intervention. It ensures a fuller understanding of the trafficking problem and supports more effective, coordinated responses.

Many African Parties report shared challenges in combating rhino horn trafficking (Table **A.6.6.1**). All appear in one way or another to revolve around funding requirements for improved capacity. Corruption, lack of funding, porous borders, and weak law enforcement remain major hurdles. In some countries logistical limitations including inadequate manpower, lack of transport, and weak investigation tools limit effective responses. Corruption and political interference reduce accountability and weaken the impact of anti-poaching strategies. Community disengagement and human-wildlife conflict show the need for grassroots-level intervention. International demand for horn and legal complexities further complicate enforcement.

Proposed solutions include adopting modern surveillance and intelligence tools, cross-border cooperation, improving ranger welfare, legal reforms, and sustainable funding models including horn use / trade discussions stressed by some range States. Community engagement and raising conservation awareness are often emphasized as essential, particularly in areas where wildlife is directly impacted by human activities.

However, many solutions face constraints. Political will, international policy and budget restrictions also delay or block progress. Some countries rely on NGOs or external partners for resources, which can come with stipulations, be unreliable and slows implementation. Others complain of resistance from global conservation dogmas that limit experimental funding mechanisms e.g. sustainable legal horn and hide trade.

Range States suggested that if their required interventions could succeed, the potential benefits would be significant. Enhanced enforcement would deter poachers. Community involvement would shift local attitudes toward protection. Sustainable funding would improve rhino habitat and surveillance. Ultimately, a drop in poaching and trafficking would allow rhino populations to continue to stabilize or grow, ensuring long-term species survival.

[183] Haas, T.C. and Ferreira, S.M., 2018. Finding politically feasible conservation policies: the case of wildlife trafficking. *Ecological Applications*, *28*(2), pp.473-494.

[184] Haas, T.C. and Ferreira, S.M., 2016. Combating rhino horn trafficking: The need to disrupt criminal networks. *PLoS One*, *11*(11), p.e0167040.

[185] Fukushima, C.S., Tricorache, P., Toomes, A., Stringham, O.C., Rivera-Téllez, E., Ripple, W.J., Peters, G., Orenstein, R.I., Morcatty, T.Q., Longhorn, S.J. and Lee, C., 2021. Challenges and perspectives on tackling illegal or unsustainable wildlife trade. *Biological Conservation*, *263*, p.109342.

Table A.6.6.1. A strategic summary of challenges identified by African range States with regards to addressing trafficking of rhino specimens. Range States provided suggested responses and what they anticipated the outcomes may be given constraints and enablers.

Challenge	Responses	Likelihood of Implementation	Constraints/Enablers	Desired Outcome
Community Engagement Gaps - low awareness, weak incentives, and funding gaps, but can improve with trust-building and shared conservation benefits.	Actively involve communities in protecting wildlife by raising awareness, supporting engagement in anti-poaching and conservation efforts, and promoting conservation education.	High	Sustainable funding and political will.	Community appreciation and participation in rhino conservation and protection.
Corruption and Governance - limit progress, as political interference, protection of offenders, and lack of accountability reduce the impact of anti-trafficking efforts.	Promote good governance by improving intelligence gathering and offering better incentives for anti-poaching and law enforcement teams, as well as implementation of policies to mitigate corruption risks.	Medium	Corruption and political pressure weaken trust and limits progress. Room for improvement regarding implementation of anti-corruption policies and practices.	Game changing reduction in trafficking and strong measures in place to mitigate and address corruption risks.
Enforcement and Legislative Weaknesses - weakened by limited manpower and patrols, inconsistent laws across countries, inconsistent implementation of legislation and a lack of strong deterrent penalties in some countries.	Strengthen cross-border cooperation and intelligence sharing. Enhance legislative reforms to ensure laws are adequate with effective implementation of the law resulting in strong deterrent penalties. Increase support to communities. Conduct intelligence driven operations and patrols with well trained personnel able to identify and investigate illegal wildlife trade.	Medium to High	Insecure funding disrupts operations and limits investment in capacity. Weak political will slows legal reform and undermines enforcement. Differing national policies block cross-border coordination. Local loss of a rhino populations reduces urgency and weaken response efforts.	Enforcement efforts result in prosecution, convictions and strong deterrent penalties leading to decrease in rhino horn trafficking.
Funding Constraints – Lack of adequate funding, or uncertainty in funding, slow processes, with competing priorities and restrictions on direct support making it hard to carry out key conservation and enforcement actions.	Secure sustainable funding, including through donor support, asset forfeiture, and exploring legal horn trade, reducing pressures on limited government budgets.	High to Low	Sustainable funding not readily available, or funding processes are slow. Limits on direct support to government and private sectors.	Rhino protection improves, their range grow, and live rhinos become valuable.
High Market Demand for Rhino Horn - drives poaching, fuelled by global markets, weak trade controls, ineffective demand reduction campaigns, and insufficient demand reduction efforts in consumer countries.	Reduce illegal demand/trade for rhino horn through global partnerships. Engage with consumer nations. Support highly controlled legal demand options. Promote de-horning, only if necessary, and expand rhino ownership where appropriate for improved conservation.	Medium to Low	Limited funding constrains demand reduction and partnership efforts. Weak justice systems undermine deterrence and enforcement. Complex legal frameworks slow coordinated global action. Global consensus on legal trade options remains elusive. Progress relies on sustained political will and long-term behaviour change.	Decrease in demand and consumption of illegal rhino specimens.
International Cooperation – often difficult due to differences in national laws and limited coordination, complex systems to support international engagement, or lack of formalized collaboration protocols, making it harder to track and stop cross-border wildlife crime	Regional experience-sharing helps disrupt cross-border trafficking networks. Joint learning strengthens enforcement, intelligence, and judicial responses. Collaboration builds trust and improves coordination across countries. Shared lessons support adaptive responses to shifting trade routes. Aligned efforts promote coherent legal and policy frameworks.	High	Cooperation weakens when countries no longer have rhinos. National focus shifts to broader wildlife crime, reducing rhino-specific action. Political will for rhino collaboration declines without local relevance. Support for intelligence sharing and joint learning becomes limited. Policy alignment suffers when priorities diverge across countries.	International cooperation enhanced
Resource and Capacity Limitations - limited staff, and lack of equipment (including vehicles) weaken the ability to monitor rhinos and respond quickly to threats.	Increase funding to hire more field officers, improve their employment benefits, and boost surveillance with better equipment and transport, and employ local people for them and their families to work with reserves in support of rhino conservation and protection.	Medium to High	Managers in some instances do not control budgets for some activities and must rely on short-term support from other departments or partners.	Resources and capacity sufficient to respond effectively and decrease in rhino specimen trafficking observed.
Technology and Intelligence Gaps – limited ability to track poachers, gather evidence and actionable intelligence including using advanced techniques, as well as responding effectively to wildlife crimes.	Adopt new conservation technology, train teams in advanced investigation skills. Learn from others through exchange visits and online training available. Enhance standardization of evidence and intelligence.	Medium	New technologies are hard to adopt without adequate funding. Training teams in advanced investigation skills is limited by capacity gaps. Exchange visits and online learning remain underutilized due to resource constraints. Evidence and intelligence standardization is limited by skill shortages.	Drawing upon technological advances and improved intelligence and decision-making will lead to faster, more effective responses and stronger protection outcomes.
Staff motivation, retention, and performance - low pay, poor working conditions, and lack of recognition make it hard to keep and motivate staff needed for rhino protection and curbing trafficking.	Build team spirit and recognize staff with non-monetary and monetary rewards. Improve skills, and treat conservation as an essential service as well as a benefit.	Medium to High	-	Better patrols and stronger monitoring driven by motivated teams will improve protection and help prevent wildlife trafficking.

A.6.6.2 Best Practices related to trafficking in Africa

Across African range States, several key initiatives have been implemented to address trafficking of rhino specimens, each reflecting different strategies based on local needs and capacity. Angola, Eswatini and Zimbabwe reported a focus on community engagement and awareness as a foundation for conservation. These Parties reported success in reducing local community involvement in trafficking by raising awareness through education and outreach, with thousands reached through campaigns and activities. However, the effectiveness of some alternative livelihood approaches varied, showing that long-term success depends on finding locally suitable and sustainable solutions.

Eswatini, Kenya, Zambia, and Zimbabwe implemented intelligence-led operations and investigative efforts to dismantle trafficking networks. These efforts achieved strong results, including arrests, seizures, and disruption of cross-border syndicates. The use of DNA analysis in Kenya and cross-border intelligence sharing in Eswatini and Zimbabwe with South Africa helped build stronger legal cases. Despite these successes, limited funding and outdated technology were common challenges, especially in Zambia, highlighting the need for improved tools and sustained investment in investigations.

Anti-poaching and anti-trafficking measures, along with improved law enforcement were a major focus in Kenya, South Africa, Zambia and Zimbabwe. Enhanced patrols, camera traps, drones, and canine units were deployed to deter and detect poaching. In some areas, patrols were effective in reducing incidents, particularly in protected national parks. However, the levels of success achieved by using canine units varied, and differences in enforcement effectiveness between private and public lands pointed to the need for more coordinated and well-resourced efforts.

Policy and strategic planning played a key role in Angola and South Africa. South Africa's implementation of its National Integrated Strategy to Combat Wildlife Trafficking is part of a five-year plan, supported by multiple departments and designed to strengthen law enforcement, improve detection, and promote national and international cooperation. Angola updated its national biodiversity strategy and action plan, aligning it with broader conservation goals and securing national-level support. Both examples show how planning and government commitment can shape long-term conservation outcomes.

Cooperation and cross-border coordination were highlighted in Angola, Eswatini, Zambia and Zimbabwe. Training of border staff and joint operations helped improve identification of illegal wildlife specimens and led to stronger enforcement. However, differences in national laws and the lack of shared protocols still limit full cooperation. Addressing these gaps through harmonized policies and clearer standard operating procedures could improve outcomes.

Asian range States did not report examples of initiatives and best practices.

Overall, while the initiatives vary by country, African range States share common goals of reducing poaching, disrupting trafficking networks, and improving protection and management of wildlife (Table A.6.6.2). Success was influenced by political will, community involvement, funding availability, and technical capacity. Strengthening these areas and ensuring better coordination across borders and sectors will be essential to sustain progress.

Greater one-horned rhino (*Rhinoceros unicornis*) cow and calf[186].

[186] https://www.asiawild.org/post/the-asian-rhino

Table A.6.6.2. A strategic summary of initiatives reported by African range States with regards to detecting and addressing trafficking of rhino specimens. Range States also provided the objectives, how these were achieved, and what could improve performance.

Initiative Type	Key Objectives	Objective Achieved	Factors Influencing Success or Failure	Suggested Improvements
Community Awareness and Engagement - educating and involving local communities in conservation, aiming to reduce local support for poaching through awareness and alternative livelihoods.	Raise awareness in communities and the wider public through environmental education, and support community engagement and economic empowerment.	Local people actively involved in conservation and supported through alternative livelihoods that reduced the appeal of poaching.	Success was seen in shifting communal hunters away from poaching roles, but some alternative livelihood methods were not effective.	More suitable and sustainable income options should be developed with community input.
Enforcement and Protection - improved patrols and enforcement responses in key wildlife habitats, often supported by training or legal reform.	Strengthen patrols in rhino habitats and community support, and improve coordination among key stakeholders, including cross-border teams, security forces, and national task groups.	Efforts to protect rhinos were successful, with strong collaboration among key stakeholders helping to prevent trafficking.	Success was supported by effective intelligence, patrols and joint operations, but differences in national laws created challenges.	Parties should align policies, publicize and update legislation and penalties in alignment with neighbouring States, and strengthen cross-border legal cooperation.
Intelligence and Investigative Operations - collecting data, conducting targeted operations, and building strong legal cases.	Strengthen intelligence-led operations, investigate internal corruption linked to crimes involving bushmeat and rhino, and run dedicated intelligence teams. This includes 24/7 monitoring, roadblocks, cross-border operations, and sharing data with law enforcement agencies.	Intelligence and investigation efforts were largely successful, leading to arrests, disrupted poaching attempts, and stronger cases. Some gaps remain, but most objectives were achieved.	Success was driven by strong teamwork, multi-agency cooperation, and effective sentencing, which helped protect most rhinos. However, limited budgets and technology slowed investigations.	More funding and better tools are needed in and around the rhino reserves, with reliable databases (*e.g.* need to update prices paid along the supply chain for trends).
Interagency and International Cooperation - enhance collaboration between government agencies and cross-border stakeholders, vital for tackling wildlife crime that often spans multiple countries.	Strengthening cooperation and coordination among the institutions and international organizations in the fight against poaching and wildlife trafficking.	Cooperation efforts were successful, with many officials trained and stronger international partnerships formed to share intelligence.	Success was supported by training and stronger supervision at key entry points, but a lack of equipment at borders limits monitoring and weakens cross-border cooperation.	Share best practices from African and Asian States. Support community engagement through shared learning. Strengthen inspection posts by exchanging knowledge and technical solutions.
Policy and Strategic Planning - updates to national biodiversity strategies and action plans, aligning conservation goals with international standards and promoting a unified approach for anti-trafficking efforts.	Update and implement strategies to strengthen law enforcement, improve coordination, implement activities in accordance with agreed unified approaches and reduce wildlife trafficking through better detection, prevention, and cooperation.	Policy and strategic planning efforts were successful, with updated biodiversity goals, strong coordination across sectors, and national plans to address wildlife trafficking being implemented.	Success was supported by strong collaboration across sectors and validation at international levels, with coordinated implementation led by key national committees.	Continued alignment and clear reporting across all involved departments within a country are needed and sharing rhino management plans to learn best practices.
Use of Technology - deploying advanced tools such as DNA analysis surveillance technologies to support enforcement and monitoring.	DNA comparison of rhino horn recovered from suspects and the carcass of the rhino poached.	DNA Technology was used successfully to trace rhino horn seizures and link them to poaching, helping build strong legal cases.	DNA analyses provided positive results that supported investigations and prosecutions.	Share technological advancements e.g., DNA analysis, biobanks, acceptable polygraphs and CCTV, data analysis etc.
Strengthening Border Security	Enforce zero tolerance for wildlife crime, and training border staff to recognize illegal wildlife specimens.	Reduced trafficking by training staff to identify wildlife specimens and gathering strong intelligence on poacher networks.	Success came from strong teamwork and trained staff, but some enforcement was weak and at times canine units were less effective.	Better oversight and investment in reliable detection tools are needed as well as online education, awareness, training *e.g.*, in identifying rhino specimens.

Annexure 7. Rhino conservation management

Information collected by the IUCN SSC AfRSG indicate key developing challenges and opportunities linked to a complex and evolving landscape, shaped by a mix of ecological, genetic, political, and societal dimensions in Africa. One of the most promising developments is the rewilding of rhinos, particularly the opportunity presented by the purchase of Platinum Rhino, a privately owned rhino population comprising over 2000 Southern white rhinos by African Parks. The Rewild Rhino[187] initiative seeks to restore most of these rhinos into free-ranging conditions, although several challenges arise as aspirations often focus on areas beyond the contemporary range of the subspecies.

Further, the role of captive rhinos—especially the genetically valuable Eastern black rhinos held in zoos[188]—cannot be overlooked. These animals could be key in future rewilding initiatives if their genetic lines are integrated into wild populations with care to avoid inbreeding and ensure ecological adaptability. However, there is still considerable debate around the ethics and efficacy of zoo-to-wild transitions[189].

Climate change introduces a second layer of challenge. Rising temperatures, shifting vegetation zones, and altered rainfall patterns[190] demand new thinking in habitat selection and connectivity. Fragmented rhino habitats are becoming more isolated and vulnerable, shaped by an increasing number of humans to feed and with quickly spreading human land use and security needs. Adaptive management approaches that account for climatic variability are essential to keep pace with environmental changes. Fragmentation is not just ecological—it also restricts gene flow, making small populations more genetically vulnerable. The need for management strategies that assist rhinos persisting in fragmented landscapes (including biobanks as a back-up storage for genetic diversity while we transition difficult times) is therefore more pressing than ever.

An additional element is that climate change may create habitats suitable for rhinos in places beyond their natural range. Responses may require introduction of rhinos as novel elements in some places that may challenge conventual policies and ecological thinking.

Security and anti-poaching efforts remain core to the success of any conservation initiative. As such, many suitable habitats may not be available to rhinos, simply because those habitats are not safe from security risks. Strategies must evolve from reactive to proactive, using approaches such as real-time surveillance, data analytics, and community-led patrols and community support to protect vulnerable rhino populations.

Despite challenges, opportunities abound. Rewilding rhinos, improving ecological corridors, advancing biological management and climate-resilient habitat planning are all within reach if guided by collaborative governance and evidence-based policy. Rhino conservation is entering a new phase—one that requires not only biological insight but also an adaptive, interdisciplinary mindset capable of responding to a rapidly changing world. This requires embracing co-development, co-responsibility and co-implementation with indigenous people and local communities.

A key development was the African Rhino Conservation Framework[191]. Moving beyond traditional methods that focused mostly on protection and population growth, the new 2025–2035 Framework embraces a people-centred, rights-based approach. It recognizes that successful conservation must balance ecological goals with human needs. This shift includes involving Indigenous Peoples and Local Communities (IPLCs) in decision-making and ensuring they benefit from rhino conservation. The framework also expands its focus to tackle organised crime, influence rhino horn markets, and promote diverse values for rhinos within society. Conservation is no longer seen as a “war to win,” but as an ongoing “infinite game” requiring cooperation, adaptability, and mutual respect, tact and understanding. Ultimately, the vision is one of thriving rhinos and thriving communities—intertwined in a shared African heritage.

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