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Accounting for rhinos – the case of South African national parks (SANParks)

Barry Ackers

Abstract

Purpose – Biodiversity is required to sustain life on earth, but the rampant growth in the illegal wildlife trade has created a global conservation challenge, where the African continent is one of the primary casualties. This paper aims to explore how South African national parks (SANParks) (as the custodian of the largest population of rhinos in the wild) accounts to its stakeholders about how it has discharged its biodiversity mandate relating to rhino preservation.

Design/methodology/approach – The paper seeks to determine whether the increase in rhino-poaching over the period from 2006 to 2015 is reflected by a concomitant increase in related disclosures in SANParks' annual reports. It adopts a mixed-methods research approach using both descriptive and inferential statistics, as well as a qualitative analysis of pertinent narrative disclosures describing how SANParks accounts to its stakeholders on the discharge of the rhino-related component of its biodiversity mandate.

Findings – The study finds that SANParks uses its publicly available annual reports to disclose how it has discharged the rhino-related component of its biodiversity mandate. In this regard, it identified a strong positive correlation between incidents of rhino-poaching and annual report disclosures in the period up to 2010. Initially, SANParks disclosed its rhino-poaching-related performance through impression management to bolster its legitimacy, but later focused its reporting on its rhino conservation efforts.

Originality/value – Although the subject of rhino-poaching has been extensively researched, this one of the first papers to explore the phenomenon from a governance and accountability perspective of a state-owned entity (SANParks) under the mantle of extinction accounting.

Keywords Accountability, Biodiversity, Annual reports, Disclosure, Rhino-poaching, SANParks

Paper type Research paper

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The only way to save a rhinoceros is to save the environment in which it lives, because there's a mutual dependency between it and millions of other species of both animals and plants (Sir David Attenborough[1]).

1. Introduction

Traditionally, accounting research has tended to focus on the disclosure of financial information. Even though the numbers remain the essence of accountancy, more recently, the scope has expanded to include issues relating to the broader aspects of governance as well. Contemporary society now expects organisations to report on their non-financial performance to their broader stakeholders as well. In this regard, corporate social responsibility reporting (i.e. the ubiquitous triple bottom line) and more recently, integrated reporting, are rapidly becoming part of the accounting discourse, with extinction accounting emerging as one of the newest areas for accounting research.

The Brundtland Commission defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Ackers, 2009, p. 4). Within the context of this paper, biodiversity accountability

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addresses the interrelated components of sustainable development, which include environmental protection, economic growth and social equity and “the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development” as espoused by Brundtland (Ackers, 2009, p. 4). Despite general acknowledgement that the effective utilisation of biological diversity is a precondition for sustainable development, biodiversity is increasingly threatened by the impact of human activities, such as industrialisation, urbanisation, deforestation, population growth and illicit wildlife crime. Environmental governance and accountability involves the rules, laws, regulations, policies and social norms that guide the use and/or protection of environmental resources by organisations. Extinction accounting assists to articulate the link between biodiversity preservation and organisational accountability.

The past decade has witnessed an explosion of the illegal trade in wildlife species and products, creating an urgent global conservation challenge. End-user consumers’ desire illegally traded wildlife products for a diverse range of uses such as for food, fuel, construction materials, medicines, ornaments, pets, cultural objects, and high-value gifts or investments (Phelps *et al.*, 2016). The illegal wildlife trade involves the harvesting, trading and use of a wide range of flora, fauna and fungi (Cooney *et al.*, 2016), including the trade in both live specimens and wildlife products needed or valued by consumers. While some of the most profitable species illegally traded include iconic animals such as rhinoceros (hereinafter referred to as rhinos), elephants, tigers and even fish, in South Africa, rhinos have been especially hard hit by these developments (NABU International Foundation for Nature, 2016). It is suggested that global poaching activities and the illicit wildlife trade, estimated to be worth US\$5-20bn per annum, may pose the single most serious immediate threat to biodiversity (Truong *et al.*, 2016, p. 354). This risk is even greater than habitat loss, climate change and environmental degradation (Truong *et al.*, 2016).

Biodiversity represents the most significant natural resource, *inter alia* including providing a source of food, medicines, clothes, energy, building material, clean air, clean water, psychological well-being (UNEP, 2008). Although the effective utilisation of biological diversity (biodiversity) may be considered to be a precondition for sustainable development, anthropogenic activities (Vačkář *et al.*, 2012) are being increasingly attributed to a primary cause of global biodiversity reduction (UNEP, 2008). Environmental governance involves the rules, laws, regulations, policies and social norms used by organisations involved in the use and/or protection of environmental resources (Novellie *et al.*, 2016).

Representing the global south and constituting a significant proportion of the underdeveloped world (Kutor, 2014), the African continent is a major casualty of the scourge of the illicit wildlife trade. Even though the illegal trade in wildlife products covers a wide range of species, the primary focus of this paper is on the rhino-poaching and conservation phenomena in South Africa. Despite rhinos not being the most threatened South African species, the recent scourge of rhino-poaching has highlighted the devastating impact of the illicit wildlife trade.

Over the past decade, reported incidents of rhino-poaching in Africa has grown exponentially from only 60 animals in 2006 to 1,342 by 2015 (Emslie *et al.*, 2016, p. 2). This represents a cumulative increase of 2,236 per cent over the 10-year period, or a simplistic annual average of 224 per cent. Despite the extent of this problem, a closer scrutiny of the affected African countries reveals that the impact on the South African rhino population has been even more problematic. The present decimation of the South African rhino population is illustrated through the poaching of 36 rhinos in 2006, compared to 1,175 rhinos in 2015 (Emslie *et al.*, 2016, p. 2), representing a cumulative increase of 3,264 per cent, or a simplistic average of 326 per cent per annum.

Confirming the assertion attributed to Sir David Attenborough quoted at the beginning of this paper, one of the primary mechanisms used around the world to combat wildlife crime

is the proclamation of protected areas, which now cover a total of 13 per cent of the Earth's land mass (Le Saout *et al.*, 2013, p. 803). The International Union for Conservation of Nature (IUCN) identifies six different categories of protected areas. Access to these areas fall along a continuum ranging from strictly controlling and limiting human visitation, use and impacts, to low-level non-industrial use of natural resources that are compatible with nature conservation (IUCN, sa). Within the scope of this paper, Category II: National Parks may be defined as being large natural or near natural areas specifically set aside to protect large-scale ecological processes, integrating the species and ecosystems representative of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities (IUCN, sa).

Responding to the ongoing decimation of rhinos, over the past decade, many scholars have extensively researched various components of rhino conservation and poaching. Accepting society's concerns about anthropogenically induced species extinction, this paper acknowledges that the multidisciplinary nature of biodiversity preservation extends beyond the traditional domain of the natural sciences and conservation, where this phenomenon is typically studied. Instead, this paper examines the interventions deployed by the South African national parks (SANParks) to account to their stakeholders about the extent to which they discharge their biodiversity mandate.

Given that the South African Government is accountable to its stakeholders, including its citizens, residents and visitors, public entities too must account to the same stakeholders about how they have discharged their primary responsibilities as required by their respective mandates. Moreover, as a public entity, SANParks is obliged to comply with the provisions of the Public Finance Management Act (PFMA) (Act no. 1 of 1999, as amended by Act 29 of 1999) and its associated treasury regulations. In this regard, Treasury Regulation 28.2 relating to Section 55(10(d)(i) of the PFMA specifically requires all public entities to *inter alia* disclose any material losses through criminal conduct, as well as their actual performance against their strategic objectives and outcomes in their annual reports. The study specifically examines the extent to which SANParks reflects the literal explosion of rhino-poaching in South Africa in their annual reports over the 10-year period from 2006 to 2015. The purpose of this paper is to understand whether and how SANParks publicly accounts to its broader stakeholders on its performance in respect of the manner in which they discharge their biodiversity mandate within the context of rhino conservation and poaching. This interdisciplinary paper accordingly investigates the rhino-poaching and conservation phenomenon within the context of biodiversity preservation and public sector accountability. Examining the rhino-poaching phenomenon within the specific context of SANParks' obligation to publicly account to its stakeholders on how it manages its biodiversity mandate to protect species threatened with extinction, it contributes to the accountability discourse of state-owned agencies.

The remainder of the paper continues with the literature review, which not only provides pertinent contextual information but also integrates the disparate topics of rhino conservation and accountability relevant to this study. Thereafter, the research design that identifies the research objectives, approach, population and methods adopted is described. Finally, the paper describes and interprets the results of the empirical study within the context of the public sector accountability framework described in the literature review, before concluding with a few pertinent observations.

2. Literature review

2.1 Introduction to African and South African rhino populations and poaching

Palaeontologists estimate that rhinos are one of the world's oldest species, having first evolved around 50 million years ago (NABU International Foundation for Nature, 2016, p. 3), with the modern rhino species emerging around 15 million years ago (WILDAID, 2015).

Rhinos are part of the iconic “Big Five” animals that tourists want to see when visiting game/nature reserves and farms. At the beginning of the twentieth century, it was estimated that around 500,000 rhinos roamed across Africa and Asia (NABU International Foundation for Nature, 2016, p. 3). Today, only five rhino species still exist; three species representing an estimated cumulative total of 3,403 animals located in Asia (Emslie *et al.*, 2016, p. 14) and two species totalling 25,628 animals in Africa (Emslie *et al.*, 2016, p. 1). European colonisation of Africa resulted in several large mammalian species being hunted to the brink of extinction. Amongst these near extinct species, in South Africa, only 110 black rhinos remained in game reserves by the 1930s and only 20 white rhinos in the Hluhluwe uMfolozi Game Reserve (South Africa, 2013, p. 9).

As reflected in Table I, South Africa’s white rhinos represent 90.4 per cent of Africa’s threatened white rhino population (*Ceratotherium simum simum*), with South Africa’s black rhinos representing 36.1 per cent of Africa’s critically endangered black rhinos (*Diceros bicornis*) (Emslie *et al.*, 2016, pp. 1-2). South Africa’s rhino populations are located on both state-owned and privately owned reserves (Lee and du Preez, 2016). Presently, around 5,100 of South Africa’s rhinos live on privately owned reserves (4,600 white and 500 black rhinos), with the remaining 15,200 being located on state-owned reserves (Lee and du Preez, 2016, p. 106). Assisted by conservation non-governmental organisations (NGOs) such as the Endangered Wildlife Trust and World Wildlife Fund, rhino owners in both the private and public sectors cooperate and collaborate to combat rhino-poaching (Lindsey *et al.*, 2009).

The exponential growth in the extent of rhino-poaching in South Africa is clearly illustrated by Table II and Figure 1, which reveal that while one rhino was poached every 240 h in 2006, by 2015, this had accelerated to one rhino every 7.5 h. Despite this high incidence in rhino-poaching, it is suggested that this situation may not be irreversible. Evidence has shown that introducing costly conservation measures had previously rescued South Africa’s white rhino population from near extinction at the beginning of the nineteenth century to recover to around 18,800 animals by 2012 (Lee and du Preez, 2016, pp. 107-108). Therefore, even though the present scale of the rhino-poaching phenomenon is unprecedented, and is strongly influenced by rhino horn products being perceived as a status symbol and an indicator of affluence amongst a rapidly growing middle class, primarily within Vietnam and China, history has shown that it is possible to contain the scourge. However, the provision of a sustainable effective solution must involve

Table I African rhino population and poached African rhinos – 2015

Poaching region	White rhinos	Black rhinos	Total rhinos	Poached rhinos	Poached rhinos as a percentage of total rhino population
South Africa	18,413	1,893	20,306	1,175	5.8
Other African countries	1,965	3,357	5,322	167	3.1
Total	20,378	5,250	25,628	1,342	5.2

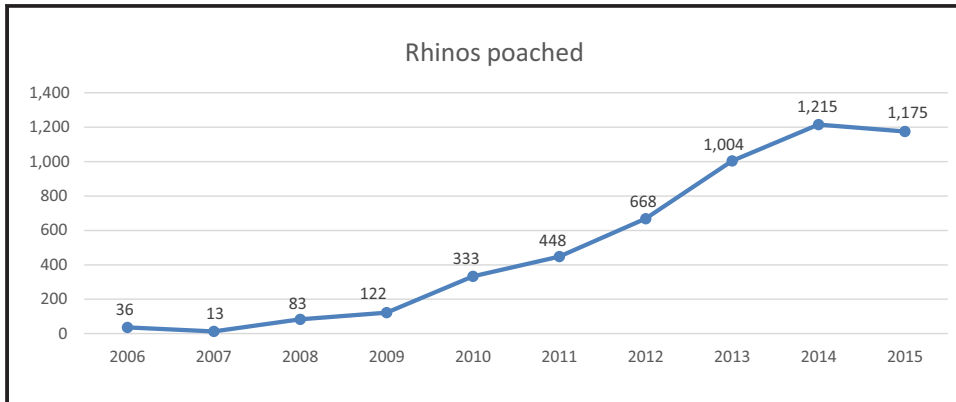
Source: Adapted from Emslie *et al.* (2016, pp. 1-2)

Table II Poached rhinos in South Africa

Poaching statistic	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Rhinos poached	36	13	83	122	333	448	668	1,004	1,215	1,175
Poached per day	0.10	0.04	0.23	0.33	0.91	1.23	1.83	2.75	3.33	3.22

Source: Adapted from Emslie *et al.* (2016, p. 2)

Figure 1 Growth in incidents of rhino-poaching in South Africa from 2006 to 2015



interventions that require both offensive and defensive mitigation strategies aimed at containing rhino-poaching.

2.2 Factors driving rhino-poaching

Researchers continue to offer various reasons for the recent increase in rhino-poaching activity. First, the demand for rhino horn, primarily from China, Vietnam and Thailand, is mainly driven by misconceptions around its medicinal benefits and by an increasingly affluent segment in their societies to ostentatiously display their wealth and status (Conrad, 2012; Lee and du Preez, 2016). Second, the paradox that the CITES ban on the international trade in rhino horn has actually stimulated a growing black market (Conrad, 2012; Lee and du Preez, 2016). Third, the absence of clearly defined property rights impedes conservation efforts (Lee and du Preez, 2016). Fourth, the potential for rhino-human conflict adds to their sustainability costs (Lee and du Preez, 2016). Fifth, the poor rate of conviction of offenders along the rhino-poaching value chain exacerbates corruption in the legal system (Lee and du Preez, 2016). Other factors that influence the illicit wildlife trade, and accordingly the demand for rhino horn, include China's economic expansion into Africa; rapid economic growth in both China and Vietnam over the past 15 years; corrupt officials across the rhino horn value chain; weak laws relating to wildlife crimes; poor enforcement of related legislation and regulations; lack of political and diplomatic will on an international level; and an obsessive-compulsive need for status and luxury goods amongst Asian nations (IRC, 2014, p. 19). The International Rhino Coalition (IRC) (IRC, 2014, p. 17) provides a Wildlife Crime Scorecard that graphically identifies the primary countries involved in the illicit trade in rhino horn (as well as elephant and tiger products), depicted as countries of origin, transit or destination. It identifies South Africa as a "source" country for rhino horn that fails on "key aspects of compliance or enforcement" and clearly identifies Thailand, China and Vietnam as being the primary destination countries.

Collectively, these demand factors contribute to the cost of conservation efforts aimed at protecting the rhino becoming prohibitively expensive, especially for private nature reserves that do not receive financial and related support from the South Africa Government. With the exorbitant cost of anti-poaching activities aimed at protecting rhinos often exceeding the financial benefits that may accrue from ecotourism, it may no longer be economically viable for private landowners to maintain their rhino populations (Lee and du Preez, 2016). The high cost of anti-poaching interventions and the difficulties involved in patrolling vast tracts of land has even forced SANParks' Kruger National Park (KNP) to relocate some of its rhinos to secret, smaller locations around Southern Africa to protect its rhino populations (Lee and du Preez, 2016).

Rhino horns are made of keratin, a fibrous protein and structural material also found in human skin, fingernails, bird beaks and porcupine quills (NABU International Foundation for Nature, 2016, p. 3). The illicit nature of the illegal trade in rhino horn implies that it is difficult to precisely value the illegal trade in rhino horn and associated products. It is nevertheless important to note that rhino horn is presently amongst the most expensive goods in the world, with an estimated value of US\$25,000-120,000 per kilogram (Hübschle, 2016, p. 193). Nevertheless, the value of the illicit rhino horn trade is estimated to be worth around US\$20bn per annum (Truong *et al.*, 2016, p. 354).

Shepherd *et al.* (2017, p. 2) found that rhino horn could sell for as much as US\$224,360 per kilogram, when sold in small quantities. As the average weight of a pair of rhino horns is 5.5 kg (Hübschle, 2016, p. 193), the horns of the average rhino could be worth around US \$137,500-1,233,980 or more. By comparison, in 2016, the average price^[2] of purchasing a live rhino at a South African auction was only US\$33,840^[3]. In addition, it is estimated that sustaining the anti-poaching interventions that are necessary to preserve rhinos is US\$53-151m per annum (South Africa, 2017, p. 7). From a purely economic perspective, the dilemma facing the parties that are involved in rhino conservation is whether it is possible to protect rhinos when they are worth far more dead than alive, especially when taking account of the high costs of anti-poaching measures.

2.3 Protected areas

The quotation at the beginning of this paper, attributed to Sir David Attenborough, clearly posits that best way to preserve any threatened species is through the proclamation and development protected areas. Within this context, the IUCN defines a protected area as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”. It expands protected areas into the following six management categories: strict nature reserves and wilderness areas, national parks, natural monuments or features, habitat or species management areas, protected landscape or seascape and protected areas with sustainable use of natural resources. The establishment of protected areas is acknowledged as one of the more effective tools to preserve biodiversity and to conserve endangered species (Worboys *et al.*, 2015, p. 21). Well-managed protected areas are capable of effectively protecting individual species, biodiversity and ecosystem services (Worboys *et al.*, 2015, p. 21). Protected areas are usually publicly owned and managed and can range in size from a few square kilometres to thousands of square kilometres (Prato and Fagre, 2015). The protection provided to protected areas is influenced by several factors such as adequate funding, diligent law enforcement, effective management practices and citizenry support (Prato and Fagre, 2015).

The IUCN is the world’s largest and most diverse environmental network, consisting of 1,300 member organisations representing both government and civil society organisations^[4]. Established in 1948, the IUCN provides public organizations, private organizations and NGOs with the necessary knowledge and tools to ensure the simultaneous coexistence of human progress, economic development and nature conservation. By 2014, there were over 209,000 designated protected areas representing 15.4 per cent of the world’s terrestrial area (excluding Antarctica) and 3.4 per cent of the total marine area (Worboys *et al.*, 2015, p. 21). Despite the successful establishment of these protected areas, concerns remain that this may be insufficient to meaningfully conserve the Earth’s threatened species. The world’s nations have accordingly agreed to establish additional protected areas, targeting at least 17 per cent of terrestrial areas and 10 per cent of coastal and marine areas by 2020 (Worboys *et al.*, 2015, p. 21).

The management objectives applicable to protected areas include conserving the composition, structure, function and evolutionary potential of biodiversity; contributing to

regional conservation strategies; maintaining diversity in landscape, habitat and of associated species and ecosystems; being large enough to ensure the integrity and long-term maintenance of the specified conservation targets; maintaining the assigned values for into perpetuity; operating under the guidance of a management plan and a monitoring and evaluation programme that supports adaptive management; and possessing a clear and equitable governance system (Worboys *et al.*, 2015, p. 17).

Proclaiming protected areas represents one of the conservation interventions that can assist in biodiversity preservation. In addition to facilitating vital ecosystem services, it is estimated that protected areas generate US\$600bn a year in direct in-country expenditure and US \$250bn a year in consumer surplus, from only US\$8bn being spent thereon. It is accordingly posited that some of these funds should be reinvested to maintain protected areas (NABU International Foundation for Nature, 2016). However, even though the proclamation of protected areas provides a platform to secure ecosystem services, create employment opportunities and generates income (Pullin *et al.*, 2013), the risk emerges that it may simultaneously alter resource use-rights and displace communities (West *et al.*, 2006). Conservationists therefore acknowledge that even though these interventions should assist in biodiversity preservation, it should contemporaneously not be to the detriment of people while also contributing to improving human wellbeing (Campagna and Fernandez, 2007). Robust and comprehensive monitoring and evaluation tools should therefore be implemented to control possible adverse social impacts. It is accordingly considered essential to ensure greater transparency and accountability, improve learning and support the effective allocation of scarce conservation resources (Grantham *et al.*, 2009).

The declaration, regulation and preservation of protected areas in South Africa is controlled through the National Environmental Management: Protected Areas Act, no. 57 of 2003, which replaced the National Parks Act of 1976 (South Africa, 2003). While the repealed Act was confined to national parks, the new Act also applies to other categories of protected areas (Novellie *et al.*, 2016).

2.4 South African national parks

SANParks is a public entity established in terms of the National Environmental Management: Protected Areas Act 57 of 2003 to conserve, protect, control and manage national parks and other defined protected areas and their biodiversity (South Africa, 2003). The SANParks mission is to develop, expand, manage and promote a system of sustainable national parks representing South Africa's biodiversity and heritage assets through innovation and best practice for the just and equitable benefit of current and future generations. SANParks is acknowledged as the leading conservation agency in South Africa, with a primary mandate to conserve biodiversity and maintain heritage assets, for the benefit of broader society (Foxcroft *et al.*, 2017). The SANParks mandate includes the conservation of functional indigenous South African ecosystems that are closely associated with South Africa's cultural heritage and history (Foxcroft *et al.*, 2017). SANParks delivers on its mandate by managing 21 national parks throughout the country (SANParks, 2015). Cumulatively, these parks comprise more than four million hectares, or 3 per cent of South Africa's total land area (Novellie *et al.*, 2016, p. 41).

Benign tourism, commonly referred to as ecotourism, is one way to generate revenue that contributes to funding conservation efforts. Ecotourism primarily involves the non-consumptive use of wildlife, such as game viewing activities and photographic excursions. One of the primary benefits of ecotourism is to generate benefits at the local level, which assists in uplifting local communities, for example, by generating foreign exchange inflows that can provide income which is required to capitalise its biodiversity and conservation efforts (Lee and du Preez, 2016, p. 107). One of the key reasons why tourists visit South Africa is ecotourism, with tourists wanting to see the Big 5 (lion, buffalo, rhino, elephant and leopard) (IRC, 2014, p. 78). The KNP is the largest of the SANParks (Botha *et al.*, 2016, p. 75)

and attracts over 1.4 million visitors a year, making it one of the country's top five tourism destinations (Kruger *et al.*, 2017, p. 318). Despite being a state-owned entity, the operational activities of SANParks generate the bulk of the funds needed to fund its conservation efforts, augmented by significant government funding and donor funds raised. About 80 per cent of the revenue of SANParks is generated by the KNP (Kruger *et al.*, 2017, p. 318). The KNP is not only home to the world's largest population of rhinos but also an area that bears the brunt of the rhino-poaching onslaught (IRC, 2014, p. 78).

2.5 Public sector governance

Around the world, the public sector uses limited resources to provide public goods and services required by stakeholders (Bolden *et al.*, 2008). The public sector should therefore perform optimally to ensure that it provides the best results by effectively leveraging these limited resources in a cost-effective and efficient manner (Raaum and Morgan, 2009). Traditionally, an organisation's annual financial statements were the primary tool used to measure performance (Rupsys, 2007). The National Treasury of South Africa released the *Framework for Managing Programme Performance Information* to manage public sector performance that *inter alia* requires the reporting of appropriate performance indicators and measures (South Africa, 2007). The disclosure of performance information should therefore provide relevant details about the extent to which predetermined objectives have been achieved. It does not, however, replace the need for annual financial statements, but should complement information provided therein (South Africa, 2007). While Joseph and Taplin (2012) examined the impact of voluntary corporate social responsibility disclosures, following the adoption of Local Agenda 21, which arose from the Agenda 21, signed at the Rio de Janeiro Earth Summit in 1992, this study considers the specific mandated responsibilities of a public sector organisation.

Corporate reporting practices are driven by two primary motivations (Dobbs and van Staden, 2016). The first, relates to the obligation of the organisation to account to its stakeholders about how it has used the resources entrusted to it to discharge its mandated responsibilities, i.e. the accountability dimension. The second, more cynically, considers corporate reporting to be a public relations exercise, aimed at managing stakeholder perceptions and enhancing organisational legitimacy. Within this context, impression management attempts to positively influence stakeholder perceptions relating to organisational performance (Ackers and Eccles, 2015). Stakeholders do not only perceive legitimate organisations as being more worthy but also more meaningful, more predictable and more trustworthy (Suchman, 1995).

As public sector funding is obtained from a country's taxpayers, it is obliged to account to the citizens about how these funds have been used to achieve their predetermined objectives (Le Roux *et al.*, 2007). The PFMA requires public sector organisations to account to parliament, and thereby to the citizenry, about how transparently they have managed the revenue, expenditure assets and liabilities of the affected organisations (South Africa, 1999). Performance management relates to the interrelated processes of planning, monitoring, measurement, review and reporting (Maluleke, 2012). The public sector accordingly uses performance management as a tool to optimally provide public goods and services by effectively, efficiently and economically deploying the limited available resources (Blackman *et al.*, 2012).

Performance management in the South African public sector is required by the PFMA (South Africa, 1999). Section 27(4) of the PFMA specifically requires public entities to submit their measurable objectives against which their performance will be assessed, together with the draft budget, to parliament for approval. Section 40(1)(d) of the PFMA requires the accounting officers of public entities to submit annual reports which include the AFS to the executive authority. These reports must be audited by the Auditor-General of South Africa (AGSA), with the resultant audit report being incorporated into the final annual

report submitted to parliament [PFMA, 1999, S40 (1)(d)]. In addition, the annual report must also disclose the extent to which predetermined objectives have been achieved [PFMA, 1999, S 40(3)(a)]. The annual report may therefore be considered as the primary tool used by the public sector to disclose how they have discharged their respective mandates to their stakeholders, using the financial and other resources entrusted to them. The level of use of inputs, performance of process activities and the achievement of outputs, outcomes and impacts should therefore be measured and reported to determine whether the planned level of performance has been achieved (South Africa, 2007).

Legislation and regulations oblige SANParks to account to its principals and accordingly its broader stakeholders about how it has discharged its biodiversity mandate. Within this context, the scope of this paper specifically examines the public disclosures of SANParks in respect of the interrelated dimensions of rhino-poaching and conservation. This paper therefore explores the extent to which SANParks accounts to their stakeholders about their stewardship over the rhino populations entrusted to them. Against the backdrop of its mandated responsibilities, and within the context of the legislative and regulatory reporting requirements for the South African public sector, the study seeks to understand the extent to which SANParks use publicly available reports to disclose the nature and extent of the rhino-poaching phenomenon which has impacted the operations within the protected areas under their control and accordingly the anti-poaching measures they have implemented to counter this scourge.

2.6 Supreme audit institution

Chapter 9 of the Constitution of the Republic of South Africa establishes the AAGSA as the supreme audit institution of South Africa (South Africa, 1999). As such, it is the only institution that has a legal obligation to audit and report on how the government is spending the monies entrusted to it by South African taxpayers. Its constitutional mandate requires the AGSA to use auditing to build public confidence and strengthen South Africa's democracy by enabling oversight, accountability and governance in the public sector. The AGSA derives its specific mandate from the Public Audit Act (PAA), Act no. 25 of 2004 (South Africa, 2004), which requires the AGSA to audit all government departments, public entities, municipalities and public institutions.

Unlike registered auditors in the private sector whose primary responsibilities involve performing audits on annual financial statements, which in terms of section 30(2) of the Companies Act are mandatory for certain types of companies (South Africa, 2008, 2006), the AGSA must not only audit and report on the fair presentation of the annual financial statements but also report on the quality of the public entity's financial management. Moreover, Sections 40(3)(a), 51(1)(a) and 61(1)(b) of the PFMA (South Africa, 1999) and Section 18.3.1 of the Treasury Regulations (South Africa, 2005) specifically require the AGSA to audit the performance information of public entities as well (South Africa, 1999, 2004). Furthermore, the PAA imposes a duty on the AGSA to do so in a manner that allows the legislature to hold the relevant cabinet ministers to account about how they have dealt with monies that have been entrusted to their respective ministries and departments (South Africa, 2004). Public entities therefore do not only have to disclose the manner in which they have used the funds entrusted to them to discharge their mandated responsibilities but also have to ensure that these non-financial disclosures are also audited.

2.7 Integrating biodiversity preservation and public sector governance

The first part of the literature review described above provides a clear overview of the dilemma facing global anti-rhino-poaching and conservation efforts, specifically within a South African context. It describes the important role that protected areas play in biodiversity conservation and identifies SANParks, and the KNP in particular, as the location

of the world's largest populations of rhinos in the wild. The second part of the literature review introduces public sector accountability and describes the framework that public sector organisations should use to account to their stakeholders about how they have discharged their legislator and regulatory mandates. To summarise, the paper identifies the scourge of rhino-poaching as a major challenge to the ability of SANParks, as the custodian of the world's largest population of rhinos in the wild, to effectively discharge its biodiversity preservation mandate. As a public sector organisation, South African legislation and regulations oblige SANParks to account to its stakeholders about how it has performed relative to its predetermined objectives. The literature review accordingly not only provides important context for the paper but also provides the theoretical basis against which the empirical results of the study are evaluated.

3. Research approach and method

In recent times, the interrelated phenomena of rhino-poaching and accordingly rhino conservation have been extensively researched, primarily by scholars in the natural sciences. However, as the relationship between the rhino-poaching phenomenon and public sector accountability appears to have been under-researched, this paper adopts an exploratory approach (Sekaran and Bougie, 2010) to establish whether the exponential increase in rhino-poaching is mirrored by a concomitant increase in the extent to which SANParks has disclosed the impact of rhino-poaching on the protected areas under its control. As the custodian of the largest population of rhinos in the wild, this paper uses SANParks as a case study to understand how it accounts to stakeholders about the manner in which it has discharged its biodiversity mandate, with specific reference to rhino conservation. The study introduces an exploratory mixed-methods research approach, pragmatically using a combination of both qualitative and quantitative methods (Goldkuhl, 2012; Joseph and Taplin, 2012; Onwuegbuzie and Leech, 2005). This exploratory study aims to improve the understanding of the emerging CSR assurance phenomena, rather than to collect detailed, precise and replicable data that may be used to accurately predict the phenomena across the entire population (Babbie and Mouton, 2011). While qualitative research involves inductive reasoning, quantitative research relies on deductive reasoning. The reasoning in mixed-methods research, however, relies on an appropriate combination of induction and/or deduction determined by the specific research questions (Morse *et al.*, 2006). In this regard, pragmatism requires researchers to retain sufficient flexibility to accommodate multiple epistemological perspectives (Leech *et al.*, 2010).

As such, this paper represents one of the first studies to explore the rhino-poaching and conservation phenomena from a public sector accountability perspective. Moreover, as SANParks is the public entity entrusted with the preservation of biodiversity, a secondary objective is to explore and understand the conservation interventions that SANParks have deployed to counter rhino-poaching. Given the increase in rhino-poaching and within the context of the SANParks biodiversity mandate, a further objective seeks to understand whether the impact of rhino-poaching is considered sufficiently material to be included in the scope of the AGSA's annual regularity audit, that covers SANParks' performance information.

As this paper seeks to explore and understand the interrelated phenomena of rhino-poaching and rhino conservation from an accountability perspective, and not to make definitive predictions that apply to the entire population, this paper appropriately adopts an interpretative mixed-methods research paradigm. Aligned to its biodiversity preservation mandate, and given the requirement for South African public entities to disclose their performance in terms of their respective mandates, the units of analysis cover the annual reports published by SANParks over a purposively selected over the 10-year period from 2006 to 2015. The study period coincides with the rampant growth in rhino-poaching from 36 in 2006 to peaking at 1,215 in 2014, before marginally declining to 1,175 in 2015.

The study initially uses Atlas.ti software to analyse the data contained in the annual reports of SANParks to understand whether the increase in rhino-poaching activity in South Africa has influenced the extent to which rhino-poaching and anti-poaching activities were disclosed over the same period. The empirical component is divided into four parts, with the findings of each reported on separately. To understand whether the increase in rhino-poaching over the 10-year period covered by the study is mirrored by a concomitant increase in the extent to which rhino-poaching and conservation activity are disclosed, the first part involves a word count of selected key words contained in the annual reports that relate to rhino-poaching and conservation. To understand the relationships between rhino-poaching and rhino disclosures, the second part uses inferential statistics to determine whether there was a correlation between the increased incidents of rhino-poaching and the extent to which SANParks has disclosed this phenomenon. In this regard, to establish the existence and strength of the relationships between rhinos poached (as the dependent variable), and key words used by SANParks to disclose rhino-poaching over the same period, the study uses both Kendall's tau-b and Spearman's (rho) rank correlation coefficient non-parametric rank correlations. The correlation coefficients are calculated in two sections – the first analyses the data for the full 10-year period; the second segments the data into two distinct populations based on the word count observations. Even though the relatively few observations implies that the resultant correlations are not statistically significant, it does nevertheless contribute to confirming the robustness of the study.

The third part qualitatively examines the specific performance information disclosures in the annual reports to understand how SANParks uses its annual reports to account to its stakeholders about the manner in which it discharges its biodiversity mandate, with a specific focus on rhino-poaching and conservation. Finally, as the Auditor-General has an expanded mandate to audit performance information, the fourth part scrutinises the audit reports published in the annual reports to establish the extent to which the SANParks performance information disclosures were reliable and specifically whether the auditors considered the rhino-poaching problem to be sufficiently material to warrant a special mention.

4. Empirical findings

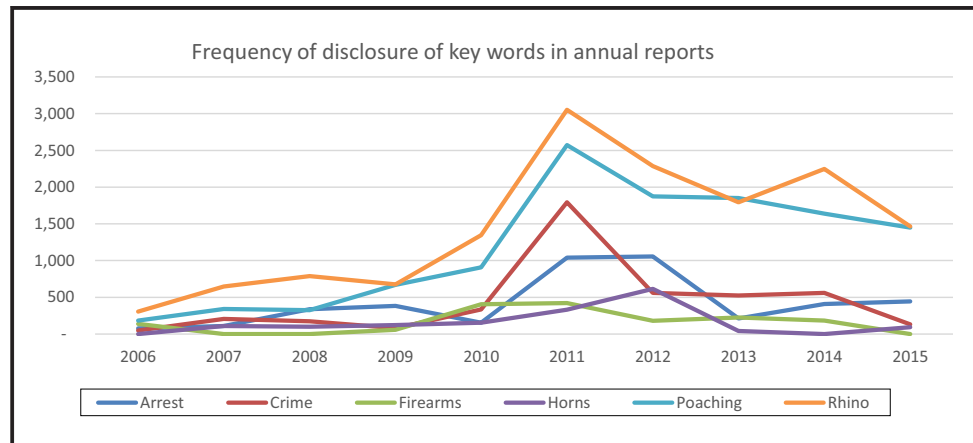
4.1 Annual report key word count from 2006 to 2015

As stated in Section 3, Atlas.ti software was used to analyse the words contained in all the annual reports on SANParks for the years ending 2006 and 2015. These words were analysed and grouped to identify key themes relating to the phenomena of rhino-poaching and conservation covered by this paper. As reflected in [Table III](#) and [Figure 2](#), these identified key words were grouped into themes covering arrest, crime, firearms, horns, poaching and rhino. Identified words associated with “arrest” include apprehend, apprehended, apprehending, arrests, arrested, arresting, detain, detained and detaining; “crime” includes crimes, criminal and criminals; “firearms” include firearm, weapon and

Table III Rhino-poaching and conservation related key words in SANParks annual reports

Key words	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Arrest	77	111	337	384	154	1,040	1,055	214	410	445	4,227
Crime	47	206	175	80	334	1,793	561	525	560	133	4,414
Firearms	140	–	–	59	407	423	182	225	183	–	1,619
Horns	–	111	100	121	154	332	616	42	–	92	1,568
Poaching	185	343	324	671	907	2,474	1,873	1,852	1,639	1,448	11,816
Rhino	307	648	788	677	1,346	3,053	2,286	1,793	1,465	1,465	14,610
Total	756	1,419	1,724	1,992	3,302	9,215	6,573	4,651	3,583	3,583	38,254

Figure 2 Rhino-poaching and conservation key words in SANParks annual reports



weapons; “horns” include horn; “poaching” includes poach, poached, poacher and poachers; and “rhino” includes rhinos, and rhinoceros.

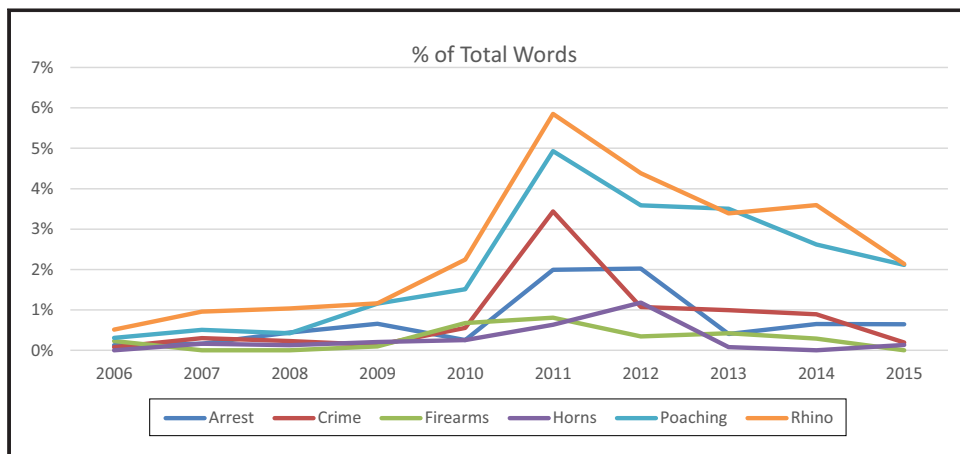
While Figure 2 reveals an increase in the key words identified for this study, the frequency appears to significantly increase in 2010, spiking in 2011, and reducing thereafter, although still remaining at levels higher than in 2006. The observation that the spike coincides with the increase in rhino-poaching activity identified in Table II and Figure 1 suggests that SANParks has indeed found it necessary to expand its disclosures relating to rhino-poaching and conservation. In this regard, it should be remembered that the 2011 annual report actually covers the 2010 year, during which rhino-poaching increased by 173 per cent. This observation is aligned with the responsibility of SANParks to use their annual reports to disclose their performance on the manner in which they are discharging their mandate to their stakeholders, as required by the PFMA. In particular, the spike in the key word themes relating to rhinos, poaching and crime illustrates the significance of this phenomenon and the realisation by SANParks of the importance of reporting on its relative performance in this regard.

As depicted in Table IV and Figure 3, the importance of SANParks reporting on its performance relative to its responsibility to protect its rhino population is further illustrated by the analysis of the key words as a percentage of the total word count in the annual reports for the respective years included in the study. While the identified words only comprised 1.26 per cent of all the words contained in the 2006 annual report, the frequency with which these words were used has steadily increased to represent 5.23 per cent by 2015, again spiking to 17.66 per cent in 2011, illustrating the extent of the rhino-poaching problem. A further analysis of the underlying data identifies increased usage of the key

Table IV Percentage of Rhino-poaching and conservation key words in SANParks annual reports

% of total words	2006 (%)	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)	2014 (%)	2015 (%)	Total (%)
Arrest	0.13	0.16	0.44	0.66	0.26	1.99	2.02	0.40	0.66	0.65	0.69
Crime	0.08	0.30	0.23	0.14	0.56	3.44	1.08	0.99	0.90	0.19	0.72
Firearms	0.23	0.00	0.00	0.10	0.68	0.81	0.35	0.43	0.29	0.00	0.27
Horns	0.00	0.16	0.13	0.21	0.26	0.64	1.18	0.08	0.00	0.13	0.26
Poaching	0.31	0.51	0.43	1.16	1.51	4.93	3.59	3.50	2.62	2.11	1.94
Rhino	0.51	0.96	1.04	1.17	2.25	5.85	4.38	3.39	3.59	2.14	2.40
Total	1.26	2.10	2.27	3.43	5.51	17.66	12.60	8.80	8.06	5.23	6.27

Figure 3 Rhino-poaching and conservation key words expressed as a percentage of total words



word themes relating to rhino (5.85 per cent), poaching (4.93 per cent) and crime (3.44 per cent). By comparison, the key words relating to rhino only represented 0.51 per cent, poaching 0.31 per cent and crime 0.08 per cent of the total word count of the 2006 annual report.

4.2 Disclosure of rhino-related issues in annual reports from 2006 to 2015

As revealed in the literature review, in South Africa, the PFMA requires all public entities including SANParks to report on their performance relative to their approved predetermined objectives. A detailed scrutiny of these performance reports for the 10-year period covered by this study reveals that in 2006, 2007 and 2009, the word “rhino” was not referred to at all. In 2008, the only reference to “rhino” was in relation to the performance objective relating to “enhancing SANParks” reputation. In this regard, SANParks stated that “several reports on rhino-poaching in the KNP also led to a high negative coverage 15 per cent in April 2007,” but failed to describe any meaningful interventions to address this matter. Although it falls outside the period covered by this study, it is pertinent to note that SANParks only commenced disclosing its performance information in 2006.

To explain the observations depicted in Figures 2 and 3, correlation coefficients were calculated between rhinos poached and the key words used by SANParks in their annual reports to describe the impact of rhino-poaching on their operations to understand whether linear relationships exist between the dependent variable (rhinos poached) and the independent variables (rhino-poaching key words). As illustrated in Figures 2 and 3, the rhino-poaching key word disclosures peaked in 2011, declining thereafter. In addition to determining the correlation coefficients for the entire 10-year period from 2006 to 2015 (Table V), it was therefore considered appropriate to segment these observations into two populations – the first covering the 2006-2011 reporting period (Table VI) and the second covering the 2012-2015 period (Table VII). Although six key words were identified and used in the Atlas.ti word count, only three only were selected to calculate the correlation coefficients (i.e. rhino, poaching and horns). The remaining three words (i.e. arrest, crime and firearms) were considered too vague and ambiguous to allow for meaningful statistical analysis interpretation; these words may, for instance, be used to refer to other crimes such as housebreaking.

As reflected in Table V, for all the reporting periods between 2006 and 2015, both Kendall's tau-b and Spearman's rho show strong positive linear relationships between the dependent

variable rhinos poached and the key words poaching and rhino but a negative and weaker correlation with horns. When segmenting the observations for the period 2006-2011, Table VI reveals very strong positive correlations between rhino-poaching and the key words poaching, rhino and horns. Interestingly, unlike the negative correlation with the key word horns between 2006 and 2011, during 2006 and 2011, horns showed a stronger positive correlation than poaching, but still less than rhino. Examining the reporting periods between 2012 and 2015 reveals negative correlations ranging from strong to moderate for all three key words. Even though the incidents of rhino-poaching continued to increase after

Table V Correlation coefficients between rhinos poached and related key words (2006-2015)

Correlation coefficient	RhinoPoached	Poachingrep	Rhinorep	Hornsrep	Poachingtot	Rhinotot	Hornstot
<i>Kendall's tau_b</i>							
RhinoPoached							
Correlation Coefficient	1.000	0.511*	0.556*	-0.085	0.511*	0.494*	-0.111
Sig. (two-tailed)		0.040	0.025	0.753	0.040	0.048	0.677
N	10	10	10	9	10	10	9
<i>Spearman's rho</i>							
RhinoPoached							
Correlation Coefficient	1.000	0.733*	0.733*	-0.335	0.733*	0.742*	-0.383
Sig. (two-tailed)		0.016	0.016	0.379	0.016	0.014	0.308
N	10	10	10	9	10	10	9

Note: *Correlation is significant at the 0.05 level (2-tailed)

Table VI Correlation coefficients between rhinos poached and related key words (2006-2011)

Correlation coefficient	RhinoPoached	Poachingrep	Rhinorep	Hornsrep	Poachingtot	Rhinotot	Hornstot
<i>Kendall's tau_b</i>							
RhinoPoached							
Correlation Coefficient	1.000	0.733*	0.867*	0.800	0.733*	0.733*	0.800
Sig. (two-tailed)		0.039	0.015	0.050	0.039	0.039	0.050
N	6	6	6	5	6	6	5
<i>Spearman's rho</i>							
RhinoPoached							
Correlation Coefficient	1.000	0.829*	0.943**	0.900*	0.829*	0.886*	0.900*
Sig. (two-tailed)		0.042	0.005	0.037	0.042	0.019	0.037
N	6	6	6	5	6	6	5

Notes: *Correlation is significant at the 0.05 level (2-tailed); **correlation is significant at the 0.01 level (2-tailed)

Table VII Correlation coefficients between rhinos poached and related key words (2012-2015)

Correlation coefficient	RhinoPoached	Poachingrep	Rhinorep	Hornstot	Poachingtot	Rhinotot	Hornsrep
<i>Kendall's tau_b</i>							
RhinoPoached							
Correlation Coefficient	1.000	-0.667	-0.333	-0.333	-0.667	-0.913	-0.333
Sig. (two-tailed)		0.174	0.497	0.497	0.174	0.071	0.497
N	4	4	4	4	4	4	4
<i>Spearman's rho</i>							
RhinoPoached							
Correlation Coefficient	1.000	-0.800	-0.400	1.000	-0.800	-0.949	1.000**
Sig. (two-tailed)		0.200	0.600		0.200	0.051	
N	4	4	4	4	4	4	4

Note: **Correlation is significant at the 0.01 level (2-tailed)

2012 (except for 2015), it is suggested that the decrease in disclosure may be attributable to a combination of rhino-poaching disclosure fatigue and SANParks' belief that they were getting to grips with the rhino-poaching problem, as evidenced by the marginal decline in rhino-poaching statistics in 2015. Recent reports in the popular media appear to suggest that the collective efforts of conservation and security agencies are bearing fruit, as more arrests relating to rhino-poaching are being made. A review of the correlation coefficients in [Tables V-VII](#), confirms assertion that although Spearman's rho is likely to demonstrate stronger correlations than Kendall's tau, they typically lead to the same inferences being drawn ([Xu et al., 2013](#)).

In the Performance Information narrative included in the 2010 annual report, SANParks introduced the rhino-poaching problem under the performance objective "improve parks' safety and security," by reporting that "the reality of poaching, particularly in the KNP, continued to receive attention." It also announced that the Anti-Poaching Strategy document (including relating to rhino-poaching) was completed and proposed the implementation of the National Environmental Crime Investigation Unit, which will be headed by SANParks. Aligned to the spike in key words depicted in [Figures 2](#) and [3](#), the extent of disclosure by SANParks of rhino-poaching related issues impacting their operations similarly burgeoned in 2011.

SANParks reached the tipping point of reporting on the impact of rhino-poaching related activity in 2011 by comprehensively disclosing its performance objectives relating to Media Reputation Rating, Number of Stakeholder Engagement Interventions, percentage of progress against implementation of Listed Species Management Programme and percentage of progress against implementation of Resources Protection Programme. Specific SANParks performance information described included proactively engaging the media, implementing infrastructural and Public Private Partnership initiatives, participating in the Lead SA Rhino Action Group civil initiative, completing the fourth KNP white rhino demography survey, completing the first draft of the SANParks rhino strategy and completing 90 per cent of the SANParks Resources Protection programme.

From 2012 to 2014, "Enhancing Organisational Reputation," with a specific performance indicator based on the Media Reputation Rating, remained one of the key performance indicators. In this regard, the report narrative identified the KNP as the most impacted area while describing collaborative initiatives to increase public awareness of the extent of the problem, sponsorships secured and the interventions implemented to combat rhino-poaching. By 2015, rhino-poaching and conservation efforts were no longer being reported under the "Enhancing Organisational Reputation" performance indicator. It is submitted that the SANParks decision to remove this rhino-poaching metric represents a change in strategic approach, from using rhino-related disclosure to manage its legitimacy to deliberately focussing on its efforts to protect its vulnerable rhino populations.

This change in strategic approach is evidenced by the introduction of "Improving the State of Conservation Estate" as a new strategic performance objective category from 2011 to 2014. In 2015, this category was renamed as "Promoting Effective Management of National Parks." Amongst others, and within the context of this paper, this performance objective specifically includes a performance information disclosure category dealing with monitoring its progress towards it implementing its biodiversity improvement and listed species management programmes. In 2013, indicative of its significance as a component of the SANParks' biodiversity strategy, an additional performance information category of "Poaching Incident Rate" was introduced as an integral element within this strategic objective. The detailed performance narrative not only includes the disclosure of information relating to rhino-poaching statistics and anti-poaching measures but also emphasises multi-stakeholder collaborative and funding initiatives together with information relating to the apprehension of criminals involved in rhino-poaching. Aligned to the literature review finding that rhino horn products are amongst the most expensive goods in the world

(Hübschle, 2016; Shepherd *et al.*, 2017), and the existence a huge value differential between the value/price of live rhinos and their horns, in the annual report of 2012, SANParks comments on “the need for innovative strategic thinking and exploring of several possibilities that will reduce the difference between demand and supply of rhino horn which determines its financial value and hence incentive for poaching,” which is exacerbated by the ongoing cost of anti-poaching interventions. In the 2013 annual report, SANParks clarifies that poaching is unacceptable by rewording the performance indicator “percentage of Acceptable Animal Population Decline due to Poaching” to “Poaching Incidents Rate” and specifically targeting zero growth in the phenomenon.

4.3 The Auditor-General's involvement in performance information

The report of the Auditor-General for the year ended 2007 first introduced its responsibilities relating to the audit of performance information by stating that “I conducted my engagement in accordance with section 13 of the Public Audit Act, 2004 (Act No. 25 of 2004) read with General Notice 646 of 2007, issued in Government Gazette No. 29919 of 25 May 2007”. Without actually providing an opinion on the veracity of the disclosed performance information for 2007, the Auditor-General nevertheless found that performance disclosures did not include all the predetermined objectives. In 2008 and 2009, the Auditor-General disclosed that the engagement “included performing procedures of an audit nature to obtain sufficient appropriate evidence about the performance information and related systems, processes and procedures”. Again, without providing an opinion about the veracity of the reported performance information, the Auditor-General stated that “the evidence I have obtained is sufficient and appropriate to report that no significant findings have been identified as a result of my review”. Despite referring to its mandated responsibilities relating to performance information, in 2010 the Auditor-General simply referred to having ‘no matters to report’ relating to SANParks’ predetermined objectives. Similarly, in 2011, the Auditor-General stated that “there were no material findings on the annual performance report concerning the presentation, usefulness and reliability of the information”.

However, in 2012 and 2013, but still without providing an audit opinion, the Auditor-General provided additional information relating to their mandated responsibilities relating to SANParks’ performance information by stating that “I performed procedures to obtain evidence about the usefulness and reliability of the information in the annual performance report[...].” and continued by disclosing that “the reported performance against predetermined objectives was evaluated against the overall criteria of usefulness and reliability”. The Auditor-General stated that:

The usefulness of information in the annual performance report relates to whether it is presented in accordance with the National Treasury annual reporting principles and whether the reported performance is consistent with the planned objectives. The usefulness of information further relates to whether indicators and targets are measurable (i.e. well defined, verifiable, specific, measurable and time bound) and relevant as required by the National Treasury Framework for managing programme performance information. The reliability of the information in respect of the selected objectives is assessed to determine whether it adequately reflects the facts (i.e. whether it is valid, accurate and complete).

However, instead of providing an opinion on the veracity of the performance information disclosures, the Auditor-General opined that “there were no material findings on the annual performance report concerning the usefulness and reliability of the information”.

While still retaining the explanatory disclosure approach adopted in 2012, by 2014, the Auditor-General reported on certain material findings relating to SANParks’ performance objectives. While this report refers to a lack of material findings on certain performance objectives, it also reports on an inability to corroborate reported performance information

against credible supporting evidence, caused by inadequate information systems and poor internal control measures. It is particularly disconcerting that the Auditor-General's report reveals that:

The reported performance information of three significantly important targets was not valid, accurate and complete when compared to the source information or evidence provided. This was due to a lack of standard operating procedures or documented system descriptions for the accurate recording of actual achievements, recording and monitoring of performance/monitoring of the completeness of source documentation in support of actual achievements/frequent review of the validity of reported achievements against source documentation.

As the performance objective "Improving Conservation Estate" now specifically includes important disclosures relating to rhino-poaching, and although no further information is provided about the "three significantly important targets", this may imply that the rhino-related disclosures being investigated could be unreliable. In 2015, the Auditor-General continued to report on the lack of proper systems and processes and formal standard operating procedures, and that a significantly important target could not be verified against the source data or evidence provided. Unfortunately, neither the 2014 nor the 2015 Auditor-General's report disclose the specific targets for which they were unable to access reliable corroborating evidence. These material inadequacies have caused the Auditor-General to raise doubts about whether SANParks could realistically deliver on its declared performance objectives and achieve its planned performance targets.

The analysis of the Auditor-General's reports over the 10-year period covered by the study suggests that the auditing of performance information is an evolving field. As the practice has become more established, the Auditor-General appears to have increased the extent of its disclosures relating to SANParks' performance information. Even though none of the rhino-related key words were used in the Auditor-General's reports, the inadequate systems, poor state of internal controls and the adverse findings about the reliability of some of the disclosures appear to suggest that the Auditor-General as of an independent and objective party may perceive SANParks as actually not being able to optimally deliver on its mandated responsibilities.

5. Research limitations and recommendations for future research

The scope of this paper is confined to one particularly vulnerable biodiversity species, the rhino, and only relating to the impact of the rhino-poaching phenomenon on one custodial organisation, SANParks. It is accordingly recommended that similar research be undertaken into other threatened species, and with respect to other organisations, both in the public and private sector.

As one of the first papers to investigate the rhino-poaching phenomenon from the perspective of how a state-funded organisation accounts to its stakeholders on how it has discharged its mandated biodiversity responsibilities, the research approach adopted is primarily exploratory. It is therefore recommended that similar research should be considered by using more robust inferential statistical techniques to definitively establish the existence of any relationships, or lack thereof, between rhino-poaching incidents and the way that custodial organisations account to their stakeholders. Similarly, additional research should be undertaken to develop a biodiversity preservation framework that could allow for a meaningful and consistent evaluation of biodiversity accountability disclosures, which could be adopted by other conservation-related bodies, irrespective of whether these were in the public, private or NGO sectors.

Although reference is made to measures deployed to counter rhino-poaching, the focus of the paper is on the extent to which SANParks has disclosed the impact of rhino-poaching activities in their publicly available annual reports, particularly from the perspective of the reporting of their predetermined performance objectives. The paper has therefore not

specifically examined information that SANParks may have provided elsewhere, which have not been included in the annual reports. Also, although SANParks does disclose more detailed information relating to their conservation efforts, the rhino-related conservation interventions elucidated on in the “conservation services report” has not been specifically investigated. It is accordingly recommended that a further study be undertaken that specifically investigates the anti-poaching interventions deployed by SANParks and other organisations, which have not only been disclosed in the annual report but also other reports and online.

6. Conclusion

This paper represents one of the early papers that specifically examines the emerging phenomenon of “extinction accounting”. It therefore adopts an exploratory interpretative research approach to understand the extent to which SANParks, as the state-owned entity tasked with the mandate to preserve South Africa’s biodiversity, has used its annual reports to illustrate the gravitas of the rhino-poaching problem and the manner through which it accounts to its stakeholders about how it has discharged its mandated responsibilities. As this phenomenon is usually studied within the context of the natural sciences and not within the governance and accountability disciplines, the paper provides the necessary context by using various literature studies to describe the rhino-poaching phenomenon. This contextual information also provides the theoretical foundation against which the empirical component of the study is assessed. The literature review continues by introducing the role played by SANParks in the preservation of biodiversity, including rhino conservation. As a state-owned entity, the paper appropriately describes the legislative and regulatory mandate that SANParks is obliged to comply with, including the governance and reporting requirements.

Using Atlas.ti to analyse the key words relating to rhino-poaching and rhino conservation within SANParks, and an in-depth review of the performance information disclosed in the annual reports for the reporting periods from 2006 to 2015, the study attempted to understand whether the exponential increase in rhino-poaching over the period was mirrored by a concomitant increase in the extent to which SANParks has disclosed the impact of rhino-poaching, as well as the anti-poaching measures used within the protected areas under its control. Unsurprisingly, the key word count reflects an increase in the frequency with which these key words have been used over the period from 2006 to 2015. Significantly, the 173 per cent increase in rhino-poaching in 2010 (as illustrated in [Figure 1](#)) appears to be strongly associated by a 179 per cent increase in the usage of the key words in 2011 (reporting on SANParks 2010 performance, as illustrated in [Figure 2](#)). Similarly, the key words as a percentage of total words in the annual reports also significantly spiked by 221 per cent in 2011 (as illustrated in [Figure 3](#)). The use of the Spearman’s rho and Kendall’s tau rank correlation coefficients confirms the generally strong positive linear relationships between the dependent variable rhinos poached and the rhino-poaching and conservation key words used by SANParks to disclose their biodiversity mandated biodiversity responsibilities. At the same time, segmenting the observations relating to rhino-poaching and the disclosed key words in terms into two periods (i.e. from 2006 to 2011 and from 2012 to 2012) assists to explain the spike in key word disclosures in 2011, as SANParks began to implement anti-poaching and rhino conservation interventions.

Although SANParks only commenced comprehensively disclosing its rhino-poaching related performance in 2010, since then and indicative of the exponential growth in rhino-poaching, the nature and extent of rhino-poaching related performance disclosures has continued to evolve. Initially, rhino-poaching was disclosed part of SANParks legitimisation efforts to enhance its reputation. In 2011, the nature and extent of SANParks’ disclosures expanded to reflect on its stakeholder engagement interventions and the manner through

which it has discharged its specific biodiversity preservation mandate. By 2015, SANParks rhino-poaching disclosures were entirely about its efforts at conserving the rhinos within its custody and was no longer directly linked to reputation management. Not only has SANParks increased the extent to which it has disclosed this phenomenon but also, more importantly, has improved the nature of these disclosures. It is therefore posited that SANParks has appropriately responded to stakeholder concerns about the impact of the rhino-poaching onslaught on its operations by providing more relevant and meaningful information to comprehensively disclose the manner in which it has discharged its rhino-related biodiversity mandate. The narrative disclosures also confirm that SANParks cannot hope to contain this scourge on its own. It is clear that this battle can only be won through a concerted collaborative effort by all parties concerned, including public and private sector organisations and NGOs.

In 2007, the Auditor-General first included SANParks' performance information in the scope of its audit responsibilities as reflected in its audit report. Since then, the nature and scope of subsequent audits on performance information has expanded, with the quality of its audit reports not only more comprehensively reflecting pertinent information relating to systemic weaknesses but also expressing concern that the reported performance information relating to certain targets could be unreliable. Despite referring to the underlying systemic weaknesses producing the performance information, the Auditor-General's reports did not specifically refer to the impact of rhino-poaching on SANParks or anti-rhino-poaching efforts.

In conclusion, therefore, the study clearly reveals that SANParks has accounted for the manner through which it has accounted for its stewardship role by not just disclosing that the rhino-poaching phenomenon significantly impacted SANParks' operations; it simultaneously recognises the crucial role that SANParks plays in combatting rhino-poaching activities within the areas under its control. However, while the findings reveal that SANParks has increased the extent of its rhino-related disclosures to reflect the growth in rhino-poaching, at the same time, the concerns raised in the reports of the Auditor-General indicate that SANParks still has much more work ahead to meaningfully account to its stakeholders about the effectiveness of its anti-rhino-poaching interventions. Therefore, even though SANParks has increased the extent of its rhino-related disclosures, there is still much work that must be done, for them to meaningfully account to their stakeholders about how they are delivering on the biodiversity mandate relating to rhino-poaching and conservation. Despite this paper specifically examining the rhino-poaching phenomenon within the context of the prescribed accountability disclosures of the South African state-owned entity mandated to protect threatened species and preserve biodiversity, it argues that more can, and must be, done to preserve the natural resources for future generations, as envisaged by the Brundtland Commission's definition of sustainable development (Ackers, 2009, p. 4; UNCSD, 2007). Despite the continuing decimation of South Africa's (and the world's) rhino populations, all is not lost. The adoption of multi-pronged, interdisciplinary and collaborative strategies, by all parties involved, including by private citizens around the world, can "save the rhino", as occurred early in the twentieth century, when South Africa's rhino populations were brought back from near extinction.

Notes

1. Retrieved on 30 April 2017, from www.brainyquote.com/quotes/quotes/d/davidatten214800.html
2. Based on Wildlife Auctions sales data, retrieved on 20 April 2017, from <http://wildlifeauctions.co.za/getHistory.php>
3. USD to ZAR exchange rate @ 20 April 2017 – ZAR 13.28 = USD 1.00.
4. Retrieved on 20 March 2017, from www.iucn.org

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