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Protected Areas in the Olifants Catchment

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Based on reports by Brandon Anthony, Samantha Gerber & Kgomotso Thomas

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Introduction

The Olifants River catchment contains many protected areas, especially in the lower portion and along the escarpment (Figure 1). The escarpment is considered high priority in terms of the National Protected Area Expansion Strategy because it supports several rare or important species and vegetation types and is especially important for climate change resilience due to the range in altitude. Protected areas in the lower part of the catchment support large numbers of game including “the big five”, and a wildlife economy based on ecotourism, game farming/breeding, hunting and related activities. The upper part of the catchment is heavily utilised for agriculture and mining, and there are few formally proclaimed protected areas. Protection of important ecosystems here, such as the many small, ecologically important wetlands, requires alternative stewardship arrangements.

Protected areas in the catchment are managed by a range of different bodies, including national, provincial and municipal departments or conservation agencies, private landowners, and local communities (through various co-management arrangements). Private land under conservation makes a significant contribution to biodiversity conservation, but these areas generally have no formal legal protection and are subject to land use changes and activities such as mining and prospecting. Two important internationally-designated protected areas fall partly within the catchment: the Kruger to Canyons Biosphere Reserve (a UNESCO designation under the Man and the Biosphere programme, and one of the largest biosphere reserves in the world), and the Great Limpopo Transfrontier Conservation Area which straddles the borders of South Africa, Mozambique and Zimbabwe (established through the Peace Parks Foundation).

The relationship between biodiversity conservation and social benefit is complex in the Olifants due to the impact of past Apartheid laws and practices on land tenure and land use. Formal protected areas are often surrounded by poor rural communities, many of whom have instituted

land claims on the protected area. While most PAs aim to both protect biodiversity and benefit neighbouring communities, they do not always succeed in these objectives. There is therefore a need to improve management effectiveness of both new and existing PAs, including strengthening capacity for negotiating contracts under complex land tenure arrangements, and designing proper incentives for private or communal land owners to join a protected areas management partnership (such as reduced taxes, tourism and access to valuable species from sales or hunting).

The plethora of stakeholders makes it essential to have appropriate institutional arrangements and opportunities to share knowledge, collaborate and learn together. Many networks and forums are already active in the catchment. Where appropriate, RESILIM-O aims to strengthen and work with these existing structures, with the aim of building relationships and facilitating systemic thinking, social learning and collaborative action (see Box 1).

The GEF-PA Programme

The Global Environment Facility (GEF) is a World Bank programme which aims to assist in the protection of the global environment and promote sustainable development. The GEF Protected Area Programme provides funding to support the CBD Programme of Work on Protected Areas adopted by the 7th CBD Conference of Parties in 2004.



In the lower Olifants, GEF-PA funding has been awarded to secure the protected area network, help implement the National Protected Area Expansion Strategy and improve land-use practices in the buffer zones around parks, with a focus on community benefits and partnerships.

The specific aims are:

- 1 To support stewardship, contract negotiation and declaration of PAs.
- 2 To facilitate buffer zone implementation and improved land-use controls.
- 3 To improve financial sustainability, benefits and diversified income streams.

Since the goals of the GEF-PA programme overlap substantially with the goals of RESILIM-O, RESILIM-O will not seek to duplicate effort, but rather to support GEF-PA initiatives while filling some of the gaps.

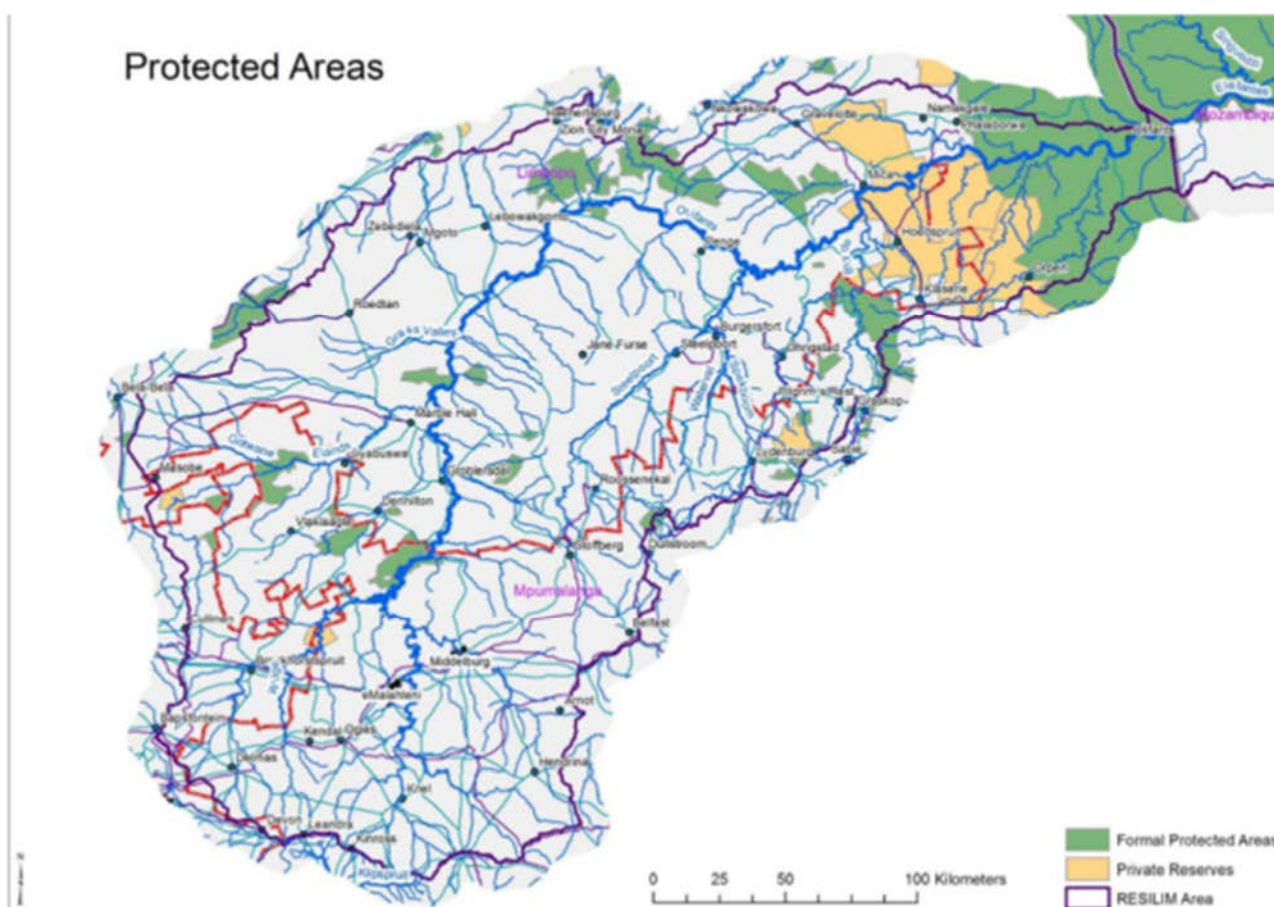


Figure 1: Protected areas in the Olifants catchment.



Verifying the declaration status of protected areas

Perhaps surprisingly, there is considerable uncertainty about the declaration status of many protected areas within the Olifants catchment. Different areas have been proclaimed under different legislation. Provincial conservation agencies have not maintained consistent databases of proclamation details over the years, and different agencies use different data formats. Various inconsistencies have been noted, for example some farm portions gazetted as proclaimed actually fall outside the reserve boundaries when mapped. Private landowners do not always have the necessary documentation to support their perceptions of the proclamation status of their land.

RESILIM-O has been working with various partners, including the K2C Biosphere Reserve, the Lowveld

Protected Area Management Forum and its members, and the GEF-PA Programme, to support the collation and checking of information on the declaration status of protected areas in the catchment.

One study focused on private protected areas in the lower catchment, while another focused on Mpumalanga provincial reserves. Data collected included the proclamation status of each property, the legislation under which it was proclaimed, the current legal status of all relevant farm portions, co-ordinates, ownership details and the relevant management authority. This information will provide a valuable foundation for future work with landowners and other stakeholders.

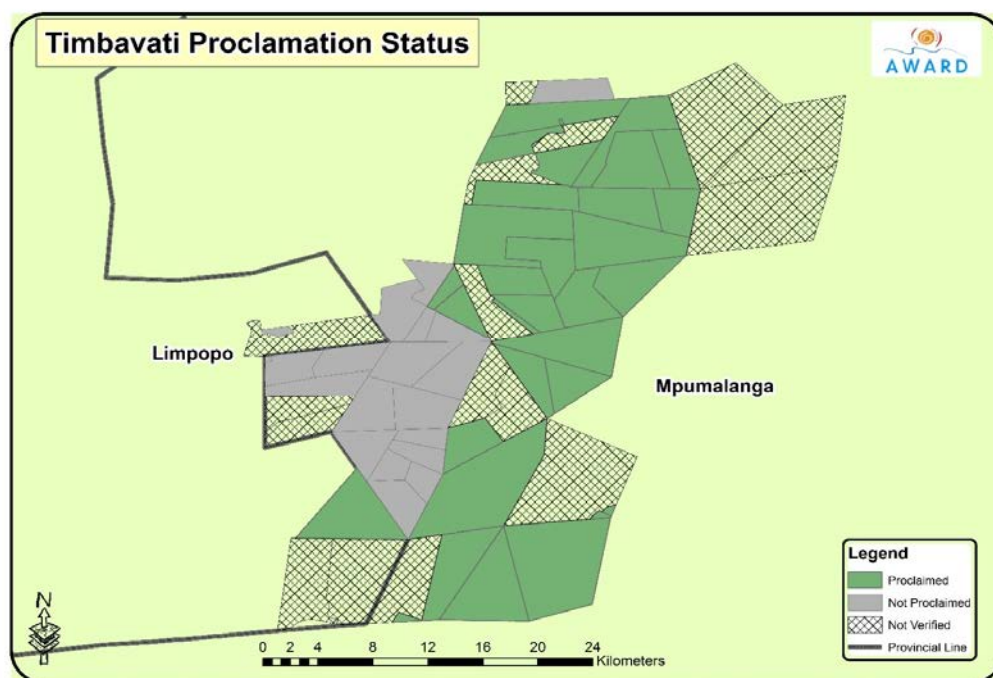


Figure 2: Example of the results of the verification process: the proclamation status of portions within Timbavati Nature Reserve.



Evaluating the effectiveness of protected area management

Conservationists increasingly recognize the importance of effective management of protected areas for conserving biodiversity. Assessment of protected area management effectiveness (PAME) is an established priority in international conservation agendas and has been a requirement of the Convention on Biological Diversity (CBD) since 2010.

Three aspects of management effectiveness are considered important for protected areas: **design/planning** (capacity of sites to achieve their stated function within the regional protected area network), **adequacy/appropriateness** (how management is resourced and conducted) and

delivery (whether stated biological and social objectives are being achieved).

Assessing PAME across a network of protected areas of different categories with differing objectives and within a multi-stakeholder environment remains a challenge. However, it is essential to find ways of doing this, as adjacent protected areas (PAs) and PA networks increasingly seek to harmonize their objectives and meet mutual goals across the wider landscape. The RESILIM-O programme has supported research on evaluation of PAME within the Olifants River basin, with the aim of improving protected area management in the catchment.

Tools for evaluating management effectiveness

RESILIM-O partners reviewed the international experience with PAME evaluation tools, detailing the strengths and weaknesses inherent in the various tools, their utility in capturing stated biodiversity and/or social outcomes, as well as lessons and recommendations for the South African context and the Olifants catchment in particular.

Many different PAME evaluation tools have been developed around the world, including the extensively used Rapid Assessment and Prioritization of Protected Area Management (RAPPAM), the Management Effectiveness Tracking Tool (METT), Threat Reduction Assessment (TRA), the Enhancing our Heritage Toolkit (EoH) designed for assessing World Heritage Sites, review and assessment methods

for Biosphere Reserves, and the Balanced Scorecard (BSC) business performance management system. Many regional and national variants of these tools have been developed as they have been adapted to suit particular needs and conditions.

Because different PA sites and networks have different characteristics (e.g. management structure, geographical coverage and biophysical features) and are embedded within different cultural, political and socio-economic contexts, no one standard tool is accepted globally. A common reporting format has, however, been developed, composed of 33 headline indicators which can be found in most PAME assessment tools¹.

1 Leverington, F., Hockings, M., and Costa, K. L. (2008). Management effectiveness evaluation in protected areas -

a global study. Gatton, Australia: The University of Queensland, TNC, WWF, and IUCN-WCPA.



This reporting format allows comparison of results from studies using different methodologies, while retaining as much information as possible. It is also flexible, with the potential to add more headline indicators in the future.

Responding to international obligations, the Department of Environmental Affairs (DEA) initiated a nationwide project to assess the management effectiveness of South Africa's World Heritage Sites and national parks. This national assessment opted to use the METT tool, although a hybrid METT and RAPPAM tool was subsequently used by Ezemvelo KZN Wildlife. Altogether, 171 protected areas were assessed for their management effectiveness over the period 2004 to 2010 - representing 58% of South Africa's terrestrial protected areas and 100% of its marine protected areas. The results were benchmarked against a global assessment done in 2010². Several other tools have also been used to assess PAME in South Africa. For example, South African National Parks (SANParks) has used the Balanced Scorecard since 2005 to measure the extent of its overall business performance and align the performance of its various business units and departments to its declared strategy.

However, there are several criticisms of composite PAME tools such as METT and RAPPAM. Interviewee bias is a potential problem with these tools, as they are self-evaluation tools which often may involve only one person. This may lead to self-serving or motivational biases, where individuals tend to accept responsibility for positive outcomes and deny responsibility for negative outcomes. Further expressions of bias may result in either defensive (exaggerating positive, minimizing negative) or counter-defensive (minimizing positive, exaggerating negative) attributions by participants. For

example, PA managers may inflate the successes if they feel the evaluation is directly linked to their job performance, or they may understate successes to attract additional resources. It has also been shown that the accuracy of expert opinion can vary greatly, and both scores and understanding of concepts are highly dependent on the evaluator(s) selected for the assessment.

A second group of criticisms reflects the fact that the indicators and weightings used often do not match the stated PA outcomes. For example, indicators often focus on inputs and processes as proxy measures of biodiversity outcomes, but the links between the indicators and outcomes are rarely substantiated or reviewed. Several recent studies have shown that METT scores did not correlate with success in preventing fires, deforestation or land transformation in Brazilian protected areas.

In a review of the appropriateness of indicators for their 'people' objectives, SANParks researchers noted that the three indicators currently used (number of participants in environmental education programs, number of internal awareness interventions, and number of sustainable resource use projects) largely fail to reflect the corporate strategic objective to build constituency and provide access to benefits from national parks, because they don't measure the benefits or what was learned in the educational programs³. This deficiency seriously undermines the reporting and monitoring process and, consequently, the adaptive management cycle. The weak links between management-based indicators and biodiversity (or social) outcomes may, in fact, create incentives for managers to invest in activities that improve effectiveness scores without necessarily making a PA more effective in terms of conservation outcomes.

2 Leverington, F., Costa, K.L., Pavese, H., Lisle, A., and Hockings, M. (2010). A global analysis of protected area management effectiveness. *Environmental Management*, 46:685-698.

3 Swemmer, L.K., and Taljaard, S. (2011). SANParks, people and adaptive management: understanding a diverse field of practice during changing times. *Koedoe* 53(2), Art. 1017, 7 pages.



The Following Recommendations Emerged From The RESILIM-O Study Of PAME Tools:

- **Conservation agencies should recognize and learn from the differences in management policies and practices in different types of protected areas.** Differences between PAME scores may reflect different management priorities within different categories of protected areas, even in the same region. Further work needs to investigate how the weighting of scores within a tool might be adjusted to reflect individual or bioregional PA management goals. Scale and diversity should be taken into account during assessments. For example, larger parks could be broken down into smaller assessment units to avoid averaging over large areas, thereby providing a more nuanced view of management effectiveness and making it easier to achieve (and interpret) changes in score. Monitoring should take place at scales matching human activities to ensure adaptive management and policy responses and, hence, conservation effectiveness in rapidly changing landscapes.
- **Cooperation and networking between protected areas and regions should be encouraged** to allow for learning and sharing of experiences and best practice. Even the best methodology will be ineffectual or have negative impacts if applied in a punitive style, or if the process of evaluation causes serious friction and loss of trust between the agencies. Where evaluations show negative trends, sensitive handling of the situation is essential, and evaluation teams should discuss in advance how to deal with cases where assessments expose genuine incompetence or deliberate misuse of power or resources. The cost-effectiveness of evaluation, particularly for re-assessments of small protected areas, could be increased by exploring synergies between conservation agencies (e.g. MTPA, LEDET and SANParks).
- **The evaluation tools themselves should continue to be critically evaluated** through local, contextually-driven assessments of the indicators used. Experimenting with the revised METT-SA2 tool is advised, as it has already been through two rounds of scrutiny in the South African context. Weighting the various elements/scores according to individual protected area or regional priorities should be explored. Methodological pluralism is recommended, and PAME tools should be complemented with rigorous monitoring programs which adequately report on biodiversity and/or social outcomes, and are congruent with the level of risk involved.
- **Best practice should be followed to minimize bias.** A number of strategies have been shown to improve the accuracy and usefulness of PAME results, based on experience so far. These include decoupling the use of PAME tools from measures of job performance, using supporting data and external experts to reduce subjectivity, providing enough time for assessments, and using management teams with a diversity of viewpoints rather than individuals to do the assessment.



Management effectiveness in the Olifants catchment

To obtain a picture of management effectiveness in the catchment, the RESILIM-O team analysed the documented METT-SA scores of 10 MTPA reserves within the catchment over the period 2009 to 2013 (Andover, Blyde River Canyon, Bushbuckridge, Loskop Dam, Mabusa, Manyeleti, Mdala, Mkhombo, SS Skosana, and Verloren Vlei).

These scores can be interpreted as follows:

<33.3%	'clearly inadequate' management
33.3 - 50%	'basic with major deficiencies'
50 - 66.6%	'basic' management
>66.6%	'sound' management

Total scores ranged from 9% to 69%, with a mean score of 51.7% (Fig. 4). This is slightly higher than the South African mean of 49% from 2009/2010², and comparable to the global mean of 53%. Most scores (48.7%) fell within the 'basic' management category. However, only 12.8% were 'clearly inadequate', which is below the national average of 15%. Moreover, assessment scores increased from 51% to 57% over the period (apart from a low score of 46% in 2011), indicating a positive trend in management performance.

Unpacking the various indicators associated with the six evaluative categories of the common reporting framework helped to identify the

strongest and weakest aspects of management during the assessment period. The protected areas investigated generally scored well on the Context indicators. These included '*boundary demarcation*' (82% of maximum possible score and the only indicator overall within the 'sound' management category), '*legal status*' (63%), '*protected area regulations*' (59%); and '*biodiversity resource inventory*' (57%). Other high-scoring indicators were '*protected area design*' (Planning, 68%), '*neighbours*' (Process, 62%) and two Output/Outcome indicators, namely '*economic and social benefit assessment*' and '*ecological condition assessment*' (62% each). These scores reflect the general national competence in conservation planning and biodiversity inventories (notwithstanding the issues with PA declaration status discussed previously).

The poorest scoring indicators, suggesting 'clearly inadequate' performance, were found within the Inputs, Planning and Process evaluative categories. These included '*current budget*' (Inputs, 17%), '*security of budget*' (Inputs, 22%), '*heritage resource management*' (Process, 29%), '*maintenance of equipment & infrastructure*' (Process, 32%) and '*annual plan of operation*' (Process, 33%). The biggest challenges facing PA managers in these reserves are therefore issues around budgets, operations and maintenance, rather than the more technical issues around legislation, reserve design or biodiversity data.

2 Britton, P. 2010. A report on the application of the METT-SA Version 1 (2008) to terrestrial protected areas managed at national and provincial level in South Africa. Report to Department of Environmental Affairs, Beyond Horizons Consulting, August 2010.

Cowan, G.I., Mpongoma, N., and P. Britton (eds.). 2010. Management effectiveness of South Africa's protected areas. Pretoria: Department of Environmental Affairs.



Understanding the drivers of management effectiveness in the Olifants catchment

The RESILIM-O team supplemented the analysis of METT-SA scores described above with a Protected Areas Survey conducted in late 2014/early 2015. A questionnaire was completed by managers of 56 protected areas in the catchment, with the aim of gathering information about the management objectives and activities, experiences with PAME evaluation tools, and the internal and external enablers and threats to effective management in each of the various PAs.

The biggest internal threats perceived by the PA managers generally matched the weaknesses identified by the METT-SA indicators. The top 6 threats across all 56 protected areas were: poaching (essentially a security issue), insufficient operational budget, lack of human resources and capacity, infrastructure maintenance, poor communication and a cumbersome financial system (Figure 4).

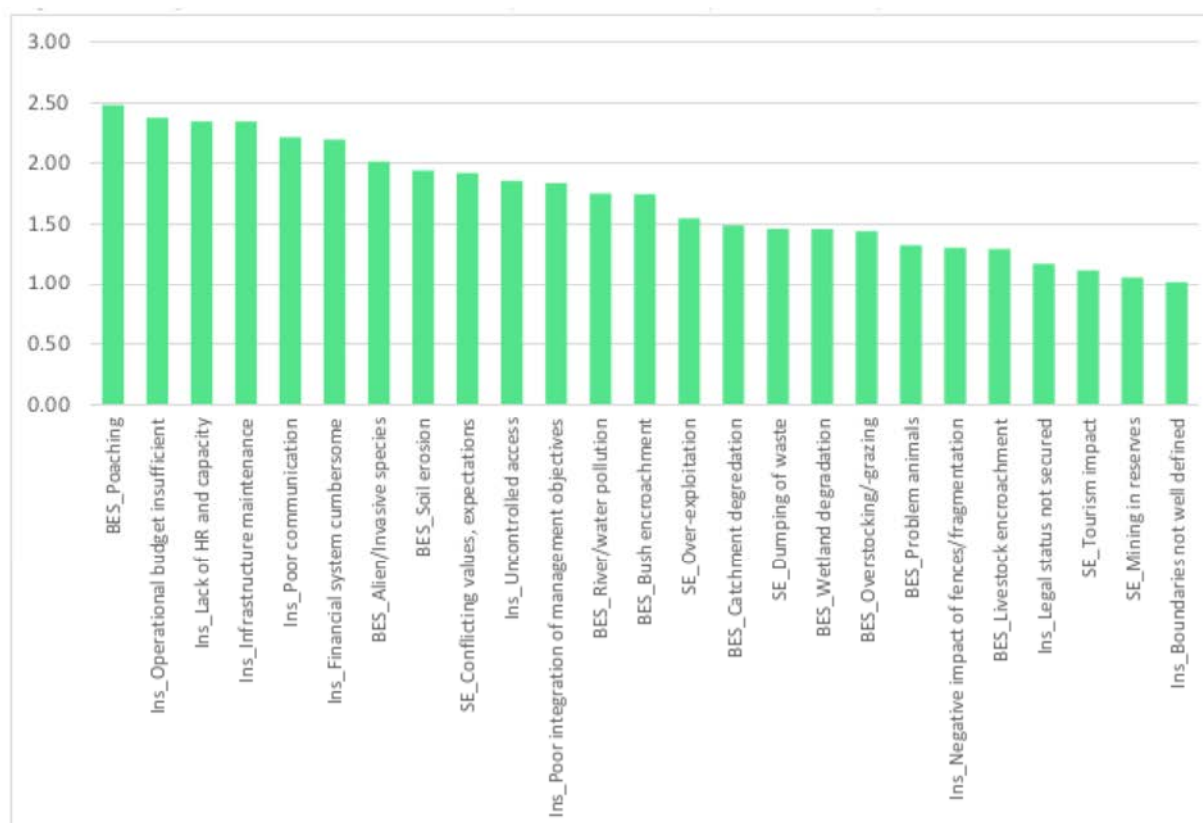


Figure 4: Importance of INTERNAL threats/drivers to protected area managers on a scale of 1 (least important) to 4 (most important); n=47 to n=54. Drivers classified as: BES = biodiversity and ecosystem services; SE = socio-economic; Ins = institutional drivers.



Some differences were evident between state-owned and non state-owned reserves. Managers of state-owned reserves ranked the following threats more highly than managers on non state-owned reserves: lack of human resources, insufficient budget, cumbersome financial systems and poor communication. Managers from non-state reserves, on the other hand, ranked poaching and dumping of waste more highly than their counterparts from state-owned reserves. Managers of reserves under co-management were more concerned about potential negative impacts

of mining and tourism activities within the reserves than other reserve managers.

The most commonly identified external threats (Figure 5) included threats to biodiversity and ecosystem services (poaching, external impacts on water quality and quantity, alien plants/bush encroachment and human-wildlife conflict) and socio-economic threats (security issues, unemployment and poverty in region, land tenure issues, and community attitudes and expectations).

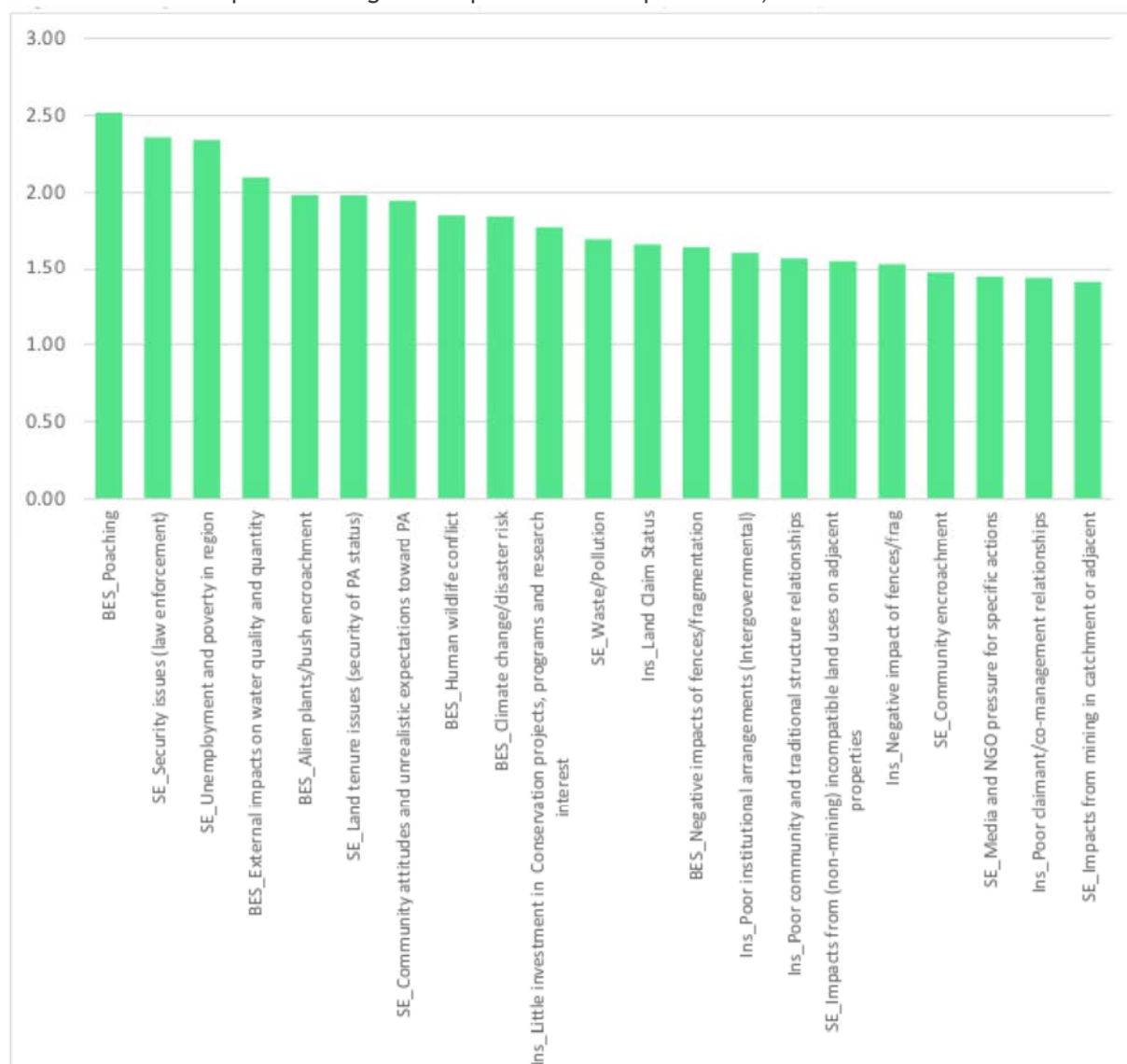


Figure 5: EXTERNAL threats/drivers to PAs on a scale of 1 (least important) to 4 (most important); n=46 to n=54. Drivers classified as: BES = biodiversity and ecosystem services; SE = socio-economic; Ins = institutional drivers.



The RESILIM-O survey also investigated the ways in which protected areas in the catchment assess management effectiveness and their experiences with the process. In 8 cases where comments on the PAME (METT or METT-SA) evaluation process were provided, 6 indicated that the process was conducted in a proper fashion and seemed effective, while 2 felt that it was less useful - in one case because the scoring was consistently low each year due to the reserve being an undeveloped area, and in another because the tool was often used to compare neighbouring reserves. Non state-owned reserves were less likely to have used the METT-SA tool or to see the value in doing so. A plethora of other methods and tools were also used to track management effectiveness, including monthly/quarterly/annual reports, management meetings, and the budgeting process. Most PAME evaluations were carried out by internal staff based at the PA, or a combination of internal staff and agency staff from outside the PA. Perceptions of the impact of PAME evaluations on management activities were mixed, with half the respondents stating that evaluations influenced management activities 'moderately' or 'a great deal' and the other half stating that they influenced management activities 'only minimally' or 'not at all'.

Acronyms used

CBD	Convention on Biological Diversity
DEA	Department of Environmental Affairs
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
GDARD	Gauteng Department of Agriculture and Rural Development
GEF-PA	Global Environment Facility - Protected Areas
LEDET	Limpopo Dept of Economic Development, Environment & Tourism
MTPA	Mpumalanga Tourism & Parks Agency
METT	Management Effectiveness Tracking Tool
METT-SA	Management Effectiveness Tracking Tool - South Africa
PA	Protected Area
PAME	Protected Area Management Effectiveness
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
UNESCO	United Nations Educational, Scientific and Cultural Organisation



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The Association for Water and Rural Development

AWARD is a non-profit organisation specialising in participatory, research-based project implementation. Their work addresses issues of sustainability, inequity and poverty by building natural-resource management competence and supporting sustainable livelihoods. One of their current projects, supported by USAID, focuses on the Olifants River and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems to sustain livelihoods and resilient economic development in the catchment.

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About USAID: RESILIM-O

USAID: RESILIM-O focuses on the Olifants River Basin and the way in which people living in South Africa and Mozambique depend on the Olifants and its contributing waterways. It aims to improve water security and resource management in support of the healthy ecosystems that support livelihoods and resilient economic development in the catchment. The 5-year programme, involving the South African and Mozambican portions of the Olifants catchment, is being implemented by the Association for Water and Rural Development (AWARD) and is funded by USAID Southern Africa.

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