



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

This project is
co-funded by the
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Federal Ministry for the
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BIOFIN
THE BIODIVERSITY FINANCE INITIATIVE

The Biodiversity Finance Initiative South Africa

Biodiversity Finance Plan

Final Report

February 2018

ACKNOWLEDGEMENTS

This project relied on inputs from many people working in biodiversity conservation and other sectors. We would like to acknowledge the following valuable contributions:

- Leadership and support from the Department of Environmental Affairs (DEA), the lead organisation of BIOFIN South Africa.
- Support from the United Nations Development Programme (UNDP), specifically Maria Mbengashe, Janice Golding, Puleng Mkhathshwa and Aubrey Manamela at the UNDP Country Office, Annabelle Trinidad and Onno Heuvel of the UNDP Global BIOFIN Team.
- The BIOFIN donors, namely the European Union and Governments of Germany, Switzerland, Norway and Flanders.
- Guidance from the BIOFIN South Africa Steering Committee, namely Ronette Engela of National Treasury, John Dini of South African National Biodiversity Institute (SANBI), Tertius Carinus of South African National Parks (SANParks), Joe De Beer and Robert Parry of Statistics South Africa (Stats SA) and Wilma Lutsch of DEA.
- Guidance and support from the technical reference group members, namely Tom Bouwer (SA Tourism), Deshni Pillay (SANBI), Saliem Fakir (WWF-SA), Ricardo Andrews (National Treasury), Pravin Pillay (EKZNW), and Wilma Lutsch (DEA).
- The SA BIOFIN team members who worked on other BIOFIN components, namely, Anthea Stevens, Aimee Ginsberg and Juan Bester.
- Key inputs and encouragement from the attendees of the two BIOFIN stakeholder workshops.
- The many people who made themselves available for one-on-one meetings and interviews and gave comments on the draft report and spreadsheet model.

Any views and opinions expressed in this report are nevertheless those of the authors and do not necessarily reflect those of contributors.

Suggested citation: Department of Environmental Affairs (DEA). 2017. Biodiversity Finance Initiative (BIOFIN) – South Africa: Biodiversity Finance Plan. Draft Report written by Hugo Van Zyl, Tracey Cumming, James Kinghorn, Mark Botha, Kamlesh Pillay, David Meyers, Massimiliano Riva and Lucia Motaung. Department of Environmental Affairs and United Nations Development Programme, Pretoria.

EXECUTIVE SUMMARY

Biodiversity, ecological infrastructure, and associated ecosystem services act as an invaluable foundation for South Africa's economy. From tourism to fishing, farming, and industry, the products and services provided by nature support people's wellbeing, livelihoods, jobs, and security. This Biodiversity Finance Plan (the Plan) has been developed to identify and support the implementation of *biodiversity finance solutions* that together significantly improve the management and financing of biodiversity management in South Africa. The aim of the Biodiversity Finance Plan is therefore to ensure that South Africa's unique and valuable biodiversity is protected and maintained through, in part, the adequate financing of the required biodiversity conservation and management interventions.

The Plan builds on a rich history of management and finance initiatives by a diverse range of actors in the country and is the fourth element of the Biodiversity Finance Initiative (BIOFIN) being implemented by the Department of Environmental Affairs (DEA) and the UNDP. BIOFIN assessments included the biodiversity policy and institutional review (PIR), the biodiversity expenditure review (BER), and the financial needs assessment (FNA) focused on the National Biodiversity Strategy and Action Plan (NBSAP). The main results and recommendations of these three previous assessments have been used to inform this Plan. The Plan builds on a systematic process to identify and prioritise finance solutions that each have significant impact in aligning incentives, increasing financing, and improving cost effectiveness and service delivery. Together the mix of finance solutions in this Plan will make clear and significant progress towards addressing the biodiversity finance and management needs of South Africa.

Finance solutions are a means of using one or more finance mechanism or instrument in a particular context, which results in the improvement of biodiversity conservation and management. Finance solutions can result in:

- *An increase in funding, either from new sources (e.g. innovative finance) or existing sources*
- *Better spending of existing funds*
- *Reducing costs associated with biodiversity conservation and management*
- *Realigning neutral or harmful expenditure to be beneficial (such as adjusting agricultural subsidies to support green agriculture)*

The 16 finance solutions that form part of the Plan build on a strong base of the South African government's financial and policy support to the biodiversity sector. This government support is justified by the essential services provided to the population and economy by the natural environment, by the "public good" nature of these services, and due to the powerful leverage the public sector can have with private companies, landowners and households. This public support has been and continues to be complemented by widespread technical and financial engagement from a rich diversity of NGOs and private sector actors as described in many solutions presented in this Plan. It is largely recognized that the strong commitment and financing by the public sector should increasingly be complemented with private sector engagement, foundations, donors, and NGO support to expand the strong mix of finance solutions in the country.

This Biodiversity Finance Plan presents a comprehensive and coherent national approach to biodiversity finance that encompasses a full suite of biodiversity finance solutions. Finance solutions are a means of using one or more finance mechanism or instrument in a particular context, which results in the improvement of biodiversity conservation and management. Finance solutions can result in:

- An increase in funding, either from new sources (e.g. innovative finance) or existing sources
- Better spending of existing funds
- Reducing costs associated with biodiversity conservation and management
- Realigning neutral or harmful expenditure to be beneficial (such as adjusting agricultural subsidies to support green agriculture)

Finance solutions in this plan are intended to be vehicles for attaining sustainable development and creating jobs – solutions for the achievement of South Africa’s development agenda as set out in the National Development Plan, and the global Sustainable Development Goals (SDGs).

The Plan is a living document that builds on South African leadership in biodiversity finance to suggest targets and steps that expand the country’s biodiversity finance agenda to achieve national biodiversity targets. The Plan is a means to foster action and support partnerships for investing in biodiversity by deepening the understanding of a range of solutions and by framing realistic action points. It provides clarity on links and synergies among solutions, finance outcomes, high level implementation roles and the contribution of biodiversity finance towards sustainable development.

The Plan includes:

1. A prioritization of finance solutions based on a rigorous selection process;
2. A systematic approach to addressing financial needs, emerging opportunities and priority biodiversity outcomes;
3. Concise technical proposals to operationalise prioritized biodiversity finance solutions, including next steps and identification of risks;
4. Consolidated estimates of the expected finance results.

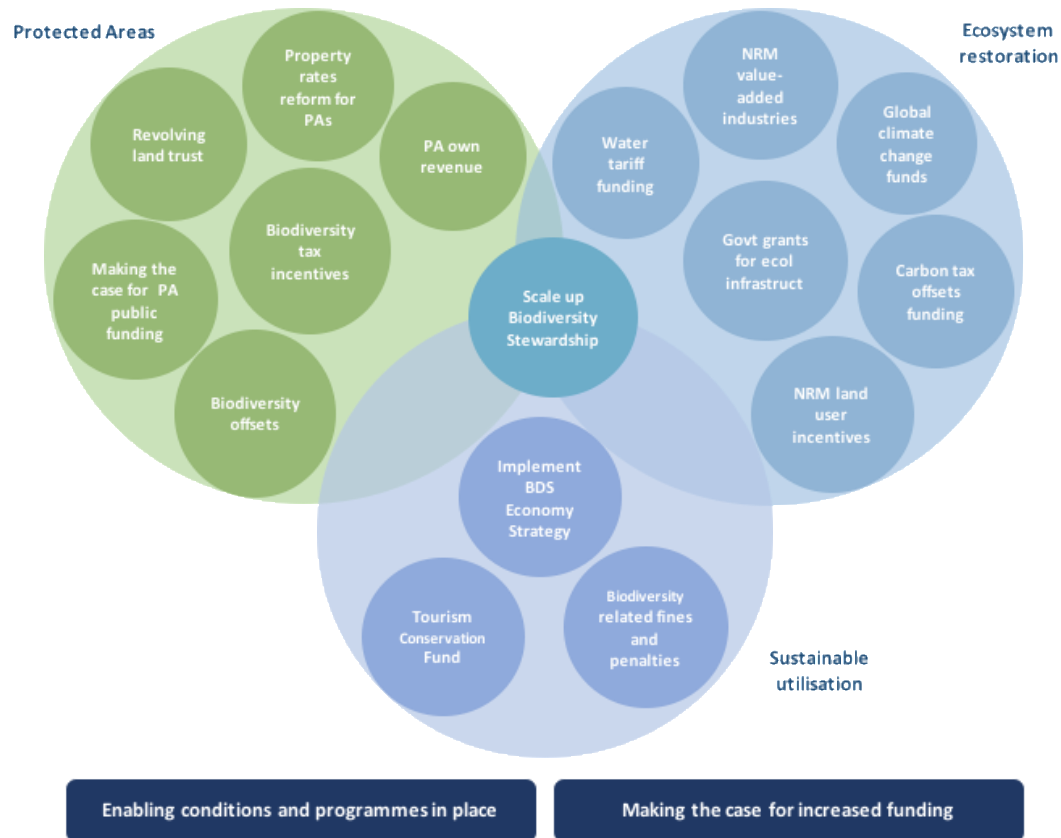
Implementation of the Plan will require a coordinated effort and technical capacity from key institutions including the Department of Environmental Affairs (DEA), national and provincial conservation authorities, National Treasury, the South African National Biodiversity Institute (SANBI), a broad range of Non-Government Organizations (NGOs), other government agencies and civil society groups. The intention is for these parties to own the plan and support its implementation. The work and monitoring of the Plan will be coordinated by DEA using existing collaborative or new frameworks.

The Plan is contextualised by starting with a clear case for investing in biodiversity that includes evidence of the social and economic value of managing and protecting biodiversity. Key elements of the institutional and programmatic context for South Africa’s biodiversity sector is also provided. Particular attention is paid to protected areas, biodiversity stewardship and natural resource management, given their status as key areas of work with relevance to the finance solutions. The system of public finance management and government budgeting is outlined, given the importance of public funds in managing biodiversity.

The biodiversity finance solutions tend to be targeted towards specific finance needs but many are complementary and can be grouped around their expected biodiversity outcomes. Some solutions fit easily into the outcomes of protected areas and ecological restoration, some result in combined outcomes and some target sustainable utilisation of biodiversity. The effective roll out of all finance solutions will benefit from a continued and increased effort on the part of the biodiversity sector to make the case for the socio-economic benefits of investing in biodiversity, along with the recognised biodiversity value and mandate of the government. Included in this effort is the ongoing work on natural capital accounting, which

should be seen as a complementary programme of work. The Figure below presents the 16 finance solutions, clustered around primary biodiversity outcomes.

Figure 1: The finance solutions clustered around biodiversity outcomes



The 16 solutions are summarized as follows.

A. Protected areas solutions

Making the case for protected areas funding: Conservation authorities need to clearly demonstrate the benefits of new public investment to decision makers at national and provincial levels. This capacity will be enhanced by providing information, analysis, communication material and capacities needed to defend and increase their budget. The solution should be viewed in combination with increasing protected area's own revenue, discussed below, as the chances of increased investment should be greater where there is evidence of progress or concerted efforts towards increasing own revenue. Increases in funding should also benefit biodiversity stewardship programmes, shown to be a highly cost effective means of expanding the protected area estate, and a key mechanism for many of the other 14 finance solutions.

Growing protected areas' own revenues: Success in generating own or site-based revenue from sources such as gate fees, tourism concessions and wildlife sales is highly variable among the different protected areas conservation authorities in South Africa. The aim of this solution is to increase the rate of own revenue growth for these conservation authorities and to improve their business models.

Reform of property rates law and application to protected areas: Certain protected areas face the challenge of being charged substantial property rates bills due to ambiguity in the Municipal Property Rates Act, putting undue financial pressure on providers of an important public good. This solution aims to ensure that the application of rates policies by municipalities better reflects the intention of the Act with respect to the concessions it offers protected areas and botanical gardens.

Support for biodiversity tax incentives: Private protected areas are extremely cost effective for expanding and managing South Africa's protected area estate. This solution will enhance the effectiveness of biodiversity tax benefits to increase the area of land under responsible land management. The expected finance gains from this finance solution is dependent on well capacitated and well-functioning biodiversity stewardship programmes.

Creating enabling conditions for biodiversity offsets: Biodiversity offsetting is the final option in the mitigation hierarchy that underpins environmental impact assessments in South Africa. Despite this, it is one of the least utilised mitigation options for various reasons, not least of which is national policy uncertainty. As a result, biodiversity offsetting has been implemented in a relatively ad-hoc manner, and there has been a call for national guidance and cohesion on biodiversity offsets. There is also a need for an effective enabling environment for implementing biodiversity offsets across the country to increase their efficacy in leveraging funding for additional biodiversity conservation and management interventions. This finance solution draws on the finalisation of the national offsets policy and associated biodiversity offsetting guidelines, and aims to design effective implementation modalities for biodiversity offsets across the country.

Introduction of revolving land trust mechanisms: A revolving land trust is a mechanism to enable the establishment of protected areas on private land, thereby increasing private sector investment into protected areas. They allow for the purchasing of conservation-worthy land, the declaration of the land as a protected area, setting up associated tax benefit structures and selling the land on to those who wish to own and manage a protected area. Any profit generated through this process can be reinvested in further rounds of land purchase. This finance solution entails encouraging existing land trusts and other NGO land acquisition groups to consider incorporating explicit revolving strategies into their operational models. Success of this mechanism is linked to the effective ongoing implementation of biodiversity stewardship programmes.

Enhance, consolidate and adequately finance the biodiversity stewardship programmes: Biodiversity stewardship programmes provide a highly cost-effective mechanism for expanding and managing protected areas in South Africa, can secure government investments in natural resource management on non-state land, and can be used as a mechanism to enable sustainable use of biodiversity. Despite the financial and practical arguments for investing in the biodiversity stewardship programmes, these government-led programmes remain substantially under-resourced within all conservation authorities, and the benefits of these innovative programmes are not being fully realized by the state. This solution, enhancing, consolidating and adequately financing the biodiversity stewardship programs, aims to ensure that the full benefit of the biodiversity stewardship programmes can be felt, contributing to protected area expansion targets, ecosystem restoration, and sustainable use of biodiversity across the country. As the financing of biodiversity stewardship programmes can come from a number of different sources, this finance solution, in practical terms, will rely on other finance solutions, as well as other programmes of work, in order to be fully realized. It will also play a facilitating role increasing the likelihood that other finance solutions, such as revolving land trusts, will emerge.

B. Ecosystem restoration solutions

Accessing existing government grants and funds for ecological infrastructure investment:

The biodiversity sector has effectively accessed grants such as the Extended Public Works Programme which funds the Natural Resource Management programmes. This solution explores opportunities for expanding access to grant allocations at provincial and municipal levels with a specific focus on government grants for investing in ecological infrastructure.

Scaling up the Natural Resource Management (NRM) Land User Incentives (LUI) Programme:

Ecosystem restoration on privately or communally owned land is a priority as delayed action will increase the scale and cost of remediation, water stress, exposure to natural disasters and related adverse effects. Based on early success, DEA-NRM seeks to scale up the LUI programme to mobilize a greater contribution from the private sector for ecosystem restoration, while continuing to create jobs through the NRM work.

Increasing income from Natural Resource Management value-added industries: Clearing invasive alien plants yields biomass which can be used as an input into value-added industries such as eco-furniture or packaging. The expansion of these industries can generate revenues for natural resource management and reduce biomass disposal cost. This solution aims to address barriers and unlock the potential of these value chains while reducing the operational costs of existing programmes.

Water tariff funding for ecological infrastructure: Investing in ecological infrastructure as part of catchment management offers significant water regulation and supply benefits along with co-benefits for biodiversity, livelihoods and disaster risk reduction, among others. This finance solution aims to improve existing means, and establish new viable mechanisms, to capture and distribute an adequate portion of water tariffs for investment in ecological infrastructure in catchments. This would be in keeping with the user-pays principle and is achievable by operationalising elements of the revised Draft Water Pricing Strategy.

Support carbon tax offset financing for biodiversity projects: The pending South African carbon tax legislation will allow taxpayers to offset part of their carbon tax liability through mitigation projects including ecosystem restoration projects which also provide significant non-carbon benefits. The solution seeks to obtain National Treasury approval for Agriculture, Forestry and Other Land Use (AFOLU) carbon offset standards, explore remedies to the delayed sequestration profile of ecosystem restoration projects and stimulate both the supply and demand for such projects. Considering that a substantial portion of AFOLU emissions are realized from crop and livestock agriculture, restorative agricultural management must be prioritized.

Accessing global climate change funds for biodiversity: Climate change funds for adaptation and mitigation increasingly seek to support projects with multiple sustainable development benefits beyond mitigation and adaptation, including biodiversity benefits. This solution seeks to 1) develop a pipeline of biodiversity-related climate fund proposals, 2) build awareness and collaboration in the climate and biodiversity communities to support these projects, and 3) encourage efforts to clarify monitoring, reporting and verification (MRV) in the AFOLU sector.

C. Solutions focused on the sustainable utilisation of biodiversity

Improving effectiveness of environmental fines and penalties: Effective environmental fines and penalties incentivise compliance with laws and may serve to mobilize additional revenues.

The values of these fines and penalties are currently too low, relative to the extent of environmental impact, limiting their efficacy. The solution updates and improves the amounts and effectiveness of fines and penalties and the enforcement of conditions for authorization of development activities to decrease environmental impacts and cover enforcement costs.

Creation of the Tourism Conservation Fund: The tourism sector greatly benefits from biodiversity conservation and has an interest in providing financial support. The aim of the Tourism Conservation Fund, driven by NGOs, is to access private sector funding and use these funds to address biodiversity conservation needs.

Implement South Africa's Biodiversity Economy Strategy: DEA, working closely with a range of stakeholders, has led the development of a National Biodiversity Economy Strategy which is currently awaiting government approval, along with two more specific guiding documents on the bioprospecting economy and the wildlife economy. Together, these set out 20 complementary initiatives and six recommendations which aim to accelerate rural development, improve social well-being, and ensure equitable access and benefit sharing from biological resource, while maintaining the ecological resource base. This finance solution encompasses the entirety of these strategies, encouraging their implementation towards 2030.

An integrated Finance Plan

The individual finance solutions are best understood as parts of an integrated plan, given the links and synergies between solutions and over-arching enabling factors. They cover a range of different instrument categories, draw on different finance sources, and have different lead agents. Market instruments are the most prominent, with eight solutions falling under this broad category. These are followed by grants, including direct government allocations (three solutions), fiscal instruments (two solutions) and regulatory instruments (two solutions).

Regarding sources of funding, private domestic sources represent the most prominent primary source of finance with 11 solutions under this category followed by four which would rely primarily on domestic public sources. Government, mostly in the form of DEA, thus has opportunities to leverage private resources in a number of ways. International sources would include one primary public source, in the form of climate change funds, and three secondary private sources through protected areas own revenue, contributions to the Tourism Conservation Fund and customer support for certified wildlife ranches.

For the majority of solutions, government would need to lead implementation through DEA, SANBI, provincial environmental departments and conservation authorities, although many of the finance solutions will only be successful if there are strong partnerships with the private sector and NGOs. Three solutions, namely the revolving land trust mechanism, the Tourism Conservation Fund and wildlife ranching certification, would require the leadership from the private sector.

Many of the finance solutions are strongly connected to each other, and, to be truly effective, require enabling conditions to be met. For example, well-functioning biodiversity stewardship programmes are pivotal to the success of a number of solutions. Investment in such programmes is needed before other funding, particularly from the private sector, can be unlocked with confidence. The availability of income tax incentives for private protected areas needs to be combined with support for landowners through stewardship as it has been shown that a suite of incentives motivate landowner behaviour. Well-functioning biodiversity stewardship programmes, targeted Natural Resource Management Programme investments through land-user incentives, the availability of income tax deductions, and property rates

reform should enable the emergence of revolving land trusts thereby securing more land for conservation. The improved use of biodiversity offsets as part of the environmental impact mitigation hierarchy should also help to create demand for private protected area establishment, and could be enabled by biodiversity stewardship programmes.

Ecosystem restoration through the Natural Resource Management Programme, and more broadly through an emergent natural resource management sector, will continue to require greater state funding. However, significant opportunities exist to shift a greater portion of the financial responsibility for ecosystem restoration to those who benefit most clearly from it, namely land users (through the land user incentives programme), water consumers (through water tariff funding) and heavy greenhouse gas emitters through carbon tax offsets and international climate change finance opportunities.

Financial benefit projections

In projecting the financial benefits of the finance solutions, it is important to be cognisant of substantial uncertainty around the effectiveness with which solutions would be implemented, the effectiveness of enabling factors required for success, and the state of the broader economy. Nevertheless, indicative estimates of potential remain a valuable tool for planning a way forward. The financial benefits (or avoided expenditure) associated with the implementation of the 12 solutions (out of the 16 finance solutions in the Plan) where quantitative estimation of these benefit was possible are presented in the Table below. Annual net financial gains could start relatively modestly at R240 million in 2018 climbing to R1.02 billion by 2020, R2.21 billion by 2023 and ending at R3.19 billion in 2026. Total financial gains over the ten-year period could sum to approximately R16.25 billion in current terms (undiscounted) which would make a highly significant contribution to reaching the country's biodiversity conservation goals. Over 80% of the total quantified financial gains would be sourced from the private sector, although the development of most of these finance solutions still require active leadership and policy development by the government.

Table 1: Annual and cumulative total financial benefits per finance solution, where quantified, over a 10-year period

| Finance solution | Net financial gain in current terms (R million) | | | | | | | | | | | | | |
|---|---|------|------|------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Total | | | |
| Case for PAs funding | - | 2 | 69 | 70 | 70 | 70 | 105 | 140 | 175 | 210 | 245 | 1,148 | 7.1% | |
| PAs own revenue | | 5 | 21 | 36 | 59 | 88 | 124 | 168 | 217 | 248 | 259 | 1,226 | 7.5% | |
| PA, PPA property rates reform | - | 2 | 39 | 96 | 160 | 160 | 160 | 160 | 160 | 160 | 160 | 1,253 | 7.7% | |
| Biodiversity tax incentives | | - | 37 | 75 | 116 | 122 | 168 | 177 | 230 | 245 | 260 | 1,430 | 8.8% | |
| Biodiversity offsets | | 9 | 30 | 71 | 104 | 127 | 161 | 175 | 189 | 203 | 218 | 1,285 | 7.9% | |
| Revolving land trust | | - | - | 45 | 45 | 92 | 93 | 140 | 142 | 144 | 147 | 848 | 5.2% | |
| NRM land user incentives | | 3 | 16 | 29 | 48 | 81 | 133 | 178 | 230 | 295 | 360 | 1,371 | 8.4% | |
| NRM value-added industries | | 11 | 19 | 33 | 54 | 82 | 122 | 163 | 190 | 231 | 272 | 1,177 | 7.2% | |
| Water tariff funding | - | 5 | - | 5 | 104 | 214 | 437 | 546 | 656 | 801 | 911 | 1,020 | 4,679 | 28.8% |
| Carbon tax offsets funds | - | 2 | - | 2 | 11 | 26 | 39 | 52 | 54 | 56 | 57 | 59 | 351 | 2.2% |
| Global climate change funds | - | 2 | - | 2 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | - | 621 | 3.8% |
| Tourism Conservation Fund | | 10 | 19 | 29 | 38 | 67 | 96 | 115 | 134 | 163 | 192 | 862 | 5.3% | |
| Total | | 25 | 239 | 688 | 1,024 | 1,452 | 1,848 | 2,214 | 2,613 | 2,956 | 3,190 | 16,251 | 100% | |
| Note: These estimates do not include financial gains from the following solutions - (1) Enhancing, consolidating and adequately financing the biodiversity stewardship programmes, (2) Accessing existing government grants and funds for ecological infrastructure investment, (3) Improving effectiveness of environmental fines and penalties and (4) Implementing South Africa's Biodiversity Economy Strategy. | | | | | | | | | | | | | | |

Water tariff funding would contribute the largest share to the total financial gain (29%) with the majority of the other solutions each contributing between 5% and 10%. More prominent contributions among these include those from biodiversity tax incentives (8.8%), NRM land user incentives (8.4%), biodiversity offsets (7.9%), protected areas property rates reform (7.7%) and protected areas own revenue (7.5%). In terms of the main biodiversity outcomes, approximately 50% of the financial gains would be from solutions focused on ecosystem restoration, 45% would be for those focused on protected areas and the remaining 5% would

be for sustainable use of biodiversity, although only one of the three financial solutions that focus on sustainable use have been included in this financial estimation exercise. The focus on ecosystem restoration and protected areas is in line with the relative costs associated with these activities in the NBSAP.

The way forward

The Biodiversity Finance Plan can be seen as a living document, intended to be owned and used by the biodiversity sector as a whole. It is a resource for the process of developing and encouraging biodiversity finance in South Africa, and may be updated as circumstances, needs and opportunities evolve. Building on South Africa's rich history of biodiversity conservation and innovation, the plan should assist in raising up the country as a leader in sustainable development.

CONTENTS

| | |
|--|-------------|
| ACKNOWLEDGEMENTS | II |
| EXECUTIVE SUMMARY | III |
| CONTENTS | XI |
| ABBREVIATIONS..... | XIII |
| 1 INTRODUCTION | 1 |
| 2 THE CONTEXT FOR BIODIVERSITY FINANCE IN SOUTH AFRICA | 6 |
| 2.1 THE INVESTMENT CASE FOR BIODIVERSITY | 6 |
| 2.2 THE BIODIVERSITY MANAGEMENT LANDSCAPE | 9 |
| 2.2.1 Protected Areas in South Africa..... | 9 |
| 2.2.2 Biodiversity Stewardship: Sustainable land management on and off protected areas | 12 |
| 2.2.3 Ecosystem restoration and South Africa's Natural Resource Management programmes..... | 14 |
| 2.3 PUBLIC FINANCE AND GOVERNMENT BUDGETING | 14 |
| 2.3.1 Provincial government equitable share | 17 |
| 2.3.2 Local government equitable share | 18 |
| 2.3.3 Conditional grants | 19 |
| 2.3.4 Overall division of revenue..... | 19 |
| 2.3.5 The scope for increased direct government funding for biodiversity | 20 |
| 3 THE BIODIVERSITY FINANCE PLAN | 21 |
| 3.1 THE BIODIVERSITY FINANCE SOLUTIONS | 21 |
| 3.1.1 Protected areas solutions | 22 |
| 3.1.2 Ecosystem restoration solutions..... | 24 |
| 3.1.3 Solutions focused on the sustainable utilisation of biodiversity..... | 25 |
| 3.2 AN INTEGRATED PLAN..... | 26 |
| 3.2.1 Biodiversity outcomes..... | 27 |
| 3.2.2 Characterising the solutions | 29 |
| 3.3 FINANCIAL BENEFIT PROJECTIONS FOR FINANCES SOLUTIONS | 30 |
| 4 BIODIVERSITY FINANCE SOLUTIONS..... | 33 |
| 4.1 PROTECTED AREAS SOLUTIONS | 33 |
| 4.1.1 Making the case for protected areas funding | 34 |
| 4.1.2 Growing protected areas' own revenue | 40 |
| 4.1.3 Reform of property rates law and application to protected areas..... | 45 |
| 4.1.4 Support for biodiversity tax incentives | 48 |
| 4.1.5 Enabling conditions for biodiversity offsets..... | 53 |
| 4.1.6 Introduction of revolving land trust mechanisms..... | 59 |
| 4.1.7 Enhance, consolidate and adequately finance the biodiversity stewardship programmes..... | 63 |
| 4.2 ECOSYSTEM RESTORATION SOLUTIONS | 68 |
| 4.2.1 Accessing existing government grants and funds for ecological infrastructure investment..... | 68 |
| 4.2.2 Scaling up the Natural Resource Management Land User Incentives Programme | 73 |
| 4.2.3 Increasing income from Natural Resource Management Value-Added Industries | 77 |
| 4.2.4 Water tariff funding for ecological infrastructure management | 81 |
| 4.2.5 Support carbon offset financing for biodiversity projects..... | 92 |

| | | |
|-------|---|------------|
| 4.2.6 | <i>Accessing global climate change funds for biodiversity</i> | <i>100</i> |
| 4.3 | SOLUTIONS FOCUSED ON THE SUSTAINABLE UTILISATION OF BIODIVERSITY | 105 |
| 4.3.1 | <i>Improving the effectiveness of environmental fines and penalties</i> | <i>105</i> |
| 4.3.3 | <i>Creation of the Tourism Conservation Fund</i> | <i>112</i> |
| 4.3.4 | <i>Implement South Africa's Biodiversity Economy Strategy.....</i> | <i>115</i> |
| | INITIATIVES FOR DEVELOPING THE BIOPROSPECTING ECONOMY..... | 117 |
| 5 | CONCLUSION AND RECOMMENDATIONS..... | 122 |
| 6 | REFERENCES | 124 |
| 7 | APPENDICES | 131 |

ABBREVIATIONS

| Abbreviation | Description |
|-------------------|--|
| AFOLU | Agriculture, Forestry, and Other Land Use Change |
| ARC | Agricultural Research Council |
| BBOP | Business and Biodiversity Offsets Programme |
| BER | Biodiversity Expenditure Review |
| BIOFIN | The Biodiversity Finance Initiative |
| CBD | Convention on Biological Diversity |
| CBO | Community Based Organisation |
| CDM | Clean Development Mechanism |
| CEA | Competent Environmental Authority |
| CMA | Catchment Management Agency |
| CoGTA | Co-operative Governance and Traditional Affairs |
| CSIR | Council for Scientific and Industrial Research |
| DAFF | Department of Agriculture, Forestry and Fisheries |
| DBSA | Development Bank of Southern Africa |
| DEA | Department of Environmental Affairs |
| DEA&DP | Department of Environmental Affairs and Development Planning Western Cape |
| DMR | Department of Mineral Resources |
| DPLG | Department of Provincial and Local Government |
| DPME | Department of Planning, Monitoring and Evaluation |
| DRDLR | Department of Rural Development and Land Reform |
| DST | Department of Science and Technology |
| DTC | Davis Tax Committee |
| DWS | Department of Water and Sanitation |
| ECPTA | Eastern Cape Parks and Tourism Board |
| EKZNW | Ezemvelo KwaZulu-Natal Wildlife |
| EMI | Environmental Management Inspectorate |
| EM&R | Environmental Management and Restoration |
| ENE | Estimates of National Expenditure |
| EPWP | Expanded Public Works Programme |
| EWT | Endangered Wildlife Trust |
| FFC | Fiscal and Financial Commission |
| FNA | Financial Needs Assessment |
| GCF | Green Climate Fund |
| GEF | Global Environment Facility |
| GiZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GTAC | Government Technical Advisory Centre |
| IDP | Integrated Development Plan |
| IUCN | International Union for the Conservation of Nature |
| LUI | Land User Incentives |
| MA | Management Authority |
| METT | Management Effectiveness Tracking Tool |
| MIG | Municipal Infrastructure Grant |
| MTEC | Medium Term Expenditure Committee |
| MTSF | Medium-term Strategic Framework |

| | |
|-----------------|--|
| NBES | National Biodiversity Economy Strategy |
| NBSAP | National Biodiversity Strategy and Action Plan |
| NDP | National Development Plan |
| NECER | National Environmental Compliance and Enforcement Report |
| NEMA | National Environmental Management Act |
| NPAES | National Protected Area Expansion Strategy |
| NRM | Natural Resource Management |
| NT | National Treasury |
| NTCSA | National Terrestrial Carbon Sinks Assessment |
| PA | Protected Area |
| PDI | Previously disadvantaged individuals |
| PPA | Private Protected Area |
| PPF | Peace Parks Foundation |
| RLT | Revolving Land Trust |
| SAMRC | South African Medical Research Council |
| SANBI | South African National Biodiversity Institute |
| SANParks | South African National Parks |
| SARS | South African Revenue Service |
| SDGs | Sustainable Development Goals |
| SMME | Small, Medium and Micro Enterprises |
| Stats SA | Statistics South Africa |
| TCF | Tourism Conservation Fund |
| TEEB | The Economics of Ecosystems and Biodiversity |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WRC | Water Research Commission |
| WRM | Water Resource Management |
| WTA | Water Trading Account |
| WWF-SA | World Wide Fund for Nature South Africa |

1 INTRODUCTION

South Africa ranks as the third most biodiverse country in the world. It is recognised for high levels of endemism and is home to over 95,000 known species, contributing a significant proportion to world plant, mammal, bird and reptile species (DEA, 2014). In addition to wetlands, rivers, estuaries, marine and coastal ecosystems, nine other diverse terrestrial biomes are found within the country including desert, fynbos, grassland, savanna and forest. Three globally recognised biodiversity hotspots have also been identified: the Cape Floristic Region (one of the world's six Floral Kingdoms), situated in the south-west of the country, falls entirely within the country; the Succulent Karoo Hotspot, in the southern interior and along the west coast, is shared with Namibia; and the Maputaland-Pondoland-Albany Hotspot, which can be found along the eastern seaboard and interior, extending into Mozambique and Swaziland (Cadman et al., 2010).

Biodiversity and ecosystem services make a highly significant contribution to the South African economy and form the baseline assets for sustainable development. Awareness of the importance of nature to tourism, water supply, food security and climate change resilience is growing, albeit slowly. For example, the concept of 'ecological infrastructure' has been developed and promoted with the intention of changing perceptions of how nature provides essential human services. The importance of diverse natural attractions, especially protected areas, as key tourism assets is better recognised and nature-based tourism is a significant contributor to the economy. The substantial costs associated with inaction, for example not proactively clearing invasive alien plants, are understood and are being addressed but require additional investments to avoid future costs.

Habitat loss and ecosystem degradation are the primary pressures on biodiversity in South Africa. While the drivers of habitat loss and degradation vary across the country, the main drivers include:

- Cultivation and over-grazing in terrestrial and wetland ecosystems
- Invasive alien species in terrestrial and freshwater ecosystems
- Coastal development in coastal ecosystems
- Certain destructive fishing activities, such as bottom trawling, in marine ecosystems
- Unsustainable mining and urban development in all ecosystems

Over 18% of the country's land surface has experienced an outright loss of natural habitat. In some regions, the percentage of loss is much higher and is accompanied by rapid rates of loss. If these rates continue, it is projected that there will be little natural vegetation left outside of protected areas by 2050 (Driver et al., 2012). The economic costs of this ecosystem loss and degradation cannot be overstated as the changing climate is placing increased stress on the need for water security, food production, and sustainable livelihoods.

The Biodiversity Finance Initiative (BIOFIN, see Box 1) has been implementing a series of technical assessments on biodiversity policy, institutions, expenditures and financial needs. The Biodiversity Expenditure Review (DEA, 2016) provides a detailed assessment of the financing environment for biodiversity conservation in South Africa. The majority of expenditure on biodiversity is by government totalling R11.54 billion in 2016 up from R5.8 billion in 2009. Since 2009, this expenditure has represented a relatively stable portion of the total national budget of between 0.9% and 1%. Government expenditure is augmented by private sector expenditure specifically on private protected areas estimated at R732 million in 2016, and NGO expenditure of R515 million in 2016 which has grown particularly strongly from R157 million in 2009. Based on an analysis of government financing trends and existing constrained budgets, it is expected that there will be close to zero real growth in biodiversity expenditure by government departments and their entities in the short to medium term (2017 to 2019) (DEA, 2016).

Current financing levels for biodiversity are inadequate. The BIOFIN Financial Needs Assessment shows that they do not cover the anticipated costs of achieving the goals of the National Biodiversity Strategy and Action Plan (NBSAP). In the order of R63 billion is needed for this, spread over the next 10 years. Bear in mind that the cost of implementing the NBSAP does not represent the total biodiversity funding needs of the country, as the NBSAP is a prioritised strategy that does not fully capture all the activities that are required if the country is to meet its biodiversity goals and mandate. Other key sources cited in the Finance Needs Assessment also give indications of under-funding. These include the costing exercise undertaken for the National Biodiversity Framework in 2008 which concluded that “regardless of the final figure, there appears to be ample evidence from a number of sources that conservation is seriously underfunded in aggregate” (DEA, 2010a). Funding shortfalls from case studies cited in the Finance Needs Assessment tend to range between 24% and 67% of actual spend levels (DEA, 2016a). Biodiversity conservation and restoration needs are immediate and government funds made

Box 1: The Biodiversity Finance Initiative

The United Nations Development Programme (UNDP) launched the Biodiversity Finance Initiative (BIOFIN) in 2012 as new global partnership seeking to address the global biodiversity finance challenge in a comprehensive and systematic manner. The project aims to develop a methodology for mainstreaming biodiversity into national development and sectoral planning, and address the finance gap for biodiversity. South Africa is one of 30 countries implementing BIOFIN at the national level led by the Department of Environmental Affairs (DEA) and its partners.

Box 2: Defining biodiversity finance solutions

Finance solutions are a means of using one or more finance mechanism or instrument in a particular context, which results in the improvement of biodiversity conservation and management. Finance solutions can result in:

- An increase in funding, either from new sources (e.g. innovative finance) or existing sources
- Better spending of existing funds
- Reducing costs associated with biodiversity conservation and management
- Realigning neutral or harmful expenditure to be beneficial (such as adjusting agricultural subsidies to support green agriculture)

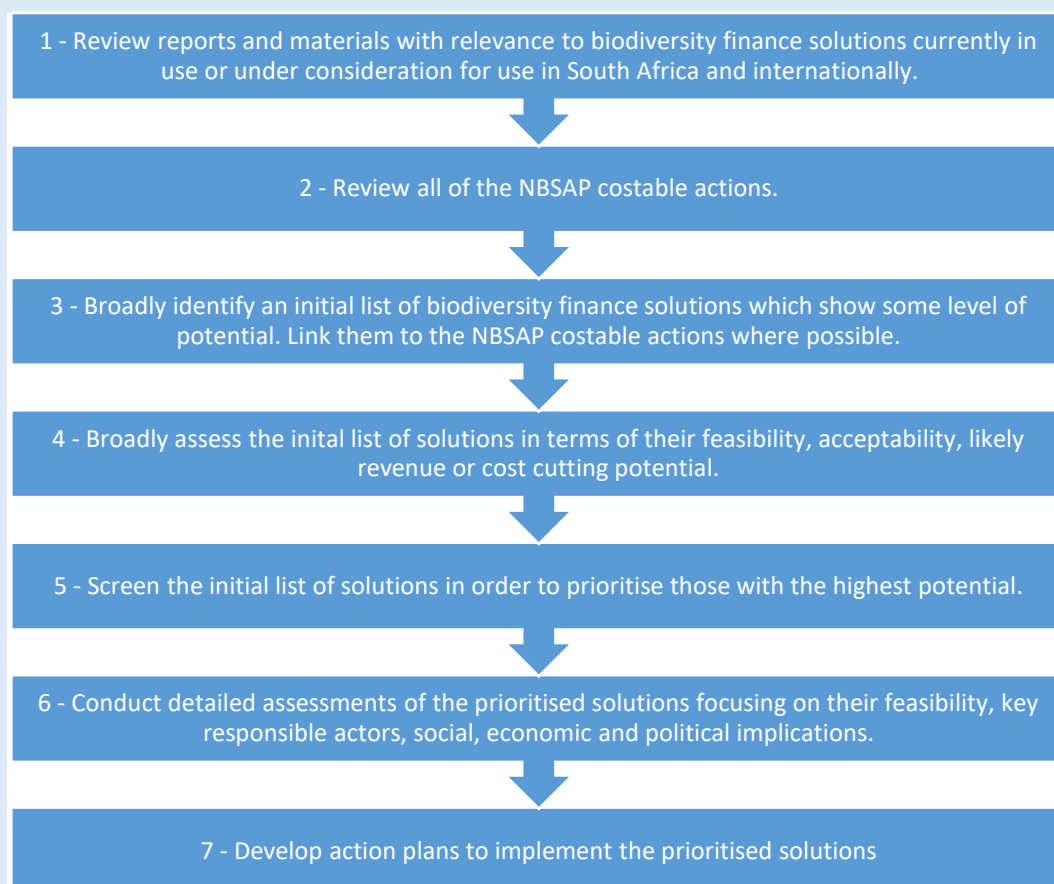
Finance solutions should speak to a particular context, addressing specific needs and challenges within that context. While a finance instrument might be generic, a finance solution should be contextualised (e.g. create a Payments for Ecosystem Services market channeling funds from New York City water users to the management of land in the New York City water catchment area). In some cases, the finance solution may simply be to fix a part of a finance mechanism. For example, in South Africa, where tax incentives for biodiversity conservation already exist, the finance solution may be to support the uptake of these tax incentives.

available to address them remain too low. As government finances are currently strained and always subject to competing demands, a growing portion of funding will likely come from the private sector and donors. However, given the “public good” nature of biodiversity conservation, significant government funding is appropriate and will continue to be needed. The State will also need to innovate and take the lead in creating the required enabling conditions for private sector investments. Biodiversity and environmental finance solutions are not new to South Africa and have been applied in sophisticated ways (Box 2 describes the key financial results that are associated with biodiversity finance solutions). For instance, in the early 2000s, National Treasury undertook an Environmental Fiscal Reform process. Tax incentives for landowners wishing to establish private protected areas have been introduced, and a carbon tax and associated carbon offsetting regime is also set to be introduced within the next few years.

This Biodiversity Finance Plan identifies priority biodiversity finance solutions, considers their feasibility and potential, and outlines broad next steps needed to move towards implementation. The approach used in drawing up the Plan is described in Box 3. The Plan should be considered a living document and a contributor to an ongoing process of developing and encouraging biodiversity finance in the country. It should be updated as circumstances, needs and opportunities evolve.

Box 3: Approach to Biodiversity Finance Plan Development

The approach to the Biodiversity Finance Plan development consisted of the following steps:



Note that Step 2 and Step 3 were not strictly sequentially as work on generating an initial list of finance solutions was carried out while the actions for the NBSAP were being costed.

The assessment was done with inputs from the other members of the BIOFIN team. In addition, technical guidance was given by the global UNDP BIOFIN team. BIOFIN South Africa is guided by a national Steering Committee, and receives technical input from a national Technical Reference Group. It is also a standing item on Working Group 1 convened by DEA – a meeting of national and provincial government entities in the environmental sector addressing biodiversity management and conservation.

Stakeholder engagement was used extensively at all stages of the process. It was carried out through one-on-one engagements and through two stakeholder workshops. Stakeholders provided valuable inputs especially in terms of identifying finance solutions, prioritising solutions and assessing feasibility particularly in terms of key nuances and potential pitfalls.

The remainder of the report is structured as follows:

- **Section 2** provides context for the Plan, focusing on the biodiversity management and public finance context, given their relevance and importance to the Plan. A discussion on the role of making the case for biodiversity and for individual finance solutions is also included in this Section.

- **Section 3** introduces the individual biodiversity finance solutions and consolidates them into an integrated plan, providing clarity on key links and synergies between solutions and over-arching enabling factors. Financial benefit projections for the Plan are also provided.
- The 16 individual finance solutions are outlined in more detail in **Section 4**, focusing on the context, objectives, likely finance results, risks and key next steps towards implementation of each finance solution.
- **Section 5** concludes with recommendations.

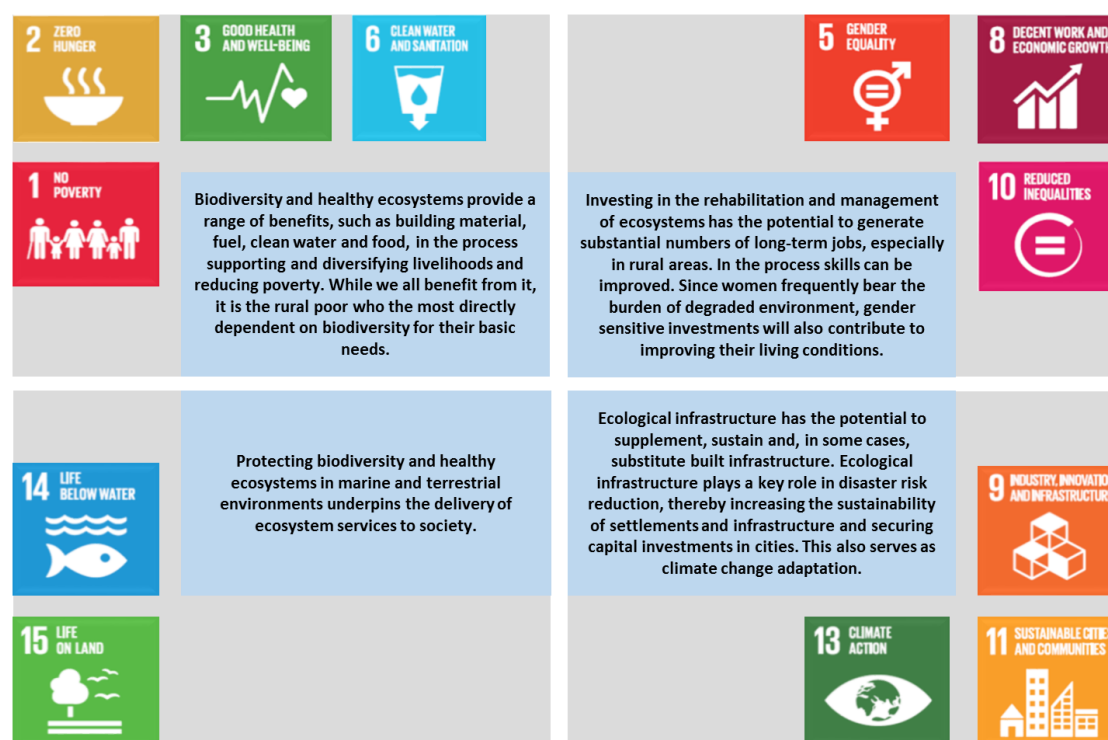
2 THE CONTEXT FOR BIODIVERSITY FINANCE IN SOUTH AFRICA

Biodiversity finance solutions are dependent on a wide range of pre-existing conditions in terms of laws, regulations, governance, institutional capacity, markets, and more. Although the full context within which these solutions function is too broad to cover in this section (see the DEA Policy and Institutional Review developed through BIOFIN), there are several areas that form essential context for understanding the solutions presented in this Plan. Section 2.1 provides evidence of the social and economic value of effectively managing and protecting biodiversity and the need to make this case clearly to key decision makers. Section 2.2 provides institutional and programmatic context for South Africa's biodiversity sector including protected areas, biodiversity stewardship and natural resource management. Section 2.3 summarizes the system of public finance management and government budgeting.

2.1 The Investment Case for Biodiversity

South Africa's rich biodiversity and ecological infrastructure provide immense opportunities to support South Africa's development path and underpin major segments of the economy. Investing in the management and protection of biodiversity and ecosystems is an investment in sustainable development and supports the country's progress towards achieving the United Nation's Sustainable Development Goals (SDGs), to which South Africa is signatory. Figure 2-1 demonstrates the role of biodiversity in supporting the achievement of a number of the SDGs.

Figure 2-1: Biodiversity and ecological infrastructure can help to achieve the Sustainable Development Goals (Cumming et al. 2017)



Biodiversity and intact ecosystems are able to provide a sustainable flow of benefits to support livelihoods. Basic needs such as food security, building materials and clean water bring benefits to all, and the impoverished in particular. There are numerous studies that have clearly shown the financial and economic value of investing in and maintaining our biodiversity and ecological infrastructure. For example, non-timber forest products within both rural and

urban areas in South Africa have been shown to make up around 20% of household income in poor communities (Shackleton et al., 2007). These natural products play a particularly important role as a safety net during times of increased vulnerability or disaster (Shackleton and Shackleton, 2004; Shackleton et al., 2007). Livelihood benefits from wetlands to rural communities have been estimated to provide a value of US\$211 per household per year for 1 km² of wetland in Limpopo Province – over six times more than the average cash incomes of these households (Adekola et al., 2008). On a per hectare basis, the livelihood benefits of wetlands in Southern Africa have been calculated to provide goods and services worth US\$203 per hectare per year and US\$1,570 per hectare per year, in rural and urban settings respectively (Lannas and Turpie, 2009).

Box 4: Biodiversity and the National Development Plan

A number of key development policies, strategies and plans express the possibilities biodiversity presents to the South African development agenda. These provide opportunities for mainstreaming biodiversity concerns into the national agenda. One key document is the National Development Plan (NDP).

The NDP is a key over-arching plan that guides South Africa's development path until 2030. The NDP places a strong emphasis on economic growth and development, with the implication that environmental planning needs to be robust enough to secure biodiversity from decisions driven largely by a development agenda. It recognizes that some of our development objectives are in conflict with each other, but affirms that South Africa "needs to protect the natural environment in all respects, leaving subsequent generations with an endowment of at least equal value". The NDP deals extensively with natural resources and biodiversity across topics and content focused on tourism, agriculture and rural development, economic infrastructure (water), and human settlements (spatial planning). At a sectoral planning level, the National Water Resources Strategy also explicitly recognises the value of ecosystem services for water security. It articulates policy objectives focused on investment in the rehabilitation and maintenance of water-related ecosystems, particularly in strategic water source areas. The Sustainable Development Goals are consistent with South Africa's development objectives.

Healthy rangelands for grazing underpin certain cultural practices and support food security and poverty alleviation (Shackleton et al., 2008).

The wine and deciduous fruit industries in the Western Cape benefit from intact natural habitats within agricultural landscapes. For example, the wine industry saves an estimated US\$230 per hectare per year due to natural pest control (Potter, 2004; Kross et al., 2011). Wild pollination services bring benefits to the deciduous fruit industry of around US\$29 – US\$185 million annually (Allsop et al., 2008).

Understanding the role of healthy ecosystems in supporting water-related services is one way to illustrate the concept of ecological infrastructure, described as

nature's equivalent of built infrastructure (SANBI, 2014; Cumming et al., 2017). While ecological infrastructure can often supply the same services as built infrastructure for a lower cost, in many instances a complementary integrated approach to ecological and built infrastructure is more realistic. For example, the role of a healthy catchment, intact river banks and well-functioning wetlands above a dam prevent siltation and can reduce the impact of flood damage on built infrastructure, thereby complementing and helping to secure the investments in built infrastructure.

The ability of intact ecosystems to retain soil and regulate the flow of water in catchments is particularly important in a water scarce country such as South Africa. Invasive alien plants have a substantial negative impact on water availability, reducing yield in critical water catchments. Estimates of related annual losses range between US\$50 million to US\$194 annually in South Africa's 10 large water catchments (Blignaut et al., 2008). Wetlands play an important role in

removing toxins from water, such as nitrogen and phosphorus from sewage, agriculture and industrial waste (Oberholster et al., 2008), and acid mine drainage (Tutu et al., 2008).

The effects of climate change are expected to see South Africa facing an increase in extreme weather events, including floods, droughts and fires. Restoration of soil health and rehabilitating certain ecosystems will bring mitigation benefits (Mills and Cowling, 2006) while also resulting in climate adaptation benefits. The protection of human settlements, agricultural lands and built infrastructure all benefit from intact ecological infrastructure (Vermaak and van Niekerk, 2004; Nel et al., 2014). For example, the restoration of sand dunes along South Africa's south eastern coast was shown to have substantial effects on reducing the destruction to houses, roads and utilities caused by sea storm waves (Nel et al., 2014).

Job creation is a top priority in South Africa's development agenda and at the heart of the National Development Plan (NDP). Investing in ecosystem management and protection supports job creation, often in rural areas with limited alternatives. DEA's Natural Resource Management (DEA-NRM) programmes, implemented across the country, aim to create jobs while rehabilitating natural ecosystems and managing biodiversity (See Section 2.2.3 for more information on these programmes). Working for Water, one of the larger NRM programmes, employs around 9,000 people each year. These programmes are designed to address a number of sustainable development issues alongside job creation – women and youth make up significant proportions of the workforce, and skills development is central to the programmes.

Tourism is a major sector in South Africa's economy, accounting for 3.1% of GDP and 4.5% of all jobs in the country in 2015 (StatsSA, 2016). Ecotourism is supported by healthy ecosystems, with some of South Africa's world renowned protected areas attracting tourists from around the globe. The Kruger National Park, for example, supports 10,150 direct and indirect job opportunities and added approximately R2 billion to GDP in 2012 (Saayman et al., 2012). Even smaller sites such as Boulders Penguin Colony, which forms part of Table Mountain National Park, can have highly significant local impacts. Van Zyl (2014) estimated that approximately 200 local jobs in the Simon's Town area stem from tourism to the Colony which attracts almost 700,000 visitors per year.

The economic evidence presented here can help make the case for sustained or increasing investment in biodiversity and ecological infrastructure. Identification of arguments that respond to decision makers' interests and objectives is essential for making a strong case. In order to assure adequate investment, biodiversity conservation must often compete with alternative uses of resources. The investment case should thus draw on scientific, socio-economic, policy-alignment, cultural and other arguments and metrics.

In many cases, it is required to build awareness and capacity of not only key opinion and decision-makers but also practitioners such as engineers, architects, food retailers, and others who make daily choices impacting biodiversity. This helps to ensure that they gain a more fundamental understanding of a relatively complex system, where benefits can be less obvious. Continuous effort and openness to opportunities is required. The biodiversity sector should also continue to work on creating its own intellectual space which is shared with and actively seeks inputs from others with financial mandates (for example, National Treasury, the Department of Planning, Monitoring and Evaluation, and the Financial and Fiscal Commission¹).

¹ The Financial and Fiscal Commission (FFC) is a permanent independent expert commission with a constitutionally defined structure and responsibilities. The Commission has the responsibility to advise and make

DEA and SANBI are the key institutions that have been actively building and making the case for biodiversity conservation at a national level. There is currently work underway within DEA, SANBI and StatsSA to develop natural capital accounts that include ecological infrastructure and ecosystem services. This important work fundamentally integrates biodiversity into national monitoring, and recognises the importance of biodiversity across the socio-economic landscape. There has also been increasing efforts to show how investment in ecological infrastructure and ecosystem services maintenance and restoration can be a cost-effective tool for infrastructure development, also addressing national development objectives of poverty alleviation, rural development and job creation.² A Framework for Investing in Ecological Infrastructure in South Africa was developed by SANBI in support of this work (SANBI, 2014). Other initiatives and research work focused on making the case with potential relevance have been summarised in Appendix 5.

2.2 The Biodiversity Management Landscape

This Biodiversity Finance Plan aims to significantly address the funding needed for the country to achieve its biodiversity vision while contributing to sustainable development. An analysis of the NBSAP in 2016 conducted in the Funding Needs Assessment by DEA, showed that the two largest cost drivers are 1) ecosystem restoration and 2) protected area establishment and management. As a result, many of the finance solutions in this Plan focus on these two broad programmes of work, yet have various co-benefits for other aspects of the biodiversity sector and the economy. This section provides an outline of the protected area institutional and programmatic landscape in the country, and explains the most prominent restoration programmes in South Africa. This is essential context for many of the finance solutions described in the sections below.

2.2.1 Protected Areas in South Africa

Protected areas (PAs) are the cornerstone of biodiversity conservation in South Africa. South Africa's protected areas system provides enormous benefit to the country through tourism, livelihoods, ecosystem services, and by contributing to South Africa's reputation as a global destination. Protected areas aim to conserve representative samples of ecological patterns and processes, ensuring ecosystems and species are protected effectively.

In South Africa, protected areas are parcels of land or sea that are formally protected by law and managed mainly for biodiversity conservation. Only protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) are considered to be protected areas in South Africa. The Protected Areas Act distinguishes between several categories of protected area: special nature reserves, national parks, nature reserves, marine protected areas and protected environments. In addition, world heritage sites, specially protected forest areas, and mountain catchment areas, which are governed by other pieces of legislation, are recognised as protected areas by the Protected Areas Act.

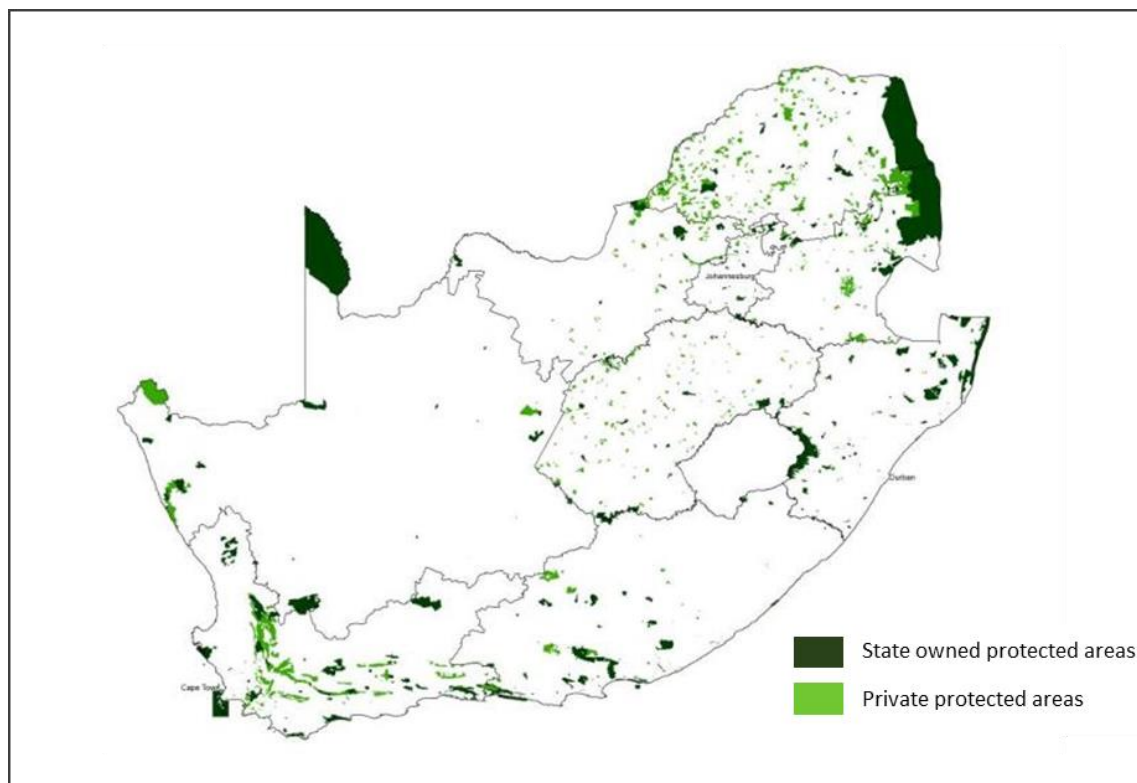
The Protected Areas Act allows for protected areas to be declared on state and non-state land with the consent of the landowner. The Act also requires that a management authority be appointed for all protected areas. This management authority must be a 'suitable person,

recommendations to Parliament, provincial legislatures, organised local government and other organs of State on financial and fiscal matters. Its primary role is to ensure the creation and maintenance of an effective, equitable and sustainable system of intergovernmental fiscal relations in South Africa (<http://www.ffc.co.za/ffc-about-us>).

² Note that the *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project* being funded by the GEF aims to contribute to bringing national initiatives to make the case for biodiversity to a municipal level (SANBI, 2013a).

entity or organ of state’ – thereby allowing for protected areas to be managed by government as well as a private or communal landowners. While most protected areas in the country are owned and managed by the state, there are many protected areas owned and managed, or just owned, by private or communal landowners (see Figure 2-2).

Figure 2-2: Protected areas in South Africa - state owned and private protected areas



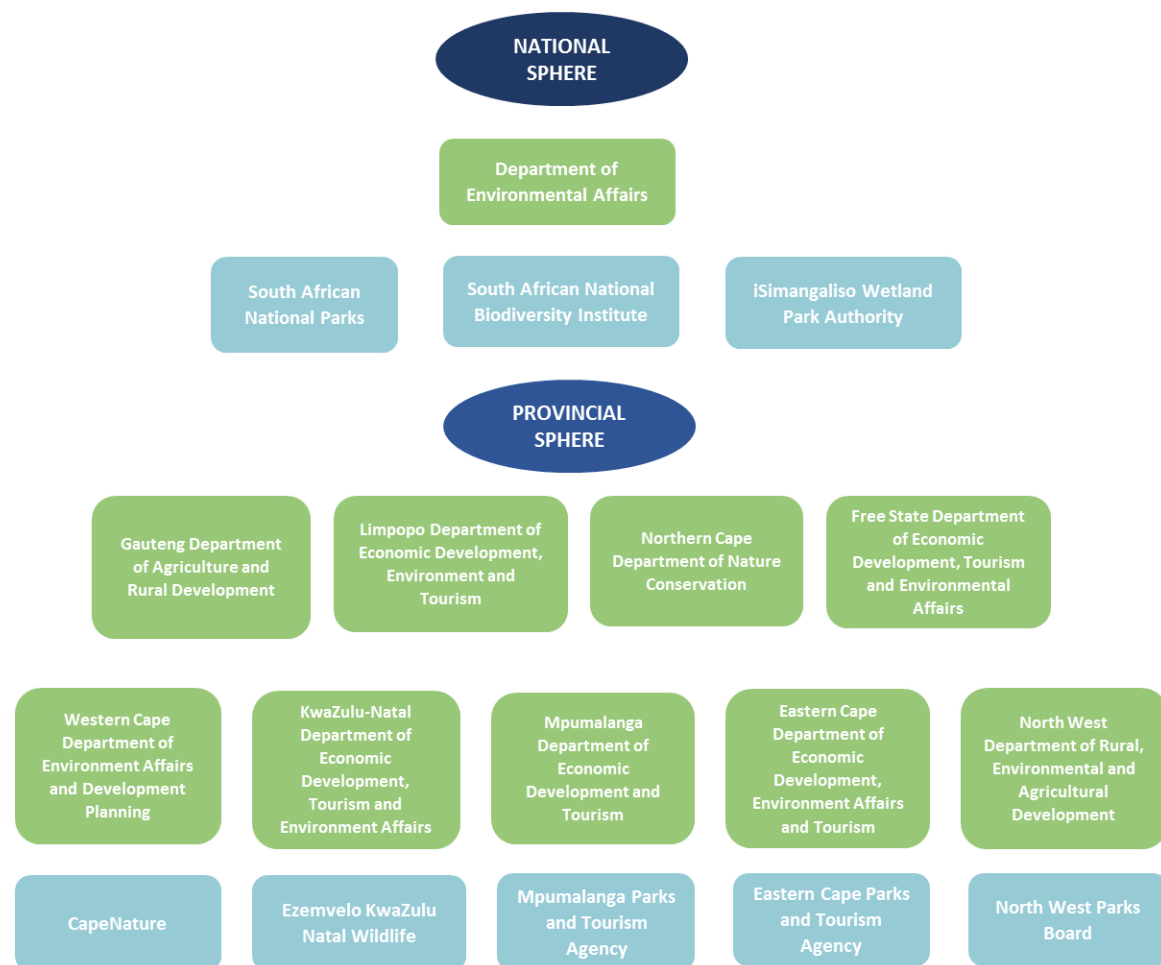
The national and provincial network of terrestrial protected areas is managed by a combination of South African National Parks (SANParks), which is responsible for all 21 National Parks, the iSimangaliso Wetland Park Authority which manages the iSimangaliso Wetland Park, and the conservation authorities in each of the nine provinces (see Figure 2-3 for the national and provincial organisational structure associated with protected area management).³ Five of these provincial conservation authorities take the form of statutory conservation boards under the provincial departments, namely:

- CapeNature in the Western Cape
- Eastern Cape Parks and Tourism Agency (ECPTA)
- Ezemvelo KwaZulu-Natal Wildlife (EKZNW)
- North West Parks and Tourism Board (NWPTB)
- Mpumalanga Parks and Tourism Agency (MPTA)

In Limpopo, Gauteng, the Northern Cape and the Free State the conservation authorities are not separate boards and are effectively divisions housed within the provincial departments responsible for the environment. The current organisational structure associated with state protected area management in the country has been characterised as complex and somewhat fragmented. Potential options for rationalisation scenarios have been investigated by DEA.

³ iSimangaliso Wetland Park is managed by a separate Authority in keeping with special requirements associated with its declaration as a UNESCO World Heritage Site. At the local level, several municipalities have established a nature conservation function to manage local nature reserves which make a very small portion of the PAs estate.

Figure 2-3: The national and provincial organisational structure of protected area management in South Africa



Source: Adapted from DEA, 2015

Private protected areas are legally recognised protected areas that are owned by private individuals, corporate entities, non-government organisation and trusts, and can also be on communal land⁴. Private protected areas are governed by the same legislation as state owned protected areas, and subject to the same legal requirements and restrictions. Around 30% of South Africa's terrestrial protected area estate is made up of private protected areas (around 9% of the country's total protected area estate, which includes terrestrial and marine). The more recently established private protected areas are created through contract agreements, either as a Contract National Parks (in the case of SANParks), or through Biodiversity Stewardship programmes, implemented by the provincial conservation authorities.

⁴ While communal land is owned by the state (usually the national Department of Public Works or the national Department Agriculture, Forestry and Fisheries), it is essentially held in trust for the sole use of the communities that live on and use the land. Therefore, communal land is classified as 'private protected areas' in South Africa (SANBI, 2015).

Box 5: The three main mechanisms for expanding the land-based protected area network (DEA, 2016c)

Acquisition of land is the traditional way of establishing and expanding protected areas, but involves large upfront costs.

Contract agreements are agreements in which landowners maintain ownership of their land but enter into a contract with a protected area agency. They are facilitated by provisions in the Protected Areas Act. They are being used increasingly as part of biodiversity stewardship programmes. Contract agreements are attractive because they tend to cost protected area agencies less than acquisition, and because by far the largest proportion of land in the priority areas is in private hands. Biodiversity stewardship programmes are increasingly recognized as an important mechanism in the expansion of the protected area network. There are significant potential synergies between biodiversity stewardship programmes, land reform and rural development.

Declaration of public or state land involves reassigning land to a protected area agency from another organ of state. It has limited applicability because only a small proportion of land in the priority areas for protected area expansion is public land.

Expansion of the marine protected area network is more complex and mechanisms for securing protected areas specifically focused on inland aquatic ecosystems are poorly understood.

The National Protected Area Expansion Strategy, drafted in 2016, sets out the country's targets for expanding protected areas. It recognises that different approaches can be followed to secure protected areas, which should be seen as complementary approaches within a complex institutional and ecological landscape. There are three main mechanisms for securing land-based protected areas, namely state acquisition of land, contract agreements with private or communal landowners, and declaration of existing public or state land (explained further in Box 5).

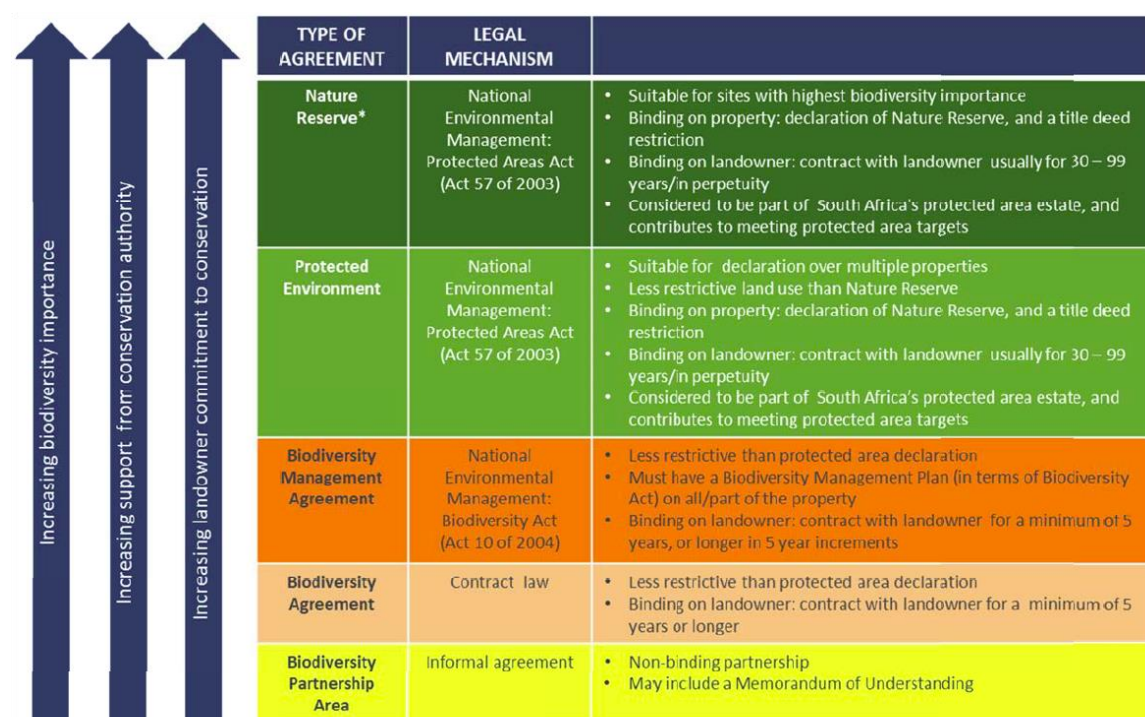
2.2.2 Biodiversity Stewardship: Sustainable land management on and off protected areas

Biodiversity stewardship in South Africa is an approach to securing land in systematically identified biodiversity priority areas, led by conservation authorities. Agreements are entered into

between conservation authorities and private and communal landowners, often with the support of conservation NGOs. The programmes encourage sustainable land use practices, and can include formal protection, management and restoration of terrestrial and aquatic ecosystems. Landowners maintain ownership of their land, receive guidance and management assistance, and are supported to diversify their land-based activities to create sustainable livelihoods, all the while protecting the biodiversity. The programmes have been established in all nine provinces over the last 13 years and are making a significant contribution to meeting national conservation targets, at much lower cost to the state than land acquisition (see SANBI, 2015).

Biodiversity stewardship programmes allow for a hierarchy of agreements with landowners (see Figure 2-4). Each 'level' requires commitments from the landowners to adhere to certain conditions over minimum time periods and, in some cases, applies restrictions to the use of the land. The 'higher' levels of biodiversity stewardship agreements result in the declaration of protected areas. The 'mid' levels of biodiversity stewardship agreements (Biodiversity Management Agreements and Biodiversity Agreements) can result in what is referred to in South Africa as 'conservation areas'— areas that are not formally protected in terms of the Protected Areas Act but are nevertheless managed at least partly for biodiversity conservation (SANBI, 2015). Typically, these two categories would have a duration of five to 10 years, but could be in place for longer. The 'lower' level of biodiversity stewardship is not legally binding in any way on the landowner, but recognises a stated commitment to some form of biodiversity or species stewardship.

Figure 2-4: Hierarchy of Biodiversity Stewardship Agreements



* Or National Park

Source: SANBI, 2015

In 2015 a study was completed which considered the cost implications and effectiveness of establishing and managing new protected areas through the traditional approach of state purchase and management, compared to the implementation of biodiversity stewardship programmes. The subsequent report, endorsed by MINMEC⁵, clearly demonstrated the financial benefits to the state of establishing and managing new protected areas through biodiversity stewardship programmes. This report, 'The Business Case for Biodiversity Stewardship' (SANBI, 2015), went on to recommend a number of actions for key stakeholders, including government, to pursue in order to implement the biodiversity stewardship programmes effectively. These six recommendations are:

1. Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year.
2. Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape.
3. Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements.

⁵ MINMEC promotes co-operative governance between the national ministers and their respective counterparts at provincial level. The environmental MINMEC comprises the Minister of Environmental Affairs, the Director-General of DEA and the provincial Members of Executive Councils (MECs) for Environmental Affairs (as mandated by Intergovernmental Relations Framework Act (Act 13 of 2005). MINMEC meets quarterly.

4. Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in.
5. Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters.
6. The community of practice for biodiversity stewardship should be strengthened and expanded.

The findings and guidance provided in the Business Case are important for both national and provincial government to consider as these entities seek to meet national and global biodiversity targets. The cost savings associated with the biodiversity stewardship approach may not yet be broadly recognised and have yet to be fully capitalised on by the state.

2.2.3 Ecosystem restoration and South Africa's Natural Resource Management programmes

Degraded areas have a direct detrimental impact on a range of important ecosystem services, including water quality and quantity, fire risk, flood risk and food security, not to mention the impact on ecosystems and endangered species. The South African government recognises this and runs a number of country-wide programmes which aim to achieve the multiple goals of job creation, ecosystem restoration and the recovery and improvement of ecosystem service provision. These programmes are run by the DEA Natural Resource Management Branch (DEA-NRM) and include:

- **Working for Water**, which enhances water catchment management through the clearing of invasive alien species and subsequent rehabilitation.
- **Working for Wetlands**, which rehabilitates degraded wetlands.
- **Working for Ecosystems**, which reverses environmental degradation through ecological restoration and maintenance programmes.
- **Working for the Coast**, which focuses on rehabilitation, pollution control and improving access in the coastal zone.
- **Working for Land**, which focuses on the restoration of land especially through the introduction of indigenous species.
- **Working on Fire**, which implements integrated veld and forest fire management programmes and activities.

Ecosystem management and restoration is a primary mechanism for investing in ecological infrastructure. The DEA-NRM programmes also play a substantial role in job creation in the country, creating just under 24,000 full time equivalent jobs in 2015/16. Along with jobs, focus is placed on skills development, and opportunities for women and youth. The NBSAP indicates that, in order to meet their targets, these restoration programmes would ideally increase their expenditure from R2 billion to R12 billion. Ecological Restoration must also be framed in the context of Strategic Infrastructure Projects (SIP) 19 (Ecological Infrastructure for Water Security) funding opportunities noting that ecological infrastructure is an enabling avenue to mobilize upstream interventions in relation to SIP 18 (Water & Sanitation).

2.3 Public finance and government budgeting

National budgets tend to be the largest source of financing for biodiversity in most countries and South Africa is no exception. It is essential to understand and optimize national budget

processes as a central element of any biodiversity finance strategy. As well, many of the finance solutions in this Plan work through existing government finance policies and programs addressing specific national objectives. Public finance and fiscal policy are also essential to leverage private investments. Given the number of solutions profiled that are directly or indirectly connected to public budget formulation this section describes the overall budget process in South Africa.

The overall objectives of the budget process, as outlined by National Treasury, are essentially threefold and should also guide thinking when formulating finance solutions (NT, 2016):

1. Fiscal sustainability: Achieving an appropriate balance between revenue, expenditure and debt;
2. Effective allocation of resources: That reflects the political and policy priorities of government taking into account evidence of programme effectiveness; and
3. Value for money: Promoting the efficient, economic and effective use of resources, as required by the Constitution.

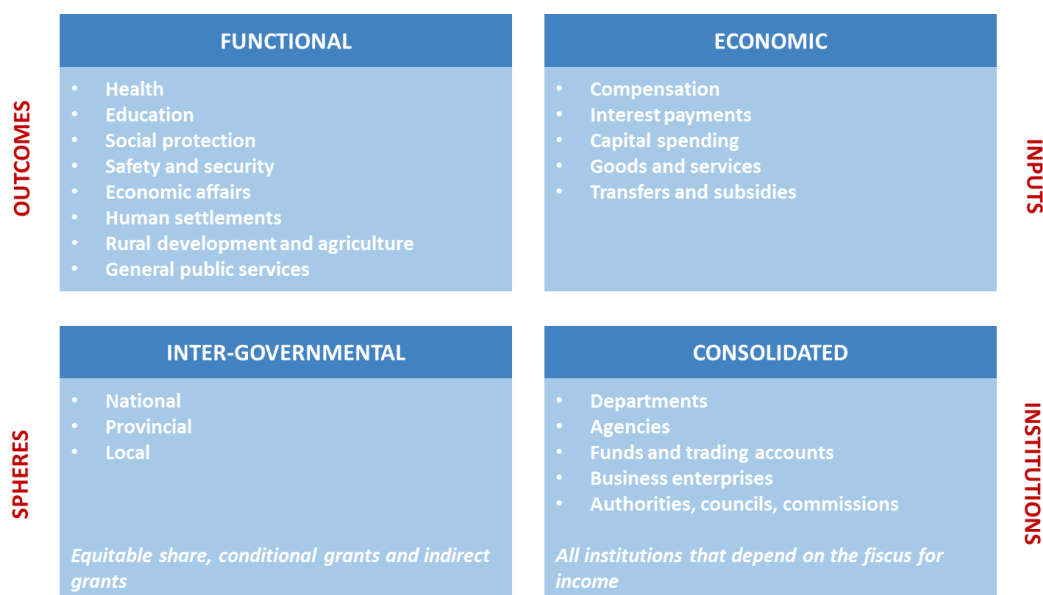
Box 6: Public finance trends in South Africa

The need of balancing growing requests for public investments with austerity measures poses short-term challenges on public finance management in South Africa. Slow growth and limited increases in revenue have expanded the debt burden and work against maintenance of an investment-grade credit rating. The budget for the fiscal year 2016/17 includes a mix of tax increases, especially on higher income earners and fuel, and reduced spending (including on public-sector salary expenditures), in order to balance budget requests from the different sectors with longer term fiscal consolidation. South Africa's fiscal space in the short term will likely narrow. As a result, and despite powerful pressures to spend, the budget deficit will likely imply short term cuts in the environment budget. In the medium term, assuming better growth, these pressures may gradually reduce. Fiscal austerity might offer opportunities to pursue more environment and biodiversity friendly fiscal measures (e.g. revision of the general fuel levy and introduction of the carbon tax). These provide incentives to the private sector and may increase the likelihood of earmarked spending on the environment under certain conditions.

The budget process is organised to allocate resources across four dimensions as outlined in Figure 2-5 (NT, 2015):

1. The principle of function (or results-based) budgeting which clusters institutional activities and resource allocation around policy objectives or outcomes.
2. The economic allocation of spending, which balances resources between the purchase of inputs such as human capacity (compensation), physical assets (capital spending) or goods and services. The Constitution requires that resources are shared equitably between the three spheres of government (national, provincial and local).
3. The budget includes a process of intergovernmental fiscal planning through which all spheres of government cooperate to design intergovernmental fiscal instruments and allocate resources towards common objectives.
4. A consolidated budget approach to public finances integrates departmental budgets of national and provincial government with the financing of agencies, entities and other institutions that are largely funded by the fiscus.

Figure 2-5: Four dimensions of the budget



Emphasis is placed on budgeting which clusters institutional activities and resource allocation around policy objectives or outcomes (which often require co-operation) and away from line items. The resource allocation framework, which ultimately guides the budget, draws on budget objectives and is essentially aimed at aligning budgets to policy priorities whilst allowing for necessary expenditure control. As such, at a macro level, it is guided primarily by the Medium Term Strategic Framework (MTSF), the National Development Plan (NDP), sector plans and key associated planning processes such as the mid-year Cabinet Lekgotla. It also takes the following technical inputs into account (NT, 2015):

- Departmental strategic plans, annual performance plans, budget reviews and recommendations reports tabled in parliament.
- The Medium Term Expenditure Committee (MTEC) report for the previous year and other analytical work produced during the last budget process.
- Expenditure and performance reviews, evaluations and performance dialogues conducted over the last year by the Department of Planning, Monitoring and Evaluation (DPME) and National Treasury and other evidence of programme effectiveness.

The national and provincial budget process is a continuous cycle that runs from April to March every year (see Box 7 based on NT, 2015).

Box 7: The budget process timeline

April: Departments submit requests for rollovers of qualifying unspent funds from the previous financial year to National Treasury.

May to June: Rollover allocation letters are issued to departments. National Treasury issues the Medium-Term Expenditure Framework (MTEF) budget guidelines to departments.

July: Departments submit detailed expenditure estimates to National Treasury. Analysis and approval of changes to departments' budget programme structures. Cabinet Lekgotla takes place, where policy priorities and implementation are discussed and approved.

August: Ministers' Committee on the Budget (Mincombud) approves the preliminary fiscal framework and division of revenue.

September: The Medium-Term Expenditure Committee (MTEC) presents its recommendations of funding allocations to the Mincombud. Final recommendations on allocations are taken to Cabinet for approval.

October to November: The Medium-Term Budget Policy Statement (MTBPS) which highlights key government priorities, the size of the spending envelope for the next MTEF period, the proposed division of revenue and major provincial and local government allocations, is tabled in Parliament. Allocations to national government departments are finalised and Cabinet approval is secured.

December to February: Minister of Finance receives Budget Review and Recommendations Reports on the MTBPS, fiscal framework, and Division of Revenue, from Parliament. Reports are analysed informing responses to Parliament. National Budget, Appropriation Bill, Division of Revenue Bill, Estimates of National Expenditure finalise and tabled by Minister of Finance in Parliament.

March to June: Parliament deliberates and adopts a Fiscal Framework for the upcoming year and begins hearings on the Division of Revenue Bill, which is then passed in Parliament.

July: The Appropriation Bill is passed by Parliament, and based on this, funds are allocated to departments.

The division of total available national revenue starts with the setting aside of the so-called 'top slice' which is used primarily for debt-service costs and to maintain emergency reserves. The remaining available budget is then divided between national, provincial and local government (this is known as the vertical division) and enacted via an annual Division of Revenue Act. The process around allocation, prescribed by the Intergovernmental Fiscal Relations Act (1997), is informed by policy, takes into account the powers and functions assigned to each sphere of government and is at the heart of constitutional cooperative governance (NT, 2016d). Allocations among the individual provinces and local government (the horizontal division) are determined through the equitable share formulas, discussed below, and through conditional grants. Conditional grants are designed to achieve specific goals, and provinces and municipalities must meet specific criteria to receive grants and fulfil conditions when spending them (NT, 2016d). They allow national government to make additional funding directly available for defined purposes or functions that are beyond overall provincial or local government allocations determined through the equitable share.

2.3.1 Provincial government equitable share

The provincial government equitable share, which determines how much each province is allocated, consists of six components that capture the relative demand for services among provinces and takes into account specific provincial circumstances. The formula's

components, which exclude environmental or biodiversity considerations, are not guidelines as to how much should be spent on functions. Provincial executive councils have discretion to determine departmental allocations for each function, taking into account the priorities that underpin the division of revenue.

For the 2016 Budget, the formula components, along with their relative weighting, are set out as follows (NT, 2016d):

1. An *education component* (48%), based on the size of the school-age population (ages 5 to 17) and the number of learners (Grades R to 12) enrolled in public ordinary schools.
2. A *health component* (27%), based on each province's risk profile and health system case load.
3. A *basic component* (16%), derived from each province's share of the national population.
4. An *institutional component* (5%), divided equally between the provinces.
5. A *poverty component* (3%), based on income data. This component reinforces the redistributive bias of the formula.
6. An *economic output component* (1%), based on regional gross domestic product (GDP-R, measured by Statistics South Africa).

The application of the equitable share formula in 2016 resulted the largest share going to KwaZulu-Natal (21.2%), followed by Gauteng (19.7%), the Eastern Cape (14%), Limpopo (11.8%), the Western Cape (10%), Mpumalanga (8.2%), North West (6.9%), Free State (5.6%) and the Northern Cape (2.6%).

2.3.2 Local government equitable share

Allocations from national government make up a relatively small proportion of local government finances as the majority of local government revenues are generated by municipalities themselves through, for example, property rates and service charges. The proportion of revenue from government transfers and own revenues varies dramatically across municipalities, with poor rural municipalities receiving most of their revenue from transfers, while urban municipalities raise the majority of their own revenues (NT, 2016d). The local government equitable share formula, which determines how much each municipality is allocated through transfers, is made up of five components:

1. The first part of the formula consists of the *basic services* component, which provides for the cost of free basic services for poor households.
2. The second part enables municipalities with limited resources to afford basic administrative and governance capacity, and perform core municipal functions. It does this through three components:
 - a. The *institutional component* provides a subsidy for basic municipal administrative costs.
 - b. The *community services component* provides funds for other core municipal services not included under basic services.
 - c. The *revenue adjustment factor* ensures that funds from this part of the formula are only provided to municipalities with limited potential to raise their own revenue. Municipalities that are least able to fund these costs from their own revenues should receive the most funding.
3. The third part of the formula provides predictability and stability through the *correction and stabilisation factor*, which ensures that all of the formula's guarantees can be met.

2.3.3 Conditional grants

Conditional grants allow national government to make additional funding directly available for defined purposes or functions that are beyond overall provincial or local government allocations determined through the equitable share. Conditional grants can be for a specific purpose or used to supplement the funding of programmes or functions that are already funded from provincial and municipal budgets. The latter often come in the form of block grants. Conditions for grants may also vary, leaving considerable discretion to the provinces and municipalities that receive them (FFC, 2014). Conditional grants are generally created to fund national priorities where it is felt that additional resources are needed. This allows national government to exercise greater spending authority and control. It involves a trade-off though as, at a national budgeting level, more funding through conditional grants means less funding through equitable shares. This may impact on the autonomy and flexibility of provincial and local governments to implement programmes according to their mandates (FFC, 2006).⁶

There are currently 26 conditional grants available to provinces and 11 available to local municipalities (Appendix 3 and Appendix 4 contains a list of all these grants along with their magnitudes for 2016).

2.3.4 Overall division of revenue

Table 2-1 summarises the division of national revenue from 2012 and projected to 2019 making the distinction between national, provincial and local government and specifying the split between equitable share and conditional grant allocations. After providing for the top-slice, 47.7% was allocated to national government, 43.2% to provincial government and 9.1% to local government based on the average for 2016 to 2019. Conditional grants provided roughly 22% of total provincial budgets and 50% of local municipality budgets.

⁶ FFC (2006) provides a comprehensive review of the use of conditional grants in South Africa. FFC (2013) reviews the evolution of conditional grants.

Table 2-1: Division of nationally raised revenue, 2012/13 to 2018/19

| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | Average |
|--|--------------|----------------|----------------|------------------|-----------------------|----------------|----------------|--------------------|
| | Outcome | | | Revised estimate | Medium-term estimates | | | annual MTEF growth |
| R billion | | | | | | | | |
| Division of available funds | | | | | | | | |
| National departments | 420.2 | 453.4 | 490.0 | 546.8 | 559.8 | 594.1 | 637.8 | 5.3% |
| <i>of which:</i> | | | | | | | | |
| Indirect transfers to provinces | 2.3 | 2.7 | 5.8 | 3.2 | 3.6 | 1.7 | 1.8 | -17.6% |
| Indirect transfers to local government | 5.0 | 5.9 | 8.9 | 10.5 | 7.8 | 7.4 | 7.7 | -10.0% |
| Provinces | 380.9 | 410.6 | 439.5 | 471.8 | 499.8 | 542.3 | 582.9 | 7.3% |
| Equitable share ¹ | 310.7 | 336.5 | 359.9 | 386.5 | 410.7 | 441.8 | 474.9 | 7.1% |
| Conditional grants | 70.2 | 74.1 | 79.6 | 85.3 | 89.1 | 100.5 | 108.1 | 8.2% |
| Local government | 76.2 | 82.6 | 87.7 | 99.7 | 104.9 | 113.3 | 125.8 | 8.1% |
| Equitable share | 37.1 | 39.0 | 41.6 | 50.5 | 52.6 | 57.0 | 61.7 | 6.9% |
| Conditional grants ¹ | 30.0 | 34.0 | 35.9 | 38.5 | 41.1 | 44.5 | 51.6 | 10.3% |
| General fuel levy sharing with metros | 9.0 | 9.6 | 10.2 | 10.7 | 11.2 | 11.8 | 12.5 | 5.4% |
| Non-interest allocations | 877.4 | 946.6 | 1 017.2 | 1 118.2 | 1 164.6 | 1 249.8 | 1 346.5 | 6.4% |
| Percentage increase | 7.9% | 7.9% | 7.5% | 9.9% | 4.2% | 7.3% | 7.7% | |
| Debt-service costs | 88.1 | 101.2 | 114.8 | 129.1 | 147.7 | 161.9 | 178.6 | 11.4% |
| Contingency reserve | – | – | – | – | 6.0 | 10.0 | 15.0 | |
| Main budget expenditure | 965.5 | 1 047.8 | 1 132.0 | 1 247.3 | 1 318.3 | 1 421.7 | 1 540.0 | 7.3% |
| Percentage increase | 8.5% | 8.5% | 8.0% | 10.2% | 5.7% | 7.8% | 8.3% | |
| Percentage shares | | | | | | | | |
| National departments | 47.9% | 47.9% | 48.2% | 48.9% | 48.1% | 47.5% | 47.4% | |
| Provinces | 43.4% | 43.4% | 43.2% | 42.2% | 42.9% | 43.4% | 43.3% | |
| Local government | 8.7% | 8.7% | 8.6% | 8.9% | 9.0% | 9.1% | 9.3% | |

1. Includes unallocated amounts

Source: NT, 2016d

2.3.5 The scope for increased direct government funding for biodiversity

With respect to the likely scope for increased direct funding for biodiversity, guidance from the National Treasury for the 2017 budget recognises the significant fiscal constraints facing South Africa made worse by persistently low economic growth. It is made clear that no or very limited additional resources will be available for the majority of state institutions, staff compensation budget limits remain in place and that institutions must continue to seek cost containment and improved efficiency. Government departments and other organs of state have also been asked to submit projections which include potential budgets cuts given the increased likelihood of these being necessary (NT, 2016). Consequently, in the next two to three years, the feasibility of increasing budgetary allocations is not clear at national, provincial or local government levels. Even so, the case for maintaining budgets will still need to be made. This will need to be accompanied by a greater emphasis on cost reductions and efficiencies and on finance solutions such as those contained in this Plan, many of which seek to draw in private sector investment. In the medium to longer term, it is worth targeting real budget increases for the biodiversity sector.

3 THE BIODIVERSITY FINANCE PLAN

The Biodiversity Finance Plan presents a comprehensive and coherent national approach to biodiversity finance that encompasses a full suite of finance solutions, well beyond the mobilization of new resources. The Plan is a living document that builds on South African leadership in biodiversity finance to suggest targets and steps that expand the country's biodiversity finance agenda and achieve national biodiversity targets. This offers a means to foster action and support partnerships for investing in biodiversity by deepening the understanding of a range of solutions and by framing realistic action points. It provides clarity on links and synergies among solutions, finance outcomes, implementation roles and the contribution of biodiversity finance towards sustainable development. The Plan is composed of:

1. A prioritization of finance solutions based on a rigorous and participatory selection process;
2. A systematic approach to addressing financial needs, emerging opportunities and priority biodiversity outcomes;
3. Concise technical proposals to help operationalise prioritized biodiversity finance solutions, including required steps and identification of risks; and
4. Consolidated estimates of the expected finance results where possible.

The Plan will require a wide range of technical capacities from multiple institutions and stakeholders. Implementation will require a coordinated effort from a group of government, civil society (NGO), private and development partners. The intention is for the biodiversity sector and other key parties to own the Plan and support its implementation. The work and monitoring of the Plan will be coordinated by DEA using existing collaboration frameworks.

The remainder of this section describes the individual priority finance solutions, thereafter consolidating them into an overall plan and presenting consolidated finance results.

3.1 The biodiversity finance solutions

The prioritisation of finance solutions started with the generation of an extensive initial list of 64 potential solutions that were subjected to two rounds of screening (Appendix 3 contains more details on the approach to screening and its outcomes). This resulted in 16 priority solutions that are the subject of this Plan. They include a wide variety of solutions such as making the case for increased investment in protected areas, direct government grants, tax incentives, conservation trust funds, private sector investment, protected areas own revenue generation, mainstreaming into other government sectors, biodiversity offsets, carbon finance, fines and certification. Two of the finance solutions are broad programmes of work. One of these is to enhance, consolidate and adequately finance the biodiversity stewardship programmes, which can be partly implemented by other finance solutions. The other is the implementation of South Africa's emerging Biodiversity Economy Strategy. This finance solution presents a vast and complex programme of work, already set out in three government strategies, and is therefore addressed somewhat differently in this document.

It is important to bear in mind that a conscious decision was made to prioritise a relatively large number of solutions. This reflects the South African context where there are a number of solutions that already exist or are under development to some degree. The priority at this stage is thus to promote and enhance these existing and emerging solutions properly and not to pursue completely new solutions. It should also be held in mind that any additional funds or cost savings for the biodiversity sector can only result in biodiversity benefits if these funds

are strategically and effectively spent. The effective use of biodiversity finance should be an ongoing focus of the sector.

Each solution is described briefly below including the solution's overall aims, key objectives and what implementation would entail. The solutions are grouped according to their main biodiversity outcomes, which are protected areas establishment and management; ecosystem restoration; and sustainable utilisation of biodiversity. Many of the finance solutions, however, will contribute towards the other two biodiversity outcomes, not just the primary biodiversity outcome that they contribute towards.

3.1.1 Protected areas solutions

The solutions which focus primarily on protected area establishment and management are:

- Making the case for protected areas funding
- Growing protected areas own revenue
- Reform of property rates law and application to protected areas
- Support for biodiversity tax incentives
- Enabling conditions for biodiversity offsets
- Introduction of revolving land trust mechanisms
- Enhance, consolidate and adequately finance the biodiversity stewardship programmes

Making the case for protected areas funding

Protected area conservation authorities face the challenge of justifying their current public expenditure levels, or arguing for additional investment, in a context of dwindling public budgets. This solution involves providing these authorities with the information, analysis, communication material and capacities needed to defend and increase their budget. It will be important to scope individual needs to allow for analysis that is fit for purpose and goes beyond the identification of ecosystem services to measure economic and social impact. Given its potential to save cost while securing biodiversity, it is likely that arguments in favour of funding biodiversity stewardship will need to form part of such analysis. The learning and knowledge generated can then be shared with the wider South African protected areas system in the medium term.

Growing protected areas' own revenue

Own or commercial revenue from sources such as gate fees, tourism concessions, conferencing facilities and wildlife sales can play an important role in supporting the financial sustainability of protected areas. Success in generating own revenue is, however, highly variable among the different conservation authorities in South Africa. The aim of this solution is to increase the rate of own revenue growth for protected areas, a particularly important imperative given significant government budget constraints. The solution entails gathering key data, undertaking assessments of key income streams, identifying enabling institutional arrangements and responsive management strategies and improving business models for conservation authorities, including partnerships with the private sector.

Reform of property rates law and application to protected areas

Certain protected areas face the challenge of being charged substantial property rates bills due to ambiguity in the Municipal Property Rates Act. This is putting undue financial pressure on providers of important public goods. This solution aims to ensure that the application of rates policies by municipalities better reflects the spirit or intention of the Act with respect to the concessions it offers protected areas and botanical gardens. DEA engagement with Cooperative Governance and Traditional Affairs (CoGTA) and National Treasury is required

and can result in the crafting of a legally binding prescribed approach to rating protected areas preferably in the national rates framework published under the Act.

Support for biodiversity tax incentives

Private protected areas in South Africa make up around 30% of South Africa's terrestrial protected area estate and have been shown to be extremely cost effective solutions for expanding the country's protected area system (SANBI, 2015). The government has provided fiscal incentives in the form of tax benefits to landowners who convert their private land to formal protected areas or who participate in the official biodiversity stewardship programme. This solution will enhance the effectiveness of these tax benefits to increase the declaration of private protected areas and the adoption of the stewardship programmes as well as increase the area under responsible land management. They also provide necessary cash flow to address expenses in land management. To achieve this objective, this finance solution aims to 1) increase awareness, 2) build capacity among landowners and tax professionals, and 3) enhance communication systems to produce continuous improvement in the biodiversity tax benefit program. The expected finance gains from this finance solution is dependent on well capacitated and well-functioning biodiversity stewardship programmes.

Creating enabling conditions for biodiversity offsets

Biodiversity offsetting is the final option in the mitigation hierarchy that underpins environmental impact assessments in South Africa. Despite this, it is one of the least utilised mitigation options for various reasons, not least of which is national policy uncertainty. As a result, biodiversity offsetting has been implemented in a relatively ad-hoc manner, and there has been a call for national guidance and cohesion on biodiversity offsets. There is also a need for an effective enabling environment for implementing biodiversity offsets across the country to increase their efficacy in leveraging funding for additional biodiversity conservation and management interventions. This finance solution draws on the finalisation of the national offsets policy and associated biodiversity offsetting guidelines, and aims to design effective implementation modalities for biodiversity offsets across the country.

Development of revolving land trust mechanisms

A revolving land trust is a mechanism to enable the establishment of protected areas on private land, thereby increasing private sector investment into protected areas. They allow for the purchasing of conservation-worthy land, declaring the land a protected area, setting up associated tax benefit structures and selling the land on to a new landowner. Any profit generated through this process can be reinvested in further rounds of land purchase. This finance solution entails encouraging existing land trusts and other NGO land acquisition groups to consider incorporating explicit revolving strategies into their operational models. Primarily, this solution will be facilitated if the biodiversity stewardship programmes are able to become more efficient with protected area declarations, initial management advice, ongoing support and assistance in accessing income tax incentives.

Enhance, consolidate and adequately finance the biodiversity stewardship programmes:

Biodiversity stewardship programmes provide a highly cost-effective mechanism for expanding and managing protected areas in South Africa, can secure government investments in natural resource management on non-state land, and can be used as a mechanism to enable sustainable use of biodiversity. It has been clearly demonstrated that the state benefits from substantial cost savings when establishing and managing protected areas through biodiversity stewardship programmes, in comparison to the alternative model of state purchase and management of the land (SANBI, 2015). Despite the financial and practical arguments for investing in the biodiversity stewardship programmes, these government-led programmes remain substantially under-resourced within all conservation authorities, and the benefits of these innovative programmes are not being fully realized by the state. This solution,

enhancing, consolidating and adequately financing the biodiversity stewardship programs, aims to ensure that the full benefit of the biodiversity stewardship programmes can be felt, contributing to protected area expansion targets, ecosystem restoration, and sustainable use of biodiversity across the country. As the financing of biodiversity stewardship programmes can come from a number of different sources, this finance solution, in practical terms, will rely on other finance solutions, as well as other programmes of work, in order to be fully realized. It will also play a facilitating role increasing the likelihood that other finance solutions, such as revolving land trusts, will emerge.

3.1.2 Ecosystem restoration solutions

The solutions which focus primarily on ecosystem restoration are:

- Accessing existing government grants and funds for ecological infrastructure investment
- Scaling up the Natural Resource Management Land User Incentives programme
- Increasing income from Natural Resource Management Value Added industries
- Water tariff funding for ecological infrastructure
- Support carbon offset financing for biodiversity projects focusing on opportunities in the carbon tax
- Accessing global climate change funds for biodiversity

Accessing existing government grants and funds for ecological infrastructure investment

The biodiversity conservation sector currently benefits from some government grants, such as the Jobs Fund and the Extended Public Works Programme. Opportunities may exist for increasing grant allocations at the provincial level as well as exploring options at the municipal level. The latter will be supported principally by the *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project* being funded by the Global Environment Facility (GEF) which aims to explore funding mechanisms to increase investment in ecological infrastructure.

Scaling up the Natural Resource Management Land User Incentives Programme

Invasive alien plant clearing and the related restoration of natural ecosystems is an established priority for South Africa. If no action is taken, the scale of the problem and associated remediation costs will increase substantially, posing a financial burden to both private and public landowners. The DEA-NRM Land User Incentives (LUI) programme has successfully combined private and public sector resources to address this challenge. Based on early success, DEA-NRM proposes to scale up the LUI programme and mobilize a greater contribution from private sector landowners. This solution thus aims to achieve a more equitable distribution of the clearing and rehabilitation cost, gradually increasing the private sector contribution from approximately 30% to 85%, and significantly expanding reach of the LUI programme in terms of land covered by it.

Increasing income from Natural Resource Management Value Added industries

The process of clearing invasive alien plants yields biomass which can be used as an input into value-added industries or businesses, for example companies producing eco-furniture, building materials, charcoal and other products. The expansion of these industries can generate revenues for natural resource management and sustainable local development (e.g. jobs creation) whilst also reducing the biomass disposal costs of government. While DEA-NRM have achieved successes with its Value Added Industries programme, institutional, operational and market-related challenges impede further scaling up. This solution aims to address these barriers and unlock the potential of new and previously identified value chains.

Water tariff funding for ecological infrastructure

Investing in ecological infrastructure as part of catchment management offers significant water regulation and supply benefits along with co-benefits for biodiversity, livelihoods and disaster risk reduction, among others. Currently, negligible financing for catchment management is derived directly from water users even though the user pays principle, which is embedded in legal instruments relevant to water management, suggests that significant realignment of user fees towards such management would be a socio-economically efficient outcome. This finance solution aims to improve existing and establish new viable ways to capture and distribute an adequate portion of water tariffs for investment in ecological infrastructure. This would be achieved by operationalising elements of the revised draft Water Pricing Strategy, which is yet to be promulgated, and which provides scope for channelling a portion of water tariffs into ecological management of catchments.

Support carbon offset financing for biodiversity projects focusing on opportunities in the carbon tax

Carbon offsets support low-carbon development and provide greater flexibility to those wishing to reduce their carbon emissions. The pending carbon tax legislation in South Africa is set to allow taxpayers to offset part of their carbon tax liability through investment in mitigation projects including ecosystem restoration projects which also provide significant non-carbon benefits. However, ecosystem restoration projects face challenges capturing carbon offset financing that include quantifying and verifying emission reductions, achieving emission reductions in the short term and competition from other cheaper mitigation project types often with limited non-carbon benefits. This finance solution aims to address these multiple challenges. Treasury approval will be sought for carbon offsets standards in the Agriculture, Forestry and Other Land Use (AFOLU) sector, including the determination of a monitoring and evaluation and verification system. In addition, remedies to the delayed sequestration profile of restoration projects need to be found which could include, for example, bridging finance, targets and discounting schemes that can incentivize restoration.

Accessing global climate change funds for biodiversity

Climate change funds aim to provide financial support for climate mitigation and adaptation projects thereby facilitating low-carbon and climate resilient development. Several climate funds also actively seek projects with multiple sustainable development benefits, including biodiversity conservation and management that go beyond mitigation and adaptation. The opportunity to mobilize climate change funds in South Africa is clear and already on the government and development aid agenda. South Africa also has experience in this domain and has been successful in attaining financial support from major climate funds including the Green Climate Fund (GCF) and the Adaptation Fund. This solution seeks to build on this success and (1) develop a strong pipeline of biodiversity-related climate fund proposals, (2) build awareness and collaboration among actors in the climate and biodiversity communities to support these projects, and (3) encourage efforts to clarify monitoring, reporting and verification (MRV) in the agriculture, forestry, and other land use (AFOLU) category of carbon projects.

3.1.3 Solutions focused on the sustainable utilisation of biodiversity

The solutions focused more on the sustainable utilisation of biodiversity include the following:

- Improving the effectiveness of environmental fines and penalties
- Creation of the Tourism Conservation Fund
- Implement South Africa's Biodiversity Economy Strategy

Improving effectiveness of environmental fines and penalties

Fines and penalties aim to incentivise compliance with environmental laws and can also have a revenue raising function. The current maximums for fines and penalties, as stipulated by the National Environmental Management Act (NEMA), are generally extremely low relative to the extent and cost of impacts on biodiversity and the environment thereby limiting their efficacy. The aim of this solution will be to revise and improve the fines and penalties system of DEA in particular for administrative fines for those who unlawfully commence with an activity, such as a new infrastructure development, without the required environmental authorisation or waste management license. Improved conditions of authorisation for new developments, especially with regards to their impacts on biodiversity, will also be required to optimise resources from fines and penalties and assure positive biodiversity impacts.

Creation of the Tourism Conservation Fund

There is a strong argument for the tourism sector to provide more direct financial support for biodiversity conservation given biodiversity's significant contribution to it. The aim of the Tourism Conservation Fund (the Fund) is to access private sector funding specifically from the tourism industry and use these funds to address targeted biodiversity conservation needs. An initial focus may be making investments to help diversify the livelihoods of communities living adjacent to protected areas, specifically by increasing their opportunities within the wildlife and tourism sector. This solution involves the establishment and ongoing operation of the Fund by the Peace Parks Foundation, Endangered Wildlife Trust, the Wilderness Foundation and other partners.

Implement South Africa's Biodiversity Economy Strategy

The biodiversity economy encompasses businesses and economic activities that either directly depend on biodiversity for their core business or that contribute to conservation of biodiversity through their activities. In South Africa, the bioprospecting and wildlife sectors are considered cornerstones of the biodiversity economy. DEA, working closely with a range of stakeholders, has led the development of a National Biodiversity Economy Strategy which is currently awaiting government approval, along with two more specific guiding documents on the bioprospecting economy and the wildlife economy. Together, these set out 20 complementary initiatives and six recommendations which aim to accelerate rural development, improve social well-being, and ensure equitable access and benefit sharing from biological resource, while maintaining the ecological resource base. This finance solution encompasses the entirety of these strategies, encouraging their implementation towards 2030.

3.2 An integrated plan

The individual finance solutions are best understood as parts of an overall integrated plan. This section addressed integration, providing clarity on key links and synergies between solutions and over-arching enabling factors. Structuring elements best suited to this include (1) biodiversity outcomes and (2) the main characteristics of each solution focused on the finance instrument type, source of finance and lead agent.

3.2.1 Biodiversity outcomes

The Plan classifies the solutions according to their biodiversity outcomes for alignment with the biodiversity conservation sector and wider government budgeting and operational processes that emphasise an outcomes-based approach (see Section 2.3). This high-level outcome-based classification is informed by the six strategic objectives in the NBSAP (see Box 8) and reflects the largest components of current biodiversity expenditures (as per the findings of the Biodiversity Expenditure Review). The chief outcomes are protected areas establishment and management, ecosystem restoration and the sustainable utilisation of biodiversity (see Figure 3-2).⁷ The Figure also shows the over-arching importance of making the case for government support in the form of creating enabling conditions and providing sufficient funding. The planning implications of links and inter-dependencies within the groupings of solutions under the key outcomes are discussed in the following sections.

Box 8: The six strategic objectives in the NBSAP:

1. Management of **biodiversity assets** and their contribution to the economy, rural development, job creation and social wellbeing is enhanced.
2. Investments in **ecological infrastructure** enhance resilience and ensure benefits to society
3. **Biodiversity considerations are mainstreamed** into policies, strategies and practices of a range of sectors.
4. **People are mobilized** to adopt practices that sustain the long-term benefits of biodiversity.
5. Conservation and management of biodiversity is improved through the **development of an equitable and suitably skilled workforce**.
6. **Effective knowledge foundations**, including indigenous knowledge and citizen science, support the management, conservation and sustainable use of biodiversity.

3.2.1.1 Protected areas

Solutions focused on protected areas outcomes include: (1) making the case for increased government funding, (2) protected areas' own revenue, (3) property rates reform, (4) support for biodiversity tax incentives, (5) enabling biodiversity offsets, (6) revolving land trusts, and (7) Enhance, consolidate and adequately finance the biodiversity stewardship programmes. Making the case for increased government funding in protected areas should be viewed especially in combination with increased PAs own revenue. Increasing funding has a substantially greater chance of materialising if making the case includes evidence of progress or at least concerted efforts towards increasing own revenue.⁸

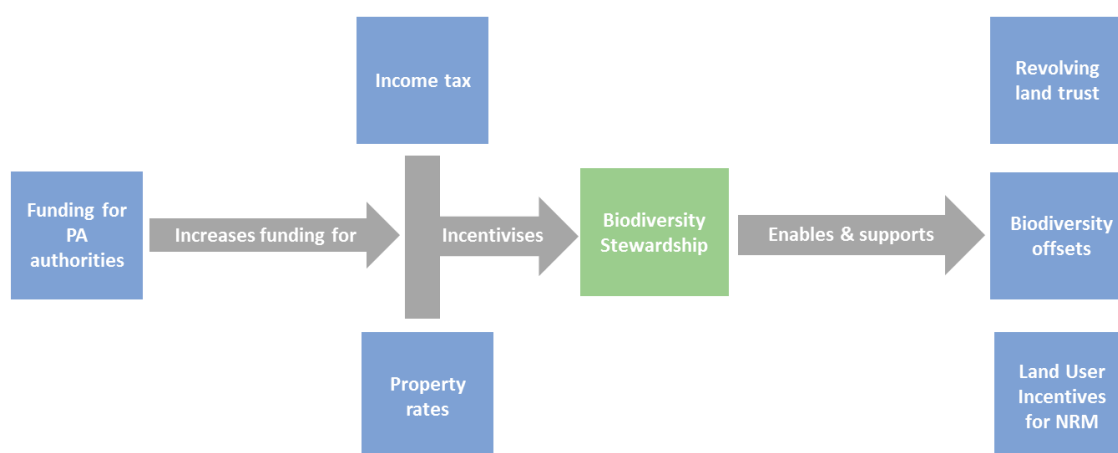
To a large extent, well-functioning biodiversity stewardship programmes would be needed to catalyse these solutions whilst also being boosted by them (see Figure 3-1). Investment in such programmes is thus needed before other funding, particularly from the private sector, can be unlocked with confidence. The availability of income tax incentives for private protected areas need to be combined with support for landowners through stewardship as it has been shown that a suit of incentives motivate landowners' behaviour, central to this being direct landowner technical and management support. Well-functioning biodiversity stewardship programmes, targeted NRM investments through land-user incentives, the availability of

⁷ Note that ecosystem restoration, and protected areas establishment and management outcomes have strong links to the achievement of climate change adaptation goals, primarily through ecosystem-based adaptation, and to climate change mitigation especially where restoration increases carbon sequestration.

⁸ The introduction of a conditional grant for protected areas may be worth pursuing in the medium-term but would require careful investigation to ensure it would not result in an adverse effect to the general allocation to the biodiversity sector, and would not apply prohibitively onerous conditions on the implementing agency.

income tax deductions and property rates reform should enable the emergence of revolving land trusts thereby securing more land for conservation. The improved use of biodiversity offsets as part of the environmental impact mitigation hierarchy should also help to create demand for private protected area establishment, and could be enabled by biodiversity stewardship programmes.

Figure 3-1: Biodiversity finance solutions and stewardship programmes



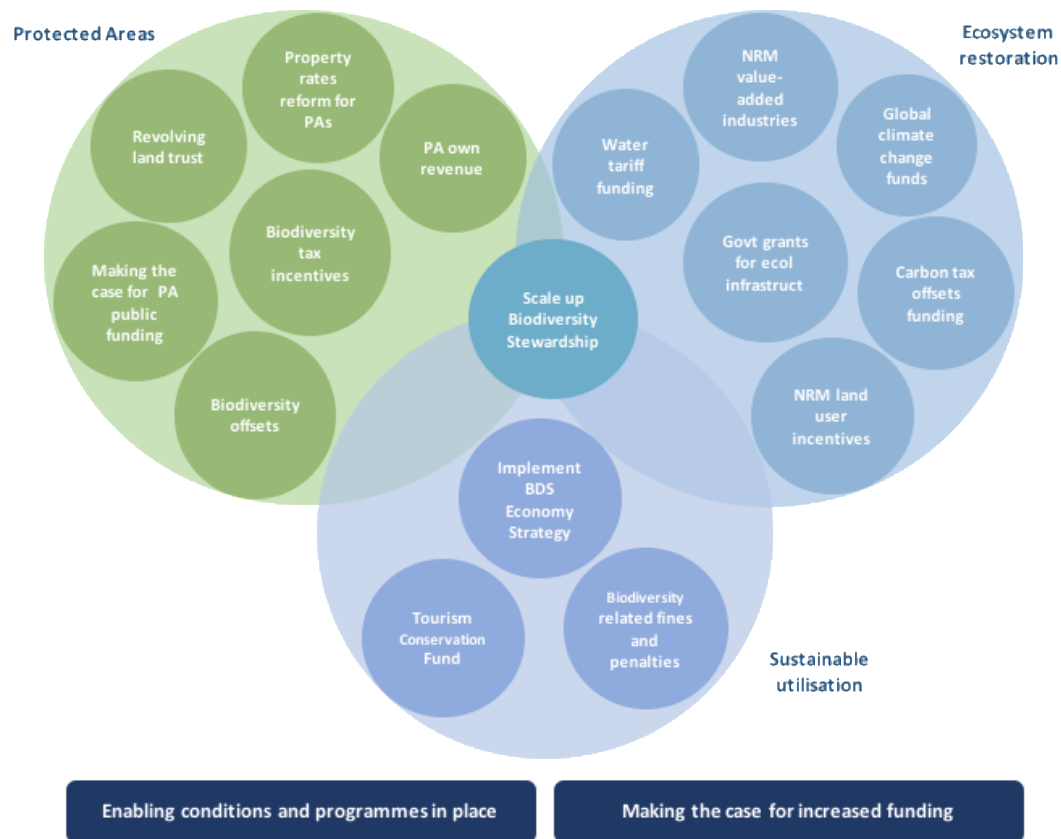
3.2.1.2 Ecosystem restoration

Finance solutions focused on ecosystem management and restoration outcomes include: (1) accessing existing government grants, (2) Natural Resource Management land user incentives, (3) Natural Resource Management value-added industries, (4) water tariff funding, (5) carbon tax offsets funds, and (6) global climate change funds. Ecosystem restoration through the NRM programme, and more broadly through an emergent natural resource management sector, will continue to require greater state funding over the next 10 years. However, significant opportunities exist to shift a greater portion of the financial responsibility for restoration to those who benefit most clearly from it, namely land users (through the land user incentives programme), water consumers (through water tariff funding) and heavy greenhouse gas emitters through carbon tax offsets and international climate change finance opportunities.

3.2.1.3 Sustainable utilisation of biodiversity

Three finance solutions included in this Plan focused on the sustainable utilisation of biodiversity include: (1) fines and penalties, and (2) the Tourism Conservation Fund and (3) implement South Africa's Biodiversity Economy Strategy. Improvements to environmental fines and penalties address a wide range of biodiversity related issues, including threatened species and land-use change. The emerging Tourism Conservation Fund is intended to assist in the management of threatened and endangered species, and benefit the livelihoods of communities living around protected areas. Implementing South Africa's emerging Biodiversity Economy Strategy is a complex and broad component of work. This strategy aims to accelerate rural development, improve social well-being, ensure equitable access and benefit sharing from biological resource, while maintaining the ecological resource base. It draws on two sector-specific guiding documents, one on the bioprospecting economy and the other on the wildlife economy, developed during 2016 and 2017. Together these sector strategies set out 20 initiatives and six recommendations to be implemented.

Figure 3-2: The finance solutions clustered around biodiversity outcomes



3.2.2 Characterising the solutions

The finance solutions cover a variety of different instrument categories, draw on different finance sources and have different lead agents. This diversity, summarised per solution in Table 3-1, should assist in spreading risk within the overall Biodiversity Finance Plan.

Market instruments are the most prominent with eight solutions falling under this broad category. These are followed by grants including direct government allocations (three solutions), fiscal instruments (two solutions) and regulatory instruments (two solutions). Note that the presence of only one regulatory instrument, fines and penalties, could be somewhat misleading as all solutions would, to varying degrees, require government to play a regulatory role. The two programmatic finance solutions are made up of a mix of instrument types, including regulatory, market and fiscal.

Private local sources represent the most prominent source of finance with 14 solutions drawing at least partly from private finance, followed by six which would rely partly or wholly on local public sources (not necessarily from the environmental sector). Three finance solutions would draw in international private funds, and one focusses on international public funds.

For the majority of solutions, government would need to take the lead in the implementation through DEA, SANBI, provincial environmental departments and conservation authorities. Two solutions, namely revolving land trust mechanisms and the Tourism Conservation Fund,

would require NGOs to lead or co-lead. Some aspects of the two programmatic finance solutions require private sector or NGO leadership, although for the most part, and given the programmatic nature of these finance solutions, they would require strong overall government leadership.

Table 3-1: Finance solutions classified by instrument type, source of finance and lead agent

| Biodiversity finance solution | Instrument type | Source of finance | Lead agent |
|-----------------------------------|-----------------|--|--|
| Case for PAs funding | Grant | Public local | DEA, Protected areas MAs |
| PAs own revenue | Market | Private local; Private international | DEA, Protected areas MAs |
| PA, PPA property rates reform | Fiscal | Public local | DEA |
| Biodiversity tax incentives | Fiscal | Private local | DEA |
| Biodiversity offsets | Regulatory | Private local; Public local | DEA |
| Revolving land trust | Market | Private local; Public local | NGOs |
| Scale up biodiversity stewardship | Mixed | Private local | DEA, SANBI, provincial authorities, NGOs |
| Existing government grants | Grant | Public local | DEA, SANBI |
| NRM land user incentives | Market | Private local | DEA - NRM |
| NRM value-added industries | Market | Private local | DEA - NRM |
| Water tariff funding | Market | Private local | DEA, SANBI |
| Carbon tax offsets funds | Market | Private local | DEA |
| Global climate change funds | Grant | Public international | DEA |
| Fines and penalties | Regulatory | Private local | DEA |
| Tourism Conservation Fund | Market | Private local; Private international | NGOs |
| Biodiversity Economy Strategy | Mixed | Private local; Private international, Public local | DEA with multiple partners |

3.3 Financial benefit projections for finances solutions

In projecting the financial benefits of the finance solutions, it is important to be cognisant of substantial uncertainty around the effectiveness with which solutions would be implemented, the effectiveness of enabling factors required for success, and the state of the broader economy. Nevertheless, where possible, indicative estimates of potential remain a valuable tool for planning a way forward. The net financial benefits (or avoided expenditure) associated with the implementation of the 12 solutions where quantitative estimates were possible (out of the total of 16 finance solutions) were projected over the next 10 years and then consolidated (see Table 3-2). It is best to view these projections as the financial targets of significant parts of the Plan as they show an estimate of what is possible if the 12 quantified solutions succeed. Annual net financial gains could start relatively modestly at R240 million in 2018 climbing to R1.04 billion by 2020, R2.21 billion by 2023 and ending at R3.19 billion in

2026. Total financial gains over a 10 year period could amount to approximately R16.25 billion in current terms (un-discounted) which would make a highly significant contribution to reaching the country's biodiversity conservation goals. It is important to note that, of the four finance solutions not included in this quantitative estimate, two involve extensive programmes of work, namely implementing South Africa's Biodiversity Economy Strategy and enhancing, consolidating and adequately financing the biodiversity stewardship programmes.

Table 3-2: Annual and total cumulative financial benefits per finance solution where quantified over a 10-year period

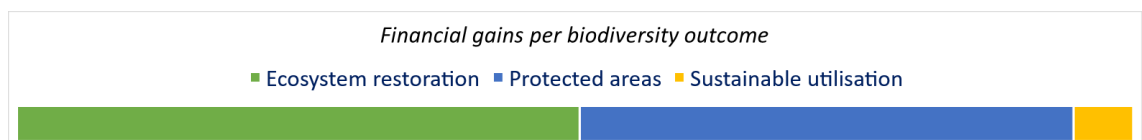
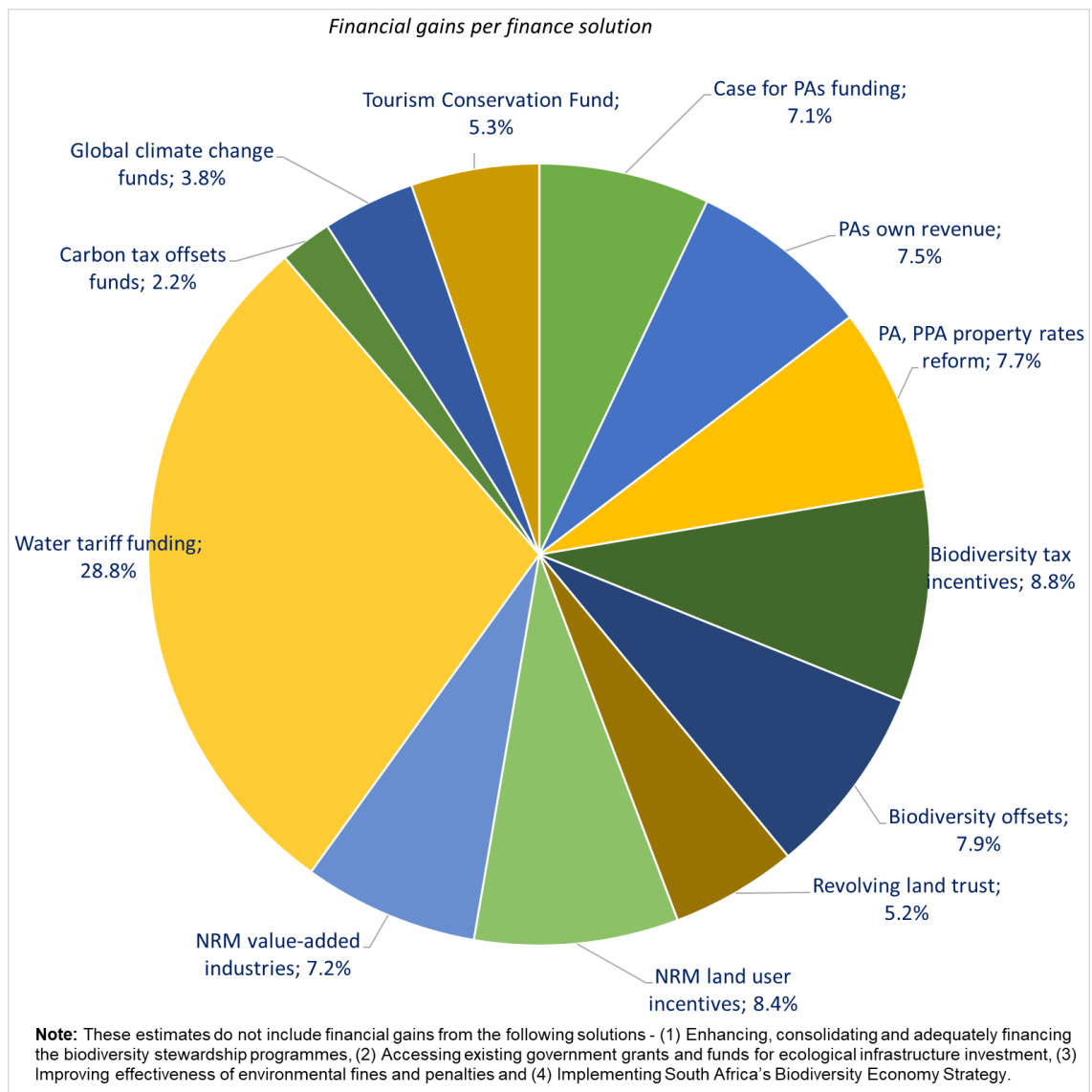
| Finance solution | Net financial gain in current terms (R million) | | | | | | | | | | | | | |
|---|---|------|------|------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Total | | | |
| Case for PAs funding | - | 2 | 69 | 70 | 70 | 105 | 140 | 175 | 210 | 245 | 1,148 | 7.1% | | |
| PAs own revenue | | 5 | 21 | 36 | 59 | 88 | 124 | 168 | 217 | 248 | 259 | 1,226 | 7.5% | |
| PA, PPA property rates reform | - | 2 | 39 | 96 | 160 | 160 | 160 | 160 | 160 | 160 | 1,253 | 7.7% | | |
| Biodiversity tax incentives | - | | 37 | 75 | 116 | 122 | 168 | 177 | 230 | 245 | 260 | 1,430 | 8.8% | |
| Biodiversity offsets | | 9 | 30 | 71 | 104 | 127 | 161 | 175 | 189 | 203 | 218 | 1,285 | 7.9% | |
| Revolving land trust | - | - | | 45 | 45 | 92 | 93 | 140 | 142 | 144 | 147 | 848 | 5.2% | |
| NRM land user incentives | | 3 | 16 | 29 | 48 | 81 | 133 | 178 | 230 | 295 | 360 | 1,371 | 8.4% | |
| NRM value-added industries | | 11 | 19 | 33 | 54 | 82 | 122 | 163 | 190 | 231 | 272 | 1,177 | 7.2% | |
| Water tariff funding | - | 5 | - | 5 | 104 | 214 | 437 | 546 | 656 | 801 | 911 | 1,020 | 4,679 | 28.8% |
| Carbon tax offsets funds | - | 2 | - | 2 | 11 | 26 | 39 | 52 | 54 | 56 | 57 | 59 | 351 | 2.2% |
| Global climate change funds | - | 2 | - | 2 | 89 | 89 | 89 | 89 | 89 | 89 | - | 621 | 3.8% | |
| Tourism Conservation Fund | | 10 | 19 | 29 | 38 | 67 | 96 | 115 | 134 | 163 | 192 | 862 | 5.3% | |
| Total | | 25 | 239 | 688 | 1,024 | 1,452 | 1,848 | 2,214 | 2,613 | 2,956 | 3,190 | 16,251 | 100% | |
| Note: These estimates do not include financial gains from the following solutions - (1) Enhancing, consolidating and adequately financing the biodiversity stewardship programmes, (2) Accessing existing government grants and funds for ecological infrastructure investment, (3) Improving effectiveness of environmental fines and penalties and (4) Implementing South Africa's Biodiversity Economy Strategy. | | | | | | | | | | | | | | |

Figure 3-3 shows the relative contribution of each finance solution to total financial gains over 10 years. Water tariff funding contributes the largest share to this total at 29% with the majority of the other solutions each contributing between 5% and 10%. More prominent contributions among these include those from biodiversity tax incentives (8.8%), NRM land user incentives (8.4%), biodiversity offsets (7.9%)⁹, protected areas property rates reform (7.7%) and protected areas own revenue (7.5%). These relative contributions should be a factor in prioritising efforts across the individual solutions, bearing in mind the aforementioned inter-dependencies between solutions.

In terms of the main biodiversity outcomes, approximately 50% of the quantified financial gains would be from solutions focused on ecosystem restoration, 45% would be for those focused on protected areas and the remaining 5% would be for those focused on the sustainable utilisation of biodiversity, although it is important to note that only one of the three financial solutions that focus on sustainable use have been included in this financial estimation exercise. The focus on ecosystem restoration and protected areas is in line with the relative costs associated with these activities in the NBSAP where the achievement of ecosystem management and restoration targets are the largest cost drivers, followed by protected area expansion and management (DEA, 2016a). Over 80% of total quantified financial gains would be sourced from the private sector, although the development of most of these finance solutions still require active leadership and policy development by the government.

Figure 3-3: Total net financial gains per solution and overall biodiversity outcome

⁹ Note that biodiversity gains from biodiversity offsets should be considered against the backdrop of biodiversity loss resulting from approved developments. Offset ratios have, however, been crafted to ensure net biodiversity gains. Financial gains from offsets are from their cost savings relative to state purchase and management of additional land secured for the protected areas estate.



4 BIODIVERSITY FINANCE SOLUTIONS

The individual finance solutions that make up the Biodiversity Finance Plan are outlined in more detail in this section. For each solution, the following elements were considered:

- Context of the solution
- Objectives of the solution (what it would be aiming to achieve?)
- The expected financial results of the solution, quantified to the degree possible, primarily in terms of increased revenues or decreased costs
- Broad suggested next steps needed for implementation, focused on the lead agents for each solution, along with key risks

The solutions are grouped sequentially according to their main biodiversity outcomes, namely protected areas, ecosystem restoration and the sustainable utilisation of biodiversity.

4.1 Protected areas solutions

The solutions under protected areas include the following which are detailed in the sections below:

1. Making the case for protected areas funding
2. Growing protected areas' own income
3. Reform of property rates law and application to protected areas
4. Support for biodiversity tax incentives
5. Enabling conditions for biodiversity offsets
6. Introduction of revolving land trust mechanisms
7. Enhance, consolidate and adequately finance the Biodiversity Stewardship Programmes

4.1.1 Making the case for protected areas funding

Conservation authorities face the challenge of justifying their current public expenditure levels, or arguing for additional investment, in a context of dwindling public budgets. This solution involves providing conservation authorities with the information, analysis, communication material and capacities needed to defend and increase their budget. It will be important to scope individual needs to allow for analysis that is fit for purpose and goes beyond the identification of ecosystem services to measure economic and social impact. Given its potential to save cost while securing biodiversity, it is likely that arguments in favour of funding biodiversity stewardship and implementing the recommendations of the Business Case for Biodiversity Stewardship (SANBI, 2015) will need to form part of this finance solution.

The case for this finance solution

- The challenge of defending current budget allocations to protected areas and negotiating additional public financing of priority investments will increase due to austerity measures. Budget allocation totalled approximately R3.6 billion for all conservation authorities in 2015 and has decreased by an average of 2% between 2015 and 2016.
- While there is ample evidence of the positive social and economic benefits of protected areas, there is limited data collection, monitoring and analysis of these benefits. When this analysis is produced, it is rarely tailored to the requirements of treasuries and the public budget cycle.
- In order to negotiate for maintaining current budget levels and lobbying for priority investments, conservation authorities need to develop their capacity to make the case and negotiate with treasuries and other departments.
- The programmatic approach of establishing and managing new protected areas through biodiversity stewardship has been shown to be a substantially more cost effective approach to the traditional approach of land purchase by the state. The case for public sector investment should integrate the importance in investing in implementing the biodiversity stewardship programmes.

4.1.1.1 Context

The BIOFIN Biodiversity Expenditure Review provides details of government budget allocations relative to own income generated by the various conservation authorities responsible for the management of the national network of protected areas. In summary, budget allocations totalled approximately R3.5 billion for all state conservation authorities in 2015 and are currently under pressure, decreasing by an average of 2% between 2015 and 2016 across all conservation authorities (with SANParks and ECPTA facing particularly significant cuts of 6% to 7%). They are also likely to be cut further at least over the next three years (DEA, 2016).

SANParks and the iSimangaliso Wetland Park Authority receive direct budget allocations at a national level (from National Treasury through DEA, their parent ministry). Provincial conservation authorities receive budget from the provincial environment departments responsible for protected areas who, in turn, compete for a slice of overall provincial budgets. The latter are primarily determined by the Provincial Equitable Share formula applied to the national budget which considers education, health, basic needs, institutional needs, poverty levels and economic output data to allocate funds per province (see Section 2.3 for more details).

New initiatives to make the case would need to learn from and build on existing work. This includes the annual reports and other strategic planning reports released by conservation authorities which are used as part of the effort to make their case. These reports provide basic information in terms of spelling out:

- How conservation authority operations are aligned with and contribute to key national and provincial policies and plans (e.g. the National Development Plan, the Medium Term Strategic Framework and the 14 priority outcomes, provincial development plans, etc.).
- The narrow legislative mandate of conservation authorities.
- In some instances, details of direct job creation associated within conservation authority's management, in related tourism establishments and from other sources such as Expanded Public Works Programme (EPWP) projects carried out in protected areas.
- Efforts to increase own revenue generation and tourism visitor numbers.
- Community contributions and support.

However, the available reports are much more limited when it comes to highlighting how protected areas play a key role in safeguarding the production of key ecosystem services mostly of a supporting and regulating nature, such as water production and regulation. More importantly they tend not to assess, or place limited emphasis on, the social and economic impact, direct and indirect.

Other potential sources for review include:

- South African studies that have focused on the impacts associated with conservation authority and tourist spending on protected areas which often use multiplier analysis with varying degrees of justification (e.g. Saayman et al., 2013 for Table Mountain National Park; Standish et al., 2004 for Table Mountain National Park, Urban-Econ 2008 for all SANParks spending; Oberholzer et al., 2010 for Tsitsikama National Park; Saayman et al. 2009 for the Karoo National Park).
- South African studies which have applied a wider ecosystem services valuation approach often including tourism services. These include EKZNW, 2012, who used benefits transfer estimates to value the ecosystem services provided by Ezemvelo KZN Parks and lead to the Ezemvelo Ecosystem Goods and Services Programme¹⁰; Turpie et al., 2006, who estimated the economic value of Marine Protected Areas along the Garden Route Coast; and Standish et al., 2004 who focused on the Economic Contribution of Table Mountain National Park.
- International work on making the case for protected areas in Africa (e.g. Van Zyl, 2015 for Ethiopia; Turpie et al. 2010 for Namibia, etc.) and elsewhere that have also used cost-benefit analysis to weigh up the benefits of increased investment in protected areas.
- Research that SANBI is in the process of commissioning, for the 2018 National Biodiversity Assessment, aimed at quantifying the economic value of tourism that relies on South Africa's biodiversity assets including its protected areas (see SANBI request for quotations Nr Q5331/2016).

¹⁰ The Programme is currently undertaking the following projects with potential relevance, (1) Assessment of the value of PAs for adjacent communities focused on Kamberg Nature Reserve as a case study, (2) Identifying the socio-economic drivers contributing to ecosystem services loss and (3) Mapping the recreational value of PAs using statistically modelling and the InVEST model. (EKZNW, 2016).

The need to make an improved case for budget allocations specifically to protected areas is relatively widely recognised in South Africa and abroad. For example, the South African Sustainable Financing Framework for Protected Areas emphasises the importance of better quantifying and communicating the value of protected areas and their associated ecosystem services (DEA, 2015). National Treasury has also provided feedback that protected areas and the wider biodiversity sector could do better at making its case, particularly at a provincial level. The introduction of a conditional grant for protected areas may also be worth pursuing in the medium-term but requires further investigation and engagement, and would only be a possibility if a strong case can be made for its introduction (see Appendix 6 for further discussion of this possibility).

Biodiversity stewardship has been shown to be an extremely cost effective approach to establishing new protected areas and managing these areas into the future (SANBI 2015). The Business Case for Biodiversity Stewardship makes the following recommendations in order to improve the impact of biodiversity stewardship on biodiversity conservation and management:

1. Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year.
2. Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape.
3. Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements.
4. Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in.
5. Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters.
6. The community of practice for biodiversity stewardship should be strengthened and expanded.

The case for improved funding for conservation authorities should include consideration for increased and sustained funds for the biodiversity stewardship programmes.

4.1.1.2 Objectives

Protected areas need to be able to compete with alternative uses of public funding in both a national and provincial government. There is thus a need to increase efforts in making the case for (or in the face of shrinking budgets, at least maintaining) funding to support these processes.

Making the case for protected areas entails providing conservation authorities with the information, analysis, communication material and capacities needed to defend and increase their budget. The solution primarily entails the development of analytical and communication material for conservation authorities to improve their capacity to lobby for increased public budget from treasuries and other departments.

It will be important to scope individual needs of each conservation authority to allow for analysis that is fit for purpose and goes beyond the identification of ecosystem services to

measure economic and social impact. The learning and knowledge generated can then be shared with the wider South African protected areas system in the medium term.

There are a number of ways of going about making the case both from a technical and process point of view. It will therefore be critically important to conduct a thorough scoping exercise at the outset in collaboration with conservation authorities.¹¹ This should be designed to bring focus to the exercise and could deal with the following:

- Establishing, as much as is possible, what lessons past ‘making the case’ exercises hold – what worked, what didn’t, what circumstances played a role, what specific audience was targeted, etc.
- Identifying a few clear target audiences and engaging with them around considerations they find particularly relevant.
- Deciding on an appropriate institutional and potentially geographical focus.
- Clarifying what is being asked for – i.e. what, specifically, is the goal of the making the case exercise? What needs to happen for it to be measured a success?
- Determining what metrics or indicators would be important along with preferred methods for assessment and emphasis. For example, assessing the multiplied impacts of spending on protected area management may detract from a case as it focuses on a relatively obvious point (i.e. increased spending will result in greater spin-offs largely regardless of whether the spending is on protected area management or on alternatives) and not differentiate the contribution or value add of protected areas.
- Agreeing on whether and how to raise cost efficiencies and own revenue generation considerations. For example, it may be particularly important to be able to show that progress is being made with spending existing funds more efficiently, for example by conservation authorities investing in biodiversity stewardship programmes in order to meet their targets more effectively, or that efforts to generate more revenue are starting to bear fruit.

The scoping process described above should lead to the following:

- The valuation of ecosystem services in selected protected areas that include an assessment of direct and indirect social and economic benefits.
- The production of targeted communication material for the packaging of the valuation/assessment information in the context of budget negotiations.
- Cost-benefit analyses for new investment projects that require public allocations, as appropriate.
- The integration of a motivation to adequately resource the biodiversity stewardship programmes.
- The production of guidelines for provincial authorities on understanding public finance cycle and making the case.
- The sharing of experiences across different actors in South Africa.

The success of this solution will be dependent on the dialogue with and engagement of treasuries and other decision makers involved with budget formulation and execution. The production of analytical and communication material needs to be linked to the on-going budget processes taking place at the national and provincial level (see Section 2.3 for more details).

¹¹ TEEB (2013) provides guidance on scoping for TEEB studies that use ecosystem services valuation and are sometimes used to make the case.

4.1.1.3 Expected financial results

The targets for increased funding for protected areas should be more accurately set at the outset of the making the case exercise. In the interim, in order to include some approximate estimate of prevented loss in the short to medium term and future gains in the longer term, it was assumed that the current trend of 2% decreases in public budget allocations in the next three years (i.e. ~R70 million per year) could be stabilised to maintain existing budget allocation levels. Thereafter, a gradual increase was assumed to 7% above current levels in real terms within the next seven years (i.e. an additional amount of ~R245 million per year by 2026). This takes into account the potential additional cost to DEA and its partners of implementing the solution which was assumed to be R3 million spread over two years and then R500,000 per year thereafter.

4.1.1.4 Next steps

Conservation authorities, in partnership with DEA, representatives from national and provincial treasuries and other relevant partners will continue to build on their efforts to make the case for biodiversity within the technical and political processes associated with budget allocations. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-1: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|----------------------------------|--|----------------------|
| 1. Internal consultations between DEA and conservation authorities on the scope of the exercise. | DEA and conservation authorities | DEA, provincial conservation authorities, SANParks, iSimangaliso Wetland Park Authority, national and provincial treasuries, provincial authorities in charge of budget decision-making and SANBI. | 2 months |
| 2. Production of valuation of ecosystem services studies that include social and economic assessments; communication material; cost-benefit analysis for new investment (if necessary). | DEA and conservation authorities | | 9 months |
| 3. Production of guidelines for conservation authorities on understanding the public finance vehicle and making the case for increase investment in protected areas and resourcing biodiversity stewardship where appropriate. | DEA and conservation authorities | | 1 year |
| 4. Sharing of experiences among conservation authorities and the organization of longer term capacity development and training modules. | DEA and conservation authorities | | 1 year |
| 5. Conservation authorities are capacitated with the production of analytical and communication material for making the business case. | DEA and conservation authorities | | 2-3 years |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- Willingness of conservation authorities to undertake the process.
- Availability of decision makers in the budget cycle to engage with conservation authorities.
- Strength of the evidence of the social and economic benefits of protected areas.
- The solution is intrinsically linked to traditional risks related to public finance, including the performance of the South African economy.

4.1.2 Growing protected areas' own revenue

Own or commercial revenue from sources such as gate fees, tourism concessions, accommodation, conferencing facilities and wildlife sales can play an important role in supporting the financial sustainability of protected areas. Success in generating own revenue is, however, highly variable among the different conservation authorities in South Africa. The aim of this solution is to increase the rate of own-revenue growth for protected areas, a particularly important imperative given significant government budget constraints. The solution entails gathering data, undertaking assessments of key revenue streams, identifying enabling institutional arrangements and responsive management strategies and improving business models for conservation authorities, including partnerships with the private sector.

The case for this finance solution

- Tourism contributes roughly 3.1% to the national GDP and 4.5% of all jobs in the country. It continues to grow strongly, particularly in the nature-based tourism sub-sector which relies on protected areas as attractions.
- The urgency associated with having to show gains in own revenue generation by protected areas has been on the increase and is likely to intensify in the current fiscal environment.
- The experience of SANParks and select other conservation authorities demonstrates the potential to grow own revenues at rates that comfortably exceed inflation.

4.1.2.1 Context

The Biodiversity Expenditure Review conducted by BIOFIN provides data on government funding allocations and own or commercial revenues generated for most of the conservation authorities.¹² This data shows that success in generating own revenue, and its individual components or sources, is highly variable.

SANParks is the conservation authority that continues to have the greatest success with commercial revenue generation. This is partially because the National Parks under their management include some of the most attractive tourism assets among the country's protected areas, including Kruger National Park and Table Mountain National Park. It is also very much a function of increasingly embracing their role as tourism service providers and their ability to manage their tourism assets and optimise their commercial potential. For example, they have a Commercialisation Strategy and a Business Development Unit with a presence in Pretoria, Cape Town and on the Garden Route, staffed by appropriately commercially oriented and skilled people who are able to identify, develop and manage commercial opportunities. Public Private Partnerships (PPP)¹³ are a key tool that allows them to focus on their core competencies (e.g. lower and middle income accommodation) and still take advantage of other non-core opportunities (e.g. high-end luxury lodges) by leveraging private sector capital and expertise. SANParks has more than 40 PPPs currently operating which generate over R85 million annually at no cost beyond administration (SANParks, 2016). Success is a function of their familiarity with PPPs and their capacity to implement them.

¹² These forms of revenue are also sometimes referred to as "site-based" revenue.

¹³ PPPs are used in this context primarily as commercial revenue sharing contracts between private sector operators of lodges, restaurants, shops and other tourism facilities and the government.

Table 4-2 shows total revenue allocations from government alongside own revenue per conservation authority. SANParks performed best, funding 52% of their expenditure through own revenue in 2015, followed by Northwest Parks (37% own revenue) and Ezemvelo KZN Wildlife (27% own revenue). The Mpumalanga and Limpopo conservation authorities generated the lowest level of own revenues at 5% and 6% respectively. Average own revenues were approximately 20% of total revenue for the conservation authorities considered, assuming that each management authority is given an equal weighting. It increases to 37% if a gross average is measured due to the dominance of SANParks. With respect to recent growth, between 2009 and 2015, SANParks and iSimangaliso were able to grow own revenues strongly at annual rates of 4% to 6% above inflation, own revenue for CapeNature and the Eastern Cape Parks and Tourism Board approximately matched inflation while own revenues decreased by more than 10% per annum in real terms in Mpumalanga and Limpopo.

Table 4-2: Own revenue and government allocations per protected area management authority in 2015 (R millions)

| Management authority | Revenue/income from government allocations | Own revenue | Own revenue as % of total revenue |
|---|--|--------------|-----------------------------------|
| SANParks | 1,341 | 1,444 | 52% |
| Ezemvelo KZN Wildlife | 670 | 251 | 27% |
| Northwest Parks and Tourism Board | 167 | 97 | 37% |
| CapeNature | 245 | 31 | 11% |
| Eastern Cape Parks and Tourism Board | 207 | 22 | 10% |
| iSimangaliso Wetlands Park Authority | 131 | 21 | 14% |
| Mpumalanga Tourism and Parks Agency | 311 | 20 | 6% |
| Limpopo Tourism Agency | 185 | 10 | 5% |
| Total / gross average | 3,257 | 1,866 | 37% |
| Average with MAs weighted equally: | | | 20% |

Source: based on data in DEA (2016)

The need for conservation authorities to increase own revenue generation is well recognised along with the understanding that each management authority faces sometimes very different circumstances. At a national level, the Sustainable Financing Framework for Protected Areas provides a strategic framework intended to inform the development of more detailed and context-specific sustainable financing strategies by each management authority supported by DEA (DEA, 2015). There are also provincial initiatives underway such as the CapeNature investigation into the income generation potential of its protected areas. Phase One of the project started in 2014 and identified a detailed list of 131 current and potential income generation options. These were then reduced to selected options with most potential in Phase Two, namely: adventure tourism, filming, game utilisation, and income from conference venues, education centres, restaurants/coffee shops & merchandising. The options are currently being subjected to detailed feasibility assessment.

Individual needs with respect to own revenue generation vary. Assistance with the use of PPPs provides an example. SANParks has done well in implementing this option. CapeNature also have a successful PPP at De Hoop Nature Reserve and are in the process of revising and expanding the agreement. Other conservation authorities may, however, struggle with PPPs and feel that assistance in this regard would be most valuable. Even then, one would need to understand what assistance they need and whether they have sought help from National Treasury who offer PPP courses, mentoring, etc. Conservation fees (i.e. entry fees) is another

area where needs are likely to vary. SANParks charges stratified fees for South African, SADC nationals and foreign visitors (who generally pay four times more than South Africans do). Other conservation authorities do not have stratified fees although Ezemvelo KZN Wildlife has initiated a process aimed at introducing them and are also considering seasonal pricing options (EKZNW, 2016). The nature of own revenue is also not dominated by leisure tourism in all cases with hunting and game sales revenue playing an important role in the Eastern Cape and Mpumalanga, for example.

In 2016, DEA hosted the Biodiversity Economy Lab, an intensive intergovernmental, industry and civil society engagement aiming to develop and transform three areas of the biodiversity economy, namely wildlife, coastal and marine tourism and bioprospecting. These three areas are deemed to have the potential to create more jobs, stimulate economic development, and bring benefits to biodiversity management. Many of the work streams identified through the Lab process aim to increase revenue for protected areas, while at the same time leveraging rural development around protected areas. The further development of plans to implement the Lab findings is currently underway, coordinated by DEA.

The Government Technical Advisory Centre (GTAC), housed within National Treasury, initiated a comparative spending and revenue review of provincial protected areas in May 2017 which should contribute to understanding costs and revenue drivers and opportunities better. The key objectives of the review are to:

- Identify and document all the costs of, and revenues generated by, provincial nature reserves over the period 2013 to 2016
- Identify and document trends in the costs and revenues of the nature reserves
- Identify key costs and revenue drivers affecting nature reserves and
- Identify proposals for reducing costs and increasing revenues and assess their feasibility

4.1.2.2 Objectives

Own revenue options tend to be relatively case specific for each conservation authority and the individual protected areas within their respective networks. This is due to a range of factors, including the location of protected areas in relation to cities and transport hubs, natural assets and existing tourism infrastructure. While there could be synergies and learning opportunities across conservation authorities, one should also be careful of making generalisations about own revenue options. Although this solution focuses on raising own revenue levels for conservation authorities, it is important to balance this with revenue models that also generate income for local communities so that they may benefit from protected areas. It is also important to recognise that government authorities on their own are not necessarily best suited to running businesses, and partnerships with the private sector will be key.

It makes sense to consider and thoroughly scope the needs of each conservation authority before recommending further actions. In the short term, the process of increasing own revenue potential will be supported by the *Improving Management Effectiveness of the Protected Area Network Project* funded by the GEF with SANParks as the executing agency along with CapeNature, Eastern Cape Parks and Tourism Agency, Mpumalanga Tourism and Parks Agency and Limpopo Department of Economic Development, Environment and Tourism as key partners. The project is currently underway and aiming for completion by end 2019. With respect to revenue streams, its overall aim, specified under Outcome 3.2, is to improve the financial sustainability of an expanded network of protected areas by optimizing and diversifying revenue streams and by improving cost efficiencies.

An important issue under consideration is the merits and practical implementation challenges associated with ensuring that all conservation authorities can retain the revenue that they generate. Retention should incentivise protected area managers to increase their own revenue collection efforts and potentially also to control costs more carefully. This would not, however, happen if increased own revenue simply results in a concomitant decrease in government funding allocations.

4.1.2.3 Expected financial results

In order to include some tentative estimate of potential gains, it was assumed that own revenues could increase gradually to 12.5% above current levels within 10 years in real terms and net of costs (i.e. an additional amount of ~R260 million by 2026 across all conservation authorities).

Funding of approximately US\$1.4 million has been secured for the programme of work described above under the GEF Protected Areas Project which will continue until 2019.

4.1.2.4 Next steps

Beyond any specific project, increasing and diversifying own revenues will need to remain a priority on-going programme of work within all conservation authorities each with their own needs and challenges.

Implementation of the GEF programme of work discussed above has started and will continue until 2019 with SANParks as the lead. Similar activities are likely to be implemented by other conservation authorities based on lessons learnt from the GEF project. The Table below outlines a proposed implementation scenario focused on broad next steps based on the GEF project activities:

Table 4-3: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|---|---|----------------------|
| 1. Establish task teams for data gathering and to act as forums to discuss and develop ideas. | SANParks and other conservation authorities | DEA, SANParks, provincial conservation authorities (especially LEDET, MTPA, ECPTA and CapeNature for the GEF project), private sector investors in protected areas and National Treasury. | 2 - 3 years |
| 2. Conduct agency-wide assessments on (1) current income streams, origins and diversity, (2) financial controls for securing income and (3) potential threats to income streams and their resilience to potential external shocks. | SANParks and other conservation authorities | | |
| 3. Comparison across MAs on their respective income sources to identify potential income streams missed by some agencies. Compare and learn lessons from well-performing protected area systems in sub-Saharan Africa. | SANParks and other conservation authorities | | |
| 4. Agency-wide assessments and analysis of current governance regarding allocation of incoming financial resources, including cost effectiveness of managing co- | SANParks and other conservation authorities | | |

| | | | |
|---|--|--|-----------------------------------|
| managed areas and related benefit sharing systems. | | | |
| 5. Provide recommendations on optimization of current inflows, business model improvements and other operational improvements around governance of inflows. | SANParks and other conservation authorities | | |
| 6. Implement recommendations from the GEF funded project and undertake ongoing evaluation. | All conservation authorities | | Ongoing with periodic evaluations |

The following risks may affect the success of the solution and should continue to inform its design and implementation:¹⁴

- Significant capacity constraints in terms of protected area management capacity to implement own revenue options successfully.
- Ability to implement new and innovative options to diversify incomes.
- Dwindling protected area budgets may create difficulties for undertaking new initiatives that require staff time and often capital investment.
- Limited capacity within core conservation authorities in terms of agency ability to take responsibility for newly acquired expansion areas.
- Lower than expected tourism growth due to external factors.

¹⁴ Adapted from SANParks, 2013

4.1.3 Reform of property rates law and application to protected areas

Certain protected areas face the challenge of being charged substantial property rates bills due to ambiguity in the Municipal Property Rates Act. This is putting undue financial pressure on providers of important public goods. This solution aims to ensure that the application of property rates policies by municipalities better reflects the spirit or intention of the Act with respect to the concessions it offers protected areas and botanical gardens. DEA engagement with Cooperative Governance and Traditional Affairs (CoGTA) and National Treasury is required and can result in the crafting of a legally binding prescribed approach to rating protected areas preferably in the national rates framework published under the Municipal Property Rates Act.

The case for this finance solution

- Protected areas and botanical gardens are a public good providing significant biodiversity and socio-economic benefits to society.
- Their contribution is reflected in the concessions offered to them in the Municipal Property Rates Act, but not consistently in the application of the Act at municipal level, resulting in unwarranted financial strain on protected areas and botanical gardens.
- Alleviating this financial strain would make an important contribution to the financial sustainability of protected areas and botanical gardens at a time when they are under significant budgetary pressure.

4.1.3.1 Context

Municipal property rates policies are governed by the Municipal Property Rates Act 6 of 2004. While the Act is relatively prescriptive, it still allows local municipalities significant discretion within certain bounds. There are positive aspects to this discretion, particularly when one considers that property rates are a major source of revenue for municipalities and can be used to relieve the financial pressure experienced by many municipalities. However, there are also down-sides to the situation which are particularly significant in the case of protected areas.

Section 17(1)(e) of the Municipal Property Rates Act states that a municipality may not levy a rate on those parts of a special nature reserve, national park or nature reserve within the meaning of the Protected Areas Act, or of a national botanical garden within the meaning of the Biodiversity Act, which are not developed or used for commercial, business, agricultural or residential purposes.¹⁵ The intention of this condition, which came into effect in 2009, was to exclude the rating of the bulk of a property that is used for conservation purposes, but to still rate those portions of the property that are clearly not used for conservation purposes (for example, a game lodge or a restaurant). However, there are instances where the Act is not being implemented in this spirit, resulting in conservation authorities facing very high property rates for the entire property. This needs to be remedied urgently for all conservation authorities to ensure that they are not burdened with significant additional costs now or in the future thereby ensuring that rates do not act as a dis-incentive to the declaration of future protected areas.

¹⁵ The Municipal Property Rates Act refers specifically to areas as specified in the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003), or of a national botanical garden within the meaning of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

The current situation with respect to SANParks gives an indication of the significant amounts involved. As of May 2016, SANParks was facing demands from various local municipalities for rates arrears totalling approximately R212 million. In addition, they estimate that future demands would be in excess of R80 million/yr. Bear in mind that SANParks manages approximately 4.09 million hectares of land (DEA, 2016d). This equates to a little over half of the 7.4 million hectares contained within special nature reserves, national parks and nature reserves within the meaning of the Protected Areas Act. Note that the total national protected area estate, which also includes protected environments, world heritage sites, forest wilderness areas and mountain catchment areas, is approximately 9.5 million hectares in extent and equal to approximately 7.75% of the total land area in the country (DEA, 2016d).

4.1.3.2 Objectives

The key objective of this finance solution is to ensure that the application of rates policies by municipalities better reflects the spirit or intention of the Property Rates Act with respect to the concessions it offers protected areas and botanical gardens and the public good they provide.

SANParks have requested that DEA engage Cooperative Governance and Traditional Affairs (CoGTA) at a ministerial level in order to find solutions. It will be critically important for this engagement and subsequent processes to address the needs of all protected areas mentioned in the Property Rates Act and their associated conservation authorities (i.e. SANParks, provincial conservation authorities, private or communal landowners of PPAs, and SANBI, the owners of national botanical gardens). Other engagements may be needed with, for example, the Department of Public Works, South African Local Government Association (SALGA), and Forum of South African Directors-General.

A permanent and clear solution is needed. For example, the erstwhile Department of Provincial and Local Government (DPLG – now COGTA) published a guideline to accompany the Property Rates Act in 2004. This guideline may benefit from updating including clarifications around rating protected areas and being formalised as a legally binding “framework” referred to in the Rates Act. National Treasury should assist with this framework.

4.1.3.3 Expected financial results

The key results would be realised through savings on property rates that protected area authorities could use for conservation instead. These would include arrears amounts which may exceed the R212 million being demanded from SANParks alone. Future avoided costs for all protected area authorities (i.e. state and privately owned protected areas and national botanical gardens) were assumed to be approximately twice the R80 million per year rates liability estimated for SANParks after three years, reflecting the area under their management relative to the national protected areas estate. The potential maximum additional cost to DEA and its partners of achieving the necessary reforms was assumed to be R3 million in potential legal fees and other specialist inputs, etc.

4.1.3.4 Next steps

DEA would need to engage with CoGTA and National Treasury to find a solution that meets the needs of all conservation authorities and simplifies the process of rating commercial property in protected areas. This solution should be captured in a rates framework or guideline that is binding and can be published under the Act. It will then be necessary to communicate the key aspects of the revised rates framework with municipal representative

bodies and individual municipalities. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-4: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|----------------|---|----------------------|
| 1. DEA to engage with CoGTA, National Treasury and possibly others in order to explore options in principle | DEA, CoGTA, NT | DEA, SANParks, SANBI | 3 months |
| 2. Reach agreement on interim solution to immediate financial challenges faced by PAs | DEA, CoGTA, NT | Provincial conservation authorities, CoGTA, | 3 months |
| 3. Technical assessment and associated work on long-term solution likely to be within national framework for property rates published under the Property Rates Act | DEA, CoGTA, NT | National and Provincial Treasury, the Department of Public Works, | 1 year |
| 4. Finalisation and approval of framework | CoGTA, NT | the Forum of South African Directors-General and SALGA. | 6 months |
| 5. Communicate key aspects of the framework to stakeholders | DEA and CoGTA | | 3 months |

The following risks may affect the success of the solution and have informed the design of this finance solution:

- Not being able to reach a workable agreement with CoGTA and National Treasury regarding solutions.
- Not being able to carry out additional technical and legal work due to limited resources.
- Resistance from local municipalities to implementation of solutions that would have a negative impact on their finances.

4.1.4 Support for biodiversity tax incentives

Private protected areas in South Africa make up around 30% of South Africa's terrestrial protected area estate and have been shown to be extremely cost effective solutions for expanding the country's protected area network. The government has provided fiscal incentives in the form of tax benefits to landowners who convert their private land to formal protected areas or who participate in the official biodiversity stewardship programme. This solution will enhance the effectiveness of these tax benefits to incentivise the declaration of private protected areas and the adoption of the stewardship programmes as well as increase the area under responsible land management. They also provide necessary cash flow to address expenses related to land management. In addition, biodiversity tax incentives provide a mechanism for sustainable financing and can assist in the effective growth of SMMEs and commercial operations linked to the Wildlife Economy. The implementation of this finance solution aims to 1) increase awareness, 2) build capacity among landowners and tax professionals, and 3) enhance communication systems to produce continuous improvement in the biodiversity tax benefit program. The effectiveness of this finance solution is dependent on the accurate appropriation of the tax benefits by SARS and continued support of Treasury. It is also partially dependent on expanded financing of the biodiversity stewardship programs at national and provincial conservation authorities, and among participating NGOs.

The case for this finance solution

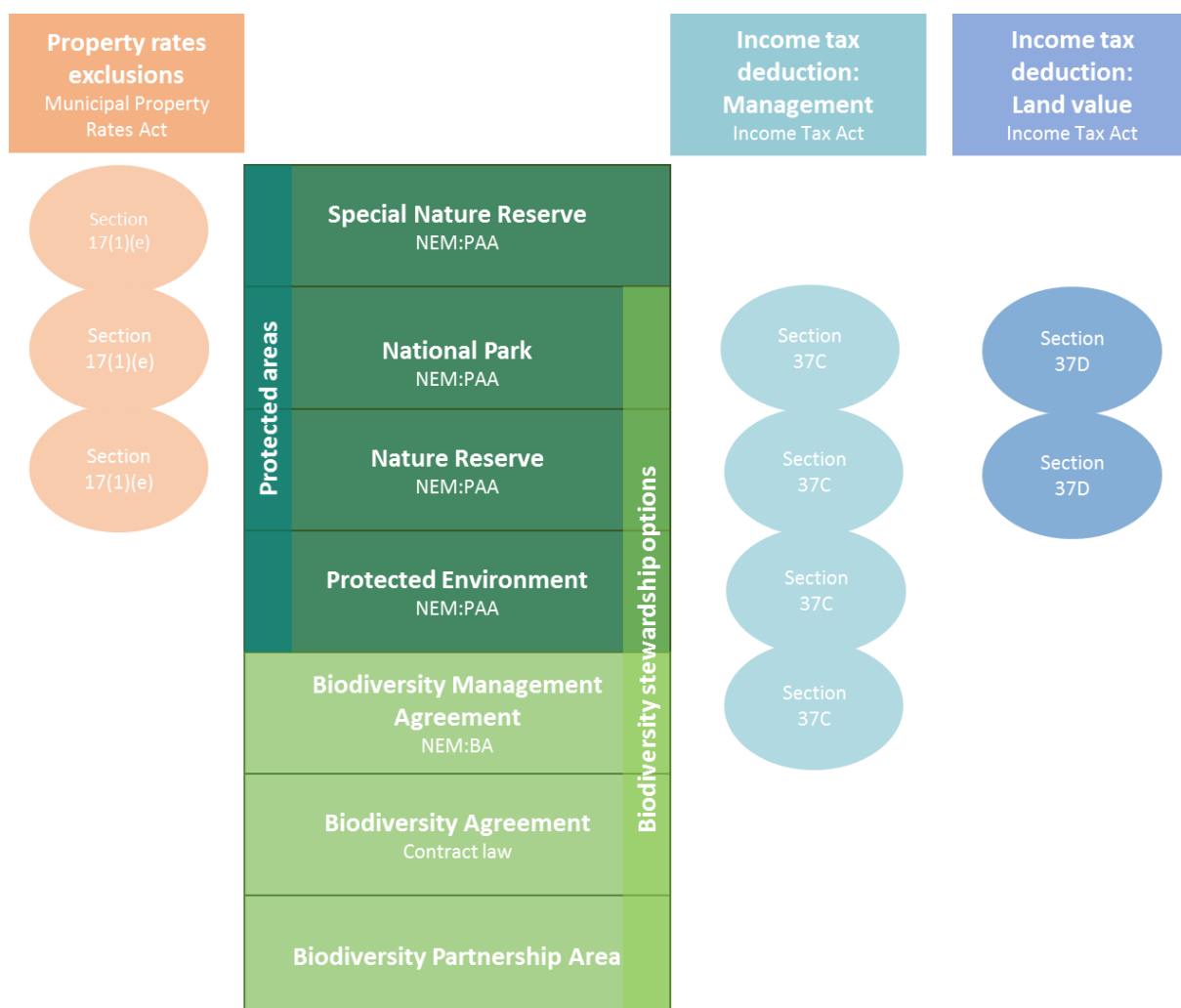
- Biodiversity stewardship is seen as a key strategy for protected area expansion by government.
- The South African biodiversity stewardship programmes are considered one of the most cost effective means of expanding and managing the South African protected area estate.
- Motivation and engagement with the programme will be enhanced by an effective tax benefit system for landowners.
- A beneficial tax system provides a unique finance model able to leverage public funding as well as private investment, by stimulating landowner input into PAs.
- Builds on an existing initiative with initial funding and a legal framework.
- National Treasury and South African Revenue Service have demonstrated a willingness to continue to engage in improving and implementing an effective tax benefit system.

4.1.4.1 Context

Non-state investment in establishing and managing protected areas requires a suite of sustainable finance tools to mitigate management costs, increase land under protection, and ensure effective growth of enterprises engaged in the biodiversity economy. Biodiversity tax incentives form part of this suite of tools. One of the leading mechanisms for creating protected areas and conservation areas is the biodiversity stewardship programmes. These programmes aim to provide a range of incentives to collaborating landowners, including recognition for their commitment to conservation, technical and professional advice and management support (for example, with clearing invasive alien plants and fire management). Additionally, landowners declaring protected areas or entering into other biodiversity stewardship agreements are accountable for effective land management actions and the associated costs. The biodiversity tax incentives present a mechanism to address the mitigation of these costs and ensure the continued investment of landowners in land management.

Certain types of protected areas and certain stewardship agreements make the landowner eligible for fiscal incentives in the form of income tax deductions under the Income Tax Act, which came into effect in the 2009/2010 tax year and 2015, and property rates exclusions (addressed in Section 4.1.3). The Figure below shows the income tax deductions and property rates exclusions available per protected area category and biodiversity stewardship agreement type. National Parks and Nature Reserves entail the strongest form of protection, and often the longest commitment to protection, therefore resulting in greater tax and property rates incentives.

Figure 4-1: Income tax deductions and property rates exclusions available for protected areas and biodiversity stewardship agreements in South Africa



The uptake and application of the income tax based incentives has historically not been as strong as expected. The original legislation was amended in 2015 in a bid to make the incentives more favourable and accessible. This included allowing landowners to claim the purchase value¹⁶ of a qualifying protected area as a straight-line deduction against income over 25 years (i.e. 4% of the value can be claimed as a deduction each year). This allowance set conservation properties apart from commercial farms, the purchase price of which cannot be claimed as a deduction although interest payments associated with purchases are

¹⁶ The value is an election between either the acquisition and improvement cost of the land or the value determined by a valuation formula incorporating municipal or market value and capital gains tax.

deductible by farmers. Protected areas and biodiversity stewardship property owners are also able to deduct management expenses from their income.

Recent achievements have shown that the 2015 amendments have the potential to provide further motivation for landowners that are eligible for income tax deductions as well as assist in economic viability. However, other identified challenges with the original income tax deductions remain in place. These challenges include lack of awareness and misunderstanding among landowners, the local South African Revenue Services (SARS) branches, conservation authorities, NGOs and tax professionals. In addition, some elements of the process remain relatively cumbersome.

The GEF funded *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project* aim to address some of these challenges with the following key objectives (SANBI, 2013a):

- Build capacity among financial/tax advisors and biodiversity stewardship staff with regards to what the incentives offer and how they can be accessed and applied.
- Develop and implement guidelines on how landowners can benefit from tax incentives and build capacity among tax professionals and landowners on the utilization of these incentives.

Work in this regard is being led by BirdLife South Africa's current programme, the Fiscal Benefits Project, which focuses on determining the effectiveness of the biodiversity tax incentives as well as assisting landowners with accessing tax incentives at 10 pilot sites. Additionally, the Fiscal Benefits Project is now mainstreaming the findings from pilot sites by introducing pro bono tax practitioner services to owners of private protected areas and biodiversity stewardship sites nationally through the recently concluded Corporate Conservation Partnership.

4.1.4.2 Objectives

The main aim of this solution is to improve the effectiveness and impact of tax incentives for private protected areas and biodiversity stewardship. To achieve this aim, the specific objectives include the following:

- 1) Increase communication and awareness of the biodiversity tax incentives
- 2) Build capacity among a range of stakeholders
- 3) Build a coalition of experts and practitioners to continue refining tax incentives and support legislative change initiatives where needed

The GEF funding for this work has been strategic and crucial. However, it is expected that this work will need to continue beyond the GEF project timelines to ensure long-term benefits. DEA and BIOFIN are already supporting this work by providing technical and strategic input. They also assist with political and institutional support, for example, by facilitating engagement with National Treasury and the South African Revenue Service.

4.1.4.3 Expected financial results

Initial funding to revitalise biodiversity tax incentives was received by the WWF Nedbank Green Trust from 2015 to 2017 to a total of R1.5 million. Funding of approximately R2.5 million has been secured for the programme of work under the GEF Mainstreaming Project which would run from 2017 to 2019. This funding will be used in part to finance the activities noted in this solution.

Expected financial results are very difficult to predict as it is difficult to isolate the effects of these tax incentives that are only one part of an overall biodiversity stewardship incentive package available to landowners. These additional motivations have been shown to include technical advice, management assistance, and positive relationships between landowners, conservation authorities and NGOs.

The financial benefits of this tax incentive include: (1) ability of the landowners to offset land costs and management expenses, (2) reduced total costs of acquisition and management of new protected areas for government, (3) low cost incentive scheme with minimal transaction costs for government, (4) increased economic viability of landowner entities.

To calculate a rough approximation of potential hectares of protected areas gained it was assumed that the tax benefit motivation would represent approximately 30% of the overall motivation for those bringing their land into the biodiversity stewardship programme or declaring a PPA. Combined with potential growth in the stewardship programme (4% to 5% per annum), this resulted in an estimate of 10,000 to 15,000 hectares gained per year in the medium term increasing gradually thereafter to 18,000 hectares per year by 2026. The associated land purchase and management cost avoided by the state was assumed to be R15,000 per hectare and R250 per hectare per year respectively based on SANBI (2015). Based on these assumptions, the solution should result in annual avoided costs for the biodiversity sector that increase to approximately R260 million by 2026.

Note that while the foregone taxes associated with this incentive will reduce annual treasury income, overall financial and economic benefits are clearly expected for the government. In addition, if one was to consider a cost-benefit analysis of the incentives, it would be important to also include other foregone tax benefits for competing land uses such as agriculture.

4.1.4.4 Next steps

Implementation of the programme of work led by BirdLife South Africa with GEF funding discussed above has started and will continue until 2019. DEA is providing support to this effort by providing technical and strategic input and facilitating engagement with National Treasury and the Revenue Service.

After the steps associated with supporting the implementation of existing tax incentives have been completed, there is likely to be a need to engage further with Treasury around the potential to enhance the incentives and address other technical issues relating to the remaining historical biodiversity tax incentives. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-5: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|---|------------------------------------|----------------------------------|----------------------|
| 1. Increase communication and awareness around tax incentives through targeted engagements and written guidelines | Birdlife South Africa, DEA support | Key stakeholders in this process | 1 year |
| 2. Build capacity among a range of stakeholders through workshops and pilot activities | Birdlife South Africa | include Birdlife South Africa, | 3 years |

| | | | | |
|----|---|--------------------------------------|--|----------|
| 3. | Build a coalition of experts and practitioners to continue refining tax incentives through the establishment and engagement with an expert advisory group on industry leaders | Birdlife South Africa, DEA support | National Treasury, SARS, DEA, SANBI, the biodiversity stewardship programmes, NGO's engaged in the biodiversity stewardship programmes, landowners and potential corporate partners from the private sector. | 3 years |
| 4. | Review the programme of work on fiscal incentives for biodiversity stewardship to determine if the work should be continued, how it should evolve, and how ongoing work could be financed | DEA, SANBI and Birdlife South Africa | | 6 months |
| 5. | Engage with and collaborate with Treasury for potential enhancements to legislation | DEA, SANBI and Birdlife SA | | Ongoing |

The following risks may affect the success of the solution and have informed its design:

- The primary implementation mechanism for establishing and managing private protected areas and conservation areas is biodiversity stewardship. Biodiversity stewardship programmes are currently substantially under-resourced (SANBI 2015). If the biodiversity stewardships programmes do not become better resourced, it will be unlikely that the tax incentives can be used to their full potential.
- A lack of skills in tax and associated legal matters to support the uptake of these incentives within the biodiversity sector is a risk, although the Fiscal Benefits project aims to address this risk.
- A lack of knowledge and understanding of the biodiversity tax incentives and their alignment with private protected areas and biodiversity stewardship programmes among tax practitioners and SARS regional offices is a risk, although the Fiscal Benefits project aims to address this risk.
- Tax incentives are appropriate for the government as they do not require a direct outlay of capital. However, ultimately, direct fiscal subsidies may be more equitable given that communal land and lower income landowners would be unlikely to benefit from income tax deductions.

4.1.5 Enabling conditions for biodiversity offsets

Biodiversity offsetting is the final option in the mitigation hierarchy that underpins environmental impact assessments in South Africa. Despite this, it is one of the least utilised mitigation options for various reasons, not least of which is national policy uncertainty. As a result, biodiversity offsetting has been implemented in a relatively ad-hoc manner, and there has been a call for national guidance and cohesion on biodiversity offsets. There is also a need for an effective enabling environment for implementing biodiversity offsets across the country to increase their efficacy in leveraging funding for additional biodiversity conservation and management interventions. This finance solution draws on the finalisation of the national offsets policy and associated biodiversity offsetting guidelines, and aims to design effective implementation modalities for biodiversity offsets across the country.

The case for this finance solution

- South Africa has substantial experience in designing biodiversity offsets, which can be drawn on for further development.
- Developing and implementing biodiversity offsets is a government objective, expected to remain in the foreseeable future.
- Land transformation for development will continue to take place in South Africa, with the related biodiversity loss. Biodiversity offsets are intended to counterbalance these losses in biodiversity.
- Biodiversity offsets favour changes in mind-sets among private and public sector developers.
- Biodiversity offsets supports the polluter pays principle, embedded in South Africa's environmental legislation.
- A national biodiversity offsets policy creates predictability and certainty for public and private sector developers.
- South Africa has a number of opportunities to achieve synergies between biodiversity offsets and with existing and tested programmes, such as Natural Resource Management programmes and biodiversity stewardship.

4.1.5.1 Context

The principles of 'additionality', 'sustained outcomes' and 'net biodiversity gain' are key to biodiversity offsetting. Therefore, biodiversity offsets may be considered to be a means of financing a net increase in the protected area estate and a net gain in ecosystem functioning (i.e. offsets must include restoration and/or rehabilitation components in order to generate the required net gain of ecosystem functioning). The efficient and effective implementation of the evolving Overall National Environmental Offsetting Policy and its associated biodiversity offsetting guidelines should counterbalance biodiversity loss in unprotected landscapes for increased formal protection and management of biodiversity.

Box 9: The Business and Biodiversity Offsets (BBOP) definition of biodiversity offsets

Biodiversity offsets can be defined as, *"measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts arising from project development after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people's use and cultural values associated with biodiversity"* (BBOP, 2012: 1).

In South Africa, around 70 ‘offset-like’ decisions have been made based on development applications over the last 10 years. The Western Cape has developed draft provincial guidelines for biodiversity offsetting (DEA&DP, 2007).¹⁷ More recently, a guideline and Norms and Standards document was published by Ezemvelo KZN Wildlife (EKZNW, 2013). At a national level, a draft national policy on biodiversity offsets was developed by DEA in 2016, and has been published for public comment during 2017. The intention is for this policy to be finalised by the end of the 2017/18 financial year, thereby providing the policy guidance that would be a pre-requisite to the scaling up of biodiversity offsets. The potential for the successful finalisation and subsequent implementation of the national policy to support the protection of biodiversity, including through the expansion of the protected areas estate, seems clear. Among other provisions, the draft policy states that it is preferable for a biodiversity offset site to be declared as a protected area under the National Environmental Management: Protected Areas Act if at all possible. It also allows for biodiversity offsets to be secured through (DEA, 2016b: 21):

- “Land donation by the applicant to an appropriate statutory conservation authority or a Public Benefit Organisation approved by the Competent Environmental Authority and willing to receive such land;
- Conservation servitudes (e.g. stewardship agreements, or the purchase and retirement of development rights) entered into between the applicant, landowner and the state conservation authority; and
- Purchase or other acquisition of land or rights to land by the applicant for either of the above purposes.”

Suitable financial provision¹⁸ for meeting the needs of a biodiversity offset would be required by the Competent Environmental Authority, prior to the issue of an environmental authorization. These financial provisions may include, but are not limited to:

- The probable costs of acquiring and/or securing a sufficient area of suitable land, including transaction costs;
- The costs of protection, rehabilitation and management of the biodiversity offset area and, where necessary, obtaining specialist input about its management, for at least the duration of the residual impact, or until such time as a closure certificate is issued or other extended time frame as may be determined by the Competent Environmental Authority; and
- The costs of monitoring and auditing performance and compliance.

Well designed and carefully implemented biodiversity offsets thus have a potentially significant role to play in securing biodiversity priority areas, as well as in providing funding for their ongoing management without substituting government investment in biodiversity. However, some obstacles need to be addressed. Individual biodiversity offset cases have been hindered by confusion over the fiscal routing and responsibility for state funds if the offset liability holder is an entity of government (a department, statutory agency or state-owned company). Where private companies are liable for biodiversity offsets, the constraints placed

¹⁷ In the Western Cape, converting the revised 2015 provincial guidelines into an appropriate NEMA regulation is currently on hold pending the finalisation of the DEA policy.

¹⁸ DEA would need to decide on the applicability of the Regulations under NEMA S24P on the financial provisions for the management of negative environmental impacts. ‘Financial provision’ is defined (s1) as the insurance, bank guarantee, trust fund or cash that applicants for an environmental authorization must provide in terms of this Act guaranteeing the availability of sufficient funds to undertake, amongst others, the ‘remediation of any other negative environmental impacts’.

on conservation agencies to aid planning of, and ring-fence and audit the implementation and ongoing management of offsets funds, limits offset contributions and effectiveness.

4.1.5.2 Objectives

There are essentially two key enabling factors in the short to medium term for the uptake of biodiversity offsets. The first is finalising a national policy for biodiversity offsets. The second is to establish effective mechanisms for biodiversity offset establishment/implementation on the ground. Together, these would create a cohesive and predictable framework across South Africa for implementing biodiversity offsets.

The finalisation of this policy would clarify that:

- Biodiversity offsets will be applicable to both private and public proponents.
- Biodiversity offsets form an integral part of the mitigation hierarchy for development decisions as they are intended to 'remedy' residual impacts that cannot altogether be avoided or minimised.
- This hierarchy allows for 'non-offsettable' or 'unoffsettable sites', where impacts on biodiversity would be deemed unacceptable. In these cases, no offset would mitigate the effect sufficiently and an alternative location or project design would need to be sought for the proposed activity.
- Biodiversity offsets strive for equivalence, or 'like for like', in securing offset receiving areas.
- Biodiversity offsets must demonstrate real long-term protection of biodiversity into the future, which is both enforceable and auditable.

Finalisation of the national policy on biodiversity offsets is key to providing clarity on when offsets must be required by any competent authority and to outline the basic rules for offsets, thereby facilitating implementation. Ensuring that the finalisation of the policy takes Treasury requirements into account will be key in terms of its ease of implementation. The resolution of fiscal and administrative procedures, including when state-owned entities are the developer, is also required for the successful implementation of offsets.

The biodiversity offsets policy will need to be accompanied by clarity on how offsets are to be implemented and administered. Certain fiscal and administrative obstacles to implementation need to be resolved – both for offsets from state-linked actors and for the financial management of offset resources from private companies. There is a need to explore, assess and develop consensus on, and clarify a number of key issues in this respect. These include:

Financial considerations

- Options for the most appropriate financing arrangements and vehicles to assure offset delivery in the case of public and private-sector developments. For example, looking into creating escrow accounts or trust funds, and determining who funds should best be vested with, and looking into options for the use of insurance or performance bonds.
- Confirming that the 30 years referred to in Section 37C(3) of the Revenue Laws Amendment Act (Act No. 2 of 2016) may be used as the basis for the duration of responsibility for offset financing and management (i.e. when does liability end, until when should financing be assured, etc.).
- Determining the most appropriate and robust legal instruments for assuring offset delivery and adequate financial provision from proponents (for example, conditions

of Environmental Authorisation and amendments of the Environmental Authorisation, as opposed to – or in addition to - private law contracts).

- Determining the timeframes for securing a biodiversity offset area and providing adequate funds for securing and managing offset receiving areas, including determining the proportion of required funds to be provided up front, and an appropriate deadline for full funding.
- Understanding the opportunities and constraints of aggregating biodiversity offsets (with associated financial aggregation) and / or biodiversity banking approaches, over individual project by project ('DIY'-type) biodiversity offset approaches.
- Where conservation authorities maintain biodiversity offset areas, determining the financial implications for the state in a 'post-offset liability' stage, determining the most appropriate arrangements and provisions that would need to be made.

Offset strategies and enabling frameworks

- Identifying the most appropriate institutional arrangements, roles and responsibilities for efficient and effective offset delivery. For example, identify the most effective type of system to facilitate the links between, management of, and financial provision for offset supply and demand.
- Determining the optimum approaches to, and financial implications of, securing conservation hectares in different contexts. For example, considering the various potential roles of biodiversity banking; biodiversity stewardship or outright land purchase; protected areas, conservation easements or servitudes; outright land purchase and revolving land trusts.
- Striking the right balance between securing new hectares for protection versus using resources for rehabilitation of ecosystems, weighing up improvements in ecological functioning (i.e. rehabilitating degraded ecosystems) against securing existing priority intact biodiversity. Determining whether these decisions should be made at a national or provincial level, or on a case-by-case basis.
- Identify gaps in the current biodiversity stewardship programmes that would need to be addressed in order for them to be sufficiently attractive to landowners to 'buy in' to them over and above the current benefits offered by these programmes, for example providing a 'rental' or 'lease fee', over and above management support.
- Ensuring that enabling conditions exist for appropriate private sector participation as a third party, such as in certification, auditing, negotiating management agreements, and managing sites.
- Ensuring that biodiversity offsets deliver additional conservation gains, and issues of additionality are addressed.

It is likely that these issues would need to be addressed in guidelines or similar to accompany national and provincial policies.

4.1.5.3 Expected financial results

Biodiversity offsets should be considered as finance solutions to the extent that they have the potential to result in *net* gains for the protection of biodiversity at no or limited additional costs to the state, against the backdrop of a development agenda what will support the transformation of land regardless whether biodiversity offsets are required or not.

The key financial gain from successful implementation of biodiversity offsets would be by complementing continued government expenditure to help meet protected area expansion targets. In this respect, biodiversity offsets would leverage private sector funds or public

sector funds from other government institutions such as those in transport, water and energy, into conservation.

The financial gains from biodiversity offsets, in the form of avoided land purchase and management costs, were tentatively estimated based on past records. Since 2006 there have been over 70 biodiversity-related offsets required from developers. The draft biodiversity offsets register (SANBI version October 2016) indicates that, although highly variable, currently there are over 20 biodiversity offsets required by competent authorities per year and previous annual increases have been modest. Although several of these offsets are small (<100 ha) or even purely in the form of monetary compensation, some are large (>10,000 ha). An average biodiversity offset area gain of 1,000 ha per offset was therefore assumed. The number of additional biodiversity offsets being implemented was assumed to grow gradually to 15 by 2022, growing by one additional offset in the years thereafter. The land purchase and management cost avoided by the state was assumed to be R10,000 per hectare and R250 per hectare per year respectively based on SANBI (2015).¹⁹ Additional costs to facilitate biodiversity stewardship on offset sites was assumed to be approximately R1.5 million per year. Based on these assumptions, biodiversity offsets should result in annual net avoided costs of establishing and managing protected areas that increase gradually to approximately R218 million by 2026²⁰.

4.1.5.4 Next steps

This solution builds on experiences across the country and existing processes, including the development of a national policy. There are a wide range of stakeholders and experts whose engagement will be critical for the success of this solution. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-6: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Indicative timescale | Key Stakeholders |
|--|---|--|--|
| Biodiversity Offsets National Policy steps: | | | DEA, SANBI, SANParks, provincial conservation authorities, NGOs, Applicants/developers, Environmental Assessment Practitioners (EAPs), EIA specialists, offset specialists and the private sector. |
| 1. Public comment | DEA | One year | |
| 2. Consolidation, consideration of comments and refinement | DEA | | |
| 3. Consultation through inter-governmental structures | DEA | | |
| 4. Approval | DEA | | |
| Biodiversity Offsets Implementation steps: | | | |
| 1. National consultation with practitioners, implementers and knowledge holders, for | DEA (to be confirmed with key stakeholders) | One to three years (depending on complexity) | |

¹⁹ This is less than the R15 000/ha assumed in the Business Case for Biodiversity Stewardship (SANBI, 2015) as the largest properties are often in outlying regions with little economic potential.

²⁰ Note that biodiversity gains from offsets should be considered against the backdrop of biodiversity loss resulting from approved developments. Offset ratios have, however, been crafted to ensure net biodiversity gains. Financial gains from offsets are from their cost savings relative to state purchase and management of additional land secured for the protected areas estate.

| | | | |
|--|---|---|--|
| example through the creation of a technical working group, in order to identify and start process of considering key implementation issues | | and done in parallel with the policy process) | |
| 2. Identification and assessment of alternative implementation models with related practical, legal and financial implications | DEA (to be confirmed with key stakeholders) | | |
| 3. Further consultation and choice of key approaches | DEA (to be confirmed with key stakeholders) | | |
| 4. Piloting different approaches in selected provinces | DEA and provincial conservation authorities | | |
| 5. Development of implementation guidelines | DEA | | |
| 6. Establish mechanisms and clarify institutional structures | To be confirmed | | |

The following risks may affect the success of the solution and have informed the design of this finance solution:

- Challenging aspects of the national biodiversity offsets policy by private sector and NGOs resulting in the policy not being finalised.
- Divergent understanding among the biodiversity sector slows the process.
- Insufficient engagement with all relevant stakeholders, including government, biodiversity specialists, EIA practitioners and offset practitioners.
- Limited participation of Treasury creates difficulties in aligning the offsets policy with related finance policy.
- Not being able to carry out additional research and technical work on implementation due to limited resources.

4.1.6 Introduction of revolving land trust mechanisms

Revolving land trust mechanisms aim to enable the establishment of protected areas on private land, thereby increasing private sector investment into protected areas. They are a mechanism for purchasing conservation-worthy land, declaring the land a protected area, setting up associated tax benefit structures and selling the land on to a new landowner. Any profit generated through this process can be reinvested in further rounds of land purchase. This finance solution entails encouraging existing Land Trusts and other NGO land acquisition groups to consider incorporating explicit revolving strategies into their operational models. Primarily, this solution will be enhanced if the biodiversity stewardship programmes are able to become more efficient with protected area declarations, initial management advice, ongoing support and assistance in accessing income tax incentives.

The case for this finance solution

- Revolving land trusts have been used successfully to increase private sector investment in the establishment of protected areas in other countries, such as Australia and the United States, where more than 350 land trusts collectively encompass around 6.5 million hectares of conserved land.
- The development of the biodiversity stewardship programmes in South Africa have led to the development of partnerships between conservation authorities, NGOs and the private sector, along with significant experience in land acquisition and protected area management.
- Creating the necessary enabling environment for revolving land trusts could encourage their establishment by NGOs thereby leveraging private sector investment, contributing to the achievement of the National Protected Areas Expansion Strategy targets.

4.1.6.1 Context

Revolving land trusts provide a mechanism for purchasing conservation-worthy land, declaring the land as a protected area, setting up associated tax benefit structures and selling the land on to a new landowner, preferably at a premium. Profits generated through this process can go towards operating costs and be reinvested into the Trust so that an increasing amount of money is channelled towards conservation through this process. In the USA, more than 350 Land Trusts are accredited by the Land Trust Accreditation Commission, covering around 6.5 million ha collectively (LTAC, 2015). Examples of revolving land trusts include The Conservation Fund and the Big Sur Land Trust in the USA and the Trust for Nature, National Conservation Trust and the Queensland Trust for Nature in Australia.²¹

The concept of the revolving land trust grew out of a recognition of two key features of conservation as it relates to land:

1. Firstly, government conservation agencies are often large entities with institutional structures which, although often well suited to channelling fiscal resources towards conservation, can prohibit the nimble approach to the purchasing of biodiversity priority areas often required to take advantage of opportunities. Revolving land trusts can be relied on at times when biodiversity priority lands become available and are at

²¹ For further details see www.conservationfund.org, www.bigsurlandtrust.org, www.trustfornature.org.au, nct.org.au, www.qtnf.org.au.

risk of being purchased with development in mind. They can act quickly to purchase the land before developers are able to. The land can then be re-sold when a conservation-focussed buyer, either public or private, becomes available.

2. Another point of departure is the realisation that reaching protected area declaration targets needs private sector involvement. Given that biodiversity priority land is often privately owned, securing such land for conservation is arguably as important, than on state-owned land. Revolving land trusts can play a vital role in establishing private protected areas.

Although there are several existing NGO Trusts that purchase land for biodiversity conservation, only one (WWF-SA) has concluded a revolving purchase (of the 2,500 ha property, Naaukloof – near Ladismith in the Western Cape). The main obstacles to private investment in conservation properties in the public good appear to be a lack of risk appetite, the burdens and liabilities in holding land (especially from property rates (see Section 0), if infested with invasive species or at risk of wildfire), and the unpredictability of government declaration processes and attendant benefits. These concerns would need to be addressed to encourage further conservation philanthropy and simplify purchase and declaration.

4.1.6.2 Objectives

The primary objective of this finance solution is to encourage existing Trusts and other NGO land acquisition groups to consider incorporating explicit revolving strategies into their operational models.

There are a few main strategies which could be pursued by a South African revolving land trust mechanism. For example, it could be used to buy land in a relatively degraded state, which would presumably have a lower market value than more pristine land. It could then implement a rehabilitation plan before selling the land on to a prospective buyer after having the land declared as a protected area and having obtained confirmation of any relevant income tax deduction benefits eligibility for the South African Revenue Service. This approach could benefit significantly from close collaboration with the DEA-NRM programme. Undertaking rehabilitation would, however, introduce higher costs (unless these could be sourced from existing government programmes) and require the Trust to hold the land for a sufficient amount of time while rehabilitation occurs.

Another strategy entails a much quicker approach of buying land which is in a relatively good state, declaring the property as a protected area and selling it on to a buyer more speedily. Given that this approach entails less risk, it is probably the safest route for a revolving land mechanism to follow at least until it has built up enough capital to take on riskier, although possibly more rewarding, projects. As a further value addition, the land could be sold on with a management plan already drawn up but not implemented. The plan could provide guidance on opportunities to reduce the costs associated with rehabilitation such as how to access programmes such as the Land User Incentive (LUI) Programme through DEA-NRM (see Section 0 for more detail on the LUI Programme).

A start-up revolving land trust would be best positioned in a region of the country with a relatively active protected area authority and a well-functioning biodiversity stewardship programme, given that this environment is more likely to foster the level of turnover required to limit risks.

Implementation will depend on key enabling conditions being met. NGO(s) and their donors are more likely to become interested in the potential of establishing a revolving land mechanism if biodiversity stewardship programmes are able to become more efficient with

protected area declarations, initial management advice and ongoing support. Ideally, this would also go hand in hand with assistance to landowners in being able to access income tax incentives and enjoy exclusion from property rates in support of biodiversity conservation as discussed in Section 0 and 0 respectively.

At scale, revolving land trusts could work well in conjunction with biodiversity offsets, given that they can act as repositories of land parcels which can be purchased by developers who are required to secure biodiversity offsets. They can also assist developers in finding appropriate parcels for biodiversity offsets. The use of offsets as standard practice in South African environmental authorisation procedures should therefore be supportive of revolving land trusts. Ways of facilitating the use of biodiversity offsets have been assessed in Section 0

4.1.6.3 Expected financial results

In terms of financial results, a basic estimation was generated. If one assumes that a revolving land trust is set up with initial capital of R15 million, such a Trust could probably purchase two parcels of land of approximately 3,000 ha each, in its first year. Furthermore, if the process of declaring takes between 6 and 12 months, it is reasonable to expect that within the first two years a revolving land trust should be able to buy and sell at least two properties. This can then be scaled up gradually as capital is built up reaching total sales of three properties by the seventh year (i.e. 9,000 ha). For running costs, if a revolving land trust were to cover the costs of employing two staff as well as covering travel expenses, which would likely be substantial, it would likely require in the region of R1.5 million per annum. The associated land purchase and management cost avoided by the state was assumed to be R15,000 per hectare and R250 per hectare per year respectively based on SANBI (2015). Using these assumptions, the solution should result in net annual avoided costs that increase to approximately R147 million per year by 2026.

4.1.6.4 Next steps

This solution would require government enabling actions to facilitate implementation by NGOs. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-7: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|---|---|----------------------|
| 1. Biodiversity stewardship programmes increase their effectiveness and reach | DEA and provincial conservation authorities | DEA, provincial conservation authorities, NGOs wishing to establish revolving trust mechanisms, | 2 years |
| 2. Income tax deduction incentives for protected areas become well established and accessed, property rates law and application to protected areas is reformed ²² | BirdLife South Africa, DEA and Treasury | | 2 years |
| 3. NGOs respond to enhanced enabling conditions and establish revolving land trust mechanisms | NGOs | | 1 year |

²² These two finance solutions are the current priority in order to incentivise landowners. Other potential solutions may, however, also arise to strengthen incentive effects.

| | | | |
|---|-----|---------------------------------------|---------|
| 4. Increased use of biodiversity offsets spurs demand for revolving land trusts | DEA | SANBI and private sector land buyers. | 2 years |
|---|-----|---------------------------------------|---------|

The following risks may affect the success of the solution and would need to inform its eventual design:

- Notwithstanding private sector demand for conservation-oriented land, the potential for the revolving land mechanism is dependent on the presence of well-functioning state conservation authorities and biodiversity stewardship programmes to expedite declarations, reduce transaction costs and reduce risk. Risk can be managed through providing biodiversity management and rehabilitation advice and services. Some level of confidence in being able to re-sell land is a key factor determining the level of risk revolving land trusts are exposed to. This risk can be reduced substantially by clear and preferably binding commitments from conservation authorities regarding their willingness to support declaration and provide support post-declaration on a given parcel of land meeting certain specified criteria (for example, land in biodiversity priority areas).²³ It is important to note that a newly established revolving mechanism will tend to have a lower appetite for risk, and so enabling conditions from conservation authorities along with a relatively strong private market for conserved land would be needed.
- A certain level of endorsement from conservation agencies could be achieved by including agency representation on the Board of Trustees for a revolving land trust – such as is the case with the National Parks Trust, managed by WWF-SA, with SANParks represented on the board. This could contribute to a good understanding of public conservation plans and objectives, thus reducing the risk entailed in purchasing land. It should, however, be noted that a trade-off tends to exist with respect to the size of boards of trustees. A larger board can ensure greater collective experience, but can also be difficult to coordinate, leading to efficiency losses and reducing the ability of a revolving land trust to act quickly and take advantage of opportunities as they arise. A smaller group of committed and engaged trustees tends to be most effective.
- Uncertainty regarding the preferences of private-sector buyers is a risk factor which is more difficult to manage. Some buyers, for example, might be attracted by a piece of land with an ongoing rehabilitation programme, and would potentially be willing to take on part of the responsibility of overseeing this programme. For other buyers, this may be less of a draw card, and they may prefer a piece of land with less demanding management requirements. It is also important to consider that many buyers may be motivated by landscape beauty and a ‘sense of place’, and not just biodiversity importance. Properties would need to be carefully selected to account for this.
- In a country where people are unfamiliar with the concept of a revolving land trust, there is a risk that people will misunderstand the motivation behind the buying and selling of properties. A revolving land trust mechanism which comes to be seen as a speculator looking to earn profits while fronting as a conservation organisation will be less likely to generate the support needed from various stakeholders to be successful. It is therefore important to emphasise the point that all profits generated by the mechanism will be used to cover operating costs and channelled back into securing land for conservation.

²³ In some cases, conservation agencies may also have the option of relying on NGOs to make quick strategic purchases on their behalf. This is common practice in the United States where conservation agencies are better-resourced.

4.1.7 Enhance, consolidate and adequately finance the biodiversity stewardship programmes

Biodiversity stewardship programmes provide a highly cost-effective mechanism for expanding and managing protected areas in South Africa, can secure government investments in natural resource management on non-state land, and can be used as a mechanism to enable sustainable use of biodiversity. It has been clearly demonstrated that the state benefits from substantial cost savings when establishing and managing protected areas through biodiversity stewardship programmes, in comparison to the alternative model of state purchase and management of the land (SANBI, 2015). Despite the financial and practical arguments for investing in the biodiversity stewardship programmes, these government-led programmes remain substantially under-resourced within all conservation authorities, and the benefits of these innovative programmes are not being fully realized by the state. This solution, enhancing, consolidating and adequately financing the biodiversity stewardship programs, aims to ensure that the full benefit of the biodiversity stewardship programmes can be felt, contributing to protected area expansion targets, ecosystem restoration, and sustainable use of biodiversity across the country. As the financing of biodiversity stewardship programmes can come from a number of different sources, this finance solution, in practical terms, will rely on other finance solutions, as well as other programmes of work, in order to be fully realized. It will also play a facilitating role increasing the likelihood that other finance solutions, such as revolving land trusts, will emerge.

The case for this finance solution

- With over 15 years of innovation in South Africa, the biodiversity stewardship programmes provide a proven model for landscape management and protected area expansion.
- Implementing biodiversity stewardship programmes for protected area extension is substantially less costly for the state than the alternative model of land purchase and management of a state protected area.
- Biodiversity stewardship has been recognized as a key strategy for protected area expansion in the National Protected Area Expansion Strategy (DEA, 2016c), and has been integrated into the National Development Plan.
- Biodiversity stewardship has the potential to enable job creation and skills development, including in agriculturally marginal areas with few job opportunities.
- A well-functioning biodiversity stewardship programme supports a number of other programmes of work within the biodiversity sector.
- Well-resourced and effectively implemented biodiversity stewardship programmes are integral to the development and implementation of a number of other finance solutions.

4.1.7.1 Context

Biodiversity stewardship is an approach to securing land in biodiversity priority areas through entering into agreements with private and communal landowners, led by conservation authorities. In many cases, conservation NGOs play a key role in facilitating the process. Biodiversity stewardship agreements result in biodiversity priority areas being conserved and managed largely by the landowners, with voluntary agreements stipulating specific management obligations and restrictions. The higher levels of biodiversity stewardship agreements result in protected areas, secured through national protected area legislation.

The first provincial biodiversity stewardship programme started in with Western Cape in 2003, and by 2012 all nine provinces in South Africa had some form of biodiversity stewardship programme in operation. See Section 2 for a brief overview, and SANBI (2015) for a more comprehensive description, of biodiversity stewardship programmes in South Africa.

The cost to the state of implementing biodiversity stewardship programmes is a fraction of the cost of acquiring and managing state-owned protected areas (SANBI, 2015). As the biodiversity stewardship model sees landowners taking on the bulk of management costs, as well as effectively donating their development rights on their land, the biodiversity stewardship model leverages substantial private sector investment in support of the government's mandate to secure protected areas. The protected areas created through the biodiversity stewardship programmes are as rigorous and as secure as state owned and state managed protected areas, meaning that the costs saved by the state do not result in inferior or less secure protected areas²⁴.

Biodiversity stewardship is making substantial contributions towards meeting national protected area targets, and is recognised as an important strategy for protected area expansion in the recently revised Protected Area Expansion Strategy (DEA, 2016c).

Biodiversity stewardship has proven to be particularly effective in multiple-use landscapes, where biodiversity priority areas exist in a matrix of other land uses. The wide range of biodiversity stewardship agreements allow for a combination of biodiversity protection and sustainable production in these landscapes, making biodiversity stewardship appropriate for complex landscapes, including agricultural and communal multiple-use areas. It also allows for the protection of threatened ecosystems, which are often highly fragmented and therefore not suitable for the creation of large state-owned protected areas.

Biodiversity stewardship can be used to enable other government programmes and policies. For example, stewardship agreements can complement and provide additional security to state investments in landscape management through programmes such as Working for Water and Working for Wetlands. Stewardship agreements can also enable biodiversity offsets, by providing a mechanism for securing protected areas.

Biodiversity stewardship can help stimulate of the rural economy, particularly in economically marginal areas. The creation of protected areas can help to diversify rural livelihoods, create nodes of rural development and stimulate job creation and skills development. Biodiversity stewardship agreements have been created on communal land, thereby integrating biodiversity conservation, and ecotourism opportunities, into the broader land reform process in South Africa.

4.1.7.2 Objectives

This finance solution centres on enhancing, consolidating and adequately financing the biodiversity stewardship programmes across the country, resulting in substantial cost savings to the state. This finance solution draws on a study completed and approved by MinMec in 2015, *The Business Case for Biodiversity Stewardship* (SANBI, 2015). The report sets out six recommendations for maximizing the potential of biodiversity stewardship programmes to support biodiversity conservation and management in South Africa, which should be implemented as part of this finance solution:

²⁴ The biodiversity stewardship programmes also allow for contact agreements for the short or medium term which do not result in a protect area. See Section 3 for more information on the suite of biodiversity stewardship agreements.

7. Provincial biodiversity stewardship programmes should be sufficiently and sustainably resourced according to their specific needs, building over the next three to five years to a total investment from the fiscus of approximately R80 million per year.
8. Partnerships between biodiversity stewardship programmes and NGOs should continue to be strengthened, building on the effectiveness of existing partnerships in the landscape.
9. Land reform biodiversity stewardship sites should receive additional support, given the complexity of creating and supporting these agreements.
10. Suitable incentives to support the uptake, effective management of sites and long-term commitment of landowners to biodiversity stewardship should continue to be invested in.
11. Biodiversity stewardship programmes should have suitable national support from DEA and SANBI, especially in relation to policy and technical matters.
12. The community of practice for biodiversity stewardship should be strengthened and expanded.

Recommendation 1, on financing biodiversity stewardship, is at least partly supported by some of the other finance solutions set out in this report. For example, making the case for an increase in public funding for protected areas (4.1.1) enables provincial conservation authorities to better fund their biodiversity stewardship programmes. A revolving land trust (4.1.6) is an alternative and complementary model for funding biodiversity stewardship, and an increase in natural resource management funding, such as from water tariffs (4.2.4), could be channelled towards management specifically on biodiversity stewardship properties in key catchment areas. The finance solution on income tax deductions (4.1.4) provides incentives for landowners, and the finance solution on property rates reform (4.1.3) reduces potentially substantial costs for owners of protected areas, state and private. The work on developing a voluntary market-based wildlife ranching certification scheme (4.3.3) would complement the biodiversity stewardship model. With DEAs focus on communal land in their wildlife economy work, this should provide particular benefits for communal stewardship sites. With an estimated cost to the fiscus of approximately R80 million a year to fund nine provincial biodiversity stewardship programmes, it is quite possible that these financial solutions will not be able to deliver sufficient sustainable resources to fully fund the programmes. Closing the funding gap for implementing the biodiversity stewardship programmes should be prioritised given their strategic importance.

Ongoing work in the biodiversity sector is addressing some of the other recommendations in the business case. For example, SANBI is leading work on growing the community of practice for biodiversity stewardship, with support from NGOs, conservation authorities and DEA. The Table Mountain Fund is supporting exploratory work on innovative models for biodiversity stewardship agreements with stronger NGO involvement, and the Biodiversity Stewardship Technical Advisory Group, convened by SANBI, continues to bring together key NGOs and government agencies implementing and continually improving on the biodiversity stewardship programmes.

While many of the above recommendations are already being addressed by particular finance solutions or other programmes of work within the sector, the overarching objective of scaling up biodiversity stewardship programmes across the country, framed as a finance solution, should be seen as a unifying imperative in and of itself. High-level commitment for this is needed within DEA, SANBI and the conservation authorities, as well as DPME, National Treasury and provincial treasuries. NGOs have always and should continue to play a crucial

role in implementing stewardship, and their continued work with these programmes is imperative.

4.1.7.3 Expected Financial Results

The potential cost savings to the state realizable by scaling up the biodiversity stewardship programmes, will only be possible if the state pursues its protected area expansion targets, i.e. the biodiversity stewardship model presents an opportunity to achieve expansion goals in a far less costly manner than the alternative approach. Expansion is considered likely as it is one of South Africa's commitments under the CBD, is captured in the recently revised NBSAP, and is more comprehensively addressed in the recently revised National Protected Areas Expansion Strategy (NPAES).

An illustration of the potential cost saving to the state from scaling up the biodiversity stewardship programmes draws on the targets and scenarios developed in the NPAES and the BIOFIN Finance Needs Assessment. The Finance Needs Assessment costed a number of different scenarios for securing land-based protected areas²⁵. Two are shown in Table 4-8. Scenario: Predominant State Purchase presents a future where state acquisition (purchase) of the land is the dominant mechanism, with very limited protected area expansion through the establishment of privately protected areas and the declaration of other state-owned land. The other scenario, Predominate Biodiversity Stewardship, presents a future where the expansion of protected areas in South Africa is done largely through the biodiversity stewardship model of establishing privately protected areas.

Table 4-8: Proportion of protected area expansion targets met through different mechanisms of protected area expansion

| Protected Area Expansion scenario | Acquisition | Private protected areas | Declaration of state owned land |
|--|------------------------|-------------------------|---------------------------------|
| Scenario: Predominant Biodiversity Stewardship | 6 % (0.56 million ha) | 86 % (8.05 million ha) | 8 % (0.75 million ha) |
| Scenario: Predominant State Purchase | 90 % (8.43 million ha) | 5 % (0.47 million ha) | 5 % (0.47 million ha) |

Source: DEA, 2016b

Estimated costs for these different scenarios were drawn from the *Business Case for Biodiversity Stewardship* report. These indicate that if South Africa's protected area targets were to be fully met, the cost saving to the state from focusing predominantly on the model of biodiversity stewardship rather than land purchase, could total over R100 billion in the long term (see Table 4-9).²⁶ It is, however, best to view this figure as very broadly indicative as it is tied to ambitious protected area targets and there could well be challenges associated with implementation. These financial benefit projections are consequently not included in the total benefit projections for the overall Biodiversity Finance Plan represented in Section 3.3. Their exclusion also ensures that this solution does not double count benefits ascribed to the other aforementioned finance solutions aimed at financing biodiversity stewardship.

²⁵ When considering the benefits of the biodiversity stewardship programmes for protected area expansion in South Africa, only land-based protected areas are considered. This is because South Africa's legislation does not allow for private ownership of marine protected areas.

²⁶ Savings to the state have not been reduced by potential forgone income tax revenue resulting from the application of income tax deductions by landowners as there is too much uncertainty in calculating this cost at present. Its magnitude relates to landowners' willingness and ability to take up these income tax deductions along with the size of their income against which to make the deduction which are not known. See Section 4.1.4 for further discussion.

Table 4-9: Cost implications of three scenarios for protected area expansion (in undiscounted 2015 Rand billions)

| Component | Scenario: Predominant Biodiversity Stewardship (R billion) | Scenario: Predominant State Purchase (R billion) |
|---------------------------------|--|--|
| Acquisition | 9.13 | 136.94 |
| Declaration of state owned land | 0.09 | 0.05 |
| Private protected areas | 0.94 | 0.05 |
| Total cost (R bn) | 10.16 | 137.05 |

Source: DEA, 2016b

4.1.7.4 Next steps

Implementing this finance solution takes many forms and should be owned by many stakeholders. Concurrent activities are and should continue to take place towards achieving all six of the recommendations in the business case. In addition to this there may need to be continued work to achieve high level buy-in for implementing the recommendations in business case for biodiversity station and scaling up the biodiversity stewardship programmes.

Specific finance solutions that support the funding of biodiversity stewardship or support stewardship programmes in other ways are individually covered in this document and have their own next steps set out. See, for example, finance solutions 4.1.1., 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.2.2, and 4.2.4.

Lead parties and supporting stakeholders include the provincial conservation authorities and agencies, communal and private landowners, NGOs, DEA, DRDLR, COGTA, National Treasury, SANBI, South African Revenue Services. While some work has already started towards the goal of enhancing, consolidating and adequately financing the biodiversity stewardship programmes, and some elements of this work has discrete timeframes. However, this is a broad programme of work which is expected to span many years, and should remain a priority of government at least for the duration of the NBSAP, and ideally beyond as necessary.

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- If the government chooses to not expand the land-based protected area estate at all, this finance solution becomes redundant. The benefit to the states is directly related to the extent of protected area expansion achieved in South Africa.
- It is imperative that sustainability is built into biodiversity stewardship programmes. Land owners entering into stewardship agreements and managing protected areas require ongoing support from the state. A breakdown in this support could result in poorly managed land and ultimately the dissolution of stewardship agreements and the deproclamation of protected areas, both new and existing.

4.2 Ecosystem restoration solutions

The solutions primarily supporting ecosystem restoration are addressed below:

- Accessing existing government grants and funds for investing in ecological infrastructure
- Scaling up the Natural Resource Management Land User Incentives (LUI) programme
- Increasing income from Natural Resource Management value-added industries
- Water tariff funding for ecological infrastructure
- Support carbon offset financing for biodiversity projects focusing on opportunities in the carbon tax
- Accessing global climate change funds for biodiversity

4.2.1 Accessing existing government grants and funds for ecological infrastructure investment

The biodiversity conservation sector currently benefits from some government grants, such as the Jobs Fund and the Extended Public Works Programme. Opportunities may exist for increasing grant allocations at the provincial level as well as exploring options at the municipal level. The latter will be supported in the short term principally by the *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project* being funded by the GEF which aims to explore funding mechanisms to increase investment in ecological infrastructure.

The case for this finance solution

- Total conditional grant amounts transferred to provinces and local government increased more than fivefold between 2006 and 2014 amounting to approximately R116 billion making them a highly significant source of government funding.
- The concept of 'ecological infrastructure' is gaining traction with government and raising awareness of the socio-economic benefits of ecosystems and biodiversity.
- The biodiversity sector has experience in successfully assessing grant allocations, mostly at the provincial level.
- This experience can be built on to access further grant funding, particularly at the municipal level.

4.2.1.1 Context

Government grants and funds not administered by DEA are an additional source of government funding separate from general unconditional provincial or local budget allocations made through the equitable share²⁷. The majority are conditional grants that are

²⁷ Conditional grants can allow for the development and implementation of provincial or municipal Ecological Infrastructure Investment Frameworks (EIIF). The Western Cape Department of Environmental Affairs and development Planning together with relevant stakeholders such as CapeNature, DEA Natural Resources Management Programmes and other alien clearing, restoration and biomass economies stakeholders, developed a path towards a strategic approach to alien invasive species and ecological infrastructure management. It was deemed imperative to develop a provincial plan for alien threats which recognises distribution and density

intended to allow national government to make additional funding directly available for defined purposes or functions that are not adequately covered by unconditional provincial or local budget allocations. Conditional grants have become an increasingly prominent part of the national budget over time. Between 2005/06 and 2013/14, total conditional grants transferred to provinces and local government increased more than fivefold, from R20 billion to R116 billion per year (R76.6 billion of which went to provinces). The total allocated to provinces and local government through the equitable share was R402 billion in 2013/2014 by comparison (NT, 2016a).

For provincial grants, the largest share of allocations are to health (35%), followed by human settlements (22%), transport (15%) and education (13%) (FFC, 2013). There are no specific provincial water infrastructure grants although allocations to human settlements can be used to service housing sites with water-related and other infrastructure. While there are no provincial conditional grants directly under DEA, those with relevance to the environment which are bringing substantial benefits to biodiversity include (NT, 2016a):

- The **Expanded Public Works Programme (EPWP)** integrated grant for the provinces under the Department of Public Works which incentivises provincial departments to use labour-intensive methods in infrastructure, environmental and other projects. Grant allocations are determined based on performance in meeting job targets. It has been allocated R1.3 billion over the three-year period starting in 2016/17. EPWP funding is the mainstay of funding for DEA's Natural Resource Management (NRM) programmes (i.e. Working for Water and the other 'Working for' programmes).
- The **land care programme grant: poverty relief and infrastructure development grant** under the Department of Agriculture, Fisheries and Forestry, which aims to improve the sustainable use of natural resources. This grant can also be used to create jobs through the EPWP. It is one of the smallest grants and has been allocated R220.7 million over the three-year period starting in 2016/17.

In contrast to provincial conditional grants, those available to local municipalities are focused almost exclusively on infrastructure and urban settlements development. Infrastructure grants may present an opportunity for the biodiversity sector particularly where it acts as a partner in larger infrastructure projects through the introduction of an ecological infrastructure component.²⁸ Grants with relevance could include (NT, 2016a):

- The water services infrastructure grant valued at R1.8 billion in 2014/15 which came about through the merging of the previous municipal water infrastructure grant, the water services operating subsidy grant and the rural household infrastructure grant.
- Regional bulk infrastructure grant valued at R4 billion in 2014/15 which funds the bulk infrastructure needed to provide reticulated water and sanitation services to individual households.
- The municipal infrastructure grant (MIG) valued at R14.7 billion in 2014/15 which aims to improve access to infrastructure for basic services, roads and social infrastructure specifically for poor households²⁹.

patterns, key focal areas of concern in terms of threats to ecological infrastructure and opportunities for alien biomass economies.

²⁸ Note that forming such partnerships on infrastructure projects is not dependent on what funding sources they tap.

²⁹ There is exploratory work in the Western Cape Province in developing a provincial or municipal Ecological Investment Framework (EIIF). The intention is for the EIIF to develop a risk analysis in all remaining priority catchments; a catchment prioritisation analysis; and a number of consolidated management Unit Clearing Plans for the priority catchments. It will also develop investment strategies and an Integrated Investment Framework.

These municipal grants tend to provide funds for urban service delivery where the potential to benefit biodiversity at scale is lower.³⁰ For example, it is clear that water infrastructure development in the form of dam construction can benefit from complimentary investment of grant monies in directly related ecological infrastructure (i.e. catchment management). However, such development of bulk infrastructure tends to be undertaken by DWS or water boards and not local municipalities. The latter tend to focus on the development of local municipal water reticulation infrastructure where ecological infrastructure plays less of a supporting role when compared to bulk water supply development.

Aside from conditional grants, the R9 billion Jobs Fund launched in 2011 is also worth considering. It operates on challenge fund principles and seeks to be a catalyst for innovation and investment in activities which directly contribute to sustainable job creation. It places significant emphasis on projects which seek to overcome barriers to sustainable job creation such as cost, technology, and infrastructure. Funding is provided through four funding windows, namely Enterprise Development; Infrastructure Investment; Support for Work Seekers and Institutional Capacity Building. Organisations within the biodiversity conservation sector that have tapped the Fund include:

- SANBI - awarded R300 million for the '*Catalysing Access to Employment and Job Creation in Ecosystems Management*' programme (also known as the 'Groen Sebenza' programme). This was the largest award to any applicant in the Support for Work Seekers window.
- SANParks - awarded R3.13 million for the '*Table Mountain Visitor and Tourism Safety*' project in Cape Town in the Support for Work Seekers window.
- The Southern African Wildlife College - awarded R8.8 million for the '*Training and Development of Unemployed Youth at Risk*' project in the Support for Work Seekers window.

4.2.1.2 Objectives

The discussion above indicates that opportunities among provincial grants are already being accessed (primarily in the form of the EPWP) and that the biodiversity sector has had successes with the Jobs Fund. However, the objective to establish where other opportunities may exist remains, particularly at a municipal grant level. In the short term meeting this objective will be assisted by the *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project*, implemented by SANBI and funded by the GEF, which has an Output aimed at exploring funding mechanisms to increase investment in ecological infrastructure particularly as part of built infrastructure development.³¹ The intention is to pilot funding mechanisms in selected municipalities. Depending on piloting outcomes this may evolve into a more permanent mechanism that could be scaled-up (SANBI, 2013a). The project is currently underway and aiming for completion by end 2019. The outcomes of the project are likely to provide guidance regarding further opportunities and work needed in this area.

Lastly, it will establish an integrated investment implementation and monitoring plan. The intention is for these framework to be incorporated into planning tools (e.g. SDFs, EMF, etc.) and clearly stipulate the municipal ecological infrastructure needs (e.g. Water), where these needs can locally be provided from (catchments), what it costs (what they can charge for it) and what action to be taken to ensure supply (e.g. Riparian alien clearing and follow-up plan).

³⁰ Spatial planning, design standards and Environmental Impact Assessment processes are there to limiting the biodiversity impacts of infrastructure construction.

³¹ See Output 1.4.1 of the *Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale Project*.

4.2.1.3 Expected financial results

Financial gains will depend on success in being able to access grants for ecological infrastructure. The nature and likely magnitude of additional funding is, however, very difficult to predict at this stage. A clearer picture of potential should emerge in the next few years as the programme of work under the GEF Mainstreaming Project is rolled out until its completion in 2019.

4.2.1.4 Next steps

Implementation of the programme of work discussed above with GEF funding will continue until 2019. The Table below outlines broad next steps to guide implementation based on SANBI (2013a). Further work on this can continue beyond this project.

Table 4-10: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|-----------------|---|--------------------------------------|
| 1. Investigate and pilot a funding mechanism to encourage increased resource allocation to the management of ecological infrastructure and promote investment in innovative municipal infrastructure projects that incorporate ecosystem services. | SANBI / DEA | SANBI, DEA, selected local municipalities, National Treasury, and selected provincial treasuries. | 1 - 3 years until Project completion |
| 2. Approach the Green Fund and other funding sources (e.g. NRM) to explore the leveraging of additional funding for ecological infrastructure projects | SANBI / DEA | | |
| 3. Build on existing studies and processes to facilitate dialogue, knowledge transfer, sharing case studies and lessons learned, and, where appropriate, to promote alignment between the project and funding programmes. | SANBI / DEA | | |
| 4. Develop a case to National Treasury that highlights the financial and economic benefits to local government of investing in the management of ecosystem services. | SANBI / DEA | | |
| 5. Establish mechanisms and clarify institutional structures | To be confirmed | | 2 years |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- The willingness of municipal and Treasury officials to buy into the need for ecological infrastructure funding and to engage at high enough levels.
- Competition for grant funding from other alternatives that may be perceived as lower risk relative to ecological infrastructure, possibly simply due to a lack of understanding.
- The availability of grants and other funds is often only part of the challenge. Rather it is for potential applicants to know that a given opportunity exists and for them to have the inclination, capacity, time and resources to put an application together.

4.2.2 *Scaling up the Natural Resource Management Land User Incentives Programme*

Invasive alien plant clearing and the related restoration of natural ecosystems is an established priority for South Africa. If no action is taken, the scale of the problem and associated remediation costs will increase substantially, posing a financial burden to both private and public landowners. The DEA-NRM Land User Incentives (LUI) programme has successfully combined private and public sector resources to address this challenge. Based on early success, DEA-NRM proposes to scale up the LUI programme and mobilize a greater contribution from private sector landowners. This solution thus aims to achieve a more equitable distribution of the clearing and rehabilitation cost, gradually increasing the private sector contribution from approximately 30% to 85%, and significantly expanding reach of the LUI programme in terms of land covered by it.

The case for this finance solution

- South Africa is a water scarce country, with approximately 5% of surface runoff water being lost annually to invasive alien plants. Aside from impacting on water security, these plants pose a significant threat to biodiversity and result in increased fire risks.
- Greater investment in eradicating invasive aliens in the short term ensures that substantially higher future eradication costs are avoided by government and landowners.
- There is already a land productivity, aesthetic and direct financial incentive for private landowners to undertake relatively lower cost eradication of invasive alien species through the LUI programme. Even so, if a greater portion of costs are not shouldered by landowners, they may face new regulations or a stricter enforcement of current laws.
- The existing LUI programme has demonstrated the benefit of blended public and private investment in invasive alien plant clearing.

It is necessary to understand the overall DEA Natural Resource Management Programmes context before continuing with the context of the Land User Incentives Programme which falls under it. The former is also relevant to the next finance solution which focused on scaling up value-added industry opportunities within the DEA Natural Resource Management Programmes.

4.2.2.1.1 *The DEA Natural Resource Management Programmes*

DEA's Chief Directorate of Natural Resource Management (DEA-NRM) manages programmes designed to meet objectives in the areas of water resource management, biodiversity and the functioning of natural systems whilst supporting livelihoods through employment generation. The following programmes fall under DEA-NRM:

- ***Working for Water*** which enhances water catchment management through the clearing of invasive alien species and subsequent rehabilitation.
- ***Working for Wetlands*** which rehabilitates degraded wetlands.
- ***Working for Ecosystems*** which reverses environmental degradation through ecological restoration and maintenance programmes.

- **Working on Fire** which implements integrated veld and forest fire management programmes and activities³².

Government funding allocations to the NRM programmes have increased to approximately R2 billion in 2016/2017 growing substantially since 1995, when the Working for Water component of programme was established with a budget of R25 million. However, current funding is not adequate to cover the anticipated costs of achieving the goals of the NRM programme. Drawing on 'middle of the road' estimates in Giordano et al. (2012), DEA-NRM management has estimated that approximately R12 billion would be needed annually by 2026 to 2028, of which an increasing proportion needs to be found within the private sector. This is a conservative estimate of the resources required to address the significant ecological challenges addressed by the NRM programme namely, the spread of invasive alien plants, ecosystem degradation and to limit fire damage. Note that this amount includes the activities that could fall under the NRM programme of work, but does not imply that the DEA-NRM directorate should be the only funder or implementer of these activities. For example, as discussed in Section 0, Catchment Management Agencies that are independent of DEA-NRM could increasingly use water tariff income to undertake alien invasive plant clearing directly.

The need for additional funding for the activities carried out by the NRM programmes has been established by DEA-NRM. Opportunities for greater funding from two existing finance solutions already being pursued by DEA-NRM, namely land user incentives and value-added industries.

4.2.2.1.2 The Land User Incentives Programme

The LUI programme carries out invasive alien plant clearing and the restoration of natural ecosystems on privately or communally owned land (i.e. not on land owned by the state). Projects are undertaken as a partnership between DEA-NRM and private entities representing the interests of land users known as Implementing Agents, with both parties contributing either through the provision of labour or financial and other resources. According to DEA-NRM, the coverage of the programme is currently limited, with around 10% of all clearing on privately owned land occurring through the LUI programme. For those clearing and rehabilitation projects carried out through the LUI programme, private partners, including contributions by land users, corporate social investment by big corporates, international funding like the GEF etc. and value-added industries currently contribute an average of 30% of the funding required, although the proportion varies substantially between individual projects. The programme's ability to mobilise private capital for invasive alien plant clearing and rehabilitation interventions reduces financial pressure on government. Private landowners in turn benefit from attracting government funding for the improvement of the health, productivity and aesthetic value of their land.

The LUI programme can also achieve greater synergies with similar initiatives, including biodiversity stewardship programmes. For example, biodiversity stewardship officers working with landowners, could support their applications to the LUI.

³² **Working for the Coast**, which focuses on rehabilitation, pollution control and improving access in the coastal zone, and **Working for Land**, which focuses on the restoration of land especially through the introduction of indigenous species, are complementary programmes which fall directly under EPIP, and are not managed by DEA-NRM.

4.2.2.2 Objectives

DEA would like to expand the LUI programme and see a relatively greater contribution from private sector and communal landowners. With this in mind, two ambitious targets have been set for 2030. The first is to increase private sector contributions per individual project from 30% to 85%. The second is to increase the overall coverage of the programme (i.e. the proportion of invasive clearing on private land which occurs through the LUI programme) from 10% to 85%. While DEA acknowledges there are substantial challenges to meeting these targets in the time frame, this is what they are working towards.

Shifting a greater portion of the financial costs associated with clearing and rehabilitation efforts onto the private sector will require their support. The likelihood of achieving the required level of buy-in can be improved with a good balance of incentives and disincentives.

There exists well-established legislation detailing the penalties for landowners who have failed to put into place plans to address the spread of invasive alien species on their land, and enforcing these could play an important part in encouraging private landowners to participate in the LUI programme and to allocate more resources towards managing invasive species. However, there is also recognition that landowners are not necessarily responsible for the original infestation of their land, and the cost of clearing the invasive alien plants can be prohibitively expensive, in some cases exceeding the value of the land itself.

In terms of incentives, a greater level of awareness surrounding the benefits of rehabilitation might encourage landowners to realise a shared vision with DEA-NRM even if they do not necessarily capture the majority of benefits themselves (e.g. improved downstream water outcomes). The establishment of value-chains for biomass generated through clearing, as discussed in Section 0, could provide more of an incentive for participation as could direct benefits to landowners, such as extension services and provision of herbicide.

The scaling up of the LUI programme will also require operational improvements in order to ease access to it by the private sector. Reforms could make the programme less administratively onerous, more efficient and more flexible, increasing its appeal among landowners and the private sector as a whole.

Achieving the above objectives will also depend on institutional changes. As an institution, DEA-NRM functions as a non-trading entity. This makes it difficult to roll out large private-public partnerships or manage complex procurement services, for example. DEA-NRM may consider options to adjust the structure of the LUI programme to improve its fit for purpose. The objective of restructuring should be, for example, nimbler and more efficient procurement and better options for the use of trading accounts which will allow the programme to function more like a business and facilitate rapid up-scaling of the various sub-programmes and partnerships. The goal is thus to restructure procedures so that the programmes are able to function more along commercial lines, thus allowing for efficiency gains needed to up-scale the LUI programme. This may see the programme more closely resembling parastatal organisations, for example.

4.2.2.3 Expected financial results

Based on tentative DEA-NRM estimates, the total amount channelled through the initial three years of the LUI programme is currently around R90 million per annum with DEA spending in the region of R60 million while the private sector contributes a further R30 million.

Looking to the future, DEA-NRM has two complimentary and highly ambitious targets for 2030. One for each individual LUI project (i.e. increasing the relative cost borne by the private sector per project from 30-35% to 85%) and one for the coverage of the programme as a whole (i.e. increasing its coverage from the current 10% of private lands cleared to 85% of private lands cleared). Reaching these targets would result in a net increase of private sector funding building to approximately R360 million by 2026. In order to leverage this amount of private sector investment, government investment through the LUI programme would have to also increase, albeit by a substantially lower proportional amount, from R60 million at present to R86 million by 2026.

4.2.2.4 Next steps

Next steps would involve DEA-NRM continuing to explore and pursue efficiency improvements and restructuring options for the LUI programme to increase its efficiency and attractiveness to the private sector. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-11: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|---|------------|---|----------------------|
| 1. Conduct a consultative review of the LUI programme in order to understand key challenges and solutions from the perspective of DEA-NRM, Implementing Agencies, landowners and other key partners | DEA-NRM | DEA-NRM, private and communal landowners, NGOs providing assistance to private and communal landowners, provincial conservation agencies and SANBI. | 1 year |
| 2. Develop a strategy for expanding the LUI, inclusive of options for institutional changes and the need for more cost-effective management of the programme. | DEA-NRM | | 1 year |
| 3. Consult with stakeholders around the strategy in step 1 and obtain departmental approval. | DEA-NRM | | 6 months |
| 4. Implement the institutional changes for the expansion of the programme and initiate scale up. | DEA-NRM | | 3 years |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- Inadequate awareness, uptake and support from private and communal landowners who will be required to shoulder an increasing portion of the financial burden for alien invasive plant clearing.
- Limited political and administrative support to make the necessary changes to the institutional structures and operational capacity of the LUI programme.
- Enforcement of legislation penalising landowners, who have failed to put into place plans to address the spread of alien invasive species, is so limited that it ceases to be a meaningful disincentive that can complement the incentives offered by the LUI.

4.2.3 Increasing income from Natural Resource Management Value-Added Industries

The process of clearing invasive alien plants yields biomass which can be used as an input into value-added industries or businesses, for example companies producing eco-furniture, building materials, charcoal and other products. The expansion of these industries can generate revenues for natural resource management and sustainable local development (including job creation) while also reducing the biomass disposal costs. While DEA-NRM has achieved successes with its Value Added Industries programme, institutional, operational and market-related challenges impede further scaling up. This solution aims to address these barriers and unlock the potential of new and previously identified value chains.

The case for this finance solution

- The use of cleared invasive alien plant biomass in value-added industries currently reduces the costs of the Working for Water programme by approximately 10%.
- Value-added industries maximise the positive socio-economic benefits of the Working for Water programme by creating additional jobs and income diversification opportunities.
- Leaving less biomass behind after clearing minimises potential negative environmental impacts, such as fire damage.
- The private sector should be able to benefit more from the availability of biomass, whilst reducing the costs of the Working for Water programme, particularly if enterprises succeed in entering into newer value chains such as eco-furniture and others.

4.2.3.1 Context

The process of clearing invasive alien plants yields biomass which can be used as an input into value-added industries or businesses. These industries increase the value of what is essentially a residual output and for the Working for Water programme and include (Purnell and Mills, 2015):

- Fire wood, charcoal and biochar
- Saw timber, laths and poles
- Eco-furniture and Eco-coffins
- Packing and fill materials
- Compost
- Feed pellets
- Fibre bases building materials

Working for Water's Value Added Industries Programme provides opportunities for the private sector and communities through the commercial use of cleared invasive alien plant biomass.³³ DEA-NRM estimates that, currently, the programme results in an annual overall cost saving equivalent to 10% of the budget for Working for Water. The contribution of value-added industries could be increased moderately through new products, increased efficiency and marketing. Such improvements are being considered both at the national and provincial levels. For example, Phase 3 of the Western Cape Department of Environmental Affairs and Development Planning's Eco-Invest Project aims to find ways of unlocking previously

³³ For example, one province, the Western Cape, has an estimated available biomass from alien trees of 18.3 million tons (Purnell and Mills, 2015).

identified value chains in the biodiversity economy. The Eco-Invest Project has now evolved into the Western Cape Provincial Biodiversity Economy Strategy and its programme of implementation which elucidates on activities over a 5 year period to enable Alien Biomass VAs (WCG, 2017). Part of this detailed project has considered how to optimise the value chains associated with biomass from invasive alien clearing (Purnell and Mills, 2015).³⁴

Due to the spread-out nature of the invasive alien plant feedstock, establishing appropriate production plants for capital-intensive operations is a challenge. At present the industries are focussed mainly on small-scale operations which rely on more basic machinery in the interest of mobility and cost effectiveness (Purnell and Mills, 2015). This approach does not allow the industries to achieve efficiencies of scale which arise from investment in more expensive machinery.

The demand for products made from harvested invasive alien plants can be stimulated by banking on the positive impact which the programmes have for biodiversity (Purnell and Mills, 2015). Ultimately, however, the utility of the products will depend on the demand. Additional scoping and analysis of potential markets and their requirements would be necessary to scale up the value chain. The availability and cost of substitutes will also play a key role in this regard.

In addition, several opportunities exist to support the potential of value-added industries. The introduction of the carbon tax could lead to greater investment in the industries, and skills development programmes (for example those funded by adaptation finance) can be used to increase the level of skills which the industries are currently lacking (Purnell and Mills, 2015).

4.2.3.2 Objectives

DEA-NRM aims to achieve further cost reductions associated with value-added industries from the current ~10% to ~15% of the Working for Water budget within 10 years. This should be achievable if barriers within the industries are removed, and may include public support. The example of the biomass-to-charcoal industry, discussed in a feasibility study in the Eco-Invest Phase 3 report, illustrates this point. The findings of the feasibility study suggest that there is potential for cleared invasive alien plants to serve as a significant source of biomass in the making of charcoal. However, the lack of successful, financially viable businesses in this area indicates that current market conditions are not conducive to the formation of such businesses. Some recommendations for further actions include initiatives addressing the following barriers to the emergence of viable operations:

- Better engagement between the private sector and government and civil society stakeholders to reduce administrative burden and facilitate the access to biomass;
- Co-ordination between investors, financial institutions and stakeholders to lower operational and financial costs, including the cost of capital;
- Reduce the market risks of private operations by estimating in advance the amount and cost of available biomass;
- Explore the potential of eco-labelled marketing in South Africa and abroad to increase the value of the products obtained from the biomass.

In addition to removing specific barriers, value-added industries as a whole would benefit from institutional changes in the same way that the LUI program would, as discussed in Section 0. Some of the activities may be financed with Government support.

³⁴ There may be scope to undertake similar projects in other provinces should Eco-Invest succeed.

4.2.3.3 Expected financial results

As mentioned above, net cost savings from value-added industries are currently estimated to be about R100 million annually (i.e. approximately 10% of total Working for Water programme expenditure of R1 billion). If these savings increase to 15% in the next 10 years, while the overall programme expenditure increases substantially from R1 billion to almost R5.44 billion by 2026, then net additional savings from value-added industries could reach R272 million by 2026.³⁵

4.2.3.4 Next steps

The key next steps are for DEA-NRM to continue to pursue institutional restructuring and the maximisation of value-added industry opportunities. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-12: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|------------|---|----------------------|
| 1. Identification of barriers that constrain the development of value-added industries in partnership with key stakeholders. | DEA-NRM | DEA-NRM, private sector entrepreneurs and investors, business and economic development support institutions in government and among NGOs, and landowners. | Ongoing |
| 2. Develop strategies and measures to address barriers inclusive of options for institutional changes. | DEA-NRM | | Ongoing |
| 3. Consult with stakeholders as needed to test ideas and increase buy-in. | DEA-NRM | | 1 year |
| 4. Implement changes, monitor and adapt as needed. | DEA-NRM | | 1 to 2 years |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- The value-add industries face risks common to all newly established industries, in addition to some risks which are specific to natural resource sectors.
- The establishment of successful value-added industries in niche markets relies on strategic coordination between a range of stakeholders.
- The long-term sustainability of the value-added industries will be dependent on the amount of invasive alien plants cleared. The cost of obtaining these inputs may increase with time. This suggests that small-scale mobile solutions are probably best.
- The success of upscaling value-added industries is highly dependent on the willingness and capacity of the Government to reduce administrative costs and barriers.

³⁵ Net additional savings by 2026 is R816 million (15% of R5.44 billion) minus R544 million (10% of R5.44 billion). Overall Working for Water alien clearing activity spending is assumed to increase to R5.44 billion by 2026 based on a percentage of the R12 billion that would be needed annually for all NRM programme activities drawing on estimates in Giordano, *et al.* (2012) discussed above. This spending need not be through the NRM programme as discussed.

4.2.4 Water tariff funding for ecological infrastructure management

Investing in ecological infrastructure as part of catchment management offers significant water regulation and supply benefits along with co-benefits for biodiversity, livelihoods and disaster risk reduction. Currently, negligible financing for catchment management is derived directly from water users even though the user pays principle, which is embedded in legal instruments relevant to water management, suggests that significant realignment of user fees towards such management would be a socio-economically efficient outcome. This finance solution aims to improve existing, and establish new viable ways to capture and distribute an adequate portion of water tariffs for investment in ecological infrastructure. This would be achieved by operationalising elements of the revised Draft Pricing Strategy for Water Use Charges (hereafter referred to as the Water Pricing Strategy), which is yet to be promulgated, and which provides scope for channelling a portion of water tariffs into ecological management of catchments.

The case for this finance solution

- Healthy ecosystems play a crucial role in sustaining water-related ecosystem services, thereby contributing to the water value chain, while also maintaining biodiversity.
- Without on-going investment in these ecosystems, and the general enhancement of the ecological infrastructure of water supply and services, one can expect a significant decrease in the availability and quality of water for socio-economic development.
- Using a small portion of water tariff income for ecological infrastructure investment aligns with the user pays principle and represents a logical and viable long-term source of sustainable funding.
- The potential for water tariffs to play a more significant role in funding investment in ecosystem has been recognised by DEA, SANBI and its partners and is reflected in the draft Water Pricing Strategy.

4.2.4.1 Context

Global awareness continues to grow of the important role played by healthy ecosystems in sustaining water-related ecosystem services, thereby contributing to the water value chain, while also maintaining biodiversity. Without on-going investment in these ecosystems, and the general enhancement of the ecological infrastructure of water supply and services, one can expect a significant decrease in the availability and quality of water for socio-economic development and ecosystem maintenance. Degraded catchments, rivers and wetlands also contribute to significantly increase flooding and other water-mediated risks. Le Maitre, et al. (2016) estimated that, for South Africa as a whole, annual surface runoff water lost as a result of invasive alien plants is likely to be in the order of 2.44 billion m³ subject to further confirmation. This represents around 5% of the total surface runoff in the country.

Investment in ecological infrastructure rehabilitation and maintenance is, like much of the biodiversity management mandate, constrained by limited funding. As mentioned in Section 4.4., studies have shown that, in order to reach national targets for ecosystem rehabilitation, the investment in the types of activities undertaken by the natural resource management programmes need to scale up from around R2 billion to R12 billion annually (Giordano, et al. 2012). The majority of the primary funding for ecosystem rehabilitation by the DEA-NRM

programmes is through the Expanded Public Works Programme (EPWP), which is intended to support job creation in the country. As a result, NRM programmes are designed to favour programmatic approaches (such as field methods and spatial prioritisation) that maximise job creation, and may not necessarily maximise the impact on ecosystem rehabilitation and ecosystem services. There is thus a need to seek other sources of funding for catchment management, which will complement the EPWP investment, while placing a focus on ecosystem health and water-related ecosystem services. Given the positive impact of ecosystem rehabilitation on water-related ecosystem services, the water sector is an obvious place to be seeking additional, sustainable funding for natural resource management.

The water sector (specifically the Department of Water and Sanitation, Catchment Management Agencies, water boards, Water User Associations, and municipalities) is able to raise funds directly through the sale of raw, bulk or retail/potable water.³⁶ The sector tends to prioritise spending on hard, engineering/grey infrastructure, with limited investment in rehabilitating and maintaining key components of ecological infrastructure, such as mountain catchments, wetlands and riparian zones. This natural infrastructure is often not seen as one of the core mandates of the water sector. There are

opportunities to recover funds for ecological infrastructure across the value chain. Although it may be administratively simpler, more effective and easier to deploy if concentrated in the raw water component, this may limit the quantum of funding potentially available unless raw water charges are recalibrated by the Water Pricing Strategy. Bulk and retail sources of financing would require substantial lobbying and engagement with a multitude of water sector authorities across the country. Figure 4-2 shows the relative proportion of current retail water tariffs stemming from raw, bulk or retail costs. Note that raw water costs present less than 15% of retail water tariffs.

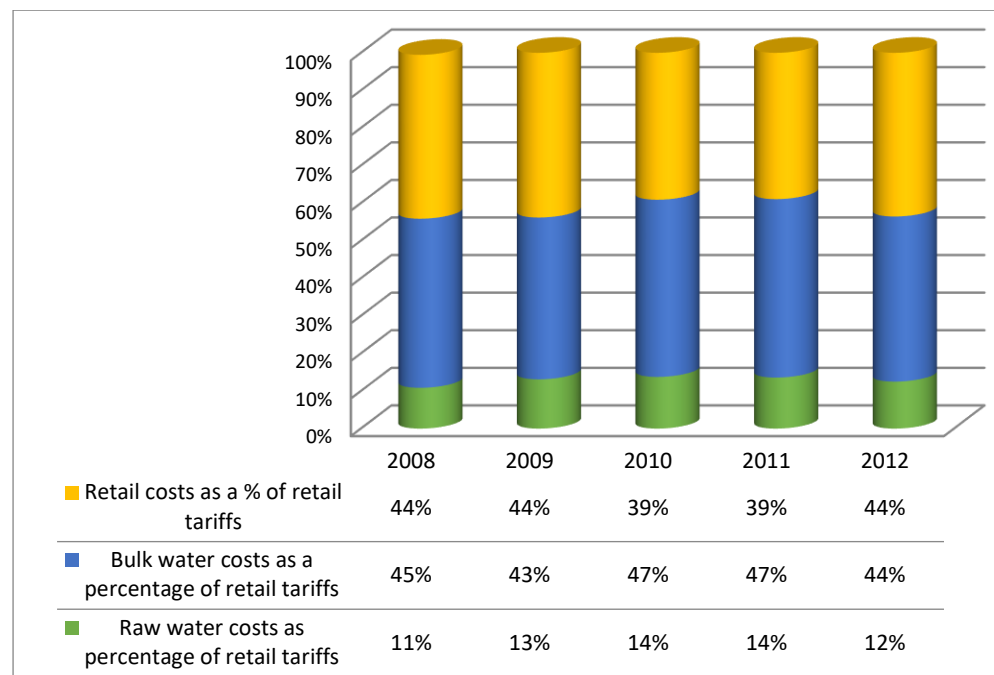
Box 11: Catchment management agencies (CMAs) defined

The purpose of catchment management agencies is to delegate water resource management to the catchment level and to involve local communities, within the framework of the national water resource strategy. The CMA governing board must represent the relevant interests in a water management area including government, communities, agriculture, forestry and business, and must have appropriate community, racial and gender representation. The key functions of CMAs include:

- Developing a catchment management strategy. During strategy development, a CMA must seek co-operation and agreement on water-related matters from stakeholders and interested persons.
- Promoting community participation, investigating and advising interested people on the protection, management and control of the water resources.
- Co-ordinating the activities of the water users and water management institutions (adapted from www.waternet.co.za).

³⁶ Raw water refers to untreated water that is stored mostly in dams. Bulk water is often treated, distributed using bulk pipelines, and sold to water retailers. Retail water is generally sold by water services authorities such as municipalities to end users including households and businesses.

Figure 4-2: A comparison of the average raw, bulk and retail costs of water for South Africa.



Source: National Treasury, 2013

The existing national Water Pricing Strategy and associated practices are part of the challenge. Key constraining factors include:

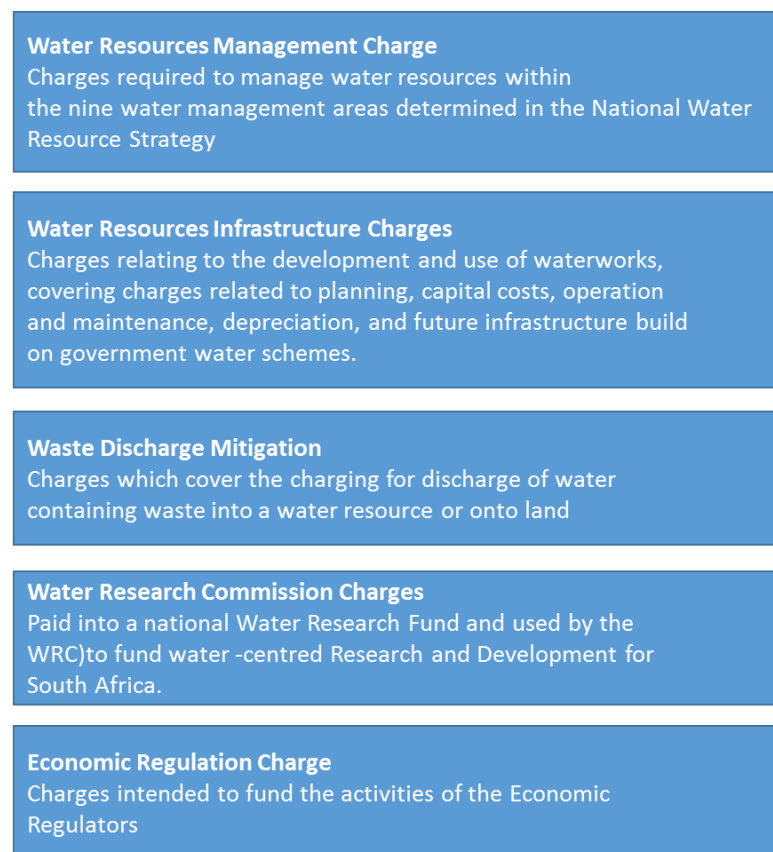
- The existing water pricing policy provides limited explicit opportunity to charge for investments in ecological infrastructure, contains a small invasive alien plant control component under the Water Resource Management (WRM) charge and maintains caps on charges to irrigation and forestry users along with inflation-linked caps, despite the actual costs of water services.
- There remains limited awareness or lingering doubts among water resource planners, engineers, providers of finance for water infrastructure projects and decision-makers of the potential benefits of investments in ecological infrastructure
- The greater complexity of spatially-dispersed ecological interventions with multiple co-benefits and stakeholders, particularly when compared with hard engineering interventions. This tends to limit willingness to try new ideas and practices, that also require different skill sets, based on ecological infrastructure.

The existing Strategy is, however, in the process of being revised. To this end, a draft Water Pricing Strategy and associated norms and standards has since been published for comment but not promulgated yet. The new draft Strategy is guided by the user pays principle and the principle of ecological sustainability to “facilitate funding to ensure the provision of water for the ecological reserve and the water sector’s contribution to maintaining water ecosystems.” As such, it incorporates several opportunities to charge for ecological infrastructure maintenance.³⁷ As the draft Strategy is yet to be promulgated, application of the revisions to the water pricing regime cannot be made.

³⁷ See DWS Notice 1154 of 2015 in Government Gazette No. 39411, 13 November 2015 for the Pricing Strategy for Water Use Charges (and the associated Norms and Standards for Setting Water Services Tariffs). The strategy is developed in terms of the National Water Act which empowers the Minister of Water and Sanitation, with the concurrence of the Minister of Finance, to establish a pricing strategy for any water use.

The draft Water Pricing Strategy sets out five categories of charges, shown in Figure 4-3. The Water Resource Management Charge (which includes the proposed Waste Discharge Charge component) and the Water Resources Infrastructure Charge are the most relevant to this finance solution as they offer the opportunity to generate funds for ecosystem management. They are expanded on below.

Figure 4-3: Categories of charges in the draft Water Pricing Strategy



Source: DWS (2015)

Note that Waste Discharge Mitigation and the proposed Waste Discharge Charge falls under the Water Resource Management Charge.

The **Water Resource Management Charge** is intended to fund the water resources management activities in the nine Water Management Areas. These activities relate to the protection, allocation, conservation, management and control of all of South Africa's water resources. These activities will be progressively implemented by CMAs, although in the interim, while CMAs are not yet fully operational, will be implemented by or in partnership with DWS National and Regional Offices. The draft Water Pricing Strategy allows for a component within the Water Resource Management Charge for 'Maintenance and restoration of ecosystems to improve water resources'.³⁸ This charge covers:

- Planning and implementation of ecosystem maintenance and rehabilitation programmes, required for water resource protection, e.g. activities to control sedimentation and improve infiltration, nutrient trapping, riparian rehabilitation

³⁸ There is merit in framing an explicit Ecosystem Maintenance and Restoration (EM&R) charge to cover all interventions that improve catchment hydrological performance, such as wetland and riparian rehabilitation, invasive plant and erosion control etc.

- Control of invasive alien plants with acknowledged negative impacts on water resources, e.g. riparian zones, mountain catchment areas, wetlands and in areas where there could be an impact of aquifers.

Likely amounts for this charge are not specified in the draft Water Pricing Strategy. However, current Water Resource Management Charges tend to be set at relatively low levels (for example, they are approximately 0.25% of the retail price paid by most residential water users according to Hollingworth et al., 2011) and are capped for agricultural and forestry users. The draft Water Pricing Strategy recommends gradually phasing out the current caps on the charge over 10 years to ease the burden on agriculture and forestry users. This cap removal would go a long way to recalibrating water tariffs.

The draft Water Pricing Strategy allows for a **Waste Discharge Charge** as part of the Water Resource Management Charge which is intended to:

- Promote the sustainable development and efficient use of water resources
- Promote the internalisation of environmental costs by waste dischargers
- Create financial incentives for waste dischargers to reduce waste and use water resources in a more optimal manner
- Recover costs associated with mitigating Resource quality impacts of waste discharge

Some form of waste discharge charge has been under consideration for over 15 years, but is yet to be implemented. Likely amounts for the charge are not clear.

The **Water Resources Infrastructure Charge** provides for costs related to the investigation, planning, design and construction of water schemes, which constitute the capital costs of Government waterworks projects. This charge should cover the full lifecycle of infrastructure, including operations and maintenance, and refurbishment. Currently, the Water Resources Infrastructure Charge does not make provision for ecological infrastructure. While likely amounts for the charge are not specified in the draft Water Pricing Strategy, the current equivalent to this charge is several orders of magnitude higher than Water Resource Management Charges (for example, it is approximately 16% of the retail price paid by most residential water users – Hollingworth et al., 2011). Because the Water Resources Infrastructure Charge is larger than the Water Resources Management Charge, and is not capped for agricultural and forestry users, it has the potential to provide substantial funds for ecological infrastructure investment.

Biodiversity sector engagement has played an important role in ensuring that the draft Water Pricing Strategy provides improved options for water tariff income to fund ecological infrastructure investment. DEA (particularly the NRM programmes) and SANBI have taken the lead in this regard with other partners. There are also additional efforts under way or planned using GEF funding. The SANBI led GEF 5 project on Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale has as an Outcome of, “Financial mechanisms and incentives are enhanced in order to encourage greater investment in biodiversity and ecosystem services and support job creation and sustainable economic development” (SANBI, 2015: 56). Output 1.4.1 under this Outcome will then, “Investigate and recommend appropriate changes to the Pricing Strategy for Water Use Charges, promulgated by the Department of Water Affairs, which would allow for the generation of adequate and sustainable funds for investment in ecological infrastructure. In addition, this work will test and pilot the generation of financial flows from the water pricing strategy.”

Through GEF 5, SANBI has received funding to (inter alia) support a smaller project focused on the further development of the water pricing policy. In addition to GEF 5, part of the planned larger GEF 6 project, led by the Development Bank of Southern Africa (DBSA) and SANBI, will investigate the opportunities to better quantify the restoration needs of specific catchments above new planned infrastructure investments such as dams. There are opportunities in building in the costs of ecological infrastructure improvements into the capital costs of such dams, where the impact of this additional cost on water tariffs is marginal and the investments can yield economic returns for the dams' operating costs over its lifetime. The GEF 6 project should also generate insights into how development finance institutions perceive and cost risk attached to infrastructure projects that do not have ecological infrastructure components.

4.2.4.2 Objectives

The draft Water Pricing Strategy, once promulgated, would allow for the funding of ecological infrastructure investment from the Water Resource Management Charge. However, the quantity and means of transferring these funds for catchment management have not been determined. In addition, there is an opportunity for the funding of ecological infrastructure through the Water Resources Infrastructure Charge to be adjusted so that it allows for additional funds to flow to catchment management. A number of barriers and opportunities exist to effective ecological investment from water tariffs. These act as points of departure for the objectives of the finance solution which are addressed below. These objectives are not necessarily sequential and reinforce each other.

Objective 1: Make the case for ecosystem maintenance and restoration of ecological infrastructure for water security more elegantly

For this finance solution to be successful, there is a continued need to demonstrate the outcomes of investments into catchment management, particularly to water resource planners, engineers, infrastructure financiers and other decision-makers in the water sector. This should improve buy-in to the concept of ecological infrastructure supporting water provision, and prolonging the life-span of built water infrastructure. This is critical not only to persuade those in the water sector, but also because paying water consumers have a right to know, with reasonable assurance, what they are getting for the investment of their money in ecological infrastructure. An urgent need is thus an improved ability to predict quantitatively the water-related outcomes (e.g. increased quantity, improved quality) and to empirically measure and verify that these benefits are indeed materialising in response to the ecological infrastructure interventions. Well-designed catchment scale experiments and continued evidence-based messaging into the water sector will be key. To this end, DEA-NRM and other partners should encourage and assist the water sector to develop appropriate implementation and monitoring systems to ensure that ecological infrastructure spend can be demonstrably linked to improved water services.

Objective 2: Improve revenue for catchment investment within the current policy constraints

The draft Water Pricing Strategy has yet to be promulgated, with ongoing negotiations taking place between National Treasury and the Department of Water and Sanitation.³⁹ The promulgation of this Water Pricing Strategy will provide a more enabling legal context for the flow of funds from the water sector to catchment management. While this is a critical step, there is not a great deal that the biodiversity sector can do to move this process along. It is possible, however, to improve the current system of determining and recovering invasive alien plant control charges which are allowed by the existing pricing strategy.

³⁹ The Western Cape is currently investigating models for municipalities and landowners to reinvest in the strategic water source areas linked to the water pricing strategy.

Beyond the Water Pricing Strategy, some local water sector authorities could, if motivated, levy their own additional bulk or retail charges for investment in ecological infrastructure. Although most water and sanitation departments in large municipalities could levy charges, many face challenges to raising the price of retail water and are often not able to cover all the built infrastructure maintenance and management costs, let alone those for catchments. The precedents for using retail costs to fund catchments are few (often limited by jurisdictional issues) and the political will to levy new charges may not be available, despite recent droughts and acknowledged under-funding of water infrastructure.

Objective 3: Determine the most appropriate means to set an Ecosystem Maintenance and Restoration Charge

The explicit integration of ecological infrastructure into the Water Resource Management Charge in the draft Water Pricing Strategy was a significant step. There is also potential to raise revenue for ecological infrastructure through the proposed Waste Discharge Charge. However, the draft Water Pricing Strategy does not provide quantitative guidance on the amount of funds that should be channelled into catchment management. This will need to be determined. An actual amount could be set, or a percentage of the total tariff could be set. Alternatively, an average cost of catchment management activities could be used to determine the amount. The challenge with this third approach is that there is arguably greater complexity of implementing ecological interventions when compared with hard engineering interventions. Costs to manage catchments vary vastly across the country, in different landscapes (e.g. high altitude vs lowlands) and with different degrees of catchment degradation or infestation, and calculating an accurate cost might slow the process of shifting the funding and not ultimately be necessary for securing the funding.

Given the risks of only pursuing one avenue to raise an Ecosystem Maintenance and Restoration Charge, it may be sensible to work on developing a nominal national charge to fund national implementers of ecosystem rehabilitation (such as DEA's NRM programme) *and* more accurately determining specific catchment applicable charges for a CMA to direct to the best available implementing agent (e.g. a conservation authority or water users association operating within that catchment).

Objective 4: Testing institutional models for deploying funds within a specific catchment

There is no clear institutional structure or framework for the capturing of specific funds for catchment management from the Water Resource Management Charge to undertake catchment management. Identifying the most appropriate approach to this and testing it in one or two catchments would provide the basis for the ultimate country-wide rollout of water tariffs contributing to catchment management. One such model is for the CMA to retain these funds and manage the spending of them in the catchment directly or indirectly through contracting public and/or private entities that specialise in this work and have local capacity. Work could be done to assist the existing and emerging CMAs with understanding the ecological infrastructure linked opportunities in their regions, and to budget for pragmatic rehabilitation and contributions to the broader natural resource management sector to pursue these opportunities.

Objective 5: Unlocking Infrastructure charges to secure ecological infrastructure

In theory, it is possible to include the scoping, design and costing of all required catchment based ecological restoration upstream of new water infrastructure (such as the Smithfield dam on the Mkomazi River in KZN) in tariffs without breaching any policy. However, this needs to happen during the detailed feasibility phase of dam design and tariff setting negotiations with key users, as it is very difficult to insert into the financial proposal and tariff setting processes of a specific infrastructure investment once these have been determined. For instance, the predicted costs of the Smithfield dam run to around R12 billion (2014

calculations), yet this contains no item for minimising sediment yield from bare soil or water loss to invasive plants in the catchment, which is currently relatively degraded and prone to erosion. The Water Resources Infrastructure Charge is not capped for agriculture and forestry users, but successfully using it for catchment conservation to improve dam performance and longevity requires a paradigm shift for engineers and funders. Hence the need to show that ecological infrastructure solutions will be able to deliver the same or better water benefits than grey infrastructure alternatives, at the same or lower cost (see Objective 3 above).

Work to be done includes collaboration with DWS's options analysis unit and dedicated water infrastructure construction and management companies (such as Trans-Caledon Tunnel Authority) to ensure that all new planned infrastructure has attendant comprehensive ecological rehabilitation components to optimise the lifespan and operating costs of that infrastructure. This could include requiring the inclusion of economically viable catchment rehabilitation proposals as part of dam design standards, and contract specifications for dam construction tenders. There is also an opportunity to require consideration of rehabilitation to optimise catchment performance in any infrastructure refurbishment proposals.

Aside from the above objectives, there are several attendant issues that need to be borne in mind during implementation. These are elaborated on below to provide context for ongoing work with DWS, the water sector and Treasury to realise this financial solution.

- The actual water charges are set by negotiation with the different water-user sectors. Engagement and a successful outcome in this process are important for ensuring sufficient revenue is generated, for the maintenance of existing built infrastructure as well as ecological infrastructure. DWS will need substantial assistance, additional ecological and economic arguments and political support to raise the additional revenue, including for the Ecosystem Maintenance and Restoration Charge. The target groups who should be liable for much of the increased charges are the urban, domestic, industrial and high assurance users.
- Most planning, administrative tools and implementation of ecological rehabilitation through the DEA-NRM programmes is currently based on jobs outcomes as it is funded from a public works perspective. The biodiversity sector will need to adapt rehabilitation planning, prioritisation and coordination to more effectively address water security outcomes in catchment management.
- Similarly, more accurately quantifying the likely costs to rehabilitate and maintain key ecosystems that currently provide water services requires additional attention. Most estimates to date are based on public-works type approaches and modalities, which will not necessarily be useful baselines in an open tender system of catchment management and rehabilitation.
- There are opportunities to recover funds for ecological infrastructure (and biodiversity co-benefits) across the water value chain. This requires devising and recalibrating the tariff models to appropriately spread the costs of maintaining ecological infrastructure across raw, bulk and retail water charges, taking into account user groups' ability to pay and revenue collection probability. Careful planning and auditing will be required to avoid "double dipping" (for example, avoiding bulk and retail charges both containing amounts for the same ecological infrastructure intervention thereby billing the consumer twice) and duplication of effort.
- The mandate for recovering raw water charges will at some time be delegated to CMAs, presenting opportunities for direct engagement in catchments where needs are greatest. Care must be taken to ensure that these relatively new entities are not unduly burdened with collecting and deploying ecological infrastructure based charges. For example, the Breede-Gouritz Catchment Management Agency's total budget for 2016/17 is estimated to be R51 million. If a properly determined Ecosystem

Maintenance and Restoration Charge was included in the Agency's budget (to control all the water-linked invasive plant control, required wetland rehabilitation etc.) then the Ecosystem Maintenance and Restoration budget alone would more be than triple the entire CMAs current budget for at least the next two decades, until the problem could be brought to a maintenance level.

4.2.4.3 Expected Financial Results

If the quantum of the proposed Ecosystem Maintenance and Restoration Charge could be set at a nominal 5c/m³ for Forestry and Irrigation Users, and at a nominal 30c/m³ for Industry and Mining, Municipality and High Assurance Users, then these additional amounts would be less than 5% of average current water tariffs paid by these users. The nominal charges suggested above (5c over ±7.5 billion Kl and 30c over ± 3.5 billion Kl) would eventually raise R1.4 billion annually. To put this into context, this amount would be roughly equivalent to the current EPWP allocation to DEA-NRM. This income would need to be explicitly used to improve water service outcomes in natural ecosystems.

Assessing the additional funding that could be generated as a component of capital spend on water infrastructure is not easy or linear. Treasury's detailed infrastructure data⁴⁰ show that South Africa will spend about R1.2 billion annually on mega⁴¹ projects, R3 billion on large projects and R1.5 billion on small projects during 2016/7 –2018/9. If detailed costing of ecological rehabilitation requirements is compiled for all catchments above new planned infrastructure projects, and this catchment investment is calibrated at 1% of the aforementioned R5.7 billion total infrastructure spend, then another R57 million could be generated per annum for direct local rehabilitation of catchments, riparian areas, wetlands and eroded areas.

Based on the above, total additional net revenue potential was estimated to increase gradually to R1.457 billion per year (R1.4 billion Ecosystem Maintenance and Restoration Charge and R57 million capital recovery charge) over ten years starting in 2019.⁴² Note this excludes additional potential revenue through the Waste Discharge Charge. Even if these projections turn out to be too optimistic, this would be a particularly significant addition to funds for rehabilitation in the nation's most important water catchments. The potential maximum additional cost to DEA and its partners of conducting research and lobbying for the implementation of the solution was assumed to be R20 million spread over four years.⁴³

To put potential revenue into perspective, it would be equivalent to approximately 2.7% of national bulk, raw and retail/potable water sales which amounted to R52 billion in 2014/15 (Table 4-13).

Table 4-13: Total annual water sales revenues in South Africa

| Entity | Water sales revenues (R millions) | |
|--|-----------------------------------|-----------|
| | 2013 / 2014 | 2014/2015 |
| DWS (Water Trading Entity)* - Bulk water | 8,197 | 9,579 |
| Water Boards** - Raw water | 14,889 | 16,756 |

⁴⁰ National Treasury 2016. Infrastructure sheets. Review of water sector and SIP investments 2012 – 2019.

⁴¹ Mega projects are over R1 billion, Large projects between R250 million and R1 billion, and small projects are <R250 million.

⁴² Note that it was assumed that revenue amounts would be net of the cost of investments in metering systems and similar measures that may be required to assist with revenue collection.

⁴³ This would be in addition to GEF funds already secured for work on this solution.

| | | |
|---|---------------|---------------|
| Municipalities** - Retail/potable water | 23,400 | 25,800 |
| Total | 46,486 | 52,135 |

Sources:

* National Treasury (2016)

** Statistics SA (2016a)

4.2.4.4 Next steps

This solution builds on experiences across the country and existing processes including the finalisation and promulgation of the draft Water Pricing Strategy. It also relies on projects focused on water tariffs being led by SANBI and DBSA with GEF funding. The Table below outlines a tentative proposed implementation scenario focused on broad next steps which are aligned with the objectives of the solution. These will likely need further refinement.

Table 4-14: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|---|---|--|--|
| 1. Encourage DWS to promulgate the draft Water Pricing Strategy, recalibrate the raw water component charges and remove tariffs caps for agriculture and forestry as soon as possible | DEA | DEA (DEA-NRM in particular), SANBI, DWS, Treasury, CMAs, Water Boards, municipalities, water users associations, WRC, CSIR and DBSA. | 6 – 12 months |
| 2. Finalise and promulgate the Water Pricing Strategy | DWS and National Treasury | | 6 – 12 months |
| 3. Make the case for ecosystem maintenance and restoration of ecological infrastructure for water security more elegantly | DBSA, SANBI, DEA, WRC and water sector researchers | | Intensively for 1 – 2 years and ongoing thereafter |
| 4. Encourage and assist the water sector to develop appropriate implementation and monitoring systems to ensure that ecological infrastructure spend can be better linked to improved water services. | SANBI and DEA (DEA-NRM in particular) and other partners | | 2 – 3 years |
| 5. Improve revenue for catchment investment within the current policy constraints. Assist CMAs with understanding ecological infrastructure investment opportunities and how to budget for an operationalise them | DWS, National Treasury, DEA (DEA-NRM in particular) and SANBI | | Intensively for 1 – 2 years and ongoing thereafter |
| 6. Determine the most appropriate means to set an Ecosystem Maintenance Restoration Charge | DWS, National Treasury, DEA (DEA-NRM in particular) and SANBI | | 2 – 3 years |
| 7. Testing of institutional models for deploying funds within a specific catchment | DWS, National Treasury, CMAs, DEA and SANBI | | 2 – 3 years |
| 8. Unlocking Infrastructure charges to secure ecological infrastructure | SANBI and DEA | | Ongoing |

There are several risks to realising any returns from the water sector. These include:

- A continued delay in the promulgation of the revised draft Water Pricing Policy delaying work on operationalising this finance mechanism.
- Lack of cooperation from DWS which is undergoing restructuring and policy reform
- Poor recovery of water charges generally, by the Water Trading Entity, CMAs and municipalities.
- Ensuring that funds generated for investment in ecological infrastructure projects reach their intended targets, and are not diverted to built infrastructure projects.
- Poor results from inadequately designed and implemented rehabilitation projects dissuade further water sector investment.
- Lack of evidence of the positive water resource outcomes and value of investing in ecological infrastructure for the water sector results in the existing ecological infrastructure allocations not being operationalised, and new proposals for ecological infrastructure spend not being accepted.

4.2.5 Support carbon offset financing for biodiversity projects

Carbon offsets support low-carbon development and provide greater flexibility to those wishing to reduce their carbon emissions. The pending carbon tax legislation in South Africa is set to allow taxpayers to offset part of their carbon tax liability through investment in mitigation projects including ecosystem restoration projects which also provide significant non-carbon benefits. However, ecosystem restoration projects face challenges capturing carbon offset financing that include quantifying and verifying emission reductions, achieving emission reductions in the short term and competition from other cheaper mitigation project types often with limited non-carbon benefits. This finance solution aims to address these multiple challenges. Treasury approval will be sought for offsets standards in the Agriculture, Forestry and Other Land Use (AFOLU) sector, including the determination of a monitoring and evaluation and verification system. In addition, remedies to the delayed sequestration profile of restoration projects need to be found which could include, for example, bridging finance, targets and discounting schemes that can incentivize restoration.

The case for this finance solution

- Ecosystem restoration offers carbon emission reduction benefits along with highly significant non-carbon benefits from enhanced ecosystem health, improved water flow and quality, increased carrying capacity for livestock and wildlife and job creation in rural areas, which are particularly vulnerable to the impacts of climate change and offer limited alternative economic opportunities.
- Carbon offsetting allowances in the carbon tax system provide an opportunity to provide substantial and sustainable finance for ecosystem restoration, provided enabling conditions are put in place that address the challenges associated with restoration projects.
- South Africa can draw on its accumulated experience in ecosystem restoration and in carbon offsets, being host to 68 of the 98 listed Clean Development Mechanism projects undertaken in Africa up to December 2015.

4.2.5.1 Context

The need to respond to climate change presents opportunities for sourcing finance for both mitigation and adaptation interventions that would benefit biodiversity through ecosystem protection and restoration. It is necessary to understand some of the key ongoing South African policy work in this arena before providing context for the specific finance solution, namely, supporting carbon offset financing for biodiversity projects. The policy context is also relevant to the subsequent finance solution which focuses on accessing global climate change funds for biodiversity.

4.2.5.2 Biodiversity and climate change mitigation and adaptation in South Africa

From a climate adaptation perspective, ecosystem-based adaptation (EbA) approaches are a key component of country responses to climate change. These approaches use biodiversity and ecosystem services as part of a comprehensive adaptation strategy, including the sustainable management, conservation and rehabilitation of ecosystems to increase the resilience of ecosystems and people in the face of adverse effects of climate change (CBD, 2009). National processes such as the Long-term Adaptation Scenarios (LTAS) research outcomes provide details on the likely impacts of climate change on biodiversity. They also

outline various adaptation measures or interventions which, for example, include developing a climate-resilient network of protected areas with greater ecological connectivity and implementing efficient biodiversity stewardship programmes (DEA, 2013). SANBI and DEA has developed a Strategic Framework and Overarching Implementation Plan for EbA for 2016 to 2021 aligned with the NBSAP and the draft National Adaptation Strategy.

With respect to mitigation, planting and restoration of indigenous habitats with carbon sequestration as a primary motivation has been undertaken in the country since the early 2000s, although mostly at a relatively small scale. The need for increased restoration is recognised in the National Mitigation Potential Analysis (MPA) which lists six mitigation opportunities in the Agriculture, Forestry and Other Land Use (AFOLU) sector. Two opportunities among the six have clear biodiversity benefits, namely rural tree planting (subtropical thicket restoration mentioned as the most prominent example) and restoration of degraded lands (focused on restoration of mesic grasslands) (DEA, 2014).⁴⁴ The importance of these opportunities is further reinforced by the National Terrestrial Carbon Sinks Assessment (NTCSA) which expands the list to nine activities outlined in Table 4-15 along with their mitigation potential and spatial extent. When combined, the restoration projects cover a potential land area of approximately two million hectares over 20 years made up of 25% subtropical thicket, 15% forest and woodland and 60% grassland. Restoration of these areas could contribute approximately 43% to total AFOLU sector emission reduction possibilities (or 6 million tons of carbon dioxide equivalent, tCO₂e, per year which would total 120 million tCO₂e over 20 years).

Table 4-15: Principle land use-based mitigation opportunities identified in the National Terrestrial Carbon Sinks Assessment

| Activity | Subclass | Spatial extent (ha) | Reduction over 20 years (tCO ₂ e) | Percentage contribution |
|---|--------------------------------|---------------------|--|-------------------------|
| Restoration of subtropical thicket, forests and woodlands | Subtropical thicket | 500 000 | 44 000 000 | 16.0 |
| | Coastal and scarp forests | 8 570 | 1 131 240 | 0.4 |
| | Broadleaf woodland | 300 000 | 24 200 000 | 8.8 |
| Restoration and management of grasslands | Restoration - erosion mesic | 270 000 | 13 860 000 | 5.0 |
| | Restoration - erosion dry | 320 000 | 11 733 333 | 4.3 |
| | Restoration - grasslands mesic | 600 000 | 22 000 000 | 8.0 |
| | Avoided degradation mesic | 15 000 | 1 100 000 | 0.4 |
| Commercial small-grower afforestation | Eastern Cape | 60 000 | 2 750 000 | 1.0 |
| | KwaZulu-Natal | 40 000 | 1 833 333 | 0.7 |
| Biomass energy (woody biomass) | Countrywide | | 39 806 316 | 14.4 |
| Biomass energy (bagasse) | Countrywide | | 6 579 099 | 2.4 |
| Anaerobic biogas digesters | Countrywide | | 72 848 160 | 26.4 |
| Biochar | | 700 000 | 12 833 333 | 4.7 |
| Reduced tillage | | 2 878 960 | 21 112 373 | 7.7 |
| Reducing deforestation and degradation | Through planting | | | |
| | Through regulation | | | |
| Total | | | 275 787 189 | 100.0 |

Source: DEA, 2015a

The National Terrestrial Carbon Sinks Assessment classifies restoration as a short- to medium-term option within the AFOLU suite of options noting that it has the potential to be more of a short-term option were it not for the significant barriers its roll-out at scale continues to face. These barriers are relatively well known and include (DEA, 2015a):

⁴⁴ The other four opportunities mentioned are treatment of livestock waste, expanding plantations, urban tree planting and biochar addition to cropland.

- A lack of consistent, sustainable financial incentives.
- The high cost of monitoring, evaluation and certification, much of which still relies on imported services.
- An absence of a national or provincial facilitation unit that addresses crucial capacity, awareness and efficiency issues.

These barriers are not unique to South Africa. Globally, the transaction costs, uncertainties in quantifying emission reductions and long approval processes have often been cited as major barriers to project developers undertaking restoration projects for carbon offsets. This is well reflected, for example, by the lack of these project types within the CDM market. Only 8% of the 98 CDM projects undertaken in Africa are within the Afforestation and Reforestation project category (CDM Pipeline, 2015).

Significant further work on addressing barriers has been conducted or is in process. This includes the following:

- DEA commissioned research for *The development of potential verification standards and methodologies for carbon offset projects in the AFOLU sector in South Africa* (see DEA, 2015b).
- DEA commissioned research for *A National Climate Change Monitoring and Evaluation system of the AFOLU Sector: A study to inform design, development and implementation* (see Promethium Carbon, 2015).
- The DEA&DP Western Cape Eco-Invest Phase III Pilot Project on Carbon Sequestration using spekboom (*Portulacaria afra*). The purpose of this report is to provide a thorough background of the spekboom carbon sequestration sub-sector of the biodiversity economy in the Western Cape and to make recommendations in the form of a business plan on how the provincial government can strengthen the individual components of the spekboom carbon sequestration value chains as well as support the sustainable growth of the sub-sector as a whole (Purnell and Mills, 2016).
- The National Terrestrial Carbon Sinks Assessment called for more detailed investigations of key opportunities in the AFOLU sector. These investigations are ongoing through a research consultancy commissioned by DEA and GiZ in 2016 which aims to conduct “a comprehensive analysis of the top four landscape and energy related mitigation opportunities (i.e. restoration of subtropical thicket, forest and woodlands, restoration and management of grasslands, biomass to energy and anaerobic biogas digesters) in order to unlock the barriers and opportunities that will facilitate implementation at scale.”
- The *Securing Multiple Ecosystems Benefit Through Sustainable Land Management (SLM) in the Productive But Degraded Landscapes of South Africa* project, funded by the GEF, which aims to strengthen the enabling environment for sustainable land management, including restoration, geographically focused in the Karoo, Eastern Cape and Olifants River area. Under its enabling environment outcomes, it has the following outputs (UNDP, 2013):
 - Government approved methodology developed for the generation of carbon credits through restoration of spekboom veld.
 - Carbon baseline sampling and assessments undertaken for 3,500 hectares in the Baviaanskloof.
 - Project Design Documents for a Baviaanskloof Programme of activities prepared and verified.
 - 1,000 hectares of degraded spekboom veld restored in the Baviaanskloof.

These initiatives should facilitate the scaling-up of restoration regardless of carbon finance source. It is assumed that they will be successfully implemented thereby ensuring that basic enabling conditions are met.

4.2.5.3 Carbon offsets and the carbon tax

The Davis Tax Committee recognises that investments in carbon offsets could boost sustainable development in South Africa, supporting rural development, employment creation, restoration of landscapes, reductions in land degradation and protection of biodiversity, and the encouragement of energy efficiency along with low carbon growth (DTC, 2015). Despite South African leadership in Africa and a favourable policy environment, voluntary carbon offsets have grown modestly. The inclusion of an offsetting option in the proposed national carbon tax regime may, however, result in an opportunity for greater and more sustainable funding flows for such projects.

The draft Carbon Tax Bill was released in late 2015 for public comment with the intention of implementing the tax in 2017-2018. It proposes a tax of R120 per tCO₂e. However, the effective tax is estimated between R36 - R48 per tonne emitted after the R120 is adjusted for free allowances and exemptions including (NT, 2015):

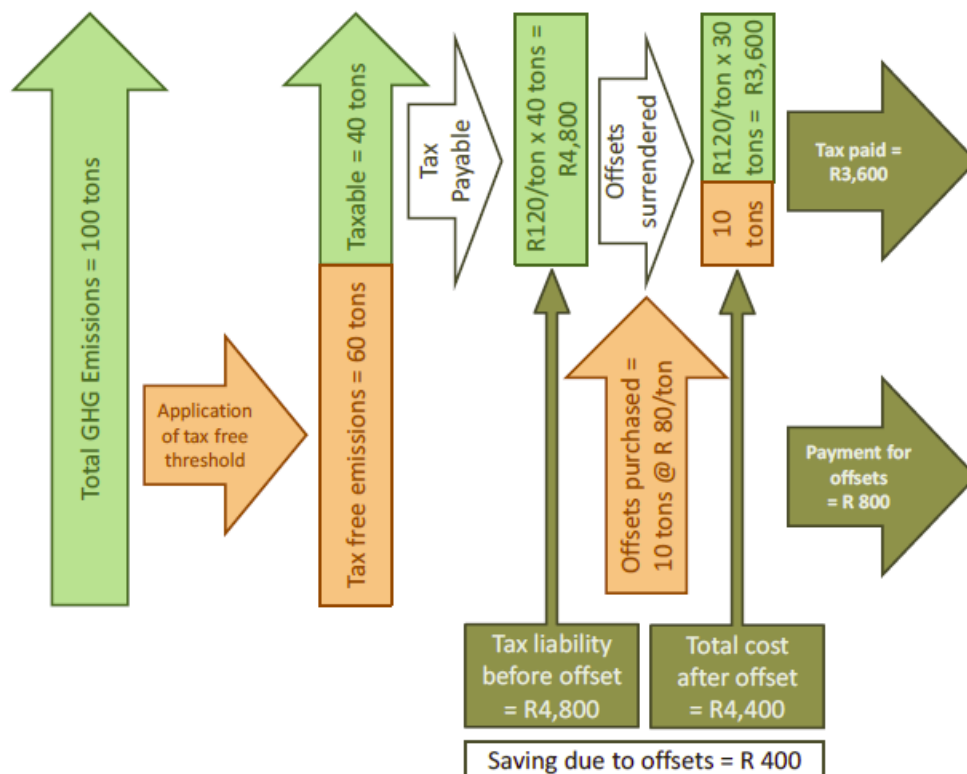
Box 11: Carbon offsets defined

“A carbon offset is a measurable avoidance, reduction or sequestration of carbon dioxide (CO₂) or other GHG emissions. Carbon offsets are sometimes described as project-based because they typically involve specific projects or activities that reduce, avoid or sequester emissions. Through investment in carbon-offset projects, entities will be able to fund GHG-reduction measures implemented by other entities to reduce their own carbon tax liability, often in a manner that is cheaper than what could be achieved through investment in a firm's own operations” (NT, 2015).

- A basic threshold on emissions that can be taxed is set at 60% (i.e. tax is only levied on 40% of emissions).
- A 10% allowance on tax payable for ‘process emissions’ to provide relief for industries where there is limited scope to reduce emissions.
- A 10% allowance on tax payable for ‘trade exposed’ sectors (industries where exports account for a significant portion of total revenue).
- An allowance of up to 5% on tax payable where efforts to reduce emissions show that the taxpayer’s emissions are better than the industry or sector benchmark.
- A 5% allowance on tax payable for companies who participate in the initial phase of carbon budgeting.

Aside from these allowances, a carbon offsets allowance of between 5% and 10% of tax liability will allow taxpayers to reduce their carbon tax liability by investing in approved mitigation projects instead (see Figure 4-4 below for a schematic example of the impact of offsetting on carbon tax liabilities). Carbon offsetting allowances and other requirements have recently been published by National Treasury in draft regulations on carbon offsets (NT, 2016c). Importantly, what would qualify as an offset option is restricted to certain activities such as those in the AFOLU (including restoration projects), transport and waste sectors. There is an implicit incentive in the offsets to favour projects such as these that can achieve emission reduction beyond the traditional pipeline.

Figure 4-4: Example of carbon offsets in the proposed carbon tax



Source: Promethium Carbon (2014)

The potential for carbon offsetting to attract funds for restoration depends on the offsetting allowances associated with the carbon tax (between 5% and 10% of tax liability). These low levels were questioned by the Davis Tax Committee who saw no clear economic reason for not allowing the maximum offset allowance to be as high as 100%. They argue this particularly on the basis that the rationale for the tax is primarily emissions reduction and not revenue generation. Along with provisions to ensure additionality, this should mean that more offsetting results in better environmental outcomes. The opportunity for carbon offset projects to catalyse greater experimentation with new technology and techniques is also mentioned as a reason to encourage them substantially (DTC, 2015). The suggestion that 100% offsetting is technically possible and necessarily desirable is, however, unclear. An argument can be made that limits to the offsetting allowances are there to ensure that sectors place due emphasis on reducing their own emissions before seeking offsets. This would be particularly important for major emitters where, for example, moving towards cleaner technologies and energy sources would be desirable. Without necessarily aiming for 100% offsetting allowances, there may nevertheless be an opportunity to seek to increase offsetting allowances in future iterations of the carbon tax particularly if initial offsetting projects are able to deliver and build trust in their processes (such as the verification of additionality).

4.2.5.4 Objectives

The key objective of the solution would be to attract a portion of carbon offset funds that should become available once the carbon tax is implemented for use in biodiversity restoration or projects with other biodiversity benefits. This would require that:

- The price and other benefits that companies can gain from these carbon offsets (e.g. achievement of Corporate Social Responsibility goals, improved corporate image,

etc.) make them attractive enough to compete with the alternatives such as simply paying the carbon tax or opting for other non-restoration offsets projects.⁴⁵

- Restoration projects are available, properly packaged, ready to receive funding and to deliver. This would depend, in part, on the barriers to implementation at scale being addressed as discussed in the context section.
- Financing challenges can be addressed, especially the potential need for bridging finance in the early years of projects when carbon sequestration rates are low.
- Methodologies are identified and validated for various ecological restoration actions. These should include Measuring, Reporting and Verification (MRV) tools, data, etc.

The viability of restoration projects can differ significantly from other competing carbon offsets projects, particularly with respect to the timing of their carbon benefit delivery. The latter often deliver carbon benefits of a similar magnitude each year from the start. Think, for example, of a retro-fitted industrial plant which cuts emission by X tonnes in the first year after the retro-fit and then in every year thereafter. Implementers of such projects can easily show early emission reduction results and justifiably charge for X tonnes emission avoided in year one. This manages project risk and establishes some level of consistent cash flow at the outset, facilitating access to bridging loans needed to fund the retro-fit. As a comparison, subtropical thicket restoration projects deliver very little carbon sequestration benefit within the first 10 years, while the plants are still small, only accelerating thereafter. Therefore, they generate no or very low cash flow during this initial period whilst their establishment costs are high. The need for bridging finance is thus significantly greater which, along with carbon benefit delivery risks, puts such projects at a distinct disadvantage relative to other options. Although these challenges are particularly acute for subtropical thicket, they are also of relevance to restoration of other habitats such as grasslands and woodlands.

These operational challenges will need to be addressed if restoration is to attract offsets investments allowed by the carbon tax. A key hurdle will be to ensure that remedies that are acceptable to Treasury can be found for the delayed sequestration profile of restoration. Options worth exploring include, for example, bridging finance, targets and discounting schemes, expanded on below:

- Bridging finance options could allow restoration projects to access finance against future earnings flows from carbon offsets. This could address the need for up-front financing but would still require Treasury to allow projects that do not show carbon reductions in the short to medium term to qualify as offsets. The involvement of development finance institutions that could potentially offer bridging assistance such as the Development Bank of Southern Africa, the Land Bank and others may be required for these options to work.
- Targets that incentivise restoration projects could be considered. For example, a minimum portion of totally allowable offsets could be reserved for restoration projects.
- Discounting schemes, sometimes referred to as net mitigation, could also be implemented as a corrective mechanism. Discounting allows for emission reductions earned from selected project types to count for more carbon credits than those earned from other project types creating a demand. Ultimately, the selection of project type will be determined by its marginal abatement cost (cost of implementation per unit emission reduction); discounting schemes would need to align to marginal abatement costs to ensure that the amount of carbon credits earned from restoration projects is competitive with other project types.

⁴⁵ These projects could even be in the AFOLU sector and entail risks to biodiversity – e.g. re-forestation.

Motivating for any of these options is likely to require a carefully constructed case which highlights challenges and emphasises significant non-carbon benefits which other types of offsetting projects cannot match. These include a high level of job creation opportunity in rural areas, improved water flows and quality, increased carrying capacity for livestock and wildlife, enhanced biodiversity, enhanced tourism opportunities and potential for value-added industries – most of which support climate change adaptation.

4.2.5.5 Expected Financial Results

The potential revenue for restoration was estimated on the assumptions that financing and other barriers discussed above can be addressed. The starting point was an estimate of the potential supply of carbon offsets for different sectors including AFOLU estimated at 1.9 million tCO₂e in 2020 (see Table 4-16).

Table 4-16: Potential carbon offset supply at maximum implementation level

| Sector | Limits to Marginal Abatement Costs (MAC) | Potential Supply in 2020 | Potential Supply in 2030 |
|------------------|--|--------------------------|--------------------------|
| Waste sector | R 0/t<MAC<R 150/t | 7 million tons | 14.2 million tons |
| AFOLU sector | R 0/t<MAC<R 150/t | 1.9 million tons | 2.5 million tons |
| Industry sector | R 0/t<MAC<R 150/t | 0.7 million tons | 0.2 million tons |
| Energy sector | R 0/t<MAC<R 150/t | 0.1 million tons | 0.2 million tons |
| Transport sector | R 0/t<MAC<R 150/t | 2.7 million tons | 0 tons |
| Total | | 12.4 million tons | 17.1 million tons |

Source: Promethium Carbon, 2014

It was assumed that 25% of all carbon offsets projects in the AFOLU sector would be ecological restoration projects and would sell carbon offsets at an average price of R110/ tCO₂e. This resulted in a revenue estimate for all restoration projects of R52 million per year by 2022 increasing to R69 million in 2032 (see Table 4-17 below which also provides an estimate of the land area which could be under restoration at 141,000 hectares by 2022 for all habitat types). The potential maximum additional cost to DEA and its partners of facilitating the implementation of the solution was assumed to be R6 million spread over three years.

Table 4-17: Calculation of total offsets revenue for restoration projects and land area under restoration

| | 2022 | 2032 |
|--|--------------|--------------|
| Likely supply from all offsets projects in the AFOLU sector (tCO ₂ e) (from Promethium, 2014) | 1,900,000 | 2,500,000 |
| Likely supply from restoration projects within the AFOLU sector (tCO ₂ e) | 475,000 | 625,000 |
| Annual revenue for restoration projects | R 52,250,000 | R 68,750,000 |
| Number of hectares under restoration | 141,089 | 145,349 |

Assumptions / notes:

Promethium estimates produced in 2014 have been moved out two years to enhance realism

Assumed supply from restoration projects as percentage of AFOLU sector

25%

Assumed average price of carbon from restoration projects (R/tCO₂e/yr)

R 110

Average CO₂ sequestration rate per hectare per year for (from NTCSA):

Thicket

4.3

Woodland

4

Grassland

1.8

Average

3.37

4.2.5.6 Next steps

In the short term, next steps will include discussions with National Treasury and other stakeholder and market players to explore ways of resolving operational challenges in

restoration and other AFOLU projects eligible for carbon tax offsetting. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-18: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|---|-------------------------|---|----------------------|
| 1. Determination and validation of a monitoring and evaluation and verification system for AFOLU projects, including restoration projects, eligible to the offset scheme | DEA | DEA, National Treasury, offset project developers, institutions that face significant carbon tax liabilities, SANBI, experts in climate change mitigation and adaptation projects, including NGOs and academic institutions | 6-12 months |
| 2. Approval by the Treasury of standards for the eligibility of AFOLU projects including restoration | National Treasury | | |
| 3. Initial consultations with Treasury regarding solutions to operational barriers faced by restoration projects such as their delayed sequestration profiles. | DEA / National Treasury | | 6-12 months |
| 4. Awareness raising and capacity development activities for supporting the emergence of a demand and supply of restoration projects | DEA | | 1 year |
| 5. Based on the results of early implementation, consider options for a corrective or support system for increasing the share of restoration projects relative to other offset projects | DEA | | 6 - 12 months |
| 6. Based on the results of early implementation, consider making proposals for increasing the current cap on offsets in the Carbon Tax | DEA / National Treasury | | 3 to 5 years |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- A delay in the approval and operationalization of the Carbon Tax Bill.
- Technical and operational barriers increase the costs for developing sound standards for the AFOLU projects.
- The corrective options and support provided to increase the demand and supply of restoration projects may not be sufficient to generate sufficient demand interest in them.
- Difficulties in coordinating between different government agencies or resistance in introducing changes in the Carbon Tax and related legislation.

4.2.6 Accessing global climate change funds for biodiversity

Climate change funds aim to provide financial support for climate mitigation and adaptation projects, facilitating low-carbon and climate resilient development. Several climate funds actively seek projects with multiple additional sustainable development benefits, including biodiversity, which go beyond mitigation and adaptation. The opportunity to mobilize climate change funds in South Africa is clear and already on the government and development aid agenda. South Africa has experience in this domain and has been successful in attaining financial support from major climate funds including the Green Climate Fund (GCF) and the Adaptation Fund. This solution seeks to build on this success and: (1) develop a strong pipeline of biodiversity-related climate fund proposals, (2) build awareness and collaboration among actors in the climate and biodiversity communities to support these projects, and (3) encourage efforts to clarify monitoring, reporting and verification (MRV) in the agriculture, forestry, and other land use (AFOLU) category of carbon projects, as well as enhancing the evidence base (monitoring and evaluation) in the adaptation sectors.

The case for this finance solution

- South Africa is the largest emitter of greenhouse gases (GHGs) in Africa and the Intergovernmental Panel on Climate Change's (IPCC) has noted that the Southern African region is extremely vulnerable to the impacts of climate change owing to a combination of baseline conditions, exposure, and risk.
- Global climate funds can bring additional financing to South Africa, enhance private sector engagement, and complement existing biodiversity management initiatives.
- South Africa is in a good position to develop a strong pipeline of biodiversity-related climate fund proposals. It has been successful with proposals to the Adaptation Fund and the Green Climate Fund and has two Accredited Entities for the Green Climate Fund.
- DEA, with the assistance of key partners, is well placed in their ongoing development of another proposal to the Green Climate Fund for a large project centred on ecosystem restoration for adaptation and mitigation.

4.2.6.1 Context

Climate change funds represent a significant opportunity to generate finance for biodiversity projects which contribute to climate change mitigation and/or adaptation. These funds may operate at a multilateral, bilateral, or national level and include single donors, multiple donors, or private sector sources. There are also some funds that work on a regional level. Biodiversity can be integrated into climate change financing in a range of ways including through safeguards. However, the greatest opportunity is through project design that emphasises the co-benefits of biodiversity to climate change mitigation, adaptation, or cross-cutting approaches as follows:

Box 12: Climate change funds defined

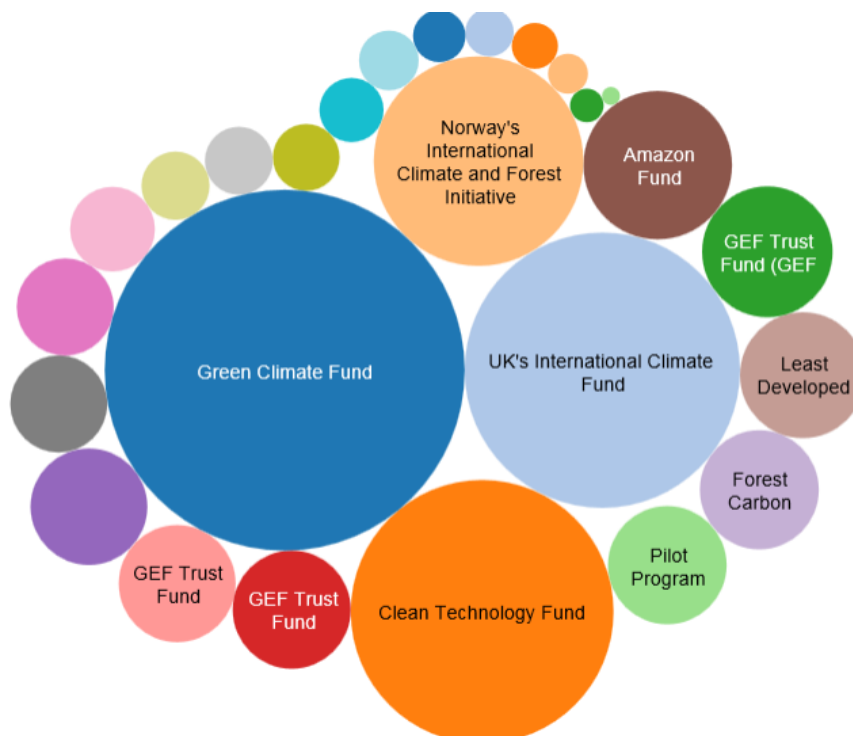
Climate change funds are financial instruments that are used to support climate change mitigation and adaptation objectives. Specific objectives vary from fund to fund including the type of projects funded, project size, co-financing requirements, private sector involvement, and target countries to be supported. Climate funds can be public or private although only public funds are examined in this solution.

- Mitigation: ecosystem restoration projects demonstrate verifiable emission reductions through carbon sequestration or avoided emissions.
- Adaptation: sustainable biodiversity management, resulting in well-functioning ecological infrastructure, increases resilience and adaptation to climate change through, for example, watershed resilience, disaster risk reduction (e.g. coral reef or mangrove restoration), and food security (crop diversity boosts drought and disease resistance), among others.
- Crosscutting: Many biodiversity projects have adaptation and mitigation benefits – e.g. soil carbon, ecosystem restoration, wetland restoration.

According to the Climate Funds Update database⁴⁶, climate change projects with a strong biodiversity component constitute US\$99.8 million of total funds mobilized by all climate funds. Upon the inclusion of broader sectors that may demonstrate biodiversity co-benefits such as disaster risk reduction, forestry and adaptation and resilience, the total funding provided by climate funds increases to a highly significant US\$2.53 billion.

The landscape of climate funds is shown in Figure 4-5. The most prominent climate funds, in terms of amount of financing available, are the Green Climate Fund (GCF, US\$10.5 billion), Clean Technology Fund (US\$5.4 billion), UK International Climate Fund (US\$6 billion) and Norway's International Climate and Forest Initiative (US\$3.4 billion).⁴⁷ Other climate funds of importance in the context of biodiversity protection and rehabilitation include the Adaptation Fund and Biocarbon Fund. Appendix 7 provides a summary of the Green Climate Fund, the Adaptation Fund and the Biocarbon Fund, including the criteria the different funds apply when evaluating applications.

Figure 4-5: Climate fund sizes based on pledges made by countries



Source: Climate Funds Update database (<http://www.climatefundsupdate.org/data>)

⁴⁶ See <http://www.climatefundsupdate.org/data>

⁴⁷ Note that the portions of these amounts pledged by the United States may decrease under the new presidency.

South Africa has been securing project finance through climate funds for several years. There is a National Climate Change Response White Paper that addresses the opportunities and challenges of climate finance in the country and outlines the need for 'improved finance policy coordination' to create a sustainable climate finance architecture for South Africa. Additionally, the national carbon tax and offsets policies of South Africa are designed to create awareness amongst the private sector for this area and will help to generate private climate finance to complement (and act as co-financing) for climate funds. Table 4-19 outlines the Green Climate Fund, Adaptation Fund and the Biocarbon Fund in terms of their mandates, eligibility criteria, project portfolios and provides examples of South African projects with clear biodiversity co-benefits that have been funded.

Table 4-19: The Green Climate Fund, Adaptation Fund and the Biocarbon Fund eligibility criteria, project portfolios and examples of South African projects

The Green Climate Fund (GCF)

The GCF is an operating entity of a finance mechanism established under the United Nations Framework Convention on Climate Change (UNFCCC). The overarching objective of the Fund is to allow finance to be transferred from developed to developing countries to support climate change mitigation and adaptation projects, programmes and policies. There are various eligibility criteria that projects must adhere to if they are to be funded. These include impact potential, paradigm shift potential, country ownership, sustainable development potential and others. Sustainable development co-benefits (including biodiversity) are seen as very favourable to funding acceptance. As of March 2017, globally, 11 of the 35 projects within the GCF project portfolio possess aspects related to biodiversity conservation. These projects represent US\$288.5 million of the total US\$1.5 billion committed GCF funds (19%). The average size per individual funding award from the GCF is US\$42.2 million in various financial forms (equity, guarantees, loans and grants). South Africa's first project to be supported by the GCF is a SCF Capital Solutions project which is mitigation focussed and looks to develop start-ups in South Africa's Green Fund incubation programme. Other exploratory talks are underway for a number of project proposals by DEA, one of which relates to biodiversity restoration

Adaptation Fund (AF)

The Adaptation Fund is a financing instrument established within the Kyoto Protocol under the UNFCCC. The AF has the objective of specifically supporting adaptation projects and programmes in developing country parties under the Protocol. Some of the eligibility criteria for projects applying to the AF include targeting areas with a significant level of vulnerability, securing regional co-benefits, adaptive capacity to the effects of climate change and others. There is a US\$10 million funding cap per country and two South African projects worth US\$9.8 million have been funded through the Adaptation Fund (US\$2.4 million for Taking Adaptation to the Ground: A Small Grants Facility for Enabling Local Level Responses to Climate Change and US\$7.4 million for Building Resilience in the Greater uMngeni Catchment, a project with biodiversity benefits).

BioCarbon Fund

The BioCarbon Fund Initiative for Sustainable Forest Landscapes operates under the World Bank. It focuses on mitigation (emission reductions) through sustainable land management with funded project types including REDD+, sustainable agriculture, green supply chains and improved land-use planning. The Fund's mandate is to work with the private sector to provide technical expertise and innovation capital for programmes at a landscape level and goes beyond the funding of individual projects. Currently, the Initiative for Sustainable Forest Landscape has three programmes in Ethiopia, Colombia and Zambia. The Ethiopian and Colombian programmes have gained financial support worth US\$50 million from the Fund. There are currently no projects in South Africa funded by the BioCarbon Fund.

Land Degradation Neutrality Fund

The Land Degradation Neutrality Fund is a new fund that will focus on land rehabilitation and avoided degradation. The LDN Fund is envisioned to be a coordination platform for blended finance and will be privately managed. Investments in LDN projects are designed to create substantial co-benefits, one of which will be within the area of biodiversity conservation. The LDN aims to rehabilitate approximately two billion hectares of productive land worldwide. The Fund was launched in the last quarter of 2016.

4.2.6.2 Objectives

The main aim of this finance solution is to generate more external climate funding that provides concrete co-benefits for biodiversity and supports national biodiversity objectives. The specific objectives are to:

1. Develop a strong pipeline of biodiversity-related climate fund proposals.
2. Build awareness and collaboration among public and private actors, CSOs and NGOs in the climate and biodiversity communities to support these projects given the need for multi-sector focussed projects, and
3. Encourage efforts to clarify monitoring, reporting and verification (MRV) in the agriculture, forestry, and other land use (AFOLU) category of carbon projects.

South Africa is well positioned to develop a strong pipeline of biodiversity-related climate fund proposals due to the strong interplay between habitat restoration, watershed and fire management, sustainable livelihoods and climate change mitigation and adaptation. It has one national Accredited Entity for the Green Climate Fund, namely SANBI, and is the headquarters of one regional Accredited Entity, namely DBSA. There is also the option to work with international Accredited Entities. Capacity to develop and implement large scale multi-dimensional projects is strong in South Africa and the challenge for developing and submitting proposals for the Green Climate Fund is likely more related to assuring strong coordination among the different actors in the country as opposed to developing viable projects. It will be essential to continue to build awareness and collaboration among actors in the climate and biodiversity communities. This should assure that project concepts will be supported locally and allow the country to present a unified approach to climate change funds. Competition for funding from the Green Climate Fund in particular has become intense as the Fund has moved beyond its initial phase when awareness of the opportunity was low and the number of applications was less. The potential amounts on offer are highly significant and some countries have been able to access assistance with preparing applications. In order to stand a chance of success, high levels of government support and landowner buy-in and effort are required. In this regard a process is underway, led by DEA, to make an application to the Green Climate Fund to fund a large project centred on ecosystem restoration for adaptation and mitigation.

The Adaptation Fund has relatively less potential in the short term due to the funding cap and uncertainty in its capitalization strategy within the Paris Agreement although certain Parties showed interest in its continuation.

As in the case of carbon offsets, an area of support for the integration of biodiversity in climate change finance is through efforts to clarify monitoring, reporting and verification in the agriculture, forestry, and other land use (AFOLU) category of carbon projects. There are ongoing efforts to achieve national standards and this will be essential for biodiversity in carbon offset financing and helpful for climate fund financing.

4.2.6.3 Expected Financial Results

Feasibility depends on being able to successfully access funding. At this point, financial results estimates focus on achieving success with one global climate fund, the Green Climate Fund, as DEA is in the process of putting an application to the Green Climate Fund for a sizable project. It was assumed that, if successful, the GCF allocated could be in the order of US\$50

million over seven years starting in 2019.⁴⁸ This project is centred on ecosystem restoration for adaptation and mitigation.

4.2.6.4 Next steps

The DEA proposal to the Green Climate Fund, which is in the early stages of development, is the immediate focus of efforts regarding access to climate change funds. The Table below outlines a proposed more general implementation scenario for the Green Climate Fund and other funds focused on broad next steps.

Table 4-20: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|-------------------------------------|---|----------------------|
| 1. Develop a strong pipeline of biodiversity-related climate fund proposals with high-levels of political support from DEA and other actors. | DEA (National Designated Authority) | DEA, SANBI, Accredited Entities, experts in climate change mitigation and adaptation projects, including NGOs and academic institutions | Ongoing – 18 months |
| 2. Build awareness and collaboration among actors in the climate and biodiversity communities to support these biodiversity focused climate projects ensuring that the application is supported by key sector actors to enhance the chances of success | Accredited Entities | | Ongoing |
| 3. Encourage efforts to clarify monitoring, reporting and verification (MRV) in the agriculture, forestry, and other land use (AFOLU) category of carbon projects. | DEA | | 6 – 18 months |

The following risks may affect the success of the solution and should continue to inform its design and implementation:

- The multilateral status of the Green Climate Fund and other funds which results in multiple potential recipient countries and projects all of whom compete for limited financial resources.
- Given that South Africa has already received support from the Green Climate Fund for the SCF Capital Solutions project, and with DEA planning a proposal for Natural Resources Management, it is unclear whether any other proposals would be funded.

⁴⁸ This amount excludes potential additional co-financing by the South African government.

4.3 Solutions focused on the sustainable utilisation of biodiversity

The solutions with a primary focus on the sustainable use of biodiversity are:

1. Improving the effectiveness of environmental fines and penalties
2. Creation of the Tourism Conservation Fund
3. Implement South Africa's Biodiversity Economy Strategy

4.3.1 Improving the effectiveness of environmental fines and penalties

Fines and penalties aim to penalise offenders, thereby encouraging compliance with environmental laws. They can also have a revenue raising function. Until legal amendments in 2009, the maximum penalties as stipulated by the National Environmental Management Act (NEMA) and the Specific Environmental Management Acts (SEMAS), were in the order of hundreds of thousands of Rands and extremely low relative to the extent and cost of impacts on biodiversity and the environment. Since then, the maximum penalties have generally been standardised to R5 million and/or five years in prison for a first offence and R10 million and/or ten years for subsequent offences. Despite these increases, the majority of sentences handed down by the courts for environmental offences (with the exception of some rhino horn and elephant ivory poaching cases) are far less than the maximum amounts legally provided for. It is also not clear that the maximum penalties are high enough to ensure a genuine disincentive. This limits their efficacy as punitive and deterrent measures. The aim of this solution is to revise and improve the fines and penalties system of DEA with a focus on the exploration of an administrative penalty system as an additional legislative enforcement mechanism.

The case for this finance solution

- Existing fines and penalties are not handed down by courts at appropriate levels relative to the impact of the transgressions on the environment. They are not adequately supportive of the polluter-pays principle, which is established in NEMA and is an economically efficient approach to aligning behavioural incentives.
- Reforming fines and penalties should result in behavioural change and less transgressions, reducing the negative impact of transgressions on biodiversity and the environment.
- Improved compliance monitoring and enforcement will increase responsibility towards minimising unnecessary biodiversity impacts and will enhance the likelihood of successful imposition of penalties for illegal activities.

4.3.1.1 Context

In the South African context, fines and penalties under NEMA and the Specific Environmental Management Acts have the potential to punish offenders, deter would-be offenders, incentivise compliance with environmental laws and serve as a revenue raising function. At a national government level, DEA's Legal, Authorisations and Compliance Enforcement Branch is mandated with managing aspects of the environmental regulatory regime established through NEMA and the Specific Environmental Management Acts, including the law reform, licensing and compliance and enforcement systems. The programme of work in this regard consists of an overall management unit along with sub-programmes in compliance monitoring, integrated environmental authorisations, enforcement, corporate legal support and litigation, and law reform and appeals.

DEA collaborates with its provincial and local counterparts and statutory bodies that make up the Environmental Management Inspectorate (EMI) institutions (EMIs are also known as the 'Green Scorpions') which have a collective staff of roughly 2,230 (DEA, 2015c). Many other such statistics are reported in the annual National Environmental Compliance and Enforcement Report (NECER), a joint publication of these institutions, which provides an overview of their environmental compliance and enforcement activities. In terms of finances needed to execute their compliance and enforcement functions, DEA's Legal, Authorisations and Compliance Programme had a budget of R134 million for 2015/2016 (NT, 2016), with a portion of this total being allocated specifically to compliance and enforcement. In addition, the total expenditure on compliance and enforcement in all of the provinces was R195 million for 2013/2014. These amounts are not regarded as sufficient.

Fines for environmental transgressions come in essentially three forms:

- Fines forming part of criminal penalties imposed by the courts after successful trial and convictions or plea and sentence agreements for contraventions of NEMA and the Specific Environmental Management Acts including the Protected Areas Act and the Biodiversity Acts (e.g. for poaching or wildlife trafficking). The magnitude of these fines varies depending on the seriousness of the transgression. However, they have been increased to R5 million for first offences and R10 million for second offences since 2009.
- S24G administrative fines paid specifically by applicants who wish to obtain an ex-post facto environmental authorisation after having unlawfully commenced with a listed or specified activity in terms of S24F(1) of NEMA or after having unlawfully commenced, undertaken or conducted a waste management activity without a waste management licence. The magnitude of these fines are determined using a fines calculator but have been capped at R5 million since 2013. Note, however, that a S24G administrative fine is not considered to be a pure administrative penalty, due to the fact that the fining process is integrated with the process of applying for an environmental authorisation. Administrative penalties are thus a monetary fine for legal violation/contravention of a law outside of criminal proceedings. They are imposed either by a regulator or an independent tribunal and the courts are not involved in the proceedings. Administrative penalties do, however, resemble criminal law fines because they are financial and punitive in nature even though the process in which they are imposed is civil.
- J534 admission of guilt fines paid for less serious environmental offences in terms of Section 56 of the Criminal Procedure Act, 1977. They are limited to an amount of R5,000

The only way to obtain a punitive monetary order against an offender is thus either to obtain a conviction and sentencing of that offender in a criminal court of law or through S24G administrative fine.

Table 4-21 below shows the annual national value of S24G administrative fines and J534 admission of guilt fines paid which was low at approximately R14.5 million in 2014/2015. Note that this amount may be somewhat under-reported as the National Environmental Compliance and Enforcement Report is not entirely comprehensive. It also excludes the value of other criminal fines. For the purposes of contributing to biodiversity finance, only administrative fines under S24G bear much investigating due to their potential contribution.

Table 4-21: Total value of S24G administrative fines and J534 admission of guilt fines paid

| Type of fine | Total value of fines paid | | |
|-------------------------------|---------------------------|---------------------|---------------------|
| | 2012 / 2013 | 2013 / 2014 | 2014 / 2015 |
| S24G administrative fines | R 5,385,215 | R 16,127,751 | R 14,005,423 |
| J534 admission of guilt fines | R 654,250 | R 498,230 | R 418,181 |
| Total | R 6,039,465 | R 16,625,981 | R 14,423,604 |

Source: DEA, 2015c

To put these amounts into perspective, they are equivalent to only 8.5% of the aforementioned 2013/2014 expenditure on compliance and enforcement specifically by the provincial Environmental Management Inspectorate institutions. This percentage is likely to fall below 5% if one includes the budgets of the other national Environmental Management Inspectorate institutions, bearing in mind that the current budget allocations for these institutions is considered inadequate relative to their mandates. To provide value, the fines need to be a more significant deterrent, need to cater for remedying impacts and losses and, preferably, generate additional revenue to be put towards biodiversity management objectives.

The effectiveness of fines and penalties remains limited due to the following:

- Although the law provides, in addition to the standard sentence, for supplementary orders that seek to include cost recovery, remediation, and profit-generation aspects into account, there is limited application of these provisions in environmental convictions which means there needs to be a successful criminal prosecution and conviction first.
- For criminal fines, despite a number of important capacity development initiatives, there are ongoing challenges associated with the Environmental Management Inspectorate in preparing comprehensive case dockets, with building the profile of environmental crimes within the National Prosecuting Authority (NPA) and raising of awareness amongst the judiciary of the serious nature and impact of environmental crime.
- Criminal fines and S24G fines that are levied, are largely allocated to the general fiscus and not ring-fenced back into compliance and enforcement efforts. There are exceptions where the prosecution has, in specific cases, applied for part of the sentence to be allocated back to Environmental Management Inspectorate institutions for enforcement purposes; or where the S24G fines have, with the permission of provincial Treasury, been transferred back to compliance and enforcement functions.
- Fines and penalties are vulnerable to erosion by inflation (R5 million today has a ~40% lower value relative to 2009 when this fine maximum was enacted). This can be contrasted with legislation such as the Competition Act enforced by the Competition Commission, for example, who are able to set fines at 10% of a company's turnover to ensure that they remain proportional.
- The deterrent value of a fine or penalty is dependent on its "expected value" which results from a combination of probabilities of the full event chain leading to fine payment – likelihood of a) detection, b) receiving summons, c) receiving court appearance, d) court decision, e) and actual payment. If any of these probabilities is low, the expected value of a fine approaches zero and is thus not an effective deterrent unless fines are inflated to compensate.

These constraints are largely recognised by DEA and its partner Environmental Management Inspectorate institutions. To address this issue, DEA has started a process to review current policy and implementation of fines and penalties and to suggest potential reforms through a

specific project that seeks to explore the feasibility of introducing an additional system of administrative penalties to supplement the existing enforcement mechanisms available, and provide an effective and efficient platform to achieve the objectives of punishment and deterrence. This project should be completed by the end of financial year 2018/2019.

There are three considerations with regard to the fines being used to raise funds for biodiversity. Firstly, there is the question of whether and how the institutions levying fines could retain income from these fines and specifically which fines could contribute revenue without jeopardising the compliance regime and providing perverse incentives for any actor in the system. This would be critical if fines are to contribute to the incomes of Environmental Management Inspectorate institutions or to the agencies that are trying to achieve national biodiversity management objectives while avoiding perverse incentives.

Secondly, there is a question whether the fines under S24G should be levied in addition to a directive to remediate any damage to or loss of biodiversity that has been caused in the contravention. An ideal scenario would be where an offender is directed to restore any significant impacts on biodiversity, and where these cannot be sufficiently restored, that the offender is required to offset the impacts through appropriate securing, setting aside and paying for the management of the impacted ecosystem or species elsewhere. The S24G fine should then amount to not just the additional administrative burden and deterrence amounts contemplated, but should include the calculated costs of the restoration and/or offsetting as suspended amounts, pending effective compliance with that restoration and offset mitigation.

Finally, a consideration is whether a system of proper administrative penalties can be designed to yield useful funds towards restoration or offsetting of impacts without creating a perverse incentive for offenders to short circuit the system by simply paying for biodiversity loss.

4.3.1.2 Objectives

The following specific objectives are pertinent to using an improved penalties system for most effect in biodiversity management (see also Botha, 2016):

1. Promote the use of section 34 of NEMA that provides for supplementary orders, upon conviction, that provide for, inter alia, the costs of remediation and mitigation of the damage caused or the loss of biodiversity in addition to the standard sentence. This section also allows for the costs of investigation and prosecution; as well as the financial advantage gained, to form a part of these supplementary orders.
2. Ensure that the financial (and possibly even economic) costs to the public of the transgression are recovered, and effectively invested in improving biodiversity outcomes (and not just any economic benefit that may have been enjoyed by the transgressor).
3. Improve the drafting of conditions of environmental authorisation for listed development activities to ensure that there is little room for doubt regarding contravention and consequences.
4. Augment the criminal prosecution model of environmental compliance with a fully-fledged, upgraded administrative penalty regime.
5. Better understand the effects of, and consider the adjustment or removal of, caps that artificially limits the utility of criminal and administrative fines.
6. In respect of the forthcoming administrative penalty system, consider a portion of turnover (such as 10% for more serious offences or repeat offenders) as has been successful in the competition realm.

Beyond any revenue raising potential, the opportunity is to fully internalise the costs of environmental (and especially biodiversity) impacts into any significant transgression of the law. At a minimum, to remove doubt and focus offenders on firstly mitigating their impact on public goods, the full costs of mitigation must be recoverable if the offender does not, cannot or will not fulfil their obligations. Although often difficult to estimate, such costs are potentially substantial, especially with regards to cumulative water pollution and biosecurity. For example, the costs of treating acid mine drainage in Gauteng province have been estimated at between R10 billion and R12 billion spread over more than 10 years, while the national economic costs caused by the spread of invasive alien plants are likely to be over R7 billion per annum (de Lange and van Wilgen 2013). The potential for such significant external costs calls into question the role of caps on fines. For example, even if enforcement were enhanced, a R5 million fine in a multi-billion construction project will hardly be noticed. Fines or penalties should rather be set in ways that ensure adequate attention from transgressors, such as linking them to turnover or project budgets (e.g. construction cost of new developments).

4.3.1.3 Expected results

The DEA project focusing on the reform of fines and administrative penalties has not reached the stage when results can be predicted other than to say that the opportunity exists for significant improvements. Much will depend on the nature of the eventual reforms that are crafted and enacted. It should be feasible to borrow from the evolution of administration penalties in other jurisdictions as there is legal precedent in the environmental sphere, and South Africa has a good working example of an effective administrative penalty in competition legislation.

Improved conditions of authorisation for new developments, especially with regards to impacts on biodiversity, will be required to optimise resources from fines and penalties, and reduce biodiversity impacts. This should not be inherently problematic, but does require some focus and training of case officers across all competent authorities (see also Section 4.1.5.4).

Improved compliance monitoring and enforcement would increase developers' duty of care towards minimising unnecessary biodiversity impacts as well as the likelihood of successful imposition of administrative penalties for illegal activities.

It is important to note that any administrative penalty regime must be seen as an addition to the criminal prosecution, and not a replacement. Repeat offenders with criminal records should bear the full brunt of the law and be severally and individually liable for mitigation.

4.3.1.4 Next steps

DEA is in a process of commencing phase two of the Administration Penalties and Compliance project. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-22: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|--|---|----------------------|
| 1. Conduct further supporting research on fines and penalties best practises. | DEA | DEA (the Legal, Authorisations and Compliance Enforcement Branch in particular), other statutory bodies that make up the Environmental Management Inspectorate (EMI) institutions such as SANParks and the provincial conservation authorities, the National Prosecuting Authority (NPA), National Treasury and NGOs active in this area. | 1 year |
| 2. Based on the research conducted, propose several models for administrative penalties, and assess the financial, human resources etc. required for each option. Undertake consultation process regarding these options. | DEA | | 1 year |
| 3. Review and amend fines and penalties policy/regulations through stakeholder consultation, drafting policy, consulting through intergovernmental structures, finalising and publishing policy. | DEA | | 2 years |
| 4. Develop guideline document(s) on appropriate means to calculate fines, appropriate remedies and mitigation through stakeholder consultation, drafting policy, consulting through intergovernmental structures, finalising and publishing policy | DEA | | 2 years |
| 5. Train EMIs and other stakeholders on the application of policy/regulations and guidelines. | DEA | | 1 year |
| 6. Implementation of fines and penalties policy/regulations and guidelines. | DEA, provincial and local government, EMIs, conservation authorities | | Ongoing |

The following risks may affect the success of the solution and have informed its design:

- The fines and penalties options that are most effective from a legal or best practise point of view may not be implementable by the Environmental Management Inspectorate institutions due to human resource and financial constraints;
- Uptake and implementation of an administrative penalty system may face resistance from Environmental Management Inspectorate institutions who may favour more familiar mechanisms;

- Regulated communities (i.e. those who would potentially have to pay fines and penalties) may lobby strongly against the amendment of fines and penalties policy or regulation.
- The principle of cost recovery and ring-fencing fines and penalties is not favoured by national or provincial treasuries, leaving these potential funds to be allocated to the general fiscus, rather than being used for compliance and enforcement purposes.

4.3.3 Creation of the Tourism Conservation Fund

There is a strong argument for the tourism sector to provide more direct financial support for biodiversity conservation given biodiversity's significant contribution to it. The aim of the Tourism Conservation Fund (the Fund) is to access private sector funding, specifically from the tourism industry, and use these funds to address targeted biodiversity conservation needs. An initial focus may be making investments to help diversify the livelihoods of communities living adjacent to protected areas, specifically by increasing their opportunities within the wildlife and tourism sector. This solution comes in the form of the establishment and ongoing operation of the Fund by the Peace Parks Foundation, Endangered Wildlife Trust, the Wilderness Foundation and other partners.

The case for this finance solution

- Continued robust growth in the South African tourism sector would be enhanced by sufficient funding of biodiversity conservation actions that secure and enhance nature-based tourism assets.
- The nature-based tourism sector has good reason to provide increased direct funding for conservation. Actors in the sector have largely recognised this but lack a vehicle through which funds can be pooled and effectively distributed.
- The Tourism Conservation Fund presents an opportunity to raise significant private sector funds for conservation action whilst, for example, creating job opportunities for communities living adjacent to protected areas.

4.3.3.1 Context

South Africa's natural heritage, characterised by unique biodiversity, pristine landscapes and diverse ecosystems, is a key draw card for the tourism industry which accounts for 3.1% of GDP and 4.5% of jobs (StatsSA, 2016). Given the contribution of biodiversity to tourism it seems appropriate that some of the revenue generated by tourism should be directed to biodiversity conservation. This was the underlying understanding which prompted members of the tourism industry to approach the Peace Parks Foundation⁴⁹ in 2015 to seek a solution which would allow the industry to make more meaningful and structured contribution to conservation on a voluntary basis. The Peace Parks Foundation had by this stage established networks with the Endangered Wildlife Trust, the Wilderness Foundation and key representatives of conservation agencies to explore these issues. The timing of the approach by industry was thus fortuitous, and led to a series of discussions around how civil society could collaborate with the private sector, with support from government, with the aim of channelling meaningful amounts of business revenue towards conservation. This resulted in the development and imminent launch of the Tourism Conservation Fund.

4.3.3.2 Objectives

The rationale for the Tourism Conservation Fund is rooted in the view that there is a misalignment in capital (in the broad sense of the term) flows between biodiversity and business. In essence, while businesses in the tourism sector benefit from biodiversity, the management of biodiversity does not presently receive adequate compensation. The Tourism Conservation Fund has been designed to achieve greater alignment in the flows of benefits between business and biodiversity.

⁴⁹ Information in this section is based largely on correspondence with Brad Poole – Programme Manager at PPF

The development of a voluntary contribution system, as opposed to one relying on statutory requirements, is intended to be relatively swift to establish, limiting the need for bureaucratic processes. The flow-through structure selected for the fund aims to ensure that funding is channelled to biodiversity conservation actions in a timely manner, with an expectation that around 70% of the funding received in any given year will be channelled to projects during that same year.

It is expected that key sources of finance envisioned for the Fund include recurrent contributions from private entities, particularly but not limited to the tourism sector, possibly as a fixed commitment to a proportion of revenue; fixed contributions from financial-sector entities based on amounts channelled through them by customers; and once-off donations from donor agencies seeking projects which are in alignment with their targeted objectives. It is anticipated that the leveraging that should be achievable through the pooling of these different sources and should act as an incentive for increased contributions.

The goal of the Tourism Conservation Fund will be to address biodiversity conservation needs and priorities in the country. The first objective envisaged by the Peace Parks Foundation will be to channel money towards conservation in the traditional sense, by fostering the preservation and management of ecological systems. The second objective will be to address the key drivers behind biodiversity loss, particularly those associated with socio-economic factors. For example, investments could be made into local development to help diversify the livelihoods of communities living adjacent to protected areas, specifically by increasing the array of opportunities within the wildlife and tourism sector. The exact nature of the Fund's priorities will be determined by the Board of Directors and associated management structures, reviewed on an annual basis.

The Fund will be structured to allow for both open-ended contributions and targeted donations towards projects with specific objectives. For example, one potential grouping of projects could include only projects which qualify for Broad-Based Black Economic Empowerment (B-BBEE) points through the socio-economic development contributions pillar.

4.3.3.3 Expected financial results

Based on research commissioned by Grant Thornton, Peace Parks Foundation estimates that the Fund could channel between R250 million and R500 million in annual revenue to biodiversity conservation projects within the first five years of its launch. This is based on a positive response from the sector and the key assumption that the Fund would receive recurring contributions amounting to 0.5% of revenue from around half of the operators within the tourism sector, as well as a commitment from one or two major banks. To put this in perspective, Tourism Marketing South Africa (TOMSA) generated approximately R133 million in 2015 from voluntary contributions. These contributions consist of 1% of the revenue generated by around 525 participating hotels, car hire firms and other service providers in the tourism industry.⁵⁰ The Tourism Conservation Fund target is thus ambitious in relative terms. For revenue estimation purposes, it was assumed that the Fund would build up to R192 million per year net of costs (i.e. the average between the lower end of the Grant Thornton projections and actual TOMSA revenues) after ten years.

4.3.3.4 Next steps

The Peace Parks Foundation and partners are in the final stages of establishing the Tourism Conservation Fund. Its Public Benefit Organisation status is being finalised and its Board is

⁵⁰ See www.tomsa.co.za

being populated. The Table below outlines a proposed implementation scenario focused on broad next steps.

Table 4-23: Proposed implementation steps, lead parties and timescales

| Step | Lead party | Key Stakeholders | Indicative timescale |
|--|-------------------------------------|---|-----------------------|
| 1. Finalise the establishment of the Fund and appoint board of trustees | Peace Parks Foundation and partners | Peace Parks Foundation, Endangered Wildlife Trust, the Wilderness Foundation, DEA, conservation authorities, | 1 year |
| 2. Develop, refine and implement funding strategy | Tourism Conservation Fund | tourism sector representative bodies, commercial tourism operators, and other NGOs active in this area. | 1-2 years |
| 3. Identify Fund beneficiaries and distribute funds | Tourism Conservation Fund | | Ongoing (as required) |
| 4. Monitor and evaluate impacts of funding allocations and refine overall management as needed | Tourism Conservation Fund | | Ongoing (as required) |

The following risks may affect the success of the solution and have informed its design:

- Lack of interest from potential contributors. The private sector has, however, thus far supported the idea of the Fund indicating that they intend to follow through with actual contributions.
- Lack of buy-in and support from relevant government departments and other conservation actors.
- Projects funded by the Fund may not deliver the expected benefits.

4.3.4 Implement South Africa's Biodiversity Economy Strategy

The biodiversity economy encompasses businesses and economic activities that either directly depend on biodiversity for their core business or that contribute to conservation of biodiversity through their activities. In South Africa, the bioprospecting and wildlife sectors are considered cornerstones of the biodiversity economy. DEA, working closely with a range of stakeholders, has led the development of a National Biodiversity Economy Strategy (NBES) (DEA, 2017) which is currently awaiting government approval, supported by two specific guiding documents, one on developing the bioprospecting economy (DEA and DT, 2016a) and the other on developing the wildlife economy (DEA and DT, 2016b). Together, these strategies set out 20 complementary initiatives and six recommendations which aim to accelerate rural development, improve social well-being, and ensure equitable access and benefit sharing from biological resources, while maintaining the ecological resource base. This finance solution encompasses the entirety of these strategies, encouraging their implementation towards 2030.

The case for this finance solution

- The biodiversity economy is considered a priority of government, from a transformation, socio-economic and environmental perspective, and they are willing to put resources into developing the sector.
- Growing the biodiversity economy supports South Africa's transition to the Green Economy, job creation and poverty reduction, particularly for rural communities.
- A thriving biodiversity economy encourages entrepreneurs to enter the industry.
- This is a potential economic growth area for South Africa given the advantages offered by its rich biodiversity.
- The sustainable management of land used for bioprospecting and wildlife ranching has the potential to support biodiversity patterns and processes.

This finance solution is based on a complex and broad strategy and plans which are only now being taken through the government endorsement processes. Due to this, the synthesis of this finance solution will not be presented in the same way in the Biodiversity Finance Plan as the other finance solutions have been. More detail is presented here on the context of the biodiversity economy, challenges and initiatives to be taken forward borrowing directly from the content and text in the NBES. DEA is overseeing the implementation of the National Biodiversity Economy Strategy, along with a network of partners. Detailed next steps are captured in the NBES and, and supporting documents on the bioprospecting economy and the wildlife economy, and are not presented here. No estimation of expected financial results for biodiversity protection, management and sustainable use has been made.

4.3.4.1 Context

The biodiversity economy encompasses businesses and economic activities that either directly depend on biodiversity for their core business or that contribute to conservation of biodiversity through their activities. In South Africa, the bioprospecting and wildlife sectors

are considered cornerstones of the biodiversity economy⁵¹. It is believed that the biodiversity economy has not reached its full potential, as it remains largely unrecognised, underdeveloped and untransformed, despite South Africa's incredibly rich diversity of genetic and biological resources. The sustainable use of the country's genetic and biological resources could support local economies and livelihoods, providing business and job creation opportunities for individuals and communities. Growing the biodiversity economy supports South Africa's transition to the Green Economy and supports job creation and poverty reduction, particularly for rural communities. For the biodiversity economy to achieve its full potential, a strategic partnership between the state, private sector and communities is needed.

A National Biodiversity Economy Strategy was completed in July 2017, and is currently being taken through the government approval processes. The Strategy provides a framework until 2030 for the creation and transformation of the bioprospecting and wildlife industries, with the aim of accelerating rural development, improving social well-being and ensuring equitable access and benefit sharing from biological resources. This will be done while maintaining South Africa's ecological resource base, thereby supporting the biodiversity patterns and processes crucial for ecosystem resilience. The NBES sets an industry growth goal that 'by 2030, South Africa should have an inclusive, sustainable and responsive biodiversity economy that grows at 10% per annum, while providing a foundation for social well-being and maintaining the ecological resource base.'

The NBES is based on a nodal approach and identifies Biodiversity Economy Nodes as key mechanism to fast-track transformation within the biodiversity economy sector. Each Biodiversity Economy Node represents an area with exceptional biodiversity and natural assets, includes protected areas and private game reserves, and has a potential for well-developed wildlife and bioprospecting products. A Biodiversity Economy Node should offer a platform that provides networks to enable market access, skills transfer and supply chain linkages for local Small Medium and Micro Enterprises (SMMEs).

The NBES draws on two guiding documents developed with intense stakeholder engagement during 2016 and 2017. One focusses on the bioprospecting economy and the other on the wildlife economy. Five initiatives have been set out for the bioprospecting economy, while the wildlife economy is to be developed through 15 initiatives and six supporting recommendations. The overarching NBES and the two supporting documents provide extensive background information on the sectors, outline key challenges, and detail the initiatives and recommendations that will be required to meet the goals of the NBES. A brief overview of the content of these strategies and the initiatives within them is provided below. The Biodiversity Finance Plan does not go into further detail on this finance solution than this, as it is a vast and complex finance solution, addressed in detail in the NBES and the supporting documents.

⁵¹ The bioprospecting sector includes research on, or development or application of, indigenous biological/genetic resources for commercial or industrial exploitation and includes: the systematic search, collection or gathering of such resources or making extractions from such resources; the utilisation of information regarding any traditional uses of such resources by indigenous communities; and the research on, or the application, development or modification of such traditional uses for commercial exploitation; the trading in and exporting of indigenous biological/genetic resources in order to develop and produce products, such as medicines, industrial enzymes, food flavours, fragrances, cosmetics, colours, extracts and essential oils. The wildlife sector includes live sales of indigenous wildlife; sale of game meat and the hunting industry.

4.3.4.2 The bioprospecting economy: characteristics, challenges and initiatives

South Africa's abundance of natural resources presents tremendous commercial potential from bioprospecting. The sector yields between 15,000 and 20,000 tonnes of plant production a year, 70% of which is exported as raw materials. These raw materials are used to produce end products including cosmetics, complementary medicines, food flavourings and oils.

Current revenue from natural plant resources is estimated to be R0.26 billion a year, revenue from processing and trade is R0.92 billion a year and final products produce revenue of R2.08 billion a year. It is believed that there is potential to increase these figures by an order of magnitude – including through identifying the next “miracle” plant for complementary medicine.

Strategies for developing the bioprospecting economy were developed under the aspiration to ‘develop and improve the bioprospecting industry to create a sustainable, inclusive and commercially viable sector, growing by 10% a year by 2030 and adding 10,000 new jobs to the sector over the same period.’ The following objectives aim to help achieve this aspiration

- **Economic growth:** To increase GDP contribution from R309 million in 2013 to R1.7 billion in 2030; and to grow the number of jobs in the sector from 6,200 to 16,200.
- **Transformation:** To increase community or knowledge holder participation in the bioprospecting/biotrade sector value chain: between 30% and 50% of South African bioprospecting products must have community involvement in the supply chain.
- **Sustainability:** To increase the cultivation of natural ingredients by at least 500 hectares a year.

The main challenges slowing growth in the bioprospecting sector are:

- A limited supply of raw material, due to the dominance of wild harvesting over cultivation.
- A limited demand for indigenous plants and related processed ingredients and products. There are low levels of local value addition and product development in the industry. There is also limited local and international awareness of South African indigenous plants, other than a small number of species.
- National and international regulation related to the sector is complex, costly and cumbersome.
- transformation of the sector is hampered by the lack of participation of communities and traditional knowledge holders in the sector's value chain.

Initiatives for developing the bioprospecting economy

Five key initiatives have been identified to drive growth and provide opportunity in the bioprospecting economy. These are:

- **Initiative 1:** Cultivation of 25 plant species strategically chosen due to their high value and occurrence across South Africa. Crop cultivation is expected to provide employment of up to a thousand jobs per annum.
- **Initiative 2:** Sustainable wild harvesting of seven plant species which will continue to provide livelihoods to harvesting communities. These species are found in seven of the nine provinces.

- **Initiative 3:** Network partnerships between the numerous government departments involved in the strategy and legislation of bioprospecting, bringing together all relevant stakeholders and coordinating the sector. The Bio Products Advancement Network South Africa (BioPANZA) will harness existing initiatives and address the innovation chasm. BioPANZA will span sector development, enterprise development and commercialisation. It will leverage existing resources to prevent additional bureaucracy and limit duplication and spending. The partnership will be hosted at specific institutions or government departments where a full time network manager and program manager would be appointed.
- **Initiative 4:** Regulation and legislation amendments, specifically to the Indigenous Knowledge Bill, National Environmental Management Biodiversity Act, and Bioprospecting Access and Benefit Sharing regulations.
- **Initiative 5:** Permitting efficiency through two measures. Firstly, the number of working days taken to process an application permit are to be reduced from 120 to 60 days. Secondly, DEA and the Department of Science and Technology can identify traditional knowledge in a specified 20 species, thereby easing compliance and eradicating stumbling blocks for applicants.

4.3.4.3 The Wildlife economy: characteristics, challenges and initiatives

South Africa's wildlife sector has been growing consistently faster than the general economy, contributing R3 billion to GDP in 2014 – almost double the contribution made by the sector in 2008. South Africa's National Biodiversity Economy Strategy estimates that the sector's GDP contribution could be R14 billion by 2030. The sector has made substantial contributions to job creation, with an estimated 74,000 jobs in 2014, and an annual growth rate above 6%. There is potential for this to double by 2030.

The wildlife sector can be divide into three sub-sectors, wildlife ranching, wildlife activities, and wildlife products (see Box 13). Wildlife ranching's return on capital has, in many cases, been shown to outperform that of cattle farming in South Africa, particularly in, but not limited to, the grasslands and bushveld biomes. the majority of the land used for wildlife ranching is converted from cattle farming. Extensive land area is covered by wildlife ranching in South Africa, estimated to be around 17 million hectares. If managed well, this land has the potential to contribute substantially to biodiversity patterns and processes.

An aspiration has been set for the wildlife economy of 'An inclusive, sustainable and responsive wildlife economy that grows at 15% a year until at least 2030, while providing a foundation for social well-being and maintaining the ecological resource base.' Three objectives support this aspiration:

- **Economic growth:** Achieve average annual GDP contribution increase of at least 10 percent, and create 100,000 new jobs by 2030
- **Transformation:** Ensure that at least 30% of wildlife businesses are owned by PDI (previously disadvantages individuals); that PDI own at least 5 million ha of land in the sector, and have access to at least another 5 million ha; and ensure that there at least 4,000 PDI-owned SMMEs supported to engage in the wildlife economy
- **Sustainability:** Ensure that at least 5 million ha of non-protected areas contribute towards South Africa's Aichi conservation target, and ensure that there is net growth in the animal population of at least 3.5% a year

A number of challenges to the growth and transformation of the wildlife economy have been identified. These can be grouped into three areas, namely barriers to transformation; the risk of future growth stagnating; and an unsupportive enabling environment.

Barriers to transformation exist with PDI facing insufficient access, ownership and inefficient utilisation of land; a lack of infrastructure development support for entrepreneurs; and high capital costs for land and game. The risk of future growth stagnating is related to the obstacles to PDI discussed above as well as the reputational risk associated with hunting, which could pose a threat to the growth of the whole value chain. Unsupportive enabling environment, including in legislative and regulatory challenges related to wildlife ranching, wildlife activities and wildlife products, as well as market-related challenges.

Box 13: The three subsectors of the wildlife sector (DEA and DT, 2016b)

‘Wildlife ranching. This sub-sector is focused primarily on breeding and live sales, with secondary contributors including translocation services, veterinary services, and fencing and maintenance. The live-sales market alone is estimated to have generated almost R5 billion in sales in 2013. There are an estimated 8,979 wildlife ranches in South Africa, of which approximately half are in Limpopo province. The average wildlife ranch is some 2,100 ha in extent, and wildlife ranching occupies 18.7 million ha of South Africa’s surface area, or 15.3% of the total.

Wildlife activities. This sub-sector is focused primarily on trophy hunting, hunting in order to produce biltong, and wildlife viewing. Secondary contributors include accommodation, transport, equipment and supplies (arms, ammunition, etc.), and taxidermy. Hunting is the largest revenue contributor to the wildlife sector, contributing more than R8.5 billion in 2015 (of which just over R7 billion was from domestic hunters and R1.5 billion from international hunters). Moreover, hunting has seen rapid growth, with revenues doubling since 2007. Around two-thirds of the value of the hunting sub-sector comes from ancillary goods and services such as equipment, transport, accommodation and taxidermy.

Wildlife products. This sub-sector is focused primarily on game-meat processing, skin and hide production, and other products such as curios, jewellery and decorations. Secondary contributors include packaging and transportation. South Africa produced more than 6,000 tons of game meat in 2013, of which two-thirds was for domestic consumption and the remainder exported. Revenues from game meat have grown at an annual rate of 18% since 2008; however, revenues were only R230 million in 2013, less than 2% of the sector’s total. It has estimated that, by 2030, South Africa could produce up to 206,000 tons of game meat a year, driven in part by a projected 50% increase in land available for wildlife ranches. Other wildlife products – including hides and skins, bones and ivory – are a relatively small opportunity.’

Initiatives for the wildlife economy

In support of developing the wildlife economy, 15 initiatives and six recommendations were identified. The initiatives are focussed around three areas: facilitating transformation; driving growth through promoting ‘value’ and products; and creating an enabling environment for the wildlife sector. The six recommendations aim to support these initiatives.

Facilitating transformation:

- **Initiative 1:** Identify and prioritise 10 million ha for transformation of the wildlife economy

- **Initiative 2:** Establish, develop and support new wildlife-ranching entrants, including business set-up support, funding models and game-ownership programmes
- **Initiative 3:** Increase capacity and support for at least 300 community entities including community property agreements (CPAs), trusts and traditional authorities
- **Initiative 4:** Create supply-chain linkages and capacitate 4,000 SMMEs (new and existing) to locally capture the value of ancillary goods and services to the wildlife economy
- **Initiative 5:** Operationalise 11 biodiversity economy nodes that unlock the economic potential of protected and communal areas
- **Initiative 6:** Empower 4,000 emerging entrepreneurs and farmers through focused capacity building programmes

Driving growth through promoting 'value' and products:

- **Initiative 7:** Formalise the SA game market and create a network of game-meat processing facilities
- **Initiative 8:** Implement a campaign that drives participative transformation and consumer growth for wildlife-related activities and products

Creating an enabling environment for the wildlife sector:

- **Initiative 9:** Create an enabling legislative environment through the amendment of the *National Environmental Management: Biodiversity Act*
- **Initiative 10:** Develop and implement wildlife industry standards
- **Initiative 11:** Implement a national wildlife-economy branding scheme, based on sustainability criteria, that allows for consumer choice and incentivises sustainable management
- **Initiative 12:** Develop and implement an electronic system for issuing wildlife permits and a centralised database
- **Initiative 13:** Reposition the Wildlife Forum as an efficient interdepartmental/industry collaboration and co-ordination platform to promote the benefits of the Wildlife Economy
- **Initiative 14:** Provide the knowledge base to support and grow the wildlife economy
- **Initiative 15:** Leverage protected areas to unlock economic potential

Recommendations:

- **Recommendation i:** Develop a toolkit of effective wildlife business, stewardship and partnership models
- **Recommendation ii:** Promote sustainable use as a foundation for conservation and growth of biodiversity economy
- **Recommendation iii:** Develop a strategic marketing campaign and value proposition for mixed game and livestock systems
- **Recommendation iv:** Establish mechanisms to allow for holistic and integrated management of animal health and conflict issues at the livestock–wildlife interface
- **Recommendation v:** Develop norms and standards to manage and mitigate risks to the wildlife economy
- **Recommendation vi:** Develop, upskill and resource extension services to facilitate the growth of the wildlife economy

4.3.4.4 Key stakeholders for implementing the Biodiversity Economy Strategy

Implementing the Biodiversity Economy Strategy requires effort and coordination of a wide range of stakeholders. Many government players will need to work together, including the national Departments of Environmental Affairs; Trade and Industry; Science and Technology; Agriculture, Forestry and Fisheries; Rural Development and Land Reform; Tourism; Economic

Development; and Small Business Development. This sector also includes provincial government departments and conservation agencies, and local municipalities. It will also need the engagement of SANBI; academic institutions; research councils such as the CSIR, South African Medical Research Council (SAMRC); and the Agricultural Research Council (ARC). NGOs; CBOs and communities are important to this work, as is the private sector, including businesses; banks; public-private partnerships (PPPs); entrepreneurs and venture capitalists.

5 CONCLUSION AND RECOMMENDATIONS

The long-standing financial challenges facing biodiversity conservation are clear. In addition, at least in the short term, the biodiversity sector is facing downward pressures on its government budget allocations due to national fiscal constraints. Fortunately, South Africa has been a leader in designing and piloting numerous innovative solutions that hold the potential to substantially shift the resource envelop for the biodiversity agenda. This Plan adds to the existing efforts of the biodiversity sector and its partners by:

- Taking a more comprehensive approach to biodiversity finance to generate compelling cross-sectoral arguments;
- Suggesting forward-looking options for each prioritized solution under an outcome oriented approach that links solutions with national biodiversity priorities, expenditures patterns and financial needs;
- Identifying synergies among the different players and solutions to establish an enabling environment for joint action and coordination.

The Plan sets out a programme of work that can be implemented by a range of actors over a number of years. An analysis of 12 of the 16 finance solutions featured in this Plan estimated a net financial gain of R16.25 billion over 10 years. The role of the government in coordinating and shaping the biodiversity finance agenda features strongly. For the majority of solutions, the government would need to take the lead, specifically DEA, SANBI, SANParks and provincial conservation authorities. Despite the critical role of public finance, the Plan also explores substantial opportunities for the government to leverage private resources and mobilize private actors and NGOs' own solutions.

The implementation of the Plan will require a wide range of technical capacities from multiple institutions and stakeholders. To achieve synergies and cost-effectiveness these efforts will require the coordination of a wider group of government agencies and departments, civil society, private sector and development partners. The intention is for the biodiversity sector and other key parties to own the Plan and work together in its implementation. Furthermore, the effectiveness of a number of the finance solutions is dependent on enabling conditions within the sector. It is critical that adequate attention is paid to enabling conditions and programmes. In addition, there are complementary initiatives that should be linked with the implementation of the Plan, such as the important ongoing work on natural capital accounting, happening at a national and international level.

Each finance solution contains suggested broad next steps, often including further consultation with stakeholders and detailed planning as initial steps. To optimise the prospects of the overall Plan, and to foster synergies in implementation, the following recommendations should be considered:

- Using existing or new coordination mechanisms to monitor the advancement of the Plan, achieve synergies and mobilize support across the different solutions.
- Identifying options to define and institutionalize the 'sustainable finance' function within the biodiversity sector, including a coordination role and enhanced capacities across participating organizations and individuals.
- Providing support for the implementation of the solutions that need it the most, drawing on BIOFIN and other available resources.

The validation and monitoring of the Plan should be coordinated by DEA and the Department of Planning, Monitoring and Evaluation (DPME) using existing or new coordination and collaboration fora.

The BIOFIN project itself currently has resources to continue until December 2018. The focus of BIOFIN now will be to drive and support the implementation of the Biodiversity Finance Plan. Given the limited timeframe and budget of BIOFIN, a subset of finance solutions will be selected to be driven specifically by BIOFIN and receive BIOFIN funding. This is appropriate, as a number of the finance solutions are already being driven and funded by other actors. BIOFIN will also have an important role to play in coordinating and monitoring the implementation of the Biodiversity Finance Plan, and providing technical input as appropriate to finance solutions that are not directly driven by BIOFIN. As a project implemented by DEA, it is envisaged that, as BIOFIN draws to an end, the important programme of work undertaken by BIOFIN will be incorporated into DEA's on-budget programming.

6 REFERENCES

- Adekola, O., Morardet, S., De Groot, R. and Grelot, F. (2008). The economic and livelihood value of provisioning services in the Ga-Mampa wetland, South Africa. IWRA World Water Congress, Montpellier, France September 2008. 24 p.
- Allsopp, M.H., De Lange, W.J. and Veldtman, R. (2008). Valuing insect pollination services with cost of replacement. *PLOS One*, 3: e3128.
- BBOP (Business and Biodiversity Offsets Programme). 2012. Biodiversity Offset Design Handbook Updated. BBOP, Washington, D.C. http://bbop.forest-trends.org/guidelines/Updated_ODH.pdf.
- Blignaut, J., Marais, C., Rouget, M., Mander, M., Turpie, J., Klassen, T. and Preston, G. (2008). Making markets work for people and the environment: employment creation from payment for ecosystem services, combating environmental degradation and poverty on a single budget while delivering real services to real people. *Second Economy Strategy: Addressing IneHey in the high rainfall catchments and riparian zones of South Africa on total surface water yield*. *Water SA*, 22: 35-42.
- Botha, M. 2016. Calculating Penalties under S24G of NEMA: Opinion. Report prepared for the Centre for Environmental Rights (CER). CER, Cape Town.
- Cadman, M., C. Petersen, A. Driver, N. Sekhran, K. Maze and S. Munzhedzi. 2010. Biodiversity for Development: South Africa's landscape approach to conserving biodiversity and promoting ecosystem resilience. South African National Biodiversity Institute, Pretoria.
- CBD (Convention on Biological Diversity). 2009. Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change. Montreal, Technical Series No. 41.
- CDM Pipeline. 2015. United Nations Environment Programme. Available at: <http://www.cdmpipeline.org/> Date Accessed: 4 July 2015.
- Cumming, T. 2012. Technical input: SA TEEB Planning for Phase II. Report submitted 9 July 2012.
- Cumming, T. 2013. Review of fiscal incentives for biodiversity and ecosystem services in South Africa. Report prepared as part of the ProEcoServ project. ProEcoServ, CSIR, Pretoria.
- Cumming, T. 2015. Biodiversity Finance Initiative South Africa: Inception report. Department of Environmental Affairs and UNDP South Africa. Unpublished.
- Cumming, T.L., Shackleton, R.T., Johannes Förster, J., Dini, J. Kahn, A., Gumula, M., Kubiszewski, I. 2017. "Towards achieving the South African national development agenda and the Sustainable Development Goals (SDGs) through investment in ecological infrastructure". *Ecosystem Services Journal*.
- DTC (Davis Tax Committee). 2015. First Interim Report on Carbon Tax for the Minister of Finance. DTC, Pretoria.

- De Lange, W.J. and B.W. van Wilgen. 2013. An economic assessment of the contribution of biological control to the management of invasive alien plants and to the protection of ecosystem services in South Africa. *Biological Invasions*, 12: 4113-4124.
- DEA (Department of Environmental Affairs). 2010. National Protected Area Expansion Strategy 2008. Department of Environmental Affairs, Pretoria.
- DEA (Department of Environmental Affairs). 2010a. Review of Institutional Arrangements for Management of Protected Areas. Prepared by Linkd Environmental Services for the Department of Environmental Affairs, Pretoria.
- DEA (Department of Environmental Affairs). 2012. State of Play: Baseline Valuation Report on Biodiversity and Ecosystem Services. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2013. Long-Term Adaptation Scenarios Flagship Research Programme (LTAS) for South Africa. Summary for Policy-Makers. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2014. South Africa's Fifth National Report to the Convention on Biological Diversity. Department of Environmental Affairs, Pretoria.
- DEA (Department of Environmental Affairs). 2014a. South Africa's Greenhouse Gas (GHG) Mitigation Potential Analysis. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2015. Sustainable Financing Framework for Management Authorities of State Managed Protected Areas. Prepared by Linkd Environmental Services for the Department of Environmental Affairs, Pretoria.
- DEA (Department of Environmental Affairs). 2015a. The National Terrestrial Carbon Sinks Assessment (NTCSA). DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2015b. The National Terrestrial Carbon Sinks Assessment (NTCSA) Development of potential verification standards and methodologies for carbon offset projects in the AFOLU sector in South Africa. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2015c. National Environmental Compliance and Enforcement Report (NECER) 2014 - 2015. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2015d. South Africa's 2nd National Biodiversity Strategy and Action Plan 2015 - 2025. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2015e. Biodiversity Economy Strategy. Department of Environmental Affairs, Pretoria. Government Gazette No. 39268, October 2015.
- DEA (Department of Environmental Affairs). 2016. Biodiversity Finance Initiative - South Africa: Biodiversity Expenditure Review. Final Report, written by Juan Bester. Department of Environmental Affairs, Pretoria.
- DEA (Department of Environmental Affairs). 2016a. Biodiversity Finance Initiative South Africa: Biodiversity Finance Needs Assessment. Final Report, written by Anthea Stephens, Aimee Ginsburg and Tracey Cumming. Department of Environmental Affairs, Pretoria.

- DEA (Department of Environmental Affairs). 2016b. Draft National Policy on Biodiversity Offsets. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2016c. National Protected Areas Expansion Strategy for South Africa 2016. Prepared by Holness, S., Skowno, A., Jackelman, J. & Balfour, D. for the Department of Environmental Affairs, Pretoria, South Africa.
- DEA (Department of Environmental Affairs). 2016d. National Environmental Management: Protected Areas Act, 2003 Compliance Monitoring Report 2015 - 2016. Prepared by the Directorate: Protected Area Planning, Legislation, Compliance and Monitoring. DEA, Pretoria.
- DEA (Department of Environmental Affairs). 2017. National Biodiversity Economy Strategy. Department of Environmental Affairs, Pretoria, South Africa.
- DEA (Department of Environmental Affairs) and DT (Department of Tourism). 2016a. Biodiversity Lab: Bioprospecting: Summary Report. Draft. Department of Environmental Affairs, Pretoria, South Africa.
- DEA (Department of Environmental Affairs) and DT (Department of Tourism). 2016b. Wildlife Economy Lab Executive Summary Report. Draft. Department of Environmental Affairs, Pretoria, South Africa.
- DEA&DP (Department of Environmental Affairs and Development Planning) of the Western Cape. 2007. Provincial Guideline on Biodiversity Offsets. DEA&DP, Cape Town.
- De Wit, M., H.W. van Zyl, J. Blignaut, D. Crookes, T. Jayiya, V. Goiset and B. Mahumani. 2009. Investing in Natural Assets: A Business Case for the Environment in the City of Cape Town. Report prepared for the City of Cape Town, Environmental Resource Management Department.
- DPME (Department of Planning, Monitoring and Evaluation). 2015. Socio-Economic Impact Assessment System (SEIAS) Guidelines. DPME, Pretoria.
- Driver A., Sink, K.J., Nel, J.N., Holness, S., Van Niekerk, L., Daniels, F., Jonas, Z., Majiedt, P.A., Harris, L. and Maze, K. 2012. *National Biodiversity Assessment 2011: An assessment of South Africa's biodiversity and ecosystems*. Synthesis Report. South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria.
- DWS (Department of Water and Sanitation). 2015. Revision of the Pricing Strategy for Water Use Charges in terms of Section 56(1) of the National Water Act, 1998. Notice 1154 of 2015 in Government Gazette No. 39411, 13 November 2015.
- EKZNW (Ezemvelo KwaZulu-Natal Wildlife). 2012. An assessment of the economic value of biodiversity to the province of KwaZulu-Natal, South Africa. Ezemvelo KZN Wildlife. Scientific Services Technical Report: Series 2012: 1.
- EKZNW (Ezemvelo KwaZulu-Natal Wildlife). 2013. Concise Guideline: Biodiversity Offsets in KwaZulu-Natal. Ezemvelo KZN Wildlife, Durban.
- EKZNW (Ezemvelo KwaZulu-Natal Wildlife). 2015. Annual Integrated Report 2015/16. Ezemvelo KZN Wildlife, Durban.

- FFC (Financial and Fiscal Commission). 2006. Review of Transfers in the Intergovernmental Fiscal Relations System in South Africa: Research Reports in support of the FFC submission for the Division of Revenue 2007/08. FFC, Midrand.
- FFC (Financial and Fiscal Commission). 2013. Evolution of Conditional Grants: Research Reports in support of the FFC submission for the Division of Revenue 2014/15. FFC, Midrand.
- Giordano, T., Blignaut, J. and Marais, C. 2012. Natural resource management — an employment catalyst: The case of South Africa. Development Bank of Southern Africa, Development Planning Division Working Paper Series No. 33. DBSA, Midrand.
- Hollingworth, B., Koch, P., Chimuti, S. and Malzbender, D. 2011. An investigation into the water infrastructure development financial allocation pathways in municipalities. Water Research Commission Report No. TT 476/10. WRC, Pretoria.
- Kross, S.M., Tylianakis, J.M. Nelson, X.J. (2011). Effects of introducing threatened falcons into vineyards on abundance of Passeriformes and bird damage to grapes. *Conservation Biology*, 26: 142-149.
- Lannas, K.S.M. and Turpie, J.K. (2009). Valuing the provisioning services of wetlands: contrasting a rural wetland in Lesotho with a peri-urban wetland in South Africa. *Ecology and Society*, 14: 18. Online <http://www.ecologyandsociety.org/vol11/iss2/art18/>
- Le Maitre, D.C., Forsyth, G.G., Dzikiti, S. and Gush, M.B. 2016. Estimates of the impact of invasive alien plants on water flows in South Africa. *Water SA*, 42(4):659-672.
- LTAC (Land Trust Accreditation Commission). 2015. Accredited Land Trusts & Statistics (Online). Available: <http://www.landtrustaccreditation.org/about/accredited-land-trust-statistics> [Accessed 01-11-2016].
- Mills, A.J. and Cowling, R.M. (2006). Rate of carbon sequestration at two thicket restoration sites in the Eastern Cape, South Africa. *Restoration Ecology*, 14: 38-49.
- NT (National Treasury). 2013. Provincial Budgets and Expenditure Review: 2010/11 – 2016/17. NT, Pretoria.
- NT (National Treasury). 2013. Water Sector Value Chain Pricing Research. NT, Pretoria.
- NT (National Treasury). 2015. Process and structures for the 2016 budget. NT, Pretoria.
- NT (National Treasury). 2016. Technical Guidelines for the 2017 Medium Term Expenditure Framework. NT, Pretoria.
- NT (National Treasury). 2016a. Estimate of National Expenditure (ENE) 2016. NT, Pretoria.
- NT (National Treasury). 2016b. Division of Revenue Bill for the 2016/17 financial year. NT, Pretoria.
- NT (National Treasury). 2016c. Draft regulations: carbon offsets. publication of proposed regulations made in terms of clause 20(b) of the draft carbon tax bill, 2015. NT, Pretoria.
- NT (National Treasury). 2016d. Budget Review 2016. NT, Pretoria.

NT (National Treasury). 2017. Budget Review 2017. NT, Pretoria.

Nel, J.L., LE Maitre, D.C., Nel, D.C., Reyers, B., Archibald, S., van Wilgen, B.W., Forsyth, G.G., Theron, A.K., O'Farrell, P.J., Kahinda, J.M., Engelbrecht, F.A., Kapangaziwiri, E., van Niekerk, L. and Barewill, L. (2014). Natural hazards in a changing world: A case for ecosystem based management. PLoS ONE, 9(5): e95942 doi:10.1371/journal.pone.0095942.

Oberholster, P.J., Botha, A.M. and Cloete, T.E. 2008. Biological and chemical evaluation of sewage pollution in the Reitveli nature reserve wetland area, South Africa. Environmental Pollution, 156: 184-192.

Oberholzer, S., M. Saayman, A. Saayman and E. Slabbert. 2010. The socio-economic impact of Africa's oldest marine park. Koedoe 52(1), Art. #879, 9 pages. DOI: 10.4102/koedoe.v52i1.879

Potter, L. 2004. Raptors for rodent control: is the Barn Owl a viable control agent for pest rodents on South African farmlands? MSc Thesis, University of Cape Town: Cape Town.

Promethium Carbon. 2014. Carbon trading in South Africa: Trading offsets against the proposed carbon tax. Report to the British High Commission, Pretoria.

Promethium Carbon. 2015. A National Climate Change Monitoring and Evaluation system of the AFOLU Sector: A study to inform design, development and implementation. Report to the Department of Environmental Affairs, Pretoria.

Purnell, A. and A. Mills. 2016. Eco-Invest Phase III Pilot Projects: Carbon Sequestration using Spekboom. Report commissioned by the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), Cape Town.

Saayman, M., A. Saayman, and M. Ferreira. 2009. The socio-economic impact of the Karoo National Park. Koedoe 51(1), Art. #158, 10 pages. DOI: 10.4102/koedoe.v51i1.158.

Saayman, M., Rossouw, R. and Saayman, A. 2012. Does Conservation Make Sense to Local Communities. Development South Africa, 29(4).

Saayman, M., A. Saayman, and R. Rossouw, 2013. The socio-economic impacts of the Table Mountain National Park. Journal of Economic and Financial Sciences July 2013 6(2), pp. 439-458.

SANBI (South African National Biodiversity Institute). 2013. Life: the state of South Africa's biodiversity 2012. South African National Biodiversity Institute, Pretoria.

SANBI (South African National Biodiversity Institute). 2013a. Mainstreaming Biodiversity into Land Use Regulation and Management at the Municipal Scale: Project Document. Report compiled by SANBI and partners for the GEF/UNDP. South African National Biodiversity Institute, Pretoria.

SANBI (South African National Biodiversity Institute). 2014. A Framework for Investing in Ecological Infrastructure in South Africa. Developed by: Tracey Cumming, Amanda Driver, Mark Botha, Jeffery Manuel, John Dini, Anthea Stephens. South African National Biodiversity Institute, Pretoria.

- SANBI (South African National Biodiversity Institute). 2015. The Business Case for Biodiversity Stewardship. A report produced for the Department of Environmental Affairs. Developed by Cumming, T., A. Driver, P. Pillay, G. Martindale, K. Purnell, K. McCann and K. Maree. South African National Biodiversity Institute, Pretoria.
- SANParks (South African National Parks). 2013. Improving Management Effectiveness of the Protected Area Network: Project Document. Report compiled by SANParks and partners for the GEF/UNDP. SANParks, Pretoria.
- SANParks (South African National Parks). 2016. SANParks Strategic Plan 2016/2017 to 2019/2020. SANParks, Pretoria.
- Shackleton, C. and Shackleton, S. 2004. The importance of non-timber forest products in rural livelihoods security and as safety nets: a review of evidence from South Africa. *South African Journal of Science*, 100: 658-664.
- Shackleton, C.M., Shackleton, S.E., Buiten, E. and Bird, N. 2007. The importance of dry woodlands and forests in rural livelihoods and poverty alleviation in South Africa. *Forest Policy and Economics*, 9: 588-577.
- Shackleton, C., Shackleton, S., Gambiza, J., Nel, E., Rowntree, K. and Urquhart, P. 2008. Links between ecosystem services and poverty alleviation: Situation analysis for arid and semi-arid lands in southern Africa. *Ecosystem Services and Poverty Reduction Research Programme: DIFD, NERC, ESRC*.
- Sims-Castley, R., Kerley, G.i.H., Geach, B. and Langholz, J. (2005). Socio-economic significance of ecotourism-based private game reserves in South Africa's Eastern Cape province. *Parks*, 1: 6-18.
- Standish, B., A. Boting, H. van Zyl, T. Leiman and J. Turpie. 2004. The Economic Contribution of Table Mountain National Park. Report to SANParks. UCT Graduate School of Business and partners, Cape Town.
- Statistics SA. 2016. Tourism Satellite Account for South Africa, final 2013 and provisional 2014 and 2015. Statistics South Africa, Pretoria. <http://www.statssa.gov.za/publications/Report-04-05-07/Report-04-05-072015.pdf>
- Statistics SA. 2016a. Financial Census of Municipalities, June 2015 (P9114). Statistics South Africa, Pretoria. http://www.statssa.gov.za/?page_id=1854&PPN=P9114
- Taylor, W.A., Lindsey, P.A. & Davies-Mostert, H. 2015. An assessment of the economic, social and conservation value of the wildlife ranching industry and its potential to support the green economy in South Africa. The Endangered Wildlife Trust, Johannesburg.
- TEEB (The Economics of Ecosystems and Biodiversity). 2013: Guidance Manual for TEEB Country Studies. Version 1.0.
- Turpie, J.K., B. Clark, and K. Hutchings. 2006. The economic value of Marine Protected Areas along the Garden Route Coast, South Africa, and implications of changes in size and management. Report by Anchor Environmental to the World Wide Fund for Nature (WWF). Anchor Environmental, Cape Town.

- Turpie, J.K., J. Barnes, G-M. Lange and R. Martin. 2010. The Economic Value of Namibia's Protected Area System: A Case for Increased Investment. Report commissioned by the Ministry of Environment and Tourism (MET) with funding from the UNDP/GEF supported Strengthening the Protected Area Network (SPAN) MET, Windhoek, Namibia.
- Tutu, H., McCarthy, T.S. and Cukrowska, E. 2008. The chemical characteristics of acid mine drainage with particular reference to sources, distribution and remediation: The Witwatersrand basin, South Africa as a case study. *Applied Geochemistry*, 23: 3666-3684.
- UNDP (United National Development Programme). 2013. Project Document for securing multiple ecosystems benefit through SLM in the productive but degraded landscapes of South Africa. UNDP Environmental Finance Services. UNDP, Pretoria.
- UNDP (United National Development Programme). 2014. The BIOFIN Workbook: A Tool to Mobilize Financial Resources for Biodiversity and Development. United Nations Development Programme: New York. Available at www.biodiversityfinance.net.
- UNDP (United National Development Programme). 2016. The 2016 BIOFIN Workbook: Mobilizing Resources for Biodiversity and Sustainable Development. United Nations Development Programme: New York. Available at www.biodiversityfinance.net.
- Van Zyl, H.W. 2014. The Economic Value and Contribution of Simon's Towns Penguin Colony. Report prepared for The City of Cape Town. Independent Economic Researchers, Cape Town.
- Van Zyl, H.W. 2015. The Economic Value and Potential of Protected Areas in Ethiopia. Report prepared for The Sustainable Development of the Protected Areas System of Ethiopia (SDPASE) project and the Ethiopian Wildlife Conservation Authority (EWCA). Independent Economic Researchers, Cape Town.
- Vermaak, J. and van Niekerk, D. 2004. Development debate and practice. Disaster risk reduction initiatives in South Africa. *Development Southern Africa*, 21: 555-574.
- Western Cape Government (WCG). 2017. Biodiversity Economy Programme 2017 – 25. Department of Environmental Affairs and Development Planning. Cape Town. South Africa.

7 APPENDICES

Appendix 1: Stakeholder engagement

Attendees of National Stakeholder Workshop on the Biodiversity Finance Plan, 4 August 2016, Kirstenbosch, Cape Town:

| Name | Organisation |
|------------------|--------------------------------------|
| Amrei von Hase | Forest Trends |
| Bev Geach | Eastern Cape Parks and Tourism Board |
| Dale Wright | Birdlife South Africa |
| James Reeler | WWF |
| Juan Bester | Public Finance Management Consultant |
| Kerry Maree | WWF |
| Kevin McCann | Wildlands Conservation Trust |
| Louis Look | MTPA |
| Lucia Motaung | DEA |
| Maria Mbengashe | UNDP |
| Marlene Laros | Western Cape: DEADP |
| Natasha Wilson | SANBI |
| Pamela Kershaw | DEA |
| Pravin Pillay | EKZNW |
| Sam Maluleka | Mpumalanga Province |
| Santhuri Naidoo | DEA |
| Sarah Polonsky | DEA |
| Sarshen Scorgie | Conservation South Africa |
| Shela Patrickson | WWF |
| Tertius Carinus | SANParks |
| Wilma Lutsch | DEA |

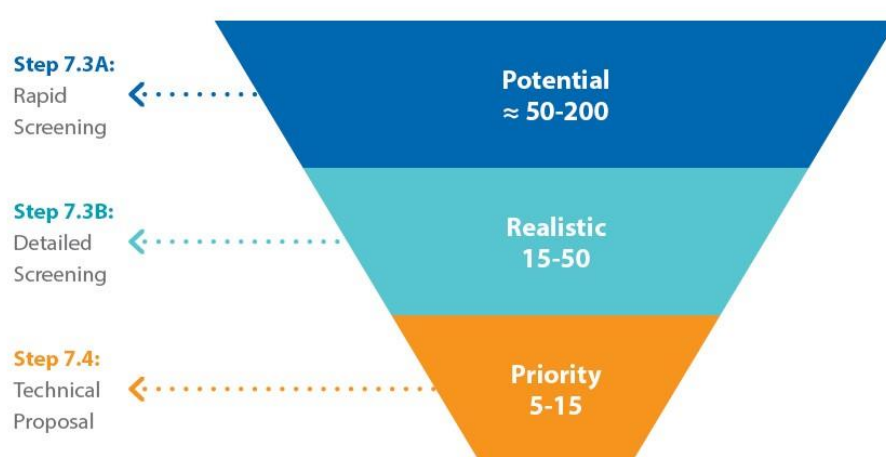
One-on-one engagements on specific finance solutions:

| Name | Organisation |
|-------------------|-------------------------|
| Amrei von Hase | Forest Trends |
| Andrew Baxter | WWF-SA |
| Anthony Mills | C4 Eco-solutions |
| Barney Kgope | DEA |
| Brad Poole | Peace Parks Foundation |
| Candice Stevens | Birdlife Africa |
| Caroline Petersen | Independent consultant |
| Christo Marais | DEA-NRM |
| Deborah Ramalope | DEA |
| Denise Mager | JAYMAT Enviro Solutions |
| Frances Craigie | DEA |
| Helen Gordon | WWF-SA |
| James Reeler | WWF-SA |
| Jeanetta Selier | SANBI |
| Jo Shaw | WWF-SA |

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|----------------------|--|
| John Dini | SANBI |
| Kerry Maree | WWF: TMF |
| Lizanne Nel | South African Hunters and Game Association |
| Madgel Boshoff | DEA |
| Mark Jardine | DEA |
| Matthew Norval | Wilderness Foundation |
| Robyn Hugo | Centre for Environmental Rights (CER) |
| Roland Vorwerk | DEA |
| Ronette Engela | Government Technical Advisory Centre (GTAC) at National Treasury |
| Shela Patrickson | WWF-SA |
| Sheraaz Ishmail | CapeNature |
| Stephen Wetmore | WWF-SA |
| Susie Brownlie | Independent consultant |
| Tarryn Rossenrode | WWF: Lesley Hill Succulent Karoo Trust |
| Thea Carroll | DEA |
| Wadzi Mandivenyi | DEA |
| Wendy Jutzen-Davids, | SANParks Table Mountain National Park |

The broad approach used for the identification of priority financial solutions is outlined in the Figure below. To start with, an initial list of potential solutions was generated. This list was necessarily relatively long to ensure high levels of completeness. The initial list was then subjected to two rounds of screening to arrive at priority solutions.

Figure 7-1: BIOFIN screening steps to prioritise finance solutions



The identification of the initial list of potential solutions was a largely iterative process and was based on:

- A review of key documents and initiatives focused on biodiversity finance or with potential relevance in this regard.
- International sources for comparison including check-lists of finance solutions generated through the BIOFIN project.
- Inputs from experts and key stakeholders, the Steering Committee and Technical Reference Group.
- Internal discussion and debate within the BIOFIN team often drawing on the above.

This resulted in a relatively extensive list of 62 solutions briefly described in Table 7-1 at the end of this Appendix. These potential solutions were then subjected to initial screening guided by scores, between 0 and 4, assigned to them for the following equally weighted criteria:

- Potential for biodiversity impact.
- Scale of financial opportunity.
- Political acceptability and likelihood of success.

Applying a hurdle score of 9 out of a possible maximum of 12 reduced the initial list of 62 potential solutions to 24 solutions considered more realistic. These were subjected to further feasibility assessment, inputs were again provided by the project Technical Reference Group, Steering Committee and stakeholders (primarily at the National Stakeholder Workshop) and a final round of screening using the following more detailed considerations was carried out based on the following questions:

- Will the solution generate, leverage, save, or realign a large volume of resources?
- Will the financing sources be stable and predictable?

Do the persons or entities paying have a willingness and ability to pay?
Are there significant financial risks? E.g. exchange rate, lack of investors, etc.
Are start-up costs onerous?
Does the solution address market failures?
Will the financing allocations remain targeted towards biodiversity over time?
Are there risks to biodiversity created by the solution? If yes, how challenging would it be to create adequate safeguards?
Will there be positive socio-economic impacts?
Is there significant risk of unintended negative social consequences?
Will the solution be viewed as equitable and will there be fair access to the solution?
Is the solution backed by political will?
Is there strong buy-in from key actors and stakeholders?
Do the managing actors have sufficient capacity to lead the process? Or can they rapidly acquire it?

Is the solution legally feasible? How challenging will the legal requirements be?
Is the solution coherent with existing mechanisms and institutional architecture, can synergies be achieved?

This resulted in the list of 16 priority solutions shown below in Table 7-1 and at the beginning of Section 2.3.

Table 7-1: Initial list of potential finance solutions

| Nr | Solution type | Name of solution | Description |
|----|-------------------|---|---|
| 1 | Making the case | Increased focus on making the case for greater government funding allocations to biodiversity conservation and ecological infrastructure in general | In order to attract funding, biodiversity conservation needs to be able to compete with alternative uses of funding particularly in a government budgeting setting. There is thus a need to make the case for increasing (or in some cases maintaining) funding drawing on scientific, socio-economic, cultural and other arguments and metrics. |
| 2 | Making the case | Increased focus on making the case for greater government funding allocations to protected areas | In order to attract funding, protected areas needs to be able to compete with alternative uses of this funding particularly in a government budgeting setting. There is thus a need to make the case for increasing (or in some cases maintaining) funding drawing on scientific, socio-economic, cultural and other arguments and metrics. |
| 3 | Government grants | Increased use of existing government grants and funds for ecological infrastructure investments | Existing government grants and funds are available for infrastructure and other purposes (e.g. Municipal Infrastructure Grant, Jobs Fund, etc.). These could be tapped more effectively particularly for ecological infrastructure projects which can be bundled with other hard infrastructure projects (e.g. including a catchment restoration and management component in water infrastructure projects like dams) |
| 4 | Government grants | Introduction of conditional government grant funding in support of protected areas | Conditional grants are used by Treasury to fund specific projects directly that are seen as a priority and/or are not well covered by general government allocations through the equitable share (i.e. allocations to provinces which in turn allocate them to their departments and agencies). There may be potential for such a grant to support protected areas that are not given a high enough priority particularly by the provincial environment departments that allocated funds to them. |
| 5 | Government grants | Adjustment of the equitable share formula to include consideration of conservation mandate/costs of provinces | Treasury use the 'equitable share' formula in order to allocate budget to provinces. This formula is driven primarily by socio-economic variables such as population numbers. It may, however, be worth lobbying for it to also include a reflection of a province's responsibilities in biodiversity or natural resource management. A changed formula may increase funds but once these funds are allocated they are not conditional so it is not clear how they can be ring-fenced for conservation? However, if conservation worthiness plays a role in fund allocations this will probably raise awareness that conservation has a value which may have positive outcomes. |

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| 6 | Tax incentives | Support for landowners wishing to have their land declared formally protected to access the associated income tax deduction incentives | Income tax deduction incentives are available to landowners who own conservation worthy land and go through the process of attaching a statutory conservation status to their land. This process of declaration and accessing tax incentives is, however, relatively onerous. There is thus a need to assist landowners in this regard through projects such as the one being run by BirdLife Africa which is focused on this issue. |
| 7 | Tax incentives | Lobbying for further income tax deduction incentives for landowners that set land aside for formal conservation | Currently landowners are allowed to claim ongoing expenses associated with the management of formally conserved land up to a maximum of 10% of their taxable income as per Section 18A of the Income Tax Act which deals with deductions allowed for donations. There may be potential to lobby for this cap to be removed for ongoing management expenses thereby allowing full deductibility. |
| 11 | Tax incentives | Reform of property rates law and application as it relates to PAs / stewardship sites | Section 17(1)(e) of the Municipal Property Rates Act states that a municipality may not levy a rate on “those parts of a special nature reserve, national park or nature reserve within the meaning of the Protected Areas Act, ..., which are not developed or used for commercial, business, agricultural or residential purposes”. The intention of this condition was to exclude the rating of the bulk of a property that is used for conservation purposes, but to still rate those portions of the property that are clearly not used for conservation purposes (for example, a game lodge). However, there are instances where the Act is not being implemented in this spirit resulting in unfair rates burdens on SANParks, the provincial conservation authorities, Botanical Gardens (SANBI) and all stewardship PAs, potentially. This needs to be remedied |
| 8 | Tax incentives | Use of property rates to further incentivise stewardship. | Municipalities have the scope to develop biodiversity related rebates, exemptions or revaluations as part of their property rates policies. Three municipalities in South Africa are known to have done this. All three of these are large metropolitan municipalities most likely because metropolitan municipalities have the capacity to implement some form of biodiversity conservation programme with landowners and given the complexity of implementing such a system. |
| 9 | Conservation trust funds | Introduction of national and/or provincial revolving land trust run by a PBO | A revolving land trusts could use trust monies (usually from donations) to buy conservation-worthy land, restore it if needed potentially using other sources of funding, go through the process of having it declared before selling it on to buyers interested in conservation properties allowing for the re-capitalisation of the trust for use in further transactions. The potential for such funds is dependent on the presence of well-functioning state conservation agencies and stewardship programmes. |
| 10 | Non-government grants | Greater non-government funding and implementation of stewardship programmes | NGOs are currently supporting stewardship programmes primarily indirectly through in-kind contributions and other assistance (e.g. legal assistance). There could be potential to increase this support. |

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| 12 | Private sector investment | Increased use of land user incentives in the Natural Resources Management (NRM) programme | The NRM programme currently has a landowner incentives programme which reduces the overall cost of alien plant clearing generally by between 25% and 35% through landowners' contributions. Currently roughly 10% of clearing on privately owned land occurs through this programme and there is potential to further increase its use. |
| 14 | Private sector investment | Increased revenue for the Natural Resources Management (NRM) programme from value-add industries | Value-added products from alien invasives such as furniture are currently being produced on a relatively small scale. There may be potential to increase production. Alien invasives also represent a highly significant source of biomass which could be used for making charcoal, generating energy. Such uses have not, however, emerged at scale indicating that state support is needed in order to catalyse this market opportunity. |
| 13 | Private sector investment | Amend EPWP strictures to increase focus on environmental/biodiversity outcomes and public good, in addition to job opportunities | The NRM programmes draw their funding from the EPWP which is essentially a job creation programme. The primary emphasis in the NRM programmes is therefore on maximising and geographically spreading job opportunities. There should, however, be ways of achieving job outcomes whilst also ensuring that biodiversity outcomes are given greater emphasis. |
| 15 | Sector mainstreaming | Water pricing reform to ensure that a small portion of water sales revenues provide a sustainable source of funding for IAP clearing, riparian and wetland restoration | Revenue from water sales represents a potentially highly significant dedicated source of funding for water catchment management activities such as alien plant clearing and restoration. As a starting point, this would require appropriate changes to the Water Pricing Strategy, promulgated by the Department of Water and Sanitation, which would allow for a portion of water sales revenue to be dedicated to these activities. |
| 16 | PAs own revenue | Increased revenue retention in conservation authorities | Revenue retention by protected areas should incentivise protected area management/staff to increase their revenue collection efforts (and potentially also to control costs more carefully) as it would for most institutions operated as businesses. However, this assumes that increased commercial revenue will not simply result in a concomitant decreases in government grant allocations. If such decreases occur, the potential incentivising effect is diluted. Clear incentive effects are also more likely if the individual staff members involved will gain some form of tangible personal benefit from their actions to increase revenue. |
| 17 | PAs own revenue | Streamlining processes (e.g. marketing, bookings) | There may be opportunities to institute streamlining measures for PAs such as shared online booking systems or centralized marketing support as noted in the DEA Protected Areas Sustainable Financing Framework |
| 18 | PAs own revenue | Increased own/commercial revenue generation for PAs | There are a number of opportunities for increased commercial revenue generation by PAs. The main opportunities listed below are also highlighted in the DEA Protected Areas Sustainable Financing Framework. In most cases there is a high level of variability in the availability of these opportunities per region (and for individual PAs) and in the ability of the different conservation authorities to take advantage of them. |

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| 19 | PAs own revenue | | Increased and better use of Public Private Partnerships (PPPs) to attract private sector investments in high-quality tourism facilities and services that complement the offerings of MAs (e.g. high-end luxury lodges through PPPs and low to middle income camps to be run by the MA) |
| 20 | PAs own revenue | | Adjusting/increasing tourism-related charges for accommodation, shops/kiosks, tours or other activities offered by MAs. |
| 21 | PAs own revenue | | Increased and/or stratified conservation fees (i.e. gate fees) |
| 22 | PAs own revenue | | Increased use of resource use fees for game, wood, plants, bioprospecting, etc. |
| 23 | PAs own revenue | | Increased use of venue hire/rental or event charges |
| 24 | PAs own revenue | | Adjusted/increased filming and professional photography charges |
| 25 | Benefit sharing | Greater use of community levies to generate funds for surrounding community projects | For example, SANParks charges a 1% levy on their accommodation and activity customers |
| 26 | Conservation trust fund | Introduction of national general conservation trust fund for PAs | DEA PAs Sustainable Fin Framework: "consideration should be given to establishing a single national Conservation Trust Fund to receive private donations to national conservation, with MAs being the primary beneficiaries of the fund". The idea is not elaborated on beyond this (e.g. will it be more a land trust or general trust for management expenses, what about competition with existing trust, should it be primarily run by NGOs, etc.). |
| 27 | PAs sponsorship | Increased use of sponsorships | The private sector may be interested in sponsoring PAs provided they are offered something in return, e.g. naming rights, advertising space, etc. |
| 28 | PAs volunteers | Increased use of volunteers | SANParks Honorary Rangers Programme contributed time and goods worth R48m in 2015, R5.6m was made up of equipment purchased by Rangers for SANParks according to a 2016 press release by the Honorary Rangers (see http://www.traveller24.com/Explore/Green/sanparks-honorary-ranger-organisation-raises-r48m-20160602). |
| 29 | Biodiversity offsets | Finalisation of biodiversity offsets policy with agreement from Treasury and resolution of fiscal and administrative procedures required for the successful implementation of offsets | The national biodiversity offsets policy is intended to provide clarity and outline the basic rules for offsets thereby facilitating implementation. It will be important to ensure that the finalisation of the policy takes Treasury requirements into account in order to it to be implementable. The biodiversity offsets policy will need to be accompanied by clarity on how offsets are to be implemented and administered. There is thus a need to ensure that fiscal and administrative obstacles to implementation are identified and resolved. Links to stewardship programmes and the potential for other facilitating measures such as offset banking should also be considered. |

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|----|------------------------------|--|---|
| 30 | Non-government grants | Increased effort to access grant funding | NGOs in particular could potentially generate more income from existing local and foreign grant funds. |
| 31 | Non-government grants | Increased effort to attract Overseas Development Assistance (ODA) | ODA has provided highly significant resources for biodiversity conservation in South Africa which could potentially be increased further. |
| 32 | Donations | Lobbying for soft earmarking and greater allocations from the National Lottery | The National Lottery currently provides roughly R2 billion per annum in funding mostly to NGOs. Some of these are in the environment/biodiversity sector and there may be scope to lobbying for greater allocations to them. |
| 33 | Donations | Competition-based donations | Protected areas could do this at larger scale (i.e. go beyond raffles), e.g. NSRI has annual comp where ~R600 donation enters puts you in running to win two sponsored cars and other high value prizes |
| 34 | Donations | Increasing donations income potential through making donation options more prominent and easier | Success associated with gathering individual donations could be enhanced by making donating easier and ensuring that people are aware of their donating options. For example, conservation authorities use online platforms like givengain.com to collect donations on their behalf but the option to donate is not given much prominence on their websites. |
| 35 | Private sector investment | Increased tapping of Corporate Social Responsibility (CSR) and investment driven by the B-BBEE requirements | Amounts spent on CSR annually are highly significant and more could arguably be done to attract this funding to the biodiversity conservation sector particularly where it also results in job creation. Companies are also required to meet increasingly stringent B-BBEE targets and there may be potential to attract funding to conservation programmes (e.g. restoration to improve watershed services outcomes) if this also allows companies to increase their B-BBEE score (especially if such spend can be used to claim B-BBEE points for Enterprise and Supplier Development). |
| 36 | Bonds, other loan mechanisms | Introduction of ecological infrastructure bonds and/or the introduction of ecological infrastructure components within traditional 'hard infrastructure' bonds (e.g. for water infrastructure) | Ecological infrastructure projects particularly in the water sector are gaining traction and their potential for implementation could be further enhanced through the use of these kinds of bonds. |
| 37 | Bonds, other loan mechanisms | Promote the general use of conservation bonds | These are ultimately a loan even if it's a soft one. They could be useful for bridging finance and have been used by conservation NGOs in other countries to leverage their assets - i.e. they do not have debts so they use them as a form of 'cheap' loan to leverage their assets, investing the money where returns from investment exceed loan repayment requirements thereby generating a surplus. |

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|----|-------------------------------------|---|---|
| 38 | Biodiversity enterprise development | Expanding investment in aquaculture (potentially assisted by 'Blue Bonds') | One of the primary threats to marine resources is over-exploitation of fish and shellfish stocks driven by increasing demand. Increased aquaculture has the potential to meet this demand whilst also decreasing pressure on wild stocks. |
| 39 | Biodiversity enterprise development | Making increased use of conservation impact investment funds to finance biodiversity-based enterprises | Conservation impact investment funds offer a potential source of finance (mostly soft loans) and could be used to start or support viable small businesses that contribute to conservation outcomes (e.g. Verde Ventures – IUCN, NatureVest – Nature Conservancy). |
| 40 | Biodiversity enterprise development | Establishing some form of Biodiversity Enterprise Fund to provide finance for biodiversity-based enterprises | This would essentially be a form of conservation impact fund. It could be considered as one of the 'Enabling Interventions' referred to in the national 'Biodiversity Economy Strategy' |
| 41 | Biodiversity enterprise development | Generating increased income and community benefit from bioprospecting | Measures to increase income and community benefits from bioprospecting are contained in the recently amended Bioprospecting, Access and Benefit Sharing Regulations which is a key part of the national Biodiversity Economy Strategy. |
| 42 | Climate change finance | Use of offset provisions in the pending Carbon Tax to fund projects with biodiversity benefit (e.g. restoration) | Once the national Carbon Tax is introduced, polluters will have the option to fund offsetting projects instead of paying the tax (up to a maximum of 10% of total tax liability). A portion of this funding could flow to restoration projects which sequester carbon whilst achieving biodiversity conservation goals and often enhanced water outcomes. The proviso is that investment in such projects are attractive and ready to receive investment. |
| 43 | Climate change finance | Use of Green Climate Fund (GCF), Adaptation Fund, Blue Carbon Fund and others to fund projects with biodiversity benefit (e.g. restoration) | The Green Climate Fund and other funds present the opportunity to generate substantially funding for restoration projects. In order to stand a chance of success, high levels of government support and landowner buy-in and effort are required. |
| 44 | Climate change finance | Increased use of voluntary sources of funding for carbon offsetting projects with biodiversity benefits | The voluntary carbon offsets market has not grown to the degree hoped for but is still a potentially significant source of funding that could be tapped to a greater degree |
| 45 | Climate change finance | Use of mandatory international sources of funding for carbon offsetting projects with biodiversity benefits | The voluntary carbon offsets market has not grown to the degree hoped for but is still a potentially significant source of funding that could be tapped to a greater degree |
| 46 | Climate change finance | Use of REDD mechanism to fund projects with biodiversity benefit (e.g. restoration) | The market for carbon offsets driven by mandatory requirements in other countries has not grown to the degree hoped for but is still a potentially significant source of funding that could be tapped to a greater degree |
| 47 | Tourism levy/tax | Tourism levy reform and adjustment to include environmental component | Currently levy used for national tourism marketing and is collected on voluntary basis from accommodation and other tourism related operators. +/- R100 million is collected per year by TOMSA and is administered by the Tourism Business Council of South Africa. |

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|----|------------------------------|---|--|
| 48 | Tourism levy/tax | Increase and tap the Air Passenger Tax (APT) | Currently an Air Passenger Tax (APT) is charged per passenger leaving the country (standard rate is R190 per ticket or R100 for countries in southern Africa). Theoretically it could be increased with additional revenue used to fund environmental outcomes. It is not, however, currently an earmarked tax. |
| 49 | Tourism levy/tax | Introduction of the Tourism Conservation Fund voluntary tourism levy | This new tourism levy is being developed by a group of NGOs including the PeaceParks Foundation, EWT and Wilderness Foundation. |
| 50 | Subsidy reform and taxes | Water pricing reform | Reducing water demand would have benefits for aquatic biodiversity in particular. Water pricing reform could be a more prominent part of a wider multi-pronged effort to reduce water use. |
| 51 | Subsidy reform and taxes | Introduce a tax on fertilizer | Fertiliser use is linked to negative outcomes for biodiversity and can be excessive without clear commercial benefits. There may therefore be scope for the introduction of a fertiliser tax. Agriculture currently has a very low level of subsidisation on global scale so it is likely to be difficult to argue for additional taxes |
| 52 | Subsidy reform and taxes | Increase carbon tax levels | The imposition of the Carbon Tax is anticipated within the next one to two years. Its currently levels are arguably still low. However, increases over time are likely as firms adjust. There is also a limited link between tax revenue generated and increased funds for biodiversity. |
| 53 | Subsidy reform and taxes | Increase transport fuel taxes | Fuel taxes are not particularly low on a global scale, increasing them would be commercially/politically very difficult and there is a limited link between the mechanism and increased funds for biodiversity. |
| 54 | Subsidy reform and taxes | Reduce implicit subsidisation of key polluting industries | An acceptable level of internalisation of externalities from key polluting industries has not been achieved (parts of the coal mining sector would be an example of this). There is thus potential for revenue generation from this source. However, progress is being made in some areas, a carbon tax is coming and ensuring that funds flow to biodiversity conservation will be very difficult |
| 55 | Subsidy reform and taxes | Further electricity price reform | Electricity prices have gone up substantially over last five years, carbon tax is coming and limited link between mechanism and increased funds for biodiversity. |
| 56 | Environmental risk financing | Increased use of environmental performance bonds and similar mechanisms not only for mining | Financial provision regulations are currently in place for mine rehabilitation and closure including the option to use bank guarantees, trust funds and insurance-type products. There may be potential to also use this system of setting aside monies in other sectors where rehabilitation/mitigation needs to be assured and backed by the formal setting aside of funds that are ring-fenced and can be access by environmental regulators in the event of bankruptcies or refusals to carry out the necessary actions. |
| 57 | Environmental risk financing | Increased use of insurance for environmental risks | Insurance-type products are currently used for unforeseen mine closure as discussed above and could be used in other sectors. |

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| 58 | Permit and licencing fees | Increasing permit and licence fees for collectors, hunters, etc. | These seem low relative to likely collection costs. E.g. GDARD charges R60 per year for permit to sell protected plants. |
| 59 | Fines | Increasing fines for environmental transgressions/crime | Fine amounts are generally low, not commensurate with damages caused and not set at levels that would discourage potential transgressors. Reform thus has the potential to lead to greater behaviour change and to raise revenue. |
| 60 | Certification, standards | Introduction of a certification scheme for game farming | Certification schemes are currently relatively widely used and include the Biodiversity and Wine Initiative (BWI), the South African Sustainable Seafood Initiative (SASSI), predator/wildlife friendly lamb, Green Choice labelling, Badger Friendly honey, etc. Game farming has also been identified as a key sector where certification should provide those wanting to pursue biodiversity friendly practices with an incentive to do so. |
| 61 | Certification, standards | Increased use of biodiversity standards or guidelines for different sectors | Biodiversity standards, guidelines and associated initiatives that have been developed include the Mining and Biodiversity Guidelines where the process was led by SANBI, the Right Rooibos initiative, the Biodiversity Best Practice for Potato Production guidelines, the Sustainable Sugar Initiative (SSI), etc. Other sectors may present opportunities \. |
| 62 | Public disclosure | Increased use of environmental disclosure programmes | Current examples of such programmes are the Carbon Disclosure Project (CDP) and the CDP's Water Disclosure Project along with WWF efforts in corporate water stewardship. There may be potential for others with air pollution coming to mind. They will probably be more difficult operationalise for biodiversity. |

Appendix 3: Conditional grant to provinces 2015/16 to 2018/19

| R million | 2015/16 | 2016/17 | 2017/18 | 2018/19 | MTEF total |
|---|---------------|---------------|----------------|----------------|----------------|
| Agriculture, Forestry and Fisheries | 2 171 | 2 202 | 2 334 | 2 464 | 7 001 |
| Comprehensive agricultural support programme | 1 640 | 1 642 | 1 739 | 1 834 | 5 214 |
| Ilima/Letsema projects | 467 | 491 | 522 | 552 | 1 566 |
| Land care programme: poverty relief and infrastructure development | 65 | 69 | 74 | 78 | 221 |
| Arts and Culture | 1 274 | 1 357 | 1 441 | 1 522 | 4 320 |
| Community library services | 1 274 | 1 357 | 1 441 | 1 522 | 4 320 |
| Basic Education | 15 632 | 16 213 | 19 717 | 20 851 | 56 781 |
| Education infrastructure | 9 354 | 9 614 | 12 780 | 13 512 | 35 906 |
| HIV and Aids (life skills education) | 209 | 231 | 245 | 260 | 736 |
| Maths, science and technology | 317 | 362 | 385 | 407 | 1 155 |
| National school nutrition programme | 5 685 | 6 006 | 6 306 | 6 672 | 18 984 |
| Occupational-specific dispensation for education sector therapists | 66 | — | — | — | — |
| Cooperative Governance and Traditional Affairs | 103 | 112 | 123 | 131 | 366 |
| Provincial disaster | 103 | 112 | 123 | 131 | 366 |
| Health | 31 905 | 33 972 | 37 588 | 41 247 | 112 808 |
| Comprehensive HIV and Aids | 13 671 | 15 291 | 17 660 | 20 032 | 52 983 |
| Health facility revitalisation | 5 417 | 5 273 | 5 770 | 6 036 | 17 079 |
| Health professions training and development | 2 375 | 2 477 | 2 632 | 2 784 | 7 893 |
| Human papillomavirus vaccine | — | — | — | 200 | 200 |
| National tertiary services | 10 381 | 10 847 | 11 526 | 12 195 | 34 568 |
| National health insurance | 61 | 85 | — | — | 85 |
| Human Settlements | 18 303 | 18 284 | 21 060 | 22 282 | 61 626 |
| Human settlements development | 18 303 | 18 284 | 21 060 | 22 282 | 61 626 |
| Public Works | 552 | 762 | 809 | 856 | 2 427 |
| Expanded public works programme integrated grant for provinces | 326 | 402 | 424 | 448 | 1 274 |
| Social sector expanded public works programme incentive for provinces | 226 | 360 | 386 | 408 | 1 153 |
| Social Development | 48 | 86 | 377 | 564 | 1 026 |
| Substance abuse treatment | 48 | 86 | 57 | 71 | 213 |
| Early childhood development | — | — | 320 | 493 | 813 |
| Sport and Recreation South Africa | 533 | 556 | 586 | 618 | 1 760 |
| Mass participation and sport development | 533 | 556 | 586 | 618 | 1 760 |
| Transport | 14 747 | 15 603 | 16 477 | 17 526 | 49 605 |
| Provincial roads maintenance | 9 807 | 10 203 | 10 754 | 11 536 | 32 492 |
| Public transport operations | 4 939 | 5 400 | 5 723 | 5 990 | 17 113 |
| Total direct conditional allocations | 85 268 | 89 146 | 100 513 | 108 061 | 297 720 |
| Indirect transfers | 3 150 | 3 636 | 1 663 | 1 765 | 7 064 |
| Basic Education | 2 047 | 2 375 | — | — | 2 375 |
| School infrastructure backlogs | 2 047 | 2 375 | — | — | 2 375 |
| Health | 1 103 | 1 261 | 1 663 | 1 765 | 4 689 |
| National health insurance indirect | 1 103 | 1 261 | 1 663 | 1 765 | 4 689 |

Source: NT, 2016a

Appendix 4: Conditional grant to municipalities 2015/16 to 2018/19

| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 |
|---|---------------|---------------|---------------|------------------|-----------------------|---------------|---------------|
| | Outcome | | | Revised estimate | Medium-term estimates | | |
| R million | | | | | | | |
| Direct transfers | 28 485 | 32 412 | 34 167 | 36 842 | 39 120 | 42 568 | 45 087 |
| Municipal infrastructure | 13 879 | 14 224 | 14 745 | 14 956 | 14 914 | 15 991 | 16 894 |
| Water services infrastructure | 562 | 1 129 | 1 051 | 2 255 | 2 845 | 3 730 | 3 959 |
| Urban settlements development | 7 392 | 9 077 | 10 285 | 10 554 | 10 839 | 11 472 | 12 052 |
| Integrated national electrification programme | 1 151 | 1 635 | 1 105 | 1 980 | 1 946 | 2 087 | 2 204 |
| Public transport network | 4 884 | 5 550 | 5 871 | 5 953 | 5 593 | 6 360 | 6 793 |
| Neighbourhood development partnership | 578 | 586 | 590 | 607 | 624 | 663 | 702 |
| Integrated city development | – | 40 | 255 | 251 | 267 | 292 | 309 |
| Regional bulk infrastructure | – | – | – | – | 1 850 | 1 865 | 2 060 |
| Rural roads asset management systems | 37 | 52 | 75 | 97 | 102 | 107 | 114 |
| Municipal disaster recovery | – | 118 | 190 | 189 | 140 | – | – |
| Indirect transfers | 4 819 | 5 705 | 8 643 | 10 274 | 7 689 | 7 297 | 7 564 |
| Integrated national electrification programme | 1 879 | 2 141 | 2 948 | 3 613 | 3 526 | 3 876 | 3 995 |
| Neighbourhood development partnership | 80 | 55 | 58 | 26 | 22 | 28 | 29 |
| Regional bulk infrastructure | 2 523 | 3 261 | 4 005 | 4 858 | 3 479 | 2 806 | 2 931 |
| Water services infrastructure | 337 | 247 | 732 | 802 | 312 | 587 | 608 |
| Bucket eradication programme | – | – | 899 | 975 | 350 | – | – |
| Total | 33 305 | 38 117 | 42 810 | 47 116 | 46 809 | 49 865 | 52 651 |

Source: NT, 2016a

- SANBI's State of South Africa's Biodiversity (SANBI, 2013) which summarises the 2012 National Biodiversity Assessment in a way that is more compelling to the average citizen or decision-maker. It combines interesting cases with harder statistics, uses high quality graphics and generally emphasises the emotional appeal of South Africa's natural heritage.⁵²
- The Project for Ecosystem Services (ProEcoServ), a partnership between the CSIR, SANBI and DEA with US\$1.6 million funding from the GEF and the United Nations Environment Programme as implementing agency. The main aim of the Project was to better integrate information on ecological infrastructure and its societal benefits into national sustainable development planning, policy and implementation.⁵³
- The SANBI business case for biodiversity stewardship (SANBI, 2015) which makes the case for increasing sustained investment in biodiversity stewardship programmes throughout South Africa.
- The DEA Baseline Valuation Report on Biodiversity and Ecosystem Services (DEA, 2012) and the associated technical input (Cumming, 2012). The report provides a synopsis of key ecosystem services valuation studies conducted in South Africa to inform a potential South African TEEB (The Economics of Ecosystems and Biodiversity) study and process which was being contemplated at the time to raise awareness of the value of ecosystems and biodiversity. The technical input identifies key focus areas that should be included in a TEEB exercise. Other TEEB materials may also have relevance especially the TEEB Guidance Manual for Country Studies (TEEB, 2013).

⁵² The report also draws on the SANBI Biodiversity Case Study Development Toolkit (SANBI, 2012) based on an analysis of biodiversity communications material which indicated that the biodiversity sector struggles to communicate (a) what biodiversity is and (b) how it contributes to socio-economic growth and development.

⁵³ See <http://www.csir.co.za/nre/ecosystems/ProEcoServ.html>

Total conditional grants transferred to provinces and local government increased more than fivefold between 2005/06 and 2013/14. This sharp upward trend is not likely to be sustained. In 2013, the FFC welcomed the *“tough stance adopted by Government to curtail the rate of growth in conditional allocations”* (FFC, 2013: 64). This indicated that the growth should slow bringing amounts allocated through conditional grants more in line with the largely inflation-linked growth of the equitable share portion. Data in the 2016 national budget generally supports this assertion (NT, 2016). Although the link is less clear, this slowing in amounts allocated may also imply less appetite for the introduction of new conditional grants or, at least, greater scrutiny of applications for new conditional grants.

Considerations of the potential for a conditional grant within the biodiversity conservation sector has tended to focus on the use of such a grant to support PAs particularly where provinces under-invest on their management, thereby resulting in *systematic* biodiversity losses of national significance. The DEA Sustainable Financing Framework for Protected Areas mentions that such a grant could be focused on much needed infrastructure which tends to be over-shadowed by operational expenses thereby undercutting potential protected area income opportunities (DEA, 2015).

Establishing the desirability and feasibility of a conditional grant for PAs would require more detailed investigation and engagement. This is needed given different opinions on the appropriateness and workability of conditional grants in general, and for PAs in particular. These differences were apparent among stakeholders consulted during the BIOFIN process. It is worth noting that other sectors grapple with similar debates around conditional grants. The investigation would need to be led internally by DEA who would ultimately need to apply for the introduction of and administer such a grant. It would probably need to involve inputs from Treasury and key issues for consideration should include the following (which are among the main areas where there are differences in opinion on the desirability of a conditional grant):

- Projected life of the conditional grant for PAs and its implications for sustainability. The FFC has recommended that conditional grants should be introduced to fund programmes identified as a matter of national priority that still need to be institutionalised into provincial and municipal budgets. Ideally, such conditional grants should be phased into the equitable share once these programmes have been institutionalised by province and municipalities (FFC, 2006). Conditional grants, in such cases, are essentially catalysts as they would require provinces to accept the need for greater protected area funding and take over responsibility for this funding when the conditional grant comes to an end.
- Understanding likely uptake and targeting of intended beneficiaries. The reporting requirements on conditional grants are strict and tend to impose an extra burden on recipients such as the need for detailed quarterly reporting (FFC, 2013). Relatively high levels of confidence would be needed that the provinces and MAs which most need the grants would actually apply for them and not be put off by administrative requirements, capacity constraints, etc.
- Impact on the funding of other programmes in the biodiversity sector. The use of conditional grants can result in trade-offs within departmental budgeting particularly in times when budgets are tight. For example, if DEA succeeds in introducing a conditional grant, there is a high likelihood that some or even all of the funds for the grant will have to come out of DEA's overall allocation from Treasury. This may affect the funds available for other programmes in DEA whilst the grant is in place.

- Availability of DEA support capacity for intended beneficiaries. The existence of sufficient support capacity in parent ministries to assist provinces is often cited as a risk and will need to be considered carefully.
- Political sensitivities. Conditional grants may be interpreted by provincial governments as an intrusion by national government in their areas of competence. It would thus be important to understand any potential sensitivities in this regard and their implication for success.

The Frameworks for Conditional Grants to Provinces (Annexure W2 in the annual Division of Revenue Bill) can also provide guidance in terms of important issues to consider when weighing up whether a conditional grant is worth pursuing. It provides a summary of each conditional grant in terms of (NT, 2016b: 113):

- Strategic goal and purpose of the grant
- Outcome statements and outputs of the grant
- Priority outcome(s) of government that the grant primarily contributes to
- Conditions of the grant (additional to what is required in the Bill)
- Criteria for allocation between provinces
- Rationale for funding through a conditional grant
- Past performance
- The projected life of the grant
- Medium-term Expenditure Framework allocations through the grant
- The payment schedule
- Responsibilities of transferring national department and receiving provincial departments
- Process for approval of business plans for the next year

Given the current fiscal climate, it is not recommended that a conditional grant be pursued in the short term (i.e. next three years). However, DEA could use the short-term to further investigate the potential for a conditional grant along with means to mitigate risks in collaboration with Treasury. Inputs from other relevant institutions such as the FFC should also be sought. If a decision is made to try for the introduction of a conditional grant, motivations to Treasury would need to be accompanied by a detailed business case.

1. Green Climate Fund

Introduction

The establishment of the Green Climate Fund (GCF) was initially decided upon at COP 16 where the fund was described as an operating entity of the financial mechanism under Article 11 of the Convention (UNFCCC, 2016). The fund is governed by the GCF Board comprising 24 members (with equal members from developed and developing country Parties). South Africa and Australia are the current chairs of the GCF board. The overarching goal of the GCF is to support projects, programmes and policies in developing country Parties and is intended to be the main fund for global climate finance in the context of mobilizing US\$100 billion target by 2020. Resource mobilization efforts have managed to realize US\$10.2 billion from 37 countries in 2014 with a further US\$5.8 billion being pledged in 2015. Prior to the Conference of the Parties (COP) 21 held in Paris in 2015, the Green Climate Fund (GCF) approved eight proposals in its initial tranche of projects with a further 9 projects being approved in June 2016. These 17 projects constitute approximately US\$424 million dollars of GCF funding.

Investment/Funding Criteria

For projects to be fundable/bankable under the GCF, they must meet the eligibility criteria under the investment framework of the fund (GCF, 2014). The six current eligibility criteria are as follows:

- Impact Potential – This refers to the contribution of the project to (a.) shift to low-emission sustainable development pathways (mitigation) and/or (b.) climate-resilient sustainable development (adaptation);
- Paradigm Shift Potential – This captures the degree to which a project can go beyond a once-off impact and catalyse further investment or an institutionalized impact;
- Sustainable Development Potential – To ensure that projects go beyond climate benefits, the GCF promotes projects, which can realize environmental (non-climate), economic, social and gender-sensitive co-benefits;
- Needs of the Beneficiary Country – The GCF has a mandate to financially support countries which are more needy;
- Country Ownership – Country ownership refers to the institutional capacity to implement the proposed project and its alignment with development objectives and national policy;
- Economic Efficiency – This refers to the cost-benefit ratio of a given project and is measured in impact per US dollar; and,
- Financial Viability – Viability refers to the financial soundness of the project.

Financial Instruments

The GCF uses several financial instruments to provide support to selected projects including concessional loans, grants, equity and guarantees. In the context of biodiversity protection, grants are possibly the most important instrument particularly if there is difficulty in creating a revenue stream from the project. However, the coupling of agriculture or tourism into biodiversity protection projects could allow for a revenue stream to be created allowing for a loan to be repaid or making it viable for the GCF to act as a guarantor. Lastly, there are initiatives being piloted where equity could become a more financially feasible option in promoting biodiversity protection.

Project Portfolio Analysis

Upon investigation of the GCF project portfolio, five of the seventeen projects currently supported by the GCF possess a biodiversity component (Table 1). For a project to be successfully funded through the GCF, biodiversity protection or rehabilitation must be framed within the context of climate change, with mitigation and/or resilience taking precedence. An example of this would be the case of the climate resilience project in Peru (project 1, Table 1), it is the carbon sequestration potential of improved forest and wetland management that is the most critical element while in project 3 (Table 1), it is the reduction of future risks through salinized land rehabilitation thereby enhancing food security

for communities which is fundamental. It is important to note that the GCF has financed none of selected projects in their entirety. It is therefore essential that sources of co-financing be investigated if biodiversity projects are to be financed through the GCF.

Table 1: Portfolio of GCF supported projects (as per March 2017)

| Project | GCF Funding Size (US\$ millions) | Duration | Area of Focus | Biodiversity Significance |
|---|----------------------------------|----------|---------------|---|
| 2015 | | | | |
| Building the resilience of wetlands in the province of Datem del Marañón, Peru | 6.24 | 5 | Adaptation | Increase in forests under improved management, with ecosystems protected and strengthened |
| Scaling up of modernized climate information and early warning systems in Malawi | 12.3 | 6 | Adaptation | - |
| Resilience increase of ecosystems and communities through restoration of the productive bases of salinized lands in Senegal | 8.16 | 4 | Adaptation | Restored and managed salinized Land, Improved fertility of land, |
| Climate-Resilient Infrastructure Mainstreaming in Bangladesh | 80 | 6 | Adaptation | - |
| KawiSafi Ventures Fund in East Africa | 25 | 12 | Mitigation | - |
| Energy Efficiency Green bonds in Latin America and the Caribbean | 237 | 10 | Mitigation | - |
| Support of Vulnerable Communities in Maldives to manage Climate Change-Induced Water Shortages | 28.3 | 5 | Adaptation | - |
| Fiji Urban Water Supply and Wastewater Management Project | 31.04 | 7 | Adaptation | - |
| 2016 | | | | |
| Energy Savings Insurance (ESI) for Private Energy Efficiency Investments by Small and Medium-Sized Enterprises (SMEs) | 21.7 | TBC | Mitigation | - |
| De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits | 20 | TBC | Mitigation | - |
| Large-scale Ecosystem-based Adaptation in The Gambia: Developing a Climate-Resilient, Natural Resource-based Economy | 20.5 | TBC | Adaptation | Agricultural landscapes and degraded ecosystems including forests, mangroves and savannahs will be restored using climate-resilient tree and shrub species. |
| Africa Hydromet Program –Strengthening Climate Resilience in Sub-Saharan Africa: Mali Country Project | 22.8 | TBC | Adaptation | - |
| Improving the Resilience of Vulnerable Coastal Communities to Climate Change Related Impacts in Viet Nam | 29.5 | TBC | Crosscutting | Protection offered by healthy and robust |

| | | | | |
|--|------|-----|--------------|--|
| Project to Support the World Bank's Climate Adaptation and Mitigation Program for the Aral Sea Basin (CAMP4ASB) in Tajikistan and Uzbekistan | 19 | TBC | Adaptation | mangrove regeneration The selection of project investment sites will take into account the degree of climate vulnerability, based on extent of land and vegetation degradation. |
| Tuvalu Coastal Adaptation Project (TCAP) | 36 | TBC | Adaptation | - |
| Strengthening the Resilience of Smallholder Farmers in the Dry Zone to Climate Variability and Extreme Events in Sri Lanka | 38.1 | TBC | Adaptation | - |
| Climate Action and Solar Energy Development Programme in the Tarapacá Region in Chile | 49 | TBC | Crosscutting | - |

2. Adaptation Fund

Introduction

The Adaptation Fund (AF) was established as a financing instrument under the Kyoto Protocol (KP) and UNFCCC as a means of financing adaptation projects and programmes in the developing country Parties under the KP. The fund is capitalized by voluntary pledges by donor governments as well as revenue generated from the sale of Certified Emission Reductions (CERs) under the Clean Development Mechanism (CDM). As per September 2016, the Adaptation Fund possessed US\$562.6 million and has supported a total of 55 projects globally.

Funding Criteria

As elaborated upon by the Climate Funds Update (2016), the Adaptation Fund has specific eligibility criteria that is taken into consideration for projects to be fundable including:

- Level of vulnerability to climate change;
- Level of urgency and risks arising from not taking immediate action;
- Ensuring access to the fund in a balanced and equitable manner;
- Lessons learned in project and programme design and implementation to be captured;
- Securing regional co-benefits to the extent possible;
- Potential for maximizing multi-sectoral or cross-sectoral benefits;
- Adaptive capacity to the effects of climate change; and,
- Potential for lessons in project and programme design and implementation.

Project Portfolio Analysis

There is a US\$10 million funding cap per country applying to the fund with project duration ranging between 3 and 6 years. To evaluate projects selected within the Adaptation Fund, the complete Adaptation Fund Portfolio (55 projects) was subset by African projects which possess biodiversity significance (Table 2). Currently, there are 19 projects funded in Africa with 16 of 19 projects demonstrating direct or indirect benefits to biodiversity protection. Biodiversity protection is framed within a climate resilience context or reduced climate risk to communities. This is essential if entities wish to apply for funding to the Adaptation Fund. Considering the US\$10 million funding cap per country and that South Africa has also funded two projects worth US\$9.8 million, the Adaptation Fund

may not be viable option for funding future projects. There is a possibility that the Adaptation Fund could change its funding criteria when the KP expires in 2020.

Blue Carbon

The Adaptation Fund has been successful in mobilizing funding for “blue carbon” initiatives. Blue carbon is the carbon stored in coastal and marine ecosystems. Project types include shoreline, mangrove, fisheries and coral reef protection projects as a means of reducing risks faced from extreme weather events and food security risks faced by communities dependent on coastal and marine sources for livelihoods. Of the total Adaptation Fund portfolio (55 projects), 30 projects have a direct blue carbon component. In the African tranche of projects, 11 out of the 19 projects possess a blue carbon component.

Table 2: Portfolio of supported projects by Adaptation Fund filtered by biodiversity significance and the African region (as per September 2016).

| | Project | AF Funding Size (US\$ millions) | Duration (years) | Biodiversity Significance | Blue Carbon Component |
|----|---|---------------------------------|------------------|---|-----------------------|
| 1. | Developing Agro-Pastoral Shade Gardens as an Adaptation Strategy for Poor Rural Communities in Djibouti | 4.6 | 5 | Shade garden to support climate resilience agro-pastoralism | |
| 2. | Building Resilient Food Security Systems to Benefit the Southern Egypt Region | 6.9 | 4 | Agroforestry - nurseries for new tree varieties | |
| 3. | Integrated Programme To Build Resilience To Climate Change & Adaptive Capacity Of Vulnerable Communities In Kenya | 9.9 | 3 | Climate resilience – integrated shoreline and mangrove management | X |
| 4. | Promoting Climate Resilience in the Rice Sector (Madagascar) | 5.1 | 5 | Food Security – The promotion of agrobiodiversity practices | |
| 5. | Programme support for climate change adaptation in the vulnerable regions of Mopti and Timbuktu | 8.5 | 4 | Local livelihood systems focused at agriculture, fisheries and forest. | X |
| 6. | Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Mauritania | 7.8 | 4 | Climate resilience - Protection of dunes, community fuel wood forests, and water sources. | X |
| 7. | Climate Change Adaptation Programme in the Coastal Zone of Mauritius | 9.1 | 5 | Climate Resilience – Focus on beach erosion, flood risk, mangrove and shoreline vegetation resilience | X |
| 8. | Climate changes adaptation project in oasis zones – PACC-ZO (Morocco) | 9.9 | 4.5 | Improving ecosystem resilience | X |

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|-----|--|-----|-----|--|---|
| 9. | Enhancing Resilience of Agriculture to Climate Change to Support Food Security in Niger, through Modern Irrigation Techniques | 9.9 | 5 | Sustainable water management – Conservation of soil of irrigated areas. | X |
| 10. | Reducing Vulnerability to Climate Change in North West Rwanda through Community Based Adaptation | 9.9 | 4 | Integrated Natural Resource Management – Reduce risks from floods, landslides and erosion | |
| 11. | Adaptation to Coastal Erosion in Vulnerable Areas (Senegal) | 8.6 | 4 | Climate resilience – Rehabilitation of canals and connections to the sea. | X |
| 12. | Ecosystem Based Adaptation to Climate Change in Seychelles | 6.4 | 5.5 | Climate Resilience – Restoring ecosystem functionality and coastal processes. | X |
| 13. | Taking Adaptation to the Ground: A Small Grants Facility for Enabling Local Level Responses to Climate Change | 2.4 | 4 | Local livelihoods protection – enhanced ecosystem services from extreme weather events | |
| 14. | Building Resilience in the Greater uMngeni Catchment | 7.4 | 5 | Climate resilience – ecosystem functionality improved to reduce risk to vulnerable communities | X |
| 15. | Implementation Of Concrete Adaptation Measures To Reduce Vulnerability Of Livelihood and Economy Of Coastal Communities In Tanzania | 5.0 | 5 | Climate resilience – Rehabilitation of coastal ecosystems to reduce flood risk | X |
| 16. | Enhancing resilience of communities to climate change through catchment-based integrated management of water and related resources in Uganda | 7.7 | 4 | Climate resilience – Sustainable management of wetlands and riverbanks. | X |

3. Biocarbon Fund

Introduction

The BioCarbon Fund Initiative for Sustainable Forest Landscape (ISFL) is administered by the World Bank and is an initiative that seeks to deploy results based finance to promote emission reductions at the landscape level. The landscape level includes GHG emissions from the land sector, REDD+, sustainable agriculture and green supply chains and land-use planning, policies and practices. The ISFL aims to move

beyond the protection of biodiversity and recognizes the role of the private sector in leveraging and mobilizing capital for broader land use practices.

Eligibility Criteria

The ISFL has the overarching objective to work with private firms that can provide innovation, capital, operational and technical expertise to allow for the greening and securing of supply chains. ISFL finance is directed towards environmental restoration, reforestation for fuel wood, REDD+, sustainable agriculture and plantations for timber. The ISFL will allow for:

- Interventions to be scaled up to a jurisdictional level thereby expanding the coverage of biocarbon practices;
- Integration of practices working across forest, agriculture and energy sectors which creates more holistic solutions;
- Partnerships with the private sector to leverage greater financial flows;
- Allows for results-based finance to be combined with grant funding for technical assistance.

Project Portfolio Analysis

As per October 2015, US\$360.6 million dollars has been pledged and deposited by donors include the United States, United Kingdom, Norway and Germany. The ISFL currently has three programmes based in Ethiopia, Colombia and Zambia. Several funds such as the Althelia Ecosphere and Moringa Funds similar to the ISFL have also been mobilized within the area of sustainable land-use space. These funds aim to invest in agribusinesses through equity and/or debt investments such that they are able control and steer the practices such that they are more sustainable. These particular funds use co-investment from public sources which helps leverage increased private sector financial flows. Other initiatives include the Landscape Fund (TLF) which provides low interest, long-dated loans to producers in selected supply chains to fund sustainable agricultural practices. By using existing finance providers and channels of credit, TLF will access smallholders and informal producers, broadening its scope of impact. To access private capital, TLF is designing a scalable software platform through which it will securitise its loan portfolio into debt instruments with an attractive risk/return profile.

The Unlocking Forest Finance (UFF) was initiated by the German government and operates in two states in Brasil and one in Peru. The programme seeks to promote sustainable benefits in agricultural supply chains: The UFF provides low-cost loans to producers and manages the interest rate and risk of default by selecting supply chains that have the potential to grow over the medium term. Early next year, UFF will package the portfolios into liquid investments, probably in the form of a bond issue. There is already high demand for 'green' bonds from emerging economies such as Brazil and Peru. To further stimulate the demand, less profitable aspects of the portfolio (for example capacity building and conservation) could be subsidised by public finance. Other approaches that can promote inclusivity amongst forest stakeholders and thereby stimulate REDD+ finance include auctioning, green bonds, bio-banking and biodiversity offsets.

Case Study: The Zambia Integrated Forest Landscape Program

The Zambia programme focuses on Zambia's Luangwa Valley with the objective of reducing GHGs while promoting co-benefits of improved rural livelihoods and wildlife conservation. The programme aims to deliver emission reductions of 35 million tCO₂e in total over 10 years. Furthermore, the programme seeks to cover 6 million hectares with 5 million hectares earmarked for sustainable land management practices and 1.1 million hectares for the forest protection initiatives. The programme has implemented sustainable agriculture and REDD+ related activities on croplands, private croplands, conservation areas and game management areas. The co-benefit of improved rural livelihoods will be realized through the development of non-timber forest products, tourism, game ranching, eco-charcoal, agriculture PES schemes and alternate energy solutions.

4. References

CDM Pipeline, (2015). <http://www.cdmpipeline.org/> Date Accessed: 4 July 2015.

Government of South Africa (2016). Explanatory Note for the Draft Regulations on the Carbon Offset. June 2016.

Adaptation Fund, (2016). <https://www.adaptation-fund.org/projects-programmes/>. Date Accessed: September 2016.

Climate Funds Update (CFU), (2016). Adaptation Fund. <http://www.climatefundsupdate.org/listing/adaptation-fund>. Date Accessed: September 2016.
Green Climate Fund (GCF), (2015). Project Briefs. Pp. 12.

Crooks, S., Rybczyk, J., O'Connell, K., Devier, D.L., Poppe, K., Emmett-Mattox, S. 2014. *Coastal Blue Carbon Opportunity Assessment for the Snohomish Estuary: The Climate Benefits of Estuary Restoration*. Report by Environmental Science Associates, Western Washington University, EarthCorps, and Restore America's Estuaries. February 2014.

UNFCCC, (2016). Green Climate Fund. http://unfccc.int/cooperation_and_support/financial_mechanism/green_climate_fund/items/5869.php. Date Accessed: 25 September 2016.

Green Climate Fund (GCF), (2014). Investment Framework. GCF/B.07/06. Republic of Korea.