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BOTSWANA

BIODIVERSITY FINANCE PLAN

FINAL REPORT
MARCH 2019

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The Biodiversity Finance Initiative Botswana

Biodiversity Finance Plan

March 2019

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Executive Summary

Biodiversity and ecosystem services make a highly significant contribution to the economy of Botswana. Investment in biodiversity is clearly aligned with overall socio-economic development planning including Vision 2036, the National Development Plan and the draft National Sustainable Development Framework. Such investment also strongly supports key sectors in the economy, including tourism and agriculture, whilst enhancing rural livelihoods, water management and adaptation to climate change.

This Biodiversity Finance Plan (the Plan) has been developed to identify and support the implementation of *biodiversity finance solutions* that together have the potential to significantly improve the management and financing of biodiversity management in Botswana. The Plan is the fourth element of the Biodiversity Finance Initiative (BIOFIN) project being implemented by the Ministry of Environment, Natural Resources Conservation and Tourism (MENT) and the United Nations Development Programme (UNDP). The other BIOFIN assessment elements included the biodiversity policy and institutional review (PIR), the biodiversity expenditure review (BER), and the finance needs assessment (FNA).

The BER found that government expenditure on biodiversity totalled P5.26 billion (US$505 million) between 2012/13 to 2018/19, equating to 1.1% of total government expenditure. As expected, the Ministry of Environment, Natural Resources and Tourism (MENT) was the largest spender on biodiversity allocating P4 billion to it, equal to 67% of the ministries total expenditure. The Ministry of Land Management Water and Sanitation Services (MLWS) spent the second highest amount at P780 million or 5.6% of their total expenditure, followed by the Ministry of Agricultural Development and Food Security (MoA) at P489 million or 3.6% of their total ministry expenditure. In addition, NGO biodiversity-related expenditure totalled P210 million (US$20 million) between 2012/13 and 2018/19.

Current financing levels for biodiversity are low. The FNA shows that they do not cover the anticipated additional costs of achieving the goals of the National Biodiversity Strategy and Action Plan (NBSAP). The additional funds needed, or finance gap, required to implement the NBSAP were estimated at approximately P735 million (US$70 million) excluding inflation over the 10 years of the NBSAP starting in 2016. In terms of NBSAP goals, the share of the total finance gap that is associated with "mainstreaming", "sustainable use" and "protection" was relatively higher at 35%, 29% and 20% respectively.

The Biodiversity Finance Plan builds on progress already made in Botswana to suggest finance solutions that expand the country's biodiversity finance agenda. This offers a means to encourage action and support partnerships for investing in biodiversity. The Plan is composed of:

1. A prioritization of eight key finance solutions based on a participatory selection process;
2. Brief technical proposals to guide the implementation of the prioritized biodiversity finance solutions;
3. Consolidated estimates of the expected finance outcomes associated with the finance solutions where possible; and
4. An outline of the links between solutions forming an integrated Plan.

The eight prioritised biodiversity finance solutions in the Plan can be grouped logically according to their primary focus on (1) protected areas, (2) sustainable utilisation and mainstreaming and (3) ecological management and restoration. They can be summarized as follows:

A. Protected areas focused solutions

Review and appropriately increase protected area entrance and other fees whilst ensuring increased retention of revenues for protected area

management and investment

Entrance and other protected area fees are largely publicly accepted with good revenue potential. They have not been adjusted in Botswana since 2000, presenting a clear opportunity to increase revenues from this source. Growing protected area self-generated revenues from fees will only be beneficial to biodiversity conservation if it results in greater funds being made available for protected areas management and investment. However, at present these revenues are not kept within the protected area system and essentially accrue to the Treasury. DWNP, who are responsible for protected areas management, are then allocated a departmental budget. Moreover, this allocation is inadequate for the purposes of biodiversity conservation and the upkeep of tourism infrastructure and is therefore leading to the gradual degradation of critical tourism assets. The overall objective of this solution would be to increase revenues from entrance and other fees and to ensure that increased amounts of funding are available for protected areas management and infrastructure which is key to eco-tourism development. It would have a component focused on reviewing fees and one on ensuring increased funds flow to protected areas. Assuming entrance and other fee revenues could increase by 50% above current levels within three years, total cumulative net financial gains from the solution over the next 10 years would sum to approximately P201 million (US$19.1 million).

Enhanced benefit sharing through Community Based Natural Resource Management (CBNRM) improvements

The success of protected areas in conserving biodiversity and as key tourism assets can be significantly enhanced through providing local communities with incentives for wildlife and natural resource conservation. Botswana has a CBNRM programme which aims to provide these incentives by sharing the benefits of local natural resource conservation and offering compensation for the costs of living, and sometimes conflicting, with wildlife. While much progress has been made, the CBNRM programme is not functioning optimally. The overall objective of this solution would be to review and reform the CBNRM programme and associated practices in order to ensure that they deliver better particularly with respect to benefit sharing with local communities thereby augmenting rural welfare and development along with anti-poaching efforts. The review would draw from research already done in Botswana, stakeholder inputs and could include some comparisons with the pros and cons of systems in other countries. Total cumulative benefit sharing gains from the solution over the next 10 years would sum to approximately P44 million (US$4.2 million) assuming concession revenues flowing to communities would increase by 25% above current levels within four years.

Establishment of a national parastatal to improve the management and finances of protected areas

Successful protected areas management and financing requires a minimum level of autonomy and flexibility especially in countries with significant protected areas tourism and associated commercial operations. Protected areas management authorities that are structured as government departments, as in the case of DWNP in Botswana, generally do not allow for these requirements to be met and can substantially inhibit longer term progress. In essence this was one of the main findings of the 2008 *Review of Organisational Performance and Development of Strategic Options to Improve the Performance of the Botswana Department of Wildlife and National Parks.* The overall objective of this solution would be to (1) further analyse and reconsider whether protected areas management and financing would be better served by the establishment of a parastatal and (2) implement the necessary restructuring should it be decided that it is preferable. The 2008 Review would serve as a useful departure point in this process along with the findings

of the 2018 Business Plan for Chobe National Park, research, experiences from other countries and stakeholder engagement. Further analysis would need to include quantifying the financial implications of restructuring for costs and revenues, establishing what other reforms would need to accompany a restructuring and assessing the degree to which a parastatal structure could unlock economic opportunities especially in tourism.

B. Solutions focused on sustainable utilisation

Introduction and formal integration of biodiversity offsets into Environmental Impacts Assessment (EIA) policy and practice

Biodiversity offsets are a natural addition to the Environmental Impact Assessment (EIA) process and can be built into the mitigation hierarchy, as is increasingly being done in countries around the world (i.e. when the loss of particularly important biodiversity cannot be avoided or mitigated then offsets can be considered as a form of replacement or compensation). If offsets are not required then EIAs tend to only address avoidance and mitigation leaving a clear residual risk to biodiversity and ecosystem services. Note that offsets should not be used to provide a way to for unacceptable developments to go ahead. EIA policy and regulation in Botswana contain principles that support the use of offsets where appropriate. This solution would build on these principles and strengthen EIAs through introduction of a formal policy and clear regulations specifically for offsets. The financial gains from biodiversity offsets, in the form of avoided land purchase and management costs, were tentatively estimated to increase gradually from approximately P5 million in 2023 to P11 million by 2028. Total cumulative net financial gains from the solution over the next 10 years would sum to approximately P43 million (US$4.1 million).

Enhancement and expansion of the Botswana Ecotourism Certification System

Tourism is crucial to the economy of Botswana and while it is a relatively sustainable sector, especially when compared to others such as mining, it is not without risk to biodiversity. With this in mind, the Botswana Tourism Organisation (BTO) launched the voluntary Botswana Eco-tourism Certification System (BECS) in 2010. Lessons have been learnt from implementing the BECS and the overall objective of this solution would be to build on and strengthen the BECS to promote higher standards of eco-tourism including increased biodiversity conservation efforts. It would start with a review of the BECS in close collaboration with tourism stakeholders to determine how it can strengthened and to plot a way forward. For example, there should be opportunities to find ways to reward operators that implement innovative ideas, options to encourage greater local sourcing and development of local suppliers, the possible introduction of an additional certification level which would incentivise even great commitment, etc. Given the high cost of certification particularly for smaller operators, any strengthening should include streamlining, simplification and concerted efforts to cut costs.

Introduction of a sustainability programme and certification system for beef products

Cattle farming and associated beef production is the most important agricultural sector in the country and can be compatible with biodiversity conservation when sustainably managed. In other words, when more farmers practice conservation agriculture, apply sustainable land management (SLM) principles, avoid over-grazing and apply agro-chemicals with care. The overall objective of this solution would be to introduce a certification scheme that encourages sustainable and biodiversity friendly beef production. The process of developing the

solution further will require an initial period of assessment and consultation aimed at testing the likely feasibility of a scheme and levels of interest among producers, buyers and consumers. The Meat Naturally Initiative introduced by Conservation International in South Africa should provide valuable guidance to the development of a certification scheme and associated programme.

C. Solutions focused on ecological management and restoration

Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas

Invasive plants are a growing challenge in Botswana and pose a clear threat to biodiversity and livelihoods as per the findings of the NBSAP. Despite negative impacts, invasive plants have potential commercial uses for example in producing charcoal, fodder, eco-furniture, building materials and other products. The overall objective of this solution would be to build on current initiatives and gradually increase the sustainable commercial use of invasive species. This should incentivise the eradication of invasive plants whilst boosting livelihoods and job creation in rural areas. Initially the focus would be on Prosopis given the threat it poses and the somewhat better understanding of its potential for commercial use. It will be particularly important to understand what the key barriers are to increased commercial use and whether they could be removed at an acceptable cost in terms of government support. This will require feasibility assessments and further engagement with stakeholders which could form the basis for further appropriate actions. The potentially significant risks attached to the commercialisation of invasive plants would also have to be managed, for example, through the development of clear policy and strategy for combatting alien species along with guidelines for their management.

Accessing global climate change funds for projects with biodiversity co-benefits

Global 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 restoration, which go beyond mitigation and adaptation. Botswana has thus far not accessed any finance from these funds in contrast with the majority of other countries in the region. The opportunity to mobilize climate change funds in Botswana is thus clear and already on the government and development aid agenda. This solution seeks to build on initial efforts and: (1) develop a suite 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) submit well thought out and ultimately successful project proposals to global climate change funds. If successful, a future Green Climate Fund (GCF) allocation to Botswana could be in the order of P231 million (US$22 million) spread over six years starting in 2020.

An integrated Finance Plan

The above individual finance solutions are best understood as parts of an integrated plan, given the links and synergies between them. They cover a range of different biodiversity outcomes, instrument categories, draw on different finance sources, and have different lead agents. With respect to biodiversity outcome they are supportive of all of the strategic goals of the NBSAP to some degree with support for Goal 2 (reduced pressure on biodiversity and sustainable use) and Goal 3 (ecosystem protection) being slightly more prominent.

Market instruments are the most prominent, with six solutions falling primarily under this broad category. There is

one regulatory and one grant mechanism. Regarding sources of increased biodiversity finance/funding (or cost reductions), private persons and companies represent the most prominent primary source of finance with international tourists featuring prominently given their interest in protected areas. Government thus has opportunities to leverage further private resources in a number of ways. For the majority of solutions, government would need to lead implementation through MENT and its departments and agencies such as DWNP, DEA, BTO and DFRR bearing in mind that many of the finance solutions will only be successful if there are strong partnerships with the private sector and NGOs.

Summary financial outcomes

The total net financial gains, associated with the implementation of all the solutions where quantitative estimates were possible, would start relatively modestly at P37 million in 2020 climbing to P63 million by 2022 before decreasing and stabilising at P33 million to P36 million from 2026 to 2028. Total cumulative net financial gains would amount to approximately P474 million (US$45.2 million) in current terms (un-discounted over 10 years). Note that these gains are inherently conservative as they include only three out of the eight solutions where quantification was possible. Implementing this Plan would thus make a highly significant contribution to reaching the country's biodiversity conservation goals.

In terms of their relative contributions, climate change funds have the potential to contribute the largest share to this total at 49%. The contribution of this solution would, however, not be sustained over the long term as grant funding would be temporary. PAs fee revenue would be the next largest contributor at 42%, followed by biodiversity offsets (9%). In addition, the CBNRM solution would contribute to increased benefits sharing with local communities that would cumulatively sum to P44 million (US$4.2 million) over 10 years.

The way forward

The Plan is a resource for the process of developing and encouraging biodiversity finance in Botswana, and may be updated as circumstances, needs and opportunities evolve. Implementation will require a coordinated effort the bulk of which will be fall to MENT. It is, however, recognized that commitment and financing by the public sector should increasingly be complemented by the private sector, NGOs and donors.

The focus of BIOFIN Botswana will now shift to supporting the implementation of the Biodiversity Finance Plan. This will take the form of selecting a subset of finance solutions to be driven specifically by BIOFIN. It is envisaged that, once BIOFIN is concluded, the important programme of work of the project will be incorporated into MENT's future programme of work.

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Abbreviation	Description
AFOLU	Agriculture, Forestry, and Other Land Use Change
BBOP	Business and Biodiversity Offsets Programme
BCPA	Botswana Cattle Producers Association
BECS	Botswana Eco-tourism Certification System
BER	Biodiversity Expenditure Review
BFP	Biodiversity Finance Plan
BIDPA	Botswana Institute for Development Policy Analysis
BIOFIN	The Biodiversity Finance Initiative
BNBPU	Botswana National Beef Producers Union
BOBS	Botswana Bureau of Standards
BOGA	Botswana Guides Association
BTO	Botswana Tourism Organisation
CAR	Centre for Applied Research
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CBO	Community Based Organisation
CDM	Clean Development Mechanism
CI	Conservation International
DEA	Department of Environmental Affairs
DFRR	Department of Forestry and Range Resources
DWNP	Department of Wildlife and National Parks
DoT	Department of Tourism
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EU	European Union
FNA	Finance Needs Assessment
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GiZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoB	Government of Botswana
GSTC	Global Sustainable Tourism Council
HATAB	Hospitality and Tourism Association of Botswana
IFI	International Financial Institution
IPCC	Intergovernmental Panel on Climate Change

IUCN	International Union for the Conservation of Nature
MADFS	Ministry of Agricultural Development and Food Security
MENT	Ministry of Environment, Natural Resources Conservation and Tourism
MFED	Ministry of Finance and Economic Development
MMEWR	Ministry of Minerals, Energy and Water Resources
NBSAP	National Biodiversity Strategy and Action Plan
NDP	National Development Plan
NDPB	Non-Departmental Public Body
NEF	National Environment Fund
NFSD	National Framework for Sustainable Development
NGO	Non-governmental Organisation
NPPO	National Plant Protection Organization
NTFP	Non-timber Forest Product
OKACOM	Okavango River Basin Water Commission
ORI	Okavango Research Institute
PA	Protected Area
SDGs	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SLM	Sustainable Land Management
TAC	Technical Advisory Committee
TEEB	The Economics of Ecosystems and Biodiversity
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate Change
WMA	Wildlife Management Area
WWF	World Wide Fund for Nature

INTRODUCTION

Introduction

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 mainstream biodiversity into national development and sectoral planning, and address the finance gap for biodiversity. Botswana is one of 30 countries implementing BIOFIN at the national level led by the Ministry of Environment, Natural Resources Conservation and Tourism (MENT) and its partners.

Biodiversity and ecosystem services make a highly significant contribution to the economy of Botswana. Investment in Botswana's biodiversity is well alignment with overall socio-economic development planning such as that contained in the National Development Plan, Vision 2036 and the National Framework for Sustainable Development. It supports livelihoods and key sectors in the economy including tourism and agriculture whilst enhancing water provision. Healthy ecosystems also play a key role in disaster risk reduction, climate change adaption and mitigation. There is thus a strong case to be made for investing in biodiversity and ecosystem services conservation.

Despite its value, biodiversity degradation and loss continue to occur as result of key threats which include habitat destruction, barriers to wildlife movement, high populations of elephant, poaching and overuse, disruption of natural fire regimes, alien invasive species and climate change (DEA, 2015). Biodiversity losses have also occurred in combination with ecosystem services losses. For example, water ecosystems have been modified over the years. Accelerated levels of land degradation continues to be a concern, resulting in decreasing agricultural potential from erosion and greater risks from natural disasters such as floods. It is difficult to overestimate the economic costs of this ecosystem loss and degradation. Solutions are therefore urgently needed including those that focus on finance.

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 (BER) provides a detailed assessment of the financing environment for biodiversity conservation in Botswana. It found that government expenditure on biodiversity totalled P5.26 billion (US$505 million) between 2012/13 to 2018/19, equating to 1.1% of total government expenditure. As expected, the Ministry of Environment, Natural Resources and Tourism (MENT) was the largest spender on biodiversity allocating P4 billion to it, equal to 67% of the ministries total expenditure. The Ministry of Land Management Water and Sanitation Services (MLWS) spent the second highest amount at P780 million or 5.6% of their total expenditure, followed by the Ministry of Agricultural Development and Food Security (MoA) at P489 million or 3.6% of their total ministry expenditure. In addition, NGO biodiversity-related expenditure totalled P210 million (US$20 million) between 2012/13 and 2018/19.

Current financing levels for biodiversity are low. The BIOFIN Financial Needs Assessment (FNA) shows that they do not cover the anticipated additional costs of achieving

the goals of the National Biodiversity Strategy and Action Plan (NBSAP). The additional funds needed, or finance gap, required to implement the NBSAP were estimated at approximately P735 million (US$70 million) excluding inflation over the 10 years of the NBSAP starting in 2016. In terms of NBSAP goals, the share of the total finance gap that is associated with "mainstreaming", "sustainable use" and "protection" was relatively higher at 35%, 29% and 20% respectively.

As government finances are limited and 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. This Biodiversity Finance Plan responds to the challenges associated with ensuring that biodiversity conservation is adequately resourced. It identifies priority biodiversity finance solutions (Box 2 describes the key financial results that are associated with 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 involved the following key steps:

1. REVIEW REPORTS AND MATERIALS WITH RELEVANCE TO BIODIVERSITY FINANCE SOLUTIONS CURRENTLY IN USE OR UNDER CONSIDERATION FOR USE IN BOTSWANA AND INTERNATIONALLY.
2. REVIEW ALL OF THE NBSAP COSTABLE ACTIONS.
3. BROADLY IDENTIFY AN INITIAL LIST OF BIODIVERSITY FINANCE SOLUTIONS WHICH SHOW SOME LEVEL OF POTENTIAL.
4. BROADLY ASSESS THE INITAL LIST OF SOLUTIONS IN TERMS OF THEIR FEASIBILITY, ACCEPTABILITY, LIKELY REVENUE OR COST CUTTING POTENTIAL.
5. SCREEN THE INITIAL LIST OF SOLUTIONS IN ORDER TO PRIORITISE THOSE WITH THE HIGHEST POTENTIAL.
6. CONDUCT DETAILED ASSESSMENTS OF THE PRIORITISED SOLUTIONS FOCUSING ON THEIR FEASIBILITY, KEY RESPONSIBLE ACTORS, SOCIAL, ECONOMIC AND POLITICAL IMPLICATIONS.
7. DEVELOP ACTION PLANS TO IMPLEMENT THE PRIORITISED SOLUTIONS

Box 2: Defining biodiversity finance solutions

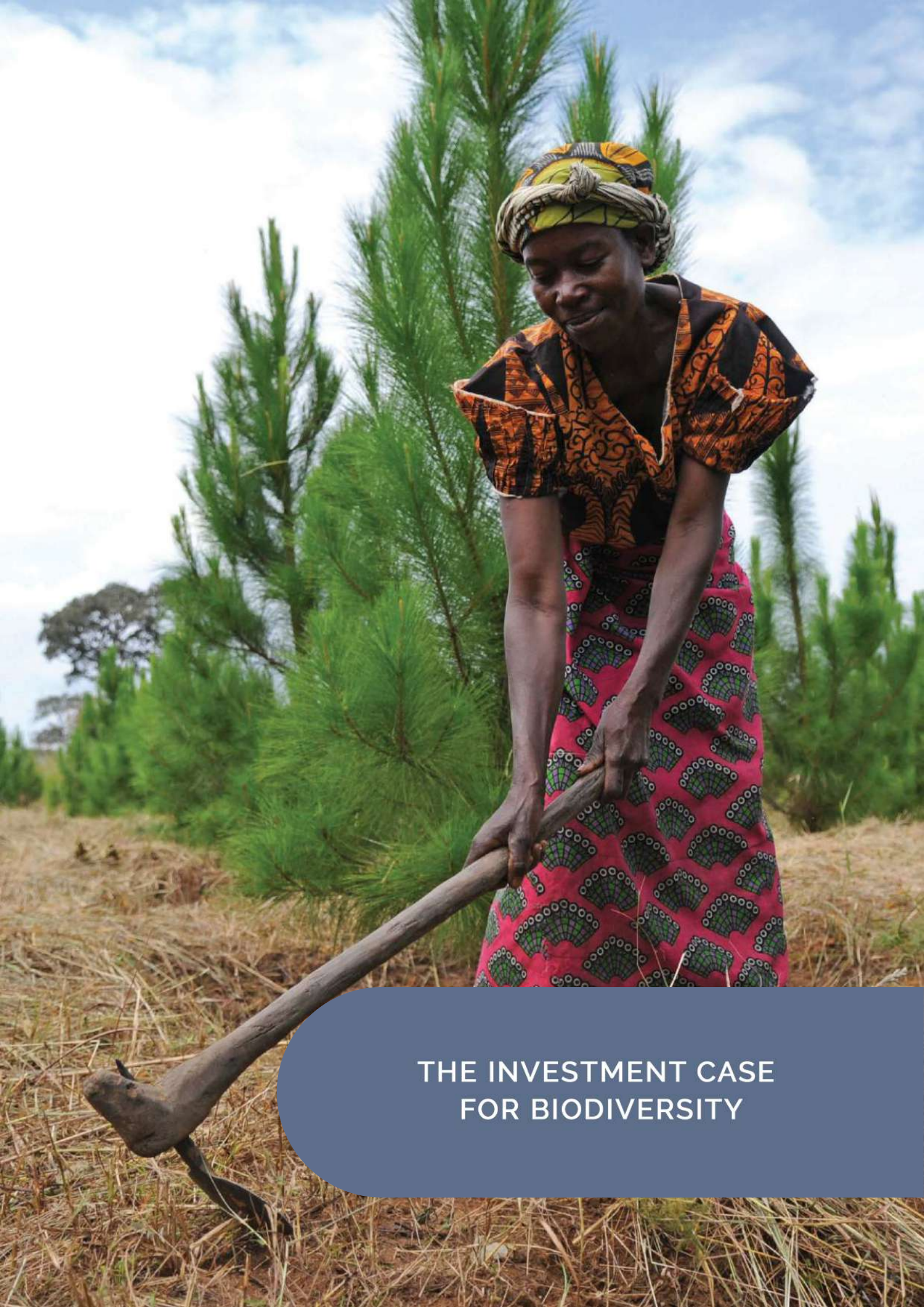
Finance solutions are a means of using one or more finance mechanism or instrument in a particular context, which results in the improvement of biodiversity conservation and management. Finance solutions can result in:

- 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 subsidies)

The assessment was done by the BIOFIN team in close collaboration with key stakeholders and with support from the global UNDP BIOFIN team and an international expert. BIOFIN Botswana is guided by a national Steering Committee, and receives technical input from a national Technical Reference Group. Stakeholder engagement was used at all stages of the process and was carried out through one-on-one engagements and 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 a brief investment case for biodiversity and ecosystem services outlining the importance and value of biodiversity especially from a socio-economic perspective and in the pursuit of Botswana's key policy goals.
- Section 3 introduces the individual biodiversity finance solutions and consolidates them into an integrated plan, providing clarity on key links between solutions. Financial benefit projections for the solutions are also provided bearing in mind that this is not a requirement and was only possible for half of the priority solutions.
- The 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 provides a conclusion.



THE INVESTMENT CASE FOR BIODIVERSITY

The Investment Case for Biodiversity

Investment in Botswana's biodiversity and associated ecosystem services provides significant opportunities to support the country's development path and underpins major sectors of the economy. This section provides a brief investment case for biodiversity and ecosystem services. It focuses on (1) the alignment of such investment with overall socio-economic development planning and (2) its value particularly in terms of how it supports livelihoods and key sectors in the economy.

2.1 Alignment with overall socio-economic development planning

Overall economic and socio-economic development in Botswana is guided primarily by Vision 2036, the National Development Plan and the draft National Framework for Sustainable Development and associated Roadmap for the Sustainable Development Goals (SDGs). The alignment or compatibility of investments in biodiversity protection and ecosystem services with these strategies is clear.

At the highest level, guidance for Botswana's development trajectory can be found in ***Vision 2036***. It sets out the goals and aspirations of the country's people, perhaps the most significant of which is to move from being an upper-middle country to a high-income country by 2036. Vision 2036 outlines four pillars through which this is to be accomplished (GoB, 2016: 4):

- "Sustainable Economic Development
- Human and Social Development
- Sustainable Environment
- Governance, Peace and Security"

The document also sets out key imperatives by which the journey to prosperity will be characterised, one of which is a recognition of national values which are shaped by the country's unique natural and cultural resources.

Botswana's eleventh ***National Development Plan*** (NDP 11) is the first medium-term development plan which was created to guide the implementation of the country's long term development priorities as laid out in Vision 2036 (GoB, 2016). The plan is aligned with global and regional development strategies including the UN Sustainable Development Goals, the AU Agenda 2063 and the Revised SADC Regional Indicative Strategy Development Plan. The NDP 11's theme is ***"Inclusive Growth for the Realisation of Sustainable Employment Creation and Poverty Eradication"***. As such, there is an emphasis on the sustainable use of natural resources and economic diversification given heavy reliance on diamond mining. With regards to the sustainable management of natural resources, the plan notes the following (GoB, 2016a: 62):

> *"Prudent management of natural resources is desirable to ensure the derivation of maximum benefits through conservation and equitable distribution of benefits to the majority of the country's population through economic growth and employment creation. During NDP 11, focus will be on the strengthening and/or development of policies and legislation to address threats, as well as measures to enhance the state of the environment. Specific areas will include land, water, minerals, energy, biodiversity and cultural resources, which are key to economic development."*

On the issue of species management, the plan outlines the following agenda (GoB, 2016a: 146):

> *"During NDP 11, programmes will be put in place to improve the status of the species (flora and fauna). A deliberate effort will be made to: improve the legislative framework; develop appropriate standards; improve inventory; and intensify compliance efforts by monitoring the status and diversity of species within the predetermined localities. In order to attain sustainable environment, public education and awareness will be intensified."*

The increased sustainability focus of the NDP can be seen

as a natural fit with the Gaborone Declaration for Sustainability in Africa which has its secretariat based in Gaborone and currently has 13 member states. The Declaration was a result of the 2012 Summit on Sustainability in Africa held in preparation for the Rio+20 UN Conference on Sustainable Development. It commits countries to:

- Integrating the value of natural capital into national accounting and corporate planning and reporting processes, policies, and programs (see the WAVES programme profiled in Box 3);
- Building social capital and reducing poverty by transitioning agriculture, extractive industries, fisheries, and other natural capital uses to practices that promote sustainable employment, food security, sustainable energy and the protection of natural capital through protected areas and other mechanisms;
- Building knowledge, data capacity and policy networks to promote leadership and new models in the field of sustainable development and to increase momentum for positive change.

It goes without saying that investment in biodiversity protection and ecosystem services is a key pillar of the National Framework for Sustainable Development (NFSD). The NFSD touches on a diverse set of topics and sectors that contribute to sustainable development. It provides a guide for the implementation of a development agenda in Botswana which is anchored on building resilience of key development sectors for sustainability. The framework includes, amongst others, water, energy, agriculture, and infrastructure as key sectors to be prioritized.

Investment in the management and sustainable utilisation of the country's biodiversity resources as a means to conserve and harness the valuable ecosystem services which they generate is thus closely aligned with national policy.

Box 3: Wealth Accounting and the Valuation of Ecosystem Services (WAVES) in Botswana

WAVES is a World Bank supported project aimed at promoting sustainable development through the mainstreaming of natural capital accounting into national development planning and economic decision making. It is working on the following priority areas for natural capital accounting:

- Water Accounts
- Tourism Component of Land and Ecosystem Accounts
- Mineral Accounts
- Energy Accounts
- Macroeconomic Indicators of Sustainable Development

(Source: https://www.wavespartnership.org/en/botswana-natural-capital-diversification-tool)

At a regional planning level, the Southern African Development Community has produced the Regional Indicative Strategic Development Plan (RISDP), which seeks to deepen regional integration through the alignment of strategies and policies. When outlining challenges in current policies and strategies in the field of environment and sustainable development, the RISDP concludes that "[i] Inadequate attention to issues of waste management and pollution, protection of the marine and coastal environment, the promotion of environmental awareness and acquisition of knowledge and skills" (SADC, 2017: 53). The trans-boundary conservation of natural resources is also listed as a distinct challenge.

Considered at a global level, 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 Nations Sustainable Development Goals (SDGs).

2.2 The value of biodiversity supporting key sectors and livelihoods

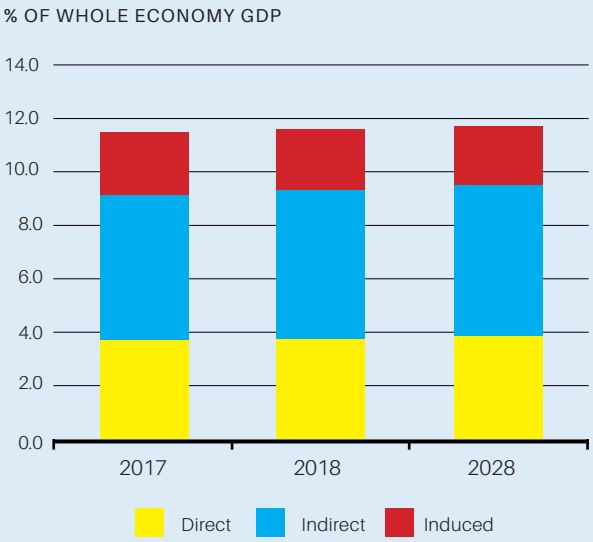
Biodiversity and intact natural ecosystems are able to provide a sustainable flow of benefits to support livelihoods particularly in rural areas. Basic needs such as food security, building materials and clean water bring benefits to all, and the impoverished in particular. Key sectors, notably tourism and agriculture, are highly dependent on the values provided by biodiversity and ecosystem services. They also boost the resilience of the economy through, for example, assisting with climate change adaptation and disaster risk reduction as discussed in the sections to follow.

2.2.1 Tourism and CBNRM

Tourism is Botswana's second largest economic sector after mining (Mbaiwa, 2015). According to the World Travel and Tourism Council (WTTC), tourism directly and indirectly accounted for 11.6% (or P22.5 billion) of national GDP in 2018 and is forecast to continue growing (see Box 4). This makes it a more significant sector relative to the global average (10.4% of GDP) and other countries such as South Africa (10.2% of GDP) and Tanzania (9% of GDP). In addition, travel and tourism directly and indirectly supports 72,000 jobs in Botswana - an amount that is expected to rise to 102,000 jobs over the next 10 years (WTTC, 2018).

According to Stone et al. (2017), tourism development in Botswana was largely private-sector driven prior to the 1990s when the government became actively involved in promoting the industry's development, in part through

Box 4: Botswana tourism sector's contribution to GDP in 2017



Source: WTTC (2018)

the creation of the 1990 Tourism Policy. The industry subsequently experienced rapid growth, with annual tourism visitor numbers growing from 620,000 in 1994 to 1.66 million in 2015 (Statistics Botswana, 2015). Botswana's wildlife and biodiversity resources play an indispensable role in attracting visitors to the country and the nature based tourism sub-sector is the most prominent aspect of the overall tourist package. Some indication of its potential and role can be inferred from visitation rates to National Parks and Nature Reserves in Botswana which have increased to approximately 550,000 in 2017. Solid momentum has thus been created in nature based tourism particularly around protected areas. However, continued success requires investment in well-maintained natural tourism assets with healthy biodiversity and ecosystems.

Biodiversity also provides opportunities for communities to generate income through utilisation and management of biological resources in their proximity. This is usually implemented through the Community-Based Natural Resource Management (CBNRM) programme which allows communities to benefit from tourism, hunting and other rights to pursue commercial harvesting activities. The most recent CBNRM review estimates that in 2016 approximately P26.8 million in revenues flowed to 53 active Community Based Organisation (CBOs) up from P22.1 million in 2012 (CAR, 2016). While this is a significant amount, there is still scope for further benefits to flow to local communities.

2.2.2 Agriculture, forestry and harvesting

Though agriculture makes a relatively limited contribution to GDP of 3%, it is vital to rural livelihoods, particularly of those who rely on it for subsistence purposes. The sector is dominated by beef and other animal production which contribute an estimated 85% to the country's total agricultural output followed by field crops at 11% and horticultural outputs at 3% (USDA, 2015). Rangelands in Botswana are especially important to livestock raising and provide a form of social safety net for people in times of need, especially resource-poor farmers in communal areas (GCF, 2017).

Box 5: Tourism's contribution to rural livelihoods in the Okavango Delta

Snyman (2014) provide a broad overview of the socio-economic impact of ecotourism on the Okavango Community Trust villages. Total revenues generated by the Trust were just under P2.5 million per year between 2006 and 2009.

Maude and Reading (2010) found that the Khwai Development Trust had generated a total of $320,000 in 2007 from hunting concessions, joint-ventures, and various camp sites for the economy of the NG/18 area of the Delta. Of this, 10% accrued to government through a concession tax and 4% to the North West District Council for land rentals. Tourism was found to directly employ 20% of the community, while additional employment was to be found in creating and selling crafts, firewood and other products purchased by visitors.

Agriculture's dependence on key ecosystem services and biodiversity is particularly direct. In this regard, Power (2010) observes that:

> *"agroecosystems depend strongly on a suite of ecosystem services provided by natural ecosystems. Supporting services include genetic biodiversity for use in breeding crops and livestock, soil formation and structure, soil fertility, nutrient cycling and the provision of water. Regulating services may be provided to agriculture by pollinators and natural enemies that move into agroecosystems from natural vegetation. Natural ecosystems may also purify water and regulate its flow into agricultural systems, providing sufficient quantities at the appropriate time for plant growth."*

The link between higher levels of pollinator abundance and diversity and increased crop yields has been outlined by research including that of Greenleaf and Kremen (2006). It has also been recognised that wild pollinators act as a form of insurance or partial substitute for farmers in the event of an unexpected decline in commercial bee populations (for example, due to a disease outbreak) (Vanbergen et al., 2014). Pest or biological control services essentially reduce or control populations of pest insects and weeds in agriculture, thereby reducing the need for often costly pesticides. Healthy, biodiverse ecosystems also support the resilience of agriculture through the genetic diversity they supply. Such ecosystems play a key role in securing natural populations of crop wild relatives (CWRs) thereby boosting resilience and increasing the chances of being able to adapt to climate change.

There are a number of examples of the value of harvesting and direct uses to local livelihoods. The Centre for Applied Research assessed the direct use-value of forest and range resources in Botswana. They investigated 11 direct uses including both timber and non-timber products in Gweta, Lerala, Palla Road, Tsetseng, Chobokwane and Kumakwane, finding that the net economic value in 2016/17 was P39.8 million. These resources were found to be particularly important for low income groups. Mmopelwa, et al. (2009) studied the economic benefits generated by wetlands for three villages adjacent to the Okavango Delta. The total direct use value of plant resources was estimated at US$1,434 per household per year in 2003 - a value almost equal to the average household financial income of US$1,416 per year. Using an 8% discount rate, the net present value of plant resources was estimated at US$101.9 million for the

Box 6: The role of ecosystem services in achieving equitable outcomes through sustainable land management

Favretto, et al. (2014) compared the costs and benefits associated with various land-use alternatives in Botswana's Southern Rangelands. They found that cattle ranching tends to produce skewed benefits, with economic returns accruing to ranchers while other stakeholders incur costs as a result of environmental externalities. The authors conclude that policy-based interventions are needed to ensure that a wider range of stakeholders could benefit from the many ecosystem services offered by more sustainably-managed land-use regimes including for agriculture.

whole Delta area demonstrating its highly significant role in sustaining local livelihoods. Devil's Claw is also an important commercially exploited medicinal plant particularly in dryland ecosystems. Between 2010 and 2013 an average 788 harvesting permits, 216 dealers permits and 23 export permits were issued per annum (DEA 2017).

2.2.3 Water management and security

The link between watershed protection and healthy ecosystems is well-established. In essence, natural habitats support natural water flows which ensure low levels of sedimentation and better water quality. They also regulate or smooth out flows over time reducing peak flows associated with higher flood risks while increasing low flows thereby ensuring greater water availability or supply during dry seasons. Through these mechanisms, they play a key role in the regulation and provision of clean water, as well as in adaptation to climate change.

The Okavango Delta provides a globally-renowned illustration of the crucial role that healthy ecosystems can play in ensuring water-security and the provision of livelihoods. Turpie et al. (2006) conducted an assessment of the economic value associated with the Okavango Delta, an area which receives very little rainfall and where both human and wildlife populations are reliant on the regulating services provided by the Delta. Households in and around the Delta were found to collectively earn a total of P225 million per year through the tourism sector, which is based on the viewing of wildlife supported by the wetland. The direct use value of the Delta for harvesting and similar activities was estimated at P95 million. When all direct and indirect impacts were taken into account, the estimated natural capital asset value of the greater study site (including areas surrounding the wetland) were P3.9 billion or 2.6% of Botswana's GDP (Turpie et al. 2006).

Given the extent of the water-related benefits offered by healthy ecosystems, most countries practice watershed management to varying degrees as a component of overall water resource management. In Botswana the Integrated Water Resources Management & Water Efficiency Plan recognises this and aims to take up the challenge of implementing Integrated Water Resources Management (IWRM). One of the strategic areas of the Plan is ecological water requirements and environmental degradation. For example, it recognises that bush encroachment has a negative impact on water resources and that more needs to be done to ensure that investments are made in natural ecosystem protection and restoration (DWA, 2013).

Box 7: The importance of the Makgadikgadi wetland system for groundwater recharge

Setlhogile (2010) carried out a valuation of selected direct and indirect use values of the Makgadikgadi wetland system. The study focussed the value of groundwater recharge and community based use of natural resources, including tourism. The value of the groundwater recharge service provided by the Makgadikgadi wetland system was estimated at P8.6 million per year. The net present value of community uses were found to be P77,312, P180,912 and P2,326,942 for the Nata, Gaing-O and Xhauxhwatubi Trusts respectively.

2.2.4 Climate change adaptation

Botswana is highly vulnerable to climate change and is located in a region where the rate of warming exceeds the global average. Climate models indicate that the average annual precipitation for Southern Africa will decrease by 10–45% by the end of the century. These models suggest a decrease in precipitation across Botswana ranging between 50 and 200 mm by 2050 (GCF 2017). In addition, temperatures are likely to increase by between 1.5 and 3.5 °C by 2050, especially in western Botswana, subsequently increasing evapotranspiration substantially. It is expected that extreme weather events such as droughts are likely to occur more frequently and with higher intensity (GCF, 2017).

Given its high levels of vulnerability, the importance of increasing resilience and adapting to climate change in Botswana is clear. However, at least two studies, both focussed on the effects of climate change on nature-based tourism in Botswana (Hambira et al.'s 2013 study in Kgalagadi South and Saarinen et al.'s 2012 study in Maun), have shown that most tourism business operators do not have climate change adaptation strategies in place. This makes them vulnerable to the impacts of climate change. Ecosystem-based adaptation (EbA) is one of the important ways in which climate change adaptation can be achieved. This approach involves the conservation, sustainable management and restoration of ecosystems. It is a nature-based solution that harnesses biodiversity and ecosystem services to reduce vulnerability and build resilience to climate change (IUCN, 2017). Increased investments in EbA in Botswana, and throughout the world, are essentially driven by a rapidly growing appreciation of the value of investments in biodiversity and ecosystem services for climate change adaptation.

THE BIODIVERSITY FINANCE PLAN

The Biodiversity Finance Plan

This Biodiversity Finance Plan presents a comprehensive national approach to biodiversity finance that encompasses a suite of priority finance solutions. It builds on progress already made in Botswana to suggest targets and steps that expand the country's biodiversity finance agenda. This offers a means to encourage action and support partnerships for investing in biodiversity. The Plan is composed of:

1. A prioritization of eight key finance solutions based on a participatory selection process;
2. Brief technical proposals to guide the implementation of the prioritized biodiversity finance solutions;
3. Consolidated estimates of the expected finance outcomes associated with the finance solutions where possible; and
4. An outline of the links between solutions forming an integrated Plan.

The remainder of this section briefly summarises the individual priority finance solutions, thereafter consolidating them into an overall plan and presenting consolidated finance results. The following section then provides more detailed technical proposals for each finance solution.

3.1 The biodiversity finance solutions

The prioritisation of finance solutions started with the generation of an initial list of 29 potential solutions that were subjected to screening (Appendix 2 contains more details on the approach to screening and its outcomes). This resulted in the following eight priority solutions that are the subject of this Plan and can be grouped logically according to their primary focus on protected areas, sustainable utilisation and mainstreaming, and ecological management and restoration:

Protected areas focused solutions

1. Review and appropriately adjust protected area entrance and other fees whilst ensuring increases retention of self-generated revenues by PAs.
2. Enhanced benefit sharing through CBNRM improvements.[1]
3. Establishment of a national parastatal to improve the management and finances of PAs.

Solutions focused on sustainable utilisation and mainstreaming

4. Introduction and formal integration of biodiversity offsets into EIA policy and practice.
5. Enhancement and expansion of the Botswana Ecotourism Certification System.
6. Introduction of a sustainability programme and certification system for beef products.

Solutions focused on ecological management and restoration

7. Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas.
8. Accessing global climate change funds for projects with biodiversity co-benefits.

Each solution is described briefly below focusing on its key objectives and what implementation would entail:

3.1.1 Protected areas focused solutions

Review and appropriately increase protected area entrance and other fees whilst ensuring increases retention of revenues for PA management and investment

Entrance and other PA fees are largely publicly accepted

[1] Although its primary focus area is protected areas widely defined (i.e. including all areas with some level of protection such as wildlife management areas), this solution also has a significant focus on sustainable utilisation.

with good revenue potential. They have not been adjusted in Botswana since 2000 presenting a clear opportunity to increase revenues from this source. Growing PA self-generated revenues from fees will only be beneficial to biodiversity conservation if it results in greater funds being made available for PA management. However, at present these revenues are not kept within the PA system and essentially accrue to the Treasury. DWNP, who are responsible for PA management, are then allocated a departmental budget. Moreover, this allocation is inadequate for the purposes of biodiversity conservation and the upkeep of tourism infrastructure and is therefore leading to the gradual degradation of critical tourism assets. The overall objective of this solution would be to increase revenues from entrance and other fees and to ensure that increased amounts of funding are available for PA management and infrastructure which is key to eco-tourism development. It would have a component focused on reviewing fees and one on ensuring increased funds flow to PAs. Assuming entrance and other fee revenues could increase by 50% above current levels within three years, total cumulative net financial gains from the solution over the next 10 years would sum to approximately P201 million (US$19.1 million).

Enhanced benefit sharing through CBNRM improvements

The success of protected areas in conserving biodiversity and as key tourism assets can be significantly enhanced through providing local communities with incentives for wildlife and natural resources conservation. Botswana has a CBNRM programme which aims to provide these incentives by sharing the benefits of local natural resource conservation and offering compensation for the costs of living, and sometimes conflicting, with wildlife. While much progress has been made, the CBNRM programme is not functioning optimally. The overall objective of this solution would be to review and reform the CBNRM programme and associated practices in order to ensure that they deliver better particularly with respect to benefit sharing with local communities thereby augmenting rural welfare, development and anti-poaching efforts. The review would draw from research already done in Botswana, stakeholder inputs and could include some comparisons with the pros and cons of systems in other countries. Total cumulative benefit sharing gains from the solution over the next 10 years would sum to approximately P44 million (US$4.2 million) assuming concession revenues flowing to communities would increase by 25% above current levels within four years.

Establishment of a national parastatal to improve the management and finances of protected areas

Successful protected areas management and financing requires a minimum level of autonomy and flexibility especially in countries with significant protected areas tourism and associated commercial operations. Protected areas management authorities that are structured as government departments, as in the case of DWNP in Botswana, generally do not allow for these requirements to be met and can substantially inhibit longer term progress. In essence this was one of the main findings of the 2008 *Review of Organisational Performance and Development of Strategic Options to Improve the Performance of the Botswana Department of Wildlife and National Parks.* The overall objective of this solution would be to (1) further analyse and reconsider whether protected areas management and financing would be better served by the establishment of a NDPB, a form of parastatal and (2) implement the necessary restructuring should it be decided that it is preferable. The 2008 Review would serve as a useful departure point in this process along with the findings of the 2018 Business Plan for Chobe National Park, research, experiences from other countries and stakeholder engagement. Further analysis would need to include estimating the quantified financial implications of restructuring for costs and rev-

enues, establishing what other reforms would need to accompany the restructuring and assessing the degree to which a parastatal structure could unlock economic opportunities especially in tourism.

3.1.2 Solutions focused on sustainable utilisation and mainstreaming

Introduction and formal integration of biodiversity offsets into EIA policy and practice

Biodiversity offsets are a natural addition to the Environmental Impact Assessment (EIA) process and can be built into the mitigation hierarchy, as is increasingly being done in countries around the world (i.e. when the loss of particularly important biodiversity cannot be avoided or mitigated then offsets can be considered as a form of replacement or compensation). If offsets are not required then EIAs tend to only address avoidance and mitigation leaving a clear residual risk to biodiversity and ecosystem services. Note that offsets should not be used to provide a way to for unacceptable developments to go ahead. EIA policy and regulation in Botswana contain principles that support the use of offsets where appropriate. This solution would build on these principles and strengthen EIAs through introduction of a formal policy and clear regulations specifically for offsets. The financial gains from biodiversity offsets, in the form of avoided land purchase and management costs, were tentatively estimated to increase gradually from approximately P5 million in 2023 to P11 million by 2028. Total cumulative net financial gains from the solution over the next 10 years would sum to approximately P43 million (US$4.1 million).

Enhancement and expansion of the Botswana Ecotourism Certification System

Tourism is crucial to the economy of Botswana and while it is a relatively sustainable sector, especially when compared to others such as mining, it is not without risk to biodiversity. With this in mind, the Botswana Tourism Organisation (BTO) launched the voluntary Botswana Eco-tourism Certification System (BECS) in 2010. Lessons have been learnt from implementing the BECS and the overall objective of this solution would be to build on and strengthen the BECS to promote higher standards of eco-tourism including increased biodiversity conservation efforts. It would start with a review of the BECS in close collaboration with tourism stakeholders to determine how it can strengthened and to plot a way forward. For example, there should be opportunities to find ways to reward operators that implement innovative ideas, options to encourage greater local sourcing and development of local suppliers, the possible introduction of an additional certification level which would incentivise even great commitment, etc. Given the high cost of certification particularly for smaller operators, any strengthening should include streamlining, simplification and concerted efforts to cut costs.

Introduction of a sustainability programme and certification system for beef products

Cattle farming and associated beef production is the most important agricultural sector in the country and can be compatible with biodiversity conservation when sustainably managed. In other words, when more farmers practice conservation agriculture, apply sustainable land management (SLM) principles, avoid over-grazing and apply agro-chemicals with care. The overall objective of this solution would be to introduce a certification scheme that encourages sustainable and biodiversity friendly beef production. The process of developing the solution further will require an initial period of assessment and consultation aimed at testing the likely feasibility of a scheme and levels of interest among producers, buyers and consumers. The Meat Naturally Initiative introduced by Conservation International in South Africa should provide valuable guidance to the development of a certification scheme and associated programme.

3.1.3 Solutions focused on ecological management and restoration

Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas

Invasive plants are a growing challenge in Botswana and pose a clear threat to biodiversity and livelihoods. Despite negative impacts, invasive plants have potential commercial uses for example in producing charcoal, fodder, eco-furniture, building materials and other products. The overall objective of this solution would be to build on current initiatives and gradually increase the sustainable commercial use of invasive species. This should incentivise the eradication of invasive plants whilst boosting livelihoods and job creation in rural areas. Initially the focus would be on Prosopis given the threat is poses and the somewhat better understanding of its potential for commercial use. It will be particularly important to understand what the key barriers are to increased commercial use and whether they could be removed at an acceptable cost in terms of government support. This will require feasibility assessments and further engagement with stakeholders which could form the basis for further appropriate actions. The potentially significant risks attached to the commercialisation of invasive plants would also have to be managed, for example, through the development of clear policy and strategy for combatting alien species along with guidelines for their management.

Accessing global climate change funds for projects with biodiversity co-benefits

Global 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 restoration, which go beyond mitigation and adaptation. Botswana has thus far not accessed any finance from these funds in contrast with the majority of other countries in the region. The opportunity to mobilize climate change funds in Botswana is thus clear and already on the government and development aid agenda. This solution seeks to build on initial efforts and: (1) develop a suite 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) submit well thought out and ultimately successful project proposals to global climate change funds. If successful, a future Green Climate Fund (GCF) allocation to Botswana could be in the order of P231 million (US$22 million) spread over six years starting in 2020.

Box 8: The strategic goals of the NBSAP:

1. Biodiversity is mainstreamed and valued across all sectors of society
2. The pressure on biodiversity is reduced and natural resources are used sustainably
3. Ecosystems, species and genetic resources are protected through sound management
4. Fair and equitable access to the benefits of biodiversity is secured
5. Participatory planning, knowledge management and capacity-building are in place to support NBSAP implementation.

3.2 Integration of solutions

The individual finance solutions are best understood as parts of an overall plan. This section addressed integration, providing clarity on key links and synergies between solutions. 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 finance solutions can classified according to their biodiversity outcomes for alignment with the biodiversity conservation sector and wider government budgeting and operational processes. The five strategic goals of the NBSAP (see Box 6) were chosen for this purpose as the most appropriate reflections of the achievement of overall biodiversity outcomes. The Table below shows which NBSAP strategic goals are supported by each solution. All of the goals are supported to some degree with support for Goal 2 (reduced pressure on biodiversity and sustainable use) and Goal 3 (ecosystem protection) being slightly more prominent.

Table 3-1: NBSAP strategic goals supported by the finance solutions

Solution Name	Main solution focus area	NBSAP strategic goals
Review and appropriately increase protected area entrance and other fees	Protected areas	1, 3
Establishment of a national parastatal to improve the management and finances of protected areas	Protected areas	2, 3, 4
Enhanced benefit sharing through CBNRM improvements	Protected areas (and sustainable utilisation)	4, 2, 5
Introduction and formal integration of biodiversity offsets into EIA policy and practice	Sustainable utilisation, mainstreaming	1, 3
Enhancement and expansion of the Botswana Ecotourism Certification System	Sustainable utilisation, mainstreaming	2, 3
Introduction of a sustainability programme and certification scheme (eco-label) for beef products	Sustainable utilisation, mainstreaming	2, 3
Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas	Ecological management and restoration	2, 3
Accessing global climate changes funds for projects with biodiversity co-benefits	Ecological management and restoration	1, 3

The NBSAP strategic goals are also disaggregated into 20 national targets set for a 10 year period. The finance solutions in this Plan are particularly supportive of the following targets:

- Target 1 - All people in Botswana appreciate how biodiversity contributes to their lives, and are aware of steps they can take to conserve and use it sustainably.
- Target 3 - By 2025, incentives and subsidies across all sectors are revised, designed or introduced to improve support for sustainable consumption and production and promote biodiversity conservation.
- Target 14 - By 2025, ecosystem services are identified and restored or maintained in all Botswana's ecoregions, and contribute to livelihood improvement through strategies that enable equitable access by all vulnerable groups, including women, the poor and local communities.
- Target 16 - By 2025, the Nagoya Protocol is domesticated and operational, and specific actions that ensure fair and equitable access and benefit sharing are implemented.
- Target 20 - By 2017, at least 80% of the required budget for the revised NBSAP, generated from diverse sources, is made available for its implementation.

3.2.2 Characterising the solutions

The finance solutions cover a variety of instruments, finance sources and lead agents. This diversity between solutions, presented in the Table below, should assist in spreading risk within the overall Biodiversity Finance Plan. Market instruments are the most prominent, with six solutions falling primarily under this broad category. There is then one regulatory and one grant mechanism. Regarding sources of increased biodiversity finance/funding (or cost reductions), private persons and companies represent the most common primary source of finance with international tourists featuring prominently. Government thus has opportunities to leverage further private resources in a number of ways. For the majority of solutions, government would need to lead implementation through MENT and its departments and agencies such as DWNP, DEA, BTO and DFRR bearing in mind that many of the finance solutions will only be successful if there are strong partnerships with the private sector and NGOs.

Table 3-2: Finance solutions classified by instrument type, source of finance and lead agent

Solution Name	Instrument type	Primary source of finance	Lead agent
Review and appropriately increase protected area entrance and other fees	Market	Private international; Private local	MENT (DWNP)
Establishment of a national parastatal to improve the management and finances of protected areas	Regulatory	Public local	MENT (DWNP)
Enhanced benefit sharing through CBNRM improvements	Market	Private international; Private local	MENT (DWNP, BTO)

(cont.) Table 3-2: Finance solutions classified by instrument type, source of finance and lead agent

Solution Name	Instrument type	Primary source of finance	Lead agent
Introduction and formal integration of biodiversity offsets into EIA policy and practice	Market	Private local; Public local	MENT (DEA)
Enhancement and expansion of the Botswana Ecotourism Certification System	Market	Private international; Private local	BTO
Introduction of a sustainability programme and certification scheme (eco-label) for beef products	Market	Private international; Private local	BNBPU
Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas	Market	Private local	MENT (DFRR)
Accessing global climate changes funds for projects with biodiversity co-benefits	Grant	Public international	MFED

3.3 Projected financial outcomes

In projecting the financial outcomes of the finance solutions, it is important to recognise the 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 financial benefits remain a valuable tool for planning.

The total net financial gains, associated with the implementation of all the solutions where quantitative estimates were possible, would start relatively modestly at P37 million in 2020 climbing to P63 million by 2022 before decreasing and stabilising at P33 million to P36 million from 2026 to 2028. Total cumulative net financial gains would amount to approximately P474 million (US$45 million) in current terms (un-discounted over 10 years). Note that these gains are inherently conservative as they include only three out of the eight solutions where quantification was possible. Implementing this Plan would thus make a highly significant contribution to reaching the country's biodiversity conservation goals. In terms of their relative contributions, climate change funds have the potential to contribute the largest share to this total at 49%. The contribution of this solution would, however, not be sustained over the long term as grant funding would be temporary. PAs fee revenue would be the next largest contributor at 42%, followed by biodiversity offsets (9%).

Although it would not result in overall financial gains, the CBNRM solution would contribute to increased benefits sharing with local communities. These benefits sharing increases would cumulatively sum to P44 million (US$4.2 million) over 10 years.

BIODIVERSITY FINANCE SOLUTIONS

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 are considered:

- The investment or business case for the solution.
- Context of, and background to, the solution.
- Objectives or aims of the solution.
- Broad suggested next steps needed for implementation, focused on the lead agents for each solution, along with key risks.
- The expected financial results of the solution, quantified to the degree possible, primarily in terms of increased revenues or decreased costs.

4.1 Protected area fees adjustment and revenue retention

4.1.1 Context

The need to grow self-generated revenue, whilst ensuring that biodiversity protection is not compromised, is generally acknowledged by the majority of protected area management authorities. There is also a recognition that the urgency associated with having to show gains in self-generated revenue generation has been increasing and is likely to intensify given government budgetary constraints and substantial protected areas financing needs.

Entrance fees for protected areas such as national parks and game reserves are probably the most important source of self-generated revenues for protected areas at a global scale. They are also a prominent source of revenue in Botswana and are complimented by other fees such as those for camping, special activities and filming outlined in Table 4-1.

The case for this finance solution

- Protected areas managers are under increasing pressure to show self-generated revenue gains particularly within the context of tight fiscal environments.
- Entrance and other fees are largely publicly accepted with good revenue potential derived from providing access to sought-after places and experiences. They have not been adjusted in Botswana since 2000.
- At a minimum, some form of inflation adjustment of fees should be justifiable and there are other factors relevant to fee levels that could be reviewed more regularly.
- Increased fees without increased management effort and investment in protected areas will probably be met with resistance from those being asked to pay more. This argues in favour of increased fee revenue retention to allow for conservation and the upkeep or improvement of critical tourism assets.

Table 4-1: Entrance and other fees for protected areas in Botswana

Fee category	Citizens	Residents	Non-Residents
Entrance – private visitors (per person, per day)	P10 (US$1)	P30 (US$3)	P120 (US$11)
Entrance- Clients of Botswana Tour Operators (per person, per day)	P10	P30	P70
Camping (per person, per day)	P5	P20	P30
Wilderness site camping (per person, per day)	P50	P100	P200
Use of wilderness trail (per person, per day)	P50	P100	P200
Com photography, documentaries (per person, per day)	P125	P250	P1 000
Advertising, feature films (per person, per day)	P1 000	P2 000	P5 000

Vehicle entry fees (per vehicle, per day)	Botswana Registered	Foreign Registered
Private motor vehicles under 3500kg	P10	P50
Commercial motor vehicles under 3500kg	P30	P200

US$1 =P10.50
Note that professional Guides and Staff of Botswana Tour Operators pay an annual fee of P1000
Source: DWNP

Revenue from entrance and other fees has largely been driven by visitor numbers which reached a total of ~450,000 to all PAs in the country by 2017 (see Table below). Approximately 81% of these visitors were for Chobe National Park and 12% for Moremi Nature Reserve. International tourists were dominant at 86% of total visitors to protected areas across the country.

Table 4-2: Visitors numbers to protected areas in Botswana for 2017

Protected Area (PA)	Citizens	Residents	International Tourists	Total Visitors	% of total visitors to all PAs
Chobe National Park	39, 871	6,613	316,946	363,430	80,8 %
Moremi Game Reserve	9, 275	1,510	41,853	52,638	11,7 %
Makgadikgadi Pans National Park / Nxai Pan National Park	1,406	967	18,391	20,764	4,6 %
Central Kalahari Game Reserve	854	271	5,581	6,706	1,5 %
Kgalagadi Trans frontier Park	199	68	3,388	3,655	0,8 %
Khutse Game Reserve	765	464	1,235	2, 464	0,5 %
Total	52, 370	9,893	387,394	449, 657	100 %
%of total per visitor category	12 %	2 %	86 %	100 %	

Revenue from entrance and other fees reached a total of approximately P50 million (US$4.81 million) for 2017 with Chobe and Moremi responsible for the bulk of the revenue at P24.3 million and P12.2 million respectively (see Table below). These revenues can be contrasted with annual budgets allocated to the DWNP for 2017/2018 which was approximately P364 million (consisting of a recurrent/operational expenditure budget of P238 million and a development/capital budget of P125 million). Note that much of this budget does not necessary reach individual Parks. For Example, the Chobe National Park business plan estimates a total budget of P6 to P7 million for the Park (i.e. four times as much as its revenues) which is noted to be clearly inadequate for the Park to fulfil its mandate (Masike, 2018).

The below entrance and other fees for protected areas have been the same since the 2000 promulgation of the National Parks and Game Reserves Regulations. They have thus not been adjusted for inflation for 18 years. This alone has resulted in decreased real revenues over time with increased visitor numbers as the only driver of revenues. There is therefore a clear opportunity to review and amend fees in order to increase revenue from this source.

Growing protected areas self-generated revenues from entrance and other fees will only be beneficial to biodiversity conservation if it results in greater funds being made available for protected areas management. However, at present these revenues are not kept within the protected areas system and essentially accrue to the National Treasury. DWNP, which are responsible for protected areas management, are allocated a departmental budget. Moreover, this allocation is inadequate for the purposes of biodiversity conservation and the upkeep of tourism infrastructure and is therefore leading to the gradual degradation of critical tourism assets (see, for e.g., Masike 2018 for an assessment of the situation in Chobe National Park).

Table 4-3: Annual revenue from fees and budgets allocated to Protected Areas in Botswana

Protected Area (PA)	Revenues				Total	% of total revenues for all PAs
	Entrance fees	Vehicle fees	Camping fees	Other fees (e.g. filming)		
Chobe National Park	P22 795 171	P885 605	P247 420	P355000	P24 283 196	48.1%
Moremi Game Reserve	P10 050 712	P884 545	P1144813	P75165	P12 155 235	24.1%
Makgadikgadi Pans National Park	P7 316 213	P291 424	P103170	P31440	P7 742 247	15.3%
Central Kalahari Game Reserve	P2 633 425	P434 152	P469 857	P0	P3 537 434	7%
Kgalagadi Trans frontier Park	P1 858 020	P11 806	P99535	P0	P1 969 361	3.9%
Nxai Pan National Park	P512 498	P82 710	P965	P0	P596 173	1.2%
Khutse Game Reserve	P179 630	P34 560	P2870	P0	P217 060	0.4%
Total	P45 345 669	P2 624 802	P2068630	P461605	P50 500 706	100%
%of total revenues	90%	5%	4%	1%	100%	

4.1.2 Objectives

The overall objective of this solution would be to increase revenues from entrance and other fees and to ensure that increased amounts of funding are available for protected areas management and investment. The finance solution would have a component focused on reviewing fees and a complementary component on ensuring increased funds flow to protected areas. These two components are explained in more detail below.

Fee review

Entrance, vehicle, camping and other smaller fees would be subject to a review focused on determining appropriate updated fees. This review would need to take into account the careful balancing of numerous competing objectives. For example, management costs need to be covered and revenues optimised without losing sight of affordability considerations especially for citizens (whose tax payments contribute to protected areas funding in the majority of cases). At the same time, pricing can be used as a tool to manage protected areas visitor numbers, meaning that relative price levels for different categories of visitors should be a consideration.

Among other information, the review should consider the effects of inflation and draw on previous research on the topic of entrance fees, especially in Botswana. It should also include a consideration of benchmarking data on comparable entrance fees in other countries which can be very helpful in assisting with fee setting especially if it is presented in a way that allows for and understanding of the relative affordability of fees in other countries compared to what they offer. Surveys of protected areas visitors and tourism operators should also be a key informant along with interviews of key experts and stakeholder inputs.

Fees have not been adjusted since 2000 and another objective of this solution would be to ensure that fees are revised more regularly. Consideration could be given to revision every 3 to 5 years. This is likely to require amendments to the relevant schedule, and possibly regulations, of the Botswana Wildlife Conservation and National Parks Act of 1992.

Increase funding allocations to protected areas

Efforts to ensure increased funding for protected areas would proceed in parallel with the review and adjustment of entrance fees. The required increased funding for protected areas could either come from (1) allowing the protected areas system to retain an adequate portion of the revenues they generate or (2) increased government allocations to protected areas management and investment. Allowing revenue retention tends to increase 'ownership' along with staff and community motivation to enhance their service offering. It can also provide greater autonomy in management through increased control over spending.

The mechanics of the solution would need to be explored with the MFED. Options within the current institutional framework could include a policy change to allow direct retention of all or part of fees in a special DWNP account. Consideration could also be given to designating a portion of entrance fees as a revenue stream for the National Environment Fund (NEF) and then ensuring that this revenue stream reaches the DWNP. The option to create a new institution for the management of PAs, in the form of a parastatal or Parks Board, may be another option which is discussed further in as a separate finance solution below.

Note that this finance solution is also strongly supported by the findings of the 2018 Business Plan for Chobe National Park. It found that entrance fees in Botswana are low when compared with park fees in the region and not supportive of the low volume high value tourism strategy. The Business Plan makes tentative recommendations on new fees for Chobe and calls for a regular re-

view and adjustment of fees (e.g. every 3 to 5 years). In addition, it advocates for revenue retention as a means to achieve financial sustainability (Masike, 2018).

4.1.3 Next steps and risks

The lead implementers of the solution would be the DWNP under the MENT in close collaboration with the MFED particularly with respect to questions of revenue retention.

Other key stakeholders would include:

- Botswana Tourism Organisation (BTO)
- Hospitality and Tourism Association of Botswana (HATAB)
- Botswana Guides Association (BOGA)
- Key NGOs working on tourism and PAs
- Donors (UNDP, GiZ, USAID and others)
- Researchers and academics (e.g. CAR, Okavango Research Institute, etc.)

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step. Note that steps associated with reviewing and amending fees should be concurrent with those associated with increasing funding allocations to protected areas.

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

Step	Lead party	Indicative timescale
Review and amend fees		
1. Seek initial stakeholder inputs on current fees and potential for changes.	DWNP	2 to 3 months
2. Review existing fees, benchmark them against fees charged in comparable countries and conduct surveys of tourist and tourism operators to inform fee revision.	DWNP	6 to 9 months
3. Propose revised fees based on the review process and initial stakeholder inputs. Invite stakeholders to comment.	DWNP	1 to 2 months
4. Finalise revised fee levels taking stakeholder comments into account as appropriate.	DWNP	1 months
5. Take revised fees through appropriate legislative process and inform stakeholders giving them enough time to prepare for changes	DWNP	9 to 18 months
6. Implement revised fees	DWNP	1 to 2 months
7. Establish a process and timing for more regular updating of fees in the future.	DWNP	Ongoing
Increase funding allocations to protected areas		
1. Assess options for increased funding allocation, including revenue retention.	DWNP and MENT	2 to 4 months
2. Engage with MFED to determine best workable option.	DWNP and MENT	3 to 6 months
3. Make necessary changes to financial systems such as revenue collection and payment systems.	DWNP and MENT	3 to 6 months

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

- Decreased protected areas visitor numbers particularly if fees for international visitors are set too high relative to competing countries and if fees for locals reduce affordability significantly. Mitigation: Ensure well thought out studies and appropriate stakeholder engagement are undertaken before setting fees.
- Stakeholders object to increased fees as a proxy for their wider objections to how protected areas are being managed and the limited investment in them. Mitigation: Ensure stakeholders are very clear on the purpose of the project and how it could benefit the areas surrounding protected areas. In addition, DWNP could increase efforts to address wider stakeholder concerns with protected areas management.
- Revenue retention within the DWNP proves unworkable within the confines of public finance management regulations. Mitigation: Effort is switched to lobbying for larger budgets for protected areas.
- Lower than expected tourism growth due to external factors reduces visitor numbers and thereby revenues.

4.1.4 Expected financial results

In order to include some tentative estimate of potential gains, it was assumed that entrance and other fee revenues could increase by 50% above current levels within three years (i.e. an additional amount of P25 million by 2021) and that this revenue would all be retained for protected areas management. This would be net of additional implementation costs and is a conservative estimate when one considers the effects of inflation over the last 18 years since fees were last adjusted. Additional cost for the initial development of the solution, in the form of the review, technical inputs and consultations, were assumed to be P1 million spread over two years. Total cumulative net financial gains over the next 10 years would sum to approximately P201 million as follows (see Appendix 3 for more detailed estimates):

Net financial gain in current terms (Pula million)										
2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
- 0.5	- 0.5	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	201.0

4.2 Enhanced benefit sharing through CBNRM improvements

4.2.1 Context

Similar to entrance fees, concessions provide the opportunity to ensure that PAs are able to grow self-generated revenues. Moreover, they present an opportunity for benefit sharing with local communities. The primary programme aimed at benefit sharing is the CBNRM programme which was started in Botswana in the 1990s and was further formalised through the 2007 amended CBNRM policy. It aims to empower communities to derive benefits from local natural resources, particularly wildlife, offer compensation for the costs of living with wildlife resources and

provide incentives for conservation (CAR, 2016). Under it, communities are allocated land use rights for defined areas which can be wildlife management areas (WMAs), community use zones inside National Parks, Game Reserves, Forest reserves and any other areas within Tribal and State Land. The basic institutional arrangements for CBNRM in Botswana are as follows (Chevallier & Harvey, 2016: 3):

- "First, a community-based organisation (CBO) must legally be established, normally in the form of a community trust. The community trust is mandated to manage revenue from resources in the best interests of the community, which may consist of a number of different villages.
- Second, registered CBOs are entitled to lease land from the Land Board, attaining associated user rights from the Department of Wildlife and National Parks (DWNP). Such rights may entail photographic safari rights, hunting quotas (before the 2014 hunting moratorium) and other rights to pursue commercial harvesting activities.
- Third, these rights are utilised to manage resources directly, or sold or auctioned to third parties (or members). Typically, CBOs in WMAs enter into joint venture partnerships (JVPs) with private tourism operators through sub-contracting rights and leases. These JVPs not only pay the CBOs for leasing the land but also generate local employment opportunities."

In a typical arrangement, a CBO will lease land from the Land Board and then sub-lease all or part of the land use rights to a private tourism operator. The amounts that CBOs are required to pay in rental to Land Boards are determined by the relevant Land Board stipulated in the head lease. Amounts vary as they take into consideration several factors such size and viability of the area for tourism

The case for this finance solution

- The success of protected areas in conserving biodiversity and as key tourism assets can be significantly enhanced through providing local communities with incentives for wildlife and natural resources conservation.
- Botswana has a CBNRM programme which aims provide these incentives by sharing the benefits of local natural resource conservation and offering compensation for the costs of living, and sometimes conflicting, with wildlife.
- The CBNRM programme is not functioning optimally resulting in resentment and negative impacts on local communities along with wider society. Reform options for CBNRM are available and should go a long way to rectifying the situation.
- This would allow these programmes to better augment rural development, welfare programmes and anti-poaching efforts.

operations (primeness). Sub-leases to private tourism operators are generally negotiated or determined through competitive bidding or direct allocation and should reflect the relative tourism or other commercial value of the concession. As such they can vary greatly from a few hundred thousand to millions of Pula per year. Final amounts negotiated are commercially sensitive and therefore confidential. The most recent CBNRM review estimates that approximately P26.8 million in revenues flowed to 53 active CBOs (out of a total of 94 registered CBOs) in 2016. Approximately P18.6 million of this was earned through joint venture partnerships up from P15.9 million in 2012 (CAR, 2016).

The 2007 CBNRM policy attempted to distribute CBNRM revenues more equitably to all CBOs in Botswana (not only to those CBOs that could establish successful tourism, hunting or harvesting operations). It specified that 35% of natural resource income could be kept by local CBOs, while the other 65% flows into the National Environment Fund (NEF). Any CBO can then apply to the NEF for funding, whether it is explicitly linked to a WMA or not, thereby allowing those with no rights to wildlife resources to submit applications to try to indirectly access CBNRM revenue (CAR 2016; Chevallier & Harvey 2016).

In terms of support for CBOs, CAR (2016) notes that CBOs have received significant support from NGOs, government and international cooperating partners (ICPs) although the majority of ICP support ended after Botswana attained middle-income country status. NGOs play an important support role for community mobilisation, capacity building, proposal writing, project development, project implementation, constitutional write-up and land use management plan preparation. Government offers support through the Technical Advisory Committees (TAC) and through various grant funds (CAR, 2016).

There are also concessions generally on state land in National Parks and Game Reserves that are not allocated to CBOs but are rather direct agreements between private concessionaires and the state presented by MENT. Such concessions do not pay Land Board rentals (as they are on state land) and only pay Resource Royalties to BTO. These Royalties tend to range between 3% and 6% of gross profit.[2] They are, however, set through a competitive tender process so there can be cases where lower percentages apply for more marginal areas as an incentive for investors or where higher percentages are offered for prime areas.

The customary CBNRM operational model, in which CBOs are granted use rights and enter into agreements with tourism operators as described above, was altered recently for selected areas. The government has introduced a tourism land bank which gives BTO the power to circumvent CBOs and enter into such agreements directly with tourism operators with the intention of facilitating tourism investment. BTO facilitates the process to identify investors usually through competitive bidding (tender). The communities still benefit from their share of the lease rentals under this system. However, these arrangements have led to confusion and dissatisfaction in some communities who feel they have been side lined and their rights taken from them. The dissatisfaction seems to arise from the communities feeling they have no guarantee to benefits through the lease and are disempowered as they do not contract directly with the investor.

Issues of corruption have also been raised. At the local level, for example, the senior leadership of some CBOs may accumulate too much power over the allocation of revenues and use this for personal gain. At a national level, for example, concerns have been raised regarding the lack of transparency or of favouritism in the allocation of concessions through the land bank process.

While there are aspects of the CBNRM programme that are functioning well enough, it is recognised that there is also room for improvement. This is in keeping with research on the topic including that of Mbaiwa (2015a) who

found that some CBNRM projects in Botswana have been successful with respect to biodiversity conservation and rural development while others have not.

4.2.2 Objectives

The overall objective of this solution would be to review and reform the CBNRM programme and associated practices in order to ensure that they deliver better, particularly with respect to benefit sharing with local communities thereby enhancing their incentives to conserve biodiversity. The review would need to take into account the careful balancing of numerous competing objectives and draw on extensive stakeholder inputs. Reforms would need to strike a careful balance between local and national interests and incentives.

The 2016 CBNRM Review provides guidance on the kinds of reforms that should be considered. Its main recommendation are as follows (CAR, 2016: 37):

1. "Clarify the role of BTO in CBNRM in terms of the CBNRM policy, its interactions with CBOs and with other support agencies (e.g. DWNP and TACs);

2. (Re-) Establish a CBNRM support programme with government and NGOs. Support should focus in particular on building CBO capital (human, physical and environmental), diversification of CBO activities and natural resource management;

3. The CBNRM programme should be regularly reviewed to assess progress and performance. A review template needs to be developed with the National CBNRM Forum to ensure that the reviews can be comparable;

4. Develop a CBO/CBNRM data base to ensure that no data are lost and that better data are available for future analysis and review. This could be spearheaded by the CBNRM advisor together with the CBNRM National Forum;

5. Special efforts (and support is needed) need to be made to enhance CBO efforts to manage natural resources. Such efforts should be informed by Management Orientated Monitoring System (MOMS) data from CBOs and DWNP. The MOMS data also provide data that can enhance CBO governance;

6. Develop a CBNRM/CBO website to market CBO activities better. This could be a joint venture between BTO and CBOs;

7. Integrate CBNRM more closely with the implementation of the Revised Rural Development Policy;

8. Facilitate CBO access to the National Environmental Fund. This requires an analysis of the acceptance and rejection rate of past CBOs proposals that have been submitted for funding and lessons learned.

9. Special support is needed to ameliorate the adverse impact of the hunting ban on CBOs, in particular the loss of revenues and the reduction in community and household benefits."

The review should also draw on previous research on the topic of CBNRM in Botswana along with other material such as articles in the press and interviews with key experts and community representatives. In addition, it could

include some comparisons with the pros and cons of systems in other countries. The contrasting systems and experiences of Namibia and Tanzania, both of whom have communal conservation areas and CBNRM programmes, may be particularly useful.

The Namibian CBNRM programme focused on the formation and support of Communal Conservancies. Once a community declares a Conservancy (with a sustainable management plan agreed to with the state), they are given substantial autonomy over management and are given rights over game and tourism opportunities. They can then engage with concessionaires, allocate hunting licences, etc and keep 100% of resultant revenue. At the end of 2014 there were 41 joint-venture tourism enterprises in Conservancies across Namibia and 48 conservation hunting concessions. Cash income to conservancies and members rose from less than N$1 million in 1998 to N$74.3 million (~US$5.5 million) in 2014 reflecting both the increased number of Conservancies and their earning power (NACSO, 2015). Note that Martin (2008), in his organisational review of DWNP, also advocates for CBNRM reform that includes 100% revenue retention by local community CBOs in Botswana. Namibia is recognised as a success in ensuring that CBNRM provides biodiversity conservation benefits and benefits to local communities. WBG (2015) provides a summary of successes and lessons noting that approximately 20 countries have sent government delegations to learn from the Namibian experience.

The Tanzanian system is more complex and less favourable to local communities when compared to Namibia and has drawn relatively more criticism. WMAs in Tanzania are managed by Authorised Associations (AAs) which market opportunities for hunting and tourism concessions and select investors through a competitive tender system. Investors pay the agreed concession fees directly to the national government which then deducts transactions costs and allocates the remaining revenue. For tourism revenue, it is allocated as follows - 20% goes to the Tanzanian Wildlife Authority, 15% to the District Council and 65% back to the WMAs. There are, however, reports that this distribution does not always happen in practice, the formula has been criticised for being unfavourable to WMAs and concerns have been raised about the motives behind the limited autonomy granted to WMAs (see CCDR, 2015 and USAID, 2016). Total annual revenues generated by all WMAs in Tanzania from tourism and hunting have risen sharply over time from approximately US$130,000 in 2007 to just over US$1 million in 2012 (WWF, 2014).

4.2.3 Next steps and risks

The lead implementers of the solution would be the DWNP and BTO under the MENT.
Other key stakeholders would include:

- Minister of Local Government (MLG)
- Ministry of Finance and Economic Development (MFED)
- Botswana Community Based Organisations Network (BOCOBONET) and individual CBOs
- Land Boards
- Botswana Council of Non-Government Organisations (BOCONGO) and key NGOs working on CBNRM.
- Hospitality and Tourism Association of Botswana (HATAB)
- Botswana Guides Association (BOGA)
- Donors (UNDP, GiZ, USAID and others)
- Researchers and academics (e.g. CAR, Okavango Research Institute, etc.)

[2] Gross profit or gross margin can be defined as the difference between revenue and the cost of making a product or providing a service, before deducting overheads, payroll, taxation, and interest payments (Charles, 2011).

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

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

Step	Lead party	Indicative timescale
1. Seek initial stakeholder inputs on the current system and potential for changes.	DWNP	2 to 4 months
2. Review the current system, benchmark against other comparable countries.	DWNP	6 to 9 months
3. Propose draft amendment based on the review process and initial stakeholder inputs. Invite stakeholders to comment.	DWNP	3 to 6 months
4. Finalise proposed reforms and amendments taking stakeholder comments into account as appropriate.	DWNP	3 months
5. Take reforms through appropriate legislative process and inform stakeholders giving them enough time to prepare for changes.	DWNP	9 to 12 months
6. Implement reforms.	DWNP	Ongoing
7. Monitor implementation challenges and adapt as needed.	DWNP	Ongoing

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

- Increased confusion among stakeholders with respect to their rights, roles and responsibilities. Mitigation: Ensure that stakeholder engagement manages expectations and includes clear messages on what is being proposed.
- Private tourism operator uncertainty on direction of reforms may result in a wait and see attitude to further new partnerships and investments. Mitigation: Ensure specific concerns of tourism operators are well understood, ask them for suggested remedies and develop measures to increase certainty to the degree possible.
- Heightened expectations among communities for greater share of benefits aren't met. Mitigation: Ensure that stakeholder engagement manages expectations and includes clear messages on what is being proposed.
- Reduced revenue to national government results in resistance to any changes. Mitigation: increase efforts to make the case for increased benefit sharing.

4.2.4 Expected financial results

The solution seeks to provide enhanced incentives for biodiversity conservation by ensuring that a greater pro-

portion of the benefits thereof accrue to local communities. In order to include some tentative estimate of these potential gains, it was assumed that concession revenues flowing to communities would increase by 25% above current levels within four years (i.e. an additional amount of P6.7 million) tracking inflation thereafter. Additional cost to implement the solution, in the form of the review, technical inputs and consultations, were assumed to be P3 million spread over three years. Total cumulative benefit sharing from the solution over the next 10 years would sum to approximately P44 million as follows (see Appendix 3 for more detailed estimates):

Net financial gain in current terms (Pula million)										
2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
- 1.0	- 1.0	- 1.0	6.7	6.7	6.7	6.7	6.7	6.7	6.7	43.9

4.3 Establishment of a parastatal to improve the management and finances of protected areas

4.3.1 Context

The case for this finance solution

- Successful protected areas management and financing requires a minimum level of autonomy and flexibility, especially in countries with significant protected areas tourism and associated commercial operations.
- Protected areas management authorities that are structured as government departments or wholly within government departments, as in the case of DWNP in Botswana, generally do not allow for these requirements to be met. This can substantially inhibit longer term progress in terms of optimal conservation, tourism and commercial management.
- It therefore seems prudent to further analyse and reconsider whether protected areas management and financing would be better served by the establishment of a Non-Departmental Public Body (NDPB), a form of parastatal, focused on protected areas management.

Protected areas in Botswana are currently managed by the Department of Wildlife and National Parks (DWNP). Over the years concerns have been raised that a government department is not an appropriate organisational structure for managing protected areas and that a Non-Departmental Public Body (NDPB), a form of parastatal, would be a better option.

In particular the 2008 *Review of Organisational Performance and Development of Strategic Options to Improve the Performance of the Botswana Department of Wildlife and National Parks* dealt with this question of organisational structure (see Martin 2008). Its point of departure was the extent to which government is optimally structured and enabled to (1) produce a general increase in the status of wildlife populations; (2) develop a tourism industry that realises the full economic potential of wildlife management as a land use; and (3) ensure that the economic development resulting from successful wildlife management has its maximum impact in the areas where local communities most need it. Based on the status quo, key challenges, engagement with government officials and an international benchmarking, the Review recommended that the DWNP needed the following (Martin, 2008):

1. A focus on core business and an accompanying organisation structure including clear division between two main functions – management of National Parks and Game Reserves and development of land use based on wildlife outside these areas (primarily in WMAs).
2. Increased autonomy and flexibility focused on revenue generation and retention, expenditure (for e.g. allowable amounts, the timing of spending, procedures for spending and from whom services can be procured) and overall authority to make responsive operational decisions quickly and efficiently.
3. An improved promotion and career advancement system to facilitate the building of a strong professional team.
4. A revision of wildlife conservation policy and legislation to make it more workable and bolster the ability to devolve some functions and incentivise the development of wildlife as a primary form of land use.
5. A revision of Community-based Natural Resources Management (CBNRM) Policy so that it devolves more significant rights over wildlife to local communities and does not create an unrealistic workload for the DWNP.

With respect to organisation structuring, the Review recommended that the DWNP should become a NDPB to enable it to fulfil its objectives and desired functions more effectively than remaining a government department would allow for. It found that, with some changes, the Act establishing the Botswana Tourism Board could be used to establish a similar NDPB for protected areas management. It also made reference to the size and importance of the DWNP which should inform an appropriate organisational structure. The DWNP is the largest department in its parent Ministry (MENT) and is larger than some other entire Ministries. It performs an extremely important land management function over large areas and the success of the overall tourism industry relies on it.

Other reviews of organisational structuring for protected areas management have also considered the pros and cons of the parastatal model. For example, Lamarque and Magane (2007) conducted a review for Mozambique and also found that a parastatal structure was generally conceptually preferable although obviously not without its own potential pitfalls. They cite South African National Parks Board (SANParks), Kenya Wildlife Service and the Tanzanian National Park Authority (TANAPA) as examples of more successful PA management parastatals all of whom manage major tourism assets. They found that

the reasons for the creation of parastatal entities were fairly similar in most countries. Chief among these was the need for greater autonomy, flexibility and responsiveness, faster decision-making and, in some cases, facilitating better community, civil society and the private sector participation. In addition, more scope to generate, retain and effectively spend self-generated revenue was mentioned.

4.3.2 Objectives

The overall objective of this solution would be to (1) further analyse and reconsider whether protected areas management, and associated financial outcomes, would be better served by the establishment of a NDPB / parastatal and (2) implement the necessary restructuring should it be decided that restructuring is preferable.

The detailed findings of the review by Martin (2008) briefly summarised above could serve as a useful departure point. Other work conducted on this topic in Botswana would also undoubtedly be relevant such as the 2018 Business Plan for Chobe National Park. It found that "A need to consider a change in the management of the park from public to parastatal. This will override the challenges of legal and policy framework that acts as a barrier in inhibiting the park sustainable financing. It is important to note that current privatization of the camp sites can still be undertaken in a parastatal set-up" (Masike, 2018: 9). More recent research and experiences from other countries should also be instructive in deepening understanding.

Extensive engagement within the DWNP and MENT, with other government ministries and bodies and with key stakeholders would be particularly important. For example, the implications of a restructuring for BTO would need to be carefully considered, particularly as some of its current functions, allocating and manging concessions being one of them, are generally performed by the protected areas management parastatals that have been established in other countries. The MFED would also play a leading role in highlighting their concerns around parastatals relative to their potential to result in gains.

Key issues for further analysis, to inform any decisions on whether a parastatal would be a more appropriate organisational structure, include the following:

- What are the specific challenges that DWNP experiences in striving to deliver its mandate and would dealing with these challenges clearly be enhanced if the DWNP was re-structured as a parastatal?
- What would the quantified financial implications of restructuring be including for costs and revenues? It needs to be clear that it would be possible to reduce costs and increase revenues over time even if there are up-front costs associated with restructuring. In essence, the burden on the fiscus would need to decrease in the medium and longer term.
- What other reforms would need to accompany the restructuring such as alternative arrangements for the channelling of a portion of funds from concessions to the protected areas management parastatal?
- Would a parastatal structure allow for the unlocking of economic opportunities and can these be quantified? Tourism and supporting services are likely to be a focus in this regard.

4.3.3 Next steps and risks

The lead implementers of the solution would be MENT as the parent ministry of the DWNP and the BTO in close collaboration with the MFED.

Other key stakeholders would include:

- Hospitality and Tourism Association of Botswana (HATAB)
- Botswana Guides Association (BOGA)

- Botswana Council of Non-Government Organisations (BOCONGO) and key NGOs working on PAs and tourism.
- Botswana Community Based Organisations Network (BOCOBONET) and individual CBOs
- Donors (UNDP, GiZ, USAID and others)
- Researchers and academics (e.g. CAR, Okavango Research Institute, etc.)

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step. Note that Step 5 onwards would only be relevant if an in-principle decision to pursue restructuring is reached in Step 4.

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

Step	Lead party	Indicative timescale
1. Internal review of previous research and other relevant material in order for MENT to take an initial view on the need to pursue a restructuring of protected areas management.	MENT	6 to 9 months
2. Initial engagement with MFED and other relevant government bodies to discuss options for restructuring and confirm analysis required to inform a decision on restructuring.	MENT	3 to 6 months
3. Carry out analysis required to inform a decision on restructuring with participation and guidance from MFED.	MENT and MFED	6 to 9 months
4. Make in-principle decision on whether restructuring should be pursued.	MENT and MFED	3 to 6 months
5. Wider stakeholder engagement.	MENT	6 to 9 months
6. Propose draft restructuring options based on the review process and initial stakeholder inputs. Invite stakeholders to comment.	MENT	9 to 12 months
7. Finalise proposed reforms and amendments taking stakeholder comments into account as appropriate.	MENT	6 to 9 months
8. Take restructuring through appropriate legislative process and inform stakeholders giving them enough time to prepare for changes.	MENT	12 to 24 months
9. Implement restructuring.	MENT	Ongoing
10. Monitor implementation challenges and adapt as needed.	MENT	Ongoing

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

- Political climate, and concerns regarding the risks associated with greater autonomy, may not be conducive to the establishment of additional parastatals regardless of their potential merits. Mitigation: Ensure that any analysis of the benefits of a parastatal is rigorous and does not shy away from addressing legitimate concerns.

- Parastatal may be established but not in a way that maximises the chances of success – e.g. too rapid creation/transition, insufficient financial (and human) resources to carry out its mandate, political interference, without concomitant legal reforms of outdated laws and policies, etc. In 2008, Martin observed that when the Zambia Wildlife Authority (ZAWA) was established in 1998, it was not given an independent Board and the necessary financial support from government to capitalise it from the outset. Its autonomy was weak, corruption and political interference hamstrung it and its debt burden increased (Martin, 2008). By 2016, ZAWA was dissolved and its responsibilities passed to the newly formed Department of National Parks and Wildlife in the Ministry of Tourism and Arts. Mitigation: Ensure that if a parastatal is formed, it follows best practice drawing on lessons from other countries.

- Stakeholder resistance to the formation of a parastatal because of their experiences from management of some of the existing parastatals. Mitigation: Take specific stakeholder concerns into account, and ensure that these help guide the development of a parastatal if that comes to pass.

4.3.4 Expected financial results

One of the main goals of this solution would be to decrease the costs and increase the revenues associates with protected areas management through efficiencies resulting from greater autonomy. Estimating net financial gains is, however, not possible at this early stage given the lack of clarity on eventual outcomes.

The potential for gains can nevertheless be illustrated with reference to the case study of SANParks which managed to grow annual visitor numbers from 4.95 million in 2012 to 6.75 million in 2016. It also grew self-generated revenues by 12% per year between 2009 and 2016 (inflation was about 5% over that period) to R1.497 billion (~US$ 110 million). This was not achievable without direct government allocations which grew to R1.4 billion by 2016 in addition to self-generated revenues. Protected areas management therefore took heed of basic business principles, appreciated by National Treasury, namely that you need to keep investing money to make money. While it is not possible to isolate the gains that can be attributed specifically to SANParks' parastatal structure, it is safe to assume that these gains would have been substantially less likely if SANParks was a department within a parent ministry.

4.4 Integration of biodiversity offsets into EIAs

The case for this finance solution

- Land transformation for development will continue to take place in Botswana, with the related biodiversity loss. Biodiversity offsets are intended to counterbalance these losses in biodiversity and strengthen the Environmental Impact Assessment (EIA) process.
- Well designed and carefully implemented biodiversity offsets 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.
- A national biodiversity offsets policy creates predictability and certainty for public and private sector developers. It may also increase their chances of accessing project finance from the large multi-lateral and other lenders that require the consideration of offsets.

4.4.1 Context

The Business and Biodiversity Offsets Programme (BBOP)[3] defines biodiversity offsets as (BBOP, 2012: 1):

> *"Measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity 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.".*

Biodiversity offsets are a natural addition to the Environmental Impact Assessment (EIA) process and can be built into the mitigation hierarchy, as is increasingly being done in countries around the world (i.e. when the loss of particularly important biodiversity cannot be avoided or mitigated then offsets can be considered as a form of replacement or compensation). If offsets are not required then EIAs tend to only address avoidance and mitigation leaving a clear residual risk to biodiversity and ecosystem services. Note that offsets should not be used to provide a way to for unacceptable developments to go ahead – i.e., the impacts of some projects will remain unacceptable even with a biodiversity offsets. These project tend to be those that would result in the destruction of particularly important and essentially irreplaceable biodiversity.

From a biodiversity finance solution point of view, the principles of additionality and net gain are key. Biodiversity offsets may be considered to be a means of financing a net increase in the protected area estate and/or a net gain in ecosystem functioning through restoration and rehabilitation components. Accessing project finance from some major development project funders are also conditional on the application of offsets. The International Finance

[3] BBOP is a partnership between companies, governments, conservation experts and financial institutions that aim to explore whether, in the right circumstances, biodiversity offsets can help achieve better and more cost effective conservation outcomes than normally occur in infrastructure development, while at the same time helping companies manage their risks, liabilities and costs.

Corporation (IFC), for example, insists that, "in critical habitats, any significant residual impacts must be mitigated using biodiversity offsets." (see IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources). They will not fund projects that do not take this approach.

No biodiversity offsets have been implemented in Botswana thus far. EIA policy and regulation are, however, in place in the form of the Environmental Impact Assessment Act, 2011 (No. 10 of 2011) and the accompanying Environmental Assessment Regulations of 2012. The Regulations contain principles that support the use of offsets where appropriate as part of the mitigation hierarchy. Mitigation is described broadly to denote actions that serve to avoid, reduce or compensate for adverse impacts in the guideline for the standardisation of the Environmental Management Plan (EMP) contained in the Regulations. It specifies that the elements of mitigation can include the following (DEA, 2012: 19):

- "Avoidance;
- Minimisation;
- Rehabilitation - this refers to rectifying adverse impacts by repairing or enhancing the affected resources;
- Restoration - this is an extreme form of rehabilitation and typically requires an extensive engineering of a selected resource to achieve what might be considered original state. It should be borne in mind that once a habitat is destroyed it is extremely difficult to recreate it to the original state;
- Replacement - this is compensation for the loss of a natural resource at a location with the creation or protection of the same natural resource (or one similar in nature), at another location; and
- Compensation - this refers to the awarding of financial or material benefits to people affected by the project (especially those who have lost their homes and livelihoods)."

The inclusion of 'replacement' as an option in the EIA Regulations is particularly supportive of offsets in principle. However, there is an opportunity to fill potential gaps and strengthen EIAs through introduction of a formal policy and clear regulations specifically for offsets. International experience has shown that, for offsets to reach their full potential, they should ideally be closely and formally integrated within statutory EIA policy and process.[4] BBOP estimates that almost 30 countries have offset-enabling legislation. In the Southern African region, South Africa has progressed furthest. A draft national policy on biodiversity offsets was developed by DEA-SA and published for public comment during 2017. The intention is for this policy to be finalised in the near future, thereby providing the policy guidance that would be a pre-requisite to the scaling up of biodiversity offsets. Mozambique is in the process of developing a biodiversity offsets policy, with supportive stakeholder engagement and legal studies.

4.4.2 Objectives

The primary objectives of the solution would be to formulate a policy, regulations and implementation framework specifically for biodiversity offsets to be integrated into EIA practice in Botswana. This would create a cohesive and predictable framework for implementing biodiversity offsets.

The experience of professionals, government officials and NGOs involved in EIAs would serve as a good starting

[4] Although there are some cases where offsets have been successfully implemented without clear government policy and regulation of offsets.

point. There are also a number of existing policies, regulations, guidelines and case study experiences from other countries that can assist with the development and formalisation of biodiversity offsets. A few of these include:

- Various BBOP material including their Standard on Biodiversity Offsets and Biodiversity Offset Design Handbook (BBOP, 2012).
- The DEA South Africa draft national biodiversity offset policy of 2017 (DEA-SA, 2017a) along with policies and regulations of other countries.
- The International Union for Conservation of Nature (IUCN) guidance on biodiversity offsets policy options for governments of 2014 (IUCN, 2014).
- The OECD guidance on biodiversity offsets focused on effective design and implementation (OECD, 2016).

A national policy should specify when offsets are required and outline the basic rules for offsets. Ensuring that policy takes MFED 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, would also be required. Experience elsewhere indicates that some potentially difficult fiscal and administrative obstacles to implementation often need to be resolved before progress can be made. There is thus a need to explore, assess and develop consensus on a number of key issues. The later stages of the development of offsets in South Africa, for example, raised issues including the following (DEA-SA, 2017):

- 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.
- Understanding the costs associated with offsets including the probable costs of acquiring and/or securing a sufficient area of suitable land including transaction costs; the cost of protection, rehabilitation and management of the biodiversity offset area and the costs of monitoring and auditing performance and compliance.
- 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.
- 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 trust funds, and determining who funds should best be vested with.
- 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.
- 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.
- 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.

It is likely that some of these issues would need to be addressed in guidelines or similar.

4.4.3 Next steps and risks

The lead implementers of the solution would be DEA in close collaboration with other departments in MENT.

Other key stakeholders would include:

- MFED and other ministries (such as Ministry of Minerals, Energy and Water Resources; Ministry of Investment, Trade and Industry; Ministry of Transport and Communications; Ministry of Agricultural Development and Food Security) or parastatals (e.g. Botswana Power Corporation, Water Utilities Corporation, Botswana Development Corporation, Botswana Housing Corporation) that may undertake projects which require offsets.
- Botswana Environmental Assessment Practitioners Association (BEAPA).
- Industry representative bodies from key sectors that may undertake or advise on projects which require offsets (e.g. Botswana Chamber of Mines, Botswana Institution of Engineers, etc).
- Key NGOs working on biodiversity in EIAs.
- Donors (UNDP, GiZ, USAID and others).
- Researchers and academics (e.g. CAR, Okavango Research Institute, etc.).
- Government representatives and NGOs working on developing offset policies in other countries.

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

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

Step	Lead party	Indicative timescale
1. National consultation with other government departments and stakeholders in order to identify and start process of considering a policy and regulations and creation of a technical working group.	DEA	6 months
2. Identification and assessment of offsets operational models with related practical, legal and financial implications. Engagement with government representatives and NGOs working on developing offset policies in other countries.	DEA	6 to 12 months
3. Development of draft policy proposals and regulations	DEA	6 to 12 months
4. Further stakeholder consultation on draft proposals.	DEA	3 months
5. Refinement of policy and regulations and commencement of relevant legislative processes.	DEA	9 to 18 months
6. Implement the policy and regulations.	DEA	Ongoing
7. Monitor implementation challenges and adapt as needed.	DEA	Ongoing

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

- Divergent understanding of offsets and views on their merits among the biodiversity sector slows the process. Mitigation: Plan for sufficient stakeholder engagement with clear messaging.
- Insufficient engagement with all relevant stakeholders, including other government departments, biodiversity specialists and EIA practitioners. Mitigation: Plan for sufficient stakeholder engagement.
- Limited buy-in and participation of MFED creates difficulties in aligning the offsets policy with related finance policy. Mitigation: Plan and make time for high level engagement as well technical engagement between the relevant departments.

4.4.4 Expected financial results

The key financial gain from successful implementation of biodiversity offsets, that result in a net gain for biodiversity, would be their complementing continued government expenditure to help meet conservation goals. 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 South African estimates in DEA-SA (2017). It was assumed that the policy would take four years to develop and approve and that, in its first year of implementation, three offsets would be required per year throughout Botswana (over 20 are required per year in South Africa). This number would then increase gradually to six offsets per year after another six years. An average offset area gain of 1,000 ha per offset was then assumed. The land purchase and management cost avoided by the state was assumed to be P1,500 per hectare and P150 per hectare per year respectively. Additional cost to develop the policy, in the form of the review, technical inputs and consultations, were assumed to be P2 million spread over four years. Additional government implementation costs were then assumed to be approximately P2 million per year. Based on these assumptions, biodiversity offsets should result in annual net benefits that increase gradually from approximately P5 million in 2023 to P11 million by 2028. Total cumulative net financial gains form the solution over the next 10 years would sum to approximately P43 million as follows (see Appendix 3 for more detailed estimates):

Net financial gain in current terms (Pula million)										
2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
- 0.5	- 0.5	- 0.5	0.5	3.0	5.1	7.3	8.1	10.5	11.4	43.2

4.5 Botswana Ecotourism Certification System strengthening

4.5.1 Context

Tourism makes the second largest contribution to the GDP of Botswana after mining. In addition, its importance continues to grow and it has significant sustainability advantages relative to extractive sectors. The tourism sector is not, however, without risks to biodiversity and ecosystem services. This includes impacts associated with the construction of accommodation and other infrastructure for tourists, habitat loss particularly in crowded sites, increase waste generation and increased use of scarce resources such as water. These risks are largely recognised by the tourism authorities and tour operators who appreciate their reliance on (preferably pristine) wilderness experiences as a key national selling point.

The policy environment has evolved in response to environmental risks with the release of, for example, the Botswana National Ecotourism Strategy in 2002 and the Botswana Eco-tourism Best Practice Manual in 2009.

In support of policy responses, the Botswana Tourism Organisation (BTO) launched the voluntary Botswana Eco-tourism Certification System (BECS) in 2010. The System focuses on, at a minimum, ensuring legal compliance primarily with environmental laws and regulations and on operating according to the following principles:

Principle 1: Implementation of sustainable management policies

Principle 2: Green and responsible marketing

Principle 3: Minimization of negative impacts on the environment by physical design and operations

Principle 4: Visitor experience, impact and interpretation

Principle 5: Maximization of local (district) community benefits

Principle 6: Contribution to conservation

Principle 7: Tour execution/nature interpretation (ecotours)

The case for this finance solution

- The tourism sector is crucial to the economy of Botswana and its importance is likely to continue increasing. While it is a relatively sustainable sector, especially when compared to others such as mining, it is not without risk to biodiversity and the wider achievement of sustainable development goals.
- The Botswana Eco-tourism Certification System (BECS) was introduced in 2010 to support sustainable eco-tourism and lessons have been learnt from the initial eight years of its implementation. There is thus an opportunity to reflect on these lessons and strengthen the BECS in order to encourage and reward greater conservation efforts among tourism operators.
- A strengthened System should result in even further reductions in the overall environmental and socio-economic costs of unsustainable tourism while contributing to enhancing the overall tourism reputation of the country.
- It would also ensure that there is greater alignment with local economic development strategies and initiatives such as youth and woman's empowerment programmes

When measured against these principles, tourism operators can achieve three progressively more stringent certification levels as follows:

Green Level - The basic entry level and reflects all of the mandatory criteria that are necessary for all facilities to be considered for certification. The standards for this level deal primarily with the environmental management systems of the facility.

Green + Level – Includes additional enhanced standards for environmental management systems. Encourages, where appropriate, additional focus on visitor experience and/or community benefits standards.

Ecotourism Level - Defines those facilities that have met all the principles of ecotourism. The level reflects the facilities' commitment and involvement of communities including cultural resources enhancement and socio-economic responsibilities, nature conservation and environmental management.

Thus far a total of 82 tourism facilities have been assessed since BECS certification began. Ecotourism Level certification has been awarded to 29 facilities, Green + to 19 facilities and Green to 5 facilities. No Awards were given to 22 facilities (i.e. assessment has been done and additional measures need to be implemented by the facilities to be awarded a certification) and awards are pending for 7 facilities (i.e. assessment has been done and is awaiting the decision of the accrediting board). Lessons have been learnt from the initial eight years of implementing the BECS. There is thus an opportunity to reflect on these lessons and enhance the system.

4.5.2 Objectives

The overall objective of this solution would be to build on and strengthen the BECS to promote higher standards of eco-tourism including increased biodiversity conservation efforts, as well as increase the number of certified tourism facilities. It would need to start with a review of the System in close collaboration with tourism stakeholders to determine how it can strengthened and to plot a way forward. Without pre-empting the outcomes of the review, the following areas for potential enhancement seem worthwhile investigating further:

- Ways to reward operators that implement innovative ideas aimed at enhanced biodiversity conservation. For example, global ecotourism standards tend to encourage operators to be more creative and come up with different initiatives. This enhances innovation in the whole sector and introduces elements that are not 'check boxes'.

- Ways to deal with bottlenecks in terms of achieving recycling goals at a system-wide level. For example, tourism establishments may separate out recyclables at source to deliver them to municipal waste sites where no recycling takes place (i.e. all waste is disposed of in the same way).

- Options to encourage greater sourcing of local products and services and development of local suppliers.

- The possible introduction of a fourth level beyond the Ecotourism Level (Ecotourism + Level if you will) which would incentivise even great commitment.
- Ensure accreditation and alignment of standard to Global Sustainable Tourism Council (GSTC).

- Introduction of new set of criteria for certification that cater better for operations in urban areas as current criteria are more suited to operations outside of urban.

- Ways to ensure that there is greater alignment

with local economic development strategies and initiatives such as youth and woman's empowerment programmes.

It will be particularly important that any changes take increased costs into account for the tourism industry. Achieving certification at present entails prohibitive costs in terms of resources and time for some smaller, less capacitated operators. Any strengthening should therefore be matched by streamlining, simplification and concerted efforts to cut the costs of certification.

4.5.3 Next steps and risks

The lead implementers of the solution would be BTO in close collaborations with key industry bodies (Hospitality and Tourism Association of Botswana (HATAB) and Botswana Guides Association (BOGA)).

Other key stakeholders would include:

- Individual tourism sector businesses and operators
- Key NGOs working on sustainable tourism
- Department of National Museum and Monuments
- Department of Waste Management
- Department of Environmental Affairs
- Department of Tourism
- City and District Councils (physical planning functions and others)
- The Global Sustainable Tourism Council (GSTC)
- Other organisations and countries known for best practice in eco-tourism development and certification

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

Table 4 - 8: Proposed implementation steps, lead parties and timescales

Step	Lead party	Indicative timescale
1. Review the BECS and consider global best practice with inputs from the GSTC. Include engagement with stakeholders as needed.	BTO	4 to 8 months
2. Discuss outcomes of review, test ideas further particularly with respect to reducing costs and agree on further actions with all relevant stakeholders.	BTO	3 months
3. Refine design of additions and enhancements to the BECS making clear what they would focus on, how they will be measured and monitored along with other key considerations.	BTO	6 to 9 months
4. Launch strengthened BECS and provide the necessary education and awareness programme.	BTO	2 months
5. Facilitate accreditation of BTO's BECS by the GSTC	BTO	3 months
6. Implement the strengthened BECS.	BTO	Ongoing
7. Monitor implementation challenges and adapt as needed.	BTO	Ongoing

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

- The upfront and ongoing costs of additional certification requirements may prove prohibitive relative to benefits in terms of market access and price premiums received as a result of being certified. Mitigation: Ensure that direct and indirect costs are a key consideration when developing additional requirements. Test ideas with tourism operators especially those aimed at limiting the costs for smaller operators.
- Lack of compliance with the certification standard may erode customer trust in the certification standard thereby weakening its value. Mitigation: Simple and strong auditing practices need to be built into the system.
- Resistance from operators who are being asked to change their practices. Mitigation: Changes could be incentivised through greater emphasis and exposure given to certified operators in the marketing efforts of BTO – thereby increasing the chances of improved market access for these operators.

4.5.4 Expected financial results

The primary benefit of the solution would be to reduce the overall environmental and socio-economic costs of unsustainable tourism. Tourism operators would incur the financial costs of the necessary adjustments to their practices (in many case there may also be savings associated with these changes) and achieve certification which should allow them to attract more tourists and charge price premiums.

Quantifying the benefits of the solution requires an estimate of the environmental and socio-economic costs of unsustainable tourism along with an estimate of how these costs could be reduced as a result of the solution. Unfortunately, such estimates are not available. Nevertheless, it is clear that the BECS is playing its role in ensuring a more sustainable tourism sector which also enhances the overall tourism reputation of the country. Strengthening it would be a natural progression and extension of the country's tourism strategy.

4.6 Introduction of a sustainability standard and certification system for beef products

The case for this finance solution

- The overall benefits of beef production could be substantially enhanced if unsustainable practices are addressed. More sustainable practices would reduce negative biodiversity and socio-economic consequences, for example, from depletion of veld, soil and water resources due to overgrazing.
- Farmers would incur the financial costs of the necessary adjustments to their practices, which are expected to be relatively minor and in some cases may even be savings, and achieve certification which should allow them to access new markets and/or sell their products for a premium.
- The wider restructuring of the market for beef exports may be an opportune time for the introduction of other initiatives such as a sustainability standard and certification scheme.

4.6.1 Context

Though agriculture makes a relatively limited contribution to GDP, it is vital to livelihoods, particularly of those who rely on it for subsistence purposes. Livestock production, which is dominated by cattle numbering over 2 million animals, contributes an estimated 80% to the country's total agricultural output. Beef products also represent roughly 70% of total agricultural exports valued at US$160 million in 2014 with South Africa and Europe being key markets (USDA, 2015).

The overall benefits of beef production could be substantially enhanced if unsustainable practices are addressed. Overgrazing is one such practice, for example, and results in the loss of important grasses and plant cover including veld products. These losses can then create the conditions for further ecological degradation through erosion, bush encroachment, reduced water availability and facilitation of the spread of invasive alien species. Aside from overgrazing, the over-use of harmful chemicals such as pesticides has also been associated with environmental damages.

MADFS support for agriculture includes the Livestock Management and Infrastructure Development (LIMID) Programme offered by the Department of Animal Production (DAP). Its objectives include promoting improved livestock productivity and management, improved range resource utilization and conservation, and assisting resource-poor farmers. It offers the following support packages:[5]

- **Animal husbandry and fodder support.** Farmers in communal are assisted to buy fodder processors, build fodder barns, construct kraals, crushes and loading ramps.
- **Water development.** Assists farmers to drill boreholes, equip boreholes, reticulate water and purchase boreholes/wells. Also provides for partnership and use of boreholes by farmers who do not own boreholes.
- **Small stock.** Assists only resource-poor farmers to purchase small stock and veterinary supplies.
- **Tswana chickens.** Assists only resource-poor farmers to purchase Tswana chickens, feeds, veterinary requisites and construct chicken houses.
- **Poultry abattoirs.** Assists cooperatives to setup poultry abattoirs.
- **Livestock Water Development for Small Herd Owners in Communal Areas.** Assists livestock owner groups with borehole equipping and water reticulation to provide livestock with water. Note that the Integrated Water Resources Management and Water Efficiency Plan also recognises that livestock water costs are subsidised through a series of financial support programmes and can 60% of borehole establishment for a group of livestock owners (DWA, 2013).

It is also important to be aware of the wider restructuring of the market for beef exports which may also present an opportunity. Currently, the government provides the Botswana Meat Commission (BMC) with a monopoly on the export of beef and prohibits the export of live cattle. However, reforms that allow for competition from other butcheries and abattoirs are expected to be introduced in the near future. This period of reforms may also present an opportune time for other initiatives such as a sustainability standard and certification scheme.

[5] For more detail see http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofAgriculture-MOA/Tools--Services/Support-Schemes-and-Initiatives/LIMID2/

4.6.2 Objectives

Cattle farming and associated beef production is the most important agricultural sector in the country and can be compatible with biodiversity conservation when sustainably managed. The overall objective of this solution would be to introduce and a certification scheme that encourages sustainable and biodiversity friendly beef production.

The Meat Naturally Initiative introduced by Conservation South Africa (a member of the Conservation International network) could guide the development of a certification scheme and associated programme. The Initiative aims to "create a positive enabling environment for government and industry; to facilitate awareness and skills development of good environmental practice amongst the country's communal and private farmers; and to educate the retailer and the consumer on making choices that will promote healthy environments in their meat purchasing." (CSA, 2017: 1). It therefore works at a number of levels of the red meat supply chain to promote sustainable farming practices.

With respect to certification, CSA partnered with South African National Biodiversity Institute and WWF South Africa to develop a National Standard for Veld-Raised Red Meat which consolidates the relevant national environmental laws primarily on land, biodiversity and water management into a single, simplified code. It is continuing to support producers and the government in the process of integrating this information into their production protocols and labelling (CSA, 2017).

The process of developing the certification standard and associated programme will require an initial period of assessment and consultation. This would be aimed at testing the likely feasibility of the idea and levels of interest among producers, buyers and consumers. A SWOT (strengths, weaknesses, opportunities, threats) analysis framework could be used for this assessment. Assessment should, among other considerations, include a focus on key questions including the following:

- Will buyers and consumers respond positively to a sustainability standard and be willing to pay a premium for certified products? Which buyers should be targeted – export markets, higher-end local markets, etc?
- Will certification allow producers to find new clients or move into new markets where sustainability is a minimum requirement?
- How can integration and complementarity be achieved with other standards such as those focused on animal traceability or those required by the European Union (EU)?
- Is it possible to add a biodiversity element to existing environmental certification schemes?
- What modalities can work for certification and how can the costs of certification be kept low particularly for small producers?
- What types of education and awareness processes would need to accompany the scheme?
- Are there NGOs or donors that would be willing to partner and fund part of the scheme or are there other funding sources such available?
- What type and level of government support would be required and can the associated costs be covered?

4.6.3 Next steps and risks

The lead implementers of the solution would be the beef producers industry representative body in the form or the Botswana National Beef Producers Union (BNBPU) in close collaboration with the relevant authorities (Department of Animal Production and the Department of Agricultural Business Promotion in in the MADFS and Department of Forests and Range Resources (DFRR) in the MENT)

Other key stakeholders would include:

- Botswana Agricultural Union and Farmers' Associations
- Botswana Meat Commission (BMC)
- Key NGOs working on sustainable production or rangeland management
- Donors (UNDP, GiZ, USAID and others)
- Researchers and academics (e.g. Department of Agricultural Research (DAR) in the MADFS, Botswana University of Agriculture and Natural Resources (BUANR), Botswana Institute for Development Policy Analysis (BIDPA), CAR, Okavango Research Institute, etc.).

Table 4-9 outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

Table 4-9: Proposed implementation steps, lead parties and timescales

Step	Lead party	Indicative timescale
1. SWOT analysis and feasibility assessment including stakeholder engagement.	BNBPU	4 to 8 months
2. Discuss outcomes of SWOT and agree on further actions with all relevant stakeholders.	BNBPU	3 months
3. In found to be viable, design standards and certification scheme procedures including consideration of: what standards are, how they will be measured with what data, who and when monitoring will take place, what costs would be involved for payment by whom, other key considerations.	BNBPU	6 to 12 months
4. Launch scheme and provide the necessary education and awareness programme.	BNBPU	2 months
5. Implement scheme.	BNBPU	Ongoing
6. Monitor implementation challenges and adapt as needed.	BNBPU	Ongoing

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

- The upfront and ongoing costs of certification may prove prohibitive relative to benefits in terms of market access and price premiums received for certified products. Mitigation: Ensure that direct and indirect costs are a key consideration when developing certification requirements. Test ideas with beef producers especially those to limit the costs for smaller producers.
- Lack of compliance with the certification standard may erode buyer trust in the certification standard thereby weakening its value. Mitigation: Simple and strong auditing practices need to be built into the system.

- Resistance from producers who are being asked to change their practices. Mitigation: Changes could be incentivised through greater emphasis and exposure given to certified producers in the promotion and marketing efforts of BNBPU and the MADFS – thereby increasing the chances of improved market access for these producers.
- If there is an increased need for fencing off areas in order to meet certification requirements, this could lead to exclusion of communities from access to areas. Mitigation: Investigate the potential for this outcome to come about, its implications and whether there are any workable mitigation measures that could be built into the certification system.

4.6.4 Expected financial results

The primary benefit of the solution would be to encourage and incentivise the more widespread adoption of sustainable farming practices to the benefit of farmers, biodiversity and wider society. Farmers would incur the financial costs of the necessary adjustments to their practices, which are expected to be relatively minor and in some cases may even be savings, and achieve certification which should allow them to access new markets and/or sell their products for a premium.

Quantifying the benefits of the solution requires an estimate of the environmental and socio-economic costs of unsustainable beef production along with an estimate of how these costs could be reduced as a result of the solution. Unfortunately such estimates are not available. However, it stands to reason that costs are relatively high given the challenges associated with overgrazing in the country.

Increased commercial use of invasive plants to aid management, control and rehabilitate affected areas

The case for this finance solution

- Invasive plants are a growing challenge in Botswana and pose a clear threat to biodiversity.
- They also result in significant negative socio-economic impacts including reduced water availability, choking of water bodies and health impacts.
- Increased commercial use of invasive plants should drive up demand for them thereby in centivising their eradication. This should reduce the costs of invasive plant control particularly for government and land owners.
- Commercial use of invasive plants can also facilitate the creation of businesses in rural areas with attendant benefits for livelihoods and job creation.

4.6.5 Context

Invasive plants are a significant and growing challenge for biodiversity in Botswana. These plants include alien invasive plants such as ***Leucaena leucocephala*** (Leucaena or river tamarind), ***Prosopis glandulosa*** (Prosopis or Mesquite), Cenchrus and ***Salvinia molesta*** (Salvinia water fern or Kariba weed) and water hyacinth in aquatic systems. In addition, some indigenous species such as acacias (Tortilis, Mellifera and Eroloba) can be invasive resulting as in the case of bush encroachment.

There are a number of negative impacts associated with the spread of invasive plants. For Salvinia and other aquatic weeds such as hyacinth, these include blocking streams and channels, choking of water bodies, affecting navigation and recreational activities such as fishing and tourism along with the elimination of indigenous vegetation.[6] Prosopis is particularly problematic in the southwest of the country. Mosweu et al. (2013) point out that Prosopis was originally introduced to combat desertification and improve fodder resources in arid regions. However, in many areas it continues to result in negative environmental and socio-economic impacts. Prosopis suppresses the growth of other plants, threatens biodiversity, lowers water tables (their roots are able to reach a depth of 20 to 25 m), has large thorns which are often detrimental to people and farm equipment and there are reports that Prosopis plants cause allergies and diseases (Mosweu et al, 2013). It can have particularly detrimental impacts on farmers and has been associated with blocking boreholes, decreased water quality, loss of palatable species for livestock and lower land productivity. The DFRR has worked with both Namibia and South Africa who experience similar challenges with Prosopis.

In recognition of the threat posed by invasive alien species, Target 9 in the NBSAP states that, "By 2025, key invasive alien species are identified and controlled or eradicated, and pathways for their spread are managed to prevent further introduction and establishment." The Botswana Integrated Water Resources and Water Efficiency Plan also recognises the negative impacts of invasive plants on the water environment and highlights the need for environmental rehabilitation campaigns that would (DWA, 2013: 122):

- "Develop and implement a strategy and plan campaign to reduce bush encroachment to improve groundwater recharge and the rangelands carrying capacity for the livestock sector.
- Develop and implement a strategy and plan to curb the spread of exotic tree species.
- Develop and implement campaign to curb water hyacinth and Salvinia molesta."

Despite negative impacts, invasive plants have beneficial uses with commercial potential. At present, commercial uses or Prosopis and other species in Botswana are primarily relative small-scale operations and include the following:

- Fire wood provision
- Fodder provision (e.g. Prosopis seed pods)
- Charcoal production
- Building materials (timber, laths and poles)

There are also ongoing research and piloting efforts being carried out that focus on the control of alien invasive plants and their commercialisation. Some of these include projects funded by the GEF that are focused on Sustainable Land Management (SLM) include the following which can be learnt from and built on:

[6] See http://www.water.gov.bw/images/Salvinia_website.pdf

- The Ngamiland Sustainable Land Management Project working in partnership with Lake Ngami Conservation Trust has started a braai wood and charcoal production project utilizing encroaching bush (mainly Acacia species including A. tortilis, A. mellifera, A. eroloba). The process involves cutting of the bush (both live and dead) on the lake bed by the community members from the villages that make up the Lake Ngami Trust, who sell the wood to the Trust. The Trust has trained workers who then prepare the charcoal in kilns. The wood and charcoal is sold in the local market and there are plans to export to Namibia. Currently 20 kilns are operational with an output of 25kg per kiln per day. Assuming a 5-day working week, total production is 10 tonnes per month. The eventual production target is, however, 30 tonnes per month.

- The BORAVAST Trust is currently in the process of developing a fodder production project aimed at control of Prosopis bush encroachment. It will make use of Prosopis pods and Mokala tree pods to produce a mixed fodder. The pods will be collected by community members who can then sell them to the BORAVAST Trust for further processing. The project plans to start with the fodder production and then expand its operations to the production of gum poles, flour, sweets and charcoal depending on the availability of resources. This would be informed by the intended knowledge exchange visits to projects currently running in countries such as South Africa (Upington, to produce sweets), Kenya (production of flour) and other countries.

- Currently efforts are ongoing to list and profile invasive plants in Botswana by the Department of Environmental Affairs. A consultant from the University of Botswana Okavango Research Institute has already made substantial progress in this regard. The scope of this study should help focus efforts and could also lead to feasibility studies on the commercial use of the listed invasive plants.

For Prosopis, also note that Mosweu et al. (2013) conducted surveys of coverage and community perceptions in southwestern Botswana. With respect to commercial potential, communities identified fire wood harvesting and fodder production as the most feasible options and indicated their willingness to embrace innovative commercialisation ideas. With respect to fodder, research has shown that Prosopis seed pods are very nutritious, high in soluble sugars, and contain low concentrations of tannins and other unpleasant chemicals, with moderate to high digestibility. However, they also indicated that external support was needed to overcome limitations to commercial use such as lack of resources, lack of markets and low prices for products derived from Prosopis.

4.6.6 Objectives

The overall objective of this solution would be to gradually increase the controlled commercial use of invasive species. To the extent that this drives up demand for invasive plants, it would incentivise the harvesting (and eradication) of these plants thereby resulting in biodiversity benefits. In addition, it can facilitate the creation of businesses in rural areas with attendant benefits for livelihoods and job creation.

Initially the focus would be on Prosopis given the threat it poses and the somewhat better understanding of its potential for commercial use. The feasibility of increased commercial use of other species would also be assessed further in order to determine whether good potential ex-

ists. For example, can water hyacinth be viably used in biogas production? what is the potential for Leucaena to be used for fodder production? etc.

At the outset, it will be particularly important to understand what the key barriers are to increased commercial use and whether they could be removed at an acceptable cost in terms of government support. This will require feasibility assessments and further engagement with stakeholders which could form the basis for further appropriate actions. Such assessment could follow standard commercial feasibility assessment protocols and should, among other considerations, include a focus on key questions including the following:

- Is there enough invasive plant feedstock to justify investments in plants and capital equipment needed to increase production?
- Can access to the feedstock be guaranteed and is there a risk that invasive plant would be retain or more invasive plants would be planted should feedstocks be depleted?
- What would be the main cost drivers and their likely amounts including harvesting, transport, processing, packaging, distribution and marketing costs?
- What level of demand can be expected and what prices should be attractive especially relative to the cost and availability of substitute or competing products?
- It is likely that the demand for products made from invasive plants can be stimulated by emphasising the positive impact which this can have for biodiversity – i.e. how significant is this in terms of its marketing/branding potential?
- What nature and level of government support would be required, can the cost of this support be justified and are there opportunities to seeking external funding (e.g. donor funding, community enterprise development funds)? Partnering with the Ipelegeng Programme which provides short-term work in bush clearing and other activities with societal benefits is likely to be important given its potential to provide feedstock.

There are potentially significant risks attached to the commercialisation of invasive plants particularly in the absence of a national strategy for the combatting of invasive plants. In order to control these risks, other important improvements to alien invasive species management are needed that would facilitate commercialisation whilst ensuring that it takes place in a controlled and sustainable fashion. These include:

- Increased support for research on topics such as the extent of alien invasive species, their rate of spread and control options to counteract them.
- Development of clear policy and strategy for combatting alien species along with guidelines for their management where needed.
- Improved formal co-ordination and harmonisation among institutions responsible for the control of alien species.
- Consideration of an overall government body to focus on the eradication and control of alien species.

These improvements could run concurrently with relatively minor commercialisation of invasive plants but should precede any major commercialisation initiatives. It will be important to ensure that commercialisation is understood as one component of a wider programme to clear invasive species and ensure that they are not propagated.

4.6.7 Next steps and risks

The lead implementers of the solution would be the DFRR in the case of Prosopis and Cenchrus, The Aquatic Vegetation Control (AVC) under DWA for any aquatic invasive plants and potentially also the National Plant Protection Organization (NPPO) Department of plant protection in the Ministry of Agricultural Development and Food Security (MADFS).

Other key stakeholders would include:

- Land owners and management authorities in areas with invasive plants
- Private sector stakeholders primarily in the form of businesses wishing to use invasive species for commercial purposes.
- Small business development promotion agencies

Table 4-10 outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

Table 4-10: Proposed implementation steps and timescales

Step	Lead party	Indicative timescale
1. Identify key invasive species and associated products to be subjected to initial commercial feasibility assessments.	DFRR, AVC or NPPO	3 months
2. Conduct feasibility and risk assessments including stakeholder engagement.	DFRR, AVC or NPPO	12 to 18 months
3. Act on outcomes of feasibility and risk assessments including developing measures to address barriers to increased commercialisation and any risk mitigation measures.	DFRR, AVC or NPPO	6 months
4. Consult with stakeholders as needed to test ideas and increase buy-in.	DFRR, AVC or NPPO	3 months
5. Implement support measures, monitor and adapt as needed.	DFRR, AVC or NPPO	Ongoing

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

- Businesses that use invasive plants face risks common to all relatively newly established businesses such as market access, controlling costs, customer relations, etc. Mitigation: Appreciate that business principles apply to such business and manage them accordingly. Seek assistance from government small business development programmes.
- The long-term sustainability of the value-added industries will be dependent on the continued availability of invasive plants which are the target

of eradication. If invasive species feedstocks are depleted, but there is still demand for them, there may be a perverse incentive to actually plant invasive plants thereby contributing to the problem. There may also be other perverse incentives to retain plants. For example, a sustainable supply of Prosopis pods requires the retention, not eradication, of Prosopis trees. Mitigation: A clear policy and strategy for combatting alien species along with guidelines for their management is needed before significant commercialisation. Assessment of the feasibility of projects must include a risk assessment with clear mitigation measures and safeguards.

4.6.8 Expected financial results

The primary financial benefit to government and land owners of increased commercial uses of invasive plants would come from reducing the cost of clearing and managing invasive plants. In other words, enterprises will undertake clearing at their costs or, more likely, in cost-sharing partnerships with the state and land owners. Estimating these costs savings at this stage is not possible as feasibility assessments have yet to be conducted. Bear in mind also that, beyond financial gains, a major aim of commercialisation is local socio-economic development and job creation.

It is, however, instructive to consider the example of the Working for Water programme in South Africa. The programme has been in existence for over 20 years and has an annual budget of roughly R1 billion for the clearing and ongoing management of alien invasive plants. 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. These include production of fire wood, charcoal and biochar, saw timber, laths and poles, eco-furniture and eco-coffins, packing and fill materials, compost, feed pellets and fibre bases building materials. The net financial returns from the use of invasive alien plant biomass in value added industries currently represents roughly 10% of the overall clearing costs of the Working for Water programme (DEA-SA, 2017).

4.7 Accessing global climate change funds for biodiversity

The case for this finance solution

- The Intergovernmental Panel on Climate Change (IPCC) has warned that Southern Africa is extremely vulnerable to the impacts of climate change owing to a combination of baseline conditions, exposure, and risk.
- Global climate funds such as the Green Climate Fund, Adaptation Fund and Bio-carbon Fund can bring additional financing to Botswana, enhance private sector engagement, and complement existing biodiversity management initiatives, particularly with respect to ecological restoration.
- Botswana is in a good position to develop compelling biodiversity-related global climate fund proposals. It can build on its experience in developing proposals for similar large funds such as the Global Environment Facility (GEF) and draw on donor assistance with proposal planning where needed.

4.7.1 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 conservation to climate change mitigation, adaptation, or cross-cutting approaches as follows (DEA-SA, 2017):

- Mitigation: ecosystem restoration projects demonstrate verifiable emission reductions through carbon sequestration or avoided emissions.
- Adaptation: sustainable biodiversity management, resulting in well-functioning ecosystems, increases resilience and adaptation to climate change through, for example, watershed resilience, disaster risk reduction, 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.

DEA-SA (2017) contains a review of the main global climate change funds. It found that the most prominent climate funds, in terms of total 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). Other climate funds of importance in the context of biodiversity protection and rehabilitation include the Adaptation Fund and Biocarbon Fund. All of these funds make allocations to a range of project types including, for example, renewable energy projects. If one narrows the focus to funds allocated to projects with biodiversity co-benefits only (using a broad definition including disaster risk reduction, forestry and adaptation and resilience projects, etc) then the total funding provided by all climate funds was found to be approximately US$2.53 billion.

Table 4-11 outlines the Green Climate Fund, Adaptation Fund, Biocarbon Fund and Land Degradation Neutrality Fund in terms of their mandates, eligibility criteria and project portfolios.

Box 9: 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.

Table 4-11: Major climate fund eligibility criteria and project portfolios

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%).
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.
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.
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.

Source: DEA-SA (2017)

In order to be illegible to submit applications for global climate funds, countries must first go through the process of registering Nationally Designated Authorities (NDAs) with a given fund. In the case of the Green Climate Fund, the NDA for Botswana is the MFED. For the Adaptation Fund, it's the Department of Meteorological Services (DMS) in the MENT. Botswana has thus far not accessed any finance from the major global climate funds in contrast to the majority of other countries in the region.

4.7.2 Objectives

This solution would aim to generate more external finance from global climate change funds that can be used to provide concrete co-benefits for biodiversity. The specific objectives are to:

1. Develop a suite of climate fund proposals which have significant biodiversity co-benefits.
2. Build awareness and collaboration between government, the private actors and NGOs in the climate and biodiversity communities to support these projects given the need for multi-sector focussed projects.
3. Submit well thought out and ultimately successful project proposals to global climate change funds.

Competition for funding from global climate change funds is generally intense as the potential amounts on offer are highly significant. Botswana should, however, be in a good position to develop a suite of biodiversity-related climate change fund proposals particularly around habitat restoration, watershed and fire management, sustainable agriculture and ecosystem-based adaptation. It has developed one project to concept note stage which was submitted to the GCF in late 2017 entitled, "Ecosystem and Livelihoods Resiliency: climate change risk reduction through ecosystem based adaptation in Botswana's communal grazing lands Botswana". The project was developed in collaboration with Conservation International (CI), a registered accredited entity with the GCF. A key objective would be to see existing proposals through and also to develop other project funding proposals.

There is adequate capacity to develop and implement large scale multi-dimensional projects in Botswana. The challenge for developing and submitting proposals to global climate change funds is likely more related to assuring strong coordination and joint effort 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 global climate change funds. In a sense it would result in a cohesive country programme with respect to global climate change funds.

4.7.3 Next steps and risks

The lead implementers of the solution to source climate finance would be MFED as they are the NDA in close collaboration with MENT and DMS in particular.

Other key stakeholders would include:

- Project beneficiaries including land owners and local communities
- Industry representative bodies from the sectors affected by the projects
- Key NGOs working in climate change and biodiversity
- Ministries and Departments implementing climate change interventions
- Local Authorities
- Accredited Entities
- Donors (UNDP, GiZ, USAID and others)
- Researchers and academics
- Media

The Table below outlines broad next steps required to meet the objectives of the solution outlined above. It also provides indicative timescales for each step.

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

Step		Lead party	Indicative timescale
1.	Develop a country programme with respect to global climate change funds in line with national policies, development plans and priorities with regards to climate change adaptation and mitigation.	MFED and MENT	12 – 18 months
2.	Build awareness and collaboration among actors in the climate and biodiversity communities, and provide capacity building with the view to generate project pipelines for funding under GCF and others.	MENT, MFED and Accredited Entities	Ongoing
3.	Coordinate the development and submission of well constructed and bankable project proposals to global climate change funds.	MFED and MENT	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 funds which results in multiple potential recipient countries and projects all of whom compete for limited financial resources. Mitigation: Ensure that funding proposal are well developed and meet funder needs.
- Disagreement around which projects show the most promise and should be prioritised. Mitigation: Stakeholder engagement, coupled with strong leadership by project implementers drawing on best available science and technical expertise to guide decisions.
- Onerous requirements associated with proposal development and writing leading to stakeholder fatigue and ultimately a loss of interest in the application process. Mitigation: Be selective over which funds and funding streams are pursued. Favour quality over quantity, and work with NGOs and others with expertise in proposal/grant writing for climate change, ecosystem-based adaptation and similar projects.

4.7.4 Expected financial results

Success would be measured in terms of funds accessed. At this point, financial results estimates focus on achieving success with at least one global climate fund, likely to be the Green Climate Fund. It was assumed that, if successful, a future GCF fund allocation to Botswana could be in the order of US$22 million spread over six years starting in 2020 (this is the initial amount suggested in the concept note for the "Ecosystem and Livelihoods Resiliency:

climate change risk reduction through ecosystem based adaptation in Botswana's communal grazing lands" project). Note that this is probably a conservative estimate as the MADFS is currently working on another GCF concept note for project on "building climate resilience in agricultural systems of Botswana" with the UNDP as the accredited entity. Additional cost for mostly technical inputs needed to complete the application processes were assumed to be P1 million spread over two years. Total cumulative net financial gains over the next 10 years would sum to approximately P230 million as follows (see Appendix 3 for more detailed estimates):

Net financial gain in current terms (Pula million)										
2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
- 0.5	38.0	38.5	38.5	38.5	38.5	38.5	-	-	-	230.0

Conclusion

Biodiversity conservation in Botswana faces a number of challenges including those of a financial nature. This is despite there being a strong case for investment in biodiversity and ecosystem services management and enhancement. Fortunately, the country is in a position to ensure that wider reforms are complimented by finance solutions that have the potential to unlock additional resources for the biodiversity agenda. This Biodiversity Finance Plan adds to the existing efforts of the biodiversity sector and its partners by providing:

- Alignment with both biodiversity sector and wider socio-economic development planning and sectoral development;
- A prioritization of eight key finance solutions based on a participatory selection process;
- Brief technical proposals to guide the implementation of the prioritized biodiversity finance solutions including next steps;
- Consolidated estimates of the expected finance outcomes associated with the finance solutions where possible; and
- An outline of the links between solutions forming an integrated Plan.

An analysis of three of the eight priority finance solutions featured in this Plan estimated a cumulative net financial gain of P474 million (US$45.2 million) over 10 years which would make a highly significant contribution to reaching the country's biodiversity conservation goals. In addition, the CBNRM solution would contribute to increased benefits sharing with local communities that would cumulatively sum to P44 million (US$4.2 million) over 10 years.

The Plan is a resource for the process of developing and encouraging biodiversity finance in Botswana, and may be updated as circumstances, needs and opportunities evolve. Implementation will require a coordinated effort the bulk of which will be fall to MENT using existing collaboration frameworks. It is, however, recognized that commitment and financing by the public sector should increasingly be complemented by the private sector, NGOs and donors.

The focus of BIOFIN Botswana will now shift to supporting the implementation of the Biodiversity Finance Plan. This will take the form of selecting a subset of finance solutions to be driven specifically by BIOFIN. It is envisaged that, once BIOFIN is concluded, the important programme of work of the project will be incorporated into MENT's future programme of work.

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Appendices

Appendix 1: Stakeholder engagement

Attendees of National Stakeholder Workshop on the Biodiversity Finance Plan held on 11 October 2018 at the Blue Tree Conference Venue, Gaborone (arranged alphabetically):

Surname, Name	Organisation
Bonyongo, Casper	OKACOM
Botebele, Rethobogile	UNDP
Botshoma L. Thabang	MENT
Chilume, Tshegofatso	Agric-NPPO
Cumming, Tracey	UNDP BIOFIN
Dijeng G. Bukkie	MMGE
Gwafila, Amanda	UNDP
Kedikilwe, Tsalano	MENT (DEA)
Kelebang, Bernard	Centre for Applied Research
Koboto Oldman Oduetse	UNDP
Malesu, Richard	BTO
Marenga, Martha	UNDP
Mazereku, Charles	MOA
Medupe, Tebo	HATAB
Mojalemotho, Charles	DEA
Mokime, Bakang	DWNP
Molefha. R David	DWA-MLWS
Molokwe Mpho	BWBPU
Mmapatsi, Thatayaone	BTO
Muzeu, Rikondja	UNDP
Ntshowe, Setshedi	MMGE-DOE
Onkametse Joseph	Kalahari Conservation Society
Petros, K. Alfred	DWA
Pule B, Ogopotse	DWA
Ralegoreng, Oakantse	DWA
Salebo, Janet	DMS
Segobai, Bathusi	MFED
Tafa, Tafa	BTO
Tiroyamodimo, Otisitswe. B	DWNP
Tsetse, Kefilwe	DFRR
Van-Zyl, Hugo	Independent Economic Researchers (Consultant)

One-on-one engagements on specific finance solutions (arranged alphabetically):

Surname, Name	Organisation
Arntzen, Jaap	Centre for Applied Research
Baletetse, Mogomotsi	Department of Tourism
Barrins, Jacinta	UNDP Resident Representative
Botshoma, Thabang L.	Ministry of Environment Natural Resources Conservation & Tourism
Dikgola, Kobamelo	Ministry of Lands Water & Sanitation services
Dithogo, Marks	National Biodiversity Authority
Ebineng, Chaba	Botswana Tourism Organization
Engleton, Abigail	UNDP GEF small grands
Fitt, Neil	Kalahari Conservation Society
Itshekeng, Edwin Monclaro	Ministry of Finance and Economic Development (WAVES)
Kedikilwe, Tsalano	Department of Environmental Affairs
Kgobe, Fiona	Ministry of Lands Water & Sanitation Services
Kootsositse, Motshereganyi Virat	Birdlife Botswana
Leineweber, Martin	GIZ TUPNR
Lopang, Shato	Botswana Tourism Organization
Mahupeleng, Sennye Neo	Department of Wildlife and National Parks
Malesu, Mafila Richard	Botswana Tourism Organization
Masike, Sennye	El Mondo
Matenge, Kebontshitswe	Botswana Tourism Organization
Matongo, Catherine	Ministry of Finance and Economic Development
Mmapatsi, Thatayaone	Botswana Tourism Organization
Mmokele, Tshepo	Botswana Tourism Organization
Mojalemotho, Charles	Department of Environmental affairs
Mphetlhe, Boniface G.	Ministry of Finance and Economic Development
Muzila, Grace	Ministry of Finance and Economic Development
Nyambe, Nyambe	Kavango–Zambezi Trans frontier Conservation Area (KAZA)
Otimile, Duly C.	Ministry of Lands Water & Sanitation services
Raitoko, Kaboyamodimo	Ministry of Lands Water & Sanitation services
Setlhogile, Tshepo	Centre for Applied Research
Somolekae, Malebogo	Department of Wildlife and National Parks
Wantle, Robert	Ministry of Lands Water & Sanitation services
Woytek, Reinhard	GIZ TUPNR
Yester, Fredrick	BORAVAST Community TRUST

Appendix 2:

APPROACH AND OUTCOMES OF THE PRIORITISATION PROCESS FOR 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 29 solutions briefly described in Table 71 at the end of this Appendix. These potential solutions were then subjected to screening by the Technical Reference Group and Project Steering Committee guided by scores, between 0 and 4, assigned to them for the following equally weighted criteria:

1. Potential for achieving a positive biodiversity impact
2. Scale and sustainability of the financial opportunity
3. Likelihood of success – a general assessment of the technical, social, and political feasibility.

Applying a hurdle score of 9 out of a possible maximum of 12 reduced the initial list of 29 potential solutions to 11 solutions considered more realistic. These were then interrogated by stakeholders and members of the Technical Reference Group and Project Steering Committee at a stakeholder workshop. The outcomes of the workshop and final deliberations by the Project Steering Committee resulted in eight priority solutions.

Table 71: Initial list of potential finance solutions

Nr	Name of finance solution	Description of solution
1	Enhanced making the case for greater government funding allocations for biodiversity and protected areas	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 budget allocations drawing on scientific, socio-economic, cultural and other arguments such as alignment with other gorvernment policies and key sectors such as tourism. An assessment of the economic values associated with biodiversity and protected areas along with their critical importance to key sectors such as tourism and agriculture could have particular potential in convincing decision-makers.
2	Consolidation and streamlining of environmental special-purpose funds in order to increase efficiencies, lower costs and improve impact.	Government environmental and biodiversity focused special-purpose funds include the National Environment Fund, Forest Conservation Botswana, Community Conservation Fund and Conservation Trust Fund. Each fund has its own focus, governance and administrative structure. There is also overlap between the kinds of projects that each fund can support. Consolidation, streamlining and harmonization of all environment funds could improve efficiencies, reduce overhead costs in particularly and increase impact. For example, a single administrative structure and system could be set up with 'sub-funds' or accounts being operated for different outcomes.
3	Review and appropriately increase protected area entrance fees	Entrance fees for National Parks have been the same since the 2000 promulgation on the National Parks and Game Reserves Regulations resulting in relatively stagnant revenues from this source driven only by increased visitor numbers. They have not kept up with inflation and require a review in terms of their appropriateness taking into account relevant considerations such as local and international conditions and trends, increased management costs, etc. Note that this solution is also strongly supported at the level of individual Parks - the 2018 Business Plan for Chobe National Park makes tentative recommendations on new fees for Chobe and calls for a regular review and adjustment of fees (e.g. every 3 to 5 years).
4	Identifying additional concession opportunities to increase revenues	Additional concession opportunities have the potential to increase government revenues and local benefits. This includes for Forest Reserve areas which BTO is in the process of assessing in terms of their potential for concession inside them or nearby. Greater use of more flexible concessions such as temporary seasonal camps could also be considered and offer the advantage of increased revenue without necessarily having to provide additional infrastructure. Part of this solution should include ensuring that ad-hoc decision are avoided. Concessions need to be allocated in accordance with relevant area management plans that, in turn, align with a clear national tourism strategy and plan that specifies the desired intensity of tourism use in terms of tourist and concession numbers.

Nr	Name of finance solution	Description of solution
5	Facilitating investments in concessions that are beneficial to communities through the Tourism Land Bank	In 2014, some prime tourism concession areas were transferred from the control of local communities to national government and its Tourism Land Bank. The Land Bank, which is administered by the Botswana Tourism Organisation (BTO), was set up to facilitate tourism through having a supply of land of concession areas 'packaged' and ready for tourism investments. It may have achieved this facilitating role but it is has been met with much resistance from some communities to the extent that it has been called a 'land grab'. The land bank gives Botswana Tourism Organisation powers to enter in to lease agreements with tour operators in community concessions. In the previous dispensation, communities through their trusts entered in to those agreements directly with the tour operators. Are reforms needed for the Land Bank concept and implementation so that it can work for national government, communities and investors? What would such reforms entail?
6	Increase retention of self-generated revenues by PAs	Currently PA management is funded by a government budget allocation which is inadequate for the purposes of biodiversity conservation and is leading to the gradual degradation of critical tourism assets. The self-generated revenues of PAs (from entrance fees and concessions) exceed the ideal budget requirements of PAs. However, these revenues are not kept within the PA system and essentially accrue to national treasury. The required increased funding for PAs could therefore either come from (1) allowing the PA system to retain an adequate portion of the revenues they generate or (2) increased government allocations to PA management and investment. Allowing revenue retention tends to increase 'ownership' along with staff and community motivation to enhance their service offering. The mechanics of the solution could be to either change policy to allow direct retention of all or part of tourism fees within the DWNP or through ring-fencing funds in MENRT budget from treasury. It may be facilitated by, or even require, the formation of a parastatal to management PAs (see separate solution below)
7	Establishment of a national parastatal to improve the management of PAs	PAs in Botswana are currently primarily management by the Department of Wildlife and National Parks (DWNP) while the BTO manages all concessions in PAs. The formation of parastatals to manage PAs is generally motivated by the greater management flexibility, autonomy and commercial orientation that they can offer when compared to a regular government department. Examples include the South African National Parks Board, Kenya Wildlife Service, Tanzania National Parks Authority and Uganda Wildlife Authority. If appropriate, the formation of a parastatal PAs management authority could help to overcome the policy and legal challenges that act as a barrier to PA financial sustainability. For example, it should facilitate revenue retention.
8	Use of private sector sponsorships as a source of PA revenue	The private sector may be interested in sponsoring PAs provided they are offered something in return, e.g. naming rights, advertising space, etc.

Nr	Name of finance solution	Description of solution
9	Increased use of co-management or delegated management for protected areas	Increased use of co-management and delegated management agreements have the potential to reduce the government cost of managing protected areas whilst increasing community ownership levels. Botswana has relatively limited experience with co-management involving local communities. For example, the Nata Bird Sanctuary, located at Sowa Pan, is subject to a co-management agreement. Examples of delegated management include the activities of African Parks an NGO that takes on the complete responsibility for the rehabilitation and management of protected areas parks in partnership with governments and local communities. They currently manage 15 protected areas in nine African countries including Malawi, Mozambique, Rwanda and Zambia.
10	Judicious and controlled lifting of the hunting ban (e.g. allowing elephant hunting instead of culling) to increase benefits for local communities.	Elephant hunting has been banned since 2014. The ban significantly reduced the incomes especially of local communities, led to lower benefit from hunting tourism whilst also increasing the costs of human-wildlife conflict. Partial lifting of the ban to allow strictly controlled, monitored and managed hunting in areas outside National Parks and Nature Reserves is under consideration. A consultative process is under way that should culminate in a National Elephant Action Plan being released in late 2018.
11	Increased government support for game farming	While game farming does involve risks for biodiversity, when well managed, it is generally more compatible with biodiversity and sustainable land-use than cattle farming. The 2014 hunting ban, restrictions on the export of live animals and policy constraints have ensured that the game farming sector has not realised its potential. This can be contrasted with South Africa where it has grown rapidly into a sophisticated sector providing significant income and job opportunities. This growth has laterally been supported by the South African government through the Wildlife Economy strategy and process which is placing particular emphasis on supporting previously disadvantaged farmers in the sector.
12	Introduction and formal integration of biodiversity offsets into EIA policy and practice	Biodiversity offsets can be implemented in EIA as the last step/option in the mitigation hierarchy (i.e. when damage to, or loss of, important biodiversity cannot be avoided or mitigated then as a last option, offsets can be considered as a form of compensation). For offsets to succeed, biodiversity offset policy has to be closely integrated within EIA policy and process. Offsets tend to work best when they are part of more mature, effective and well-managed EIA systems.
13	Using a small portion of water tariff revenues to fund catchment land management (e.g. alien invasive plant clearing and ecological restoration) in selected catchments	This would invlove setting up a form of water payments for ecosystem services (PES) scheme in which 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 the Department of Water Affairs to buy into the concept and make the appropriate changes with respect to water tariffs and the use of water tariff revenues which would allow for a portion of water sales revenue to be dedicated to these activities. To the extent that the solution results in increased water tariffs, it would also assist with water demand management which is the focus of one of the other finance solutions below

Nr	Name of finance solution	Description of solution
14	Enhancement and expansion of the Botswana Ecotourism Certification System	The Botswana Ecotourism Certification System was relatively recently introduced by Botswana Tourism Organisation through the Quality Services Committee (QSC), the same Committee responsible for star grading of accommodation enterprises. The system uses a three level structure designed to encourage operators to improve their performance towards achievement of the next higher level. The MENT has identified the need to strengthen the certification system
15	Use of a portion of tourism Bed Levy revenues for biodiversity conservation	Revenue from the Bed Levy is currently allocated to the Department of Tourism (DoT) to be used specifically for tourism training purposes. Biodiversity conservation, inside and outside protected areas, benefits tourism as it enhances key tourism assets/attractions such as protected areas. An argument can thus be made for the allocation of a portion of Bed Levy revenues to biodiversity conservation in support of tourism. Such a change would require buy-in from DoT along with policy changes to widen the allowable use of Bed Levy revenues.
16	Introduce local eco-tourism fees or taxes in specific areas where the tourism sector is highly reliant on biodiversity conservation	This would be a similar concept to national fees but only charged to tourism businesses in specific areas such as Maun that require high levels of conservation effort upon which the tourism industry relies. The fees could be collected by accommodation establishments and by other tourism services providers such as tour companies to be used by local government for local biodiversity conservation projects. Another option would be for the tourism sector in such areas to establish a voluntary fund or something similar to raise money for biodiversity conservation activities (see next solution). Current requirements for the tourism industry to pay the Bed Levy and potentially also the mooted Tourism Development Levy need to be taken into account.
17	Introduction of the voluntary fund by the tourism sector to raise money for biodiversity conservation activities	This solution would involve the tourism sector establishing a dedicated fund to raise revenue for biodiversity conservation activities. It would could draw lessons from the Tourism Conservation Fund recently introduced in South Africa for a similar purpose. The tourism sector would have to see the value of the idea and drive the process of establishing the fund and associated structures. It would need to take into account their existing support for NGOs and communities engaged in conservation along with the difficulties associated with extracting additional contributions from CSI budgets or similar sources.
18	Lobbying for soft earmarking, dedicated allocations to biodiversity conservation from the National Lottery	Once the National Lottery licence is allocated, it may be beneficial to ensure that the initial rules on how Lottery proceeds are to be allocated make adequate provision for allocations to NGOs/charities focused on biodiversity conservation. This would require engagement by MENT in the relevant processes around the determination of rules on how Lottery proceeds are to be allocated.

Nr	Name of finance solution	Description of solution
19	Ensuring adequate financial provision are made for unexpected mine closures	Notwithstanding legal obligations, in many countries where mining is prominent, the state has been burdened with the cost of remediating mines that are prematurely abandoned by their owners who may go bankrupt, for example. To remedy this, countries have set up system where the state obligates miners to set funds aside or put financial guarantees in place that can be used by the state to rehabilitate mines if they are abandoned. The Webber Wentzel 2014 African Mining Law Survey notes that for Botswana, "There are no clear legal provisions that establish an environmental rehabilitation fund as part of the mine closure planning process" There may thus be an opportunity to set up a system to ensure that adequate financial provisions are made for mine closure thereby benefiting biodiversity and ensuring that rehabilitation costs are not imposed on the government and taxpayers.
20	Reduction or re-orientation of subsidies and support for agriculture	It stands to reason that direct and indirect subsidies and support for agriculture play a role in increasing the scale of agriculture and its use of chemicals which can be at the expense of the natural environment and biodiversity. The system and nature of subsidies and support could be subject to a comprehensive review to properly understand its impacts on the natural environment (on which agriculture ultimately depends) and recommend adjustments as needed. For example, agricultural support programmes could provide more opportunity for the state to increase the awareness of farmers regarding biodiversity conservation. This can be done through ensuring that initiatives like agricultural training programmes have a component on best practice in sustainable, biodiversity friendly farming. Agricultural loans or subsidies can also be made conditional on the implementation of sustainable farming practices.
21	Introduction of a sustainability programme and certification scheme (eco-label) for beef products	Livestock farming with cattle is the most important agricultural sector in the country and can be compatible with biodiversity conservation when livestock lands are sustainably managed. Borrowing from Conservation South Africa's 'Meat Naturally Initiative' programme, a similar programme could be investigated and set up. It could support farmers to adopt and expand rangeland and processing practices that support restoration and maintenance of healthy ecosystems whilst educating retailer and consumers on more sustainable choices. A certification scheme and eco-label could also be introduced in support of the programme.
22	Accessing global climate changes funds and carbon markets to fund projects with biodiversity co-benefits	Climate change funds such as the Green Climate Fund (GCF), Adaptation Fund and Biocarbon Fund aim to provide financial support for climate mitigation and adaptation projects, facilitating low-carbon and climate resilient development. There is an opportunity to secure greater climate change funds from these sources and from the wider carbon market. In order to benefit biodiversity, proposals would have to be for mitigation and adaptation project that are also to the benefit of biodiversity (e.g. forest restoration projects or project to combat land degradation). Competition for climate change funds and carbon finance is intense and generating proposals with potential requires a significant investment in time and resources along with high levels of government support and land owner buy-in.

Nr	Name of finance solution	Description of solution
23	Increased tapping of Corporate Social Investment (CSI) and investment	Amounts spent on CSI 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 other benefits such as job creation. NGOs in particularly already devote significant time to trying to attract CSI funds so it is not clear exactly what else they could action in this regard. Allocations of CSI funds are also often driven by the personal interests of those managing CSI funds which understandably leads to an more opportunistic approach among NGOs. Much depends on establishing personal relationships and ensuring a good records of clean governance and delivery.
24	Enhanced co-ordination of funding for biodiversity conservation between government, donors, NGOs and the private sector (CSI)	The funding of various biodiversity conservation projects undertaken in the country could be done in a more co-ordinated way in order to increase the cost-effectiveness of funds. In extreme cases lack of co-ordination can lead to highly wasteful 'double-dipping' where the same project is funded twice over particularly in the case of smaller community projects. The situation could be improved with enhanced co-ordination through, for example, the maintenance of a shared online database for project funding.
25	Creation of 'mega' RAMSAR site for Okavango and wider transboundary wetland system	The Okavango and other linked wetlands upstream in Namibia and Angola are areas of extremely high importance for biodiversity, water security, tourism and local livelihoods. They would benefit from greater transboundary protection potentially through the establishment of a RAMSAR site with associated agreements between countries on their conservation (including management of adequate upstream flows). funding for such an initiative could potentially come from a mix of sources including debt-for-natures swaps, climate changes funds and direct tourism revenues.
26	Commercial use of invasive alien plants	Controlling alien invasive plants can becomes substantially easier when they become useful inputs to commercial undertakings. For example, invasive alien bush cleared in Namibia is used for charcoal manufacturing. It may even be possible to use aquatic invasives as a feedstock for energy production. Rigorous feasibility studies of such ideas is required and it needs to be recognised that some form of government support is generally needed.
27	Water tariff reform for demand reduction	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.

Nr	Name of finance solution	Description of solution
28	Energy tariff reform for demand reduction	Coal mining to produce feedstock for electricity generation is generally associated with environmental impacts including increased carbon emissions, impacts on biodiversity, water quality impacts and increased water use. Reducing energy demand would have indirect benefits for biodiversity to the extent that coal mining activity for this purpose is reduced bearing in mind that such mining may continue/increase to the extent that coal is exported. Energy pricing reform could be a more prominent part of a wider multi-pronged effort to reduce energy use.
29	Increased introduction of renewable energy	Increased introduction of renewable energy sources should result in less need for coal mining for the generation of electricity bearing in mind that such mining may continue/increase to the extent that coal is exported. It is likely that a mix of solutions could be used to hasten the uptake of renewable energy including reduction of subsidies for non-renewables, electricity pricing reform, introduction of incentives for renewables, etc.

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