



Republic of Botswana



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The Biodiversity Finance Initiative Botswana

Biodiversity Finance Needs Assessment

Final Report

March 2019

Acknowledgements

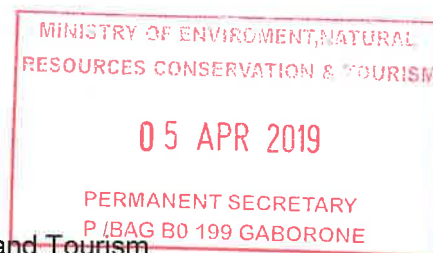
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Executive Summary

Introduction

This Finance Needs Assessment (FNA) serves to estimate the “finance gap” associated with implementing Botswana’s National Biodiversity Strategy and Action Plan (NBSAP). It therefore quantifies the additional costs associated with the implementation of the NBSAP’s strategies and actions. A programme-based approach to costing the actions was adopted for this process and the assessment was guided by the BIOFIN methodology.

Results of the cost estimation process

The results of the cost estimation process show that the additional funds required to implement the NBSAP would amount to approximately P833 million (US\$79 million) including inflation over the 10 years of the NBSAP starting in 2016.¹ This would translate to an average of P83 million (US\$8 million) per year although funding needs vary substantially between years and are particularly high in the early years of implementation. Note that this amount excludes the salary costs for existing staff, some of whom would be responsible for the implementation of the NBSAP. The Biodiversity Finance Plan should therefore aim to lessen this funding/finance gap.

Recommendations

To assist in addressing the current challenges related to biodiversity financing, it is recommended that:

1. The activity of undertaking a country-wide The Economics of Ecosystems and Biodiversity (TEEB) assessment under Target 2 of the NBSAP, be treated separately as its resource requirement is high (approximately 25% of all additional costs of the NBSAP) and balloons the costs of the “mainstreaming” biodiversity goal.
2. The Biodiversity Finance Plan (BFP) focus on solutions that will lessen the finance gap for “mainstreaming”, “sustainable use”, and “protection” as these goals have relatively higher resource need (35%, 29% and 20% of the total additional cost of the NBSAP respectively).
3. Finance solutions prioritised in the finance plan be targeted to cross-cutting sectors, the tourism sector and food security as the additional costs required for implementing the NBSAP in these sectors are the highest, account for 51%, 31% and 15% of costs respectively.
4. For future FNAs, the costing of the NBSAP be done alongside the development and / or revision of the NBSAP, through rigorous consultative process with stakeholders and using appropriate and accounting applications, methods and standards.

¹ Or P735 million (US\$70 million) excluding inflation.

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Abbreviations and Acronyms

BIOFIN	The Biodiversity Finance Initiative
BCM	Botswana Chamber of Mines
BPC	Botswana Power Corporation
CAC	BIOFIN Botswana Cost Accounting Consultant
CI	Conservation International
CBD	Convention on Biological Diversity
CIMA	Chartered Institute of Management Accountants
DCDE	Department of Curriculum Development and Evaluation
DCP	Department of Crop Production
DEA	Department of Environmental Affairs
DFRR	Department of Forestry and Range Resources
DIA	Department of Industrial Affairs
DLGDP	Department of Local Governance Development Planning
DMS	Department of Meteorological Services
DOT	Department of Tourism
DRST	Department of Research, Science and Technology
DTRP	Department of Town and Regional Planning
DNMM	Department of National Museum and Monuments
DWA	Department of Water Affairs
DWNP	Department of Wildlife and National Parks
DWMPC	Department of Waste Management and Pollution Control
EFDP	Economic and Finance Policy Division
GOB	Government of Botswana
MENT	Ministry of Environment, Natural Resources Conservation and Tourism
MENT RDU	MENT Research and Development Unit
MFED	Ministry of Finance and Economic Development
NBDA	National Biodiversity Authority
NBSAP	National Biodiversity Strategy and Action Plans
NSO	National Strategy Office
UNDP	United Nations Development Programme
WUC	Water Utilities Corporation

Chapter 1: INTRODUCTION

1.1 Background

Botswana, as a signatory to the Convention on Biological Diversity (CBD), supports the CBD's premise that biodiversity strengthens ecosystem functioning and the provision of ecosystem services so essential to human wellbeing, livelihoods and poverty reduction. The country developed a National Biodiversity Strategy and Action Plan (NBSAP) in 2004, which was updated in 2016, to integrate global guidance on - setting smart targets and indicators, inclusion of a target that focuses on resource mobilization and inclusion of a Clearing House Mechanism - as contained in the CBD's Strategic Plan and Aichi Targets. It is therefore important to Botswana's sustainable development that the NBSAP is effectively implemented.

Innovative sources of funding are likely to be required for effective implementation of the country's NBSAP given the pressing developmental challenges faced by the country such as high levels of poverty and unemployment. The Biodiversity Finance Initiative (BIOFIN), therefore, is designed to address the biodiversity finance challenge by building a sound business case for increased investments in the conservation and sustainable management of ecosystems and biodiversity, and through the development of a Biodiversity Finance Plan.

The Finance Needs Assessment (FNA) and the Gap Analysis is guided by the *Cost of implementing national biodiversity strategies and action plans* guideline in the BIOFIN Workbook (2016). The purpose of the guideline is to offer a methodology to be used to estimate overall costs for implementing the suite of strategies and actions in a country's NBSAPs, and to calculate the associated financial gap between what is needed to implement the NBSAP and what is budgeted for to implement the NBSAP.

BIOFIN offers two steps to calculating Financial Needs Assessment and the Gap Analysis:

- A. Costing all biodiversity strategies and action plans. These costs are to be subdivided as follows:
 - Costs of mainstreaming strategies
 - Costs of sustainable use strategies
 - Costs of protection strategies
 - Costs of access to benefits (ABS) strategies
 - Costs of implementation strategies
- B. Provide a summary analysis of biodiversity strategies, actions and costs, and project finance gaps and surpluses
 - Summary of annual finance needs for implementing all strategies from 2016 to 2025
 - Summary of annual business-as-usual finance from 2016 to 2025
 - Summary of projected annual financial gaps and surpluses from 2016 to 2025

Other useful information for completion of this assignment is contained in the BIOFIN Policy and Institutional Review (PIR), such as the policy and practice drivers, drivers of biodiversity change as well as key questions arising from broader environmental factors. From the PIR, this

assignment also draws information related to understanding the distribution of costs and benefits, roles and capacities of key financial actors, and understanding key sector actors and their major activities.

1.2 Scope of assessment

The scope of this assessment was to undertake a cost analysis, define the financial needs, and calculate the finance gap for implementing Botswana's NBSAP, as well as support the formulation of a Biodiversity Finance Plan to help support the implementation of the NBSAP. Specifically, the following objectives were to be met:

- a. To assess and provide a summary of all of the additional costs involved in implementing the biodiversity strategies within the Botswana NBSAP;
- b. To calculate the total finance gap for implementing the Botswana NBSAP;
- c. Support, as needed, the development of a Biodiversity Finance Plan within Botswana.

The goals and targets of the NBSAP are as follows:

Targets under Goal 1: Biodiversity is mainstreamed and valued across all sectors of society

Mainstreaming
Costs

1. By 2025, 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.
2. By 2025, planning processes at all (district, urban and national) levels, and national accounting and reporting systems in Botswana contain explicit actions to promote biodiversity conservation.
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.
4. By 2025, at all levels, policy and regulatory instruments are in place to ensure production and consumption by government, industry and society are kept within sustainable levels and safe ecological limits.

Targets under Goal 2: The pressure on biodiversity is reduced and natural resources are used sustainably

Sustainable Use
Costs

5. By 2025, the rate of natural land conversion is at least halved, and degradation and fragmentation are significantly reduced.
6. By 2025, animal and plant resources in Botswana's wetlands, woodlands and savannas are sustainably managed using the ecosystem approach, so that the impacts of harvesting remain within safe ecological limits.
7. By 2025, wetlands, woodlands and savannas, particularly where used for use for range or crops, are managed sustainably, ensuring conservation of biodiversity.
8. By 2025, levels of air, water and soil pollution are maintained below levels that would threaten ecosystem functioning and biodiversity.
9. 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.
10. By 2025, the anthropogenic pressures on wetlands, woodlands and savannas are minimized, so that the impacts of climate change and other external perturbations on their ecological integrity and functioning can be managed.

Targets under Goal 3: Ecosystems, species and genetic resources are protected through sound management

Protection
Costs

11. By 2025, at least 25 percent of all Botswana's ecoregions, particularly the wetlands, rivers and pans in them, are effectively conserved through an ecosystem approach that integrates their management with that of the surrounding landscapes and involves resident communities.
12. By 2025, the conservation status of species in Botswana that are listed as threatened has been improved or sustained.
13. By 2025, the genetic resources of traditional agricultural species and their wild relatives are protected, and strategies for minimizing genetic erosion and safeguarding their genetic diversity have been implemented.

Targets under Goal 4: Fair and equitable access to the benefits of biodiversity is secured

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.
15. By 2025, ecosystem integrity in all Botswana's ecoregions will be conserved through the adoption of ecosystem-level management approaches built around key ecological processes, so that they contribute to climate change mitigation and to combating desertification.
16. By 2025, the Nagoya Protocol is domesticated and operational, and specific actions that ensure fair and equitable access and benefit sharing are implemented.

Targets under Goal 5: Participatory planning, knowledge management and capacity-building are in place to support NBSAP implementation

17. By 2015, Botswana's revised NBSAP has commenced implementation with the full support of all sectors and levels of governance.
18. By 2025, the indigenous knowledge of Botswana's various communities, as it relates to the conservation and sustainable use of biodiversity in all the country's ecoregions, will be documented, assessed and legally protected, and - where relevant - integrated into programmes and projects supporting biodiversity conservation.
19. By 2025, information and techniques relating to the biodiversity and its value in all Botswana's ecoregions are efficiently documented, stored, shared, disseminated and used by all sectors and levels of society.
20. By 2017, at least 80% of the required budget for the revised NBSAP, generated from diverse sources, is made available for its implementation.

Note* Activities under each target are provided in Appendix IV

Chapter 2: APPROACH

2.1 Methodology

This section provides the methodology and approach used to complete the BIOFIN FNA in Botswana along with the process undertaken to cost the NBSAP and determine the additional financial needs required for its implementation.

2.1.1 Costing Biodiversity strategies and action plans

Botswana has prepared its NBSAP, which contains strategic actions; targets and indicators, and includes agencies and offices that are responsible for the implementation of specific actions or activities.

A worksheet was used to estimate finance needs and finance gaps for the biodiversity strategy and the action plan. The worksheet provides a summary of the costs of implementing the NBSAP from 2016-2025, covering costs of different strategy categories of actions as follows: 1) biodiversity mainstreaming strategies; 2) sustainable use strategies; 3) protection strategies; 4) access and benefit sharing strategies; and 5) implementation support strategies.

The BIOFIN global methodology has recommended worksheets for a data management system to support calculating costs, but it also allows governments to adopt alternative methods of cost estimation which they think are more relevant to their situations. Botswana adopted a combination of both 'programme-based' and 'expert-judgment' approaches to cost estimation. Programme Based Costing (PBC) is a costing approach which directly links the planned activities to direct costs while Expert Judgment uses the experience and knowledge of experts to estimate the cost

of an activity. Under the PBC approach, the inclusion of any cost item to an activity is justified. It distinguishes costs as either direct or indirect. Direct costs are those costs that are incurred as a direct result of the activity whereas indirect costs are those costs that have already been committed and will be incurred even if the decision to engage in the activity is not taken, such as headquarters' salaries.

2.1.2 The Procedure for Costing the NBSAP by the Botswana Team

Determination of the costs of implementing Botswana's NBSAP is guided by the prescribed methods in the BIOFIN Workbook. The Botswana BIOFIN team met for three days to come up with costing assumptions and costing estimates. A pool of experts was drawn from all stakeholder organizations as outlined in appendix II.

2.1.3 Preparation for the Costing Workshop

A comprehensive definition of the requirements was produced during the costing workshop preparatory meeting. The following activities were also carried out in preparation for the costing workshop:

- Designed templates for costing,
- Conducted a desktop research on cost assumptions to be used in costing.

In addition to the preparatory meeting, two workshops were conducted with all relevant stakeholders to determine costing standards, as shown in *appendix III*.

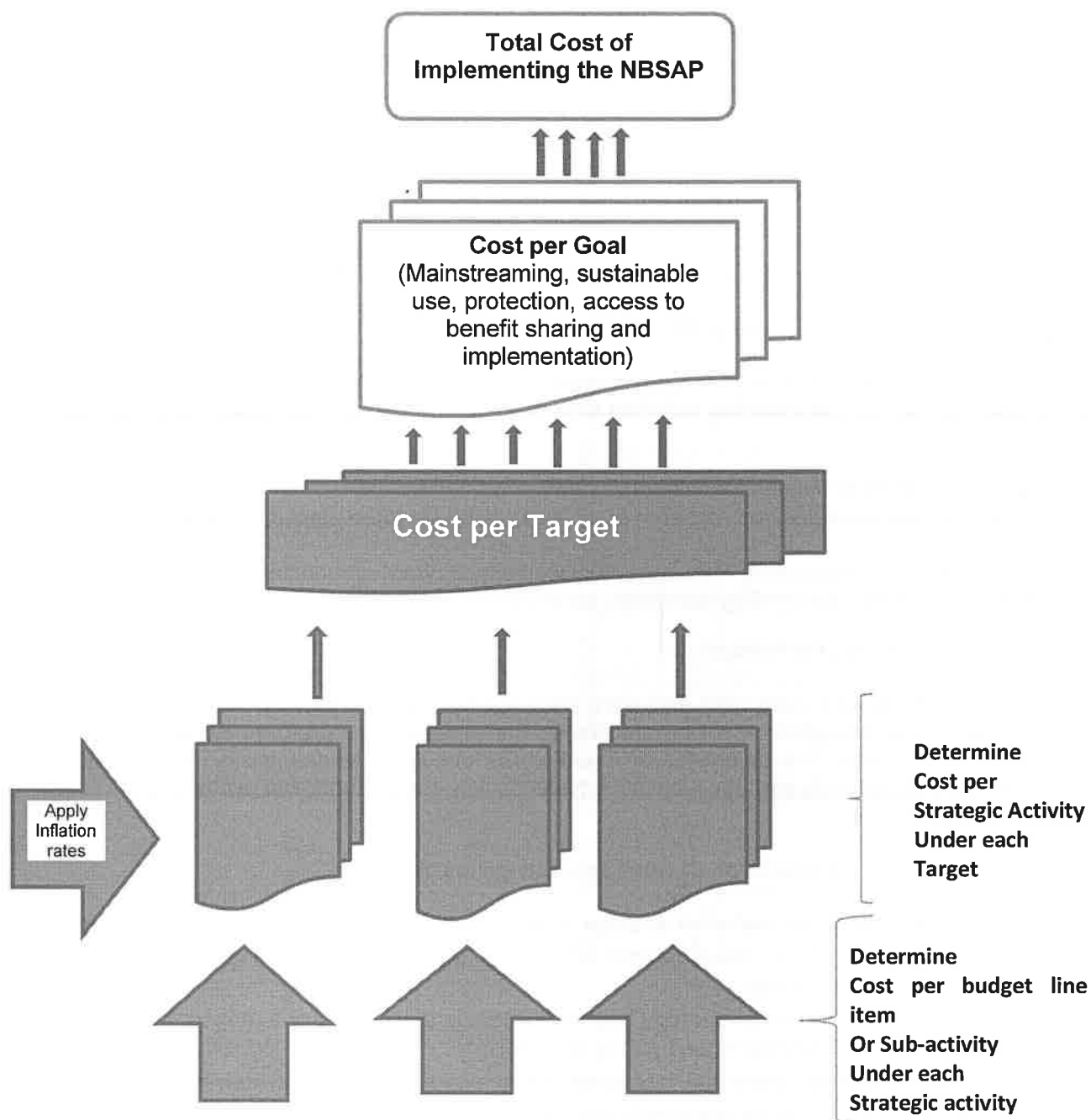
2.1.4 NBSAP Costing Workshops

The Costing Workshops were held and were attended by thematic experts from government, private sector and non-government organizations. Participants were pre-grouped according to their field of expertise. The objectives of these workshops were to decompose each activity included in the biodiversity strategy plan into smaller activity components and estimating the cost of each component.

The following procedure was followed when calculating the cost estimates:

- i. Determination of the preferred strategy to achieve intended outcomes of each strategic action. (For example, development of training manuals or guidelines that includes biodiversity components).
- ii. Translating the preferred strategy into workable sub-activities (For example, the type of skills required to develop such training manuals).
- iii. Determine whether additional resources are required, or the activity can be carried out within existing resources, especially recurrent.
- iv. Translate each sub activity into current cost, using standard costs where possible. Standard costs are annexed as appendix III of the report.
- v. Determine the frequency of each activity. (For example, once-off in year 2015 only; Once-off annually from 2015 to 2025; or four times annually from 2015 to 2020). The NBSAP document was used to determine appropriate years.

A process map summarizing the procedure for costing:



2.1.5 Coarse Resolution Cost Estimation

Standard costs developed by the participants of the Costing Workshop served as the basis for computing the coarse resolution of the additional costs of implementing the NBSAP. The BIOFIN Botswana team agreed on the standard cost per unit for travel and accommodation, transport, workshops, and consultants (see appendix III for standardized per unit costs).

A total of 94 out of 107 activities were estimated using available data at 2015/16 costs at the time of writing this report. Other activities were not costed either due to non-availability of data, to avoid double counting in mutual activities or because there is no marginal cost of implementing the strategic action.

2.1.6 Fine Resolution Cost Estimation

After estimating costs at current prices (2015/16), a timeline of costs was developed using information contained in the NBSAP document as a guide of timeline costs. Since the NBSAP document indicates activities that were to be implemented from 2014, any activity planned to start in 2014 and 2015 were estimated using 2016 as a base year.

2.1.7 Adjusting for inflation

All calculated current costs were also inflated from 2016 to 2025. The World Bank's publication on Botswana's inflation rates between 2011 and 2014 shows changes of 8.5%, 7.5%, 5.9% and 4.4% respectively.² We used a spreadsheet to project future CPI's for years 2015 to 2025. It was assumed that current trends will continue into the foreseeable future and that CPI would average 4.5% over the period. The results were used to adjust nominal costs for each year from 2016 to 2025 to reflect inflation. A snapshot of the estimated CPI rates and adjusted costs is provided below:

Table 1: Consumer Price Index (CPI) Estimates from 2015-2025

	Actual Consumer Price Index (CPI) Rates					Estimated Consumer Price Index (CPI Rates)										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CPI	100.0	108.5	116.6	123.5	128.9	137.3	144.62	151.9	159.18	166.46	173.7	181.02	188.3	195.58	202.86	210.1
% Change	0	8.5	7.5	5.9	4.4	1	5.3	5.0	4.8	4.6	2	4.2	4.0	3.9	3.7	3
CPI Projections from 2016							100	105.0	109.8	114.4	116.4	120.6	124.6	128.5	132.2	135.2
Inflation adjustment (%)							100.0%	105.0%	109.8%	114.4%	116.4%	120.6%	124.6%	128.5%	132.2%	135.2%

2.2 Assumptions

It is particularly important to bear in mind that the costing exercise did not focus on the *total* costs of NBSAP implementation. Costing was done on an incremental basis focusing exclusively on the *additional* costs required to implement the NBSAP. As a consequence, the salaries of existing permanent staff that would work on NBSAP actions were excluded as these costs would remain

² World Bank Publication on national economic statistics <http://data.worldbank.org/indicator/FP.CPI.TOTL>

even without the NBSAP. Other additional costs such as those for consultancies, training, equipment and additional/new staff were, however, included.

The following decisions were adopted during the costing exercise and are important to note when using these results:

1. All costs are to be quoted in Botswana 'Pula' currency,
2. Adopt an 'activity based' approach to costing. Information on project activities was provided by implementing partners,
3. Use activities to estimate costs; standard costs are used as cost driver rates of the activities,
4. Only incremental costs are considered as relevant,
5. Salaries of implementing institutions' employees were considered not to be relevant because they are assumed not marginal unless they are procured exclusively for implementation purposes.
6. The cost of material is considered relevant if it was incremental and significant to successful implementation. Any fixed costs that remained unchanged such as depreciation was also considered to be inappropriate.
7. The assumed cost of equipment includes the cost of new equipment needed for implementing an activity and the expenses incurred from equipment maintenance.

2.3 Best Practices

In using the above methodological approach, the following best practices have been applied to address uncertainties such as long planning horizons and general lack of information:³

- **Expert judgment**, which uses the experience and knowledge of experts to estimate the cost of the project. This technique can take into account unique factors specific to the project and also saves time for research. This is normally used before inception of the project and can be biased towards what is known by the expert, and what is unknown is left out.
- **Analogous estimating**, this uses historical data from similar projects as a basis for the cost estimate. The estimate can be adjusted for known differences between the projects. This type of estimate is usually applied at the early phases of a project and is less accurate but better than expert judgment as it incorporates lessons learnt.
- **Parametric estimating**, this uses statistical modeling to develop a cost estimate. It uses historical data of key cost drivers to calculate an estimate for different parameters such as cost and duration. For example, square footage is used in some construction projects. This is normally relevant for projects that are on-going where there is historical data.
- **Vendor analysis** can also be used to estimate what the project should cost by comparing the bids submitted by multiple vendors. This is normally the most accurate way of estimating cost of an activity because it is realistic.

The project team, looking at their limitations and time constraints, adopted an expert judgement approach to costing, where a group of experts met in a workshop setting to estimate cost per each activity contained in the NBSAP.

³ Information provided by Project-Management-Skills at <http://www.project-management-skills.com>

Chapter 3: COST ESTIMATES

This chapter presents the summary of the additional or incremental costs of all the strategic activities required to implement the NBSAP over 10 years. Total costs are disaggregated for (1) each of the five NBSAP goals, (2) per key economic sector and (3) per lead institution.

All costs were estimated in current 2016 prices and then also with likely nominal inflation from 2016 to 2025 included. The costs in the sections below are all with inflation included unless otherwise stated. Selected detailed excel spreadsheet used for the Finance Needs Assessment are included in the Annexures.

3.1 Costs per NBSAP goal

The following sections present estimates of the total additional cost of implementing the Botswana NBSAP over ten years for each NBSAP goal as follows (refer to Appendix IV for detailed costs per NBSAP target and goal):

Goal 1: Biodiversity is mainstreamed and valued across all sectors of society

Goal 2: The pressure on biodiversity is reduced and natural resources are used sustainably

Goal 3: Ecosystems, species and genetic resources are protected through sound management

Goal 4: Fair and equitable access to the benefits of biodiversity is secured

Goal 5: Participatory planning, knowledge management and capacity-building are in place to support NBSAP implementation

3.1.1 Mainstreaming Costs

The Table below presents the cost of ensuring biodiversity is mainstreamed and valued across all sectors of the society from 2016 to 2025 as per the NBSAP 2016. Target 2⁴, requires the highest costs, and Target 4⁵, has the lowest cost. A major activity for Target 2 is carrying out a country-level, Economics of Ecosystems and Biodiversity assessment which will include maintaining an inventory of natural resources, which was planned to run from 2016 to 2018.

Table 2: Total Additional Costs of Mainstreaming Biodiversity in million Botswana Pula per year

Targets	Additional Cost per Year in million Botswana Pula											Total Cost (BWP)
	16	17	18	19	20	21	22	23	24	25		
Mainstreaming Costs												

⁴ [By 2025, planning processes at all (district, urban and national) levels, and national accounting and reporting systems in Botswana contain explicit actions to promote biodiversity conservation]

⁵ "By 2025, at all levels, policy and regulatory instruments are in place to ensure production and consumption by government, industry and society are kept within sustainable levels and safe ecological limits"

1	By 2025, 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	1	4	4	5	5	6	5	6	6	1	45
2	By 2025, planning processes at all (district, urban and national) levels, and national accounting and reporting systems in Botswana contain explicit actions to promote biodiversity conservation.	2	111	112	1	-	0	0	0	0	0	226
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.	-	6	3	3	3	-	-	-	-	-	15
4	By 2025, at all levels, policy and regulatory instruments are in place to ensure production and consumption by government; industry and society are kept within sustainable levels and safe ecological limits.	-	2	2	-	-	-	-	-	-	-	
	Total	4	123	119	9	8	6	5	6	6	1	287

3.1.2 Sustainable Use Costs

The Table below shows the costs to ensure that the pressure on biodiversity is reduced and natural resources are used sustainably from 2016 to 2025. The highest costs in this category is cost of implementing Target 7⁶, a total of more than P100 million is needed between 2018 and 2024. The major activity is to ensure that Botswana's wetlands, woodlands and savannas are used sustainably.

Table 3: Total Additional Cost for Sustainable Use in million Botswana Pula per year

Targets		Additional Cost per Year in million Botswana Pula										Total Cost (BWP)
		16	17	18	19	20	21	22	23	24	25	
Sustainable Use Costs												
5	By 2025, the rate of natural land conversion is at least halved, and degradation and fragmentation are significantly reduced	4	5	4	3	3	1	1	-	-	-	21
6	By 2025, animal and plant resources in Botswana's wetlands, woodlands and savannas are sustainably managed using the ecosystem approach, so that the impacts of harvesting remain within safe ecological limits.	1	3	7	7	5	3	4	4	-	-	34

⁶ "By 2025, wetlands, woodlands and savannas, particularly where used for use for range or crops, are managed sustainably, ensuring conservation of biodiversity"

7	By 2025, wetlands, woodlands and savannas, particularly where used for use for range or crops, are managed sustainably, ensuring conservation of biodiversity	-	-	4	17	19	14	15	15	16	-	101
8	By 2025, levels of air, water and soil pollution are maintained below levels that would threaten ecosystem functioning and biodiversity.	16	14	11	1	-	-	-	-	-	-	42
9	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.	2	1	1	1	-	-	-	-	-	-	4
10	By 2025, the anthropogenic pressures on wetlands, woodlands and savannas are minimised, so that the impacts of climate change and other external perturbations on their ecological integrity and functioning can be managed.	9	1	5	4	4	4	4	4	4	2	40
	Total	31	24	31	32	31	23	24	23	20	2	240

3.1.3 Protection Costs

The below Table indicates the costs to ensure ecosystems, species and genetic resources are protected through sound management from 2016 to 2025. The major activity cost under target 11⁷, is to ensure that by 2016 annual grants are issued to environmental NGOs for monitoring of key species.

Table 4: Total Additional Cost for Protection of Biodiversity in Million Botswana Pula per year

Targets		Additional Cost per Year in million Botswana Pula											Total Cost (BWP)
		16	17	18	19	20	21	22	23	24	25		
Protection Costs													
11	By 2025, at least 25 percent of all Botswana's ecoregions, particularly the wetlands, rivers and pans in them, are effectively conserved through an ecosystem approach that integrates their management with that of the surrounding landscapes and involves resident communities.	12	11	15	15	17	13	13	14	14	15	137	
12	By 2025, the conservation status of species in Botswana that are listed as threatened has been improved or sustained.	-	-	10	12	-	-	-	-	-	-	22	
13	By 2025, the genetic resources of traditional agricultural species and their wild relatives are protected, and strategies for minimizing genetic	-	-	-	-	-	-	1	5	1	1	7	

⁷ "By 2025, at least 25 percent of all Botswana's eco-regions, particularly the wetlands, rivers and pans in them, are effectively conserved through an ecosystem approach that integrates their management with that of the surrounding landscapes and involves resident communities"

	erosion and safeguarding their genetic diversity have been implemented.											
Total		12	11	25	27	17	13	14	19	15	15	166

3.1.4 Access and Benefits Sharing Costs

In the Table below, the costs to ensure that there is fair and equitable access to the benefits of biodiversity from 2016 to 2025 is presented. In this category the major cost is for Target 15⁸, with the most costly activity to engage research consultancies to undertake a study into past and present fire regimes in all country's eco-regions as well as documenting any deviations from natural regimes.

Table 5: Total Additional Cost for Access and Benefit Sharing in million Botswana Pula

Targets		Additional Cost per Year in million Botswana Pula										Total Cost (BWP)
		16	17	18	19	20	21	22	23	24	25	
Access and Benefit Sharing Costs												
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.	7	-	1	6	0	0	0	0	0	0	15
15	By 2025, ecosystem integrity in all Botswana's ecoregions will be conserved through the adoption of ecosystem-level management approaches built around key ecological processes, so that they contribute to climate change mitigation and to combating desertification.	4	7	3	4	7	4	4	4	4	4	45
16	By 2025, the Nagoya Protocol is domesticated and operational, and specific actions that ensure fair and equitable access and benefit sharing are implemented.	3	-	-	-	-	-	-	-	-	-	3
Total		14	7	4	9	8	4	4	4	4	5	63

3.1.5 Implementation Support Costs

The Table below shows the costs to ensure that participatory planning, knowledge management and capacity-building are in place to support NBSAP implementation from 2016 to 2025. Target

⁸ " By 2025, ecosystem integrity in all Botswana's ecoregions will be conserved through the adoption of ecosystem-level management approaches built around key ecological processes, so that they contribute to climate change mitigation and to combating desertification"

19⁹, has the highest cost under this category of costs and the major cost is to upgrade and maintain the Environment Information System (EIS) to function as a Clearing House Mechanism (CHM) accessible to all sectors of society.

Table 6: Total Additional Cost of NBSAP Implementing Support in million Botswana Pula per year

Targets		Additional Cost per Year in million Botswana Pula										Total Cost (BWP)
		16	17	18	19	20	21	22	23	24	25	
Implementation Costs												
16	By 2015, Botswana's revised NBSAP has commenced implementation with the full support of all sectors and levels of governance.	-	-	-	-	-	-	-	-	-	-	-
18	By 2025, the indigenous knowledge of Botswana's various communities, as it relates to the conservation and sustainable use of biodiversity in all the country's ecoregions, will be documented, assessed and legally protected, and - where relevant - integrated into programmes and projects supporting biodiversity conservation.	2	2	2	-	-	-	-	-	-	-	5
19	By 2025, information and techniques relating to the biodiversity and its value in all Botswana's ecoregions are efficiently documented, stored, shared, disseminated and used by all sectors and levels of society.	11	10	6	6	6	6	6	7	7	7	70
20	By 2017, at least 80% of the required budget for the revised NBSAP, generated from diverse sources, is made available for its implementation	-	-	-	-	1	-	-	-	-	-	1
Total		12	11	8	6	7	6	6	7	7	7	77

3.1.6 Summary of all costs per NBSAP goal

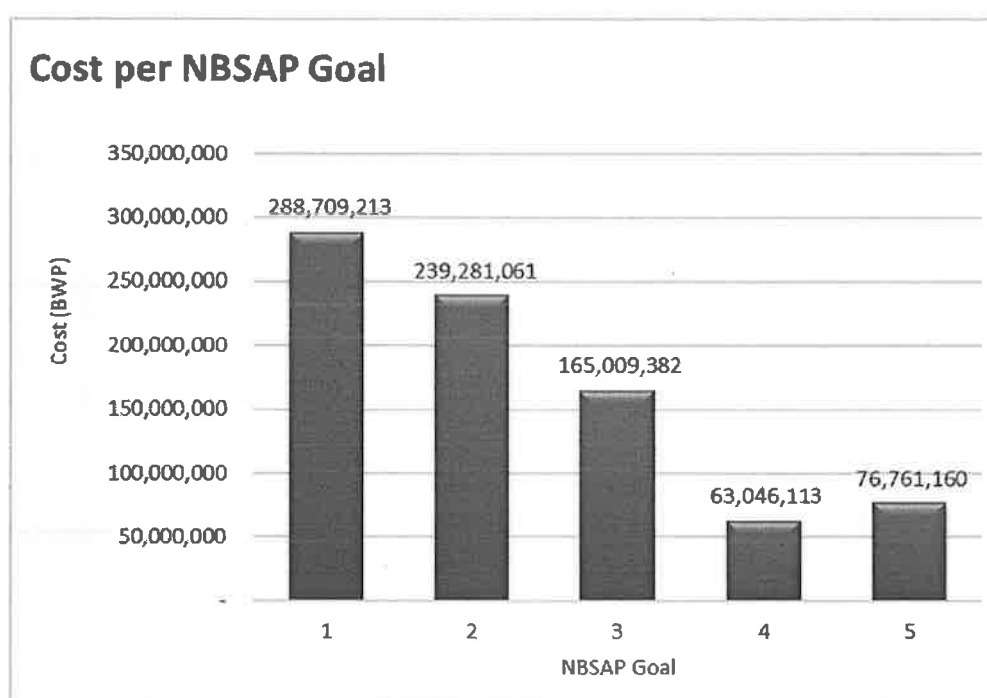
The Table and accompanying Figure below shows that the total additional cost of implementing the Botswana NBSAP over ten years is P832.8 million including inflation (equivalent to P735 million without inflation included). Costs are relatively higher for 2017 and 2018 at P174 million and P185 million respectively particularly because of the TEEB study which is planned under the Mainstreaming goal. Mainstreaming and Sustainable Use account for roughly 65% of all costs at P288 million and P239 million respectively. The protection goal would then require P165 million (20% of all costs) followed by P76 million for the implementation support goal and P63 million for access and benefit sharing.

⁹ "By 2025, information and techniques relating to the biodiversity and its value in all Botswana's ecoregions are efficiently documented, stored, shared, disseminated and used by all sectors and levels of society"

Table 7: Summary of Additional Costs per NBSAP Goal per Year in Botswana Pula

NBSAP Goal	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total Finance Needs	% per Goal
1 Mainstreaming	3,680,000	123,205,794	118,767,485	8,912,900	8,486,720	5,777,472	5,970,150	6,155,378	6,333,712	1,419,602	288,709,213	35%
2 Sustainable use	30,605,000	23,527,590	30,476,856	31,745,985	30,554,986	23,213,597	23,987,766	23,318,747	20,160,531	1,690,003	239,281,061	29%
3 Protection	11,500,000	10,503,388	24,688,999	26,975,508	15,422,993	12,963,438	14,317,893	18,822,019	14,740,323	15,074,823	165,009,382	20%
4 ABS	13,950,000	6,627,638	3,953,754	9,151,996	7,565,997	-	-	-	-	-	63,046,113	8%
5 Implementation	12,200,000	11,133,591	7,797,682	5,834,397	7,100,397	-	-	-	-	-	76,761,160	9%
Total Finance Needs	71,935,000	174,998,001	185,684,776	82,620,786	69,131,093	41,954,508	44,275,809	48,296,143	41,234,566	18,184,428	832,806,930	100%
% of total fin needs	9%	21%	22%	10%	8%	5%	5%	6%	5%	2%	100%	

Figure 2: Summary of Additional Costs per NBSAP Goal in Botswana Pula



3.2 Costs per key sectors of the economy

The Table below summarises the additional costs of implementing NBSAP activities per priority sector and for those activities that cut across sectors. The later would be most prominent requiring P428 million followed by P257 million for tourism and P125 for food security.

Table 8: Additional Costs of implementing activities within the priority sectors in Botswana Pula.

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total (BWP)
Cross Cutting	26,380,000	144,737,740	135,845,507	18,236,496	18,904,515	17,414,419	18,917,313	22,150,882	15,191,126	10,478,016	428,256,013
Energy	3,500,000	3,676,186	-	-	-	-	-	-	-	-	7,176,186
Food Security	7,100,000	787,754	8,291,901	27,398,787	20,544,591	15,495,830	16,012,613	16,509,416	16,128,425	270,400	128,539,717
Tourism	28,205,000	24,640,949	40,339,277	35,727,104	28,401,587	19,294,419	19,937,883	20,556,471	21,152,033	18,928,029	257,182,751
Water	6,750,000	1,155,373	1,208,092	1,258,399	1,280,399	-	-	-	-	-	11,652,263
Total Finance Needs	71,935,000	174,998,001	185,684,776	82,620,786	69,131,093	52,204,667	54,867,809	59,216,769	52,471,583	29,676,445	832,806,930

3.3 Costs per lead institution

The Table below shows a summary of costs per lead implementing institution as well as the projected implementation timelines. The largest portion of costs (P218 million) will be needed to be carried by the Economic and Finance Policy Division (EFPD) in the Ministry of Finance and Economic Development as they would lead the TEEB study process, followed by Department of Wildlife and National Parks (DWNP) and Department of Forestry and Range Resources (DFRR), both in the Ministry of Environment, Natural Resources Conservation and Tourism.

Table 9: Additional Costs of implementing activities per institution in Million Botswana Pula

Institution	Year										Total (BWP)
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
BPC	4	4	-	-	-	-	-	-	-	-	8
DCDE	1	-	-	-	-	-	-	-	-	-	1
DCP	-	-	-	14	14	14	15	15	16	-	88
DEA	12	9	10	14	11	7	7	7	7	7	91
DFRR	6	13	21	20	17	11	11	15	9	2	126
DIA	-	1	-	-	-	-	-	-	-	-	1
DLGDP	0	-	1	-	-	-	-	-	-	-	1
DNMM	1	2	9	7	7	8	8	8	8	8	66
DOT	-	6	3	3	3	-	-	-	-	-	15
DRST	5	4	-	-	-	-	-	-	-	-	9
DTRP	2	-	-	-	1	-	-	-	-	-	3
DWA	7	-	-	-	-	-	-	-	-	-	7
DWNP	29	14	20	25	16	12	13	13	12	12	166
DWMPC	-	11	11	1	-	-	-	-	-	-	22
EFPD	-	106	111	0	0	0	0	0	0	0	218
MENT RDU	5	5	-	-	-	-	-	-	-	-	10
NSO	-	1	-	-	-	-	-	-	-	-	1
Statistics Botswana	3	-	-	-	-	-	-	-	-	-	3
TOTAL NEEDS	72	175	186	83	70	52	54	59	52	30	834

3.2 The Biodiversity Finance Gap

The results show an additional financial need of approximately P833 million (US\$79 million) over the 10 years of the NBSAP starting in 2016. This would translate to an average of P83 million (US\$8 million) per year although funding needs vary substantially between years and are particularly high in the early years of implementation. As the costing exercise only included those costs that are not already carried by the relevant institutions, these amounts should be seen as the additional finance/funds that Botswana needs, or the 'funding gap' for the full implementation of the NBSAP. The Biodiversity Finance Plan should aim to lessen this funding gap through development of biodiversity finance solutions.

The most significant additional costs for implementing the NBSAP was for Target 2 – primarily in the form of a country wide TEEB assessment that would represent approximately 25% of the additional costs of the NBSAP. The cost of the assessment was estimated on the basis that it would be extremely comprehensive which may not prove necessary. It is therefore worth noting that, without the TEEB assessment, the total funding gap would reduce to approximately P606 million (US\$57.7 million) or P61 million (US\$5.8 million) per year on average.

Chapter 4: CHALLENGES, LESSONS LEARNT AND BEST PRACTICES

The major challenge in estimating the cost of the activities of the NBSAP is uncertainty. Values provided as estimates will change as economic conditions change. There is no available Generally Accepted Accounting Practice (GAAP) rule in developing costing estimates; hence expert opinion was necessary to agree on the cost standards which are provided in appendix III.

In addition, at the national level, the institutional responsibility for biodiversity appears to be fragmented and focused largely on the Ministry of Environment, Natural Resources Conservation and Tourism; which oversees the Departments of Environmental Affairs, Wildlife and National Parks, Waste Management and Pollution Control and Tourism. While there are other institutions that play a significant role such as department of Water Affairs, Metrological Services, the Botswana Chamber of Mines, Botswana Power Corporation and Water Utilities Corporation, their contribution in costing biodiversity activities was limited and their inclusion in the NBSAP is not obvious.

Private and academic sector participation in costing biodiversity activities was also significantly limited despite due to communication challenges, except for a few organisations such as University of Botswana, Birdlife Botswana, Somarelang Tikologo and Tshole Trust. This therefore limits the accuracy of the study results.

There were also significant government departments that had not availed data on the biodiversity activities they lead such as DMS¹⁰, DEA ¹¹ and EFPD¹² at the time of writing this report. The implication is that once data becomes available, it can be included in a revision.

Key lessons learnt include the following:

¹⁰ [To adopt and implement, by 2016, the National Climate Change Strategy and Action Plan]

¹¹ [To implement, from 2014, the NBSAP Resource Mobilisation Plan],

¹² [To adopt fully and permanently, by 2020, a natural capital accounting system (such as the Wealth Accounting and Valuation of Ecosystem Services (WAVES) programme) into the national planning processes]

- Costing the NBSAP is a very critical exercise and for it to be successful, it needs to be done alongside the NBSAP development process in order to assist in the decision-making exercise.
- Biodiversity priorities must be set before the costing exercise and this should follow a rigorous consultative process.
- Stakeholder involvement (programme experts) is very critical also during the costing exercise as their input guided the costs through defining the targets, detailing breakdown of activities into sub-activities as well as defining priorities.

Chapter 5: CONCLUSION AND RECOMMENDATIONS

The additional costs of implementing the NBSAP over ten years were estimated at P735 million using current prices and P832.8 million including inflation. Based on this FNA exercise, the following recommendations are made:

1. The activity of undertaking a country-wide The Economics of Ecosystems and Biodiversity (TEEB) assessment under Target 2 of the NBSAP, be treated separately as its resource requirement is high (approximately 25% of all additional costs of the NBSAP) and balloons the costs of the "mainstreaming" biodiversity goal.
2. The Biodiversity Finance Plan (BFP) focus on solutions that will lessen the finance gap for "mainstreaming", "sustainable use", and "protection" as these goals have relatively higher resource need (35%, 29% and 20% of the total additional cost of the NBSAP respectively).
3. Finance solutions prioritised in the finance plan be targeted to cross-cutting sectors, the tourism sector and food security as the additional costs required for implementing the NBSAP in these sectors are the highest, account for 51%, 31% and 15% of costs respectively.
4. For future FNAs, the costing of the NBSAP be done alongside the development and / or revision of the NBSAP, through rigorous consultative process with stakeholders and using appropriate and accounting applications, methods and standards.

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- IV. Resource Mobilization and Financial Reporting under the CBD Assessing funding needs, gaps, and priorities: costing the NBSAPs at <https://www.cbd.int/doc>
- V. Republic of Ghana. (2013) Programme Based Budgeting Guidelines, Concept and Specifications at <http://www.mofep.gov.gh/sites/default/files/pbb/PBB%20Guidelines%20for%202014%20Budget.pdf>
- VI. World Bank Publication on national economic statistics at <http://data.worldbank.org/indicator/FP.CPI.TOTL>
- VII. Project-Management-Skills, Project Cost Estimating Tools and Techniques at <http://www.project-management-skills.com>

APPENDICES

Appendix I: Contributors to the Costing Project

Name	Institution
Marks Dithlogo	NBDA
Tsosoloso Matale	DEA
Mmolotsi Mokotedi	UNDP Botswana
Dineo Gaborekwe	UNDP Botswana
Lapologang Magole	UNDP Botswana
Juan Bester	UNDP Botswana
Meshack Letlhare	UNDP Botswana
Mosimanegape Nthaka	DEA
Oageng Disang	DEA
Agang Vincent Motsumi	DEA
Keoagile Sebopelo	DEA
Tshepo Baakile	DEA
Basego Moremedi	DEA
Dorothy Kgathi-Thite	DEA
Mokgadi Monamati	DEA
Kuda Mpolokang	DEA
O G Phatshwane	MFDP
Amos Ramocha	BNVL
Katso Lethola	DAR
Keneilwe Mathaba	CCB
Stephen Mopalo	Tshole Trust
Thato Sengwaketse	MOH
Kaone Kgotlaetsile	NACA
Gilbert Gaboutloeloe	BCA
Bokamoso Phalaagae	Somarelang Tikologo
Mercy Munyadzwe	DWNP
Wanda Mphinyane	UB
Matlhogonolo Thomas	AGC
Gwiso Dube	AGC
Bolokwe Maina	DWA
Mookho L Kamyuka	DTRP
Claire Glass-Rudake	DWNPC
Gofetamang Phunyuka	DFRR
Tawana Babili	CI

Appendix II: Stakeholder Mapping

A list of targeted stakeholders for data collection.

Sector	Institution	Comment
Biodiversity conservation	Ministry of Environment, Wildlife and Tourism Department of Environmental Affairs	Executing agency of the project
Private Sector	Game lodges, Safari companies	Could not be reached at the time of reporting but important as a potential finance actor.
Tourism	Department of Wildlife and National Parks Department of Tourism Botswana Tourism Organization	Most of the activities are tourism related and their expertise is important.
Non-governmental Organizations	Birdlife Botswana Kalahari Conservation Society Mmokolodi Nature Reserve Somarelang Tikologo Tshole Trust	They showed good experience in implementing biodiversity management work on the ground, as well as an understanding of the needs of local communities whose livelihoods are directly dependent on biodiversity. Their contribution was important.
National Finance and Budgeting	Ministry of Finance and Development Planning Statistics Botswana	Key decisions that affect biodiversity are made in the Ministry of Finance and Development Planning and Statistics Botswana assisted with development of baseline cost assumptions. Their contribution was immense.
Land management	Department of Lands and Housing Department of Town and Regional Planning	To cost activities related with sustainable land use practices
Water	Department of Water Affairs Water Utilities Corporation	Most of the rehabilitation of water sources falls under their jurisdiction, hence their contribution was important.
Energy	Department of Energy Affairs Botswana Power Corporation	Could not be contacted at the time of reporting.
Transport	Department of Transport	They identified all activities related with environmental assessments on national road networks.
Poverty Eradication	Office of the President Department of Local Government and Development Planning	They identified local economic development strategies and poverty eradication projects related to biodiversity
Indigenous and local community organizations	Community Trusts in Ecosystem areas such as Okavango area, Chobe area, Makgadikgadi area	Could not be contacted at the time of reporting.

Appendix III: Standard cost elements at 2015/16 Prices

The following cost assumptions were made for each identified cost unit:

Cost Element	Cost per unit	Cost Unit	General Comments
Accommodation	P1,500	per person per day	Lodging cost
Consultancy	P500,000	per consultant	Cost per assignment
Travelling	P10.00	per litre for 5 km.	Mostly in rural roads
Capacitating an office	P2,500,000	Per office	Infrastructure cost
Workshops	P100 000	per day	Conference costs
Research	P1,000,000	per Eco region	Cost per research

Appendix IV: Total Additional Cost of implementing each target and goal per year in million Botswana Pula

Targets		Additional Cost per Year in million Botswana Pula										Total Cost (million BWP)
		16	17	18	19	20	21	22	23	24	25	
Goal 1: Biodiversity is mainstreamed and valued across all sectors of society												
1	By 2025, 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	1.3	4	4	5	5	5	4	5	5	1	37
2	By 2025, planning processes at all (district, urban and national) levels, and national accounting and reporting systems in Botswana contain explicit actions to promote biodiversity conservation.	2	106	102	1	-	0	0	0	0	0	211
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.		6	3	3	3						14
4	By 2025, at all levels, policy and regulatory instruments are in place to ensure production and consumption by government, industry and society are kept within sustainable levels and safe ecological limits.		2									2
Total for Goal 1		4	117	108	8	7	5	4	5	5	1	263
Goal 2: The pressure on biodiversity is reduced and natural resources are used sustainably												
5	By 2025, the rate of natural land conversion is at least halved, and degradation and fragmentation are significantly reduced	4	5	4	2	2	1	1				19
6	By 2025, animal and plant resources in Botswana's wetlands, woodlands and savannas are sustainably managed using the ecosystem approach, so that the impacts of harvesting remain within safe ecological limits.	1	3	6	6	5	3	3	3			29

7	By 2025, wetlands, woodlands and savannas, particularly where used for use for range or crops, are managed sustainably, ensuring conservation of biodiversity	-	-	3	15	16	12	12	12	12	-	83
8	By 2025, levels of air, water and soil pollution are maintained below levels that would threaten ecosystem functioning and biodiversity.	16	14	10	1	-	-	-	-	-	-	40
9	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.	2	1	1	1	-	-	-	-	-	-	4
10	By 2025, the anthropogenic pressures on wetlands, woodlands and savannas are minimized, so that the impacts of climate change and other external perturbations on their ecological integrity and functioning can be managed.	9	1	5	3	3	3	3	3	3	1	34
Total for Goal 2		31	23	28	28	26	19	19	18	15	1	209
Goal 3: Ecosystems, species and genetic resources are protected through sound management												
11	By 2025, at least 25 percent of all Botswana's ecoregions, particularly the wetlands, rivers and pans in them, are effectively conserved through an ecosystem approach that integrates their management with that of the surrounding landscapes and involves resident communities.	12	10	13	13	14	11	11	11	11	11	116

Targets		Additional Cost per Year in Million Botswana Pula										Total Cost (BWP)
		16	17	18	19	20	21	22	23	24	25	
Goal 3: Cont....												
12	By 2025, the conservation status of species in Botswana that are listed as threatened has been improved or sustained.	-	-	9	10	-	-	-	-	-	-	20
13	By 2025, the genetic resources of traditional agricultural species and their wild relatives are protected, and strategies for minimizing genetic erosion and safeguarding their genetic diversity have been implemented.	-	-	-	-	-	-	1	4	0	0	5
	Total for Goal 3	12	10	22	24	14	11	11	15	11	11	141
Goal 4: Fair and equitable access to the benefits of biodiversity is secured												
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.	7	-	1	5	0	0	0	0	0	0	14
15	By 2025, ecosystem integrity in all Botswana's ecoregions will be conserved through the adoption of ecosystem-level management approaches built around key ecological processes, so that they contribute to climate change mitigation and to combating desertification.	4	6	3	3	6	3	3	3	3	3	38
16	By 2025, the Nagoya Protocol is domesticated and operational, and specific actions that ensure fair and equitable access and benefit sharing are implemented.	3	-	-	-	-	-	-	-	-	-	3

	Total for Goal 4	14	6	4	8	7	3	3	3	3	3	55
Participatory planning, knowledge management and capacity-building are in place to support NBSAP implementation												
17	By 2015, Botswana's revised NBSAP has commenced implementation with the full support of all sectors and levels of governance.	-	-	-	-	-	-	-	-	-	-	-
18	By 2025, the indigenous knowledge of Botswana's various communities, as it relates to the conservation and sustainable use of biodiversity in all the country's ecoregions, will be documented, assessed and legally protected, and - where relevant - integrated into programmes and projects supporting biodiversity conservation.	2	2	2	-	-	-	-	-	-	-	5
19	By 2025, information and techniques relating to the biodiversity and its value in all Botswana's ecoregions are efficiently documented, stored, shared, disseminated and used by all sectors and levels of society.	11	9	5	5	5	5	5	5	5	5	61
20	By 2017, at least 80% of the required budget for the revised NBSAP, generated from diverse sources, is made available for its implementation	-	-	-	-	1	-	-	-	-	-	1
	Total for Goal 5	12	11	7	5	6	5	5	5	5	5	67
	Total Finance Needs	72	167	169	72	60	43	43	46	40	22	735

Appendix V: Detailed costs of all strategic actions at 2015/16 Prices

*Note: Activities written in red were not done at the time of writing this report.

Strategic Actions for Target 1: By 2025, 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.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
Starting in 2015, to ensure that existing environmental education and awareness campaigns under the NEESAP include biodiversity components.	Consultancy	1	500,000	500,000
	Printing	10	300,000	3,000,000
Total for strategy:				3,500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To ensure that by 2020, biodiversity is included as a core topic in environmental studies in primary and secondary school curricula and that at tertiary level, biodiversity is a core subject for those doing environmental studies.	A consultant to review current curricula and make recommendations	2	500,000	1,000,000
	Development of manuals	3	300,000	900,000
Total for strategy:				1,900,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To establish, by 2018, a regular public seminar series in all major centers to disseminate information on different aspects of biodiversity and the environment.	Workshop/seminars (2 per eco-region)	14	50000	700,000
	Strategic roadmap development – in house			
	Travel and accommodation (6ppl@P1500/personx2x7 Eco regions annually)	14	50000	700,000
Total for strategy:				1,400,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
By 2025, implement the project on Greening the urban areas (i.e. using open spaces to grow trees (fruit trees and indigenous trees) such as Francistown; Maun; Gantsi; Hukuntsi; Serowe; Molepolole; Lethakane and Palapye.	Consultation with councils	1	130,000	130,000
	Development of training manuals	3	50,000	150,000
	Train officers on propagation and management of trees	8	10,000	80,000
Total for strategy:				360,000

Strategic Actions for Target 2: By 2025, planning processes at all (district, urban and national) levels, and national accounting and reporting systems in Botswana contain explicit actions to promote biodiversity conservation.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To undertake, by 2015, biodiversity mainstreaming and Eco region workshops for thematic groups at district level	Community engagement	2	30,000	60,000
	Travelling and Accommodation	2	150,000	300,000
	Transportation	2	250,000	500,000
	Conference facilities	14	50,000	700,000
High total for strategy:				1,560,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
Starting in 2015, all MEWT departments report both ecological and socio-economic data according to Eco regions.	Develop Monitoring and evaluation tools	2	500,000	1,000,000
Total for strategy:				1,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To ensure that by 2020, preparation guidelines for all national, district and urban plans are inclusive of elements of the ecosystem approach.	Consultant to identify and assess gaps	1	500,000	500,000
	Development of Ecosystem approach-based plans - in house			
Total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To adopt fully and permanently, by 2020, a natural capital accounting system (such as the Wealth Accounting and Valuation of Ecosystem Services (WAVES) programme) into the national planning processes.				
Total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that by 2015, the Environmental Assessment Act Guidelines specify that all SEAs must use	In-house			

an ecosystem approach, and that EIAs and SEAs in sensitive areas include a biodiversity assessment.				
Total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To develop, by 2017, SEA guidelines for all sectorial and land use plans	Consultancy	2	500,000	1,000,000
total for strategy:				1,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To carry out, by 2018, a country-level 'The Economics of Ecosystems and Biodiversity' (TEEB) assessment, that captures the ecosystem services values, and the total economic values, of all Botswana's Eco regions	Consultancy to carry out Valuation assessments (including Inventory of natural resources)	2	100,000,000	200,000,000
	Stakeholder Consultations	3	500,000	1,500,000
	Travel and accommodation	3	300,000	900,000
Total for strategy:				202,400,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To ensure that by 2025, Government has constructed natural resource accounts for Botswana's Eco regions, and that these Eco region values are incorporated into the national accounts	Consultations to facilitate the integration of natural resources accounts	1	100,000	100,000
	Upgrading of the national account's software and servers	1	1,500,000	1,500,000
	Training on upgraded software	1	500,000	500,000
	Consultations to facilitate the integration of natural resources accounts	1	100,000	100,000
Total for strategy:				2,100,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:

To ensure that by 2017, all government and parastatal sectors specifically address biodiversity conservation in their components of district, urban and national development plans.	Engage a consultant to review and report on available gaps	1	1,000,000	1,000,000
Total for strategy:				1,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To adopt, by 2020, Local Economic Development Strategies that reflect natural capital and biodiversity as drivers of the local economy and poverty eradication.	Community consultation	10	100,000	1,000,000
Total for strategy:				1,000,000

5.1.3 Strategic Actions for 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.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To conduct, by 2017, a SEA of taxes and subsidies used to promote development in key sectors	Consultancy to undertake SEA	1	1,000,000	1,000,000
Total for strategy:				1,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To establish, by 2020, a system of incentives for sustainable natural resources use and biodiversity conservation.	Implementation of the recommendations from the SEA on taxes and subsidies (initial cost of setting up a structure that enables the implementation of the recommendations)	3	1,000,000	3,000,000
	Capacity building	1	2,000,000	2,000,000
Total for strategy:				5,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To revise, by 2018, all existing subsidies to ensure they support biodiversity conservation and	Engage a consultant	1	500,000	500,000

sustainable development, and where appropriate, introduce new ones.				
Total for strategy:				

5.1.4 Strategic Actions for Target 4: By 2025, at all levels, policy and regulatory instruments are in place to ensure production and consumption by government, industry and society are kept within sustainable levels and safe ecological limits

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To ensure that by 2017, the Environmental Management Act and its Regulations is legislated.	Engage a consultant to develop regulations	1	500,000	500,000
Total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
To conduct, by 2016, an assessment of the viability of Payment of Ecosystem Services (PES) and other tax reduction and rebate options potentially applicable to ranch and WMA lease-holders.	Engage a consultant to carry out assessment	1	500,000	500,000
Total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
By 2017, to undertake, and implement recommendations of, a study on consumption patterns of consumers in order to minimize impacts on biodiversity.	Engage a consultant to carry out a study and make recommendations	1	500,000	500,000
	Implement the recommendations - in house			
Total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost:
By 2020, building regulations are amended to ensure that residential properties and industries have water harvesting tanks	Review of existing regulations - in house			0

High total for strategy:			
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5.1.5 Strategic Actions for Target 5: By 2025, the rate of natural land conversion is at least halved, and degradation and fragmentation are significantly reduced.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2018, a study of current rates of natural land conversion in each Eco region	Consultancy	3	P500,000	P1,500,000
	Monitoring and Evaluation	1	P100,000	P100,000
Total for strategy:				P1,600,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2017, a strategic environmental assessments (SEAs) of a) all the veterinary and game fences, b) the national road networks, and c) the national power line grid in terms of their impact on wildlife (including birds), and to adopt the assessment recommendations.	Engage a SEA consultant	1	1,000,000	P1,000,000
	Harmonize and integrate policies - in house			
	Stakeholder engagement	3	50,000	P150,000
Total for strategy:				P1,150,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To implement, by 2018, Sustainable Land Management (SLM) practices on all tribal grazing land.	Consultancy work including stakeholder engagement	3	50,000	150,000
	Harmonize and integrate policies - in house			
	Capacity building workshops	2	50,000	100,000
Total for strategy:				250,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission, by 2016, ecological and policy studies into the interacting causes and potential consequences of a) loss of trees and b) habitat fragmentation in the northern Eco	Training on mapping software	1	500,000	500,000
	Procurement of licenses and renewals	1	500,000	500,000
	Conduct consultative workshops	2	50,000	100,000
	Engage a consultant to carry out a study	1	500,000	500,000

regions, and implement the study recommendations.				
Total for strategy:				1,600,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2020, to identify; map; and quantify the critical linkages between the Okavango Delta and wet season habitats in adjacent ecosystems, and to bring these linkages into land use planning and halt, and where possible, reverse the isolation of the Panhandle region	Stakeholder engagement	2	100,000	200,000
	Engage a consultant to map the linkages and recommend	1	500,000	500,000
	Implement the recommendations in house			
Total for strategy:				700,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To identify and protect, by 2017, migratory routes between Gcwihaba and Tsodilo WMAs, and the Okavango Delta and Lake Ngami.	Engage a consultant to review available data on protection of migratory roots	1	500,000	500,000
Total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2016, a SEA of the SW Kalahari Conservation Corridor, and implement the assessment recommendations.	Engage a SEA consultant	1	1,200,000	1,200,000
	Implement recommendations in house			
	Stakeholder engagement	2	100,000	200,000
Total for strategy:				1,400,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To rehabilitate, by 2024, the Ntshe, Tati, and Mahalapye rivers	Environmental Assessment of Rivers	3	1,000,000	3,000,000
	Community awareness campaigns	3	100,000	300,000
	Review of By-laws in house			
Total for strategy:				3,300,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To undertake, by 2017, restoration projects (tree planting in degraded villages; clearing of bush-	Environmental Assessment and mapping of degraded areas	6	1,000,000	6,000,000
	Community awareness campaigns	6	100,000	600,000

encroachment and invasive weeds) in 6 identified and prioritized areas.				
Total for strategy:				6,600,000

4.1.6 Strategic Actions for Target 6: By 2025, animal and plant resources in Botswana's wetlands, woodlands and savannas are sustainably managed using the ecosystem approach, so that the impacts of harvesting remain within safe ecological limits.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2015, and develop monitoring mechanisms for, by 2018, the list of key plant, insect, fish and animal resources in each Eco region for which off take limits should be set, and add these as guidelines to the relevant legal acts	Engage Consultant to develop inventory of key species	3	1,000,000	3,000,000
	Develop monitoring systems	1	1,000,000	1,000,000
	Community engagement	2	100,000	200,000
Total for strategy:				4,200,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission, by 2016, a study of key ecosystem processes (including breeding areas) under wet and dry scenarios for Botswana's more vulnerable Eco regions.	Engage researchers on natural resources	2	1,500,000	3,000,000
	Develop monitoring systems	2	1,000,000	2,000,000
Total for strategy:				5,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To implement, by 2016, the Management Effectiveness Tracking Tool in all Botswana's national parks and game reserves.	Training staff on the system	1	500,000	500,000
Total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
Establish, by 2025, mokolwane farms for the communities of Shorobe, Mosu and Gweta	Acquisition of Land	3	250,000	750,000
	Fencing	3	600,000	1,800,000
	Stakeholder consultations	3	100,000	300,000

Total for strategy:				2,850,000
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Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
Establish and operationalize, by 2024, Veldt Products multiplication and commercialization projects (morula, morama, sour plum (moretologa); moretlwa; mmilo; mogwana; motshibi; kgengwe, serowa) in each ecoregion	Breeding by selection	4	250,000	1,000,000
	Research	1	1,000,000	1,000,000
	Collection and assessment of seeds by ecoregion	7	1,000,000	7,000,000
Total for strategy:				9,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
Establish, by 2025, Indigenous Tree Plantations for Logging in 6 identified areas	Collection and assessment of seeds by Eco region	7	500,000	3,500,000
	Research	6	500,000	3,000,000
	Collection and assessment of seeds by area	6	300,000	1,800,000
Total for strategy:				8,300,000

4.1.7 Strategic Actions for Target 7: By 2025, wetlands, woodlands and savannas, particularly where used for use for range or crops, are managed sustainably, ensuring conservation of biodiversity.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To develop, by 2020, an integrated land use framework that includes the SEA process.	Stakeholder engagement	1	100,000	100,000
	Engage a SEA consultant	1	1,000,000	1,000,000
Total for strategy:				1,100,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2015, an inventory of all wooded areas on state and communal land, including riparian woodlands that warrant improved protection and management, and establish forestry management practices that support the	Engage Consultant to develop inventory of key species	1	2,000,000	2,000,000
	Develop monitoring systems	1	1,00,000	1,000,000
	Community consultation	1	100,000	100,000

regeneration of tree populations and maintain ecosystems processes.				
Total for strategy:				3,100,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To revise, by 2025, the implementation strategies and their related guidelines (i.e., Master Plan for Arable Agriculture and Dairy Development, Integrated Support Programmed for Arable Agriculture Development, support programmer relating to fencing, and Livestock Management and Infrastructure Development) of the National Policy on Agricultural Development to explicitly exclude habitats important to biodiversity.	Review of Agric Policy - in house			
	Stakeholder consultancy	14	100,000	1,400,000
Total for strategy:				1,400,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
Establish and operationalize, by 2025, Community Based Arable Farming Projects in Khumaga, Habu, Xere, Mopipi, Mokoboxane, and Makomoto	Feasibility (suitability , acceptability) study on appropriate type of farming	6	500,000	3,000,000
	Community mobilisation (land, project management)	6	250,000	1,500,000
	Project implementation	6	11,000,000	66,000,000
	Feasibility (suitability , acceptability) study on appropriate type of farming	6	500,000	3,000,000
total for strategy:				74,500,000

5.1.8 Strategic Actions for Target 8: By 2025, levels of air, water and soil pollution are maintained below levels that would threaten ecosystem functioning and biodiversity.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2017, a SEA of all the energy-related industries (coal, gas, uranium and thermal electrical power production) and their individual and cumulative impacts on biodiversity.	Consultancy to undertake SEA	1	3,500,000	3,500,000

total for strategy:				3,500,000
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Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2015 to institute and maintain water quality monitoring and systematic reporting to the CHM for those parts of the Okavango, Zambezi, Gariep and Limpopo river catchments within Botswana	Procurement and Installation of automatic water quality monitoring system (including Equipment e.g. computers)	1	6,250,000	6,250,000
	Training of officers on use of equipment and reporting of information to the CHM	1	500,000	500,000
total for strategy:				6,750,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To prepare, by 2019, and enforce guidelines stipulating discharge and emission levels of key pollutants for both the Atmospheric Pollution (Prevention) Act and the Waste Management Act	Development of regulations in house			
	Awareness campaigns	1	500,000	500,000
total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2015 to maintain, and institute where necessary, air quality monitoring and systematic reporting to the CHM for all protected areas (parks, reserves and important bird areas) and major developed areas (cities, towns and industrial areas)	Procurement Installation of automatic air quality monitoring system (including computers)	1	5,000,000	5,000,000
	Training of officers on use of equipment and reporting of information to the CHM	1	500,000	500,000
total for strategy:				5,500,000

5.1.9 Strategic Actions for Target 9: 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.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2015, to identify, map, and quantify the baseline distribution of, the alien invasive species of greatest threat to Botswana's biodiversity for each Eco region, and to institute and maintain monitoring and systematic reporting to the CHM on key alien invasive species	Identification and mapping of alien invasive species	1	1,500,000	1,500,000
	Monitoring and evaluation tools	1	500,000	500,000

total for strategy:				2,000,000
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Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To initiate and implement, from 2017, control and eradication programmes for key alien invasive species for each Eco region	Develop management strategies in house			
	Development of eradication programmes in house			
	Implementation of the strategies	1	500,000	500,000
total for strategy:				500,000

5.1.10 Strategic Actions for Target 10: By2025, the anthropogenic pressures on wetlands, woodlands and savannas are minimized, so that the impacts of climate change and other external perturbations on their ecological integrity and functioning can be managed.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To legislate, by 2020, formal protection for all IBAs and for 25% of wetlands in each of the Eco regions found in Botswana	Priorities which wetlands need to be gazetted in house			
	Gazette IBAs in house			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that, by 2025, all Management Plans for Protected Areas are implemented.	Engage consultants to review management plans and develop a Monitoring and evaluation plan	2	2,500,000	5,000,000
	Travel and accommodation	6	65,000	390,000
	Transport	6	40,000	240,000
total for strategy:				5,630,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2018, and maintain representative ecological transects for all Eco regions in all districts, that are systematically monitored and reported on to the CHM	Developed in house			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :

To initiate and maintain, from 2018, the monitoring of vegetative biomass (as a measure of carbon sequestration) at the Eco region level, and systematically report to the CHM				
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To streamline and maintain, from 2018, the monitoring of veld fires (as a measure of carbon emission) at the Eco region level, and systematically report to the CHM	Capacitate Staff	2	2,500,000	5,000,000
	Provide extinguishing equipment	8	2,000,000	16,000,000
total for strategy:				21,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure, by 2020, that biodiversity hotspots are protected through Integrated Land Use Plans	Review land use plans and identify biodiversity hotspots - in house			
total for strategy:				

5.1.11 Strategic Actions for Target 11: By2025, at least 25 percent of all Botswana's Eco regions, particularly the wetlands, rivers and pans in them, are effectively conserved through an ecosystem approach that integrates their management with that of the surrounding landscapes and involves resident communities

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission, by 2015, the development of, and implement, a formal national biodiversity monitoring system, including the trend and analysis of species, with linkages to the CHM	Engage a consultant to develop	1	500,000	500,000
	Monitoring and evaluation tools	5	250,000	1,250,000
total for strategy:				1,750,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To finalize, by 2016, the national-level and Eco region biodiversity indicator lists, and initiate their systematic monitoring and reporting to the CHM	Finalization of National and eco regional biodiversity indicator list	1	400,000	400,000
	Establish NBM unit	1	2,500,000	2,500,000
total for strategy:				2,900,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
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To provide, by 2016, annual grants to selected environmental NGOs for ongoing monitoring of key species	Facilitate uptake of NEF	1	1,000,000	1,000,000
	Identifying environmental NGO's - in house			
	Monitoring and evaluation	9	500,000	4,500,000
total for strategy:				5,500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To revise, adopt and implement, by 2016, Botswana's Wetlands Policy	Revise wetland policy in house			
	Establish wetland Management Policy in house			
	Implementation of wetland policy in house			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To finalize and adopt, by 2015, the Cubango-Okavango River Basin (CORB) SEA	Endorsement of CORB SEA	1	2,000,000	2,000,000
total for strategy:				2,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2016, notification procedures for contraventions of the CORB SEA thresholds				
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To formally adopt, by 2015, and initiate implementation of the ODRS Strategic Environmental Management Plan	Initiate implementation	1	10,000,000	10,000,000
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To conduct, by 2017, a SEA of the impact of land use changes and soda ash mining on the Makgadikgadi system	Consultancy to undertake SEA	1	1,500,000	1,500,000
High total for strategy:				1,500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
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To conduct, by 2020, feasibility studies for the nomination of a) the northern forest region and b) the Kgalagadi Transfrontier Park, as Biosphere Reserves	Engage a consultant to conduct a feasibility study	2	500,000	1,000,000
High total for strategy:				1,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To complete, by 2025, an inventory on below-the-ground biodiversity.	Consultant to Develop inventory	2	2,500,000	5,000,000
High total for strategy:				5,000,000

5.1.12 Strategic Actions for Target 12: By2025, the conservation status of species in Botswana that are listed as threatened has been improved or sustained.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To review, finalize and implement, by 2016, the Botswana Threatened Species Management Strategy	• Consultation with stakeholders	1	P100,000.00	P100,000.00
	• Develop Botswana Threatened Species Management Strategy	1	P1, 000,000.00	P1, 000,000.00
	• Implementation	1	P2,000,000.00	P2,000,000.00
	• Travel & Accommodation	1	P200,000.00	P200,000.00
High total for strategy:				P4,200,000.00

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To prepare, by 2018, Eco region-based threatened species lists and maps of their habitats, and initiate their systematic monitoring and reporting to the CHM	Collate existing species information in line with global criteria for threatened species		P1, 500, 000.00	P1, 500, 000.00
	Assign species based on the collated information to various conservation status categories		P1,000, 000.00	P1,000, 000.00
	Develop an operational plan for monitoring threatened species		P1,000,000.00	P1,000,000.00
	Implementation		P2,000,000.00	P2,000,000.00
	Travel & Accommodation		P100,000.00	P100,000.00
High total for strategy:				P5,700.000.00

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To legislate formal protection, by 2025, for areas critical to biodiversity				

and key ecosystem functioning (e.g. breeding areas, dry season grazing, IBAs, wetlands, habitats for threatened species)				
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ratify and domesticate, by 2020, the Agreement on the Conservation of African Eurasian Migratory Water birds	Implement AEWA activities		P200,000	P200,000
High total for strategy:				P200,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To comply, by 2018, with the ex situ seed collection objectives of the Millennium Seed Bank	Seed collection	8	1,500,000	12,000,000
	Transport	2	150,000	300,000
High total for strategy:				12,300,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ratify and domesticate, by 2020, the Convention on the Conservation of Migratory Species of Wild Animals	Consultations with stakeholders		P100,000.00	P100,000.00
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2019, recovery programmes for species with critically low populations	Procure consultant		P1,000,000	P1,000,000
	Consultations		P100,000	P100,000
	Develop recovery programs		P2,000,000	P2,000,000
total for strategy:				P3,100,000

5.1.13 Strategic Actions for Target 13: By 2025, the genetic resources of traditional agricultural species and their wild relatives are protected, and strategies for minimizing genetic erosion and safeguarding their genetic diversity have been implemented.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ratify and domesticate, by 2016, the International Treaty on Plant				

Genetic Resources for Food and Agriculture				
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To finalize and implement, by 2016, domestication instruments for the Cartagena Protocol	internal processes-no funding required			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ratify and domesticate, by 2016, the Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety				
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
Establish, by 2023, Community Indigenous and Medicinal Tree Centers/Parks in each Eco region	Community identification in an Eco region- in house			
	consultations with dingaka tsa setso association	1	100,000	100,000
	Consulting, Monitoring and evaluation	4	400,000	1,600,000
	development of training manuals/guidelines	1	40,000	40,000
	Training on planting, monitoring	1	200,000	200,000
	Infrastructure development (Materials and equipment)	1	3,500,000	3,500,000
total for strategy:				5,440,000

5.1.14 Strategic Actions for 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.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2016, the list of the main plant and animal resources in each ecoregion used by rural	Procure consultant		P1,000,000	P1,000,000
	Inventorise animal resources in each eco region		P2,000,000	P2,000,000

households and for which offtake should be managed, and commercial offtake regulated	Monitoring & Evaluation		P4,000,000	P4,000,000
	Travel & Accommodation		P100,000	P100,000
total for strategy:				P7,100,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To identify, set, and enforce, by 2019, offtake limits at the CHA level for each identified resource	Consultations		P100,000	P100,000
	Establish off take limits at the CHA level for each identified resource		P1,000,000	P1,000,000
	Travel & Accommodation		P100,000	P100,000
total for strategy:				P1,200,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission a study, by 2019, to identify for each ecoregion the ecosystem services important to rural households.	Consultancy	7	500,000	3,500,000
total for strategy:				3,500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To develop, by 2018, activities under the Local Economic Development Strategy that harmonize biodiversity conservation and poverty eradication in key ecoregions.	Consultation workshop to review LED Strategy	1	500,000	500,000
	Development of LED activities - in house			
total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2022, introduce community use zones (seasonal uses to harvest firewood and veldt products) in Moremi and Chobe National Parks	Consultations		P100,000	P100,000
	Introduce community use zones – In house			
	Travel & accommodation		P100,000	P100,000
total for strategy:				P200,000

5.1.15 Strategic Actions for Target 15: By2025, ecosystem integrity in all Botswana's ecoregions will be conserved through the adoption of ecosystem-level management approaches built around key ecological processes, so that they contribute to climate change mitigation and to combating desertification.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To map and quantify, by 2016, areas of degraded habitat for each ecoregion to establish baseline conditions for monitoring restoration.	Identification and mapping of degraded habitat	1	500,000	500,000
total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To initiate and maintain, by 2017, monitoring of habitat condition in and peripheral to degraded areas, and systematically report to the CHM.	Identify indicators/conditions - in house			
	Develop Monitoring plan - in house			
	Assessment and reporting	1	500,000	500,000
total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2017, ecosystem restoration projects in degraded areas such that degraded areas are reduced to 80% of their baseline extent by 2025.	ecosystem restoration projects	2	1,000,000	2,000,000
total for strategy:				2,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that, by 2025, broad scale ecosystem management plans informed by ecological processes are in place for all protected areas incorporating their surrounding areas.	Procure Consultant		P1,000,000	P1,000,000
	Consultations		P100,000	P100,000
	Develop broad scale ecosystem Management plans		P2,000,000	P2,000,000
	Travel & Accommodation		P100,000	P100,000
total for strategy:				P3,200,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission, by 2017, a study into past and present fire regimes in all the country's ecoregions and to document deviation from natural regimes.	Consultancy	5	500,000	2,500,000
	Travel and accommodation	1	1,500,000	1,500,000
	Transport	1	60,0000	60,000
total for strategy:				4,060,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To finalise and implement, by 2015, the Elephant Management Plan and Predator Management Strategy	Implementation of the plans		P2,000,000	P2,000,000
	Travel & Accommodation		P100,000	P100,000
total for strategy:				P3,100,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To adopt and implement, by 2016, the National Climate Change Strategy and Action Plan				
total for strategy:				

5.1.16 Strategic Actions for Target 16: By2025, the Nagoya Protocol is domesticated and operational, and specific actions that ensure fair and equitable access and benefit sharing are implemented.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2015, to develop the legislative framework for domestication and implementation of the Nagoya Protocol	Develop domestication road map – in house			
	Stakeholder Consultations - Develop legislative framework	1	600,000	600,000
	National capacity assessment-resource availability - Consultant	1	500,000	500,000
	Travel and accommodation	1	500,000	500,000
total for strategy:				1,600,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2016, develop the CHM for the ABS within the EIS	Consultant (web development including system support and training)	1	1,000,000	1,000,000
	Computer equipment (servers and storage systems)	1	200,000	200,000
	Computer software	1	200,000	200,000
total for strategy:				1,400,000

5.1.17 Strategic Actions for Target 17: By 2015, Botswana's revised NBSAP has commenced Implementation with the full support of all sectors and levels of governance.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To inform and solicit, by 2015, implementing agencies' support in the implementation of the NBSAP	the implementation of the NBSAP - in house			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that, by 2016, the National Strategy for Sustainable Development (NSSD) recognizes and adopts the NBSAP as part of its implementation tools	Integration – in house			
total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
From 2014, establish regular monitoring and reporting of all NBSAP activities.	Monitoring and Evaluation tools and reporting mechanisms - in house			
total for strategy:				

5.1.18 Strategic Actions for Target 18: By 2025, the indigenous knowledge of Botswana's various communities, as it relates to the conservation and sustainable use of biodiversity in all the country's ecoregions, will be documented, assessed and legally protected, and - where relevant - integrated into programmes and projects supporting biodiversity conservation.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To finalize, by 2014, and implement, the Indigenous Knowledge Systems Policy and Action Plan	Project roll out	2	1,500,000	3,000,000
total for strategy:				3,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To establish, by 2019, and maintain a database of plants and their traditional uses by different groups as part of the CHM	Upgrade software and hardware	1	1,500,000	1,500,000
	Train officers on new technologies	1	500,000	500,000
total for strategy:				2,000,000

5.1.19 Strategic Actions for Target 19: By 2025, information and techniques relating to the biodiversity and its value in all Botswana's ecoregions are efficiently documented, stored, shared, disseminated and used by all sectors and levels of society.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To, by 2015, implement the communication strategy for the NBSAP				
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To upgrade and maintain, by 2015, the Environmental Information System (EIS) to function as a Clearing House Mechanism (CHM) accessible to all sectors of society	Systems upgrade	1	1,500,000	1,500,000
	Procurement of computer equipment	1	500,000	500,000
High total for strategy:				2,000,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To integrate, by 2018, biodiversity-related information into national welfare indicators and environmental statistics				
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To develop, by 2018, a set of financial indicators relating to income from, and expenditure on, biodiversity-related activities.				
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2025, to have a focused unit on advanced Use of Biological Resources in BITRI				
High total for strategy:				

5.1.20 Strategic Actions for Target 20: By2017, at least 80% of the required budget for the revised NBSAP, generated from diverse sources, is made available for its implementation.

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To implement, from 2014, the NBSAP Resource Mobilization Plan				
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that, by 2016, NBSAP activities are integrated into the national, district, and urban plans budgets.	integration - in house			

High total for strategy:				
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Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To ensure that, by 2016, the National Environment Fund (NEF) is fully functional and includes a specific allocation for biodiversity conservation activities	in house			
High total for strategy:				

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
To commission, by 2020, a study on disaggregated biodiversity-related expenditure and revenue for the public sector, private sector, NGOs, CBOs, ICPs and research institutions				
	Consultancy	1	500,000	500,000
High total for strategy:				500,000

Strategy:	Sub-Activities:	Frequency:	Current Cost per unit:	Total Current Cost :
By 2020, to systematically collate and update datasets on the allocation of funds to biodiversity by all sectors, for inclusion in the CHM	PER consultant to provide baseline datasets and develop a budget for updates for inclusion in the CHM	1	500,000	500,000
High total for strategy:				500,000

Appendix VI: Classification of strategic actions into key sectors of the economy

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total (BWP)
	Activity	100.0%	105.0%	109.8%	114.4%	116.4%	120.6%	124.6%	128.5%	132.2%	135.2%	
Food Securing	Act8.1	3,500,000	3,676,186	-	-	-	-	-	-	-	-	7,176,186
	Act4.4	-	525,169	-	-	-	-	-	-	-	-	525,169
	Act5.3	-	262,585	-	-	-	-	-	-	-	-	262,585
	Act6.4	-	-	3,514,448	3,660,798	1,862,399	-	-	-	-	-	9,037,646
	Act6.6	-	-	713,872	743,600	756,600	783,836	809,977	835,107	-	-	4,642,991
	Act7.2	-	-	3,514,448	3,660,798	3,724,798	-	-	-	-	-	10,900,045
	Act7.3	-	-	-	-	-	-	-	-	-	-	-
	Act7.4	-	-	-	-	-	-	-	-	-	-	-
	Act7.6	-	-	-	13,727,994	13,967,994	14,470,814	14,953,413	15,417,353	15,864,025	-	88,401,592
	Act13.1	-	-	-	-	-	-	-	-	-	-	-
	Act14.1	7,100,000	-	-	-	-	-	-	-	-	-	7,100,000
	Act14.2	-	-	-	1,372,799	116,400	120,590	124,612	128,478	132,200	135,200	2,130,280
	Act14.3	-	-	-	4,003,998	-	-	-	-	-	-	4,003,998
	Act14.4	-	-	549,133	-	-	-	-	-	-	-	549,133
	Act14.5	-	-	-	228,800	116,400	120,590	124,612	128,478	132,200	135,200	986,280
Food Securing		7,100,000	787,754	8,291,901	27,398,787	20,544,591	15,495,830	16,017,613	16,509,416	16,128,425	270,400	128,539,717
Tourism	Act3.2	-	4,726,525	2,745,663	2,859,999	2,909,999	-	-	-	-	-	13,242,185
	Act3.3	-	525,169	-	-	-	-	-	-	-	-	525,169
	Act4.3	-	525,169	-	-	-	-	-	-	-	-	525,169
	Act5.4	-	1,680,542	-	-	-	-	-	-	-	-	1,680,542
	Act5.5	-	-	1,757,224	-	-	-	-	-	-	-	1,757,224
	Act5.6	1,000,000	-	-	-	-	-	-	-	-	-	1,000,000
	Act5.7	1,100,000	-	-	-	-	-	-	-	-	-	1,100,000
	Act6.3	500,000	-	-	-	-	-	-	-	-	-	500,000
	Act7.5	-	-	-	-	-	-	-	-	-	-	-
	Act8.5	-	5,251,694	5,491,325	-	-	-	-	-	-	-	10,743,020
	Act9.1	2,000,000	-	-	-	-	-	-	-	-	-	2,000,000
	Act10.1	8,555,000	52,517	54,913	57,200	58,200	60,295	62,306	64,239	66,100	67,600	9,098,370
	Act10.5	-	-	2,196,530	2,287,999	2,327,999	2,411,802	2,492,235	2,569,559	2,644,004	-	16,930,129
	Act11.1	1,500,000	1,050,339	1,098,265	1,143,999	1,163,999	1,205,901	1,246,118	1,284,779	1,322,002	1,352,002	12,367,405
	Act11.3	2,500,000	2,625,847	2,745,663	2,859,999	2,909,999	-	-	-	-	-	13,641,507
	Act11.4	-	-	-	-	-	-	-	-	-	-	-
	Act11.5	-	-	-	-	-	-	-	-	-	-	-
	Act11.6	-	-	-	-	-	-	-	-	-	-	-
	Act11.8	-	1,575,508	-	-	-	-	-	-	-	-	1,575,508
	Act11.9	-	-	6,864,157	7,149,997	7,274,997	7,536,882	7,788,236	8,029,871	8,262,513	8,450,013	61,356,665
	Act11.10	-	-	-	-	-	-	-	-	-	-	-
	Act11.11	-	-	3,843,928	4,003,998	4,073,998	4,220,654	4,361,412	4,496,728	4,627,007	4,732,007	34,359,733
	Act12.1	3,300,000	-	-	-	-	-	-	-	-	-	3,300,000
	Act12.2	2,100,000	2,205,712	2,306,357	-	-	-	-	-	-	-	6,612,068
	Act12.3	-	-	-	-	-	-	-	-	-	-	-
	Act12.4	200,000	210,068	219,653	228,800	232,800	-	-	-	-	-	1,091,321
	Act12.6	-	-	7,610,977	7,927,916	-	-	-	-	-	-	15,538,893
	Act12.7	-	-	-	3,660,798	116,400	120,590	124,612	128,478	132,200	135,200	4,418,279
	Act13.2	-	-	-	-	-	-	-	-	-	-	-
	Act15.1	500,000	-	-	-	-	-	-	-	-	-	500,000
	Act15.2	-	525,169	-	-	-	-	-	-	-	-	525,169
	Act15.3	1,000,000	1,050,339	1,098,265	1,143,999	1,163,999	1,205,901	1,246,118	1,284,779	1,322,002	1,352,002	11,867,405
	Act15.4	-	-	-	-	3,724,798	120,590	124,612	128,478	132,200	135,200	4,365,879
	Act15.5	-	2,846,418	-	-	-	-	-	-	-	-	2,846,418
	Act15.6	2,100,000	2,205,712	2,306,357	2,402,399	2,444,399	2,532,392	2,616,847	2,698,037	2,776,204	2,839,204	24,921,551
	Act15.7	-	-	-	-	-	-	-	-	-	-	-
	Act16.1	1,850,000	-	-	-	-	-	-	-	-	-	1,850,000
Tourism		28,205,000	27,056,728	40,339,277	35,717,104	28,401,587	19,415,009	20,062,495	20,584,949	21,284,233	19,063,229	260,239,610
Water	Act4.5	-	-	-	-	-	-	-	-	-	-	-
	Act5.8	-	1,155,373	1,208,092	1,258,399	1,280,399	-	-	-	-	-	4,902,263
	Act8.2	6,750,000	-	-	-	-	-	-	-	-	-	6,750,000
	Water	6,750,000	1,155,373	1,208,092	1,258,399	1,280,399	-	-	-	-	-	11,652,263

