BIODIVERSITY
FINANCE NEEDS ASSESSMENT (FNA)
FOR ZAMBIA

BIOFIN
THE BIODIVERSITY FINANCE INITIATIVE

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REPORT VALIDATION:

See Annex 1 for details

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

7NDP	Seventh National Development Plan
BER	Biodiversity Expenditure Review
BFP	Biodiversity Finance Plan
BIOFIN	Biodiversity Finance Initiative
BWZ	Bird Watch Zambia
CBD	Convention on Biological Diversity
COP	Conference of the Parties
DMMU	Disaster Management and Mitigation Unit
DNPW	Department of National Parks and Wildlife Area Management
DOE	Department of Energy
FNA	Financial Needs Assessment
GMOs	Genetically Modified Organisms
IDP	Integrated Development Plan
MCTI	Ministry of Commerce, Trade and Industry
MFL	Ministry of Fisheries and Livestock
MHE	Ministry of Higher Education
MIBS	Ministry of Information and Broadcasting Services
MLG	Ministry of Local Government
MLNR	Ministry of Lands and Natural Resources
MMMD	Ministry of Mines and Mineral Development
MoA	Ministry of Agriculture
MoE	Ministry of Energy
MSD	Mines Safety Department
MTA	Ministry of Tourism and Arts
MWDSEP	Ministry of Water Development, Sanitation and Environmental Protection
NBA	National Biosafety Authority
NBSAP	National Biodiversity Strategy and Action Plan
NHCC	National Heritage Conservation Commission
OVP	Office of The Vice President
PA	Protected Areas
SDG	Sustainable Development Goals
SEEA	System of Environmental Economic Accounts
UNDP	United Nations Development Programme
WARMA	Water Resources Management Authority
ZANIS	Zambia News and Information Services
ZARI	Zambia Agricultural Research Institute
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZOS	Zambia Ornithological Society

EXECUTIVE SUMMARY

Aim of the Biodiversity Financial Needs Assessment (FNA)

The Financial Needs Assessment (FNA) is one of the key components of the BIOFIN Methodology. It aims to make a comprehensive estimate of the financial resources needed to achieve national and sub national biodiversity targets as outlined in the National Biodiversity Strategy and Action Plan (NBSAP-2) (UNDP, 2018).

FNA Methodology

The global BIOFIN methodology as outlined in chapter 6 of the BIOFIN workbook was largely adopted to guide the process. With guidance from the BIOFIN Country Team, eighteen (18) institutions, that is, government departments and statutory bodies did the costing process to deduce the finance needs for all the 100 NBSAP-2 activities for Zambia.

Zambia's NBSAP-2 is schematically arranged as follows: vision, strategic goals, principles, targets, strategic interventions, key performance indicators, key activities and responsible entities. The results of the FNA are largely guided by the schematic outline of the NBSAP-2 as well as other tags. Figure 1 shows the vision and strategic goals of the NBSAP-2 which were key cost tags during the costing process.

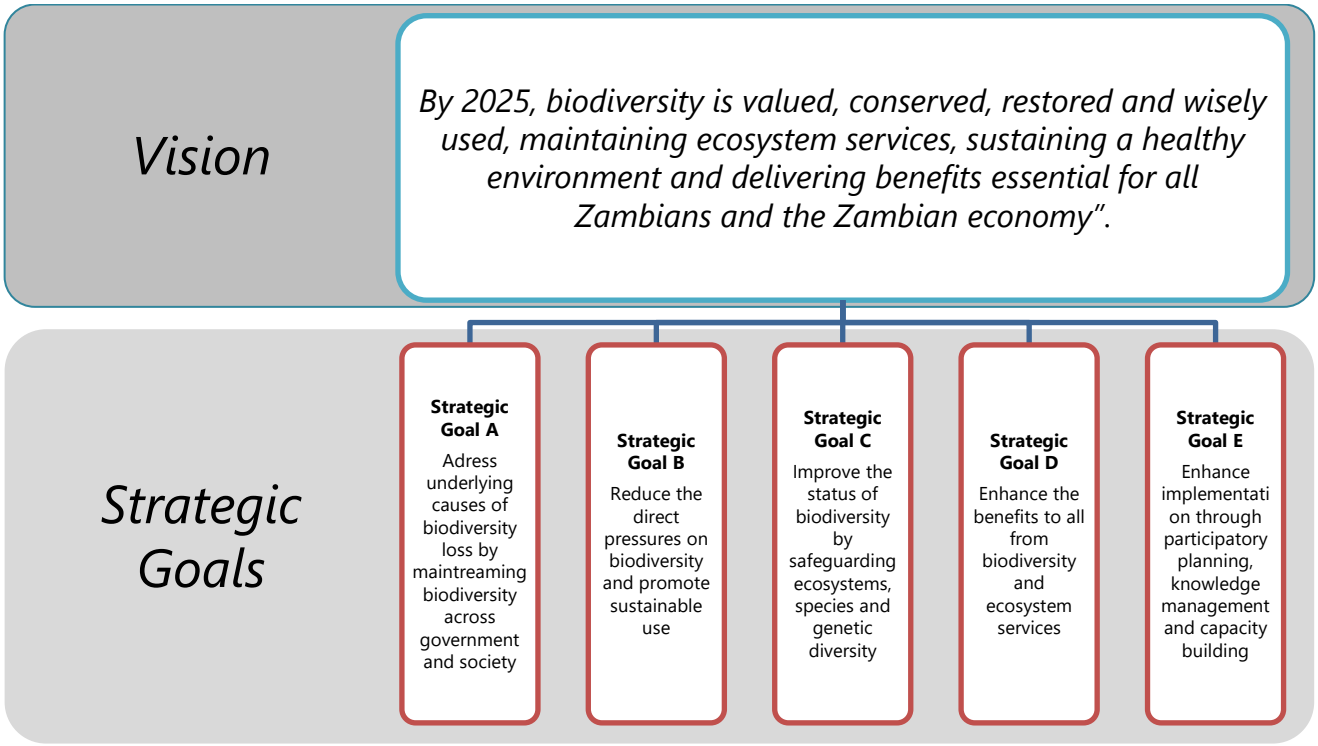


Figure 1: NBSAP-2 Vision and Strategic Goals

Source: Customised from the NBSAP-2 (GRZ,2015)

Key Results

The total finance needs towards the attainment of the NBSAP-2 vision as outlined in Figure 2 is K 2,420,115,780 (USD$242,011,578). This is for the 13-year time horizon (2018-2030) which amounts to an average of 0.2% of the national budget based on the 13-year forecast derived from past year budget figures. The only year which recorded a proportion above 1% of finance needs in relation to the projected total national budget is 2018. The total finance needs are further sub divided into the five (5) NBSAP-2 strategic goals as depicted in Figure 2.

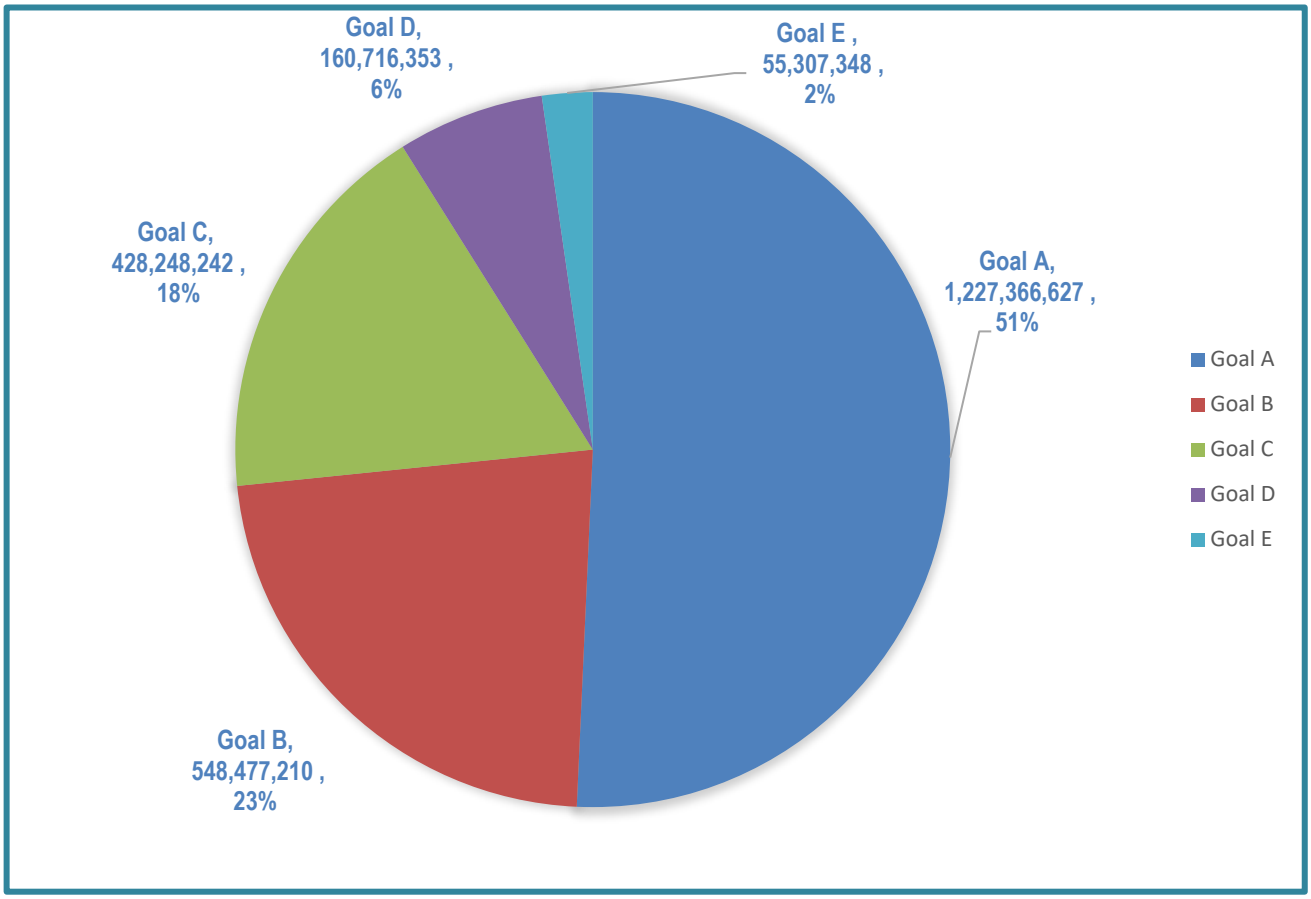


Figure 2: Total Finance Needs based on the NBSAP-2 Strategic Goals (ZMW)

Source: Authors' computation

As noted above, strategic goal A has the highest finance needs at 51% seconded by strategic goal B at 23%. In terms of the spread of costs across the 13-year costing period from 2018-2030, most of the financial needs are front loaded in 2018 and gradually decreasing especially from 2021 to 2030.

Target 5 of Zambia's NBSAP-2 whose strategic focus is on the reduction of deforestation rate in Zambia by at least 25% emerged with the highest finance needs seconded by target 12 whose focus is on the maintenance of genetic diversity of cultivated plants and farmed ones. Target 5 is largely driven by activities 5.4.3 and 4.1.2 which requires conducting and implementing integrated land use plans in the targeted landscapes for biodiversity conservation as well as updating the existing inventory of forests and lower plants in the major conservation landscapes of Zambia respectively. When analysed based on Aichi Targets, Target 2 emerged with the highest finance needs based on the cost classifications for Zambia's NBSAP-2. The detailed analysis in text however provides some commentaries on the source of the difference in the finance needs between target 5 in the NBSAP-2 and Aichi Target 2. This difference largely arises from the

misclassification of activities 5.4.1, 5.4.2 and 5.4.3 under Target 5 instead of Target 2 in the NBSAP-2.

Zambia's NBSAP-2 has fifty (50) strategic interventions under each of the18 targets. Finance needs for strategic intervention number 5.4 on the institutionalisation of integrated land use plans across sectors emerged with the highest finance needs followed by strategic intervention number 4.1 on the update of baseline data for fish, forests, lower plants and wildlife. At activity level, activity number 5.4.3 has the highest finance needs in comparison with the other 99 activities. The intended results under this activity include having bio-diversity landscapes for integrated land use planning identified in 10 provinces by end of April 2019, 109 Integrated Development Plans (IDPs) prepared with bio-diversity lens between May 2019 and end of November 2020, 109 bio-diversity mainstreamed IDPs distributed to implementing institutions by end of December 2020 as well as having targeted landscapes in 109 districts monitored and evaluated for bio-diversity conservation by 2030. At Ministry level, Ministry of Fisheries and Livestock has the highest finance needs seconded by the Ministry of Lands and Natural Resources, largely under the Forestry Department. Ministry of Energy, specifically the Department of Energy has the least finance needs.

Besides the NBSAP-2 cost tags, the total finance needs were also analysed based on the Sustainable Development Goals (SDGs) as well as the BIOFIN cost categories. SDG 15 (life on land) has the highest finance needs largely driven by two activities. These are activities 12.3.1 and 4.1.2 whose focus are on the mobilisation of resources for the collection and maintenance of indigenous livestock genetic resources and the updating of the existing inventory of forests and lower plants in the major conservation landscapes of Zambia respectively. SDG 11 (Sustainable cities and communities) has the second highest finance needs largely driven by activity 5.4.3 meant to conduct and implement integrated land use planning in the targeted landscapes.

Using the BIOFIN cost categories, "biodiversity and development planning" emerged with the highest finance needs specifically, the spatial planning sub category. This is largely driven by activities 5.4.3 on conducting and implementing integrated land use planning in the targeted landscapes for biodiversity conservation, activity 4.1.2 meant for updating the existing inventory of forests and lower plants in the major conservation landscapes of Zambia and activity 3.1.1 meant for the identification and analyses of potential incentives that encourage biodiversity conservation and its sustainable use.

Conclusions

Some of the key objectives of the FNA assignment include the clarification of NBSAP-2 strategies and actions for possible revision during the mid-term review as well as the derivation of detailed

costs for each of the NBSAP-2 activities. These two objectives were fully met in this output. The later output (costs for each of the activities) is critical towards the development of the biodiversity finance plan which is expected to be the ultimate output under the Biodiversity Finance initiative (BIOFIN) in Zambia.

Recommendations

Below is a summary of the key recommendations which are outlined in chapter 4 of this report;

a) Ensure wider consultation among all relevant departments during the mid-term review of the NBSAP-2 to avoid contestation of activities at costing stage.

b) Ensure that the private sector is incorporated to lead implementation of some of the NBSAP-2 activities where they have comparative advantage over the public sector.

c) Ensure the number of activities allocated to a department match the department's resource capacity that is, human resource, finances and time to avoid underperformance.

d) Departments must ensure that they recommend a balanced mix of skills for the costing teams to avoid gaps in the conceptualisation of cost drivers, sub activities, unit costs and use of excel which leads to delayed completion of the costing process.

e) Ensure that the FNA results are incorporated into the costings of the 7th National Development Plan (7NDP) once costed.

f) There must be a holistic commitment to resource mobilisation which was identified as the source of poor performance of the first NBSAP for Zambia leading to ad hoc implementation of activities. This call for commitment ought to extend to accountability in the achievement of milestones outlined in the NBSAP-2's monitoring and evaluation plan.

g) Arising from an observation in the first NBSAP for Zambia, there is need to improve on the coordination among implementing entities to avoid silo implementation.

INTRODUCTION

1.1 BACKGROUND TO THE FINANCIAL NEEDS ASSESSMENT

In October 2010, Parties to the Convention on Biological Diversity (CBD) at its Tenth Session of the Conference of the Parties (COP) in Nagoya, Japan, agreed on a set of 20 time bound, measurable global biodiversity targets, known as the "Aichi Biodiversity Targets" (CBD,2017). These targets are aimed at contributing to the reduction of, and eventually halting, the loss of biodiversity at a global level by the middle of the twenty-first century. Among the 20 Aichi Targets, Target 20 is focused on mobilisation of financial resources for biodiversity conservation as outlined below.

> *By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties* (CBD, 2017).

In the formulation of Zambia's Second National Biodiversity Strategy and Action Plan (NBSAP-2), Zambia did customise the broader global goals as well as Aichi Targets in the national context. In relation to Aichi Target 20, Zambia developed an equivalent target that deals with the mobilisation of internal and external financial resources for the implementation of NBSAP-2. Below is Zambia's customised Target 18 which resonates with Aichi Target 20;

> *By 2020, Zambia mobilizes adequate internal and external financial resources for effective implementation of NBSAP2. (GRZ, 2015)*

Whilst the CBD did come up with high level global estimates of how much resources are needed to attain the Aichi Targets, the Financial Needs Assessment (FNA) under the Biodiversity Finance Initiative (BIOFIN), which is the focus of this report seeks to produce a detailed and realistic costing of the targets as enshrined in the NBSAP-2. The research question for the FNA in relation to Zambia is thus as follows: *"What financing is needed for Zambia to achieve its stated biodiversity targets enshrined in the NBSAP-2?"*

In responding to the question espoused above, section 1.2 covers the specific objectives of the FNA as referenced from the BIOFIN workbook of 2018 (UNDP, 2018).

1.2 AIM AND OBJECTIVES OF THE FINANCIAL NEEDS ASSESSMENT

The overall aim of the FNA is to make a comprehensive estimate of the financial resources needed to achieve national and sub national biodiversity targets (UNDP, 2018). Towards the attainment of the aim as coined above, Table 1 outlines the specific objectives of the FNA which guided this output;

Table 1-FNA Objectives

Objective #	Objective
Objective 1	Review and integrate the FNA with the national planning and budgeting process for optimal impact
Objective 2	Clarify strategies and actions in national biodiversity plans (NBSAPs) to describe "costable actions" that link to expected biodiversity results in a logical framework that lends itself to costing.
Objective 3	Produce a detailed budget for each costable action by defining unit costs and quantities over the target time frame.
Objective 4	Use these detailed budgets to make a stronger case for biodiversity finance – linking the costs of achieving specific results to the national budget processes.
Objective 5	Prioritize biodiversity strategies and actions based on specific biodiversity and cost criteria
Objective 6	Link the FNA to the Biodiversity Expenditure Review (BER) through a tagging system that associates financing needs with expenditure categories, sectors, and organizations
Objective 7	Calculate the finance gap between the business as usual biodiversity expenditure projections (from the BER) and financial needs identified in the FNA in as detailed a manner as possible.

METHODOLOGY FOR THE FNA

2.1 PROPOSED BIOFIN FNA PROCESS

The FNA process as depicted in Figure 6.1 of the BIOFIN workbook was largely used as the benchmark for the development of the methodology for this report. It must however be noted that some modifications to the BIOFIN methodology were made. Notably, these changes relate to item 3 of the schematic methodology regarding desktop study and development of initial costing tables. In the quest to ensure the FNA output emerged as a stakeholder driven process, the costing process in Zambia was carried out by the departments that were identified to lead the implementation process of the NBSAP-2 activities as outlined in the logical monitoring matrix outlined from pages 51 through to page 60 of the NBSAP-2.

2.2 FNA PREPARATORY ACTIVITIES

The sections below provide a brief outline of the various facets of the process that was followed in preparing for the FNA.

2.2.1 Stakeholders for the costing process

One of the key preparatory aspects for the FNA was the identification of stakeholders to undertake the costing process. The envisaged method was that the costing process would be best done by departments earmarked for implementation of the NBSAP-2 activities. This was done to ensure ownership of the costing results. The starting point for the stakeholder identification process was to refer to the list of entities earmarked for implementation of NBSAP-2 though some modifications arose based on internal consultations. Table 2 provides a summary of all the entities that were identified for the FNA process which will also be critical for the Biodiversity Expenditure Review (BER) as well as the development of the Biodiversity Finance Plan (BFP) with the latter being the ultimate output for the BIOFIN process. Some of the inferences that can be derived from Table 2 is that the costed NBSAP-2 has a total number of 100 activities across 5 NBSAP-2 strategic goals, slightly higher than previously estimated.

Table 2: List of Stakeholders and the assigned NBSAP-2 Activities for the FNA Process

Lead Ministry	Lead Implementing Department or Institution	Strategic Goal A	Strategic Goal B	Strategic Goal C	Strategic Goal D	Strategic Goal E	Grand Total
Ministry of Lands and Natural Resources		**8**	**2**	**8**	**6**	**7**	**31**
	Natural Resources Management Unit	6			6	7	19
	Forestry Department	2	2	8			12
Ministry of Tourism and Arts		**1**	**8**	**10**		**1**	**20**
	Department of National Parks and Wildlife Area Management	1	8	10			19
	National Heritage Conservation Commission (NHCC)					1	1
Ministry of Fisheries and Livestock		**1**	**15**	**1**			**17**
	Fisheries Department	1	15				16
	Livestock Development Department			1			1
Ministry of Water Development, Sanitation and Environmental Protection		**2**	**4**		**3**	**2**	**11**
	Zambia Environmental Management Agency	1	4				5
	Environment Management Department	1				2	3
	Water Resources Management Authority				3		3
Ministry of Agriculture		**2**		**5**			**7**
	Zambia Agricultural Research Institute			5			5
	Agriculture Department	2					2
Ministry of Mines and Mineral Development			**4**				**4**
	Mines Safety Department		4				4
Ministry of Local Government		**3**					**3**
	Physical Planning and Housing Department	3					3
Ministry of Information and Broadcasting Services		**2**					**2**
	Zambia News and Information Services	2					2
Ministry of Energy		**2**					**2**
	Department of Energy	2					2
Office of the Vice President			**1**				**1**
	Disaster Management and Mitigation Unit		1				1
Ministry of Commerce, Trade and Industry		**1**					**1**
	Zambia Development Agency	1					1
Ministry of Higher Education				**1**			**1**
	National Biosafety Authority			1			1
Grand Total		**22**	**34**	**25**	**9**	**10**	**100**

Source: Authors' computation

It must be noted that activities 8.2.1 and 8.2.2 (Annex 3)[1] as outlined in the NBSAP-2 were 'contested' by the Ministry of Mines and Minerals Development in a letter dated 31 March 2017 to the Permanent Secretary -Lands and Natural Resources prior to the costing process. In view of that letter, it was agreed that the earlier activities in the NBSAP-2 (8.2.1 and 8.2.2) be replaced hence the Department of Mines Safety (DMS) developed four (4) new activities to replace the two that were in dispute. The revised number of activities then rose to 100. Other inferences that can be drawn from Table 2 are that Ministries of Lands and Natural Resources, Tourism and Arts as well as Fisheries and Livestock had the largest share of activities for costing with a total number of activities being 33, 20 and 17 respectively.

Institutions/Departments with the least number of activities for costing and subsequent implementation include the Zambia News and Information Services (ZANIS), Department of Energy, Disaster Management and Mitigation Unit (DMMU), Zambia Development Agency (ZDA), National Biosafety Authority (NBA) as well as the Environment Management Department. It is however ironic that the Environment Management Department was only allocated three (3) activities for implementation within the NBSAP-2 yet the vision of the NBSAP-2 appears to also resonate with the mandate of the department in a profound way. It can also be observed from Table 2 that within the Ministry of Fisheries and Livestock, Department of Fisheries has 16 out of the 17 activities under the Ministry with only one (1) activity allocated to the Livestock department.

2.3 SCOPING AND CLARIFYING THE NBSAP-2 ACTIVITIES

In the process of clarifying the NBSAP-2 activities, several issues arose. Notably, it was evident that some key departments were initially not consulted during the NBSAP-2 revision process such as the Mines Safety Department for reasons that were outlined above. Some of the strategic interventions and indicators as outlined in the action plan (that is,1.1 and 2.1) are not in synch with the ones reflected in the Logical Monitoring Matrix for the NBSAP-2. More notable issues with the NBSAP-2 relate to the coding process for the key activities such as 4.1.2 which should have read 4.2.1, 3.2.2 which should have read 4.3.1, 7.2.1 which should have read 7.1.1, 7.3.1 which should have read 7.4.1 etc. Activity code 7.3.1 was repeated in the NBSAP-2 whilst codes for activities under strategic interventions 6.2, 6.3 and 6.4 were completely omitted. The NBSAP-2 costing model thus made changes to the observations outlined above hence readers of this report ought to take this into account especially if read in conjunction with the NBSAP-2. Another adjustment

[1] Refer to appendix 3 for codes corresponding to NBSAP 2-actions.

that was made was on Activity 4.1.1 in the NBSAP-2 which reads “Update the existing inventory of fish, forests and lower plants and wildlife species in the major conservation landscapes and river system of Zambia”. This activity has more than three sectors hence it was split into three activities to ensure each sector was costed by the most appropriate department with core competence in the subject being costed. It is hoped that these observations from the FNA process will be taken into account when reviewing the NBSAP-2.

It was also felt by stakeholders that the NBSAP-2 is a comprehensive plan that reflects Zambia’s strategic plans towards biodiversity conservation hence no other biodiversity strategies were considered in the costing process to augment the NBSAP-2.

2.4 DEVELOPMENT OF THE COSTING MODEL

To aid the costing process, a quantitative costing model was developed which was largely customised from the quantitative costing model developed by the BIOFIN Global Team. Below are some aspects that were taken into account;

2.4.1 Building cost tables

To ease cost capturing and cross referencing for key inputs into the costing process, a one pager dashboard was developed as depicted in Figure 3.

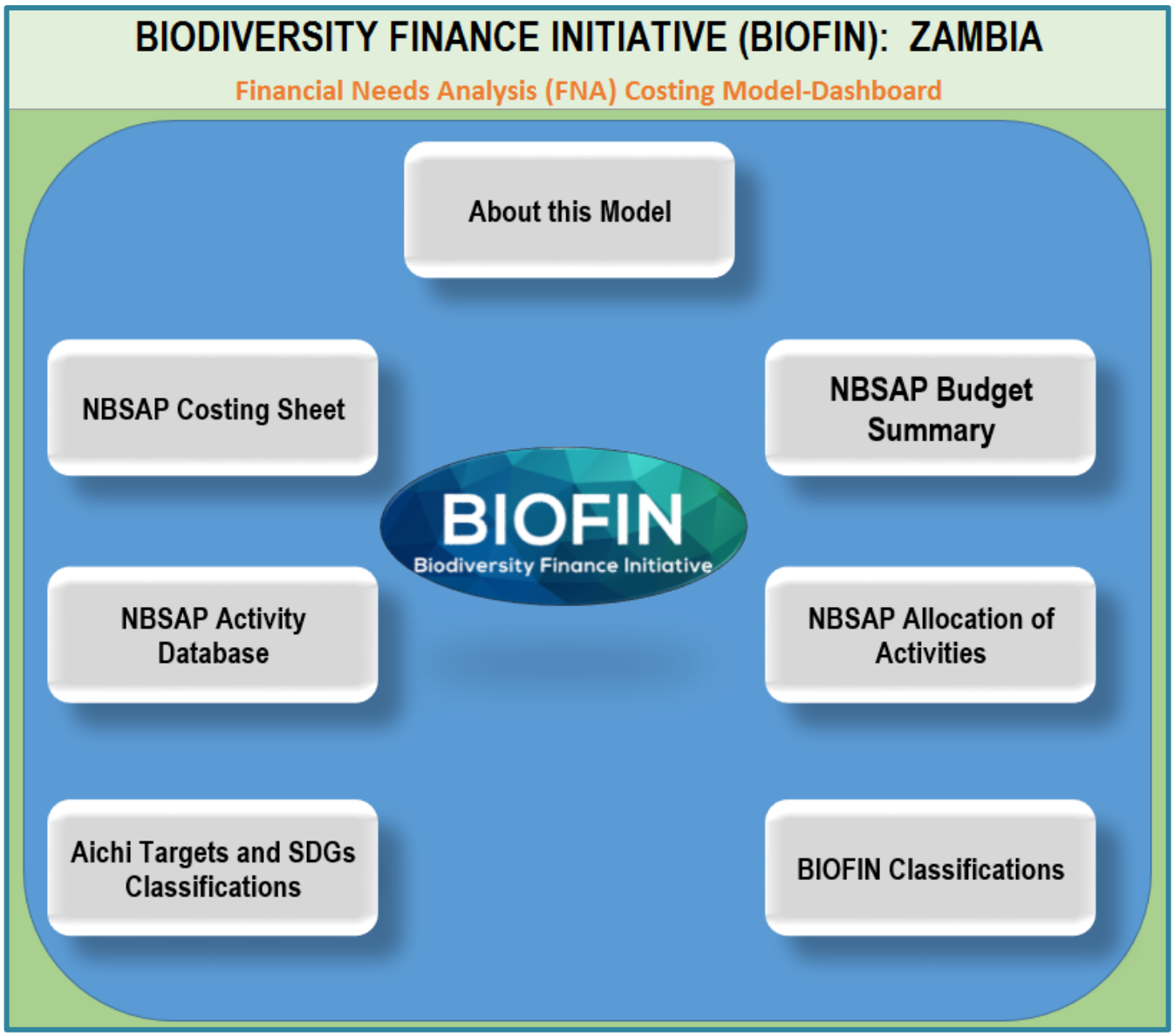


Figure 3: Snapshot of the dashboard for the FNA costing Model

Source: Authors' conceptualization

The dashboard made it easier for stakeholders to input their costs as well as refer to other key facets of the costing process especially cost tags such as Aichi Targets, Sustainable Development Goals (SDGs) as well as the BIOFIN cost tags. In view of the above, the quantitative FNA model for Zambia can be construed as merely being a customised model for Zambia based on the model developed by the BIOFIN global team with a few adjustments especially on the navigation capabilities which are key for such a process.

2.4.2 Identification of budget units and standard costs

The identification of budget units as well as standard costs was discussed at the onset of the costing workshop in Siavonga. Accounting staff present during the costing workshop did provide standard units for goods and services such as travel. However, despite this guidance, some variations in the standard unit costs could still be noted from the departmental costing sheets during the data analysis which is quite inevitable for an assignment of this magnitude covering 100 activities. Some stochastic simulations were undertaken to vet these input variations (refer to section 3.2 in the analysis paragraph for details).

2.4.3 Cost Tagging

The 2018 BIOFIN workbook (page 124) dictates that all actions should be tagged to a range of categories that allow cross comparisons and financial analysis across the other BIOFIN countries. Besides the tagging based on the NBSAP-2 strategic goals, lead ministry and lead implementing institution, other forms of tagging in relation to sector, Aichi Targets, SDGs and BIOFIN categories were deployed into the model. Their relevance is quite evident in chapter 3 where the total finance needs are analysed in various forms based on the tags outlined above.

2.5 PRE-COSTING WORKSHOP

Given the complexity of costing a strategy such as the NBSAP-2, it was felt imperative that a pre-costing workshop be convened with stakeholders to clarify the process and emphasise on the data requirements. The pre-costing workshop was convened on the 28th of March 2017 at Pamodzi Hotel in Lusaka. The meeting afforded a mutual exchange of ideas between the BIOFIN Project Team and stakeholders on the best way to undertake the FNA assignment. Clarifications made at this meeting made it possible for some departments to commence the costing process prior to the main costing workshop which was later held in Siavonga.

2.6 FNA COSTING WORKSHOP

The FNA costing workshop which was officially opened by the Permanent Secretary-Ministry of Lands and Natural Resources, took place in Siavonga, Zambia, from 24th to 27th April 2017 (Refer to Figure 4 and Annex 1 for a complete list of participants).

Figure 4: FNA Costing Team in Siavonga, Zambia

Source: Captured by the BIOFIN Team

2.6.1 Key assumptions in the costing process

2.6.1.1 Time Horizon for the FNA

The time horizon for the NBSAP-2 is 2015-2025. However, ~~in the quest~~ to align the costings to the "Vision 2030 for Zambia", it was agreed by stakeholders that the costing process begins from 2018 through to 2030.

2.6.1.2 Forecasting of Costs

Given the 13-year time horizon for the costing process, it was inevitable that future unit costs take into account projected inflation through to 2030. The Exponential Triple Smoothening Method was used to make inflation projections from 2018 to 2030 which were factored into the costing model for future cost inputs. Given the statistical reality that long-range forecasts become less reliable into the future due to the volatility of economic factors such as inflation, it may be prudent to re-work some of the costs should economic fundamentals veer off from the projections made in this report.

2.6.1.3 Personnel costs

Within the costing model, a drop-down list was provided to ensure each cost item got classified according to the various cost line items that were provided. The cost line items in the drop-down list included computers and peripherals, stationery, consultancy costs, technical assistance, motor

vehicle expenses, equipment, personnel/ salaries etc. For personnel costs, it was not very practical at the costing workshop to precisely deduce the finance needs or level of effort required per person per activity hence the assumption that was made was to add the personnel component after that operational costs were costed. The ratio of personnel costs in relation to non-personnel costs derived from Ministry of Finance was used to extrapolate the total finance needs per activity as depicted in Table 3.

Table 3: Percentage of personnel costs for selected ministries, 2017

Ministry	Personnel Emoluments (%)	Non-Personnel Emoluments (%)
Ministry of Mines and Mineral Development	54%	46%
Disaster Management and Mitigation Unit	39%	61%
Ministry of Information and Broadcasting Services	20%	80%
Ministry of Local Government	2%	98%
Ministry of Commerce, Trade and Industry	4%	96%
Ministry of Water Development, Sanitation and Environmental Protection	2%	98%
Ministry of Energy	5%	95%
Ministry of Tourism and Arts	51%	49%
Ministry of Lands and Natural Resources	18%	82%
Ministry of Fisheries and Livestock	18%	82%
Ministry of Agriculture	8%	92%
Ministry of Higher Education	1%	99%
Minimum	1%	46%
Maximum	54%	99%
Average	19%	82%

Source: Ministry of Finance, Zambia

Whilst the average percentage of personnel costs in relation to programme costs for the 2017 budget stood at 19% across all ministries, percentages for the respective ministries were used to avoid cost distortions given the huge variances in the proportions as depicted in Table 3. It must also be noted that, in the quest for brevity, only percentages for Ministries that were part of the costing process are highlighted in Table 3.

2.6.1.3 USD Exchange Rate

To ensure cost comparison across FNAs for the other BIOFIN Countries, the Kwacha costs were also translated into USD which is the most common reserve currency used by other BIOFIN countries. The exchange rate used in this report is K10 to USD$1, which was an average of the monthly exchange rates obtaining at the time this report was written.

2.7 VALIDATION PROCESS FOR THE FNA

The main structures that were put in place for the validation of the FNA report were the reviews by the BIOFIN technical Committee, the BIOFIN Global Team as well as the statistical checks by the Local BIOFIN Team.

2.8 LIMITATIONS IN THE NBSAP COSTING PROCESS

The finalised data submission by some departments was delayed which also led to the delay in the completion of this report. Further, the composition of some of the teams from some departments was limited in the diversity of skills, especially in costing hence this also delayed the process due to the long learning curve.

Chapter 3 of this report as presented below provides detailed analysis of the costing exercise which emanated from the methodology outlined above.

ANALYSIS OF THE FNA RESULTS

3.1 INTRODUCTION

Chapter 3 presents detailed analysis of the results from the NBSAP-2 costing process. The data analysis is largely guided by the tagging categories that were developed within the quantitative costing model that was developed. The chapter begins with section 3.2 which provides summaries of the total finance needs for biodiversity conservation in Zambia analysed based on the NBSAP-2 strategic goals, targets and strategic interventions. Further, different cost perspectives are provided notably distribution of costs based on the following tags: Costs per annum from 2018-2030, analysis of costs by institution and department, and cost classification based on the Aichi Target's, SDGs and BIOFIN categories.

3.2 FINANCE NEEDS BASED ON NBSAP-2 FRAMEWORK: 2018-2030

Zambia's NBSAP-2 is schematically arranged as follows: vision, strategic goals, principles, targets, strategic interventions, key performance indicators, key activities and responsible entities. Section 3.2 and its sub sections seek to provide an analysis of the total finance needs based on the NBSAP-2's schematic outline as highlighted above.

Based on the total finance needs analysed, Zambia will require a total of **K 2,420,115,780** (USD$242,011,578) to attain the vision outlined above over 13 years from 2018-2030. The sections that follow provide detailed cost perspectives which was arrived at by different departments.

3.2.1 Financial needs based on the NBSAP-2 strategic goals

To attain the vision outlined in the preceding section, the NBSAP-2 is made of five (5) strategic goals. Table 4 shows a summary of the finance needs for the NBSAP-2 based on the strategic goals which are outlined on page 30 of the NBSAP-2.

Table 4: FNA Costs based on NBSAP-2 Strategic Goals

Strategic Goals	Strategic Goals Narration	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Goal A	Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.	1,227,366,627	122,736,663	51%
Goal B	Reduce the direct pressures on biodiversity and promote sustainable use	548,477,210	54,847,721	23%
Goal C	Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	428,248,242	42,824,824	18%
Goal D	Enhance the benefits to all from biodiversity and ecosystem services	160,716,353	16,071,635	7%
Goal E	Enhance implementation through participatory planning, knowledge management and capacity building	55,307,348	5,530,735	2%
Total		**2,420,115,780**	**242,011,578**	**100%**

As can be deduced from Table 4, Strategic goal A has the highest finance needs (51%) with a total number of 22 activities. Table 5 provides a detailed outline of the finance needs for the 22 activities under strategic goal A.

Table 5: NBSAP-2 Strategic Goal-A Finance Needs per activity

NBSAP-2 Activity	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Conduct and implement integrated land use planning in the targeted landscapes for biodiversity conservation.	319,934,392	31,993,439	26.07%
Conduct public awareness and education campaigns on value of conserving biodiversity and using it sustainably	200,897,523	20,089,752	16.37%
Update the existing inventory of forests and lower plants in the major conservation landscapes of Zambia	185,668,464	18,566,846	15.13%
Identify and analyse potential incentives that encourage biodiversity conservation and its sustainable use	176,302,320	17,630,232	14.36%
Engage independent consultants to undertake EIAs and SEAs.	103,539,656	10,353,966	8.44%
Update the existing inventory of wildlife in the major conservation landscapes of Zambia	60,100,026	6,010,003	4.90%

NBSAP-2 Activity	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Update the existing inventory of fish species in the major conservation landscapes and river system of Zambia	56,854,899	5,685,490	4.63%
Conduct a farming systems diagnosis in the areas surrounding the PA systems in the selected landscapes for biodiversity conservation.	34,904,625	3,490,462	2.84%
Conduct additional studies under ILUA II to include lower plants and herbaceous flowering plants to determine the conservation status of individual tree and lower plant species at national level	33,384,861	3,338,486	2.72%
Build capacity of key sector actors in the use of the guidelines for integrated land use planning.	29,158,020	2,915,802	2.38%
Develop and promote area specific compatible alternative energy sources.	9,430,490	943,049	0.77%
Develop and promote farming systems compatible with sustainable agricultural practices in the selected landscapes.	4,727,736	472,774	0.39%
Develop/improve on existing guidelines for integrated land use planning with a biodiversity conservation lens.	4,491,548	449,155	0.37%
Conduct an assessment of alternative energy sources in areas surrounding the selected landscapes for biodiversity conservation	2,832,924	283,292	0.23%
Develop a Communication, Education and Public Awareness (CEPA) strategy for NBSAP2	1,501,348	150,135	0.12%
Conduct surveys to assess change in behaviour among sensitized stakeholders using the Biodiversity Barometer Tool	1,406,073	140,607	0.11%
Mainstreaming of the identified biodiversity conservation actions in the sector, provincial and district SeNDP programmes and budgets based on the screening results.	579,032	57,903	0.05%
Conduct an analysis of existing methods for natural resources valuation most compatible with the key biodiversity components being addressed by the NBSAP	545,072	54,507	0.04%
Establish a Clearing House Mechanism (CHM) for information exchange and knowledge management on biodiversity.	475,734	47,573	0.04%
Conduct a biodiversity components valuation.	444,282	44,428	0.04%
Identify and analyse the most harmful subsidies to biodiversity conservation and its sustainable use	179,702	17,970	0.01%
Conduct a biodiversity conservation screening of the SeNDP.	7,900	790	0.00%
Total	**1,227,366,627**	**122,736,663**	**100%**

3.2.3 Financial Needs based on the NBSAP-2 and Aichi Targets

Whilst the Aichi targets have a total number of 20 targets, Zambia's NBSAP-2 only has 18 targets as the country adopted only those targets that were of strategic relevance to the country. Table 6 provides a summary of the NBSAP-2 finance needs based on national targets as enshrined in the NBSAP-2.

Table 6: Finance Needs based on NBSAP-2 Targets

NBSAP-2 Target	NBSAP-2 Target Narration	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Target 1	Awareness increased	204,350,017	20,435,002	8.44%
Target 2	Biodiversity values integrated in National Plans	1,031,213	103,121	0.04%
Target 3	Incentives for biodiversity conservation and sustainable reformed	176,482,022	17,648,202	7.29%
Target 4	Baselines for critical biodiversity is established	336,483,984	33,648,398	13.90%
Target 5	Deforestation rate in Zambia is reduced by at least 25%.	509,019,391	50,901,939	21.03%
Target 6	Fisheries co-management regimes are established in 60% of all major fisheries.	215,016,455	21,501,645	8.88%
Target 7	Areas under agriculture, aquaculture and forestry are managed sustainably	243,171,290	24,317,129	10.05%
Target 8	Pollution reduced	21,672,260	2,167,226	0.90%
Target 9	Invasive alien species and pathways are identified and controlled or eradicated	68,617,205	6,861,721	2.84%
Target 10	Zambia's Protected Area (PA) network increased and improved	18,725,666	1,872,567	0.77%
Target 11	Extinction of threatened and endemic species prevented	198,785,474	19,878,547	8.21%
Target 12	Genetic diversity of cultivated plants and farmed maintained	210,737,103	21,073,710	8.71%
Target 13	(ABS) Nagoya Protocol in force and operational	2,896,222	289,622	0.12%
Target 14	Zambia accedes to the Nagoya Protocol and by 2018, done stigmatizing of the Protocol is underway	18,358,462	1,835,846	0.76%
Target 15	Take deliberate actions to protect critical ecosystems of the Zambezi, Kafue and Luangwa watersheds.	139,461,668	13,946,167	5.76%
Target 16	Traditional knowledge respected	36,670,265	3,667,026	1.52%
Target 17	Knowledge improved, shared and applied	16,201,367	1,620,137	0.67%
Target 18	Mobilizes adequate internal and external financial resources for effective implementation of NBSAP2	2,435,717	243,572	0.10%
	Totals	**2,420,115,780**	**242,011,578**	**100%**

As can be deduced in Table 6, Target 5 whose strategic focus is on the reduction of deforestation rate in Zambia by at least 25% emerged with the highest finance needs seconded by target 4 whose focus is on establishing baselines for critical biodiversity. Target 5 is largely driven by activities 5.4.3 and 4.1.2 which entails conducting and implementing integrated land use plans in the targeted landscapes for biodiversity conservation and updating the existing inventory of forests and lower plants in the major conservation landscapes of Zambia respectively. The target with the least finance needs is target 2 whose focus is on integration of biodiversity values into national, provincial, district and other planning processes.

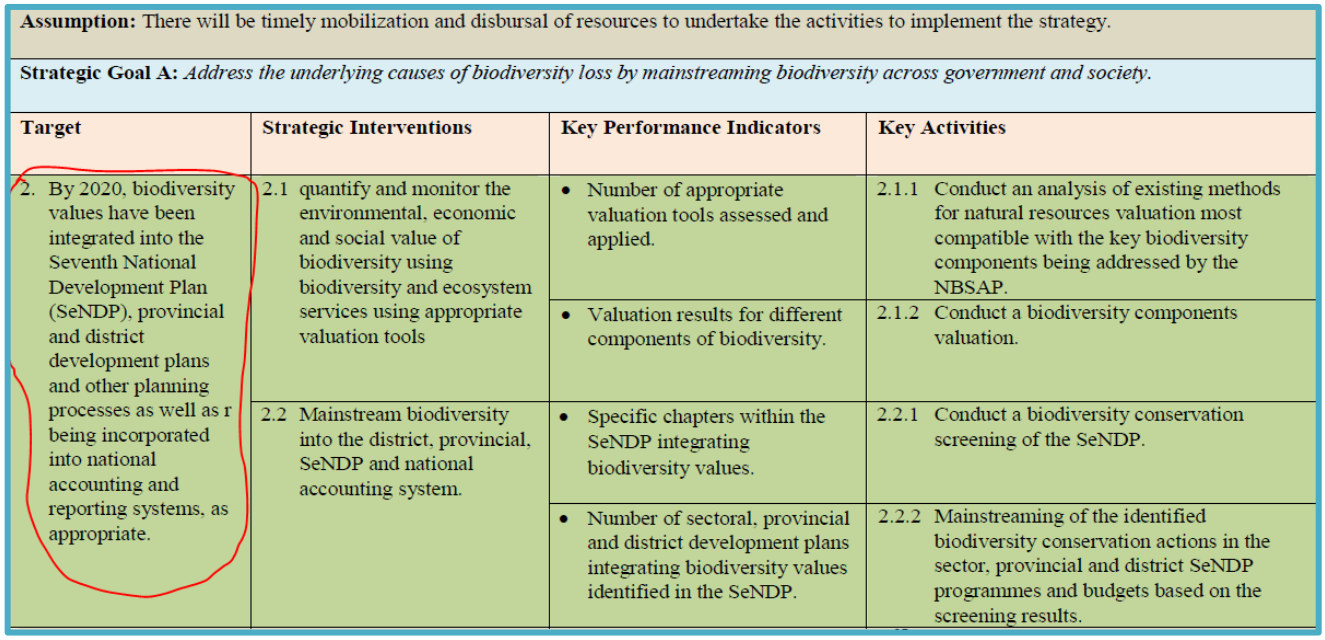
In hindsight to the analysis of NBSAP-2 finance needs based on the Aichi Targets from which the NBSAP-2 Targets ware benchmarked, there appears to be a misplacement of activities 5.4.1, 5.4.2 and 5.4.3 under Target 5 which reads as follows; “By 2020, the deforestation rate in Zambia is reduced by at least 25%”. It is therefore recommended that activities 5.4.1, 5.4.2 and 5.4.3 as depicted in Figure 5 would have been better placed under Target 2 of Zambia’s NBSAP-2 as depicted in Figure 6 which directly resonates with strategic intervention 5.4 on institutionalisation of integrated land use planning across sectors.

Strategic Goal B: *Reduce the direct pressures on biodiversity and promote sustainable use.*

Target	Strategic Interventions	Key Performance Indicators	Key Activities
5. By 2020, the deforestation rate in Zambia is reduced by at least 25%.	5.1 Promote sustainable agricultural practices.	• 25% reduction in the national deforestation rate.	5.1.1 Conduct a farming systems diagnosis in the areas surrounding the PA systems in the selected landscapes for biodiversity conservation.
			5.1.2 Develop and promote farming systems compatible with sustainable agricultural practices in the selected landscapes.
	5.2 Promote alternative renewable energy technologies.		5.2.1 Conduct an assessment of alternative energy sources in areas surrounding the selected landscapes for biodiversity conservation.
			5.2.2 Develop and promote area specific compatible alternative energy sources.
	5.3 Strictly enforce the EIA and SEA provisions of the Environmental Management Act (2011).		5.3.1 Engage independent consultants to undertake EIAs and SEAs.
	5.4 Institutionalize integrated land use planning across sectors.		5.4.1 Develop/improve on existing guidelines for integrated land use planning with a biodiversity conservation lens.
			5.4.2 Build capacity of key sector actors in the use of the guidelines for integrated land use planning.
			5.4.3 Conduct and implement integrated land use planning in the targeted landscapes for biodiversity conservation.

Figure 5: Snapshot of NBSAP-2 Target 5

Source: GRZ (2015:35)



Assumption: There will be timely mobilization and disbursal of resources to undertake the activities to implement the strategy.

Strategic Goal A: *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.*

Target	Strategic Interventions	Key Performance Indicators	Key Activities
2. By 2020, biodiversity values have been integrated into the Seventh National Development Plan (SeNDP), provincial and district development plans and other planning processes as well as r being incorporated into national accounting and reporting systems, as appropriate.	2.1 quantify and monitor the environmental, economic and social value of biodiversity using biodiversity and ecosystem services using appropriate valuation tools	• Number of appropriate valuation tools assessed and applied.	2.1.1 Conduct an analysis of existing methods for natural resources valuation most compatible with the key biodiversity components being addressed by the NBSAP.
		• Valuation results for different components of biodiversity.	2.1.2 Conduct a biodiversity components valuation.
	2.2 Mainstream biodiversity into the district, provincial, SeNDP and national accounting system.	• Specific chapters within the SeNDP integrating biodiversity values.	2.2.1 Conduct a biodiversity conservation screening of the SeNDP.
		• Number of sectoral, provincial and district development plans integrating biodiversity values identified in the SeNDP.	2.2.2 Mainstreaming of the identified biodiversity conservation actions in the sector, provincial and district SeNDP programmes and budgets based on the screening results.

Figure 6: Snapshot of NBSAP-2 Target 1

Source: GRZ (2015:32)

Because of this misplacement of activities in the NBSAP-2, Target 2 in the NBSAP-2 turned out to have the least finance needs (0.04%) yet when analysed based on the Aichi cost tags as depicted in Table 7, Target 2 emerges with the highest finance needs (33.12%) given that the three (3) activities (5.4.1, 5.4.2 and 5.4.3) are correctly tagged to Aichi Target 2 and not under Target 5 as is the case with the NBSAP-2.

Table 7: NBSAP-2 Finance Needs based on Aichi Targets

AICHI Target	AICHI Target Narration	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Target 1	By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	58,676,148	5,867,614	2.39%
Target 2	By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning.	600,549,837	60,054,984	33.12%
Target 3	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed to minimize or avoid negative impacts.	201,748,420	20,174,842	8.34%

AICHI Target	AICHI Target Narration	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
Target 4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption.	103,202,469	10,320,247	4.26%
Target 5	By 2020, the rate of loss of all-natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	197,228,186	19,722,819	8.15%
Target 7	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	307,915,900	30,791,590	12.72%
Target 8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	5,622,265	562,226	0.23%
Target 9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated.	50,475,974	5,047,597	2.09%
Target 11	By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of importance for biodiversity and ecosystem services, are conserved.	31,837,306	3,183,731	1.32%
Target 12	By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	273,329,730	27,332,973	11.29%
Target 13	By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained.	21,478,222	2,147,822	0.89%
Target 14	By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded.	239,156,917	23,915,692	9.88%
Target 15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems.	49,596,488	4,959,649	2.05%
Target 16	By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from	4,282,569	428,257	0.18%

AICHI Target	AICHI Target Narration	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
	their Utilization is in force and operational, consistent with national legislation.			
Target 17	By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	20,025,211	2,002,521	0.83%
Target 18	By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected.	31,358,746	3,135,875	1.30%
Target 19	By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	21,195,677	2,119,568	0.88%
Target 20	By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels.	2,435,717	243,572	0.10%
	Total	**2,420,115,780**	**242,011,578**	**100.00%**

As earlier indicated, it is evident from Table 7 that Aichi Target 2 has the highest finance needs based on the cost classifications for Zambia's NBSAP-2. Target 2 is largely driven by activities 5.4.3 and 4.1.2 which entails conducting and implementing integrated land use plans in the targeted landscapes for biodiversity conservation as well as updating the existing inventory of forests and lower plants in the major conservation landscapes of Zambia respectively. Aichi Target 7 has the second highest finance needs largely driven by two activities earmarked for implementation by the Department of Fisheries. These are activity 6.4.3 whose focus is on the imposing of a moratorium on fishing of threatened species to allow for natural restocking of the threatened species as well as activity 4.1.1 meant to update the existing inventory of fish species in the major conservation landscapes and river system of Zambia.

It can also be deduced from Table 7 that no cost classifications were allocated for Aichi Targets 6 (sustainable management of marine living resources) and Target 10 (anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification) as these are the two that were seen not to be of strategic relevance to Zambia at the time of the formulating the NBSAP-2.

3.2.4 Financial Needs based on the NBSAP-2 Strategic Interventions

Zambia's NBSAP-2 has fifty (50) strategic interventions under each of the targets. Figure 7 provides an outline of the total finance needs in relation to the NBSAP-2 strategic interventions. However, in the quest for brevity, only the top ten (10) strategic interventions based on the magnitude of the finance needs are shown.

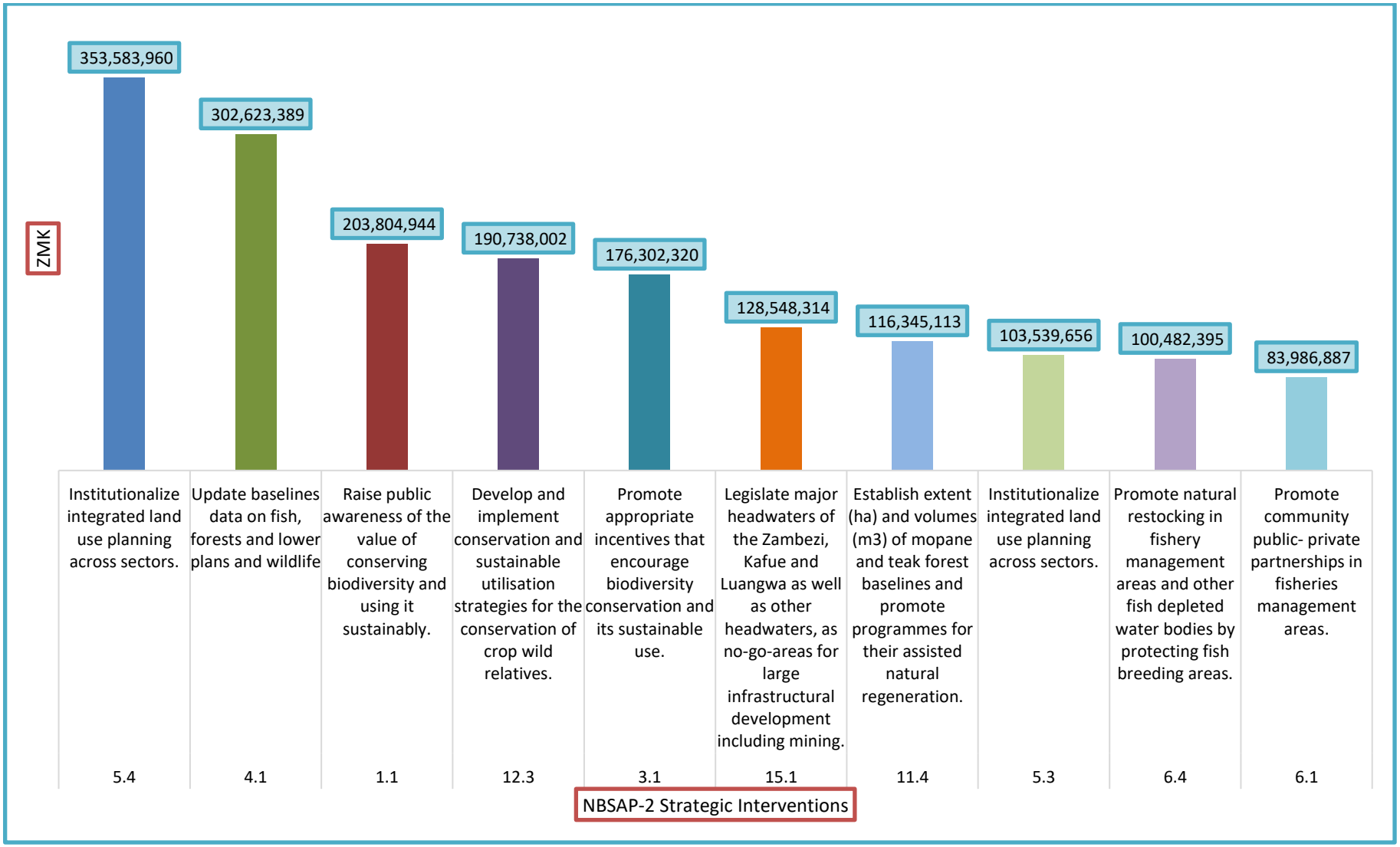


Figure 7: Top 10 NBSAP-2 Financial needs based on NBSAP-2 Strategic Interventions

As can be noted from Figure 7, finance needs for strategic intervention number 5.4 on the institutionalisation of integrated land use plans across sectors emerged with the highest finance needs followed by strategic intervention number 4.1 on the update of baseline data for fish, forests, lower plants and wildlife.

3.2.5 Financial Needs based on the NBSAP-2 Activities

The preceding sections have outlined the summaries of NBSAP-2 finance needs based on the strategic goals, targets and strategic intervention. This section seeks to provide summaries of finance needs based on the 100 activities in the NBSAP-2. In the quest for brevity, Figure 8 provides a snapshot of the total NBSAP-2 finance needs for the top 5 activities ranked based on cost.

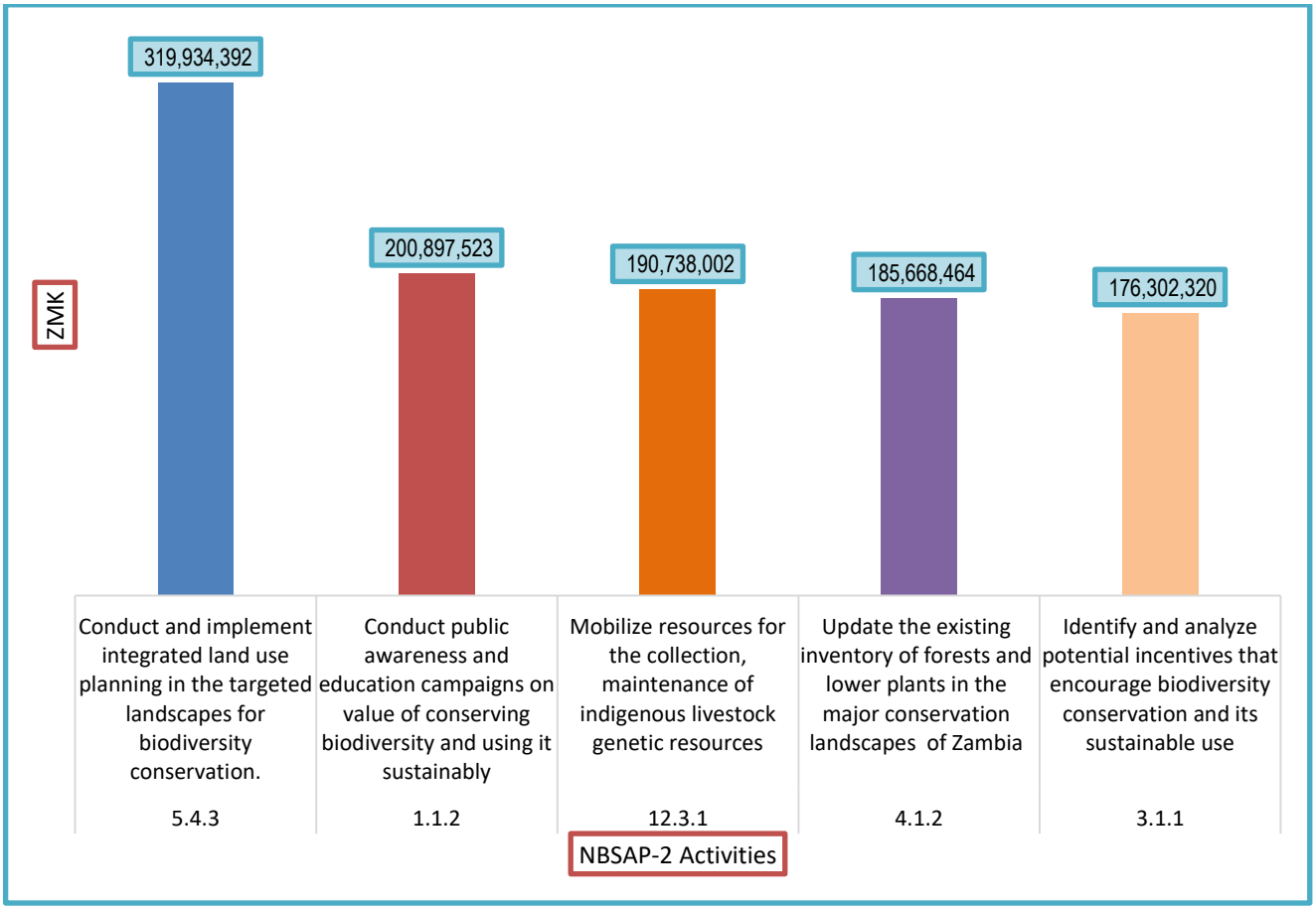


Figure 8: Summary of NBSAP-2 most costly five (5) activities

It can be noted from Figure 8 that activity number 5.4.3 has the highest finance needs in comparison with other 99 activities. The intended results under this activity include having bio-diversity landscapes for integrated land use planning identified in 10 provinces by end of April 2019, 109 IDPs prepared with bio-diversity lens between May 2019 and end of November 2020,

109 bio-diversity mainstreamed IDPs distributed to implementing institutions by end of December 2020 as well as having targeted landscapes in 109 districts monitored and evaluated for bio-diversity conservation by 2030. Figure 9 provides a snapshot of the key sub activities under this activity.

Sub Activity 1	•Identification of bio-diversity landscapes in 10 provinces by 2019
Sub Activity #2	•Preparation of Integrated Development Plans (IDPs) in 109 districts and ensuring that bio-diversity issues are incorporated
Sub Activity #3	•Distribution of IDPs to implementing institutions
Sub Activity #4	•Backstopping of 109 districts on the preparation of IDPs
Sub Activity #5	•Review of 109 IDPs (5-yearly review: 2025 and 2030)
Sub Activity #5	•Monitoring and evaluation of IDPs

Figure 9: Planned sub activities under activity 5.4.3

Among the top 5 activities in terms of finance needs, activity 3.1.1 whose focus is on the identification and analysis of potential incentives that encourage biodiversity conservation and its sustainable use had the lowest finance needs. As a signatory to the Convention on Biological Diversity (CBD), Zambia is implicitly committed to develop positive incentive measures that promote the conservation of biodiversity, and to take steps to identify, reform or phase out subsidies and other incentives that have harmful effects on biodiversity. Activity 3.1.1 thus resonates with Aichi Target 3 which is depicted below.

By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.(CBD, 2017).

The responsibility for this activity to identify and analyse potential incentives that could encourage stakeholders to undertake actions which would benefit biodiversity in Zambia is earmarked to be led by the Zambia Development Agency under the Ministry of Commerce, Trade and Industry. However, given that the activity also entails reforming subsidies that are harmful to biodiversity, it is expected that the activity will jointly be undertaken with the Ministry of Finance and Ministry of National Planning. Figure 10 provides a snapshot of some of the key sub activities planned under this activity.

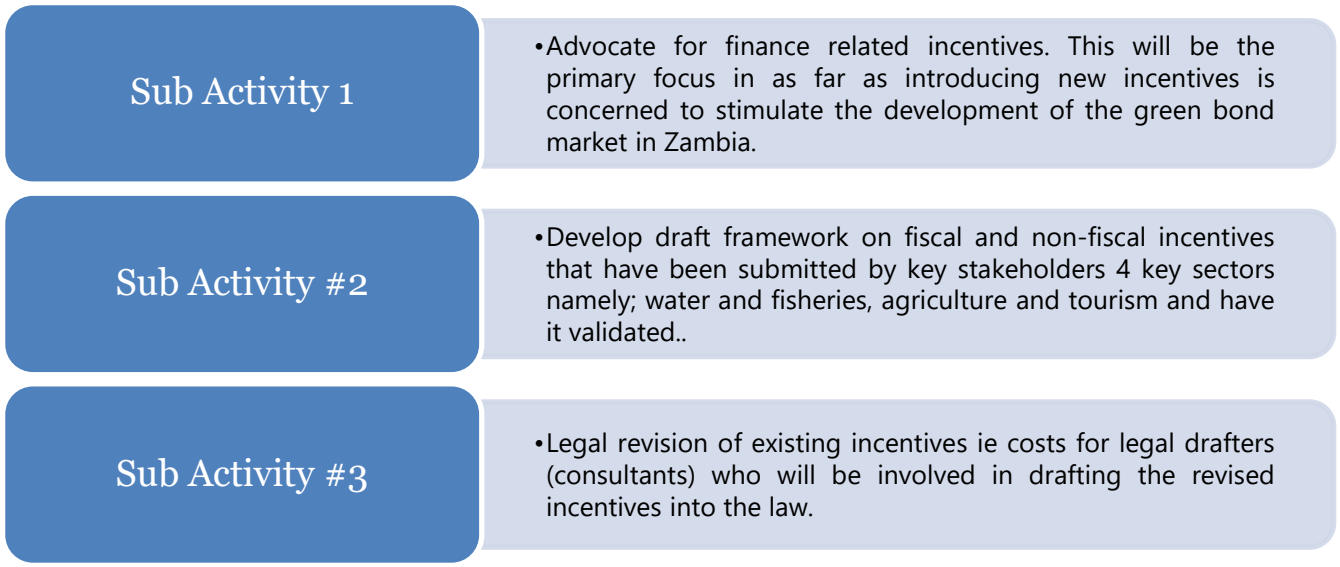


Figure 10: Planned sub activities under activity 3.1.1

Prior to the commencement of detailed studies under the BIOFIN Initiative in Zambia, the BIOFIN project team did organise a private sector awareness workshop where companies in the following sectors were in attendance: mining, pensions and insurance, banking, media, research institutions.

One of the issues tackled in this workshop was the question of why the private sector does not fully get involved in financing biodiversity conservation initiatives in Zambia. Several issues emerged among them being lack of appropriate incentives for private sector to get fully involved in biodiversity conservation activities, that is, taxation, concession loans, poor linkages with research institutions to provide empirical data on value of biodiversity, lack of skills within the financial and insurance sectors to appraise the bankability of biodiversity project applications among others. Based on the feedback from the private sector awareness workshop, it is apparent that the issue of incentives is a critical issue that will have to be undertaken to address some of the issues that emerged from the this workshop.

At present, existing incentives are provided under the ZDA Act which works together with Customs and Excise Cap 322, the Customs and Excise (General) Regulations 2000, and Regulation 98D as amended by SI No. 94 of 2013 (ZDA, 2017). To qualify for incentives, the investor(s), local or foreign must meet the following requirements:

a) An Investment of US$ 500,000

b) Invest in a priority sector, that is, Manufacturing, Education, Energy and Water Development, health, tourism (restricted to construction and establishment of hotels, convention centres, museums, theatres and shopping malls) etc.

c) Production must be in the following locations (i) Multi-Facility Economic Zone (MFEZ), (ii) Industrial Area/Park and (iii) Rural business enterprise.

In view of the above, activities 3.1.1 and 3.1.2 on the identification and analysis of potential incentives and the most harmful subsidies to biodiversity conservation respectively will be critical towards encouraging biodiversity conservation and its sustainable use. Annex 3 and 4 to this report provide an outline of the finance needs for all the 100 activities each outlining varying perspectives. Particular attention should be given to the footnotes provided in Annex 3 which explains the rationale for the missing costs under activities 12.2.1, 14.1.1 and 18.1.1.

3.2.6 Financial Needs based on the lead implementing institutions and priority

The third last column of the Logical Monitoring Matrix for NBSAP-2 (pages 52-61) assigns responsibility to several institutions as lead entities towards implementation of Zambia's NBSAP-2 as depicted in Table 8.

Table 8: Snapshot of the Logical Monitoring Matrix for NBSAP-2

Strategic Interventions	Key Performance Indicators	Data Gathering Methods	Means of Verification	Collection Frequency	Responsibility for Indicator
1. Raise public awareness of the value of conserving biodiversity and using it sustainably.	• At least 70% of surveyed key stakeholders are aware of the values of biodiversity and have taken steps to conserve and use it sustainably. • Results of surveys for pre-defined key stakeholders demonstrating change in human behaviour towards biodiversity	Surveys	Survey results	Annual	ZEMA/Dept. of Environment, MIB, media
2. Apply biodiversity and ecosystem services valuation tools to quantify and monitor the environmental, economic and social value of biodiversity.	• Number of appropriate valuation tools assessed and applied. • Valuation results for different components of biodiversity.	Review of valuation reports	Valuation results and tools applied	Bi-annual	Dept. of Environment

Source: GRZ (2015:52)

As can be noted from Table 8, in some instances, there were several institutions or departments earmarked the "responsibility for indicator" in the NBSAP-2 such as intervention 1 where the responsibility was assigned to ZEMA, Department of Environment and the Ministry of Information and Broadcasting. However, for costing purposes, the rationale adopted was that each activity needed to be assigned to one (1) entity to lead the costing process subject to consultations with the other departments hence intervention 1 on raising awareness was assigned to the Zambia News and Information Services under the Ministry of Ministry of Information and Broadcasting. Figure 11 and Table 9 provide cost summaries analysed in descending order of cost per Ministry and departments respectively.

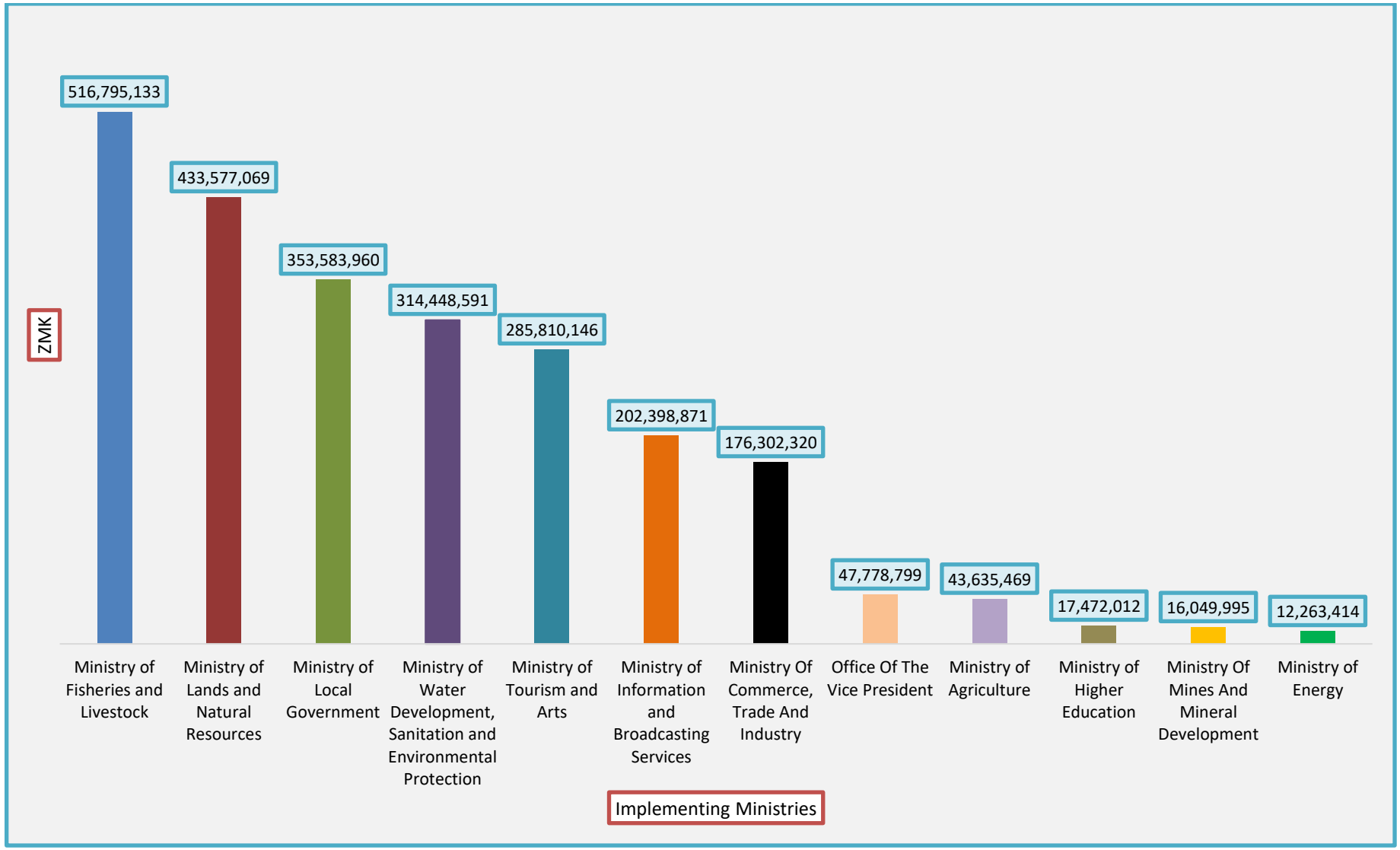


Figure 11: Total NBSAP-2 Finance Needs based on Lead Ministries

Table 9: Total NBSAP-2 Finance Needs per department

Lead Ministry	Lead Department or Institution	Total Costs (ZMK)	Total Costs (USD)
Ministry of Fisheries and Livestock	Fisheries Department	326,057,131	32,605,713
	Livestock Development Department	190,738,002	19,073,800
Ministry of Fisheries and Livestock Total		**516,795,133**	**51,679,513**
Ministry of Lands and Natural Resources	Forestry Department	400,085,016	40,008,502
	Natural Resources Management Unit	33,492,053	3,349,205
Ministry of Lands and Natural Resources Total		**433,577,069**	**43,357,707**
Ministry of Local Government	Physical Planning and Housing Department	353,583,960	35,358,396
Ministry of Local Government Total		**353,583,960**	**35,358,396**
Ministry of Water Development, Sanitation and Environmental Protection	Zambia Environmental Management Agency	159,637,895	15,963,789
	Water Resources Management Authority	139,461,668	13,946,167
	Environment Management Department	15,349,028	1,534,903
Ministry of Water Development, Sanitation and Environmental Protection Total		**314,448,591**	**31,444,859**
Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	254,451,400	25,445,140
	National Heritage Conservation Commission (NHCC)	31,358,746	3,135,875
Ministry of Tourism and Arts Total		**285,810,146**	**28,581,015**
Ministry of Information and Broadcasting Services	Zambia News and Information Services	202,398,871	20,239,887

Lead Ministry	Lead Department or Institution	Total Costs (ZMK)	Total Costs (USD)
Ministry of Information and Broadcasting Services Total		**202,398,871**	**20,239,887**
Ministry of Commerce, Trade and Industry	Zambia Development Agency	176,302,320	17,630,232
Ministry of Commerce, Trade and Industry Total		**176,302,320**	**17,630,232**
Office of The Vice President	Disaster Management and Mitigation Unit	47,778,799	4,777,880
Office of the Vice President Total		**47,778,799**	**4,777,880**
Ministry of Agriculture	Agriculture Department	39,632,360	3,963,236
	Zambia Agricultural Research Institute	4,003,109	400,311
Ministry of Agriculture Total		**43,635,469**	**4,363,547**
Ministry of Higher Education	National Biosafety Authority	17,472,012	1,747,201
Ministry of Higher Education Total		**17,472,012**	**1,747,201**
Ministry of Mines and Mineral Development	Mines Safety Department	16,049,995	1,605,000
Ministry of Mines and Mineral Development Total		**16,049,995**	**1,605,000**
Ministry of Energy	Department of Energy	12,263,414	1,226,341
Ministry of Energy Total		**12,263,414**	**1,226,341**
Grand Total		**2,420,115,780**	**242,011,578**

As can be deduced from Table 9, the Ministry of Fisheries and Livestock has the highest finance needs seconded by the Ministry of Lands and Natural Resources largely under the Forestry Department. Ministry of Energy, specifically the Department of Energy, has the least finance needs.

3.3 FINANCE NEEDS BASED ON BIODIVERSITY COST TAGS

Besides the cost tags based on the NBSAP-2, the BIOFIN methodology requires that costs should be tagged to a range of categories that allow across comparison and financial analysis across the BIOFIN process (UNDP, 2018: 119). The sections below provide the summaries of finance needs based on the various cost tags that were imbedded within the costing model which largely mimic the suggested tags within the BIOFIN workbook except for the System of Environmental Economic Accounts (SEEA) categories. It must be noted that the first cost tag outside the NBSAP-2 framework was the Aichi Targets. However, the analysis based on the Aichi Targets was combined with the analysis of finance needs based on the NBSAP-2 targets in the preceding sections. In view of that, this section only provides the analysis of finance needs based on the SDG and BIOFIN categories.

3.3.1 Finance needs based on Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs), commonly referred to as the Global Goals, are a global call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity (UNDP, 2017). These 17 Goals build on the successes of the Millennium Development Goals, while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities (UNDP, 2017). Given the strategic importance of these goals in the development realm, the SDG goals were incorporated as one of the cost tags. Table 10 provides a summary of finance needs based on the SDGs.

Table 10: NBSAP-2 Finance Needs based on SDGs

SDG #	SDG Narrative	Finance Needs (ZMK)	Finance Needs (USD)	% of Grand Total
SDG 2	Zero Hunger	4,003,109	400,311	0.17%
SDG 4	Quality Education	202,398,871	20,239,887	8.36%
SDG 9	Industry, Innovation and infrastructure	194,312,066	19,431,207	8.03%
SDG 11	Sustainable cities and communities	562,522,450	56,252,245	23.24%
SDG 12	Responsible consumption and production	303,966,791	30,396,679	12.56%
SDG 13	Climate action	118,906,291	11,890,629	4.91%
SDG 14	Life below water	312,991,584	31,299,158	12.93%
SDG 15	Life on land	708,280,238	70,828,024	29.27%
SDG 16	Peace, justice and strong institutions	12,734,379	1,273,438	0.53%
	Total	**2,420,115,780**	**242,011,578**	**100.00%**

As shown in Table 10, SDG 15 has the highest finance needs largely driven by two activities. These are activities 12.3.1 and 4.1.2 whose focus are on the mobilisation of resources for the collection and maintenance of indigenous livestock genetic resources and the updating of the existing inventory of forests and lower plants in the major conservation landscapes of Zambia respectively. SDG 11 has the second highest finance needs largely driven by activity 5.4.3 meant to conduct and implement integrated land use planning in the targeted landscapes for biodiversity conservation. The missing SDGs in terms of the classifications made by the departments are SDG 1 (no poverty), SDG 3 (good health and wellbeing), SDG 5 (gender equality), SDG 6 (Clean water and Sanitation), SDG 7 (Affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 10 (Reduced inequalities) and SDG 17 (Partnerships for the goals). It can be assumed these missing SDGs by classification are mainstreamed in the other SDGs.

3.3.2 Finance needs based on BIOFIN categories

Besides other biodiversity categories that are used by various frameworks, the BIOFIN initiative developed its own categories which describe types of activities which can be used to group and analyse expenditure or costs (UNDP, 2018: 80). Table 11 presents the relationship between the nine (9) BIOFIN categories and Aichi categories.

Table 11: Relationship between the BIOFIN and Aichi categories

Nine BIOFIN Categories	Six Aichi Categories
Biodiversity Awareness and Knowledge **Green Economy** **Pollution management**	Mainstreaming
Sustainable Use **Biosafety**	Sustainable Use
Protected Areas and other Conservation Measures	Protection
Restoration	Restoration
Access and Benefit Sharing (ABS)	ABS[18]
Biodiversity and Development Planning	Enabling

Source: (UNDP, 2018)

Based on the guidance depicted in Table 11, Figure 12 provides a snapshot of the finance needs based on the Six (6) Aichi Categories.

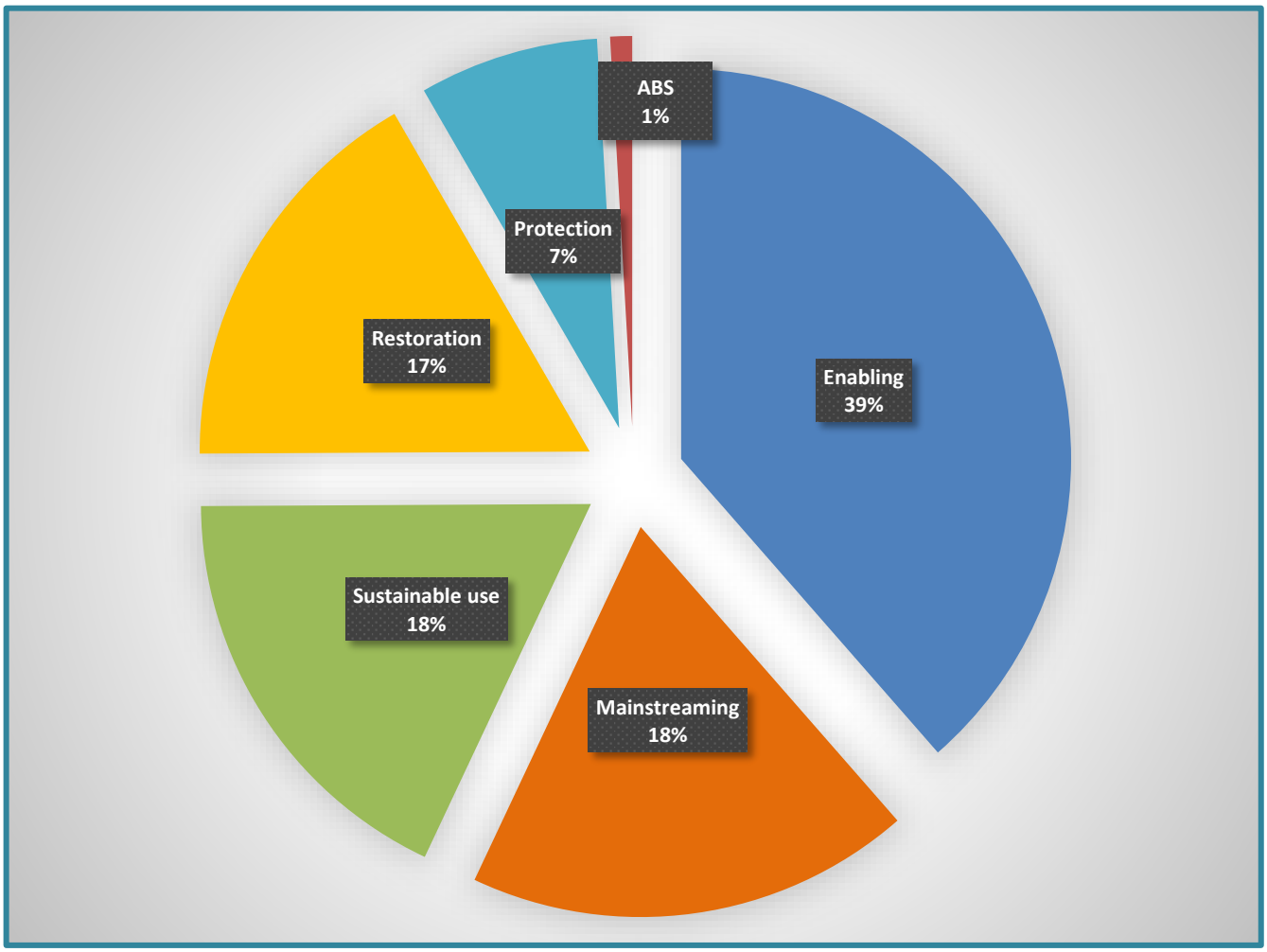


Figure 12: Zambia's Finance Needs based on the Six (6) Aichi Categories

The BIOFIN methodology requires that all expenditure or costs in the BER and the FNA must be tagged to the nine BIOFIN categories. Table 11 provides finance needs based on the BIOFIN categories level 1 and Level 2 respectively. Some of the insights that can be deduced from Figure 12 and Table 11 are that “biodiversity and development planning” has the largest finance needs specifically the spatial planning sub category. This is largely driven by activities 5.4.3 on conducting and implementing integrated land use planning in the targeted landscapes for biodiversity conservation, activity 4.1.2 meant for updating the existing inventory of forests and lower plants in the major conservation landscapes of Zambia and activity 3.1.1 meant for the identification and analyses of potential incentives that encourage biodiversity conservation and its sustainable use.

The second largest BIOFIN category in terms of finance needs is “sustainable use” with “sustainable fisheries” being the highest sub category. Activities that account for the highest finance needs under this category are activities 6.4.3 on imposing a moratorium on fishing of threatened species to allow for natural restocking of the threatened species as well as activity 4.1.1 meant to update the existing inventory of fish species in the major conservation landscapes and river system of Zambia.

3.4 ESTIMATION OF THE FINANCE GAP

The implementation timeframe for the NBSAP-2 is from 2015-2025. However, in the quest to align the costing process with the Vision 2030, it was decided that the costing timeframe will be from 2018-2030. Figure 13 provides a summary of the finance needs per annum based on the costing timeframe of 2018-2030.

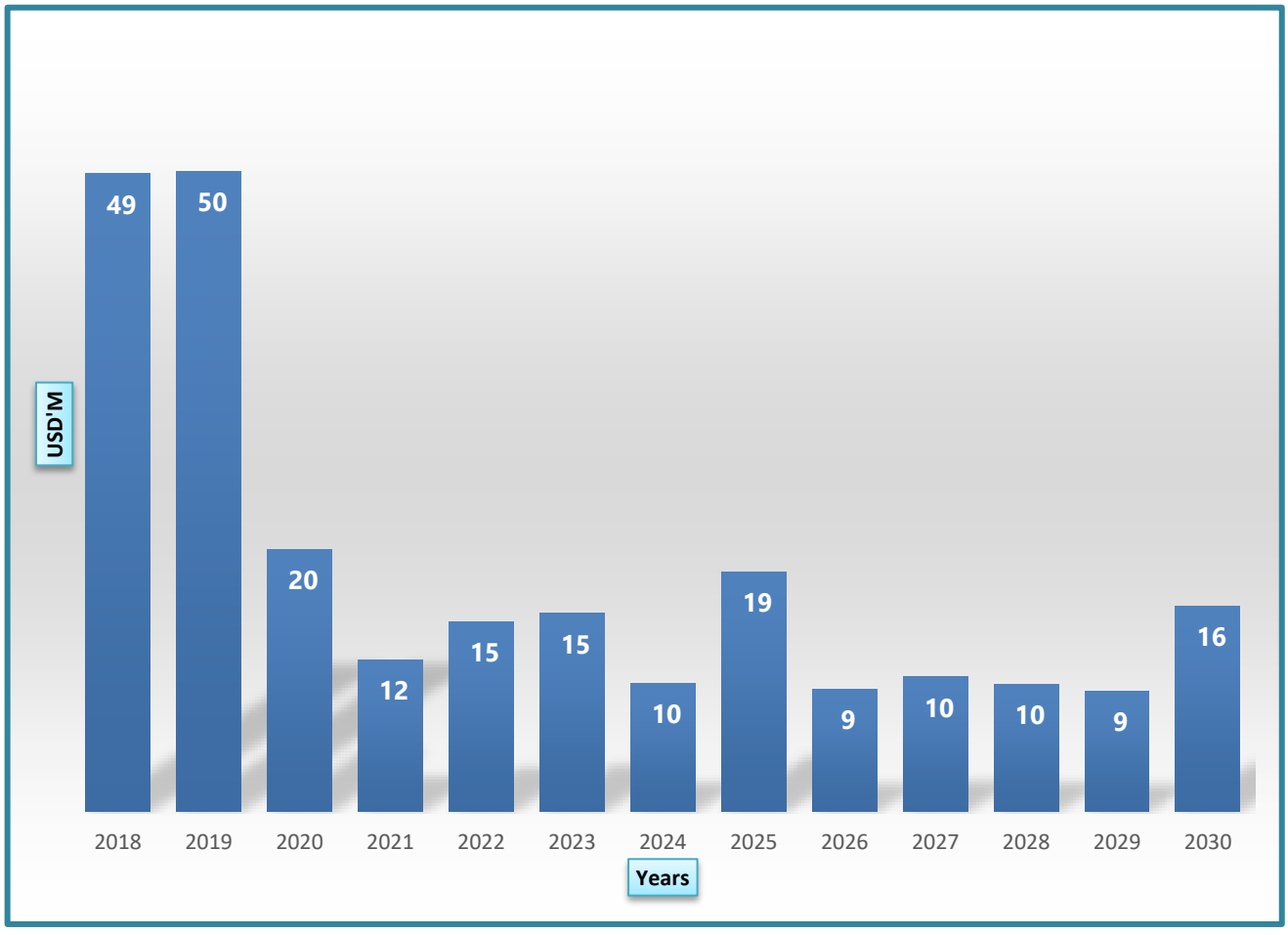


Figure 13: Zambia's Total NBSAP-2 Financial Needs per Annum (USD)

Source: Authors’ computation

Overall, the finance needs are on average 0.2% of the forecast national budgets from 2018 to 2030 which may indicate that there is no finance gap. However, this is confronted by three key issues

3.4.1 Low Biodiversity Budgetary Allocations

Over the period 2006 to 2019, the budget allocation towards Environmental Protection has been very low with an average of 0.6% of the total national budget. While the budgetary allocations towards environmental protection have been on average 1% from 2017 to 2019 and has generally increased from about 0.9% of the total national budget to 1.3% over between 2010 and 2018, allocation has reduced over the last 2 years from 1% of the national budget in 2019 to 0.6% in 2020.

3.4.2 Low Budgetary Releases

Budget releases in Zambia average about 38% of the approved annual budget across key entities responsible for environmental protection, with certain institutions receiving as low as 17% of the approved annual budget. These low budgetary releases negatively affects programme implementation and achievement of targets outlined in the NBSAP-2.

3.4.3 Low financing priority by Government

Donors have financed about 74% of the budgetary allocation towards Environmental Protection while Government has only financed 26%. The dominance of donor funding as the main source of funds for environmental protection and biodiversity conservation poses a huge financing risk in as far as sustainable financing towards environmental protection is concerned given the dwindling Official Development Assistance (ODA).

CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The overall aim of the FNA is to make a comprehensive estimate of the financial resources needed to achieve national and sub national biodiversity targets (UNDP, 2018). Towards the attainment of the aim as highlighted above, this report has presented the total estimated finance needs towards biodiversity conservation for Zambia to be **K 2,420,115,780**. Given that this total figure arrived at using deterministic costing principles, a stochastic simulation was undertaken using Monte Carlo in @risk which indicated that the most likely total finance needs for Zambia's NBSAP-2 is K **2,380,000,000.** This represents an average of **0.2%** of the national budget based on the 13-year forecast derived from past year budget figures. The year 2018 is the only year which recorded a proportion above 1% of finance needs in relation to the projected total national budget. The total finance needs are analysed and presented in various forms based on the NBSAP-2 nomenclature as well as using the various cost tags.

Below is an outline of how each of the FNA objectives were met in this report.

4.2 REVIEW OF THE FNA OBJECTIVES

As was stated earlier, the FNA has 7 core objectives as outlined chapter 1, section 1.2. The sub sections below seek to provide insights on how this output attained each of the seven (7) FNA objectives.

4.2.1 FNA Objective #1-Review and integration of the FNA with national planning process

At the time of writing this report (Aug 2017), it was perhaps too early in the BIOFIN process in Zambia to claim that the FNA has been fully integrated with national planning. However, biodiversity conservation was recently infused into the 7th National Development Plan under Strategy 5(d) as depicted in Annex 6 together with climate change adaptation, disaster risk reduction and mitigation. Given that the implementation plan for the 7th National Development Plan is yet to be costed to deduce the finance needs for its implementation, the FNA results will be useful input when that process commences. The FNA methodology used in Zambia is also likely to be used as a reference point in the costing process for other related sectors. Notably, the lessons from the FNA costing process were recently used in undertaking a finance needs assessment for climate change in Zambia where the BIOFIN Zambia provided technical assistance to the Ministry of Lands and Natural Resources.

4.2.2 FNA Objective #2-Clarification of NBSAP strategies and actions

As was highlighted under section 2.3, the FNA process provided a platform for a detailed review of the NBSAP-2 framework in relation to strategies, activities and institutions earmarked to lead the implementation of the NBSPA-2. Besides some numbering errors identified in the NBSAP-2 as documented in section 2.3, the FNA also provided an opportunity for departments to reflect on the logic of the activities. One notable example was the case of the Ministry of Mines who wrote a letter dated 31st March 2017 explaining why they thought activity 8.2.1 on the transfer of the Environmental fund from the Ministry of Mines to the Ministry of Finance ought to be removed from the NBSAP-2. Another example was the clarification on the lead departments for specific NBSAP-2 activities notably between the Ministry of Water Development, Sanitation and Environmental Protection as well as the Ministry of Lands and Natural Resources. At the time of the development of the NBSAP-2, the Ministry was called "Ministry of Lands, Natural Resources and Environmental Protection". However, at the time of the FNA, the Environment Management Department had been relocated to the Ministry of Water Development, Sanitation and Environmental Protection whilst the Natural Resources Management Unit had remained with the now renamed Ministry of Lands and Natural Resources. The split of activities between these two departments proved to be challenging given the similarity of the functions. Whilst extensive consultations were made on this matter, there is need for further dialogue between the two entities to harmonise the allocation of activities.

In view of the above, the objective of thoroughly reviewing the NBSAP-2 strategies and actions were ably handled in this report.

4.2.3 FNA Objective #3-Derivation of detailed costs for each of the NBSAP-2 activities

The detailed costing for each of the 100 activities was one of the core outputs of the FNA. This objective was thus attained as reflected in Annex 3 and 4.

4.2.4 FNA Objective #4-Making a stronger case for biodiversity

Finance is a critical input and enabler in the biodiversity conservation agenda for any country. Knowing how much resources are needed and the specific activities and timelines for implementation is thus a key milestone in the biodiversity conservation efforts. This report has ably provided some detailed context for biodiversity financing in Zambia which will guide policy makers during planning or budgeting processes and will also provide input in the resource allocation negotiations.

4.2.5 FNA Objective #5-Priorities

Annex 4, column 7, provides proposed timelines for implementation of each of the 100 NBSAP-2 activities. Subject to the fruition of finance solutions that will be developed for each of the activities, it is hoped that the timelines as indicated in Annex 4 will be followed during the implementation process.

4.2.6 FNA Objective #6-Linking FNA to BER

Objective 6 appears to make an assumption that the BER precedes the FNA which is consistent with the BIOFIN methodology. However, in the case of Zambia, the BER is yet to be undertaken hence the link between the two studies can be construed as opaque at the time of writing this report. This link will however become clear once the BER is completed with similar cost tags making it easier to make comparisons. This though will be subject to discussions by the technical committee about the extent to which the NBSAP-2 represents the total finance needs of all biodiversity sectors as that has an impact on the finance gap calculation.

4.2.7 FNA Objective #7-Calculation of the Finance Gap

The BIOFIN methodology indicates that the calculation of the finance gap entails linking the outputs from the FNA and BER with the latter being a projection of the expenditure. Given that the BER is yet to be conducted, the calculation of the finance gap will thus be incorporated in the BER report.

4.3 RECOMMENDATIONS

Below are some recommendations to various stakeholders which are largely drawn from the FNA process as well as lessons learnt from the previous 1999 NBSAP-1 implementation.

4.3.1 Recommendations on the future revision of NBSAP-2

4.3.3.1 Wider consultation among all relevant departments

As was earlier noted, some key institutions were not part of the NBSAP-2 formulation process. To avoid contestation of activities after finalising the strategy, there is need to undertake a thorough stakeholder identification which also promotes goal congruency and ownership of activities during the implementation phase.

4.3.3.2 Incorporation of Private Sector into the Strategy

There is very little private sector leadership in the implementation of any of the 100 NBSAP-2 activities, which is not an ideal scenario knowing that biodiversity conservation ought to be a multi

sectoral undertaking. The only private sector that could be identified in the NBSAP-2 as co-implementers of some activities are Bird Watch Zambia (BWZ) and the Zambia Ornithological Society (ZOS) on the establishment of a population baseline for flagship species including vultures. This lack of prominence of the private sector in the biodiversity conservation roadmap for Zambia can potentially also lead to skewed results in deducing financial needs for biodiversity conservation and pose a challenge in the financing of the strategy. This lack of private sector visibility can be construed as a short-coming of the NBSAP-2 itself and not necessarily a limitation in the costing process.

4.3.2 Recommendations on future NBSAP-2 costing process

4.3.2.1 Activities to match department capacity and resources

Owing to the fact that different departments have varying mandates in relation to biodiversity conservation, it is obvious that some departments may be allocated more activities than others for implementation. However, in the quest for effective performance and accountability as assigned in the NBSAP-2 Logical Monitoring Matrix, there is need to ensure that the number of activities assigned to a specific department ought to be realistic and commensurate to the department's capacity in terms of manpower, time and finances. For example, as was noted in Table 2, chapter 2, the Natural Resources Management Unit was allocated 19 activities yet the Environment Management Department with a related mandate was only allocated 3 activities. Without any adjustments to the resources at the disposal of some of the departments assigned to lead more activities beyond their capacity and resource envelop, this scenario is a recipe for poor performance and accountability against the performance indicators outlined in the NBSAP-2 Logical Monitoring Matrix (pages 50-60).

4.3.2.2 Composition of costing teams

There is need for balanced mix of skills among the costing teams, that is, finance, planning and technical staff as that speeds up the costing process. Some of the teams that had an imbalance in the team composition had more challenges during the costing process such as in the use of excel, conceptualising the cost inputs in relation to the activities, identifying sub activities as well as getting access to unit costs.

Further, owing to some delays in the submission of cost inputs by some departments due to data gaps, it is recommended that departments ought to fully cost the activities in advance before the consolidation workshop. This will accord the costing teams more time in validating the inputs during the cost consolidations workshops. The quality of input was evident in the departments that

adopted this strategy of costing the activities before the cost consolidation workshop as more time was spent in fine tuning the costs during the workshop.

4.3.3 Recommendations on the NBSAP-2 Implementation and Resource mobilization

4.3.3.1 Incorporate the FNA Results into the 7NDP once costed

Given that the Seventh National Development Plan is the overarching development agenda for the country, there is need to ensure that the NBSAP-2 costing is fully integrated into the costings for the 7NDP whose costings are yet to be done. Biodiversity is among the four (4) programmes outlined under strategy 5 of the 7NDP as outlined in Figure 14.

Strategy 5: Climate Change adaptation, Disaster Risk Reduction and Mitigation for reduced Vulnerability

Climate change and disaster impacts have potential to reverse development gains. In order to address this, the government during the five-year period of implementation will focus on implementing adaptation and mitigation programmes that reduce the vulnerability of communities and contribute to stabilization of greenhouse gases in the atmosphere. The Government will also focus on strengthening the national disaster response systems as well as building resilience of communities. As part of the global village Government will ensure that emissions that cause global warming are addressed by engaging in the following programmes:

a) Climate Change Adaptation

b) Climate Mitigation

c) Disaster Risk Reduction

d) Biodiversity Conservation

Figure 14: Extract of strategy 5 from Zambia's 7th National Development Plan

Source: (GRZ, 2017)

It is however recommended that the heading for strategy 5 ought to incorporate "biodiversity" as the current heading in the 7NDP for strategy 5 as depicted above is solely on climate change with biodiversity appearing as a sub set of climate change.

4.3.3.2 Commitment to resource mobilisation

Whilst the BIOFIN process is intended to ultimately develop a Biodiversity Finance Plan for Zambia which is the fourth output of the BIOFIN initiative, there is need for stakeholders to ensure

continued commitment towards resource mobilisation for the implementation of activities outlined in this report. Admittedly so, the first NBSAP-1 lacked a clear resource mobilisation plan which led to ad hoc implementation of activities (GRZ 2015:29). Whilst it is expected that financing the NBSAP-2 will go beyond budget support, Officers across various departments must strive to ensure that some of the activities outlined in the NBSAP-2 are included in the annual budgets.

Further, there is need for continued commitment by relevant organs of the public and private sector to provide the necessary factors towards bankable biodiversity investments such as appropriate incentives and de-risking instruments.

4. 3.3.3 Improvement in coordination among implementing entities

The implementation process for the NBSAP-1 faced challenges of ineffective coordination among implementing entities (GRZ ,2015:29). This calls for continued coordination among implementing departments earmarked to lead the various activities as outlined in the NBSAP-2. It must be noted that whilst specific entities were earmarked to lead specific activities, there is need for such institutions to co-opt other entities that are jointly tagged the responsibility for implementation of various indicators as outlined in the Logical Monitoring Matrix.

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ANNEXURES

Annex 1: List of Participants during the NBSAP-2 Costing Workshop, Siavonga

S/I	Name	Name of Organisation	Designation	Gender
1	Trevor Kaunda	Ministry of Lands and Natural Resources	Permanent Secretary	Male
2	Ephraim Shitima	Ministry of Lands and Natural Resources	Chief Natural Resource Management Officer	Male
3	Allan Dauchi	Ministry of Lands and Natural Resources	Principal Natural Resource Management Officer	Male
4	Shirley M.Mapara	Ministry of Lands and Natural Resources	Senior Natural Resource Management Officer	Female
5	Mayando Chilembo	Ministry of Water Development, Sanitation and Environmental Protection	Environmental Management Officer	Female
6	Brenda Daura	Ministry of Lands and Natural Resources	Planner	Female
7	Julius Mwansa	Department of Forestry	District Forestry Officer	Male
8	Victoria Banda	Department of Forestry	Forestry Technician	Female
9	Victor Chiiba	Department of Forestry	Principal Forestry Officer for Southern Province	Male
10	Jones Masonde	Department of National Parks and Wildlife	Principal Ecologist	Male
11	Chisha Moseni	Department of National Parks and Wildlife	Planner	Female
12	Mpande Sibbuku	Department of National Parks and Wildlife	Senior Accountant	Male
13	Muyumbwa Ndiyoi	National Heritage Commission	Chief Natural Heritage Officer	Male
14	Mweemba Chijoka	Ministry of Fisheries and Livestock	Statistician	Male
15	Cosmore Mwaanga	Ministry of Fisheries and Livestock	Chief Policy Analyst	Male
16	Mbamwai Mbewe	Ministry of Fisheries and Livestock	Chief Fisheries Research Officer	Male
17	Vincent Simoongwe	Department of Livestock	Chief Livestock Production Officer	Male
18	Rodwell Chandipo	Zambia Environmental Management Agency	Principal Inspector	Male

S/I	Name	Name of Organisation	Designation	Gender
19	Kambili Chilufya	Zambia Environmental Management Agency	Senior Inspector	Male
20	Levy Museteka	Water Resources Management Authority (WARMA)	Senior Hydrogeologist	Male
21	David T. Banda	Water Resources Management Authority (WARMA)	Environmental and Water Quality Officer	Male
22	Graybill Munkombwe	Zambia Agriculture Research Institute	Senior Agricultural Research Officer and Head of Gene bank	Male
23	Joy Sinyangwe	Ministry of Agriculture	Principal Agricultural Specialist	Male
24	Meembo Changula	Ministry of Local Government	Principal Planner	Female
25	Chitalu Kapambwe	Ministry of Information and Broadcasting	News Editor	Female
26	Victor Hachimbi	Ministry of Information and Broadcasting	Assistant Director-Technical Services	Male
27	Ilitongo Kaywala	Ministry of Energy	Energy Officer	Female
28	Kasongo Chiwama	Ministry of Energy	Programmer	Male
29	Jackson K. Kafwanka	Ministry of Mines	Inspector of Mines	Male
30	Chilambwe Mwansa	Ministry of Higher Education	Senior Sciences Technology Officer	Male
31	Mutibo Chijikwa	National Biosafety Authority	Senior Biosafety Officer	Female
32	Vincent K. Likomeno	Zambia Development Agency	Planning Specialist	Male
33	Olive C. Darris	Disaster Management and Mitigation Unit	Regional Coordinator- Muchinga	Female
34	Jacob Mwitwa	Copperbelt University	Consultant PIR	Male
36	Akabiwa Nyambe	Ministry of National Planning	Monitoring and Evaluation Specialist	Male

Annex 2: List of Participants during the FNA Validation Workshop-Fringilla Lodge

S/I	Name	Name of Organisation	Designation	Gender
1	Victor Chiiba	Forestry Department		
2	Frank Nyoni	Water Resources Management Authority		
3	Muyumbwa Ndiyoi	National Heritage Conservation Commission (NHCC)		
4	Jackson K. Kafwanka	Mines Safety Department		
5	Chilombo Chila	Department of Energy		
6	Mwape Sichilongo	World Wide Fund for Nature		
7	Mpande Sibbuku	Department of National Parks and Wildlife Area Management		
8	Matongo Mundia	The Nature Conservancy		
9	Mutibo Chijikwa Mushenywa	National Biosafety Authority		
10	Mirriam Zimba	Bankers Association of Zambia		
11	Getrude Ngenda	INESOR		
12	Ian Habulembe	Fisheries Department		
13	Vincent Simoongwe	Livestock Development Department		
14	Graybill Munkombwe	Zambia Agricultural Research Institute		
15	Kay Mazaba	Zambia Extractive Industries Transparency Initiative		
16	Misheck Banda	Physical Planning and Housing Department		
17	Christeter	Zambia News And Information Services		
18	Rodwell Chadipo	Zambia Environmental Management Agency		

19	Winford Sikapula	Environment Management Department		
20	Mayando K. Cilembo	Environment Management Department		
21	Roselyne Mwila	United Nations Development Programme		
22	Joshua Mabeta	United Nations Development Programme		
23	Bruno Mweemba	United Nations Development Programme		
24	Winnie Musonda	United Nations Development Programme		
25	Mandisa Mashologu	United Nations Development Programme		
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Annex 3: Total Finance Needs for 100 activities per annum (ZMK)

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1.1.1	Develop a Communication, Education and Public Awareness (CEPA) strategy for NBSAP2	**1,501,348**	1,501,348	-	-	-	-	-	-	-	-	-	-	-	-
1.1.2	Conduct public awareness and education campaigns on value of conserving biodiversity and using it sustainably	**200,897,523**	3,231,999	19,025,481	17,362,359	19,886,891	15,177,421	17,391,829	15,442,291	17,692,718	15,707,162	17,990,859	15,994,256	15,994,256	-
1.1.3	Conduct surveys to assess change in behaviour among sensitized stakeholders using the Biodiversity Barometer Tool	**1,406,073**	101,955	-	346,725	-	-	109,045	-	362,334	-	-	113,919	-	372,094
2.1.1	Conduct an analysis of existing methods for natural resources valuation most compatible with the key biodiversity components being addressed by the NBSAP	**545,072**	257,432	-	-	-	-	-	-	-	-	-	287,641	-	-
2.1.2	Conduct a biodiversity components valuation.	**444,282**	353,651	-	-	-	-	-	-	-	-	-	90,631	-	-
2.2.1	Conduct a biodiversity	**7,900**	2,479	-	-	-	-	2,651	-	-	-	-	2,770	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	conservation screening of the SeNDP.														
2.2.2	Mainstreaming of the identified biodiversity conservation actions in the sector, provincial and district SeNDP programmes and budgets based on the screening results.	**579,032**	181,692	-	-	-	-	194,326	-	-	-	-	203,013	-	-
3.1.1	Identify and analyze potential incentives that encourage biodiversity conservation and its sustainable use	**76,302,320**	14,936,098	12,656,488	12,960,794	13,087,969	13,198,895	13,313,943	13,429,113	13,544,283	13,659,453	13,774,624	13,909,439	13,913,896	13,917,325
3.2.1	Identify and analyze the most harmful subsidies to biodiversity conservation and its sustainable use	**179,702**	179,702	-	-	-	-	-	-	-	-	-	-	-	-
4.1.1	Update the existing inventory of fish species in the major conservation landscapes and river system of Zambia	**56,854,899**	21,099,928	8,240,244	2,248,938	2,306,749	2,290,232	2,310,216	2,858,142	2,915,139	2,370,168	2,390,152	2,413,490	2,979,158	2,432,345
4.1.2	Update the existing inventory of forests and lower plants in the major conservation	**185,668,464**	145,319,908	-	-	-	-	40,052,024	-	296,532	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	landscapes of Zambia														
4.1.3	Update the existing inventory of wildlife in the major conservation landscapes of Zambia	**60,100,026**	17,351,486	9,674,606	-	10,919,395	1,447,380	342,799	1,942,454	2,703,106	-	11,200,333	4,160,344	358,123	-
4.2.1	Conduct additional studies under ILUA II to include lower plants and herbaceous flowering plants to determine the conservation status of individual tree and lower plant species at national level	**33,384,861**	18,489,504	29,739	60,535	62,091	61,670	13,800,910	62,722	63,260	63,798	64,336	496,367	64,964	64,964
4.3.1	Establish a Clearing House Mechanism (CHM) for information exchange and knowledge management on biodiversity.	**475,734**	314,759	-	160,975	-	-	-	-	-	-	-	-	-	-
5.1.1	Conduct a farming systems diagnosis in the areas surrounding the PA systems in the selected landscapes for biodiversity conservation.	**34,904,625**	2,225,918	-	-	-	32,678,706	-	-	-	-	-	-	-	-
5.1.2	Develop and promote farming systems compatible	**4,727,736**	2,175,402	354,132	361,783	1,589,758	246,660	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	with sustainable agricultural practices in the selected landscapes.														
5.2.1	Conduct an assessment of alternative energy sources in areas surrounding the selected landscapes for biodiversity conservation.	**2,832,924**	1,812,859	1,020,065	-	-	-	-	-	-	-	-	-	-	-
5.2.2	Develop and promote area specific compatible alternative energy sources.	**9,430,490**	-	390,864	2,786,284	1,696,325	1,126,281	1,126,860	1,147,365	1,156,511	-	-	-	-	-
5.3.1	Engage independent consultants to undertake EIAs and SEAs.	**103,539,656**	13,120,552	7,944,234	13,207,949	6,773,737	6,725,233	6,783,916	6,842,599	6,901,282	6,959,965	7,018,648	7,087,179	7,087,179	7,087,179
5.4.1	Develop/improve on existing guidelines for integrated land use planning with a biodiversity conservation lens.	**4,491,548**	4,490,924	624	-	-	-	-	-	-	-	-	-	-	-
5.4.2	Build capacity of key sector actors in the use of the guidelines for integrated land use planning.	**29,158,020**	6,660	29,151,361	-	-	-	-	-	-	-	-	-	-	-
5.4.3	Conduct and implement integrated land use planning in the	**319,934,392**	46,727,368	50,676,184	52,625,781	39,086	38,806	39,145	39,483	83,666,203	40,161	40,499	40,895	40,895	85,919,886

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	targeted landscapes for biodiversity conservation.														
6.1.1	Conduct an assessment of the institutional landscape for joint management of the key fisheries areas in Zambia.	**34,810,471**	9,919,449	1,852,507	1,592,116	-	-	1,433,489	4,984,643	2,393,855	2,548,958	1,126,861	1,708,609	4,403,511	2,846,473
6.1.2	Develop appropriate fisheries enterprises by communities	**7,430,454**	2,552,043	2,942,950	1,935,461	-	-	-	-	-	-	-	-	-	-
6.1.3	Develop and implement appropriate fishery specific compatible models for co-management.	**41,745,961**	27,692,626	552,432	562,241	576,694	572,565	577,561	4,041,489	587,553	592,549	597,545	603,380	4,185,947	603,380
6.2.1	Conduct a capacity needs assessment of key stakeholders for biodiversity monitoring based on the impact of their sectors on fisheries conservation.	**10,905,414**	5,381,517	5,523,897	-	-	-	-	-	-	-	-	-	-	-
6.2.2	Develop sector specific guidelines for fisheries biodiversity conservation monitoring.	**1,172,498**	1,172,498	-	-	-	-	-	-	-	-	-	-	-	-
6.2.3	Train sector actors on the use of the guidelines	**1,378,312**	1,378,312	-	-	-	-	-	-	-	-	-	-	-	-
6.2.4	Develop and implement sector specific fisheries	**10,099,189**	-	-	10,099,189	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	biodiversity monitoring implementation plans.														
6.3.1	Assess the most equitable and effective BDS in fisheries co-management based on the major fisheries in the country.	**791,791**	791,791	-	-	-	-	-	-	-	-	-	-	-	-
6.3.2	Implement the most practical and equitable BDS for fisheries co-management in all the major fisheries.	**6,199,969**	-	3,072,705	3,127,264	-	-	-	-	-	-	-	-	-	-
6.4.1	Conduct a fish biodiversity assessment of the targeted fisheries.	**4,186,575**	4,186,575	-	-	-	-	-	-	-	-	-	-	-	-
6.4.2	Identify the breeding grounds of the fishery and declare them as protected.	**18,492,714**	16,479,799	791,751	-	298,384	-	-	301,417	-	-	309,172	-	312,191	-
6.4.3	Impose a moratorium on fishing of threatened species to allow for natural restocking of the threatened species.	**77,803,105**	5,902,549	5,866,405	5,970,569	5,846,792	5,976,971	5,890,288	5,906,231	6,027,503	6,114,366	6,058,189	6,081,081	6,081,081	6,081,081
7.1.1	Use existing mapping of appropriate areas and reconcile it with the fisheries areas most vulnerable to	**2,063,074**	2,063,074	-	-	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	erosion extinction of indigenous fish species.														
7.2.1	Promote aquaculture based on the mapping and reconciliation	**33,981,472**	12,439,975	2,053,760	1,973,115	2,006,924	2,009,344	2,009,940	2,044,411	2,044,713	2,671,171	2,079,486	2,117,486	256,726	274,422
7.3.1	Undertake vulnerability and adaptation assessment on prioritized ecosystems in Zambia.	**47,778,799**	20,810,101	1,224,375	1,195,123	1,278,148	5,453,274	4,312,457	1,211,890	5,215,520	1,733,137	3,952,760	54,723	311,237	1,026,055
7.4.1	Conduct an assessment of the value of forests and institutional arrangements (including traditional structures) for natural resources management in open areas, protected forest areas and concession forest areas.	**21,622,327**	20,162,628	747,270	158,643	204,845	192,370	156,571	-	-	-	-	-	-	-
7.5.1	Based on the assessment results develop and promote area specific legally binding co management models implementation.	**9,111,857**	9,111,857	-	-	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
7.5.2	Develop and implement fire management plans	**48,230,406**	25,577,194	1,754,121	1,785,267	1,831,159	1,818,047	1,833,911	1,849,775	2,254,383	1,881,503	1,897,367	1,915,893	1,915,893	1,915,893
7.5.3	Conduct monitoring incidences of wildfires	**1,366,082**	110,998	97,378	99,107	101,685	100,927	115,690	99,636	103,569	101,345	105,330	106,358	120,862	103,197
7.6.1	Promote Public-Private- Community Partnerships (PPCPs) in the management of protected areas	**38,603,574**	1,230,209	3,100,804	3,155,862	3,247,399	3,213,808	3,241,851	3,269,894	3,297,937	3,325,980	3,364,704	3,386,772	3,386,772	1,381,581
7.7.1	Conduct an assessment/update of corridors in adjoining protected areas.	**12,216,480**	998,479	1,232,885	188,858	207,930	9,433,113	-	-	77,120	-	-	78,095	-	-
7.7.2	Develop and implement management plans for the protection of the corridors.	**19,620,826**	1,065,044	2,825,490	1,206,436	1,851,286	1,228,588	1,239,308	1,870,106	1,260,749	1,271,470	1,918,221	1,294,709	1,294,709	1,294,709
7.8.1	Conduct a status assessment of the GMAs.	**1,003,060**	-	1,003,060	-	-	-	-	-	-	-	-	-	-	-
7.8.2	Identify and map critical wildlife refuges in the GMA.	**5,489,220**	-	-	4,432,088	524,267	532,864	-	-	-	-	-	-	-	-
7.8.3	Based on the results of 1 and 2 above, rezone GMAs and provide maximum protection for the identified wildlife refugias.	**2,084,112**	-	1,541,362	-	542,750	-	-	-	-	-	-	-	-	-
8.1.1	Conduct an analytical assessment of the effectiveness of the	**5,075,684**	362,947	371,296	377,889	387,603	384,827	388,185	391,543	394,901	398,259	401,617	405,539	405,539	405,539

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	existing provisions for pollution control from a biodiversity conservation perspective														
8.1.2	Revise the EIA regulations to reflect strict enforcement of the pollution control from the biodiversity conservation perspective	**546,580**	-	546,580	-	-	-	-	-	-	-	-	-	-	-
8.2.1	Review and formulation of mining legislation with a view of safeguarding biodiversity	**3,363,978**	346,917	3,017,061	-	-	-	-	-	-	-	-	-	-	-
8.2.2	Undertake Scoping surveys on mining, exploration and explosives activities in the country to assess the extent of environmental damage caused and associated effect on biodiversity	**5,476,327**	-	5,476,327	-	-	-	-	-	-	-	-	-	-	-
8.2.3	Formulate approaches and methodologies of rehabilitation activities in mining and mineral processing industry to cover biodiversity restoration amd sustenance	**4,036,224**	-	-	-	-	-	2,039,361	541,500	238,337	240,364	242,391	244,757	244,757	244,757

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
8.2.4	Formulate effective mine closure guidelines with key consideration on biodiversity conservation and restoration.	**3,173,466**	-	-	-	-	-	-	227,793	1,874,274	460,418	151,635	153,116	153,116	153,116
9.1.1	Update existing mapping of types and spread of invasive species in the country.	**14,985,472**	2,161,387	-	2,050,299	-	2,087,946	-	2,124,384	-	2,160,822	-	2,200,317	-	2,200,317
9.1.2	Develop and implement an updated programme for the control of invasive plant species.	**35,490,502**	3,484,235	2,334,344	2,755,860	2,436,865	2,806,462	2,440,527	2,855,439	2,482,750	2,904,416	2,524,972	2,957,503	2,549,627	2,957,503
9.1.3	Develop and implement an updated programme for the control of invasive fish species.	**18,141,231**	3,946,439	1,455,393	729,778	742,993	743,178	764,935	1,876,449	758,254	769,117	1,574,244	1,595,417	1,589,615	1,595,417
10.1.1	Conduct/update the identification of all major ecosystems/habitats in each defined bio-geographical region of the country based on the vegetation classes of Edmonds (1976).	**4,752,532**	4,683,502	-	34,051	-	-	34,979	-	-	-	-	-	-	-
10.1.2	Conduct an assessment of representativeness of the identified	**11,520,072**	-	-	8,205,774	405,196	402,295	405,805	-	412,826	416,336	-	423,946	423,946	423,946

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	ecosystems/ habitats in the existing protected areas (emphasis on National Parks and Forest Reserves).														
10.1.3	Identify major ecosystems either not represented or poorly represented in the existing protected areas.	**603,998**	-	-	603,998	-	-	-	-	-	-	-	-	-	-
10.1.4	Map the distribution of unrepresented and poorly represented ecosystems/habitats to guide the reclassification of the protected areas.	**1,849,064**	-	-	-	1,849,064	-	-	-	-	-	-	-	-	-
11.1.1	Update the threats to the current Kafue Lechwe population.	**12,461,723**	1,217,894	5,275,344	337,864	1,281,535	103,662	-	1,253,081	171,106	-	1,347,653	175,715	1,297,870	-
11.1.2	Develop implementation strategy for the protection of the Kafue Lechwe to increase its population based on the identified threats.	**35,581,833**	4,188,618	1,892,493	5,387,820	5,415,069	5,376,294	2,245,821	-	2,012,486	2,304,103	-	2,066,696	2,346,217	2,346,217
11.2.1	Update the threats to the current Rhino population	**1,918,605**	211,611	125,144	174,225	174,181	177,345	130,837	-	181,987	183,535	-	170,155	170,155	219,429
11.2.2	Develop implementation strategy for the protection of the	**357,289**	357,289	-	-	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	Rhino to increase its population.														
11.3.1	Update the population baselines for the Shoebill and Wattled crane	**1,412,477**	-	-	245,749	-	219,912	-	223,750	-	227,588	-	263,730	-	231,748
11.3.2	Update the threats to the Shoebill and Wattled crane	**4,656**	-	4,656	-	-	-	-	-	-	-	-	-	-	-
11.3.3	Develop and implement strategies for the protection of the two-species based on the analysis of identified threats	**27,895**	-	-	27,895	-	-	-	-	-	-	-	-	-	-
11.4.1	Conduct inventories for mopane and teak forests	**23,413,529**	20,157,437	837,484	210,521	215,933	214,387	216,257	218,128	219,999	221,869	223,740	225,925	225,925	225,925
11.4.2	Develop and implement management plans for mopane and teak forests.	**10,831,787**	10,758,766	73,021	-	-	-	-	-	-	-	-	-	-	-
11.4.3	Promote assisted natural regeneration (ANR) in the mopane and teak forests.	**82,099,798**	82,099,798	-	-	-	-	-	-	-	-	-	-	-	-
11.5.1	Conduct participatory resource inventory on Devil's claw to determine its abundance, distribution and availability	**5,845,942**	5,845,942	-	-	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
11.5.2	Facilitate formal declaration of Devil's claw as a "protected species of national importance".	**683,292**	683,292	-	-	-	-	-	-	-	-	-	-	-	-
11.5.3	Build local community capacities in sustainable harvest methods and marketing techniques.	**21,195,677**	21,195,677	-	-	-	-	-	-	-	-	-	-	-	-
11.5.4	Facilitate local communities' participation in restoration planting of Devil's claw in depleted areas.	**1,474,950**	1,474,950	-	-	-	-	-	-	-	-	-	-	-	-
12.1.1	Mainstream and upscale the Micro propagation studies into the National Agricultural Research Systems (NARS)	**1,476,020**	-	160,184	241,471	222,321	257,410	211,595	118,060	107,447	72,744	84,787	-	-	-
12.1.2	Promote the use of land races especially among the most vulnerable small-scale farmers (e.g. as part of the package for the Food Security Pack subsidy for the most vulnerable farmers)	**1,390,510**	-	293,205	298,412	339,199	228,848	230,845	-	-	-	-	-	-	-
12.2.1	Mobilize resources for the collection characterization	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	accessions of key crop genetic resources[2]														
12.3.1	Mobilize resources for the collection, maintenance of indigenous livestock genetic resources	**190,738,002**	21,632,747	14,091,470	13,878,845	14,356,500	14,235,116	14,271,168	14,244,427	14,507,475	15,102,310	13,400,382	13,527,961	13,498,590	13,991,012
12.4.1	Mainstream the ongoing domestication initiative into the National Agricultural Research System (NARS).	**663,947**	-	134,600	-	-	529,347	-	-	-	-	-	-	-	-
12.4.2	National laws and regulations for access and benefit sharing of PGNFAGR	**472,632**	472,632	-	-	-	-	-	-	-	-	-	-	-	-
12.4.3	Enhance institutional capacity to implement and enforce the national biosafety framework.	**17,472,012**	1,942,839	3,155,373	2,737,719	2,594,792	2,576,212	543,156	547,855	552,553	557,252	561,950	567,437	567,437	567,437
13.1.1	Assess the scope of key elements necessary for a generic national benefit sharing framework.	**135,834**	135,834	-	-	-	-	-	-	-	-	-	-	-	-

[2] Activity was not found to be logical by ZARI who were earmarked to cost this activity.

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
13.1.2	Develop a generic national benefit sharing framework based on the assessment results above.	**512,449**	512,449	-	-	-	-	-	-	-	-	-	-	-	-
13.2.1	Develop sectoral BDSs for forestry, fisheries, wildlife, water, agriculture, mining and infrastructure development	**1,340,628**	417,489	194,368	49,995	-	-	-	-	-	-	-	466,481	212,294	-
13.3.1	Legislate sectoral BDSs.	**907,311**	349,238	181,357	184,578	-	-	-	-	-	-	-	192,138	-	-
14.1.1	Lobby GRZ to sign the Nagoya Protocol.[3]	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-
14.2.1	Integrate benefit sharing mechanisms of genetic resources in practices at all levels	**18,358,462**	1,818,387	8,197,262	8,342,813	-	-	-	-	-	-	-	-	-	-
15.1.1	Assess on-going activities in the three river headwaters and identify activities that are detrimental to biodiversity conservation.	**6,180,327**	5,809,713	29,199	29,717	30,481	30,263	30,527	30,791	31,055	31,319	31,583	31,892	31,892	31,892

[3] Activity had already been achieved by the time of undertaking the costing process.

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
15.1.2	Implement deliberate actions to stop activities negatively impacting on biodiversity conservation in the three headwaters through legislation.	**122,367,988**	65,083,872	10,090,761	7,935,069	7,946,189	7,959,343	7,958,130	2,181,048	2,127,866	2,218,458	2,164,053	2,259,007	2,185,183	2,259,007
15.2.1	Disseminate the legislation among the public and other key stakeholders using the CEPA Strategy.	**10,913,354**	859,110	792,130	806,195	826,920	820,998	828,162	835,326	842,490	849,654	856,818	865,184	865,184	865,184
16.1.1	Engage with the Zambia Parliamentary Conservation Caucus for speed ratification of the Bill.	**1,821,025**	1,821,025	-	-	-	-	-	-	-	-	-	-	-	-
16.2.1	Promote the documentation of indigenous Knowledge systems on biodiversity conservation.	**31,358,746**	7,307,033	747,358	460,882	472,729	469,344	117,470	1,479,640	4,687,206	3,772,958	5,137,967	2,235,387	2,235,387	2,235,387
16.2.2	Mainstream proven indigenous systems for biodiversity conservation into area specific plans for biodiversity conservation.	**3,490,494**	1,201,705	-	-	-	-	1,119,375	-	-	-	-	1,169,414	-	-
17.1.1	Conduct a research needs assessment on biodiversity conservation	**494,307**	155,107	-	-	-	-	165,892	-	-	-	-	173,308	-	-

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	involving multiple stakeholders														
17.1.2	Using the results from the research needs assessment, develop a research plan	**43,427**	13,627	-	-	-	-	14,574	-	-	-	-	15,226	-	-
17.2.1	Promote platforms for the discussion of scientific biodiversity information exchange and using existing structures such as the Community Based Natural Resources Management Forum and the Natural Resources Consultative Forum.	**3,126,787**	223,704	228,850	232,913	238,900	237,014	239,083	241,151	243,219	245,287	247,355	249,770	249,770	249,770
17.3.1	Develop a knowledge and skills assessment needs for biodiversity conservation in key sectors charged with the management of biodiversity (especially, FD, ZAWA, Environment Department, ZOS, ZEMA, WECSZ, etc.).	**494,307**	155,107	-	-	-	-	165,892	-	-	-	-	173,308	-	-
17.3.2	Conduct capacity building activities	**12,042,539**	2,071,977	-	1,309,311	-	1,333,352	871,154	1,356,622	-	1,379,891	-	2,315,119	-	1,405,112

NBSAP-2 Activity Code	NBSAP-2 Activity name	Total Finance Needs (ZMK)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
	based on the needs assessment results														
18.1.1	Use the approved NBSAP to do the costing of the proposed strategic interventions.[4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.1.2	Develop and implement a resource mobilization strategy for the NBSAP2 from both domestic and external sources as well as private and other innovative funding sources.	**2,435,717**	794,903	813,188	827,626	-	-	-	-	-	-	-	-	-	-
	Total	**2,420,115,780**	**48,863,538**	**235,865,624**	**198,080,733**	**114,816,738**	**144,716,713**	**151,712,461**	**98,090,650**	**184,410,502**	**93,557,886**	**102,840,234**	**97,271,498**	**91,959,904**	**157,929,299**

[4] This was undertaken using BIOFIN resources under this output (FNA) in 2016 hence it falls outside the time scope (2018-2030) for this report.

Annex 4: Summary of finance needs based on NBSAP-2 Strategies, Activities and cost tags

NBSAP-2 Activity Code	NBSAP-2 Activity name	NBSAP-2 Strategic Goal	NBSAP-2 Strategic Intervention Code	Lead Ministry Code	Lead Department or Institution	Activity Priority	Sector	Aichi Target	SDG #	BIOFIN Category Level 1	BIOFIN Category Level 2	Total Costs ZMK
1.1.1	Develop a Communication, Education and Public Awareness (CEPA) strategy for NBSAP2	Goal A	1.1	Ministry of Information and Broadcasting Services	Zambia News and Information Services	Immediate	Media	Target 1	SDG 4	Biodiversity Awareness and Knowledge	Biodiversity awareness (e.g. public awareness campaigns, park visitor education etc.)	**1,501,348**
1.1.2	Conduct public awareness and education campaigns on value of conserving biodiversity and using it sustainably	Goal A	1.1	Ministry of Information and Broadcasting Services	Zambia News and Information Services	Medium term	Media	Target 2	SDG 5	Biodiversity Awareness and Knowledge	Biodiversity awareness (e.g. public awareness campaigns, park visitor education etc.)	**200,897,523**
1.1.3	Conduct surveys to assess change in behaviour among sensitized stakeholders using the Biodiversity Barometer Tool	Goal A	1.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Short term	Multi-sectoral	Target 1	SDG 11	Biodiversity Awareness and Knowledge	Biodiversity communication	**1,406,073**
2.1.1	Conduct an analysis of existing methods for natural resources valuation most compatible with the key biodiversity components being addressed by the NBSAP	Goal A	2.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Immediate	Multi-sectoral	Target 14	SDG 11	Biodiversity and development planning	Biodiversity coordination and management	**545,072**
2.1.2	Conduct a biodiversity components valuation.	Goal A	2.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Immediate	Multi-sectoral	Target 2	SDG 11	Biodiversity and development planning	Biodiversity finance	**444,282**
2.2.1	Conduct a biodiversity conservation screening of the SeNDP.	Goal A	2.2	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Immediate	Multi-sectoral	Target 14	SDG 11	Biodiversity and development planning	Biodiversity coordination and management	**7,900**
2.2.2	Mainstreaming of the identified biodiversity conservation actions in the sector, provincial and district SeNDP programmes and budgets based on the screening results.	Goal A	2.2	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 4	SDG 12	Biodiversity and development planning	Biodiversity coordination and management	**579,032**

NBSAP-2 Activity Code	NBSAP-2 Activity name	NBSAP-2 Strategic Goal	NBSAP-2 Strategic Intervention Code	Lead Ministry Code	Lead Department or Institution	Activity Priority	Sector	Aichi Target	SDG #	BIOFIN Category Level 1	BIOFIN Category Level 2	Total Costs ZMK
3.1.1	Identify and analyze potential incentives that encourage biodiversity conservation and its sustainable use	Goal A	3.1	Ministry of Commerce, Trade And Industry	Zambia Development Agency	Short term	Multi-sectoral	Target 3	SDG 9	Biodiversity and development planning	Biodiversity finance	**176,302,320**
3.2.1	Identify and analyze the most harmful subsidies to biodiversity conservation and its sustainable use	Goal A	3.2	Ministry of Water Development, Sanitation and Environmental Protection	Environment Management Department	Immediate	Multi-sectoral	Target 4	SDG 11	Biodiversity and development planning	Biodiversity laws, policies, plans	**179,702**
4.1.1	Update the existing inventory of fish species in the major conservation landscapes and river system of Zambia	Goal A	4.1	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**56,854,899**
4.1.2	Update the existing inventory of forests and lower plants in the major conservation landscapes of Zambia	Goal A	4.1	Ministry of Lands and Natural Resources	Forestry Department	Immediate	Forestry and logging	Target 2	SDG 15	Biodiversity and development planning	Data generation and spatial mapping	**185,668,464**
4.1.3	Update the existing inventory of wildlife in the major conservation landscapes of Zambia	Goal A	4.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Immediate	Forestry and logging	Target 4	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**60,100,026**
4.2.1	Conduct additional studies under ILUA II to include lower plants and herbaceous flowering plants to determine the conservation status of individual tree and lower plant species at national level	Goal A	4.2	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 2	SDG 12	Biodiversity and development planning	Valuation of biodiversity and ecosystems	**33,384,861**
4.3.1	Establish a Clearing House Mechanism (CHM) for information exchange and knowledge management on biodiversity.	Goal A	4.3	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Short term	Multi-sectoral	Target 13	SDG 11	Sustainable use	CBD Clearing House Mechanism	**475,734**
5.1.1	Conduct a farming systems diagnosis in the areas surrounding the PA systems in the selected	Goal A	5.1	Ministry of Agriculture	Agriculture Department	Medium term	Forestry and logging	Target 14	SDG 12	Biodiversity and development planning	Valuation of biodiversity and ecosystems	**34,904,625**

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	landscapes for biodiversity conservation.											
5.1.2	Develop and promote farming systems compatible with sustainable agricultural practices in the selected landscapes.	Goal A	5.1	Ministry of Agriculture	Agriculture Department	Medium term	Forestry and logging	Target 4	SDG 12	Biodiversity and development planning	Data generation and spatial mapping	**4,727,736**
5.2.1	Conduct an assessment of alternative energy sources in areas surrounding the selected landscapes for biodiversity conservation.	Goal A	5.2	Ministry of Energy	Department of Energy	Medium term	Forestry and logging	Target 4	SDG 12	Protected areas and other conservation measures	Data generation and spatial mapping	**2,832,924**
5.2.2	Develop and promote area specific compatible alternative energy sources.	Goal A	5.2	Ministry of Energy	Department of Energy	Immediate	Forestry and logging	Target 5	SDG 13	Protected areas and other conservation measures	Loss of valuable habitats, including targeted conservation of species outside PAs	**9,430,490**
5.3.1	Engage independent consultants to undertake EIAs and SEAs.	Goal A	5.3	Ministry of Water Development, Sanitation and Environmental Protection	Zambia Environmental Management Agency	Medium term	Multi-sectoral	Target 5	SDG 12	Sustainable use	Environmental Impact Assessment (EIA)	**103,539,656**
5.4.1	Develop/improve on existing guidelines for integrated land use planning with a biodiversity conservation lens.	Goal A	5.4	Ministry of Local Government	Physical Planning and Housing Department	Immediate	Multi-sectoral	Target 2	SDG 11	Biodiversity and development planning	Spatial planning	**4,491,548**
5.4.2	Build capacity of key sector actors in the use of the guidelines for integrated land use planning.	Goal A	5.4	Ministry of Local Government	Physical Planning and Housing Department	Immediate	Multi-sectoral	Target 2	SDG 11	Biodiversity and development planning	Spatial planning	**29,158,020**
5.4.3	Conduct and implement integrated land use planning in the targeted landscapes for biodiversity conservation.	Goal A	5.4	Ministry of Local Government	Physical Planning and Housing Department	Immediate	Multi-sectoral	Target 2	SDG 11	Biodiversity and development planning	Spatial planning	**319,934,392**

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6.1.1	Conduct an assessment of the institutional landscape for joint management of the key fisheries areas in Zambia.	Goal B	6.1	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**34,810,471**
6.1.2	Develop appropriate fisheries enterprises by communities	Goal B	6.1	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**7,430,454**
6.1.3	Develop and implement appropriate fishery specific compatible models for co-management.	Goal B	6.1	Ministry of Fisheries and Livestock	Fisheries Department	Medium term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**41,745,961**
6.2.1	Conduct a capacity needs assessment of key stakeholders for biodiversity monitoring based on the impact of their sectors on fisheries conservation.	Goal B	6.2	Ministry of Fisheries and Livestock	Fisheries Department	Immediate	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**10,905,414**
6.2.2	Develop sector specific guidelines for fisheries biodiversity conservation monitoring.	Goal B	6.2	Ministry of Fisheries and Livestock	Fisheries Department	Immediate	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**1,172,498**
6.2.3	Train sector actors on the use of the guidelines	Goal B	6.2	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**1,378,312**
6.2.4	Develop and implement sector specific fisheries biodiversity monitoring implementation plans.	Goal B	6.2	Ministry of Fisheries and Livestock	Fisheries Department	Medium term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**10,099,189**
6.3.1	Assess the most equitable and effective BDS in fisheries co-management based on the major fisheries in the country.	Goal B	6.3	Ministry of Fisheries and Livestock	Fisheries Department	Immediate	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**791,791**
6.3.2	Implement the most practical and equitable BDS for fisheries co-management in all the major fisheries.	Goal B	6.3	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**6,199,969**
6.4.1	Conduct a fish biodiversity assessment of the targeted fisheries.	Goal B	6.4	Ministry of Fisheries and Livestock	Fisheries Department	Immediate	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**4,186,575**

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6.4.2	Identify the breeding grounds of the fishery and declare them as protected.	Goal B	6.4	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**18,492,714**
6.4.3	Impose a moratorium on fishing of threatened species to allow for natural restocking of the threatened species.	Goal B	6.4	Ministry of Fisheries and Livestock	Fisheries Department	Short term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**77,803,105**
7.1.1	Use existing mapping of appropriate areas and reconcile it with the fisheries areas most vulnerable to erosion extinction of indigenous fish species.	Goal B	7.1	Ministry of Fisheries and Livestock	Fisheries Department	Immediate	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**2,063,074**
7.2.1	Promote aquaculture based on the mapping and reconciliation	Goal B	7.2	Ministry of Fisheries and Livestock	Fisheries Department	Medium term	Fisheries and aquaculture	Target 7	SDG 14	Sustainable use	Sustainable fisheries	**33,981,472**
7.3.1	Undertake vulnerability and adaptation assessment on prioritized ecosystems in Zambia.	Goal B	7.3	Office Of The Vice President	Disaster Management and Mitigation Unit	Medium term	Multi-sectoral	Target 14	SDG 11	Biodiversity and development planning	Biodiversity coordination and management	**47,778,799**
7.4.1	Conduct an assessment of the value of forests and institutional arrangements (including traditional structures) for natural resources management in open areas, protected forest areas and concession forest areas.	Goal B	7.4	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 2	SDG 12	Biodiversity and development planning	Valuation of biodiversity and ecosystems	**21,622,327**
7.5.1	Based on the assessment results develop and promote area specific legally binding co management models implementation.	Goal B	7.5	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 17	SDG 12	Green economy	Biodiversity laws, policies, plans	**9,111,857**
7.5.2	Develop and implement fire management plans	Goal B	7.5	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Short term	Wildlife	Target 15	SDG 15	Protected areas and other conservation measures	Landscape/seascape conservation, including of valuable ecosystem services	**48,230,406**

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7.5.3	Conduct monitoring incidences of wildfires	Goal B	7.5	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Immediate	Wildlife	Target 15	SDG 15	Protected areas and other conservation measures	Landscape/seascape conservation, including of valuable ecosystem services	**1,366,082**
7.6.1	Promote Public- Private-Community Partnerships (PPCPs) in the management of protected areas	Goal B	7.6	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Short term	Wildlife	Target 1	SDG 12	Green economy	Sustainable tourism	**38,603,574**
7.7.1	Conduct an assessment/update of corridors in adjoining protected areas.	Goal B	7.7	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Medium term	Wildlife	Target 11	SDG 15	Protected areas and other conservation measures	Landscape/seascape conservation, including of valuable ecosystem services	**12,216,480**
7.7.2	Develop and implement management plans for the protection of the corridors.	Goal B	7.7	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 11	SDG 15	Biodiversity and development planning	Biodiversity coordination and management	**19,620,826**
7.8.1	Conduct a status assessment of the GMAs.	Goal B	7.8	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Immediate	Wildlife	Target 14	SDG 15	Biodiversity and development planning	Biodiversity coordination and management	**1,003,060**
7.8.2	Identify and map critical wildlife refuges in the GMA.	Goal B	7.8	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 14	SDG 15	Protected areas and other conservation measures	Protected areas, including indigenous and communities conserved areas	**5,489,220**
7.8.3	Based on the results of 1 and 2 above, rezone GMAs and provide maximum protection for the identified wildlife refugias.	Goal B	7.8	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 14	SDG 15	Biodiversity and development planning	Biodiversity coordination and management	**2,084,112**

NBSAP-2 Activity Code	NBSAP-2 Activity name	NBSAP-2 Strategic Goal	NBSAP-2 Strategic Intervention Code	Lead Ministry Code	Lead Department or Institution	Activity Priority	Sector	Aichi Target	SDG #	BIOFIN Category Level 1	BIOFIN Category Level 2	Total Costs ZMK
8.1.1	Conduct an analytical assessment of the effectiveness of the existing provisions for pollution control from a biodiversity conservation perspective	Goal B	8.1	Ministry of Water Development, Sanitation and Environmental Protection	Zambia Environmental Management Agency	Long term	Water	Target 8	SDG 14	Pollution management	Waste water management	**5,075,684**
8.1.2	Revise the EIA regulations to reflect strict enforcement of the pollution control from the biodiversity conservation perspective	Goal B	8.1	Ministry of Water Development, Sanitation and Environmental Protection	Zambia Environmental Management Agency	Short term	Multi-sectoral	Target 8	SDG 12	Sustainable use	Environmental Impact Assessment (EIA)	**546,580**
8.2.1	Review and formulation of mining legislation with a view of safeguarding biodiversity	Goal B	8.2	Ministry of Mines and Mineral Development	Mines Safety Department	Long term	Wildlife	Target 14	SDG 15	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	**3,363,978**
8.2.2	Undertake Scoping surveys on mining, exploration and explosives activities in the country to assess the extent of environmental damage caused and associated effect on biodiversity	Goal B	8.2	Ministry of Mines and Mineral Development	Mines Safety Department	Short term	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**5,476,327**
8.2.3	Formulate approaches and methodologies of rehabilitation activities in mining and mineral processing industry to cover biodiversity restoration amd sustenance	Goal B	8.2	Ministry of Mines and Mineral Development	Mines Safety Department	Short term	Wildlife	Target 12	SDG 15	Restoration	Site-management	**4,036,224**
8.2.4	Formulate effective mine closure guidelines with key consideration on biodiversity conservation and restoration.	Goal B	8.2	Ministry of Mines And Mineral Development	Mines Safety Department	Immediate	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**3,173,466**
9.1.1	Update existing mapping of types and spread of invasive species in the country.	Goal B	9.1	Ministry of Water Development, Sanitation and	Zambia Environmental Management Agency	Short term	Tourism	Target 9	SDG 15	Restoration	Invasive alien species	**14,985,472**

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				Environmental Protection								
9.1.2	Develop and implement an updated programme for the control of invasive plant species.	Goal B	9.1	Ministry of Water Development, Sanitation and Environmental Protection	Zambia Environmental Management Agency	Long term	Tourism	Target 9	SDG 15	Restoration	Invasive alien species	**35,490,502**
9.1.3	Develop and implement an updated programme for the control of invasive fish species.	Goal B	9.1	Ministry of Fisheries and Livestock	Fisheries Department	Medium term	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**18,141,231**
10.1.1	Conduct/update the identification of all major ecosystems/habitats in each defined bio-geographical region of the country based on the vegetation classes of Edmonds (1976).	Goal C	10.1	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 14	SDG 12	Biodiversity and development planning	Valuation of biodiversity and ecosystems	**4,752,532**
10.1.2	Conduct an assessment of representativeness of the identified ecosystems/ habitats in the existing protected areas (emphasis on National Parks and Forest Reserves).	Goal C	10.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 14	SDG 15	Biodiversity and development planning	Biodiversity coordination and management	**11,520,072**
10.1.3	Identify major ecosystems either not represented or poorly represented in the existing protected areas.	Goal C	10.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 1	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity communication	**603,998**
10.1.4	Map the distribution of unrepresented and poorly represented ecosystems/habitats to guide the reclassification of the protected areas.	Goal C	10.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 14	SDG 15	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	**1,849,064**
11.1.1	Update the threats to the current Kafue Lechwe population.	Goal C	11.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife	Short term	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**12,461,723**

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					Area Management							
11.1.2	Develop implementation strategy for the protection of the Kafue Lechwe to increase its population based on the identified threats.	Goal C	11.1	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Short term	Wildlife	Target 12	SDG 15	Restoration	Site-management	**35,581,833**
11.2.1	Update the threats to the current Rhino population	Goal C	11.2	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Immediate	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**1,918,605**
11.2.2	Develop implementation strategy for the protection of the Rhino to increase its population.	Goal C	11.2	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Medium term	Wildlife	Target 12	SDG 15	Restoration	Site-management	**357,289**
11.3.1	Update the population baselines for the Shoebill and Wattled crane	Goal C	11.3	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Medium term	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**1,412,477**
11.3.2	Update the threats to the Shoebill and Wattled crane	Goal C	11.3	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Medium term	Wildlife	Target 12	SDG 15	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**4,656**
11.3.3	Develop and implement strategies for the protection of the two-species based on the analysis of identified threats	Goal C	11.3	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	Long term	Wildlife	Target 12	SDG 15	Restoration	Site-management	**27,895**
11.4.1	Conduct inventories for mopane and teak forests	Goal C	11.4	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 4	SDG 12	Biodiversity and development planning	Data generation and spatial mapping	**23,413,529**

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11.4.2	Develop and implement management plans for mopane and teak forests.	Goal C	11.4	Ministry of Lands and Natural Resources	Forestry Department	Medium term	Forestry and logging	Target 4	SDG 12	Protected areas and other conservation measures	Data generation and spatial mapping	**10,831,787**
11.4.3	Promote assisted natural regeneration (ANR) in the mopane and teak forests.	Goal C	11.4	Ministry of Lands and Natural Resources	Forestry Department	Immediate	Forestry and logging	Target 5	SDG 13	Protected areas and other conservation measures	Loss of valuable habitats, including targeted conservation of species outside PAs	**82,099,798**
11.5.1	Conduct participatory resource inventory on Devil's claw to determine its abundance, distribution and availability	Goal C	11.5	Ministry of Lands and Natural Resources	Forestry Department	Immediate	Forestry and logging	Target 2	SDG 12	Biodiversity and development planning	Loss of valuable habitats, including targeted conservation of species outside PAs	**5,845,942**
11.5.2	Facilitate formal declaration of Devil's claw as a "protected species of national importance".	Goal C	11.5	Ministry of Lands and Natural Resources	Forestry Department	Immediate	Forestry and logging	Target 5	SDG 12	Access and benefit sharing (ABS)	Loss of valuable habitats, including targeted conservation of species outside PAs	**683,292**
11.5.3	Build local community capacities in sustainable harvest methods and marketing techniques.	Goal C	11.5	Ministry of Lands and Natural Resources	Forestry Department	Short term	Forestry and logging	Target 19	SDG 13	Biodiversity Awareness and Knowledge	Indigenous and local communities' knowledge	**21,195,677**
11.5.4	Facilitate local communities' participation in restoration planting of Devil's claw in depleted areas.	Goal C	11.5	Ministry of Lands and Natural Resources	Forestry Department	Immediate	Forestry and logging	Target 5	SDG 12	Restoration	Indigenous and local communities' knowledge	**1,474,950**
12.1.1	Mainstream and upscale the Micro propagation studies into the National Agricultural Research Systems (NARS)	Goal C	12.1	Ministry of Agriculture	Zambia Agricultural Research Institute	Short term	Agriculture	Target 13	SDG 2	Biodiversity Awareness and Knowledge	Biodiversity scientific research	**1,476,020**
12.1.2	Promote the use of land races especially among the most vulnerable small-scale farmers (e.g. as part of the package for the Food Security Pack subsidy for the most vulnerable farmers)	Goal C	12.1	Ministry of Agriculture	Zambia Agricultural Research Institute	Medium term	Agriculture	Target 13	SDG 2	Protected areas and other conservation measures	Ex-situ conservation of species (botanical gardens and gene banks)	**1,390,510**

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12.2.1	Mobilize resources for the collection characterization accessions of key crop genetic resources	Goal C	12.2	Ministry of Agriculture	Zambia Agricultural Research Institute	Short term	Agriculture	Target 13	SDG 2	Protected areas and other conservation measures	Ex-situ conservation of species (botanical gardens and gene banks)	-
12.3.1	Mobilize resources for the collection, maintenance of indigenous livestock genetic resources	Goal C	12.3	Ministry of Fisheries and Livestock	Livestock Development Department	Medium term	Livestock	Target 12	SDG 15	Restoration	Reintroduction of species	190,738,002
12.4.1	Mainstream the ongoing domestication initiative into the National Agricultural Research System (NARS).	Goal C	12.4	Ministry of Agriculture	Zambia Agricultural Research Institute	Medium term	Agriculture	Target 13	SDG 2	Biodiversity Awareness and Knowledge	Biodiversity scientific research	663,947
12.4.2	National laws and regulations for access and benefit sharing of PGNFAGR	Goal C	12.4	Ministry of Agriculture	Zambia Agricultural Research Institute	Short term	Agriculture	Target 16	SDG 2	Biodiversity and development planning	Biodiversity laws, policies, plans	472,632
12.4.3	Enhance institutional capacity to implement and enforce the national biosafety framework.	Goal C	12.4	Ministry of Higher Education	National Biosafety Authority	Long term	Science and technology	Target 13	SDG 9	Biosafety	Genetically modified organisms (GMOs), including Living modified organisms (LMOs)	17,472,012
13.1.1	Assess the scope of key elements necessary for a generic national benefit sharing framework.	Goal D	13.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Short term	Multi-sectoral	Target 16	SDG 11	Access and benefit sharing (ABS)	Valuation of biodiversity and ecosystems	135,834
13.1.2	Develop a generic national benefit sharing framework based on the assessment results above.	Goal D	13.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Medium term	Multi-sectoral	Target 16	SDG 11	Access and benefit sharing (ABS)	Valuation of biodiversity and ecosystems	512,449
13.2.1	Develop sectoral BDSs for forestry, fisheries, wildlife, water, agriculture, mining and infrastructure development	Goal D	13.2	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Medium term	Multi-sectoral	Target 16	SDG 11	Access and benefit sharing (ABS)	Valuation of biodiversity and ecosystems	1,340,628
13.3.1	Legislate sectoral BDSs.	Goal D	13.3	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 3	SDG 11	Access and benefit sharing (ABS)	Valuation of biodiversity and ecosystems	907,311

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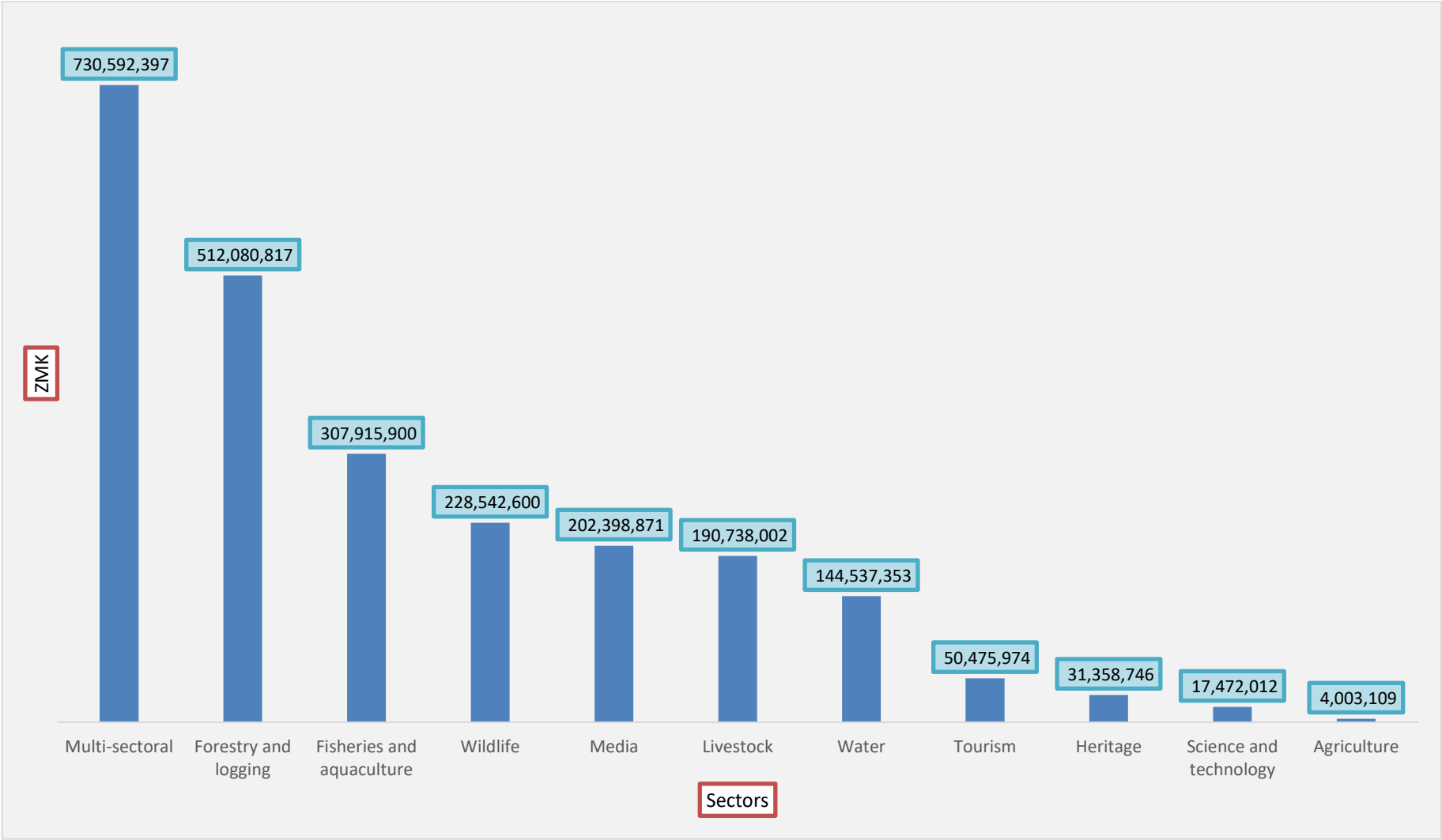
14.1.1	Lobby GRZ to sign the Nagoya Protocol.	Goal D	14.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Immediate	Multi-sectoral	Target 16	SDG 11	Access and benefit sharing (ABS)	Nagoya Protocol (ratified/enforced)	-
14.2.1	Integrate benefit sharing mechanisms of genetic resources in practices at all levels	Goal D	14.2	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 3	SDG 11	Access and benefit sharing (ABS)	Sustainable consumption	**18,358,462**
15.1.1	Assess on-going activities in the three river headwaters and identify activities that are detrimental to biodiversity conservation.	Goal D	15.1	Ministry of Water Development, Sanitation and Environmental Protection	Water Resources Management Authority	Immediate	Water	Target 3	SDG 13	Protected areas and other conservation measures	Ecosystem connectivity	**6,180,327**
15.1.2	Implement deliberate actions to stop activities negatively impacting on biodiversity conservation in the three headwaters through legislation.	Goal D	15.1	Ministry of Water Development, Sanitation and Environmental Protection	Water Resources Management Authority	Short term	Water	Target 14	SDG 11	Restoration	Site-management	**122,367,988**
15.2.1	Disseminate the legislation among the public and other key stakeholders using the CEPA Strategy.	Goal D	15.2	Ministry of Water Development, Sanitation and Environmental Protection	Water Resources Management Authority	Long term	Water	Target 17	SDG 16	Biodiversity Awareness and Knowledge	Biodiversity communication	**10,913,354**
16.1.1	Engage with the Zambia Parliamentary Conservation Caucus for speed ratification of the Bill.	Goal E	16.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Immediate	Multi-sectoral	Target 16	SDG 16	Biodiversity and development planning	Biodiversity coordination and management	**1,821,025**
16.2.1	Promote the documentation of indigenous Knowledge systems on biodiversity conservation.	Goal E	16.2	Ministry of Tourism and Arts	National Heritage Conservation Commission (NHCC)	Short term	Heritage	Target 16	SDG 15	Biodiversity Awareness and Knowledge	Indigenous and local communities' knowledge	**31,358,746**

NBSAP-2 Activity Code	NBSAP-2 Activity name	NBSAP-2 Strategic Goal	NBSAP-2 Strategic Intervention Code	Lead Ministry Code	Lead Department or Institution	Activity Priority	Sector	Aichi Target	SDG #	BIOFIN Category Level 1	BIOFIN Category Level 2	Total Costs ZMK
16.2.2	Mainstream proven indigenous systems for biodiversity conservation into area specific plans for biodiversity conservation.	Goal E	16.2	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 14	SDG 12	Sustainable use	Sustainable consumption	**3,490,494**
17.1.1	Conduct a research needs assessment on biodiversity conservation involving multiple stakeholders	Goal E	17.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 4	SDG 9	Biodiversity and development planning	Biodiversity coordination and management	**494,307**
17.1.2	Using the results from the research needs assessment, develop a research plan	Goal E	17.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Short term	Multi-sectoral	Target 4	SDG 9	Biodiversity and development planning	Biodiversity coordination and management	**43,427**
17.2.1	Promote platforms for the discussion of scientific biodiversity information exchange and using existing structures such as the Community Based Natural Resources Management Forum and the Natural Resources Consultative Forum.	Goal E	17.2	Ministry of Water Development, Sanitation and Environmental Protection	Environment Management Department	Long term	Multi-sectoral	Target 1	SDG 12	Biodiversity Awareness and Knowledge	Biodiversity communication	**3,126,787**
17.3.1	Develop a knowledge and skills assessment needs for biodiversity conservation in key sectors charged with the management of biodiversity (especially, FD, ZAWA, Environment Department, ZOS, ZEMA, WECSZ, etc.).	Goal E	17.3	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Long term	Multi-sectoral	Target 1	SDG 12	Biodiversity Awareness and Knowledge	Formal biodiversity education	**494,307**
17.3.2	Conduct capacity building activities based on the needs assessment results	Goal E	17.3	Ministry of Water Development, Sanitation and Environmental Protection	Environment Management Department	Long term	Multi-sectoral	Target 1	SDG 11	Biodiversity Awareness and Knowledge	Formal biodiversity education	**12,042,539**
18.1.1	Use the approved NBSAP to do the costing of the proposed strategic interventions.	Goal E	18.1	Ministry of Lands and	Natural Resources	Immediate	Multi-sectoral	Target 4	SDG 11	Biodiversity and development planning	Biodiversity coordination and management	**-**

NBSAP-2 Activity Code	NBSAP-2 Activity name	NBSAP-2 Strategic Goal	NBSAP-2 Strategic Intervention Code	Lead Ministry Code	Lead Department or Institution	Activity Priority	Sector	Aichi Target	SDG #	BIOFIN Category Level 1	BIOFIN Category Level 2	Total Costs ZMK
				Natural Resources	Management Unit							
18.1.2	Develop and implement a resource mobilization strategy for the NBSAP2 from both domestic and external sources as well as private and other innovative funding sources.	Goal E	18.1	Ministry of Lands and Natural Resources	Natural Resources Management Unit	Short term	Multi-sectoral	Target 20	SDG 11	Biodiversity and development planning	Biodiversity coordination and management	**2,435,717**
												2,420,115,780

Annex 5: Finance Needs based on Sector classifications



Annex 6: NBSAP-2 Finance needs based on the BIOFIN categories and its sub categories

BIOFIN Category level 1	BIOFIN Category level 2	Total Costs (ZMK)	Total Costs (USD)	% of Grand Total
Biodiversity and development planning				
	Spatial planning	353,583,960	35,358,396	14.61%
	Data generation and spatial mapping	213,809,728	21,380,972	8.83%
	Biodiversity finance	176,746,602	17,674,660	7.30%
	Valuation of biodiversity and ecosystems	94,664,345	9,466,434	3.91%
	Biodiversity coordination and management	87,933,349	8,793,334	3.63%
	Loss of valuable habitats, including targeted conservation of species outside PAs	5,845,942	584,594	0.24%
	Biodiversity laws, policies, plans	652,334	65,233	0.03%
Biodiversity and development planning Total		**933,236,262**	**93,323,626**	**38.56%**
Sustainable use				
	Sustainable fisheries	307,915,900	30,791,590	12.72%
	Environmental Impact Assessment (EIA)	104,086,236	10,408,623	4.30%
	Sustainable consumption	3,490,494	349,049	0.14%

BIOFIN Category level 1	BIOFIN Category level 2	Total Costs (ZMK)	Total Costs (USD)	% of Grand Total
	CBD Clearing House Mechanism	475,734	47,573	0.02%
Sustainable use Total		**415,968,364**	**41,596,836**	**17.19%**
Restoration				
	Reintroduction of species	190,738,002	19,073,800	7.88%
	Site-management	162,371,230	16,237,123	6.71%
	Invasive alien species	50,475,974	5,047,597	2.09%
	Indigenous and local communities' knowledge	1,474,950	147,495	0.06%
Restoration Total		**405,060,157**	**40,506,015**	**16.74%**
Biodiversity Awareness and Knowledge				
	Biodiversity awareness (e.g. public awareness campaigns, park visitor education etc.)	202,398,871	20,239,887	8.36%
	Biodiversity scientific research	104,828,479	10,482,847	4.33%
	Indigenous and local communities' knowledge	52,554,423	5,255,442	2.17%
	Biodiversity communication	16,050,211	1,605,021	0.66%
	Formal biodiversity education	12,536,846	1,253,684	0.52%

BIOFIN Category level 1	BIOFIN Category level 2	Total Costs (ZMK)	Total Costs (USD)	% of Grand Total
	Data generation and spatial mapping	5,213,043	521,304	0.22%
Biodiversity Awareness and Knowledge Total		**393,581,872**	**39,358,187**	**16.26%**
Protected areas and other conservation measures				
	Loss of valuable habitats, including targeted conservation of species outside PAs	91,530,288	9,153,028	3.78%
	Landscape/seascape conservation, including of valuable ecosystem services	61,812,967	6,181,296	2.55%
	Data generation and spatial mapping	13,664,711	1,366,471	0.56%
	Ecosystem connectivity	6,180,327	618,032	0.26%
	Protected areas, including indigenous and communities conserved areas	5,489,220	548,922	0.23%
	Ex-situ conservation of species (botanical gardens and gene banks)	1,390,510	139,051	0.06%
Protected areas and other conservation measures Total		**180,068,022**	**18,006,802**	**7.44%**
Green economy				
	Sustainable tourism	38,603,574	3,860,357	1.60%

BIOFIN Category level 1	BIOFIN Category level 2	Total Costs (ZMK)	Total Costs (USD)	% of Grand Total
	Biodiversity laws, policies, plans	9,111,857	911,185	0.38%
Green economy Total		**47,715,431**	**47,715,43**	**1.97%**
Access and benefit sharing (ABS)				
	Sustainable consumption	18,358,462	1,835,846	0.76%
	Valuation of biodiversity and ecosystems	2,896,222	289,622	0.12%
	Loss of valuable habitats, including targeted conservation of species outside PAs	683,292	68,329	0.03%
	Nagoya Protocol (ratified/enforced)	-	-	0.00%
Access and benefit sharing (ABS) Total		**21,937,977**	**2,193,797**	**0.91%**
Biosafety				
	Genetically modified organisms (GMOs), including Living modified organisms (LMOs)	17,472,012	1,747,201	0.72%
Biosafety Total		**17,472,012**	**1,747,201**	**0.72%**
Pollution management				
	Waste water management	5,075,684	507,568	0.21%
Pollution management Total		**5,075,684**	**507,568**	**0.21%**

BIOFIN Category level 1	BIOFIN Category level 2	Total Costs (ZMK)	Total Costs (USD)	% of Grand Total
Grand Total (ZMK)		2,420,115,780	242,011,578	100.00%

Annex 7: Finance Needs for the top 10 NBSAP-2 activities in 2018 based on cost

NBSAP Activity Code	NBSAP-2 Activity name	Lead Ministry	Lead Department or Institution	Finance Needs (ZMK)
4.1.1	Update the existing inventory of forests and lower plants in the major conservation landscapes of Zambia	Ministry of Lands and Natural Resources	Forestry Department	145,319,908
11.4.3	Promote assisted natural regeneration (ANR) in the mopane and teak forests.	Ministry of Lands and Natural Resources	Forestry Department	82,099,798
15.1.2	Implement deliberate actions to stop activities negatively impacting on biodiversity conservation in the three headwaters through legislation.	Ministry of Water Development, Sanitation and Environmental Protection	Water Resources Management Authority	65,083,872
5.4.3	Conduct and implement integrated land use planning in the targeted landscapes for biodiversity conservation.	Ministry of Local Government	Physical Planning and Housing Department	46,727,368
6.1.3	Develop and implement appropriate fishery specific compatible models for co-management.	Ministry of Fisheries and Livestock	Fisheries Department	27,692,626
7.5.2	Develop and implement fire management plans	Ministry of Tourism and Arts	Department of National Parks and Wildlife Area Management	25,577,194
12.3.1	Mobilize resources for the collection, maintenance of indigenous livestock genetic resources	Ministry of Fisheries and Livestock	Livestock Development Department	21,632,747
11.5.3	Build local community capacities in sustainable harvest methods and marketing techniques.	Ministry of Lands and Natural Resources	Forestry Department	21,195,677
4.1.1	Update the existing inventory of fish species in the major conservation landscapes and river system of Zambia	Ministry of Fisheries and Livestock	Fisheries Department	21,099,928
7.3.1	Undertake vulnerability and adaptation assessment on prioritized ecosystems in Zambia.	Office of The Vice President	Disaster Management and Mitigation Unit	20,810,101

NBSAP Activity Code	NBSAP-2 Activity name	Lead Ministry	Lead Department or Institution	Finance Needs (ZMK)
				477, 239,218