BIODIVERSITY EXPENDITURE REVIEW (BER) FOR ZAMBIA

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BIOFIN
THE BIODIVERSITY FINANCE INITIATIVE

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The Biodiversity Expenditure Review (BER) report for Zambia could not have been a success without the able contribution of various Individuals and Institutions. Below are some of the key contributors to this report.

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REPORT VALIDATION:

See Annex 6 for details

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ACRONYMS AND ABBREVIATIONS

BER	Biodiversity Expenditure Review
BFP	Biodiversity Finance Plan
BIOFIN	Biodiversity Finance Initiative
CBD	Convention on Biological Diversity
CCNRMD	Climate Change and Natural Resources Management Department
COP	Conference of the Parties
CSO	Central Statistical Office
CSR	Corporate Social Responsibility
DNPW	Department of National Parks and Wildlife
FD	Forestry Department
FISP	Farmer Input Support Programme
FNA	Financial Needs Assessment
GDP	Gross Domestic Product
GMA	Game Management Area
MFL	Ministry of Fisheries and Livestock
MLNR	Ministry of Lands and Natural Resources
MMMD	Ministry of Mines and Mineral Development
MoA	Ministry of Agriculture
MoE	Ministry of Energy
MoF	Ministry of Finance
MTA	Ministry of Tourism and Arts
MWDSEP	Ministry of Water Development, Sanitation and Environmental Protection
NBSAP	National Biodiversity Strategy and Action Plan
OVP	Office of the Vice President
PIR	Policy and Institutional Review
SDGs	Sustainable Development Goals
UNDP	United Nations Development Programme
WARMA	Water Resources Management Authority
WDI	World Development Indicators
ZEMA	Zambia Environmental Management Agency

EXECUTIVE SUMMARY

Aim of the Biodiversity Expenditure Review (BER)

The overall objective of the BER is to "use detailed data on public, private, and civil society budgets, allocations and expenditures to inform and promote improved biodiversity policies, financing, and outcomes (UNDP, 2018)."

Methodology

The BIOFIN methodology contained in the 2018 BIOFIN workbook was adopted for the analysis of the BER data for Zambia. The departments or institutions that formed part of the BER analysis was guided by scoping exercise that was conducted in the PIR. A detailed breakdown of all the 24 institutions that were included in the BER analysis are presented in Annex. The key ministries responsible for biodiversity conservation in Zambia transcends various sectors and includes Ministry of Agriculture (MoA), Ministry of Energy (MoE), Ministry of Fisheries and Livestock (MFL), Ministry of Mines and Minerals Development (MMMD), Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP), Ministry of Tourism and Arts (MTA) and Ministry of Lands and Natural Resources (MLNR). The analysis also conducted biodiversity expenditure at provincial level.

The main source of data for the BER was the Ministry of Finance (MoF). The data covers a 5-year period, 2014 to 2019. Other sources of data such as the World Bank and the Central Statistical Office (CSO) were used to provide a macroeconomic context to the BER. The data was inputted in the customized BER Model and was analysed according to various categories as prescribed in the 2018 BIOFIN workbook.

Key Results

The total expenditure on biodiversity between 2014 and 2018 is K964, 507,942. This represents 25% of the total budget allocations to all the sectors considered for analysis during the same period or 60% of the actual expenditure by the relevant institutions. The actual expenditure on biodiversity shows an upward trend as illustrated in Figure 1. From a macroeconomic perspective, the country spends about 0.11% of Gross Domestic Product (GDP) on activities associated with biodiversity. The biodiversity expenditures are further analysed according to different categories.

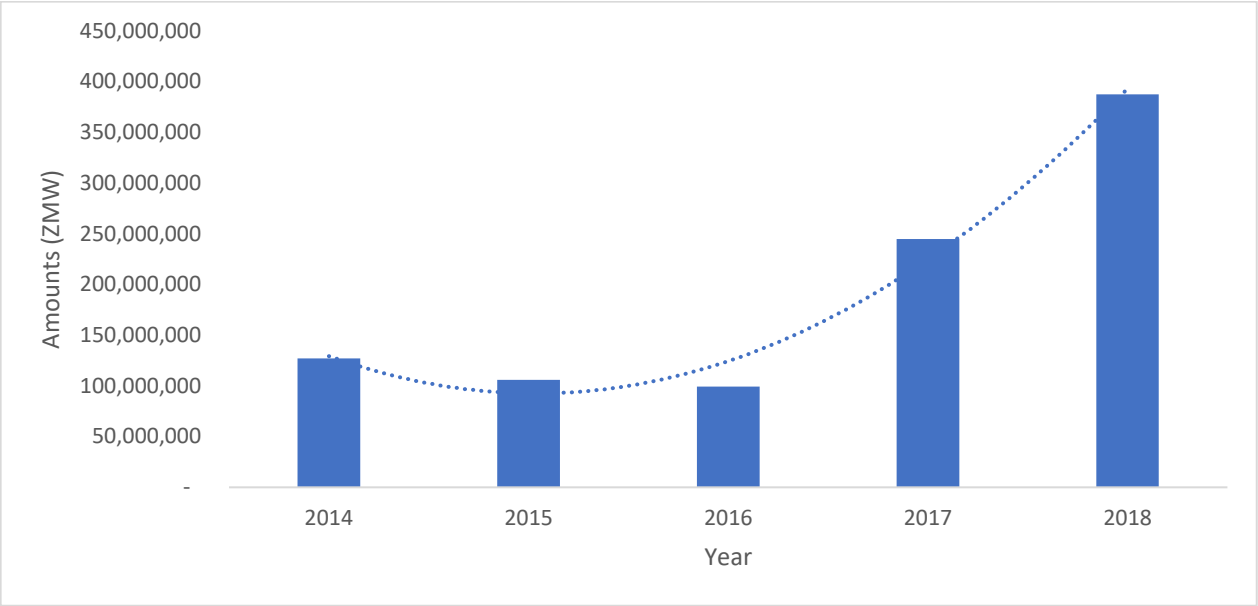


Figure 7: Trends in biodiversity expenditure

In terms of expenditure at Ministry level, out of the total biodiversity expenditure over the period 2014 to 2018, the Ministry of Energy has the largest share of biodiversity relevant expenditure (26%) followed by the Ministry of Tourism and Arts (21%). The Ministry of Mines and Minerals Development has the least share of biodiversity relevant expenditure at 0.3%. In terms of the proportion of total expenditure that is biodiversity relevant per agency, it can be deduced that all the agencies at sub-national level spend in excess of 90% of their total budget releases on biodiversity activities. At national level the Ministry of Tourism and Arts and Ministry of Lands and Natural Resources have the highest share of biodiversity relevant expenditure at 98% and 88% respectively while the Ministry of Agriculture spend only 20% of their budget releases on biodiversity activities.

A further decomposition of expenditure by expense classification as shown in Figure 2 reveals that recurrent expenditures take the largest share of total spending (87%) compared to only 23% for investment expenditure. Expenditure on human resources and administration, particularly operations and salaries account for the largest share of recurrent expenditures (about 90%).

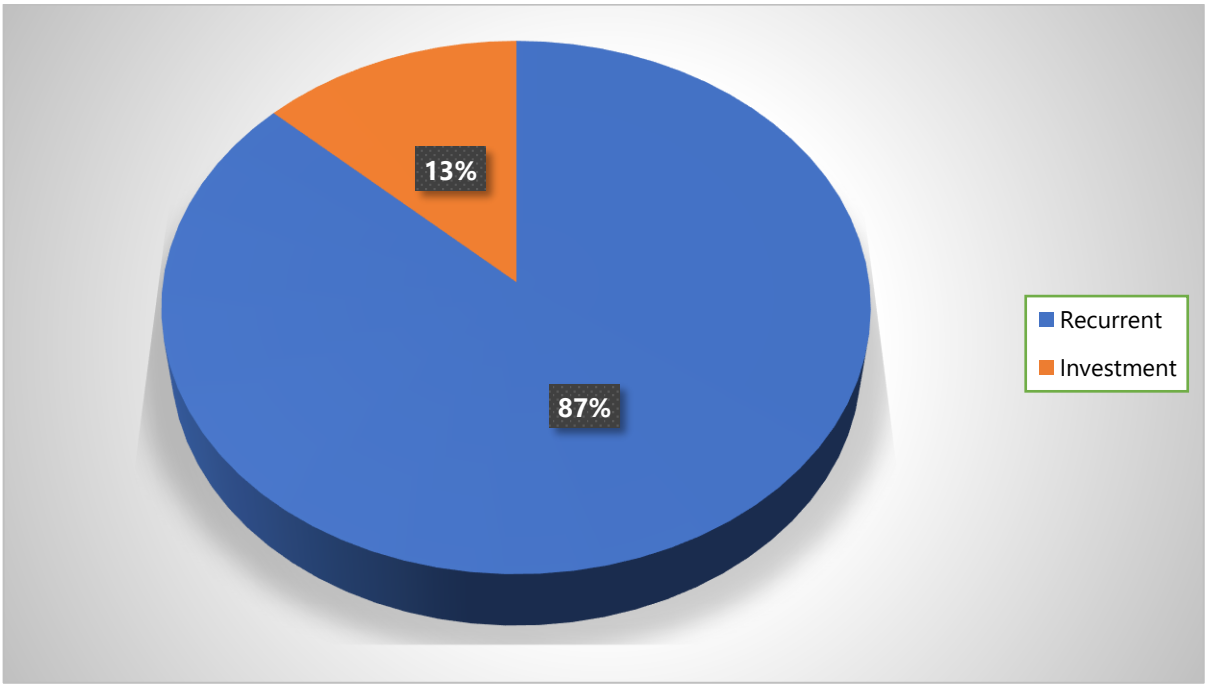


Figure 9: Expenditure by expense classification

The analysis showed that 75 % of total expenditure is dedicated to biodiversity development and planning, 14% to green economy, 4% to biodiversity awareness and knowledge, 4% to protected areas and other conservation measures, 2% to sustainable use and less than 1% on restoration, pollution management and access and benefit sharing. The analysis also showed that biodiversity expenditures in Zambia contribute to the attainment of targets 1, 4, 5, 6, 7, 8, 9, 12, 14, and 15 of the NBSAP with target 7 accounting for about 50% of the total expenditure over the 5-year period followed by target 5 (26%) while target 17 accounted for a paltry 0.002%. Biodiversity spending in Zambia contributes towards the attainment of 11 Sustainable Development Goals (SDGs). SDG 15 has the highest biodiversity expenditure associated with it (about 45% of total biodiversity expenditure) followed by SDG 7 (about 26%). While SDG 5 had expenditure attributed to it, none (0%) of the total expenditure was classified as biodiversity relevant.

Conclusions

The analysis of the status and trends of biodiversity as guided by the BIOFIN methodology is an important, innovative and evidence based approach to inform and promote policies and financing that contribute to the achievement of the objectives of the Convention on Biological Diversity (CBD) namely conservation of biological diversity, sustainable use of the components of biodiversity and fair and equitable sharing of the benefits arising out of the use of genetic resources. The analysis has ably responded to the 7 objectives outlined in the 2018 workbook and has provided baselines for projections of future biodiversity spending. The findings from the analysis has also provided a basis for the development of innovative finance solutions that will form part of Zambia's BFP to

bridge the financing gap for biodiversity conservation. Arising from the analysis conducted in this report are the following recommendations.

Recommendations

a) Government should engage the private sector in biodiversity management through assignment of activities in the National Biodiversity Strategy and Action Plan (NBSAP), provision of incentives in key biodiversity sectors, and raise awareness and build capacity among private sector actors regarding measuring and reporting of biodiversity expenditure.

b) Spending agencies in government line ministries should realign some resources from recurrent to investment expenditures if effective implementation of biodiversity programs is to be realized.

c) Given that priority in the next few years in as far as government expenditure is concerned will be debt servicing, it is imperative for government to explore innovative financing mechanisms to bolster sustainable financing towards environmental protection. The implementation of the Biodiversity Finance Plan (BFP) by the government which contains innovative finance solutions will be key to sustainable financing of the green agenda in Zambia. Some of the financing mechanisms that government should consider implementing include refinancing of government debt through issuance of a green bond and debt for nature swaps.

d) Government should revise the current classification in the National ABB budget on budget functional classifications and integrate the sub-categories under Economic Affairs into Environmental Protection category, particularly the protection of biodiversity and landscape sub-function. This will give a holistic picture about the country's expenditure patterns and trends.

INTRODUCTION

1.1 BACKGROUND TO THE BIODIVERSITY EXPENDITURE REVIEW (BER)

Biodiversity loss has reached unprecedented levels yet little strides have been made to reverse the status quo (Slingenberg *et al.*, 2009; Santos Rui *et al.*, 2012; OECD, 2013; Meinard, Remy and Schmid, 2017). However, financing towards biodiversity conservations remains inadequate (World Bank, 2012; Mabeta, Mweemba and Mwitwa, 2018). The need to mobilize financial resources was set out and agreed upon at the tenth meeting of the Conference of the Parties (COP) to the Convention Biological Diversity in 2010. Aichi Target 20 in particular states:

> *"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)*."*

The commitment to mobilize resources for sustainable financing towards biodiversity conservation and contributing towards the implementation of the Strategic Plan for Biodiversity 2011-2020 was reaffirmed at COP 12 through decision XII/3 which partly states:

> *"Recognizing that resource mobilization for implementing the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets has an important role to play in the Financing for Development process, and the post-2015 United Nations Sustainable Development Agenda* (CBD, 2014)

The emphasis of the CBD is to reinvigorate National Biodiversity Strategy and Action Plans with a view to achieve the national conservation targets as well as the 20 Aichi biodiversity conservation targets. One of the targets that COP 12 adopted for resource mobilization under Aichi Target 20 of the Strategic Plan for Biodiversity 2011-2020 is:

> *"Endeavour for 100 per cent, but at least 75 per cent, of Parties provided with adequate financial resources to have reported domestic biodiversity expenditures, as well as funding needs, gaps and priorities, by 2015, in order to improve the robustness of the baseline* (CBD, 2014)*."*

The Biodiversity Finance Initiative (BIOFIN) responds to the aspirations of the CBD through devising innovative financing solutions to address the existing financing gap. The BIOFIN methodology takes shape through three key assessments: The Policy and Institutional Review (PIR), The Financial Needs Assessment (FNA) (through costing the NBSAP) and The Biodiversity

Expenditure Review (BER). These three outputs are intertwined and feed into each other. For instance, the BER draws from the PIR which identifies the policies, institutional and finance actors that are key to biodiversity conservation the BER, upon which this report is based, is an analysis of Public and Private expenditures that benefit biodiversity in a country.

To date, tracking of expenditure on biodiversity in Zambia has been limited. However Zambia has conducted public expenditure reviews in health and education sectors (Chansa *et al.*, 2015, 2018). The situation is even worse in as far private sector tracking of biodiversity expenditure is concerned (UNDP, 2017) given that they are the least engaged among all stakeholders in the implementation of the CBD and only a few have mainstreamed biodiversity in their core businesses (UNEP, 2006). The BER therefore provides a holistic and a well-coordinated approach to assess the trends and status of biodiversity expenditure to enhance biodiversity conservation and sustainable use of ecosystem services.

The rest of this report is organized as follows; following this introductory section, the rest of Chapter One presents the objectives of the BER. Chapter Two presents the methodology of the BER including the preparatory phase, data sources and data analysis. Chapter 3 discusses the macroeconomic context of Zambia's biodiversity spending and the key findings emerging from the data analysis. Conclusions and recommendations are drawn in Chapter Four.

1.2 AIM AND OBJECTIVES OF THE BIODIVERSITY EXPENDITURE REVIEW (BER)

The overarching objective of the BER is to "use detailed data on public, private, and civil society budgets, allocations and expenditures to inform and promote improved biodiversity policies, financing, and outcomes (UNDP, 2018)." The specific objectives are outlined in Table 1.

Table 1: Objectives of the BER

Spending Basics	•Who spends money, how much do they spend, and what do they spend it on – establishing a "business as usual" situation upon which to build a Biodiversity finance Plan
Biodiversity Categories	•What are the concentration patterns for spending within biodiversity categories, NBSAP targets and other key strategies.
Policy Alignment	•Is spending aligned with stated government policies and priorities? Which thematic areas are the better financed and why?
Delivery Patterns	•is all the money that is budgeted being allocated? Has all the money that has been allocated been disbursed and spent? if not, why? Are
Financing Sources and Solutions	•Are there opportunities to for improved efficiency of biodiversity financing?
Future Spending	•What biodiversity expenditure trends and data can be identified to pre- dict future spending? How
Business Case	•How can we use the information in the BER to make a better business case?

Source: Adapted from (UNDP, 2018)

2.1 INTRODUCTION

The BER was conducted based on the guidance outlined within the BIOFIN Workbook with minor modifications. Figure 1 provides an outline of the BER Implementation Steps

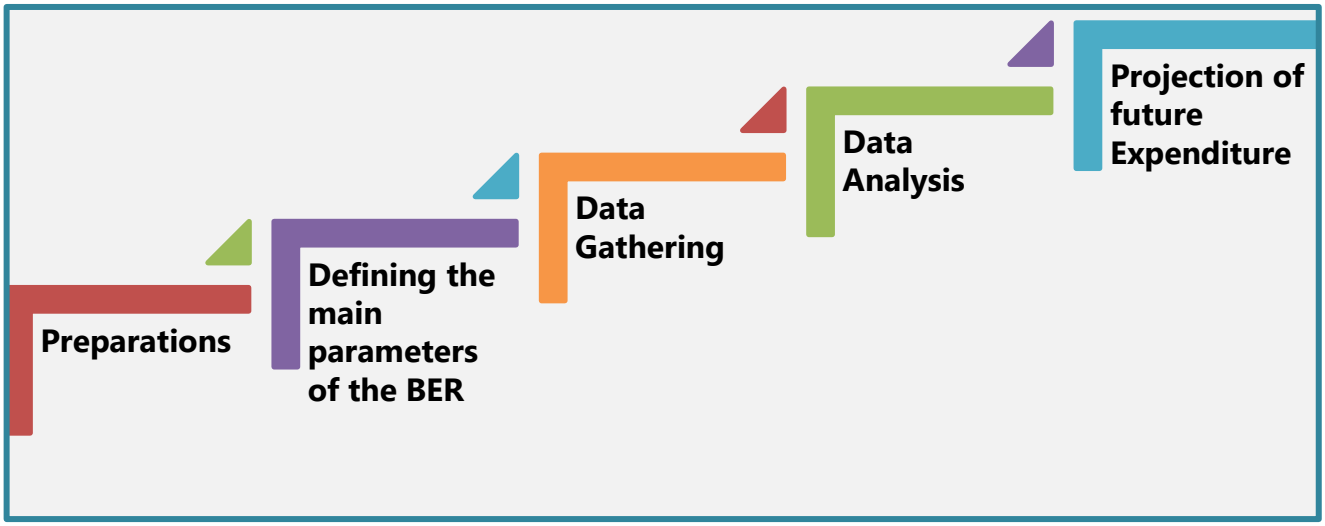


Figure 1: BER Implementation Steps

Source: Adapted from BIOFIN 2018 Workbook

2.2 PREPARATIONS

The departments or institutions that formed part of the BER analysis was guided by scoping exercise that was conducted in the PIR. Table 2 shows the public sector institutions that were targeted for the BER analysis.

Table 2: Key institutions in biodiversity management in Zambia and their mandates

Responsible Institutions	Sector	Description of key roles
Ministry of Agriculture	Agriculture	Working at creating an enabling environment for increased private sector participation in the agricultural sector; implements Agriculture Sector Investment Programme (ASIP).
Ministry of Energy	Energy	Create conditions that will ensure the availability of adequate supply of energy from various sources, which are dependable, at the lowest economic, financial, social and environmental cost consistent with national development goals.
Ministry of Livestock and Fisheries	Fisheries	Conservation and protection of aquatic biodiversity; ensure equitable sharing of benefits arising from the exploitation of fisheries resources with local communities; promote the sustainable development of fisheries and a precautionary approach in fisheries management & conservation.
Ministry of Lands and Natural Resources	Lands and Natural Resources	Through the Forestry Department, Formulate and implement appropriate forest policies and programmes for sustainable management and use of forest resources and biodiversity. Promote participation of local communities, traditional institutions, NGOs & other stakeholders in forest management.
Ministry of Tourism and Arts	Wildlife	Ensure controlling, managing, conserving, protecting and administering National Parks, GMAs, bird and wildlife sanctuaries. Adopting methods ensuring sustainability, conservation & preservation in natural state of ecosystems & biodiversity & ensure proper balance between sustainable use of wildlife & management of ecosystems.
Ministry of Water Development, Sanitation and Environmental Protection	Water	Through the Zambia Environmental Management Agency is responsible for establishing environmental standards and management of the environment and its ecosystems. Provides for the regulation and management water resources in Zambia. Provides for the preservation, protection and conservation of wetlands, dambos, marshlands and headwaters. Provides for preservation of the integrity of river catchments for water resources management.
Office of the President/Vice President	Various sectors	Sustainable management and conservation of biodiversity across the key biodiversity sectors at provincial or sub-national level The Office of the Vice President (OVP) through the Disaster Management and Mitigation Unit (DMMU) mitigation of hazards and disasters that have adverse impacts on communities and the environment.

Source: Adapted from the PIR (UNDP, 2017)

A detailed breakdown of all the 24 institutions that were included in the BER analysis are presented in Annex 1. It can be deduced from Table 2 that the key ministries responsible for biodiversity conservation in Zambia transcends across various sectors and includes Ministries of Agriculture, Energy, Fisheries and Livestock, Mines and Minerals Development, Tourism and Arts, Water

Development, Sanitation and Environmental Protection and Ministry of Lands and Natural Resources. The expenditure covered at these Ministries is at National or Headquarter level. On the other hand, the second category of expenditure is at subnational or provincial level covering all the 10 provinces of Zambia and is captured under the Office of the President.

2.3 Defining the main parameters of the BER

The definition of parameters is guided by the 2018 BIOFIN workbook. The workbook defines biodiversity expenditure as "*any expenditure whose purpose is to have a positive impact or to reduce or eliminate pressures on biodiversity* (UNDP, 2018). The following operational definitions that are used in this report can be derived from this definition of biodiversity expenditure above:

2.3.1 Definition biodiversity expenditure

Actual expenditure: The overall expenditure and budgetary releases to the key biodiversity sectors identified in section 2.2 whose aim is to finance biodiversity conservation or other programmes or activities within that sector.

Biodiversity-relevant expenditure: The proportion of the actual overall expenditure that can be classified as pro-biodiversity, that is, promoting biodiversity conservation, its sustainable use and equitable sharing of its benefits.

2.3.2 Classification of biodiversity expenditures

The distinct feature about the BER data for Zambia is the level of detail that shows biodiversity expenditure up to activity level (Table 3). This allowed classification of biodiversity expenditures according to the 9 BIOFIN categories (both level 1 and 2) as well as tagging of institutions to other categories such as the Aichi and NBSAP targets, recurrent and investment, and Sustainable Development Goals (SDGs).

2.3.3 Attribution of expenditures

The 2018 BIOFIN workbook guides that once the classification of the biodiversity expenditures into the different categories outlined above is completed, the amount that contributes to sustainable biodiversity management can be computed using the attribution approach. Using detailed expenditure data, the activities or programmes were classified either as biodiversity or non-biodiversity expenditures. The preliminary analysis used a hybrid of agency approach, that is, focusing on institutions making the expenditures and the programme approach that focuses on detailed expenditure up to activity level as demonstrated above to determine the proportion of expenditures that can be attributed to biodiversity or the biodiversity relevant expenditure. The analysis then adapted the coefficients prescribed in the workbook (Annex III) to compute the revised expenditure for each activity. Institutions whose core mandate is biodiversity conservation were assigned higher coefficients while those whose biodiversity expenditure is secondary were assigned to lower coefficients. Activities falling under programmes such as general administration and salaries or personal emoluments were assigned coefficients of 100% if they were under Ministries of Fisheries and Livestock, Lands and Natural Resources, Tourism and Arts and Water Development, Sanitation and Environmental Protection. On the other hand, the Ministry of Energy was assigned coefficients of 50% under the same category while the ministries of Agriculture and Mines and Mineral Development had the least at 25%. It was observed that activities under these 2 ministries have no direct impact on biodiversity conservation and mostly administrative in nature.

2.4 Data acquisition: sources of data

Analysis of public biodiversity expenditure presented in this report is based on time series data obtained from the Ministry of Finance covering the period 2014 to 2018. The data was provided in unprocessed form and included over 100,000 rows of all expenditure by public sector agencies which reduced to about 9,000 after cleaning to only take into account the key biodiversity sectors outlined in the PIR. Data was also obtained from the Central Statistical Office and The World Development Indicators (WDI) of the World Bank to provide a macroeconomic context of Zambia as well as the ratio of biodiversity spending to Gross Domestic Product (GDP).

2.5 Data Analysis

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.

PRESENTATION OF THE BER RESULTS

3.1 INTRODUCTION

Chapter 3 presents the analysis of the results from the BER process which was largely guided by the tagging categories that were developed within the BER model. The BER Model was developed by the BIOFIN Country Team Leader based on the BIOFIN BER model and customised in the Zambian context. Figure 2 provides a snapshot of the dashboard for the BER Model that was used to collect and analyse data especially public sector data.

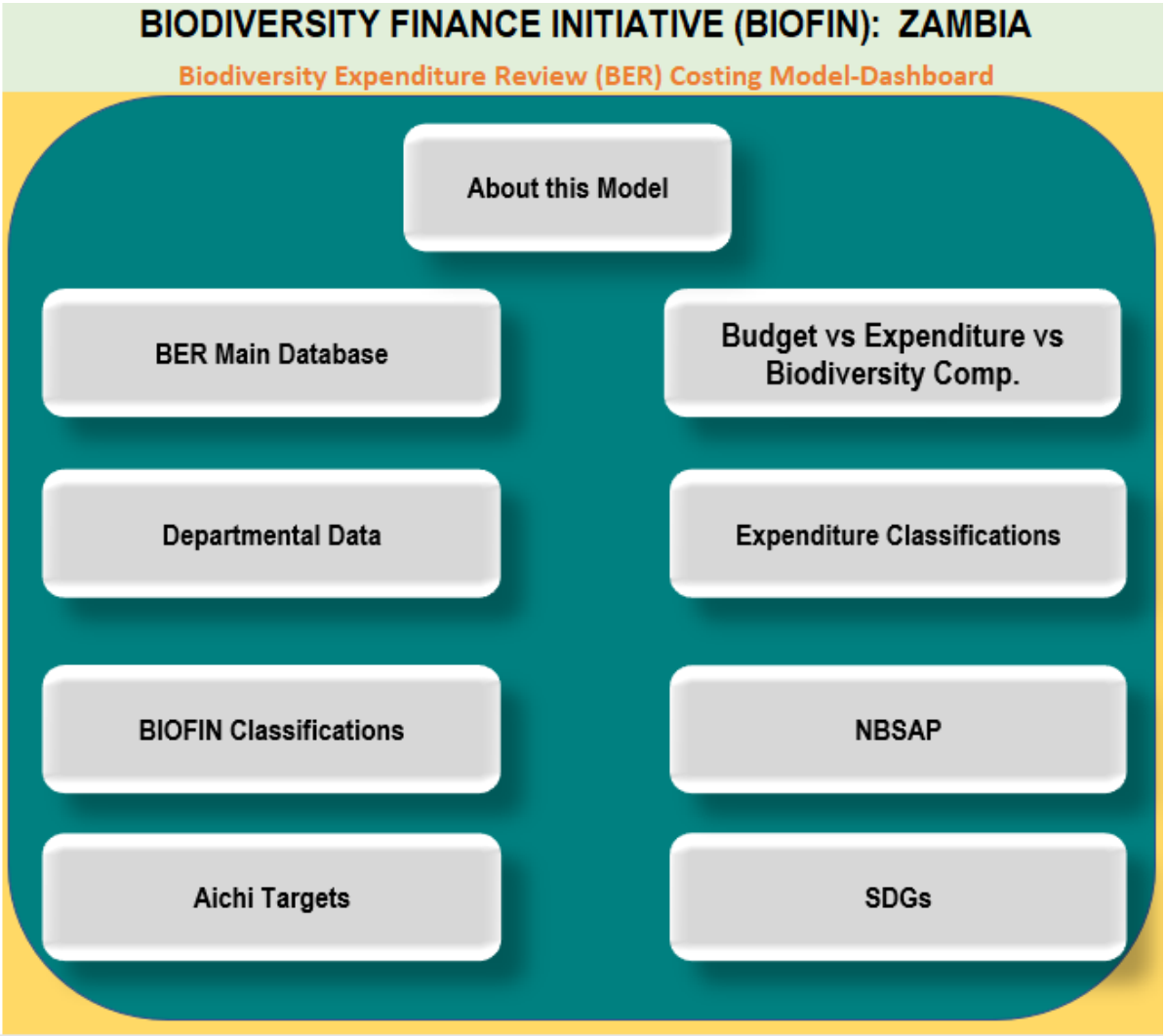


Figure 2: Dashboard for the BER Zambia Model

The presentation of the results is also guided by the revised 2018 BIOFIN Workbook which was launched at Fourteenth meeting of the Conference of the Parties to the Convention on Biological Diversity in Sharm El-Sheikh, Egypt. The 2018 BIOFIN Workbook requires that results are presented in the following order: National macroeconomic context, Biodiversity spending in the national context, identification of relationship between budgets, allocation and expenditures, and identification of other trends in expenditure (UNDP, 2018). The outcomes from this analysis provides different kind of data which also includes an estimate of the total biodiversity expenditures for the country though due to data gaps, results shown are largely from public sector with some minimal accessible data for donors, NGOs and other civil society players.

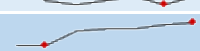
3.2 A SNAPSHOT OF ZAMBIA'S NATIONAL MACROECONOMIC CONTEXT

Table 2 and 3 provide a summary of some of Zambia's key macroeconomic indicators and a comparison of Zambia's GDP with other BIOFIN Countries in Africa respectively.

Table 3: Selected Macroeconomic Indicators for Zambia

Indicator Name	2013	2014	2015	2016	2017
GDP (current US$)	28,045,460,442	27,150,630,607	21,154,394,546	20,954,754,378	25,808,666,422
GDP growth (annual %)	5.06	4.70	2.92	3.76	4.08
GDP per capita (current US$)	1,851	1,738	1,314	1,263	1,510
Inflation, consumer prices (annual %)	7	8	10	18	7
Official exchange rate (LCU per US$, period average)	5	6	9	10	10
Access to clean fuels and technologies for cooking (% of population)	16	16	16	16	
Access to electricity (% of population)	25	28	31	27	
Access to electricity, rural (% of rural population)	3	4	4	3	
Access to electricity, urban (% of urban population)	59	62	68	62	
Forest area (% of land area)	66	66	65		
Forest area (sq. km)	489,682	488,016	486,350		

Table 4: Comparison of Zambia's GDP with other BIOFIN Countries in African (Current USD)

Country	2011	2012	2013	2014	2015	2016	2017	Trend
South Africa	416,878,162,441	396,332,702,639	366,829,390,479	350,904,575,292	317,741,039,198	295,762,685,148	349,419,343,614	
Uganda	20,176,025,418	23,114,293,019	24,599,550,742	27,291,880,327	27,102,650,472	24,078,931,744	25,891,058,946	
Zambia	23,460,098,340	25,503,370,699	28,045,460,442	27,150,630,607	21,154,394,546	20,954,754,378	25,808,666,422	
Botswana	15,682,926,896	14,686,278,707	14,915,780,539	16,250,774,267	14,420,551,446	15,648,700,274	17,406,530,781	
Namibia	12,409,629,836	13,016,272,899	12,717,790,505	12,786,078,008	11,769,045,772	11,309,232,188	13,244,597,345	
Mozambique	13,131,168,012	14,534,278,446	16,018,848,991	16,961,117,243	14,798,399,862	11,014,862,242	12,333,859,926	
Rwanda	6,563,320,570	7,334,917,697	7,621,923,308	8,016,591,928	8,277,613,194	8,475,681,533	9,136,689,514	
Malawi	8,003,300,198	6,028,470,989	5,518,901,971	6,054,750,320	6,373,201,160	5,433,038,647	6,303,277,591	
Seychelles	1,065,826,670	1,059,498,884	1,328,091,524	1,342,997,306	1,375,604,279	1,425,929,444	1,485,994,387	

Source: World Bank (2018)

Some of the inferences that can be deduced from Table 2 is that Zambia's GDP increased by 9% between 2011 and 2013 which later dwindled drastically by 22% in 2015. It can also be noted that as at 2017, Zambia's GDP was the third largest among the BIOFIN Countries in Africa, although the GDP per capita of $1,510 was very low when compared to some of the other BIOFIN Countries in Africa such as Botswana and Seychelles whose GDP per-capita were on average $7,596 and $15,504 respectively.

In terms of the sectoral or industry contributions to GDP, the March 2019 Monthly Bulletin by Zambia's Central Statistical Office (CSO) reported that wholesale and retail trade had the largest contribution to GDP at 18.9% seconded by mining and quarrying at 16.6%. Arts, entertainment and recreation had the least contributing a paltry 0.2% to the GDP. Figure 3 provides an overall outline of the percentage shares by industry to the overall GDP at current prices.

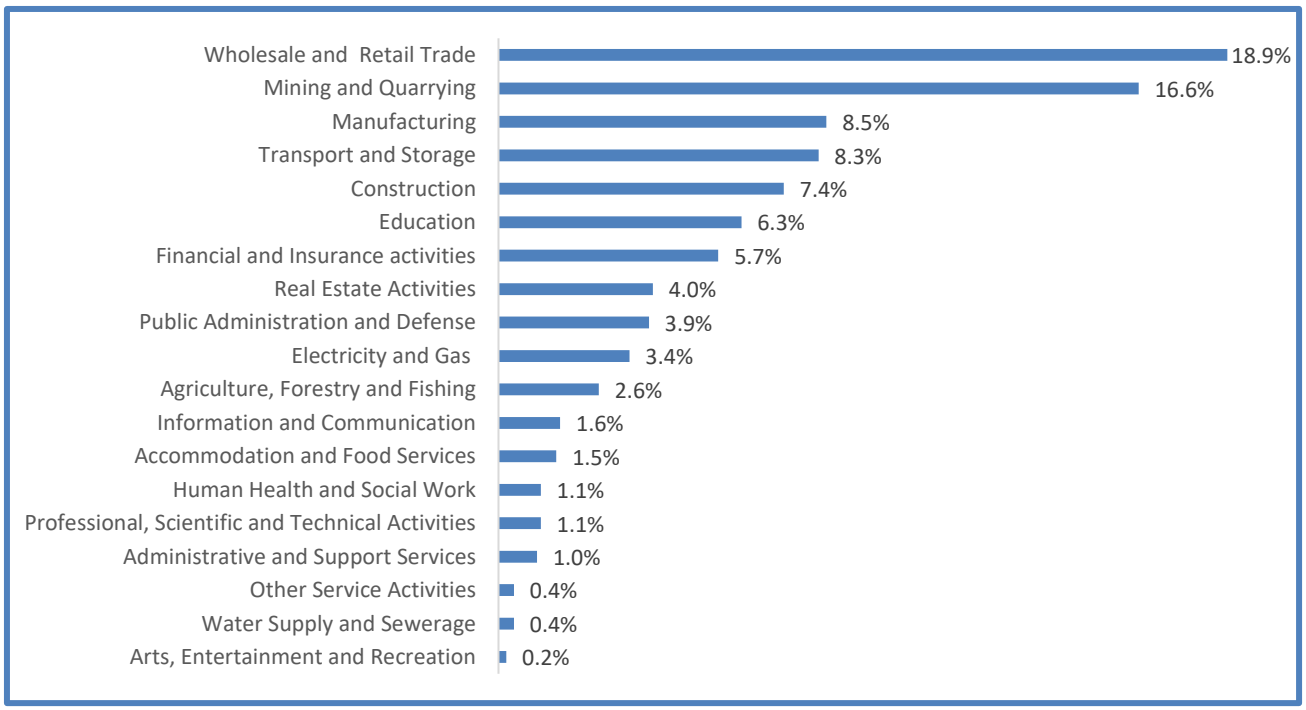


Figure 3: Percentage shares by Industry to the Overall GDP at Current Prices (Q1 to Q4 2018)

Source: (Central Statistical Office, 2019)

Among the key biodiversity related sectors, it can be noted in Figure 3 that the combined category of agriculture, forestry and fishing contribute only 2.6% towards Zambia's GDP whilst water supply recorded 0.4%. Based on the above, it can be deduced that the biodiversity sector appears to contribute minimally to Zambia's GDP though this is largely due to lack of robust biodiversity tagging which implicitly distorts the real contribution of biodiversity sector to Zambia's GDP.

3.2 PUBLIC SECTOR BIODIVERSITY SPENDING IN THE NATIONAL CONTEXT

Zambia's National budget allocations have over the years been analysed by functions of Government. Table 4 provides a summary of budgetary allocations from 2010 to 2019 for the ten (10) budget functions presented both in absolute kwacha amounts as well as percentages.

Table 5: Budget Function -Absolute Total Annual Budget Allocations (K' Million)

S/L	Budget Function	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Cum Total (ZMK)	Avg % (2006-2019)
1	General Public Services	4.19	4.02	4.51	4.87	5.37	5.86	8.30	8.44	10.79	12.04	19.17	17.97	25.90	31.28	162.7	31.7%
2	Economic Affairs	1.84	2.33	2.30	3.02	3.22	5.25	8.12	8.90	11.94	12.75	13.25	20.13	17.26	20.65	131.0	25.5%
3	Education	1.65	1.81	2.12	2.63	3.32	3.83	4.85	5.63	8.61	9.43	9.14	10.64	11.56	13.28	88.5	17.2%
4	Health	1.10	1.29	1.59	1.82	1.36	1.77	2.58	3.64	4.23	4.46	4.43	5.76	6.78	8.07	48.9	9.5%
5	Defence	0.65	0.80	0.98	1.07	1.33	1.49	1.65	2.04	2.74	3.25	3.15	3.20	3.50	5.07	30.9	6.0%
6	Public Order and Safety	0.39	0.45	0.58	0.61	0.77	0.92	1.02	1.35	2.12	2.18	1.84	2.34	2.15	2.87	19.6	3.8%
7	Social Protection	0.05	0.34	0.58	0.37	0.45	0.55	0.66	0.89	1.18	1.26	1.27	2.69	2.30	2.19	14.8	2.9%
8	Housing and Community Amenities	0.29	0.79	0.83	0.59	0.66	0.65	0.35	1.01	0.66	0.80	0.47	0.82	0.82	2.24	11.0	2.1%
9	Environmental Protection	0.04	0.10	0.10	0.12	0.15	0.12	0.03	0.07	0.17	0.18	0.15	0.62	0.95	0.88	3.7	0.7%
10	Recreation, Culture and Religion	0.03	0.11	0.17	0.18	0.10	0.11	0.14	0.25	0.30	0.32	0.26	0.32	0.45	0.30	3.0	0.6%
	Totals national Budget (ZMK' Billion)	**10.2**	**12.0**	**13.8**	**15.3**	**16.7**	**20.5**	**27.7**	**32.2**	**42.7**	**46.7**	**53.1**	**64.5**	**71.7**	**86.8**	**514.0**	100%

Source: (Ministry of Finance, Various Years)

Over the period 2010 to 2019, the budget allocation towards Environmental Protection averaged 0.6% of the total national budget, the lowest (along with Recreation, culture and religion) among all the budget functions. Further discounting the 0.6% environmental protection budgetary allocation taking into account the 70% for biodiversity relevant expenditure out of the total environmental protection budget, the average budgetary allocation to environmental protection reduces to about 0.4% of the total national budget. It is important to note that the allocation towards Environmental Protection in 2019 was 1% of the total budget, down from 1.3% in 2018. While allocation towards environmental protection decreased between 2018 and 2019, other budget functions, notably housing, defense, public order and health received budgetary allocation increases of 174%, 45%, 34%, and 19% respectively during the same period.

It must also be noted that biodiversity related expenditure is not just limited to the environmental protection budget function as some expenditures under economic Affairs can still be classified as biodiversity relevant. The biodiversity related expenditure that falls under economic affairs include Forestry Affairs and services, Fishing and Hunting Affairs and Services.

3.2.1 Budget Sub Functions under Environmental Protection Budget Function

A detailed breakdown of Zambia's environmental protection budget function shows that although not all environmental protection budget lines qualify as biodiversity, a substantial part is targeted at biodiversity conservation based on the details of the activities.

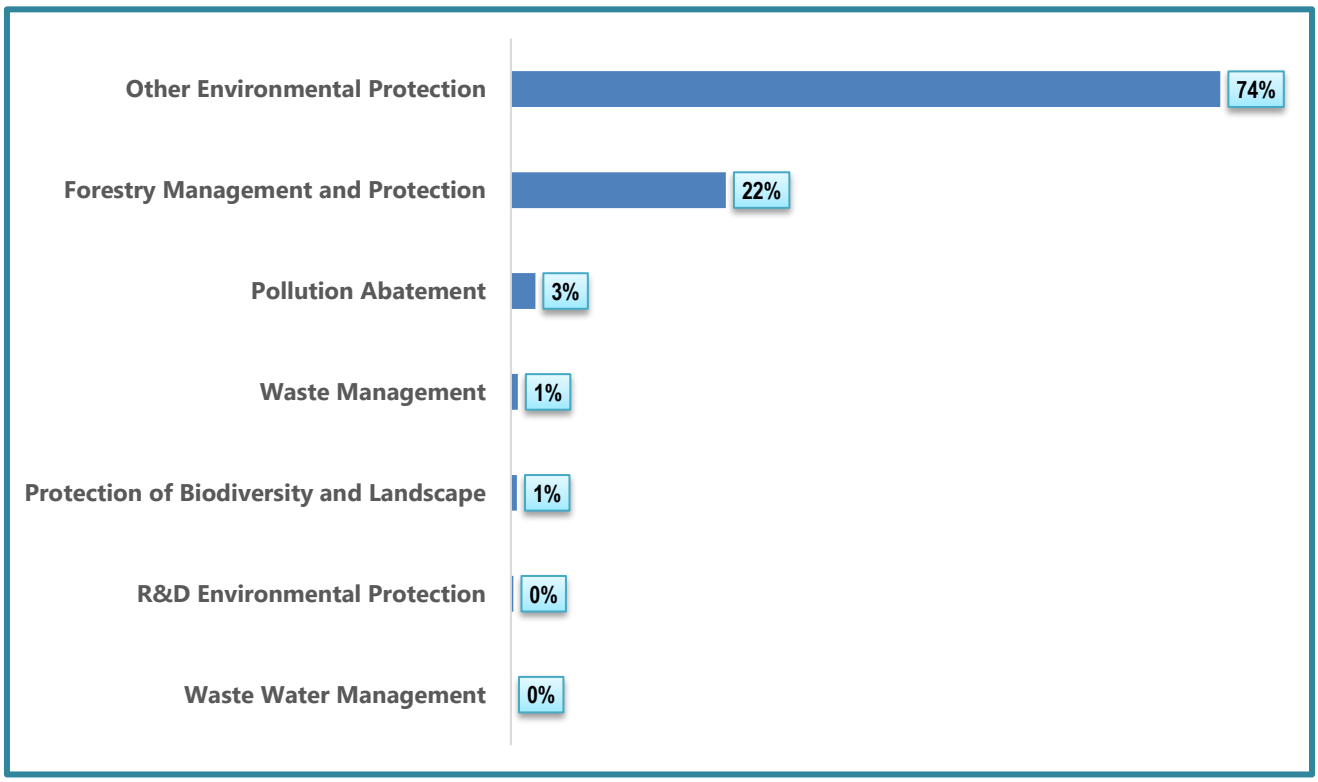


Figure 4: Breakdown of Zambia's Environmental Protection Budget Function (2010-2019)

Source: National ABB Budget on Budget Functional Classifications (2010-2019)

Figure 4 shows that apart from Forestry Management and Protection, which accounted for about 22% of the total budget between 2010 and 2019, the rest of the budget sub-functions jointly accounted for only about 5% of the total environmental protection budget. It is worth noting that Other Environmental Protection has the largest share of the environmental protection budget function, when ideally it is expected to be have one of the least in terms of share of the total environmental protection budget. The reporting of the environmental protection budget sub-functions therefore needs to be reclassified by unbundling the other environmental protection sub-function so that biodiversity related programmes are clearly revealed as reflected in Table 6.

Table 6: Snapshot of programmes under 'Other Environmental Protection' for the 2019 Budget

Department	Programme	Share of total other environmental protection budget
Mines Safety Department	Environmental Impact Assessment	0.02%
Loans and Investments	Projects	1.28%
	Recapitalization and Investments	3.92%
Development Planning	Grants to Institutions - Operational	44.66%
Environmental Management	General Administration	0.14%
	Bilateral, Multilateral and Regional Co-operation	0.11%
	Support to Environmental Projects	48.44%
	Transport Management	0.02%
	Contributions and Subscriptions to Organizations	0.17%
	Environment and Natural Resources Awareness	0.00%
	Field Assessments for Projects and Projects and Programme	0.03%
National Parks and Wildlife Area Management	Community Based Wildlife Management	1.22%
Climate Change and Natural Resources Management Department	General Administration	0.00%
	Bilateral, Multilateral and Regional Co-operation	0.00%
	Transport Management	0.00%
	Public Education and Awareness	0.00%
	Support to Climate Change Strategies, Programmes and Projects	0.00%
	Support to the implementation of Natural Resources Projects	0.00%
	Events	0.00%

Source: National ABB Budget on Budget Functional Classifications (2010-2019)

It is evident from the classification in Table 6 that the largest share of other environmental in 2019 comprises grants to institutions (45%) and support to environmental projects (48%). However, this trend is also apparent for the entire period that was considered for the BER analysis.

Apart from the environmental protection budget line, it is also important to note that although the current budget classification incorporates biodiversity under the environmental protection budget line, there are biodiversity related aspects covered under the budget function economic affairs. Some of the budget sub-functions under economic affairs include Forestry Affairs and Services, Fishing and Hunting Affairs and Services, Other Services Related to Agriculture, Forestry Fishing and Hunting Affairs and Services, and Hunting Affairs and Services. Improved allocation, focus and implementation of programmes would require that these budget sub-functions are integrated to and classified under environmental protection, particularly the protection of biodiversity and landscape sub-function.

3.2.2 Financing of Environmental Protection Sub-Functions

Table 6 provides a detailed outline of the financing to environmental protection for each budget line by Environmental Protection Sub-Functions and reveals the dominance of donor funding towards environmental protection. Between 2010 and 2019, analysis of the budget functional classification by the Ministry of Finance shows that donors financed about 74% of the budgetary allocation towards Environmental Protection while Government only financed 26%. From the Ministry of Finance's perspective, the largest share of what is classified as donor are actually loans contracted from donors hence can be construed as government financing. However, data from budget functional classification as shown in Table 6 does not provide enough evidence to support this assertion. The dominance of donor funding as the main source of funds for environmental protection poses a financing risk in terms of sustainable financing of environmental protection and biodiversity conservation agenda at large.

Table 7: Financing of Environmental Protection Budget Function (2010-2019) in Zambia

Sub-Budget Function	Government (ZMK)	Donors (ZMK)	Total (ZMK)
Other Environmental Protection	296,447,150	1,928,553,603	2,225,000,753
Forestry Management and Protection	428,305,390	246,117,781	674,423,171
Pollution Abatement	18,215,077	58,500,000	76,715,077
Waste Management	6,766,000	15,000,000	21,766,000
Protection of Biodiversity and Landscape	19,154,541	-	19,154,541
R&D Environmental Protection	8,030,244	-	8,030,244
Waste Water Management	316,479	-	316,479
Totals	**77,234,881**	**2,248,171,384**	**3,025,406,265**
Funding Percentage	**26%**	**74%**	**100%**

Source: National ABB Budget on Budget Functional Classifications (2010-2019)

3.2.3 Public revenue sources from biodiversity and ecosystem services

In Zambia, key biodiversity departments generate revenues from various sources such as; fees, fines, licenses and levies by Department of Fisheries; fees, revenue from auctions, fines, royalties, timber levies, concessions, licenses by Forestry Department; slaughter and dipping fees, Police form, veterinary permit stock movement and Police anti-theft stock clearance report by the Livestock Development Department; Raw water user charges under the Water Supply and Sanitation by Water Resources Management Authority (WARMA) and fixed lease fees, variable fees, park/reserve entrance fees and animal fees, Tourism Enterprise License fees and Game Management Area Land-user-rights fees by the Department of National Parks and Wildlife (DNPW).

Table 7 shows the collections of revenue from various sources. Revenues from the mineral royalty tax accounts for the largest share (96%) of total revenue between 2010 and 2016 and has

increased by 87% over the same period. Generation of revenue from key sectors such as fisheries and forestry is still low mainly due to low fees and charges that apply to these respective sectors. However, the government during the 2019 budget speech acknowledged that the various fees have not been revised in a long time proposed to adjust upwards the fees to cost reflective levels every two years and to index them to inflation from 2020 onwards (GRZ, 2019).

Table 8: Public revenue sources and collections (ZMW Millions): 2010-2016

Revenue sources	2010	2011	2012	2013	2014	2015	2016	Grand Total
Mineral Royalty Tax	411.96	2,457.04	1,458.62	1,760.17	1,766.62	4,133.19	3,077.42	15,065.03
Excise Duty-Carbon	14.92	18.59	22.54	27.35	27.88	12.42	22.50	146.22
Mining Licences	5.76	3.29	5.23	16.98	22.94	26.96	31.49	112.64
National parks and Trophy Hunting	-	0.00	0.02	0.32	0.39	-	111.63	112.36
ZEMA Collections	-	-	-	-	33.04	24.78	16.80	74.63
Forestry Revenue	3.68	5.15	5.16	8.84	6.12	13.90	18.14	60.99
Water Board Fees	2.51	0.01	5.16	1.91	0.34	6.63	8.85	25.42
Excise Duty- Timber	-	-	-	-	-	-	18.99	18.99
Fish Licences	1.27	0.98	0.79	1.61	1.14	1.58	0.75	8.14
Import & Export Permit- Fisheries	-	-	-	-	-	-	2.75	2.75
Import & Export Permit- Agriculture	-	-	-	-	-	-	2.46	2.46
Proceeds from Sale of Fish	-	-	0.02	0.01	-	0.00	-	0.03
Grand Total	440	2,485	1,498	1,817	1,858	4,219	3,312	15,630

Figure 5 gives a snapshot of revenue collected by the Zambia Environmental Management Agency (ZEMA) against the budgeted amounts from 2014 to 2016. The sources of revenue are Environmental Impact Assessment fees and charges, discharge of effluents fees and charges. Overall, revenue generation by ZEMA is well below its potential and has declined between 2014 and 2016. This may be due to lack of institutional structures across the country hence affecting enforcement and revenue generation potential.

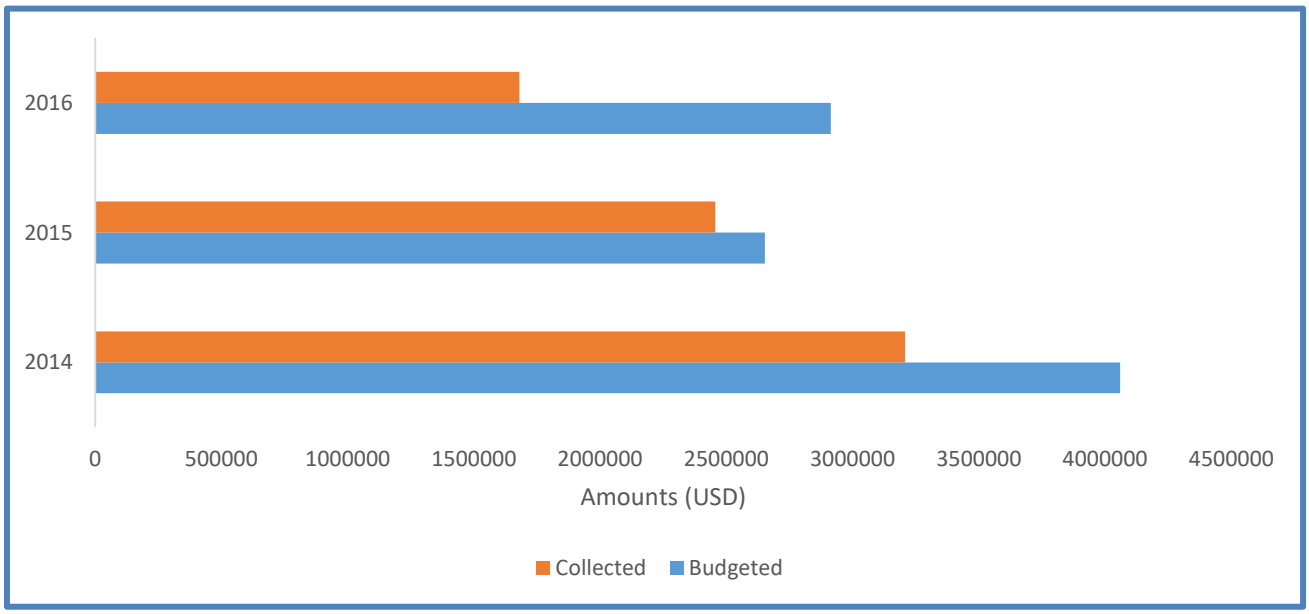


Figure 5: Budgeted and revenue collection by ZEMA (2014-2016)

Source: Authors' computation from Auditor Generals' reports for 2014, 2015 and 2016.

3.2.4 Relationships among budgets, allocation and expenditures

Given that not all environmental protection sub-function relates to biodiversity expenditure the attribution coefficients were used to deduce the proportion of total expenditure that is biodiversity relevant. It is evident from Figure 6 that out of the aggregated budgets for the key biodiversity sectors for each year, the actual expenditure has been low and well below 50% except for the year 2017 when the share of total expenditure out of the total budget was about 85 percent. It can also be deduced that the share of biodiversity expenditure out of the total budget was very low. However, the proportion of biodiversity relevant expenditure out of the actual expenditure was relatively high and was in excess of 70% in 2015, 2016 and 2018..

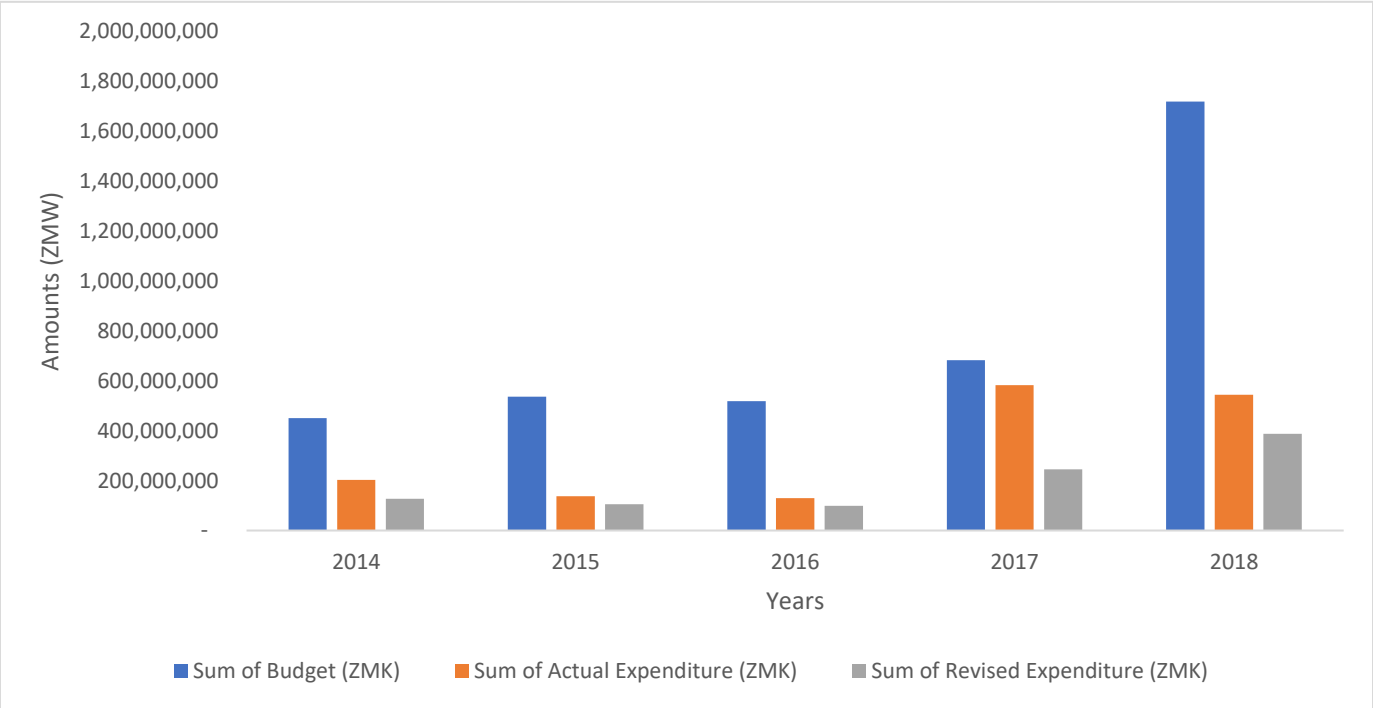


Figure 6: Relationship between Budget Allocation, Total Expenditure and Biodiversity Relevant Expenditure

Source: Authors' computation based on data from MoF

Figure 7 further shows that biodiversity relevant expenditure has been increasing between 2014 and 2018. Biodiversity relevant expenditure has increased by about 67% between 2014 and 2018. This coincides with the increase in total budget allocation by 74% and actual expenditure by 63% over the same period.

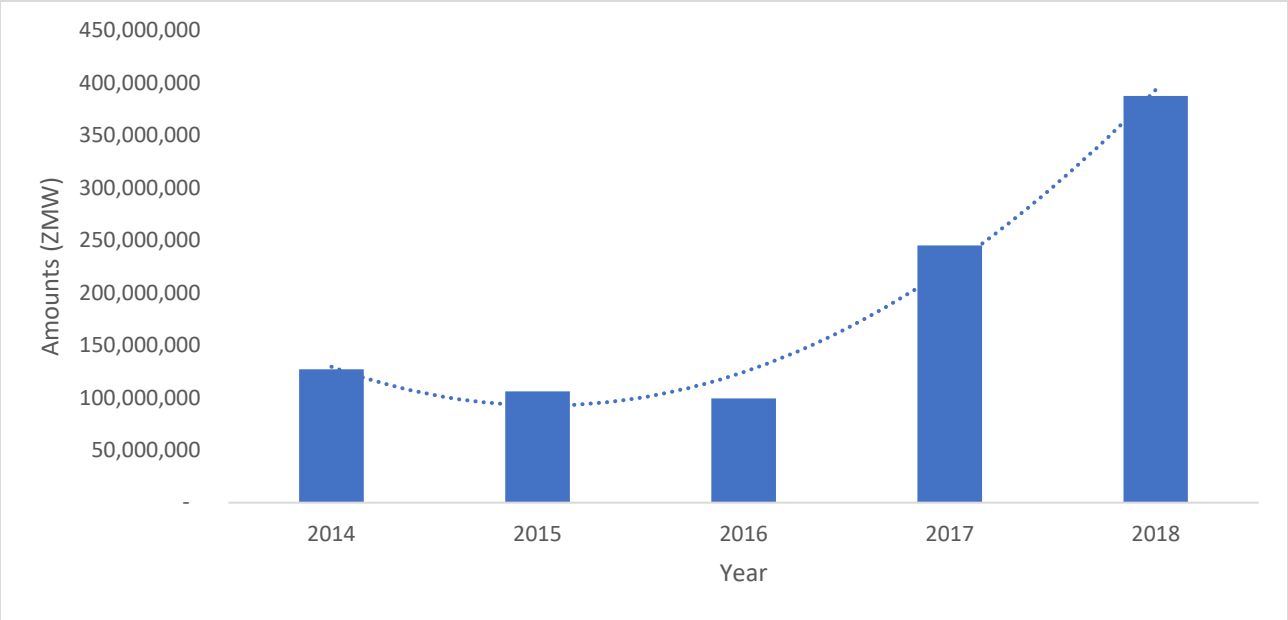


Figure 7: Trends in Biodiversity Relevant Expenditure

Source: Authors' computation based on data from MoF

3.2.5 Biodiversity expenditure based on Ministries and Departments

Table 7 shows that the average expenditure between 2014 and 2018 of the key or lead Ministries is about 57% of the approved budget. The Ministry of Tourism and Arts and the Ministry of Water Development, Sanitation and Environmental Protection has the highest (about 100%) and lowest (about 12%) actual expenditure of their total approved budgets respectively. Of the total actual expenditure by the lead Ministries, only about 47% is deemed biodiversity relevant. The Ministry of Tourism and Arts has the highest biodiversity relevant expenditure out of their total approved budget (97%) while the Ministry of Water Development, Sanitation and Environmental Protection has the least at about 7%. The average biodiversity expenditure out of the total actual expenditure is 80% with biodiversity relevant expenditure out of the total actual expenditure in excess of 90% for the majority of the Ministries except for the Ministry of Mines and Mineral Development (23%), Ministry of Lands and Natural Resources (88%) and Ministry of Water Development, Sanitation and Environmental Protection (55%).

Table 9: Biodiversity Expenditure by Ministry and Department

Ministries	Expenditure vs Budget	Biodiversity vs Budget	Biodiversity vs Actual Expenditure
Ministry of Agriculture	86%	17%	20%
Ministry of Energy	56%	28%	50%
Ministry of Fisheries and Livestock	28%	19%	69%
Ministry of Lands and Natural Resources	15%	14%	88%
Ministry of Mines and Mineral Development	42%	9%	23%
Ministry of Tourism and Arts	100%	97%	98%
Ministry of Water Development, Sanitation and Environmental Protection	12%	7%	55%
Office of the President - Central Province	75%	74%	98%
Office of the President - Copperbelt Province	73%	70%	95%
Office of the President - Eastern Province	73%	67%	92%
Office of the President - Luapula Province	79%	78%	99%
Office of the President - Lusaka Province	48%	46%	97%
Office of the President - Muchinga Province	24%	23%	95%
Office of the President - Northern Province	53%	52%	97%
Office of the President - North-Western Province	65%	62%	96%
Office of the President - Southern Province	62%	61%	99%
Office of the President - Western Province	80%	78%	98%
Average	**57%**	**47%**	**80%**

Source: Authors' computation based on data from MoF

3.2.5 Biodiversity expenditure based on Expense Classification

Biodiversity expenditure by expense classification as presented in Figure 8 shows that between 2014 and 2018, operations take up a largest share of total biodiversity expenditures (about 59%) followed by salaries (about 33%) while transfers are the least (about 0.01%). Expenditure on human resources and administration, particularly operations and salaries account for the largest share of recurrent expenditures (about 90%). Human resources and administration takes up the largest share for all the departments except for Natural Resources and Environment Department and Livestock Development Department.

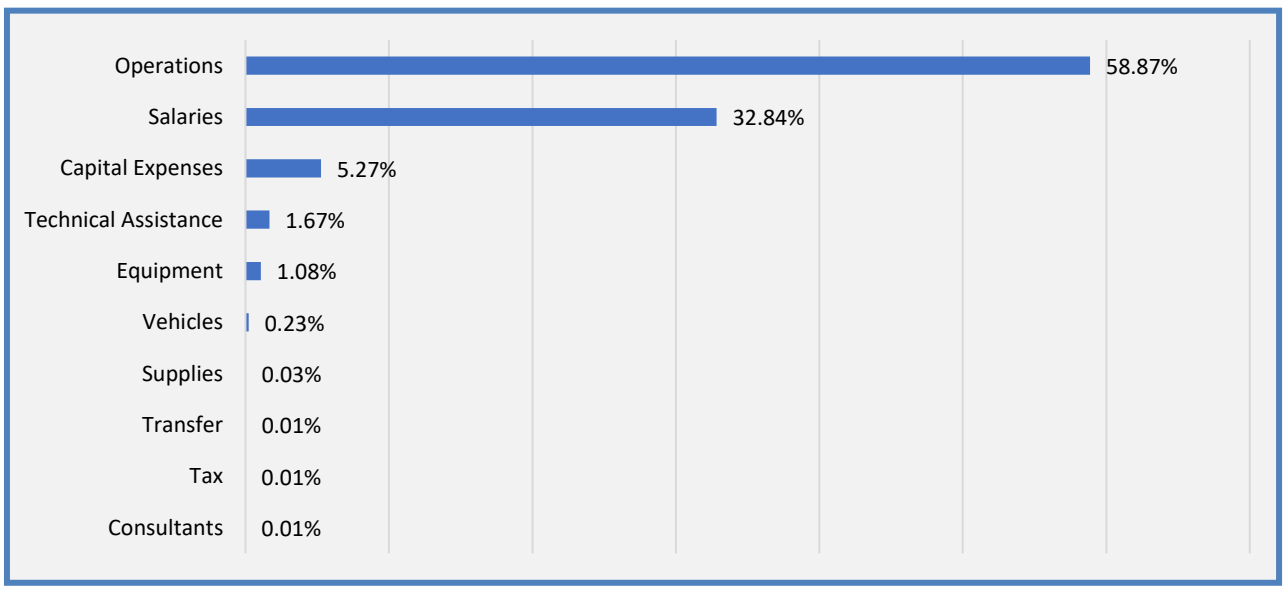


Figure 8: Biodiversity expenditure by expense classification

Source: Authors' computation based on data from MoF

A further decomposition of biodiversity expenditure by recurrent and investment categories (Figure 9) reveals that recurrent expenditure accounts for the lion's share of total biodiversity expenditure (87%) compared to only 13% for investment expenditure. This is largely driven by expenditure on human resources and administration as highlighted above, particularly operations and salaries.

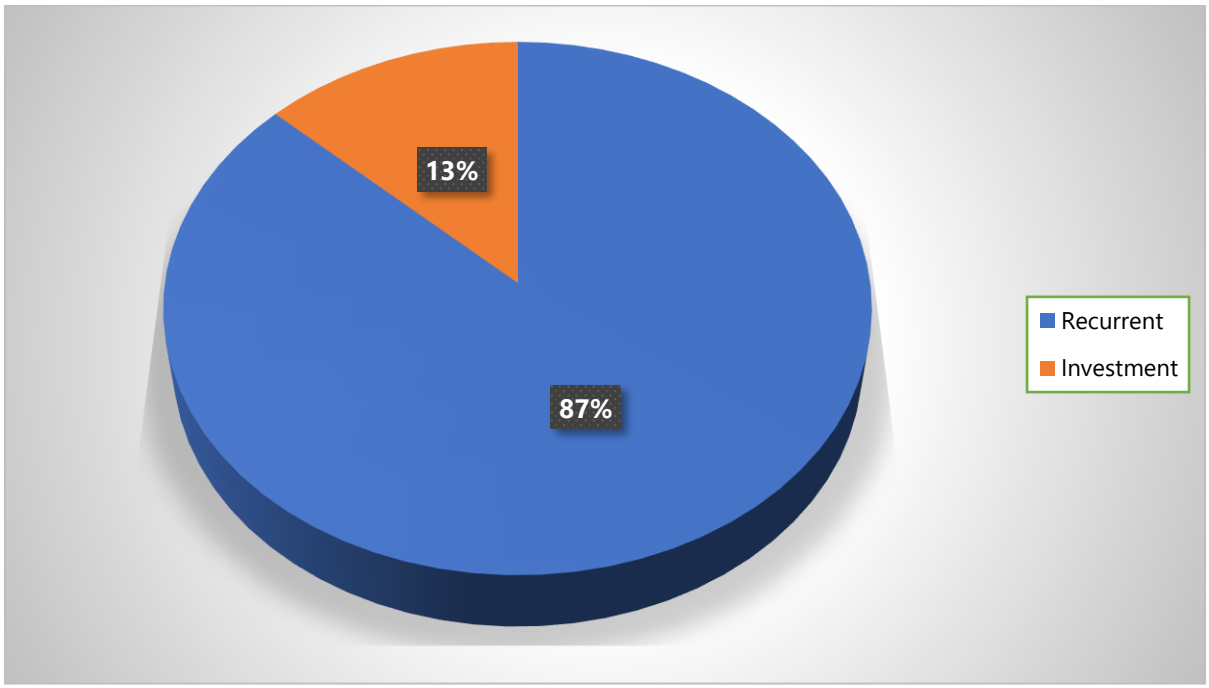


Figure 9: Recurrent and Investment biodiversity expenditure

Source: Authors' computation based on data from MoF

3.3 PUBLIC SECTOR BIODIVERSITY EXPENDITURE BASED ON OTHER COST TAGS

This section presents public biodiversity expenditure based on Aichi and NBSAP targets, BIOFIN categories, and Sustainable Development Goals (SDGs).

3.3.1 Biodiversity expenditure based on NBSAP and Aichi Targets

Of all the targets that were tagged to the expenditure data, the analysis in Table 8 shows that Aichi Target 7 of accounts for about 50% (K486, 878,193) of the total biodiversity expenditure. Target 7 is followed by Target 5 which accounts for about 26% (K252, 382,235) of the total biodiversity expenditure. Aichi Target 19 has the least expenditure (K33, 028), representing about 3% of the total biodiversity expenditure. Although Target 2 was tagged to the expenditure data, it is important to note that 0% of the budgeted amount was actually spent towards achievement of this particular Target.

Table 10: Biodiversity expenditure based on Aichi and NBSAP biodiversity targets (ZMW)

Aichi Target	2014	2015	2016	2017	2018	Grand Total
Target 7	48,117,705	56,826,209	60,166,021	94,637,972	227,130,286	486,878,193
Target 5	9,064,025	4,007,063	3,986,901	116,034,019	119,290,227	252,382,235
Target 14	49,358,092	25,748,079	13,794,520	14,308,787	27,217,038	130,426,516
Target 6	12,020,716	12,203,790	12,237,521	5,946,056	8,698,092	51,106,175
Target 1	2,339,170	2,823,071	4,911,533	8,182,600	2,467,960	20,724,333
Target 13	2,125,478	1,572,413	1,432,620	4,438,216	767,439	10,336,165
Target 4	3,199,963	2,128,987	2,128,988	608,124	38,077	8,104,139
Target 8	717,609	449,232	449,232	756,264	1,767,226	4,139,563
Target 9	84,072	106,069	106,069	56,000	25,384	377,595
Target 19			33,028			33,028
Target 2					-	-
Grand Total	**127,026,830**	**105,864,912**	**99,246,431**	**244,968,039**	**387,401,730**	**964,507,942**

Source: Authors' computation based on data from MoF

The expenditure follows the same pattern when total biodiversity expenditure is analysed by NBSAP Targets with Targets 7 and 5 having the highest and second highest expenditure respectively. However, Target 17 has the lowest biodiversity expenditure accounting for about 0.002% (K23, 027) of the total biodiversity expenditure. In terms of biodiversity expenditure by Strategic Goals, Strategic Goal B has the highest (83% of the total biodiversity expenditure, K964, 507, 942) while Strategic Goal E has the least contributing a paltry 0.002% (K23, 027) to total biodiversity expenditure. Strategic Goal B is largely driven by 3 strategic interventions namely 5.2, 7.4 and 7.6 which account for about 82% of the total biodiversity expenditure under Strategic Goal B.

3.3.2 Biodiversity expenditure based on BIOFIN categories

The biodiversity expenditure was further tagged to the nine BIOFIN categories and corresponding sub-categories as shown in Figure 10. The findings reveal that Biodiversity and Development Planning has the highest share of biodiversity expenditure accounting for about 75 percent (K719, 165,200) of total biodiversity expenditure. This is largely driven by sub-category Biodiversity Coordination and Management which makes up about 99 percent of the total expenditure on Biodiversity and Development Planning. Coordination and Management mainly comprises activities related to general administration with very little direct impact on biodiversity conservation. The Green Economy category has the second highest total expenditure on biodiversity (K138, 410,363 or 14% of total biodiversity expenditure) with sustainable energy contributing the largest

share (91%) under this category. Access and Benefit Sharing ranks the least in terms of spending priority contributing a meagre 0.01% (K125, 011) to the total biodiversity expenditure.

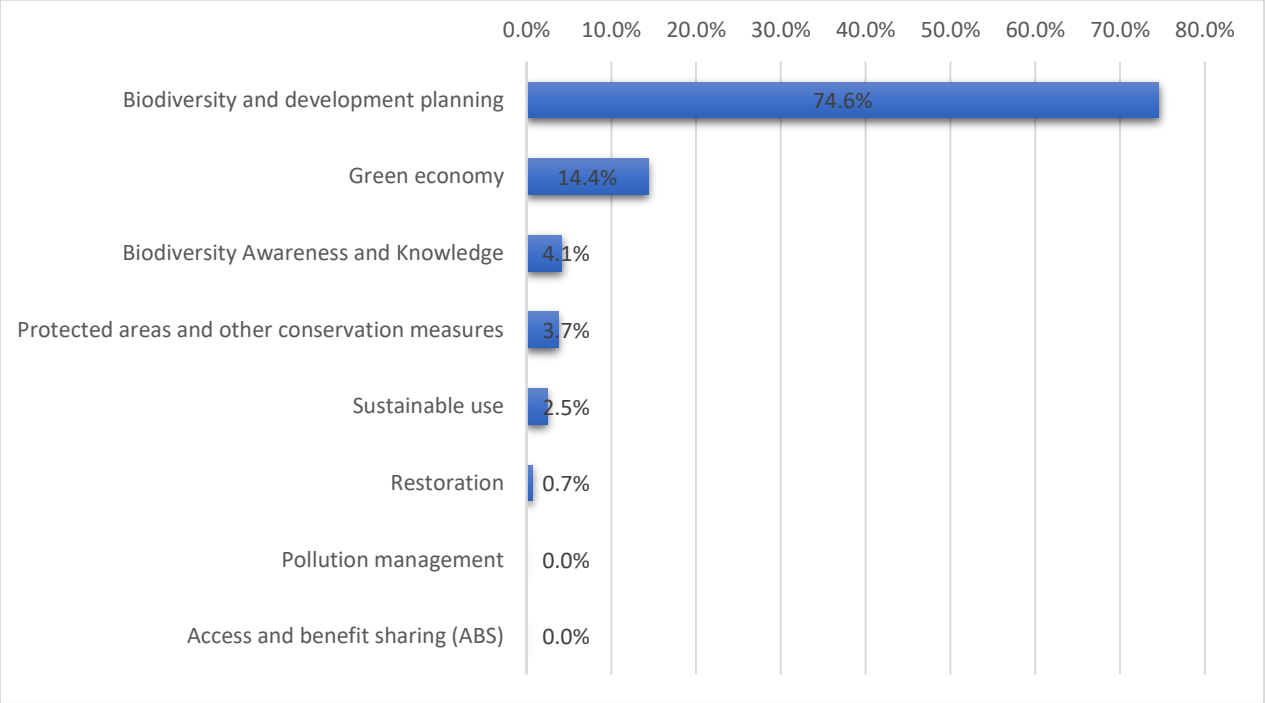


Figure 10: Biodiversity Expenditure by BIOFIN Categories

Source: Authors' computation based on data from MoF

3.3.3 Distribution of Biodiversity Expenditure by Sustainable Development Goals (SDGs)

Table 9 indicates that biodiversity expenditure in Zambia contributes towards attainment of eleven (11) Sustainable Development Goals (SDG). Of these eleven SDGs, SDG 15 has the highest biodiversity expenditure associated with it (about 45% of total biodiversity expenditure). Expenditure contributing towards achievement of this SDG has increased by about 81 percent indicating the country's commitment and strides in addressing issues related to life above land. However, very little has been spent on biodiversity issues related to life below water as evidenced by the low share of total expenditure on SDG 14 (7%). SDG 7 about affordable and clean energy had the second highest biodiversity expenditure (about 26%). This is very key in reducing the pressure on the Zambia's forest resources and reducing the current high deforestation rates that the country is facing. While SDG 5 had expenditure attributed to it, none (0%) of the total expenditure was classified as biodiversity relevant.

Table 11: Biodiversity Expenditure by SDGs

SDG #	2014	2015	2016	2017	2018	Grand Total
SDG 15	41,758,131	52,814,361	57,950,177	57,152,481	219,962,577	429,637,728
SDG 7	9,274,649	4,215,179	4,213,767	116,081,219	119,614,587	253,399,402
SDG 6	49,826,535	25,825,331	13,875,574	14,395,012	27,247,050	131,169,502
SDG 2	5,761,233	5,059,124	4,961,624	45,211,171	11,533,348	72,526,500
SDG 14	19,701,850	16,114,363	16,348,411	8,667,860	5,719,065	66,551,548
SDG 13		1,387,780	1,448,105	751,341	148,126	3,735,352
SDG 3	704,433	448,774	448,774	755,014	436,570	2,793,564
SDG 11					2,730,656	2,730,656
SDG 12			-	1,947,690		1,947,690
SDG 8	-	-	-	6,250	9,750	16,000
SDG 5	-	-	-	-	-	-
Grand Total	**127,026,830**	**105,864,912**	**99,246,431**	**244,968,039**	**387,401,730**	**964,507,942**

3.4 PUBLIC SECTOR PROJECTIONS OF FUTURE BIODIVERSITY EXPENDITURES

The projections of public future expenditures on biodiversity were premised on 2 assumptions. The first assumption is that biodiversity expenditure grows at the same pace as the average share of budget allocation to environmental protection between 2010 and 2019. The second scenario is that biodiversity relevant expenditure follows the pattern of the average growth of the total national budget over the same period. Based on these 2 underlying assumptions deterministic forecasts were conducted and Figure 11 shows the trends in public biodiversity expenditure for the period 2019 to 2030. This period coincides with the Vision 2030 and the period that was used to assess the FNA for Zambia.

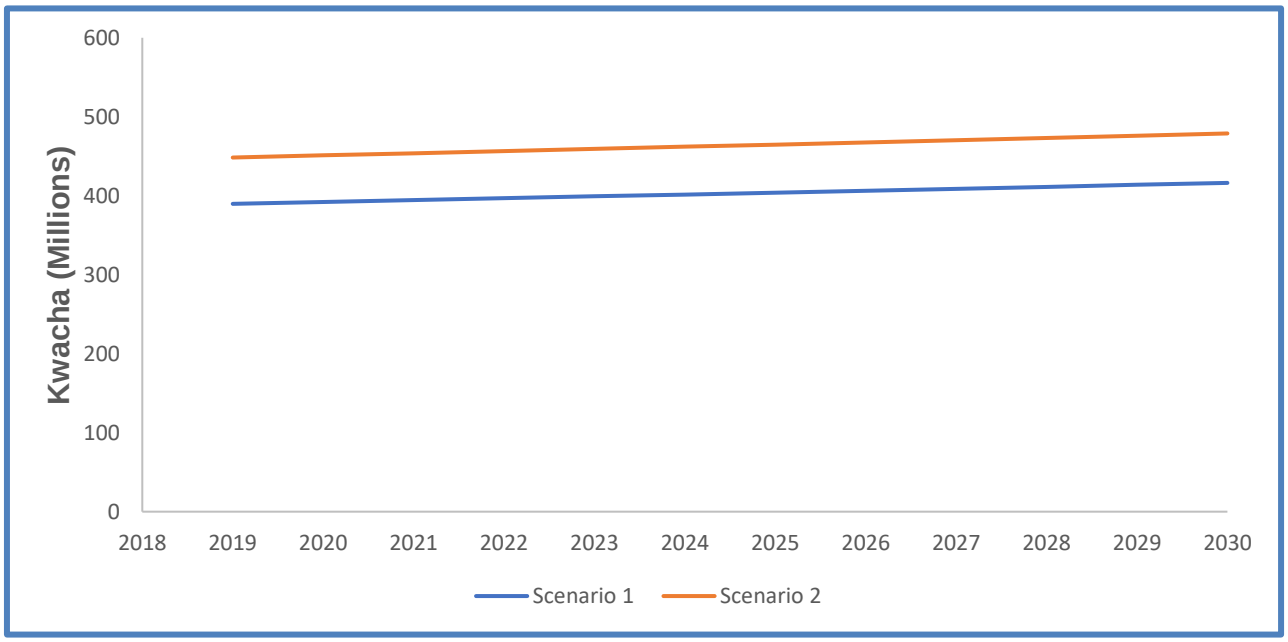


Figure 11: Projections of biodiversity expenditure in Zambia: 2019-2030

Source: Authors' computation based on data from MoF

It can be deduced from Figure 11 that there is an upward trend in public biodiversity expenditure albeit the growth is somewhat slow. Scenario 2 that assumes an annual growth in the national budget of 16% has higher biodiversity expenditure between 2019 and 2030 than Scenario 1 that factors in average allocation to environmental protection of 0.6%. However, Scenario 1 is more realistic compared to Scenario 2 given that from recent experience, increases in national budget allocation does not usually translate in increases in allocation to environmental protection. For instance, the 2019 budgetary allocation was reduced from the 2018 allocation by 8%. Environmental protection was allocated 1% of the total annual budget in 2019 down from 1.3% in 2018.

3.5 PRIVATE SECTOR BIODIVERSITY EXPENDITURE

Tracking of private sector expenditure on biodiversity has proved to be a challenge in Zambia and the private sector actors that contribute towards biodiversity conservation do so mainly through their Corporate Social Responsibility (CSR) activities. However, there is no clear-cut policy that guides priority sectors for CSR expenditure. As a result, there is erratic reporting of biodiversity expenditure even through CSR. A review of financial statements and annual reports of selected companies in some years in which specific CSR activities were reported revealed that the private sector has a key role to play in sustainable conservation. The literature review on the private sector was conducted on companies in the mining, manufacturing, extractive and banking industries as their operations benefit from the use of biodiversity and ecosystem services. The specific pro-biodiversity activities undertaken by these industries are presented in Table 9 and where possible, the total amount that they have spent in implementing the respective activities.

Table 12: Biodiversity expenditure by selected private sector actors in Zambia

Company	Description of Biodiversity Activity	Sector	Expenditure
Konkola Copper Mines (KCM)	Over 80,000 trees, including citrus trees have been planted in communities and government-run schools under the KCM "Go Green" environmental support programmes. More recently, 2,000 elite Pongamia Pinnata trees were planted on a 4-hectare overburden site at Tailings dump to revegetate the land and enhance soil fertility,	Mining	No data available
First Quantum Minerals (FQM)	FQM through its Corporate Social Responsibility conducts various biodiversity related activities through the Trident project. The company's scope of responsibility takes in over 14,000 km^2 of wildlife reserves, forest, plains and wetlands, including the rivers of the Zambezi watershed. FQM also funds Conservation Farming and rehabilitation of disturbed areas.	Mining	FQM has invested more than US$2 million in wildlife and conservation initiatives around its Trident Project site and the West Lunga Management Area since 2014
Zambian Breweries (ZB)	ZB has been involved in the preservation and protection of nature as evidenced with the protection of the Itawa Springs in Ndola. The company has also been promoting awareness on the need of conserving and re-using water, recycling and waste management and power conservation, among others.	Manufacturing	No data available

Lafarge	Lafarge Zambia PLC successfully launched the Lafarge Foundation in 2015, a new channel for CSR which seeks to address sustainability issues related to water, biodiversity, climate change and people and communities.	Manufacturing/ Extractive	K2 million has been set aside to implement community projects in three years in these sustainability areas
Zambia Sugar	The company works with the government on a number of conservation initiatives including tree planting, the protection of water systems, and support for local communities in forest conservation. Zambia Sugar contributes to sustainable biodiversity management through environmental stewardship programme. 91% of Zambia sugar's energy consumption is provided from renewable sources, primarily bagasse, and 80% of all water used is cleaned and returned to source.	Manufacturing	No data available
Zambeef	Through its environmental stewardship system "windrow cropping", Zambeef produces organic fertilizer from organic waste on the farm to use in its cropping operations.	Manufacturing	No data available
First National Bank (FNB)	National Tree Planting	Banking	Between 2014 and 2017, FNB spent K50,000 by providing support to tree planting to the Forestry Department

CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The analysis of the status and trends of biodiversity as guided by the BIOFIN methodology is a key step to providing continuous tracking of biodiversity expenditure by the public and private agencies as well as establishing baseline levels of biodiversity expenditure in Zambia. The evidence based approach to assess current biodiversity expenditures is vital in informing and promoting policies and financing that contribute to the achievement of the objectives of the CBD namely conservation of biological diversity, sustainable use of the components of biodiversity and fair and equitable sharing of the benefits arising out of the use of genetic resources. It also provides a basis to ascertain progress that Zambia has made in achieving the NBSAP and Aichi biodiversity targets. From a macroeconomic perspective, the country spends about 0.11% of GDP on activities associated with biodiversity. Out of the total budgetary allocations, actual expenditure accounts for only about 57% of the total budget on average while the proportion of actual expenditure that is deemed biodiversity relevant out of the national budget over the period 2014 to 2018 averages 47%.

Section 4.2 reviews how each of the BER objectives were met in this report.

4.2 REVIEW OF THE BER OBJECTIVES

As was stated earlier, the BER 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 7 BER objectives.

4.2.1 BER Objective #1- Composition of biodiversity expenditure

Out of the total biodiversity expenditure over the period 2014 to 2018, the Ministry of Energy has the largest share of biodiversity relevant expenditure (26%) driven by Human Resources and Administration and Electrification and Power Development. The Ministry of Tourism and Arts has the second highest biodiversity relevant expenditure at 21% which is also largely driven by Human Resources and Administration. The Ministry of Mines and Minerals Development has the least share of biodiversity relevant expenditure at 0.3%. In terms of the proportion of total expenditure that is biodiversity relevant per agency, it can be deduced that all the agencies at sub-national level. At national level the Ministry of Tourism and Arts and Ministry of Lands and Natural Resources have the highest share of biodiversity relevant expenditure at 98% and 88% respectively while the Ministry of Agriculture spend only 20% of their budget releases on biodiversity activities. At Departmental level, the Department of Energy has the highest spending on biodiversity (K253, 397,990) followed by Forestry Department (K190, 010,033) and Department

of National Parks and Wildlife (K189, 569,690[1]). The Climate Change & Natural Resources Management Department (CCNRMD) has the least expenditure (K777, 665[2]). In terms of the composition of the total biodiversity spending, it is important to note that human resources and administration takes up the largest share for all the departments except for Natural Resources and Environment Department and Livestock Development Department. Consequently, 87% of the expenditure on biodiversity is of a recurrent nature not investments. Regarding private sector spending on biodiversity, it is difficult to establish the actors with the highest and lowest spending due to fragmented nature of private sector data.

4.2.2 BER Objective #2-Distribution of biodiversity expenditure across biodiversity categories

The analysis showed that 75 % of total expenditure is dedicated to biodiversity development and planning, 14% to green economy, 4% to biodiversity awareness and knowledge, 4% to protected areas and other conservation measures, 2% to sustainable use and less than 1% on restoration, pollution management and access and benefit sharing. The analysis also showed that biodiversity expenditures in Zambia contribute to the attainment of targets 1, 4, 5, 6, 7, 8, 9, 12, 14, and 15 of the NBSAP with target 7 accounting for about 50% of the total expenditure over the 5-year period followed by target 5 (26%) while target 17 accounted for a paltry 0.002%.

4.2.3 BER Objective #3-Alignment of expenditure with government policies and priorities

Biodiversity falls under the environmental protection budget function. About 70% of the environmental protection budget line is biodiversity. Budget allocation towards Environmental Protection averaged 0.6% of the total national budget during the period 2010 to 2019, the lowest (along with Recreation, culture and religion) among all the budget functions. Of the 0.6% budget allocation, the largest share of Zambia's environmental protection annual budget is largely financed by donors (76%). The high expenditure on human resource leaves very little resources available to implement the activities that would lead to favorable biodiversity conservation outcomes.

4.2.4 BER Objective #4-Execution of budget allocations

In addition to low budget allocation to environmental protection, budget releases are low averaging about 40% and are even lower for some government ministries. Among the 7 ministries, budget releases are highest for the Ministry of Tourism and Arts (about 100%) and Ministry of Agriculture at 86%. Regarding the Ministry of Agriculture, the high budget releases are expected given the

[1] Note that this figure is the sum of 2 years; 2017 and 2018 as DNPW previously used to be a quasi-government institution before 2017.

[2] The reported low figure is because this is a new department and only became fully operational in 2018

importance that government attaches to the agricultural sector through provision of subsidies. In particular, the expenditure on agricultural subsidies notably the Farmer Input Support Programme (FISP) has been more than six fold that of environmental protection from 2010-2018 (Mweemba, 2018). On the other hand, the Ministry of Water Development, Sanitation and Environmental Protection has the lowest budget releases at 12%.

4.2.5 BER Objective #5-Opportunities to for improved efficiency of biodiversity financing

Several opportunities exist for improved efficiency of biodiversity financing which include refinancing of government debt through issuance of a green bond, earmarking and retention of biodiversity dependent revenues, reforming fiscal and non-fiscal incentives, developing Zambia's green bond market, greening the FISP, debt for nature swap and establishment of a privately managed biodiversity fund to finance investments in green projects.

4.2.6 BER Objective #6-Forecasting of future biodiversity expenditure

The forecasting of biodiversity relevant expenditure using the deterministic approach was conducted under 2 scenarios. The first scenario assumed that biodiversity expenditure grows at the same pace as the average share of budget allocation to environmental protection (0.6%) between 2010 and 2019 while the second scenario assumed a growth rate of 16% of biodiversity expenditure based on the growth rate in the total national budget over the same period. The projections revealed a positive and upward trend in biodiversity expenditure over a 12 year horizon; 2019 to 2030.

4.2.7 BER Objective #7- Making a business case

The analysis of Zambia's spending on biodiversity has provided a basis to develop 2 innovative finance solutions based on the issues that have been identified in the BER such as low budget and allocation and releases, and little private sector participation in biodiversity conservation. These are (i) Making a case for enhanced government funding towards biodiversity conservation and (ii) Making a case for enhanced private sector funding towards environmental protection through earmarking of CSR funds. These solutions are aimed at clearly demonstrating the nexus between biodiversity conservation and development goals, including the contribution of biodiversity to economic growth. These 2 finance solutions could potentially generate up to $1,272,326,928 between 2019 and 2030. It is envisaged that BIOFIN Zambia, as a permanent undertaking, will embark on a detailed budget analysis of the Environmental Protection budget function in the coming years to advocate for enhanced sustainable financing towards environmental protection through publication of evidence driven policy briefs and advisory notes.

4.3 RECOMMENDATIONS

Emanating from the foregoing findings and conclusions drawn from the analysis conducted in this report, the following recommendations are made.

4.3.1 Recommendation #1-Engage the private sector in biodiversity management

As alluded to earlier, there is very low participation of the private sector in biodiversity conservation hence making it difficult to track their expenditure on biodiversity. To enhance private sector participation in biodiversity management, there is need to assign some activities to private sector actors such as Non-governmental organizations (NGOs) and civil society organizations (CSOs) in the NBSAP. There is also need for the government through the Zambia Development Agency to provide incentives to all areas of investment in tourism, fisheries, agriculture and forestry, and other green investments that promote biodiversity conservation.

Government also needs to engage the private sector to raise awareness and build capacity among private sector actors regarding measuring and reporting of biodiversity expenditure. This is critical in ensuring sustainability of tracking private sector expenditure on biodiversity conservation and management beyond the lifespan of BIOFIN.

4.2.2 Recommendation #2-Realignment of biodiversity expenditures

The analysis has revealed that the largest share of total expenditure at departmental level goes towards human resources with minimal investment in other key conservation activities. Spending agencies should realign some resources from recurrent to investment expenditures if effective implementation of biodiversity programs is to be realized.

4.2.3 Recommendation #3-Develop a resource mobilization strategy for implementation of the BFP

As discussed in Chapter 2, public financing towards environmental protection is characterized by 3 main issues; low budget allocation towards biodiversity conservation (less than 1% of the national budget), donors have financed the larger component of the Environmental Protection Budget (74%) against 26% for the Government for the last 10 years and low budget releases averaging 40% of the budgeted amounts. Given that priority in the next few years in as far as government expenditure is concerned will be debt servicing coupled with low budget allocations and releases, it is imperative for government to explore innovative financing mechanisms to bolster current financing towards environmental protection. The implementation of the BFP by the government which contains innovative finance solutions will be key to sustainable financing of the green agenda in Zambia. Some of the financing mechanisms that government should consider implementing include refinancing of government debt through issuance of a green bond and debt for nature swaps.

4.2.5 Recommendation #5-Revise budget function classification

Based on the National ABB budget on budget functional classifications, there are other environmental and biodiversity categories under the Economic Affairs Category, which are not part of the Environmental Protection category. This has the potential to underestimate the actual total amount that is spent on biodiversity related activities. Government should therefore revise the current classification in the National ABB budget on budget functional classifications and integrate the sub-categories under Economic Affairs into Environmental Protection category, particularly the protection of biodiversity and landscape sub-function. This will give a holistic picture about the country's expenditure patterns and trends.

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ANNEXURES

Annex 1: Key Institutions involved in the BER Analysis

Ministry	Department
Ministry of Agriculture	Zambia Agricultural Research Institute
Ministry of Energy	Department of Energy
Ministry of Fisheries and Livestock	Central Province - Provincial Fisheries & Livestock Co-ordinating Office
	Copperbelt Province - Provincial Fisheries & Livestock Co-ordinating Office
	Eastern Province - Provincial Fisheries & Livestock Co-ordinating Office
	Fisheries Department
	Fisheries Research Stations
	Livestock Development Department
	Luapula Province - Provincial Fisheries & Livestock Co-ordinating Office
	Lusaka Province - Provincial Fisheries & Livestock Co-ordinating Office
	Muchinga Province - Provincial Fisheries & Livestock Co-ordinating Office
	North- Western Province - Fisheries & Livestock Co-ordinating Office
	Northern Province - Provincial Fisheries & Livestock Coordinating Office
	Southern Province - Provincial Fisheries & Livestock Co-ordinating Office
	Western Province - Provincial Fisheries & Livestock Co-ordinating Office
Ministry of Lands and Natural Resources	Climate Change & Natural Resources Department
	Forestry Department
	Natural Resources and Environment Department
	Zambia Forestry College
Ministry of Mines and Mineral Development	Mines Safety Department
Ministry of Tourism and Arts	Department of National Parks and Wildlife
	National Parks and Wildlife Regions
Ministry of Water Development, Sanitation and Environmental Protection	Department of Water Resources Development
	Environment Management Department
Office of the President - Central Province	Central Province - Provincial Fisheries & Livestock Co-ordinating Office
	Department of Water Resources Development
	Forestry Department

Ministry	Department
Office of the President - Copperbelt Province	Copperbelt Province - Provincial Fisheries & Livestock Co-ordinating Office
	Department of Water Resources Development
	Forestry Department
Office of the President - Eastern Province	Department of Water Resources Development
	Eastern Province - Provincial Fisheries & Livestock Co-ordinating Office
	Forestry Department
Office of the President - Luapula Province	Department of Water Resources Development
	Forestry Department
	Luapula Province - Provincial Fisheries & Livestock Co-ordinating Office
Office of the President - Lusaka Province	Department of Water Resources Development
	Forestry Department
	Lusaka Province - Provincial Fisheries & Livestock Co-ordinating Office
Office of the President - Muchinga Province	Department of Water Resources Development
	Fisheries Department
	Forestry Department
	Muchinga Province - Provincial Fisheries & Livestock Co-ordinating Office
Office of the President - Northern Province	Department of Water Resources Development
	Forestry Department
	Northern Province - Provincial Fisheries & Livestock Co-ordinating Office
Office of the President - North-Western Province	Department of Water Resources Development
	Forestry Department
	North- Western Province - Fisheries & Livestock Co-ordinating Office
Office of the President - Southern Province	Department of Water Resources Development
	Forestry Department
	Southern Province - Provincial Fisheries & Livestock Co-ordinating Office
Office of the President - Western Province	Department of Water Resources Development
	Forestry Department
	Western Province - Provincial Fisheries & Livestock Co-ordinating Office

Annex 2: Snapshot of the Data collection Sheet –Part 1

S/L #	Head/Ministry	Department	Year	Unit	Programme	Activity Narration
182	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Planning and Information Manageme	Expansion of Cashew Nut Plantation (AIA)
183	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Planning and Information Manageme	Removal of illegal Squarters in Forest R
184	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Planning and Information Manageme	Monitoring the Management Plan Implement
185	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Protection	Forest Fire Management
186	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Protection	Forest Pests and Diseases Assesment
187	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Surveys and Mapping	Beacon Identification and Maintenance
188	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Surveys and Mapping	Preparation of Reservation Proposal and
189	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forest Surveys and Mapping	Identification of Forest Sites for Reser
190	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forestry Production and Management	Monitoring of Timber Extraction in Fores
191	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forestry Production and Management	Mapping and Map Production for Forest Co
192	Ministry of Lands and Natural Resources	Forestry Department	2014	Forest Protection Unit	Forestry Production and Management	Forest Revenue Monitoring and Inspection
865	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Planning and Information Manageme	Monitoring the Management Plan Implement
866	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Planning and Information Manageme	Control of Enchroachment in Forest Reser
867	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Planning and Information Manageme	Updating of Forest Management Plans for
868	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Protection	Forest Fire Management
869	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Protection	Forest Pests and Diseases Assesment
870	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Protection	Development of Timber Tracebility System
871	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Protection	Monitoring of Timber Extraction in Fores
872	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Surveys and Mapping	Beacon Identification and Maintenance
873	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Surveys and Mapping	Mapping and Map Production for Forest Co
874	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Surveys and Mapping	Preparation of Reservation Proposals and
875	Ministry of Lands and Natural Resources	Forestry Department	2015	Forest Protection Unit	Forest Surveys and Mapping	Identification of Forest Sites for Botan
1972	Ministry of Lands and Natural Resources	Forestry Department	2016	Forest Protection Unit	Forest Planning and Information Management	Control of Enchroachment in Forest Reserves
1973	Ministry of Lands and Natural Resources	Forestry Department	2016	Forest Protection Unit	Forest Planning and Information Management	Monitoring the Management Plan Implementati
1974	Ministry of Lands and Natural Resources	Forestry Department	2016	Forest Protection Unit	Forest Planning and Information Management	Updating of Forest Management Plans for Forest

Annex 3: Snapshot of the Data collection Sheet –Part 2

Expense Classification 1	Expense Classification 2	Budget (ZMK)	Actual Expenditure (ZM	Expenditure Coefficient	Revised Expenditure (ZM	BIOFIN Category Level 1	BIOFIN Category Level 2	Aichi Target	NBSAP Target	NBSAP Strategic Goal	NBSAP Strategic Intervention	SDG #
Operations	Recurrent	40,000		100%	-	Green economy	Sustainable investing	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	150,000	139,247	100%	139,247	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	30,000		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	100,000	45,000	100%	45,000	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.5	SDG 15
Operations	Recurrent	123,500	123,500	100%	123,500	Biodiversity Awareness and Knowledge	Biodiversity scientific research	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	207,500	100,000	100%	100,000	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	115,000		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	50,000		100%	-	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	47,600	47,600	100%	47,600	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	57,500	57,500	100%	57,500	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	93,000	45,000	100%	45,000	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	70,000		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	150,000	100,000	100%	100,000	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	200,000		100%	-	Biodiversity and development planning	Biodiversity laws, policies, plans	Target 7	Target 7	Strategic Goal B	7.7	SDG 15
Operations	Recurrent	100,000		100%	-	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.5	SDG 15
Operations	Recurrent	123,000		100%	-	Biodiversity Awareness and Knowledge	Biodiversity scientific research	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	200,000		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	1,561,888		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	157,000	157,000	100%	157,000	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	100,000		100%	-	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	115,000		100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	50,000		100%	-	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	150,000	100,000	100%	100,000	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	70,000	-	100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	200,000	-	100%	-	Biodiversity and development planning	Biodiversity laws, policies, plans	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	200,000	-	100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	100,000	-	100%	-	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.5	SDG 15
Operations	Recurrent	123,000	-	100%	-	Biodiversity Awareness and Knowledge	Biodiversity scientific research	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	1,561,888	-	100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	157,000	157,000	100%	157,000	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	50,000	-	100%	-	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	100,000	-	100%	-	Biodiversity Awareness and Knowledge	Data generation and spatial mapping	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	115,000	-	100%	-	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	65,530	32,580	100%	32,580	Biodiversity and development planning	Biodiversity coordination and management	Target 7	Target 7	Strategic Goal B	7.7	SDG 15
Operations	Recurrent	141,850	32,580	100%	32,580	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.4	SDG 15
Operations	Recurrent	195,800	32,580	100%	32,580	Biodiversity and development planning	Biodiversity laws, policies, plans	Target 7	Target 7	Strategic Goal B	7.7	SDG 15
Operations	Recurrent	107,900	50,146	100%	50,146	Protected areas and other conservation measu	Protected areas, including indigenous and communities cor	Target 7	Target 7	Strategic Goal B	7.5	SDG 15
Operations	Recurrent	132,717	50,146	100%	50,146	Biodiversity Awareness and Knowledge	Biodiversity scientific research	Target 7	Target 7	Strategic Goal B	7.4	SDG 15

Annex 4: Biodiversity expenditure by BIOFIN Category Level 2

BIOFIN Cate	BIOFIN Category Level 2	2014	2015	2016	2017	2018	Grand Total	% of Total
Protected areas and other conservation measures		**2,844,353**	**7,367,152**	**7,432,916**	**3,682,710**	**14,505,348**	**35,832,480**	
	Protected areas, including indigenous and communities conserved areas	1,224,534	2,013,615	2,029,279	2,279,074	13,670,470	21,216,972	59%
	Expansion of protected areas	1,619,820	5,353,537	5,403,637	858,260	794,578	14,029,833	39%
	Ex-situ conservation of species (botanical gardens and gene banks)	-	-	-	470,365	-	470,365	1%
	Landscape/seascape conservation, including of valuable ecosystem services				35,011	12,300	47,311	0%
	Biodiversity scientific research		-		40,000		40,000	0%
	Loss of valuable habitats, including targeted conservation of species outside PAs					28,000	28,000	0%
Sustainable use		**5,069,596**	**3,459,835**	**3,505,835**	**8,087,388**	**3,666,496**	**23,789,150**	
	Sustainable forestry	2,938,826	888,678	894,928	4,661,451	361,473	9,745,356	41%
	Sustainable fisheries	1,334,115	924,155	965,155	109,505	3,162,373	6,495,303	27%
	Watershed management	416,540	1,600,326	1,600,327	640,000	-	4,257,193	18%
	Sustainable aquaculture	142,984	43,925	42,675	2,532,443	124,650	2,886,678	12%
	Sustainable agriculture	237,132	2,750	2,750	119,377	-	362,008	2%
	Agrobiodiversity	-	-	-	24,612	18,000	42,612	0%
	Sustainable land management (UNCCD and multiple use)					-	-	0%
Restoration		**838,937**	**720,458**	**812,958**	**3,862,207**	**569,375**	**6,803,935**	
	Reintroduction of species	838,937	720,458	812,958	3,862,207	569,375	6,803,935	100%
Pollution management		**104,592**	**59,953**	**49,509**	**161,004**	**36,871**	**411,929**	
	Protection and remediation of soil, groundwater and surface water	91,416	54,745	48,951	158,454	36,871	390,436	95%
	Waste management	13,176	5,208	558	2,550	-	21,493	5%
	Waste water management					-	-	0%
Access and benefit sharing (ABS)			**90,000**	**-**	**35,011**		**125,011**	
	Nagoya Protocol (ratified/enforced)		90,000	-	35,011		125,011	100%
Grand Total		**127,026,830**	**105,864,912**	**99,246,431**	**244,968,039**	**387,401,730**	**964,507,942**	

BIOFIN Cate	BIOFIN Category Level 2	2014	2015	2016	2017	2018	Grand Total	% of Total
Protected areas and other conservation measures		**2,844,353**	**7,367,152**	**7,432,916**	**3,682,710**	**14,505,348**	**35,832,480**	
	Protected areas, including indigenous and communities conserved areas	1,224,534	2,013,615	2,029,279	2,279,074	13,670,470	21,216,972	59%
	Expansion of protected areas	1,619,820	5,353,537	5,403,637	858,260	794,578	14,029,833	39%
	Ex-situ conservation of species (botanical gardens and gene banks)	-	-	-	470,365	-	470,365	1%
	Landscape/seascape conservation, including of valuable ecosystem services				35,011	12,300	47,311	0%
	Biodiversity scientific research		-		40,000		40,000	0%
	Loss of valuable habitats, including targeted conservation of species outside PAs					28,000	28,000	0%
Sustainable use		**5,069,596**	**3,459,835**	**3,505,835**	**8,087,388**	**3,666,496**	**23,789,150**	
	Sustainable forestry	2,938,826	888,678	894,928	4,661,451	361,473	9,745,356	41%
	Sustainable fisheries	1,334,115	924,155	965,155	109,505	3,162,373	6,495,303	27%
	Watershed management	416,540	1,600,326	1,600,327	640,000	-	4,257,193	18%
	Sustainable aquaculture	142,984	43,925	42,675	2,532,443	124,650	2,886,678	12%
	Sustainable agriculture	237,132	2,750	2,750	119,377	-	362,008	2%
	Agrobiodiversity	-	-	-	24,612	18,000	42,612	0%
	Sustainable land management (UNCCD and multiple use)					-	-	0%
Restoration		**838,937**	**720,458**	**812,958**	**3,862,207**	**569,375**	**6,803,935**	
	Reintroduction of species	838,937	720,458	812,958	3,862,207	569,375	6,803,935	100%
Pollution management		**104,592**	**59,953**	**49,509**	**161,004**	**36,871**	**411,929**	
	Protection and remediation of soil, groundwater and surface water	91,416	54,745	48,951	158,454	36,871	390,436	95%
	Waste management	13,176	5,208	558	2,550	-	21,493	5%
	Waste water management					-	-	0%
Access and benefit sharing (ABS)			**90,000**	**-**	**35,011**		**125,011**	
	Nagoya Protocol (ratified/enforced)		90,000	-	35,011		125,011	100%
Grand Total		**127,026,830**	**105,864,912**	**99,246,431**	**244,968,039**	**387,401,730**	**964,507,942**	

Annex 5: Biodiversity expenditure by Strategic Goals

Sum of Revised E	Year					
NBSAP Strateg	NBSAP Strategic Inter	2014	2015	2016	2017	2018	Grand Total
Strategic Goal B		**70,004,127**	**73,592,362**	**76,955,744**	**217,430,311**	**356,911,216**	**794,893,761**
	5.2	9,064,025	4,007,063	3,986,901	116,034,019	119,290,227	252,382,235
	7.6				37,580,982	166,356,745	203,937,727
	7.4	39,896,507	46,499,151	51,477,684	12,541,995	48,788,828	199,204,164
	7.1	3,501,120	3,381,020	3,368,270	40,753,376	11,025,671	62,029,457
	6.2	9,477,932	10,114,336	10,068,094	3,367,907	5,964,961	38,993,229
	7.3	4,290,050	6,695,363	4,903,426	945,297	757,415	17,591,551
	6.4	1,376,048	1,571,750	1,702,850	2,483,382	358,187	7,492,216
	6.1	1,166,736	517,704	496,579	94,768	2,374,944	4,650,731
	7.2	348,796	250,675	396,641	2,685,921	140,969	3,823,002
	8.2	704,433	448,774	448,774	755,014	436,570	2,793,564
	8.1	13,176	458	458	1,250	1,330,656	1,345,999
	9.1	84,072	106,069	106,069	56,000	25,384	377,595
	7.5	81,232	-	-	65,241	60,658	207,131
	7.7		-		65,160		65,160
	5.4					-	-
Strategic Goal D		**49,358,092**	**25,748,079**	**13,794,520**	**14,308,787**	**27,217,038**	**130,426,516**
	15.1	49,358,092	25,748,079	13,794,520	14,308,787	27,217,038	130,426,516
Strategic Goal A		**5,539,133**	**4,952,058**	**7,040,521**	**8,790,724**	**2,506,037**	**28,828,472**
	1.1	2,339,170	2,823,071	4,911,533	8,182,600	2,467,960	20,724,333
	4.1	3,199,963	2,128,987	2,128,988	595,124	38,077	8,091,139
	4.3		-	-	13,000	-	13,000
	2.1					-	-
Strategic Goal C		**2,125,478**	**1,572,413**	**1,432,620**	**4,438,216**	**767,439**	**10,336,165**
	12.3	2,125,478	1,572,413	1,432,620	4,438,216	525,589	10,094,315
	12.2					241,850	241,850
Strategic Goal E				**23,027**			**23,027**
	17.1			23,027			23,027
Grand Total		**127,026,830**	**105,864,912**	**99,246,431**	**244,968,039**	**387,401,730**	**964,507,942**

Annex 6: Technical Proposals validated by various stakeholders

s/l	Institutions assigned to review and validate the proposal	Proposals/Concept Notes Reviewed and validated
1	• Ministry of Finance-Economic Management Department • Ministry of National Development Planning-National Planning Department • Ministry of Lands and Natural Resources-Department of Climate Change & Natural Resources • Ministry of Water Development, Sanitation, & Environmental Protection-Environment Management Department • Bank of Zambia • Securities and Exchange Commission • Lusaka Stock Exchange • UNDP • Ministry of Commerce, Trade and Industry-Department of Industry • Zambia Development Agency	• **Proposal #1: Mainstreaming of green finance into Zambia's financial sector** • **Proposal #2: Reforming fiscal and non-fiscal incentives towards eligible green projects** • **Proposal #3: Establishing a dedicated national Green fund for eligible green projects**
2	• Ministry of Finance-Budget Office • Ministry of Lands and Natural Resources-Climate Change & Natural Resources Management Department • Ministry of Lands and Natural Resources-Forestry Department	• **Proposal #4: Making an economic and business case for enhanced Government budget allocation and budget releases for environmental protection.** • **Proposal #5: Making a business case for enhanced Private sector funding towards biodiversity conservation.** • **Proposal #6: Establishing a Biodiversity Finance and M&E Unit**

s/l	Institutions assigned to review and validate the proposal	Proposals/Concept Notes Reviewed and validated
	• Ministry of Fisheries and Livestock-Department of Fisheries • Ministry of Water Development, Sanitation, & Environmental Protection-Environment Management Department • Water Resources Management Authority (WARMA) • Zambia Agricultural Research Institute • Zambia Environmental Management Agency • The Nature Conservancy	• **Proposal #7: Development of an NBSAP online M&E System**
3	• Ministry of Local Government – Physical Planning & Housing Department • The Nature Conservancy • UNDP	• **Proposal #10: Mainstreaming Biodiversity into the Integrated Development Planning Guidelines**
4	• Ministry of Mines - Mines Safety Department • UNDP	**Proposal #11: Mainstreaming of biodiversity into the management of the Mining Sector**