

Development of a Baseline of Biodiversity Expenditure in Namibia

Final Report



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Contributing Authors

Lawrie Harper-Simmonds, Dr. Jonathan I. Barnes and Angus Middleton

Enquiries

Namibia Nature Foundation
76 – 78 Frans Indongo Street
Windhoek, Namibia
Tel: + 264 61 248345
Fax: +264 61 248344
Email: info@nnf.org.na

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List of Acronyms

BAU	Business As Usual
BCC	Benguela Current Commission
BCLME SAP	Benguela Current Large Marine Ecosystem Strategic Action Programme
BIOFIN	Biodiversity Finance Initiative
BMCC	Biodiversity Management and Climate Change
BMM	Bwabwata-Mudumu-Mamili
BSLM	Biodiversity and Sustainable Land Management
CALLC	Enhancing Institutional and Human Resource Capacity through Local Level Coordination of Integrated Rangeland Management and Support
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CBRLM	Community-Based Rangeland Management
CCA	Climate Change Adaptation
CPP-ISLM	Country Pilot Projects – Integrated Sustainable Land Management
DEA	Directorate of Environmental Affairs
DoT	Department of Transport
DRFN	Desert Research Foundation of Namibia
ECOFISH	Ecosystems Improved for Sustainable Fisheries
EED	Evangelischer Entwicklungsdienst
EIF	Environmental Investment Fund
ENP	Etosha National Park
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GGF	Go Green Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GRN	Government of the Republic of Namibia
HCPRP	Hoodia Commercialisation and Poverty Reduction Project
ICEIDA	Icelandic International Development Agency
ICEMA	Integrated Community-Based Ecosystem Management
INP	Indigenous Natural Products
IRBM	Integrated River Basin Management
IRDNC	Integrated Rural Development and Nature Conservation
IRLUP	Integrated Regional Land Use Plan
KAZA	Kavango-Zambezi
KfW	Kreditanstalt für Wiederaufbau
LIFE	Living in a Finite Environment
MAWF	Ministry of Agriculture, Water and Forestry
MCA	Millennium Challenge Account
MET	Ministry of Environment and Tourism
MFMR	Ministry of Fisheries and Marine Resources
MLR	Ministry of Lands and Resettlement
MME	Ministry of Mines and Energy
MoD	Ministry of Defence
MoE	Ministry of Education
MoF	Ministry of Finance
MoJ	Ministry of Justice
MoSS	Ministry of Social Security

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MRLGHRD	Ministry of Regional and Local Government, Housing and Rural Development
MTEF	Medium Term Expenditure Framework
MWTC	Ministry of Works, Transport and Communication
MYNSSC	Ministry of Youth, National Service, Sport and Culture
NACOMA	Namibian Coast Conservation and Management Project
NACSO	Namibian Association of CBNRM Support Organisations
NAFOLA	Sustainable Management of Namibia's Forested Lands
NAMPLACE	Namibia Protected Landscape Conservation Areas
NNF	Namibia Nature Foundation
NSA	Namibia Statistics Agency
NTB	Namibia Tourism Board
NWR	Namibia Wildlife Resorts
NBSAP	National Biodiversity Strategy and Action Plan
PASS	Strengthening the Capacity of the Protected Area System to Address New Management Challenges
PESILUP	Promoting Environmental Sustainability through Improved Land Use Planning
PGR	Private Game Reserve
POP	Persistent Organic Pollutant
SAM	Sustainable Adaptive Management
SAREP	Southern Africa Regional Environmental Program
SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Use
SDC	Swiss Agency for Development and Cooperation
SGP	Small Grants Programme
SIDA	Swedish International Development Cooperation Agency
SOE	State Owned Enterprise
SPAN	Strengthening the Protected Area Network
TEEB	The Economics of Ecosystems and Biodiversity
TEKOA	Traditional Environmental Knowledge and Outreach Academy
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	United States Agency for International Development

Executive Summary

Target 20 of the Aichi Targets of the Convention on Biological Diversity makes explicit the need to mobilise resources for the conservation of biodiversity. In order to develop a strategy for resource mobilisation, it is first necessary to understand current expenditures on biodiversity in Namibia by public, private and donor organisations, and assess how these expenditures are projected to evolve in the absence of such a strategy.

This report has two main objectives: to estimate expenditure on biodiversity conservation for the most recent five-year period (2008 – 2012), disaggregated by the source of this expenditure; and to project a baseline of ‘business as usual’ biodiversity expenditure for the duration of the period comprising Namibia’s Second National Biodiversity Strategy and Action Plan (NBSAP2; 2013 – 2020). The methodology and framework of the report is informed by the UNDP BIOFIN Workbook.

A review of Government of the Republic of Namibia (GRN) budget and expenditure data suggests that real (2013 prices) GRN biodiversity expenditure was consistently increasing between 2006/07 and 2011/12, reaching N\$791m, before decreasing to N\$710m in 2012/13. The three Ministries of Environment and Tourism (MET); Agriculture, Water and Forestry (MAWF); and Fisheries and Marine Resources (MFMR) account for more than 90% of this expenditure. Biodiversity expenditure over this period is significantly less than that on defence, health and education, and from 2010/11 onwards represents a decreasing proportion of total GRN expenditure (2.4% to 1.7%) and GDP (0.8% to 0.6%).

GRN biodiversity expenditure is projected forward based on budget forecast data and past trends in biodiversity expenditure data. The estimates suggest that real baseline GRN biodiversity expenditure peaks in 2015/16 at N\$831m, before decreasing by 3.3% to N\$804m in 2020/21. This decline could represent a reduced ability of Namibian Government Ministries to support biodiversity related activities from 2015/16 onwards.

In addition, GRN biodiversity expenditure as a proportion of total GRN expenditure and GDP is projected to continue to decline through 2016/17. Perhaps the most striking aspect of the projected decline in GRN biodiversity expenditure is therefore that it represents a falling priority for Namibian public funds, and is in the context of a growing economy.

Sensitivity analysis based on adopting different discount rates or utilising different scenarios for projecting growth rates of biodiversity expenditure generally supports this conclusion. Although these scenarios demonstrate considerable uncertainty about the extent of real baseline GRN biodiversity expenditure by 2020/21, the different scenarios indicate that further action will need to be taken to prevent real GRN biodiversity expenditure falling in the future, even in the most optimistic scenario.

Non-GRN biodiversity expenditure in Namibia arises largely through donors, such as GEF-funded projects, the US and German Governments, and the WWF, but there is also an increasingly important role for the private sector. The hump-shape that characterises non-GRN biodiversity expenditure is driven by the United States Agency for International Development (USAID) funded MCA (Millennium Challenge Account) project, which has contributed approximately N\$720m to total non-GRN biodiversity expenditure in real terms between 2009 and 2014. Real baseline non-GRN

biodiversity expenditure is estimated to peak in 2014/15 at N\$432m, before falling by 76% by 2020/21.

The extent of the projected reduction in baseline non-GRN biodiversity expenditure is at least partly due to our decision to only include committed funds from donors. However Namibia can expect additional donor funding within the timeframe considered in this report even in the absence of a distinct resource mobilisation strategy. In order to assess the effect of this assumption, a scenario is presented where donor funding is projected forwards; this increases real non-GRN biodiversity expenditure in 2020/21 by 104% (N\$105m). However expenditure in 2020/21 under this scenario would still represent a decline of 52% from its estimated 2012/13 level.

Indeed this is likely to be indicative of Namibia receiving less donor funding going forwards; Namibia's classification as an upper-middle income country has seen donors target their funds towards countries they perceive to be in greater need. Furthermore, the Namibian Government may need to commit proportionally more co-financing in the future to generate additional donor funding.

Combining estimates of GRN and non-GRN biodiversity expenditure yields an estimate for total real baseline biodiversity expenditure in Namibia. Expenditure is estimated to peak at N\$1,181m in 2014/15, but it is subsequently projected to decrease by 23% to N\$906m in 2020/21. GRN expenditure accounts for between 62% (2012/13) and 89% (2020/21) of the total baseline expenditure, with the vast majority of the post 2014/15 fall in expenditure as a result of reductions in donor funding.

Sensitivity analysis is again conducted by adopting high and low scenarios of projected expenditure by GRN and private landholders, as well as by varying the discount rate and including projections of donor expenditures. Although changing these assumptions can alter the actual levels of expenditure quite significantly, the main outcome from this analysis is that, in all cases, the baseline of total real biodiversity expenditure in Namibia is set to decrease between 2014/15 and 2020/21. This provides further support for the need to mobilise resources for biodiversity conservation in Namibia.

It should be noted that the expenditure estimates discussed so far are likely to be underestimates of real biodiversity expenditure in Namibia. This is due to limitations with both the available data and the timeframe available in compiling the report. Our analysis indicates that the extent of this underestimation is likely to be relatively small, although the assessment of expenditures by private actors warrants further research. Furthermore, the most important outcome is the clear decreasing trend in baseline biodiversity expenditure in the latter half of the study period.

This report indicates that in excess of N\$1bn is currently being spent on biodiversity conservation in Namibia. This is an impressive figure, but both GRN and non-GRN biodiversity expenditure are projected to decline from their current levels. Furthermore, GRN biodiversity expenditure as a percentage of total GRN expenditure has been declining since 2010/11, and this is projected to continue; the implication is that biodiversity is becoming a lower priority for Namibian public funds.

In order to reverse this trend, there is a clear need for greater mainstreaming of biodiversity into the Namibian Government's accounting, budgeting and planning processes, and also into the private sector. To support this mainstreaming, it is likely that the total economic costs and benefits of biodiversity and its conservation need to be better understood.

1 Introduction

1.1 Background

The preservation of biodiversity has gained significant international attention in recent years. The TEEB (The Economics and Ecosystems of Biodiversity) Reports, published between 2008 and 2011, helped to highlight that the degradation of biodiversity was having wider costs that were not being taken into consideration in economic decision-making. In addition, the Convention on Biological Diversity (CBD), in particular through the Aichi Targets, has emphasised the importance of identifying the values of ecosystems. Indeed, Target 20 makes explicit the need to mobilize resources to conserve biodiversity.

The Constitution of Namibia (Article 95) recognizes the importance that ecosystems and biodiversity play in contributing to human welfare. However, preventing degradation of biodiversity is only possible with the support of both the public and private sectors. Demonstrating the economic value of biodiversity is key to driving support among institutions, and therefore also in generating funding to ensure that policies to prevent the degradation of biodiversity can be properly implemented. This is the goal of the resource mobilisation project being co-ordinated by the Ministry of Environment and Tourism (MET) in collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH commissioned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

1.2 Objectives

This study represents the first step in the resource mobilisation project. In order to develop a resource mobilisation strategy, it is first necessary to assess the current level of expenditure on biodiversity-related activities in Namibia and how this is expected to evolve going forwards; in other words, the ‘business as usual’ (BAU) baseline of biodiversity expenditure needs to be understood. This baseline can subsequently be compared to the biodiversity-financing needs, as defined in the National Biodiversity Strategy and Action Plan (NBSAP), to estimate the size of the resource gap; i.e. the level of resources that need to be mobilized in order to meet the needs for financing biodiversity conservation in Namibia.

Consequently, the main objectives of this report are as follows:

- To estimate expenditure on biodiversity conservation for the most recent five-year period available, disaggregated by the source of this expenditure; and
- To project a baseline of ‘business as usual’ biodiversity expenditure for the duration of the NBSAP2 period (2013 – 2020).

1.3 Approach and structure

The primary reference for this report is the Biodiversity Finance Initiative (BIOFIN) Workbook, developed by UNDP and launched in October 2012. BIOFIN has developed a new methodological framework to “*define biodiversity financing needs and gaps with greater precision and determine related challenges and opportunities for resource mobilisation*”¹ at the national level. By following this framework, the results of the study will be consistent with best practice in the area and comparable with other countries following the initiative².

The report proceeds as follows:

- Section 2 discusses what constitutes biodiversity expenditure;
- Section 3 presents the methodology for estimating and projecting biodiversity expenditure for both Namibian Government (GRN) and non-GRN sources;
- Section 4 provides a snapshot of GRN budget and expenditures;
- Sections 5 and 6 detail the estimates and projections of biodiversity expenditures by GRN and non-GRN sources, respectively;
- Section 7 aggregates and summarises the outcomes from Sections 5 and 6;
- Section 8 concludes.

A separate Annex document presents data supporting the report. The Annex includes the following Sections:

- A: Data supporting the snapshot of overall GRN budgetary and expenditure data;
- B – F: Data supporting the GRN biodiversity expenditure review;
- G: Data supporting the non-GRN biodiversity expenditure review;
- H: Data supporting the total biodiversity expenditure review and the disaggregation of biodiversity expenditure into different ‘strategies’;
- I: Data from this report presented in the format of BIOFIN Workbook 1C.

¹ http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/projects_and_initiatives/biodiversity-finance-initiative/

² At the time of writing, 19 countries are participating in BIOFIN.

2 Classification of biodiversity-related activities

The UNEP/CBD/WG-RI/4/6/Add.1³ document provides a classification of four categories of activities that are relevant to biodiversity. These classifications are detailed in Table 2.1. The Preliminary Reporting Framework for the Implementation of the Strategy for Resource Mobilisation simplifies the four categories into being either directly or indirectly related to biodiversity. The Framework is intended for use by Parties for providing data on resource mobilisation according to the indicators adopted in decision X/3. Within this Framework, Categories A and B are classified as being directly related to biodiversity, while Categories C and D are indirectly related to biodiversity.

The BIOFIN Workbook (2014) disaggregates biodiversity activities into five different strategies. Some of these strategies are similar to the headings in the Categories A – D in Table 2.1, but they do not align perfectly with them. Appendix J of the BIOFIN Workbook provides examples of activities within each of the five strategies, and describes them in more detail. The five strategies are:

- **Biodiversity mainstreaming strategies:** The integration of biodiversity into key economic development sectors, including into development planning; land use planning; sustainable management and use of natural resources; poverty alleviation plans; and climate resilience. This is accomplished by using specific mainstreaming instruments in order to achieve specific objectives.
- **Protection strategies:** The establishment and effective management of a comprehensive protected area network, as well as ex-situ strategies to ensure the long term protection of biodiversity and ecosystems.
- **Restoration strategies:** The restoration of the structure, functions, and/or key ecological processes of degraded ecosystems.
- **Access and benefits sharing strategies:** The development and implementation of an effective access and benefits sharing framework within the country.
- **Enabling implementation strategies:** The broader enabling environment of NBSAPs, including communication; research; and data management strategies.

The BIOFIN workbook does not require that an explicit distinction is made between activities that are directly and indirectly related to biodiversity in budgetary and expenditure data. As the BIOFIN workbook is the primary reference for this project, we focus on following its classification when appraising which activities are relevant to biodiversity.

However, in presenting the data we do not follow the BIOFIN Workbook exactly. Appendix I of the Workbook provides a four-point scale (from 'high' to 'very low') in assessing the relevancy of biodiversity-related activities, while Supplementary Guidance Box 16 discusses examples of 'negative biodiversity expenditures'⁴. Both are included in Workbook 1C, but due to the short timeframe within which this study was to be completed, we do not attempt to collect or assess this data.

³ <https://www.cbd.int/doc/meetings/wgri/wgri-04/official/wgri-04-06-add1-en.pdf>

⁴ Negative biodiversity expenditures are expenditures that directly or indirectly result in biodiversity loss and degradation. Examples include subsidies for agricultural pesticides and incentives that lead to the wasteful use of natural resources.

Table 2.1: CBD Classification of Biodiversity Expenditure

	Activity Classification			
	Category A	Category B	Category C	Category D
Default Description	<p>Activities where biodiversity protection is the main purpose, such as activities funded by environmental agencies that directly and intentionally impact biodiversity.</p> <p>Activities related to Article 6-9 and 12-21 of the Convention as well as Targets 9, 11-13 and 16-20 of the Strategic Plan.</p>	<p>Activities related to policy development and administration carried out in part or entirely by environmental agencies.</p> <p>Activities related to Articles 6-9 and 12-21 of the Convention as well as Targets 9, 11-13 and 16-20 of the Strategic Plan.</p>	<p>Activities related to sustainable use and sustainable management that have co-benefits for biodiversity. Activities under this category would generally be lead by agencies outside of the environmental sector.</p> <p>Activities related to Articles 8, 10 and 11 of the Convention as well as Targets 5-8, 10, 14 and 15 of the Strategic Plan.</p>	<p>Activities related to sustainable production and consumption where the responsibility lies with multiple government entities, the private sector and the general public</p> <p>Activities related to Articles 11 and 12-21 of the Convention as well as Targets 1-4 of the Strategic Plan.</p>
Activities Considered	<p><i>Safeguarding biodiversity</i></p> <ul style="list-style-type: none"> • In situ/ex situ conservation • Protected areas • Maintaining genetic diversity • Addressing threats from invasive alien species • Addressing threats to specific ecosystems and/or species 	<p><i>Biodiversity planning</i></p> <ul style="list-style-type: none"> • NBSAP development • CHM related activities <p><i>Access and Benefit Sharing of Genetic Resources</i></p> <ul style="list-style-type: none"> • ABS frameworks <p><i>Biosafety</i></p> <ul style="list-style-type: none"> • Biosafety framework 	<p><i>Sustainable management of ecosystems</i></p> <ul style="list-style-type: none"> • Sectoral measures to promote biodiversity conservation and sustainable use within productive sectors (agriculture, forestry, aquaculture, fisheries, etc.) • Sectoral measures to conserve water and prevent pollution <p><i>Land use and climate related activities</i></p> <ul style="list-style-type: none"> • Managing land use to protect biodiversity, mitigate climate change and increase resilience. 	<p><i>Measures in the wider economy and society</i></p> <ul style="list-style-type: none"> • Planning, fiscal and regulatory measures to promote sustainable consumption and production • Broad scale public awareness and education measures.

3 Methodology

Having defined how we classify biodiversity-related activities in Section 2, this section presents the methodology we adopt in estimating a BAU baseline of biodiversity expenditure in Namibia. We begin by looking at Namibian Government (GRN) expenditure, in turn detailing how we estimate the size of the budget allocated to biodiversity-related activities (Section 3.1.1) and subsequently the level of biodiversity-related expenditure between 2006/07 and 2012/13 (Section 3.1.2). Section 3.1.3 outlines how this expenditure data is projected forward to 2020/21. Non-GRN sources of expenditure are dealt with in Section 3.2.

3.1 Expenditure Review: GRN

This section details the expenditure by GRN on biodiversity-related activities. The Medium Term Expenditure Framework (MTEF) documents, published by the Ministry of Finance (MoF), are a key source of information. They present the total budget for each Vote⁵ for the three upcoming financial years, the current financial year and the two financial years preceding that. They can therefore illustrate where revisions to budgets have taken place, both looking forwards as well as backwards. The governmental financial year in Namibia runs from April to March.

The budget for the MTEF period for each Vote is initially broken down into both operational and development terms. The operational budget of a Vote represents the budget required to maintain its day-to-day activities, while the development budget relates to capital expenditure projects. In the most recent MTEF, the development budget for 2014/15 accounts for 16.6% (N\$9.58bn) of the total GRN budget (N\$57.69bn).

The budget for each Vote is further characterised in terms of programmes, which represent groupings of activities undertaken by the Vote. The main activities are listed for each programme, and the 2007/08 – 2009/10 to 2013/14 – 2015/16 MTEFs include budget allocations for the main activities in the programme overviews. The degree to which programmes are broken down into activities is not necessarily consistent across the Votes, and the 2014/15 – 2016/17 MTEF does not include a breakdown of the budget allocated for separate activities within programmes for some Votes (e.g. MET).

This study reviews the MTEFs from 2007/08 – 2009/10 to 2014/15 – 2016/17 to determine which of the Votes included biodiversity-related activities. This review concluded that 10 of the 31 Votes consistently included Biodiversity-related activities, although only three of these, MET, MAWF and MFMR, routinely included more than four biodiversity-related activities. These three are dealt with in detail in Sections 5.1 to 5.3, with the other 7 Votes that include biodiversity-relevant activities covered in more general terms in Section 5.4.

The following sub-sections detail the process by which estimates for the BAU baseline of biodiversity-related expenditure for each of the Votes are calculated. This involves first estimating the size of the Vote's budget that is allocated to biodiversity-related activities, and subsequently the

⁵ A Vote generally represents an individual Ministry within the Namibian Government, although in some cases different Votes correspond to individual Departments (for example the Department of Transport and Communication and the Department of Works within the Ministry of Works, Transport and Communication are different Votes).

expenditure on biodiversity-related activities for the period 2006/07 – 2012/13⁶. Estimates from this period are then projected forwards to 2020/21.

3.1.1 Budgets

The final budget allocation for each Vote in each year is taken from the most up-to-date source. Initial budget estimates are provided by the MTEFs, but these may be revised in subsequent MTEFs, or further clarified in the MoF's Accountability Report. The Accountability Reports detail the final budget allocations for each Vote, along with the final expenditure for that Vote.

As discussed above, the budget can be broken down by the individual programmes within each Vote, and further into the individual activities listed within each programme. These budgeted activities do not necessarily sum to the total budget allocation for the programme. This may be for two reasons:

1. In some cases, only the main activities are listed. In such a case, we might expect the total for the budgeted activities to be slightly smaller than the total budget allocated to that programme.
2. The budgets for individual activities are sourced primarily from the MTEFs, and they are not revised in subsequent MTEFs. Furthermore, final budget allocations at the activity level are only presented in the Accountability Report in 2012/13 for a small number of Votes. Therefore the budgets for individual activities are primarily based on the original MTEF budget which may have been subsequently revised up or down.

To determine the size of the budget that is relevant to biodiversity, we therefore look at these individual activities. Those activities relevant to biodiversity were compiled and their budgeted amounts summed within each programme. For those situations in which the total for the budgeted activities is not equal to the final budget for that programme, the budget for biodiversity-related activities is scaled accordingly. This process is detailed below, and the calculations are presented in Table 3.1.

1. Compile the total for the budgeted activities for that programme (A).
2. Review the list of activities to determine which are relevant to biodiversity, and sum their budgets (B).
3. Calculate the proportion of total budgeted activities that are relevant to biodiversity (B/A).
4. Compile the most up-to date budget for the programme (C). This may be from revised MTEF budgets or Accountability Reports.
5. The biodiversity-relevant budget is calculated by scaling the revised budget (C) by the proportion of total budgeted activities that were classified as a relevant to biodiversity (B/A).

⁶ The BIOFIN Workbook only requires expenditure estimates for the most recent available five-year period, which would represent 2008/09 – 2012/13. This report also includes 2006/07 and 2007/08 because it was thought useful to include more data where possible.

Table 3.1: Estimation of the biodiversity budget for a programme within a given year

Type of Data	Calculation
Total budgeted activities	A
Total biodiversity-relevant activities	B
Biodiversity-relevant activities as a proportion of the total budget	B/A
Revised Budget	C
Biodiversity-relevant activities as a proportion of the total budget	C*(B/A)

There are two key assumptions in the above. The first is that any unbudgeted activities are relevant to biodiversity in the same proportion that the budgeted activities are. If the difference between the budgeted activities and the total budget is relatively insignificant, this assumption is largely unproblematic.

The second assumption is that the revision of the total programme budget leaves the proportion of the budget that is relevant to biodiversity unchanged. As with the first assumption, when these revisions are small, this assumption does not have much of an impact on the overall estimation. When this revision is large, the assumption could have more significant impacts. In the case where activities sum to the budget for the programme, and the budgets for individual activities are revised along with programme and Vote budgets (or these budget are not revised at all), the above assumptions do not have to be made.

The classification of whether activities are relevant to biodiversity is undertaken in accordance with the discussion in Section 2. Although the BIOFIN Workbook does not directly address the approach to dealing with administrative activities, the UNEP/CBD/WG-RI/4/6/Add.1 document makes it clear that administration that relates to activities that are relevant to biodiversity should be included in estimations of the biodiversity budget and expenditure data.

Therefore, if administration was included as an activity within a programme, the degree to which it is deemed as relevant is taken as proportionate to the rest of the activities in that programme. For example, if 90% of the non-administration activities are deemed to be relevant to biodiversity, then 90% of the administration budget is assumed to be relevant to biodiversity. Similarly, where administration is detailed within its own programme, the proportion of administration that is included as relevant to biodiversity is taken as equal to the proportion of biodiversity-related activities across all of the other programmes.

3.1.2 Expenditure

Government expenditure data is published annually alongside the Budget Statement and the MTEF. Data for a given financial year is usually published with a one-year lag; that is, expenditure data published alongside the budget in 2014 presents the actual expenditure for 2012/13, and the estimates (or budget allocations) for expenditure in the previous financial year (2013/14) and the upcoming MTEF period (2014/15 – 2016/17).

The primary source for expenditure data is the Accountability Report, which describes expenditure at the programme level within each Vote. For a small number of Votes, expenditure data for 2012/13 is reported at the activity level. The reporting of expenditure data at the activity level makes the task of estimating biodiversity-related expenditure very simple, as the expenditure of

those activities identified as relevant to biodiversity can easily be summed. For those Votes for which only programme expenditure is detailed, biodiversity expenditure for each programme is estimated as follows, with the calculation presented in Table 3.2:

1. Compile the total expenditure for that programme from the Accountability Report (E).
2. Take the proportion of biodiversity-relevant activities calculated for the estimation of the biodiversity relevant budget in Table 3.1 (B/A).
3. Multiply the programme expenditure (E) by the proportion of biodiversity relevant activities (B/A).

Table 3.2: Estimation of biodiversity expenditure for a programme within a given year (Accountability Report)

Type of Data	Calculation
Total programme Expenditure	E
Biodiversity-relevant activities as a proportion of the total budget	B/A
Biodiversity-relevant expenditure	E*(B/A)

The accuracy of the above estimate depends upon the implicit assumption that expenditure occurs on activities proportionately to the manner in which it was budgeted. For example, if B/A is 0.6, it assumes that 60% of the actual expenditure occurs on biodiversity-related activities. It is likely that if programme expenditure does not deviate significantly from the budget assigned to it, this assumption is reasonable. However, it is still possible that some activities have been subject to over- or under-spends, and compensated by under- or over-spends on others in the same programme; if only one of these activities is not relevant to biodiversity, this could bias the estimates.

However, the Accountability Report has only been published for the period 2008/09 to 2012/13. In order to estimate expenditure on biodiversity activities for the 2006/07 and 2007/08 years, we review the MoF's Estimates of Revenue and Expenditure report. This report presents expenditure data for each department or division within each Vote, but not by programme. These divisions do not map exactly on to the programmes, and so the estimation of biodiversity expenditure is made at the level of the Vote and not the programme. This estimation is as follows, and the calculation is presented in Table 3.3:

1. Take the total of the budgeted activities for the Vote (X).
2. Calculate the budget estimated to be allocated to biodiversity-relevant activities within the Vote (Y).
3. Calculate the proportion of the total budgeted activities that are relevant to biodiversity (Y/X).
4. Multiply the total vote expenditure (Z) for the Vote by the proportion of budgeted activities that are relevant to biodiversity (Y/X).

Table 3.1: Estimation of the biodiversity budget for a programme within a given year

Type of Data	Calculation
Total budgeted activities in the Vote	X
Total biodiversity-relevant activities in the Vote	Y
Proportion of biodiversity-relevant activities in the Vote	Y/X
Total Vote expenditure	Z
Biodiversity expenditure	C*(Y/X)

The assumption underlying the accuracy of this calculation is effectively the same assumption that is required for the calculation in Table 3.2; that is, expenditure occurs on activities in the same proportion as it was budgeted. The assumption here is much stronger, however, because expenditure is being reviewed at a much more aggregated level, and could have been realigned significantly from its original budgeting. Consequently, we have less confidence in the estimates calculated in this way.

3.1.3 Biodiversity Expenditure Projections

The MTEF budget allocations for 2013/14 and 2014/15, and consequent projections for 2015/16 and 2016/17, provide a starting point from which to project future biodiversity expenditure. The first step is to generate estimates of biodiversity expenditure for the years 2013/14 – 2016/17 based on the actual and forecast MTEF budget allocations for these years.

We adopt three different approaches to generating estimates of biodiversity expenditure for the period 2013/14 – 2016/17. These approaches all begin by first estimating the biodiversity budget, but in different ways. Different approaches to estimate the biodiversity budget are necessitated by different levels of disaggregation of the budget allocations for different years and different Votes. These approaches are described below along with the instances in which they are appropriate.

1. Estimates of budget allocations are disaggregated at the level of individual activities:

The biodiversity budget can be estimated directly from the allocations for the activities that are classified as being relevant to biodiversity.

2. Estimates of budget allocations are disaggregated at the programme level, and the programmes are similarly defined to the programmes in previous years:

The biodiversity budget for each of the programmes can be estimated by scaling total programme budgets by the proportion of the budget that was relevant to biodiversity in previous years. The previous years' proportions that are used to scale estimates of budget allocations are determined dependent on which years are most relevant. This is based on the assumption that programmes are similar from year to year, and consequently have similar proportions of their budgets as relevant to biodiversity.

3. Estimates of budget allocation are only presented at the level of the whole Vote, or disaggregated into programmes which are not well aligned with those of previous years:

The biodiversity budget can be estimated by scaling the total budget allocation by the proportion of previous years' total budgets that were estimated to be relevant to biodiversity. Our primary method is to take the average of this ratio from the years 2010/11 – 2012/13, and

apply it to the budget allocations for 2013/14 to 2016/17. Different methods to calculate the ratio by which the total budget allocation is scaled may be adopted dependent on what is most appropriate.

Biodiversity expenditure can subsequently be estimated by scaling the biodiversity budget by the average ratio of biodiversity expenditure to the biodiversity budget in previous years. As with the methodology for the third approach detailed above, our primary method is to scale the biodiversity budget by the average of this ratio from the years 2010/11 – 2012/13, but different methods may be adopted dependent on what is most appropriate. Scaling the biodiversity budget in this way takes account of the possibility that the budget execution rate is not 100% (especially if it is systematically above or below), and also if there is a tendency to have a different execution rate for biodiversity-related activities than for other activities.

From this basis, different scenarios can be adopted that project forward biodiversity expenditure to 2020/21. These scenarios take the trend of biodiversity expenditure over different periods in the 2006/07 – 2016/17 timeframe, and extrapolate forward from a given point. The point from which these scenarios extrapolate may not be 2016/17, as the data may indicate that a better projection of baseline biodiversity expenditure starts from an earlier point. For each Vote, we specify a 'central' scenario, accompanied by 'low' and 'high' scenarios.

3.2 Expenditure Review: Non-GRN

Non-GRN biodiversity expenditure is primarily estimated by requesting data directly from the relevant parties. There are relatively few relevant non-GRN actors in Namibia, which makes this task easier than it would be in some other countries. The data from these actors should ideally include expenditure on an annual basis, detailing the projects or purposes for which it was used as well as any partners involved in the activity, or the source of the funding if not from the reporting party itself. The description of partners or funding sources is of particular use to ensure that there is no double-counting of expenditures.

In many cases, it is not possible to get data detailed to this extent; in these instances, we need to make certain assumptions. When expenditure data is not available, we use budgetary data instead; if neither budgetary nor expenditure data is available on an annual basis then we generally assume it is equally distributed over the relevant period. Neither of these assumptions should have a major effect on the outcomes of the report, as budgets for grants or projects from donors usually have extremely high execution rates, and the total amount budgeted or spent is more important than the precise annual breakdown.

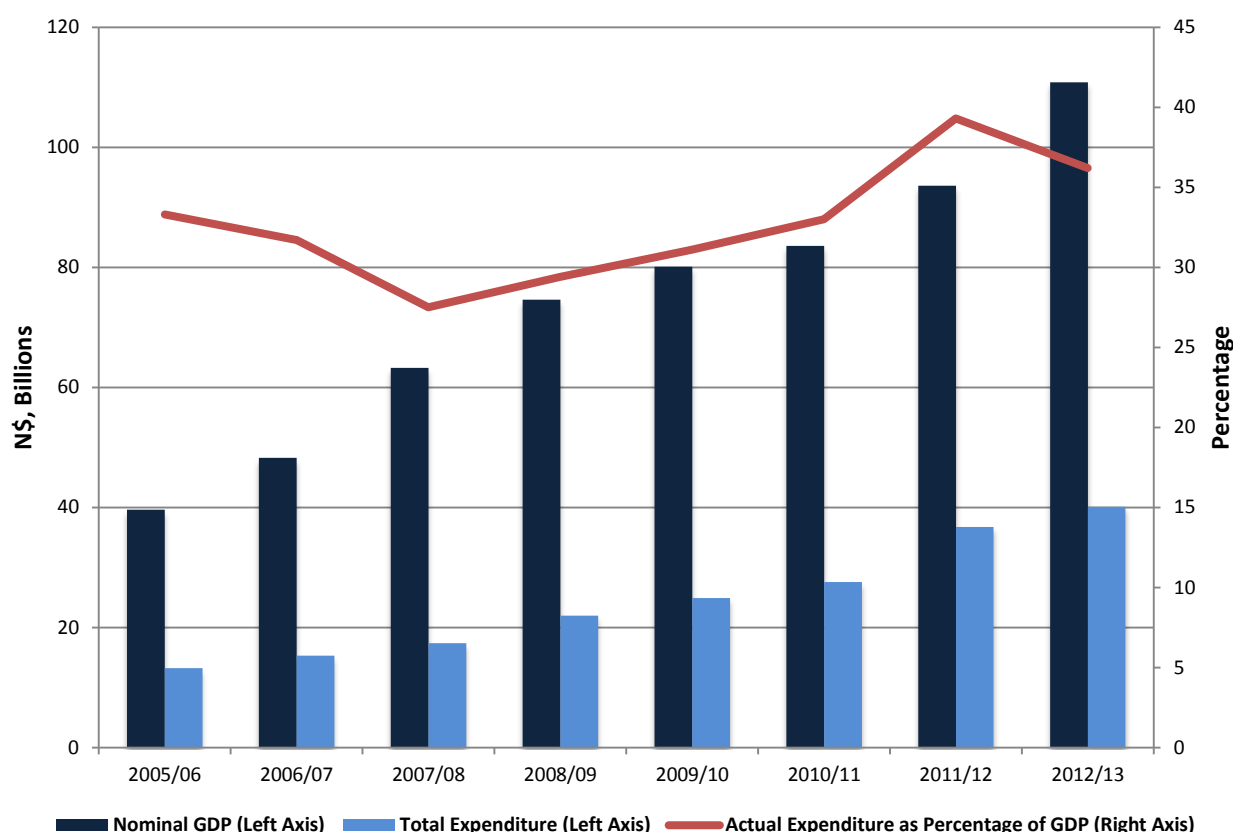
External funds are frequently in either Euros or US Dollars; estimates of annual expenditure are consequently converted into Namibian Dollars using an estimate of the annual exchange rate calculated by taking the average of monthly exchange rates for that year. An additional implicit assumption is that where data is provided to us it is complete and accurate.

We generally do not project forward the non-GRN sources of expenditure. This is because they are primarily from donors, and linked to particular projects, and historical trends do not necessarily provide any indication of future expenditures. Furthermore, it is the continuation or enhancement of such external funds that the resource mobilisation project is in part aimed at achieving.

4 Overall National Budgetary and Expenditure Snapshot

Figure 4.1⁷ presents estimates of GDP and actual GRN expenditure from 2005/06 to 2012/13, and combines these to illustrate how expenditure as a percentage of GDP has evolved over this period. Expenditure as a percentage of GDP was at a minimum for the 2005/06 to 2012/13 period in 2007/08 at 27.5%. The data clearly illustrate the expansionary fiscal policy pursued between 2008/09 and 2011/12 in response to the global economic downturn; indeed, Namibia herself experienced a contraction in real GDP of 1.1% in 2009⁸. This has subsequently been succeeded by growth rates in real GDP of 6.3%, 5.7% and 5.0% in 2010, 2011 and 2012, respectively.

Figure 4.1: Actual GDP and total government expenditure, 2005/06 – 2012/13



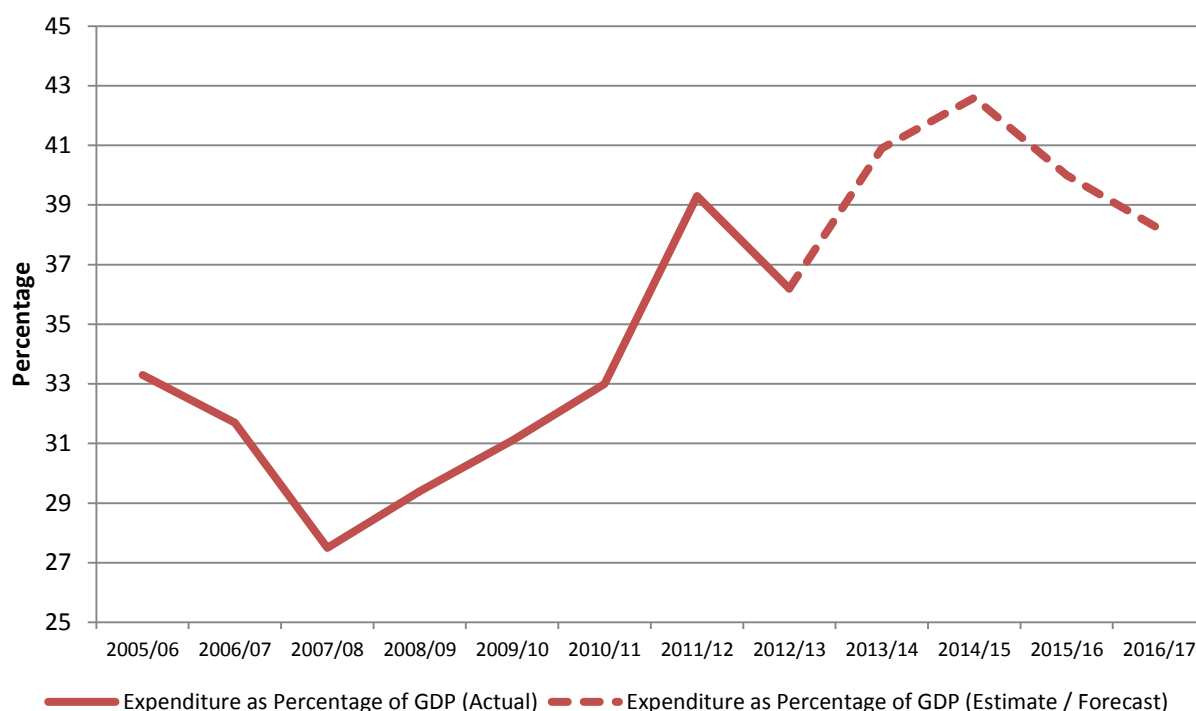
The focus of fiscal policy in the 2012 Budget Statement (MoF, 2012) was on macroeconomic stability and therefore creating ‘fiscal space’ for possible exogenous shocks. As such, Government expenditure as a percentage of GDP fell from 39.3% in 2011/12 to 36.2% in 2012/13. The 2013 and 2014 budget speeches both emphasized the need to continue with this fiscal consolidation, although the 2014 Budget Speech noted that “*with the prospect of resurgent risks on growth, the 2013/14 budget adopted a moderate fiscal expansion*”.

⁷ The data supporting Figure 4.1 can be found in Table A1. This data is sourced from MTEF documents, and also includes total authorised Government expenditure (effectively the Government budget) and forecast data for 2013/14 to 2016/17. Actual and authorised expenditure estimates include operational and development expenditure, as well as domestic and foreign interest payments.

⁸ NSA National Accounts Time Series : <http://www.nsa.org.na/dataset/>

The forecast path for expenditure as a percentage of GDP is presented in Figure 4.2; the data is taken from the 2014/15 MTEF. This illustrates the moderate fiscal expansion mentioned in the 2014 Budget Speech, with forecast expenditure increasing to 40.9% of GDP in 2013/14, and 42.6% in 2014/15. Fiscal consolidation is consequently only really apparent following this peak, decreasing sharply to 38.2% in 2016/17.

Figure 4.2: Actual and forecast total government expenditure as a percentage of GDP, 2005/06 – 2016/17



5 Expenditure Review: GRN

The National Budgetary and Expenditure snapshot presented in Section 4 provides the basis from which to review GRN biodiversity expenditure in Namibia. The approach in this section follows the methodology set out in Section 3.1: we first deal with the three Votes that were found to have a number of biodiversity-related activities (MET, MAWF and MFMR) in detail, and subsequently discuss the remaining seven Votes that have activities relevant to biodiversity in more general terms.

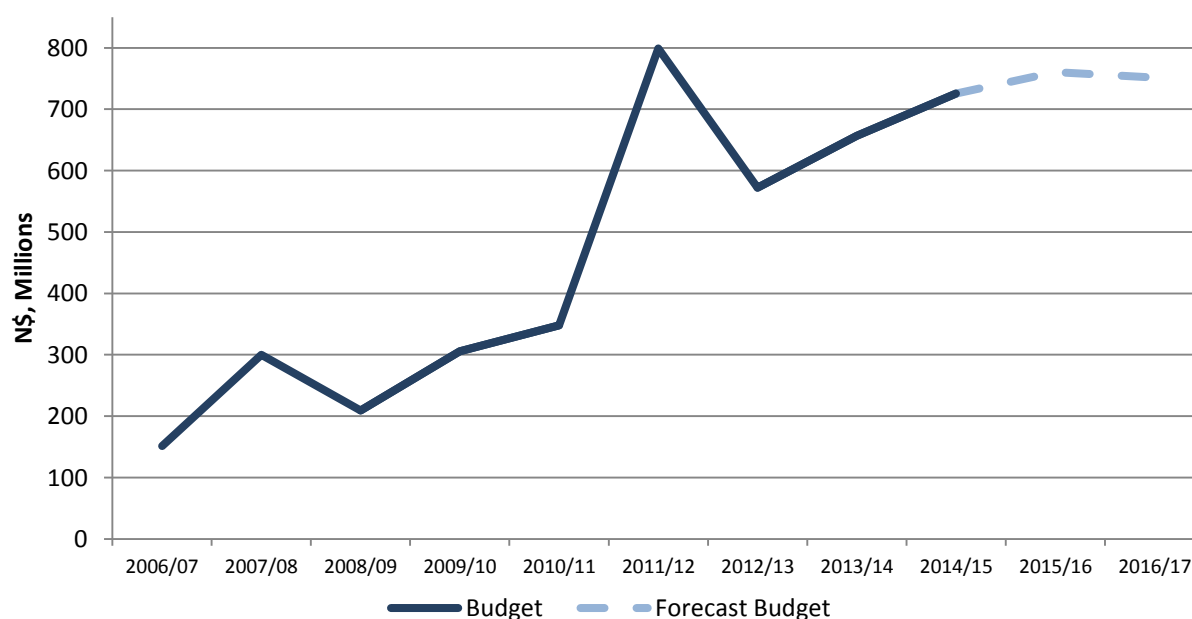
The most recent expenditure data available (2012/13) can be used to put the expenditure of the Votes that are most significantly involved in biodiversity-related activities into the context of wider GRN expenditure. MET (1.4%), MAWF (4.4%) and MFMR (0.7%) combined to account for N\$2.3bn (6.5%) of total GRN expenditure (N\$36.05bn). In contrast, the five Votes with the greatest expenditures (Education, Health and Social Services, Defence, Finance, Transport) represented N\$21.87bn (60.7%) of total GRN expenditure.⁹

5.1 Ministry of Environment and Tourism

5.1.1 Total Budget

Figure 5.1 presents the evolution of the total MET budget allocations from 2006/07 to 2014/15, and the forecast allocations for 2015/16 and 2016/17. Between 2006/07 and 2014/15, the MET budget increased by N\$574m (380%), this represents an annual average increase of 19.6%.

Figure 5.1: Actual and forecast total MET budget, 2006/07 – 2016/17



There are two spikes in the budget allocation that are clearly evident in Figure 5.1: 2007/08 and 2011/12. The 2007/08 budget allocation represented a 111% increase on the 2006/07 allocation, while the 2011/12 allocation was 130% increase on the 2010/11 figures. These allocations were also 89% and 136% higher than their respective forecast budget allocations in the preceding year's MTEF.

⁹ 2012/13 expenditure broken down by the 31 Votes is presented in Table B1.

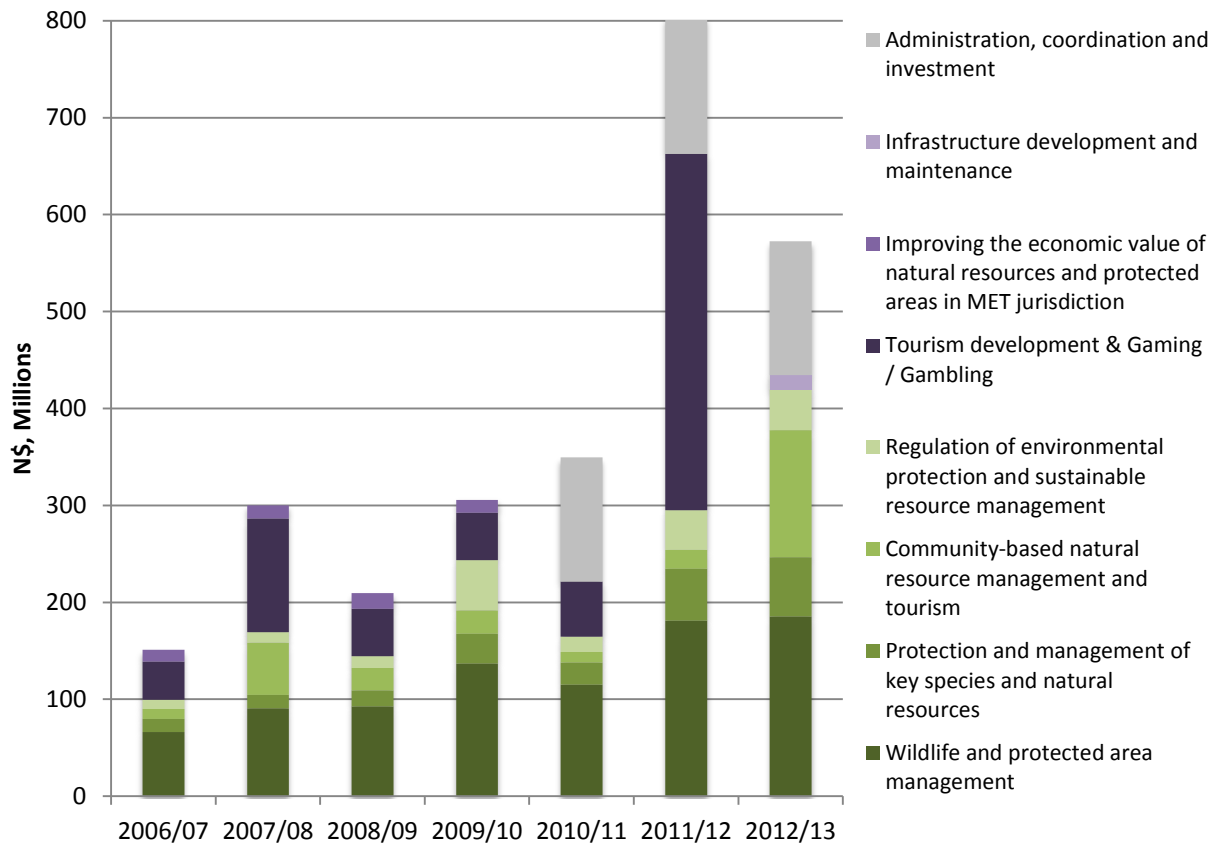
In order to understand these outliers, the MET budget can be reviewed at the level of the individual programmes. A total of nine separate programmes are distinguished within the MET budget. An overview of these programmes is presented in Table 5.1.

Table 5.1: Overview of MET programmes

Name of Programme	Aims
Wildlife and Protected Area Management: 2006/07 - present (known as Protected Area Management from 2006/07 to 2009/10)	<ul style="list-style-type: none"> - Improve the efficiency of the protection and management of protected areas - Increase the socio-economic value of protected areas by improving revenue generation - Increase the role of protected areas in biodiversity conservation
Protection and management of key species and natural resources: 2006/07 – present (known as Natural resources management in 2013/14)	<ul style="list-style-type: none"> - Improve the efficiency of the protection and management of key species and natural resources
Community-based natural resource management and tourism: 2006/07 – present (known as Community-based natural resource management, gambling and tourism development in 2012/13 and Tourism development and gaming from 2013 - present)	<ul style="list-style-type: none"> - Strengthen the conservancy system and other community-based programs on communal lands by improving the natural resource base for economic development - Improve the management of natural resources through such programs - Enhancing job creation and livelihood improvement through enterprise development <p>From 2012/13 to the present the aims have also included:</p> <ul style="list-style-type: none"> - Support the development of environmentally and socio-economically beneficial tourism development and further its growth
Regulation of environmental protection and sustainable resource management: 2006/07 – present	<ul style="list-style-type: none"> - Ensure sustainable development by avoiding environmental degradation and non-sustainable use of resources
Tourism development: 2006/07 – 2011/12	<ul style="list-style-type: none"> - Support the development of environmentally and socio-economically beneficial tourism development and further its growth
Gaming / Gambling: 2010/11	<ul style="list-style-type: none"> - Guide the implementation of the gaming act and any other law relating to the gaming and entertainment industry
Improving the economic value of natural resources and protected areas in MET jurisdiction: 2006/07 – 2009/10	<ul style="list-style-type: none"> - Improve the MET contribution to state revenue - Improve the understanding of the value of assets for which MET is responsible and the costs of maintaining them - Promote value addition and trade in natural resource-based products
Infrastructure development and maintenance: 2012/13 – present	<ul style="list-style-type: none"> - Ensure that required and existing infrastructure are developed and maintained in a cost-effective and sustainable manner <p>From 2013/14 this aims changed to:</p> <ul style="list-style-type: none"> - Ensure the planning and implementation of development projects of the Ministry
Administration, coordination and investment: 2010/11 - present	<ul style="list-style-type: none"> - Provide support to the holistic administrative issues of the Ministry

The breakdown of the MET budget allocation by programme and year for the period 2006/07 to 2012/13¹⁰ is illustrated in Figure 5.2¹¹. The 'Tourism development' and 'Gaming / Gambling' programmes have been combined because the budget of the latter programme is very small in comparison to the others¹².

Figure 5.2: MET budget by programme, 2006/07 – 2012/13



In 2007/08, the sharp budget increase can be largely attributed to frontloaded investments in tourism to capitalise on revenue generation possibilities arising from the 2010 World Cup being held in neighbouring South Africa. This is illustrated by the respective 419% and 198% increases in the budgets for 'Community-based natural resource management and tourism' and 'Tourism development' from 2006/07 to 2007/08. The budgets for these programmes subsequently fell by 57% and 58% in 2008/09, respectively.

A number of programmes in 2011/12 saw significant increases in their budget allocation from the previous year, but the major driving force behind the change in the overall budget allocation was the N\$302m (566%) increase in the 'Tourism development' budget. N\$250m of this increase was for the

¹⁰ 2012/13 is chosen as the final year to simplify comparison with expenditure data as that is the final year for which expenditure data is available.

¹¹ The data supporting Figure 5.2 can be found in Table C1.2.

¹² The Gaming/Gambling programme was allocated N\$1.7m in 2010/11 and N\$2.0m in 2011/12. This corresponds to 0.5% and 0.3% of the total budget allocation, respectively.

'development of tourism facilities for NWR', and therefore it alone accounted for 56% of the total increase in the MET budget. The budget in 2012/13 for this same activity was only N\$45m.

As discussed in Section 3.1 and indicated above, each programme can also be broken down by individually budgeted activities. This level of detail is important for estimating the size of the biodiversity budget for each programme, and subsequently for the whole of the MET. Table 5.2 compares the total for the individually budgeted activities against the total MET budget allocation.

Table 5.2: Comparison of the total MET budget and the total budget assigned to individual activities, 2006/07 – 2012/13

Year	Total Budget (N\$ Millions)	Total Budgeted Activities (N\$ Millions)
2006/07	151.15	139.84
2007/08	299.92	191.04
2008/09	209.29	206.54
2009/10	305.65	305.65
2010/11	347.93	347.93
2011/12	798.85	791.11
2012/13	572.45	572.45

In general, the total of the budgeted activities compares well to the total MET budget for each year. Programme-Based Budget Management was introduced in 2010/11, which has helped to ensure that the total budget was equal to the total budgeted activities¹³. There are however two instances in Table 5.2 for which the total of the individually budgeted activities are significantly less than the total budget allocation.

The first instance is in 2006/07, when total budgeted activities are 7.5% smaller than the total budget allocation. This arises because the total budgeted activities are relative to the original MTEF 2006/07 MTEF budget figure of N\$141.49m, whereas the N\$151.15m is a revised budget figure from the 2007/08 MTEF. Given that this difference is due to a revision of the total budget allocation with no additional information regarding budgets at the activity level, there are no further adjustments we can make.

The second instance is in 2007/08, where the total budgeted activities underestimates the total budget by more than N\$100m. Table 5.3 provides a breakdown by programme of this comparison. The major driver behind the discrepancy is the difference in total budget and the total of the budgeted activities for the 'Tourism development' programme. There is more than N\$84m unaccounted for by activities in the budget for this programme¹⁴.

¹³ The exception is in 2011/12, for which the final budget allocation is taken from the relevant Accountability Report, whereas the individually budgeted activities were presented in the original budget in the MTEF.

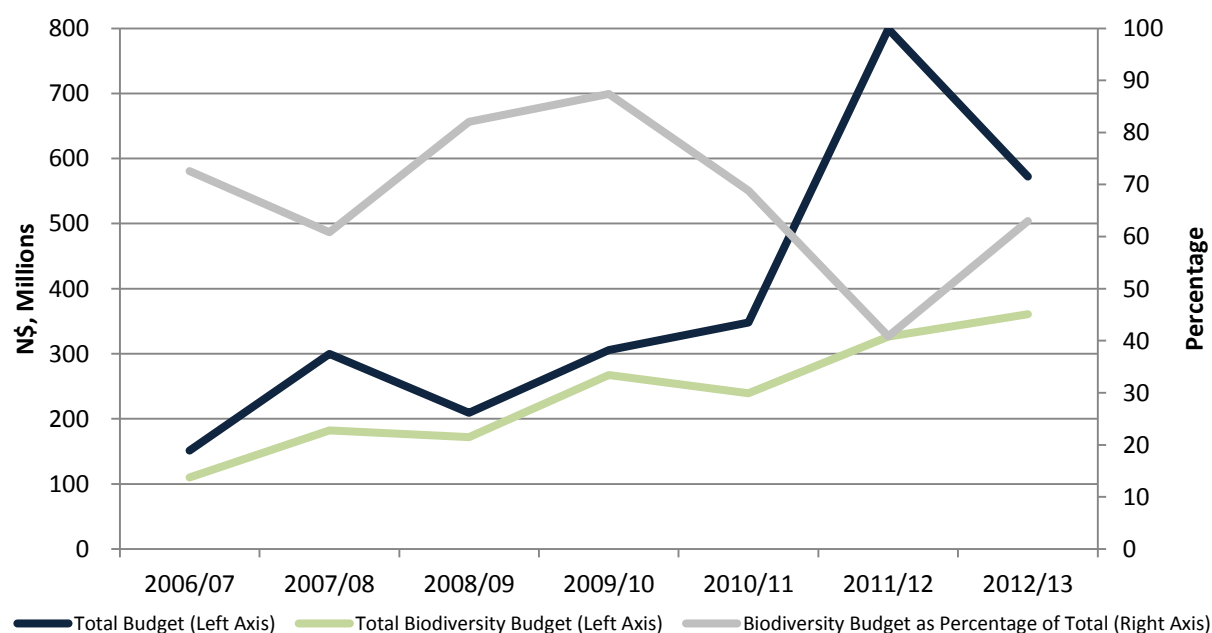
¹⁴ There also appears to be an error in the 2007/08 MTEF, as it attributes N\$200m to 'Development of a National Lottery' in 2007/08. This would subsequently result in total budgeted activities increasing to N\$390.84m, which would be 30% greater than the total MET budget of N\$299.92m. In subsequent MTEFs, the figure for the Lottery activity is just N\$0.2m, and consequently we adopt this figure for 2007/08 as well.

Table 5.3: Comparison of the total budget allocated and the total budget assigned to individual activities by MET programme, 2007/08 (N\$ Millions)

Programme	Total Budget	Total Budgeted Activities	Difference
Protected area management	90.61	72.45	18.16
Protection and management of key species and natural resources	13.93	12.30	1.63
Community-based natural resource management and tourism	53.56	51.13	2.44
Regulation of environmental protection and sustainable resource management	10.99	9.71	1.28
Tourism development	117.24	33.00	84.24
Improving the economic value of natural resources and protected areas in MET jurisdiction	13.57	12.46	1.12
Total	299.92	191.04	108.87

5.1.2 Biodiversity Budget

The MET biodiversity budget for 2006/07 to 2012/13 is estimated following the procedure outlined in Table 3.1. Figure 5.3¹⁵ compares the estimate of the total MET biodiversity budget with the total MET budget for each year, as well as plotting the proportion of the total budget that is relevant to biodiversity. The biodiversity budget is much smoother than the total budget, and the large increases in total budget in 2007/08 and 2011/12 are not reflected in the biodiversity budget. The proportion of the total budget that is relevant to biodiversity has fallen in recent years (from 86% in 2009/10 to 62% in 2012/13), although whether this is a trend that will be continued is unclear.

Figure 5.3: MET budget and biodiversity budget, 2006/07 – 2012/13

¹⁵ Data supporting Figure 5.3 can be found in Table C2.1.

In order to better understand the relationship between the total budget and the biodiversity budget, the breakdown of the respective allocations by programme can be compared. But to first provide context to which activities are classified as relevant to biodiversity, a brief review of the activities within each of the programmes is provided below.

1. Wildlife and protected area management

All activities in this programme are classified as relevant to biodiversity because they relate primarily to the management of protected areas. This includes activities such as increasing revenue generation within parks, as this such activities can help to secure their conservation.

2. Protection and management of key species and natural resources

The vast majority of activities in this programme are classified as relevant to biodiversity. Those that aren't involve the capture and translocation of game to Cuba, and wildlife auctions.

3. Community-based natural resource management and tourism

All activities relating to CBNRM are included as relevant to biodiversity. Community-based tourism activities are included because these represent a significant source of revenue for CBNRM programs, and thus help to support the positive impact that Conservancies have had on wildlife numbers (NACSO, 2013). Other tourism activities, including contributions to the Namibia Tourism Board (NTB) and Namibia Wildlife Resorts (NWR)¹⁶, are excluded.

4. Regulation of environmental protection and sustainable resource management

From 2010, this programme includes significant contributions to the Environmental Investment Fund (EIF). The EIF is a State Owned Enterprise (SOE) that is currently funded entirely by MET, and specifically the Directorate of Environmental Affairs (DEA). Not all of the EIF's activities are relevant to biodiversity conservation, so we take a conservative approach in only including the funds used to finance projects that are relevant to biodiversity conservation in the MET biodiversity budget and biodiversity expenditure estimates. A fuller discussion of the EIF calculations and projections are presented in Section A2.2. All other activities within the programme are taken as wholly relevant to biodiversity, including co-financing costs for the Namibian Coast Conservation and Management (NACOMA) project.

5. Tourism development

Where they appear under this programme and not under 'Community-based natural resource management and tourism', community-based tourism activities are included as relevant to biodiversity. All other activities are omitted.

6. Gaming/Gambling

No activities are classified as relevant to biodiversity within this programme.

¹⁶ NWR manages all the accommodation in Namibia's National Parks.

7. Improving the economic value of natural resources and protected areas in MET jurisdiction
Those activities relating to the economics of natural resources are included as relevant to biodiversity, as they help to make the economic case for their conservation. Wildlife breeding is also classified as relevant.

8. Infrastructure development and maintenance
Planning and maintenance are classified as relevant to biodiversity, as this infrastructure relates to a good extent to the management of protected areas. The upgrading of tourist roads is included for the same reason as revenue-generating activities under 'Wildlife and protected area management'. The construction of regional offices and new headquarters is not included, along with upgrades to sewerage and water supply systems

9. Administration, coordination and investment

Activities supporting administration are classified as relevant following the methodology described in Section 3.1.1. 'Maintenance' and the 'upgrading of tourist roads' appear under this programme in 2010/11 – 2011/12, and are classified as relevant to biodiversity, as when they appear under 'Infrastructure development and maintenance'

Figure 5.4: MET budget and biodiversity budget by programme, 2006/07 – 2012/13

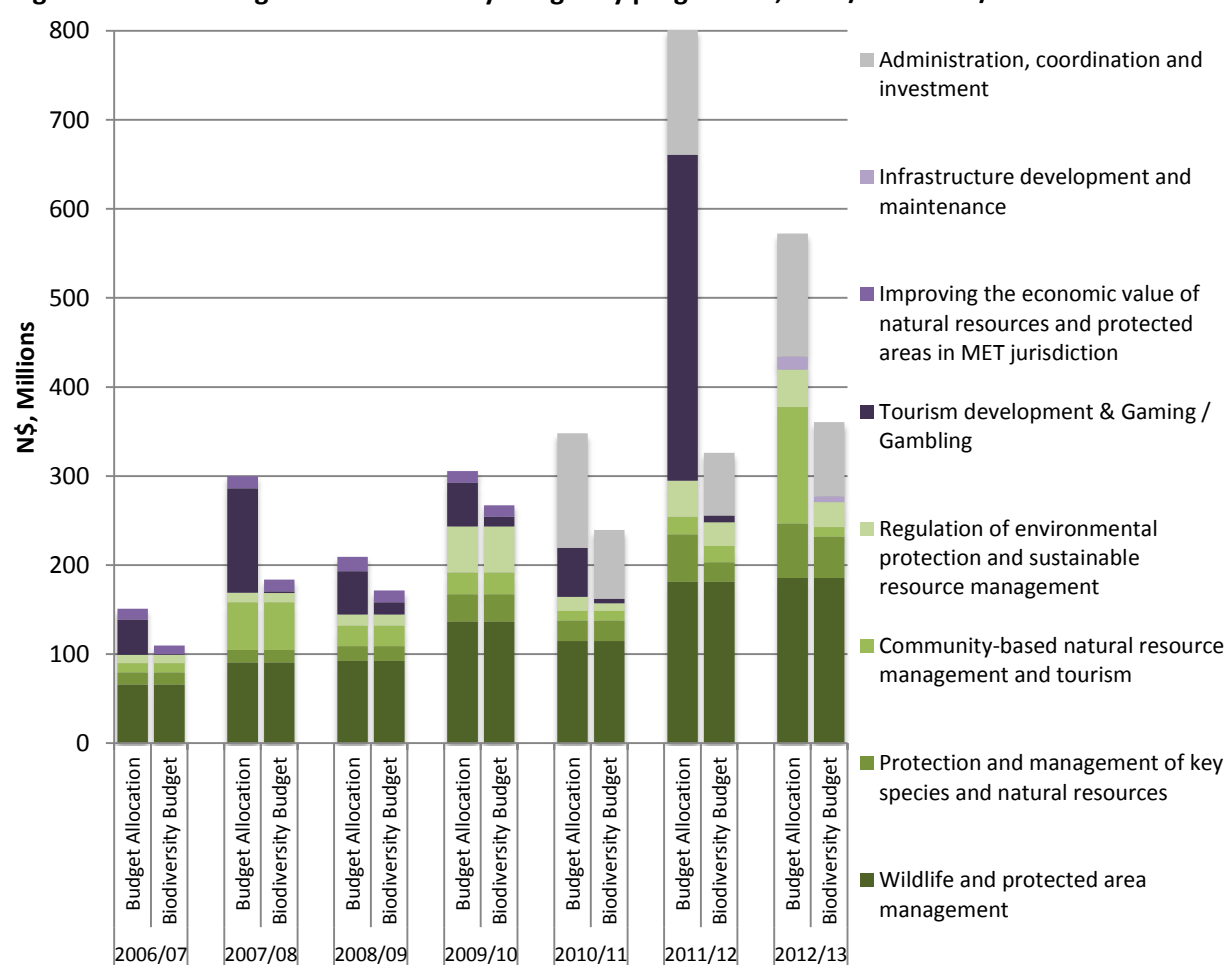


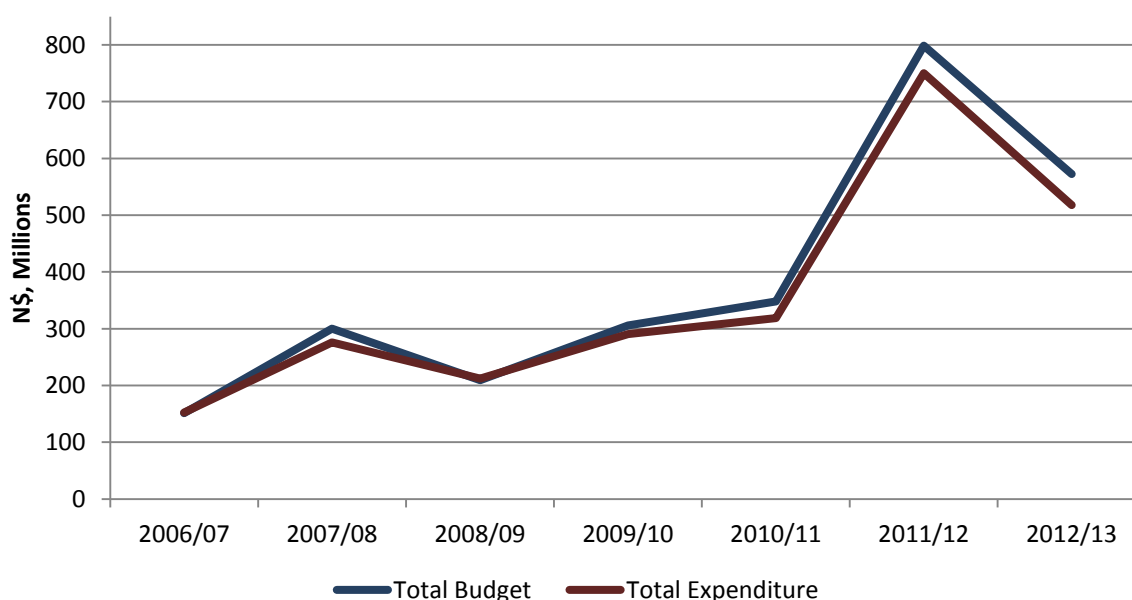
Figure 5.4 presents estimates of the biodiversity budget by programme and year, compared to the total budget allocations, for 2006/07 to 2012/13¹⁷. Two main observations can be drawn from this comparison. First, disconnects between the total budget and the biodiversity budget between 2006/07 and 2012/13 are being primarily driven by allocations relating to tourism development¹⁸. The introduction of the 'Administration, coordination and investment' programme, and consequently of activities relating to the construction of offices and staff houses, has also acted to exacerbate this disconnect.

Second, in recent years there has been a trend among a number of programmes towards a smaller proportion of their budget being relevant to biodiversity, which has subsequently contributed to a falling proportion of the total MET budget that is relevant to biodiversity. This applies primarily to three programmes:

1. Protection and management of key species and natural resources – the 2011/12 budget included a sizable amount to the translocation of wildlife to Cuba.
2. The regulation of environmental protection and sustainable resource management – this can largely be accounted for by the EIF budget increasing faster than its expenditure on biodiversity related projects; and
3. Community based natural resource management and tourism – which assumed many of the activities from the tourism development programme in 2012/13.

5.1.3 Total Expenditure

Figure 5.5: Comparison of the total MET budget and the MET expenditure, 2006/07 – 2012/13



¹⁷ The data supporting this chart can be found in Tables C1.2 and C2.1. The calculations for each of the individual programmes are presented in Table C2.2 – C2.10.

¹⁸ Between 2006/07 and 2011/12, this can be seen directly in the different between the budget allocation and the biodiversity budget for the 'Tourism Development' programme. In 2012/13, activities from tourism development are incorporated into the CBNRM and tourism programme, and consequently the proportion of the total CBNRM and tourism programme budget that was relevant to biodiversity fell from 94.2% (2011/12) to 8.2% (2012/13).

Total MET expenditure is compared to the total MET budget allocation in Figure 5.5¹⁹. The data illustrates that MET fractionally overspent on its budget in both 2006/07 and 2008/09, but aside from these two years, it has consistently underspent by between 5% and 10% of the total budget allocation.

The overspend in 2006/07 is not discussed in the relevant *Estimates of Revenue and Expenditure* Report, and is only by 0.7% of the total budget allocation. The 1.48% overspend in 2008/09 was mainly due to three issues: increased area patrols to prevent poaching; flooding in the north east and Etosha; and the building of fire breaks to combat increased veld fires.

5.1.4 Biodiversity Expenditure

Estimates of expenditure on biodiversity-related activities by MET are compared to total estimates of the biodiversity budget in Figure 5.6²⁰. Total biodiversity expenditure tracks the biodiversity budget fairly closely; the two years in which biodiversity expenditure was greater than the biodiversity budget are the two years in which MET as a whole overspent on its total budget.

Figure 5.6: Comparison of the MET biodiversity budget and MET biodiversity expenditure, 2006/07 – 2012/13



The execution rate of the MET biodiversity budget has declined in recent years, from 102% in 2008/09 and 95% in 2009/10 to 88% in 2012/13. To assess whether the declining execution rate is due to systematic underspending in particular programmes, Figure C4.1 compares the biodiversity budget to biodiversity expenditure by programme in each year. There is no particular evidence that any of the programmes are characterized by systematic underspending, although the Wildlife and

¹⁹ The data supporting Figure 5.5, alongside a breakdown of expenditure by programme, is presented in Table C3.1.

²⁰ The data supporting Figure 5.6 can be found in Tables C2.1 and C4.1. A breakdown of biodiversity expenditure by programme is presented in Table C4.1. The calculations of programme-level biodiversity expenditure estimates can be found in Tables C4.2 - C4.10.

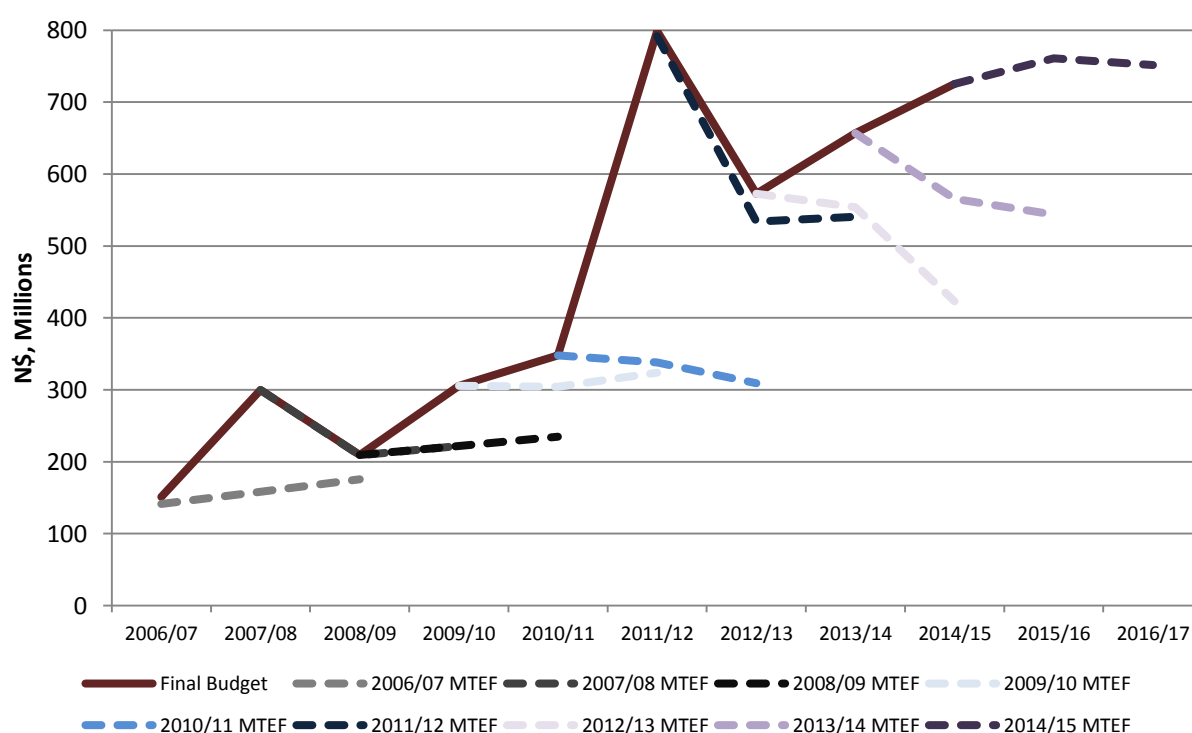
protected area management programme underspent on its biodiversity budget by 14.5% and 11.8% in 2011/12 and 2012/13, respectively.

5.1.5 Projected Expenditure

Figure 5.7 illustrates the evolution of the MET budget allocations from 2006/07 to 2014/15, and the estimates and forecasts presented in each three-year MTEF period²¹. The estimate of the allocation in the first year of each MTEF period is usually accurate; only 2006/07 and 2011/12 do not match the final allocations, and these underestimations are relatively small. However, Figure 5.7 shows that the forecasts presented for the second and third year of each MTEF period consistently underestimate the actual allocations in these years.

The resulting implication is that the intended three year budgeting period presented in the MTEF for MET is in reality closer to a one-year budgeting period. Consequently, the MTEF estimates for 2015/16 and 2016/17 may not accurately represent the actual budget MET will receive in those years.

Figure 5.7: Evolution of MET budget allocations and MTEF forecasts, 2006/07 – 2016/17



²¹ The data supporting Figure 5.7 can be found in Table C5.1.

Figure 5.8: Estimates and projections of MET biodiversity expenditure, 2006/07 – 2020/21

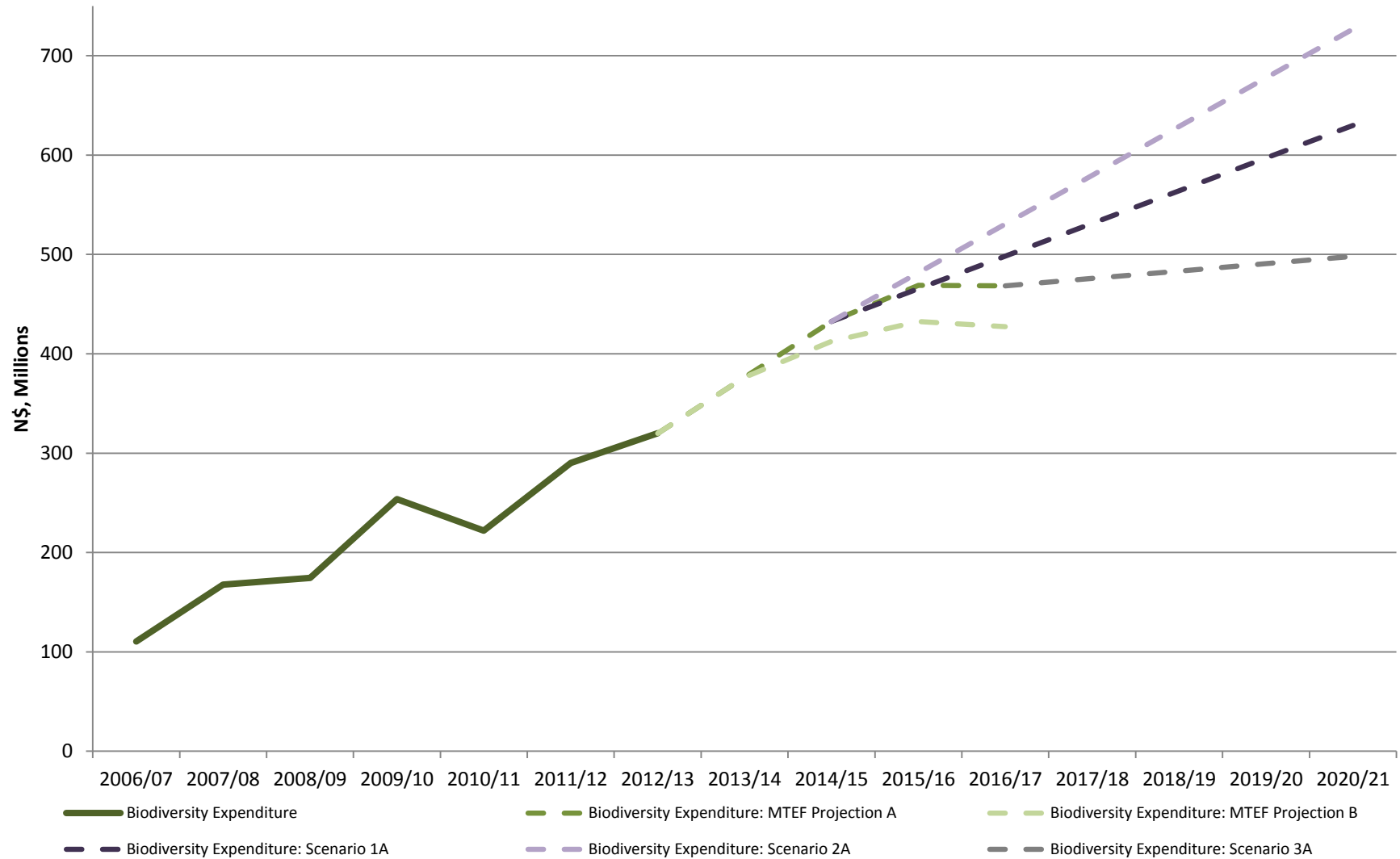


Figure 5.8 presents estimates of biodiversity expenditure for MET for the period 2006/07 to 2020/21. This includes the estimates calculated previously (2006/07 – 2012/13), and subsequently projections for biodiversity expenditure from 2013/14 – 2020/21²². As discussed in Section 3.1.3, the starting points for these projections are the budget allocations for 2013/14 and 2014/15, and the MTEF forecasts for 2015/16 and 2016/17. Two projections are presented for this period, and are detailed below²³.

- Biodiversity expenditure: MTEF Projection A

The 2013/14 budget allocation is presented at the activity level, but the individual activities do not sum to the total budget allocation²⁴. Thus the biodiversity expenditure total for this year is estimated by scaling the total for the biodiversity-relevant activities by the ratio of the total budget allocation to the total for the individually budgeted activities.

The budget allocations for 2014/15 – 2016/17 are only presented at the level of the individual programmes. Biodiversity expenditure estimates are calculated following the methodology detailed for the second approach in Section 3.1.3²⁵.

- Biodiversity expenditure: MTEF Projection B

Projection B presents a second set of estimates of MET biodiversity expenditure for 2013/14 – 2016/17 for comparison to Projection A. These estimates are calculated following the methodology detailed for the third approach in Section 3.1.3, and not using the breakdown of the total allocation by programme²⁶.

Projection A utilizes the available information in greater detail than Projection B, and therefore allows for a changing relative focus on different programmes. As such, the estimates in Projection A (N\$468m by 2016/17) are larger than Projection B (N\$427m by 2016/17) because programmes that are strongly relevant to biodiversity (such as protected area management) have larger increases in budget than programmes that are less relevant to biodiversity (such as infrastructure development). Projection A therefore represents the basis for extrapolating biodiversity expenditure forward to 2020/21, and three scenarios are presented and detailed subsequently.

- Biodiversity expenditure: Scenario 1

Scenario 1 takes a linear trend of the estimates of biodiversity expenditure in the years 2006/07 to 2012/13. This trend is then used to project biodiversity expenditure forwards from 2014/15 to 2020/21.

²² The data supporting this Figure 5.8 can be found in Table C5.8.

²³ The calculations underlying the estimation of MET biodiversity budgets from 2013/14 to 2016/17 are presented in Tables C5.2 to C5.5.

²⁴ The total budget for 2013/14 is N\$656.80m, but the individual programme budgets sum to N\$477.01m. The 2014/15 MTEF references the total budget for 2013/14 as N\$656.80m, so it is assumed that the total allocation is correct.

²⁵ MET MTEF Projection A estimates are presented in Table C5.6.

²⁶ MET MTEF Projection B estimates are presented in Table C5.7.

- Biodiversity expenditure: Scenario 2

Scenario 2 takes a linear trend of the estimates of biodiversity expenditure in the years 2010/11 – 2012/13. This trend is then used to project biodiversity expenditure forwards from 2014/15 to 2020/21.

- Biodiversity expenditure: Scenario 3

Scenario 3 takes a linear trend of the estimates of biodiversity expenditure in the years 2014/15 – 2016/17. This trend is then used to project biodiversity expenditure forwards from 2016/17 to 2020/21.

Scenarios 1 and 2 start extrapolating forward from 2014/15 to avoid the apparent systematic underestimation of budget allocations in the MTEF forecasts. Scenario 1 represents our 'central' estimate because it is not clear that the faster trend rate of growth exhibited between 2010/11 and 2012/13, and that which is used to extrapolate Scenario 2, will continue into the future. Under Scenario 2, estimated expenditure is N\$727m by 2020/21; this is 15.4% higher than the central estimate of N\$630m, and consequently represents our 'high' estimate.

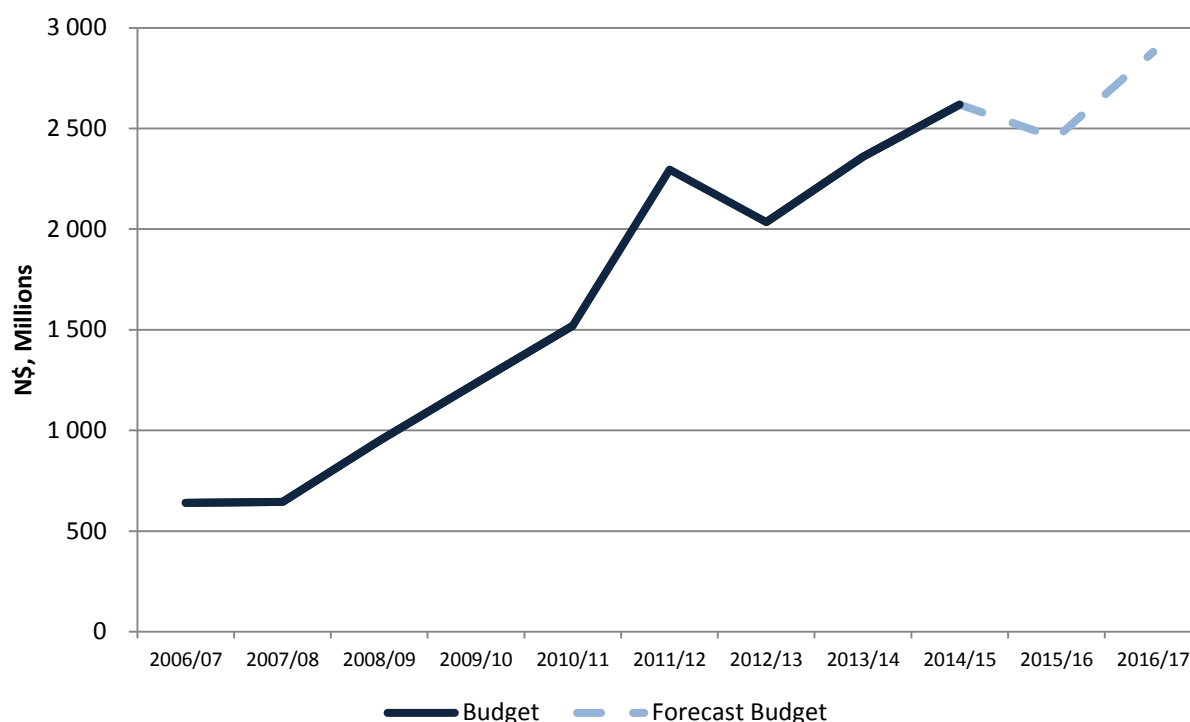
Scenario 3 represents our 'low' estimate of future biodiversity expenditure, and uses the trend rate over the three-year period in the 2014/15 MTEF; at N\$498m in 2020/21, it is 20.9% lower than the central estimate. The difference between the three estimates illustrates the considerable uncertainty regarding future biodiversity expenditure by MET, and also the effect of focusing on the MTEF forecasts for projecting future biodiversity expenditure.

5.2 Ministry of Agriculture, Water and Forestry

5.2.1 Total Budget

The total budget allocated to MAWF has increased from N\$640m in 2006/07 to N\$2,618m in 2014/15, equivalent to an annual average increase of 17.6%. Figure 5.9 illustrates the evolution of the total MAWF budget allocations from 2006/07 to 2014/15, and the forecast allocations for 2015/16 and 2016/17.

Figure 5.9: Actual and forecast total MAWF budget, 2006/07 – 2016/17



The 2011/12 budget allocation stands out as an outlier relative to the otherwise fairly consistent increase in the total allocation from 2007/08 to 2014/15. The budget increase in 2011/12 represented a 51% increase on the 2010/11 allocation, and a 47% increase on the forecast allocation in the 2010/11 MTEF. As with the analysis of the MET budget, we subsequently review the MAWF budget at the level of the individual programmes.

Table 5.4 presents the 12 programmes which comprise the MAWF Vote from the years 2006/07 to 2012/13. From 2013/14, the budget is divided into only four programmes, and the level of detail at which the individual activities are described is also reduced; in 2012/13, a total of 60 individual activities within the seven programmes were budgeted, this was just 12 in 2013/14. This renders the 2013/14 – 2014/15 MTEF budgets significantly less useful for the subsequent task of estimating the biodiversity budget, and as such, we do not describe these programmes.

Table 5.4: Overview of MAWF programmes

Name of Programme	Aims
Agricultural Advice: 2006/07 – 2008/09	<ul style="list-style-type: none"> - Improve agricultural technology and practice options, support staff and framers with relevant information, strengthening of agricultural institutions and organizations towards improved service delivery, promotion of linkages with all stakeholders - Human resource development (staff and farmers training), provide veterinary clinical services through government veterinary staff as well as through training community Animal Health Workers within the communities. - Ensure a bottom-up approach from community driven expectations concerning animal health and marketing, empower women to obtain and improve livestock whereby their food security and income can reduce poverty and improve livelihoods of mainly rural populations through better marketing facilities, and facilitate adequate access of appropriate information to all livestock producers.
Training: 2006/07 – 2008/09	<ul style="list-style-type: none"> - Facilitate and co-ordinate the development and management of all the ministerial human resources, support the non-formal training of farmers and farm workers.
Agricultural infrastructures: 2006/07 – 2008/09	<ul style="list-style-type: none"> - Create an enabling, commercially viable environment through an effective public-private partnership to stimulate increasing private sector investment in the irrigation sub-sector and promote the relevant objectives of the National Development Plan
Planning, marketing and food security: 2006/07 – 2008/09 (known as Poverty and food security in 2006/07)	<ul style="list-style-type: none"> - Encourage food security and diversification among small holder producers, promote domestic horticultural production, promoting economic growth and employment resulting from greater commercialization of mahangu and other crop production, raised and maintaining an acceptable level of nutrition and standard of living of all the Namibia cross-sectoral institutional co-ordination mechanisms and strategies.
Integrated water resources management: 2006/07 – 2012/13	<ul style="list-style-type: none"> - Ensure equitable access and the sustainable availability and use of water resources, uphold and improve the availability of reliable water resource data, perform the professional assessment of water resources information, implement the Water Resources Management Act, establish an institutional and operational environment for integrated water resources management and ensure that Namibia strengthens its own capacity on the water sector <p>From 2009/10 the aim changed to:</p> <ul style="list-style-type: none"> - Development and maintenance of water management systems, capable of providing the necessary information for the planning and management of water resources. <p>From 2012/13 the aims also included:</p> <ul style="list-style-type: none"> - Initiate the development of water supply infrastructure
Water supply to urban and rural communities: 2006/07 – 2012/13 (known as Rural water supply from 2006/07 – 2008/09; Water supply and sanitation to rural communities in 2012/13)	<ul style="list-style-type: none"> - Build infrastructure in order to increase coverage and access to safe water, ensure efficient and effective community-based operation and management of payments for water supply and decentralized water supply services and regional and constituency levels <p>From 2009/10 the aims changed to:</p> <ul style="list-style-type: none"> - The development of rural and bulk water infrastructure and the supply of water to urban industries and rural communities. - Management and implementation of the sanitation policy and programmes

Forestry: 2006/07 – present (known as Management, development and utilization of forest resources from 2009/10 – 2012/13)	<ul style="list-style-type: none"> - Improve the efficiency of protecting and managing key species and natural resources, to strengthen the conservancy system on communal lands and other community-based programmes by improving the natural resource base for economic development, the management of natural resources through such programmes and enhancing job creation and livelihood improvement through enterprise development and job creation. - Ensure sustainable development by avoiding environmental degradation and non-sustainable use of renewable resources, to improve the contribution to State revenue, and improve the understanding of the value of the assets that the Directorate of Forestry is responsible for and the costs of maintaining them. <p>From 2009/10 the aims changed to:</p> <ul style="list-style-type: none"> - Development and management of forestry resources to enhance socio-economic development and environmental sustainability
Crop production and horticultural development: 2009/10 – 2012/13	<ul style="list-style-type: none"> - Increase crop and horticultural production in order to reduce poverty, improve food security at the household level and to earn revenue from exports. <p>From 2011/12 the aims also included:</p> <ul style="list-style-type: none"> - Development of storage, marketing and infrastructure for distribution
Livestock production, improvement and animal health control: 2009/10 – 2012/13	<ul style="list-style-type: none"> - Increase livestock production and marketing as well as to improve animal health status in communal areas, while improving the production level of commercial farmers.
Co-operatives regulation, development and promotion services: 2009/10 – 2011/12	<ul style="list-style-type: none"> - Create a conducive legal environment for the Namibia co-operatives - Facilitate the investigation of the viability of agricultural projects and to render quality support services - Participate in trade negotiations and develop financing and incentive schemes to enhance agricultural production marketing
Agriculture planning, agro-business development and co-operative regulation: 2012/13	<ul style="list-style-type: none"> - Facilitation of policy formulation leading to the creation of legal frameworks for the Ministry - Implementation of policies - Promotion of agricultural and agro-industrial development - Mobilisation of technical and financial resources - Development and maintenance of an agricultural information system - Administration of the co-operative act - Promotion of marketing of agricultural products
Institutional development and support services: 2012/13	<ul style="list-style-type: none"> - Provide support to the Vote's programmes and to ensure proper financial anagement, optimal deployment of resources, the acquisition and development of physical infrastructures, ITC services, transport and communication, consumables, safety and wellness, utilities, legal costs, assets management and protections, public relations, publications, capacity building and staff development.

The breakdown of the MAWF budget allocation by programme and year for the period 2006/07 to 2012/13 is illustrated in Figure 5.10²⁷, and makes clear the introduction and conclusion of different programmes.

Figure 5.10: MAWF budget by programme, 2006/07 – 2012/13

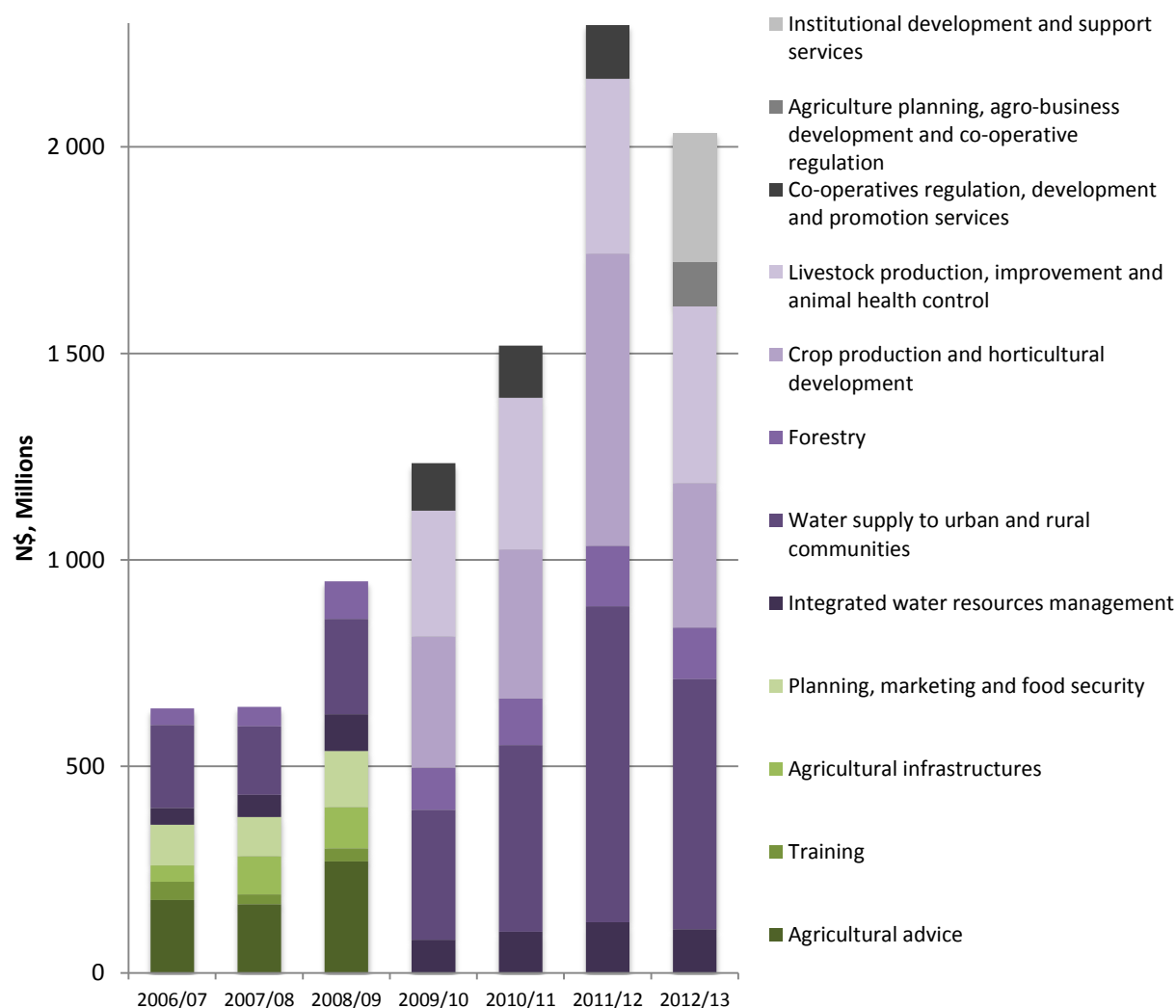


Figure 5.10 illustrates that the increase in the 2011/12 allocation was primarily driven by increases in the budget for the 'Water Supply to Urban and Rural Communities' (N\$313m increase on 2010/11, or 69%) and 'Crop Production and Horticultural Development' (N\$346m, 96%) programmes. The former can largely be accounted for by a doubling in the budget for the "*implementation and construction of water infrastructures*", while the latter is due to a greater than four-fold increase in the budget for the "*development and construction of an agronomic irrigation project for the production of horticultural, food crops, cash crops, and for marketing processing*".

Following the procedure undertaken for MET, the total for individually budgeted activities and the total MAWF budget for each year are compared in Table 5.5. From 2010/11 to 2012/13, a

²⁷ The data supporting Figure 5.10 can be found in Table D1.2.

breakdown of activities and their budgets in the Accountability Reports has helped to ensure that the figures for the two are consistent. In 2006/07 and 2008/09, the slight underestimates of the total budgeted activities against the total budget are as a result of the revising upwards of the budget and not all the activities being budgeted, respectively. The total budgeted activities in 2007/08 and 2009/10 represent an overestimate of the total budget; these are discussed below.

Table 5.5: Comparison of the total MAWF budget and the total budget assigned to individual activities, 2006/07 – 2012/13

Year	Total Budget (N\$ Millions)	Total Budgeted Activities (N\$ Millions)
2006/07	640.45	634.72
2007/08	644.77	662.57
2008/09	948.63	944.39
2009/10	1,234.49	1,244.99
2010/11	1,518.74	1,518.74
2011/12	2,295.26	2,295.26
2012/13	2,034.23	2,034.23

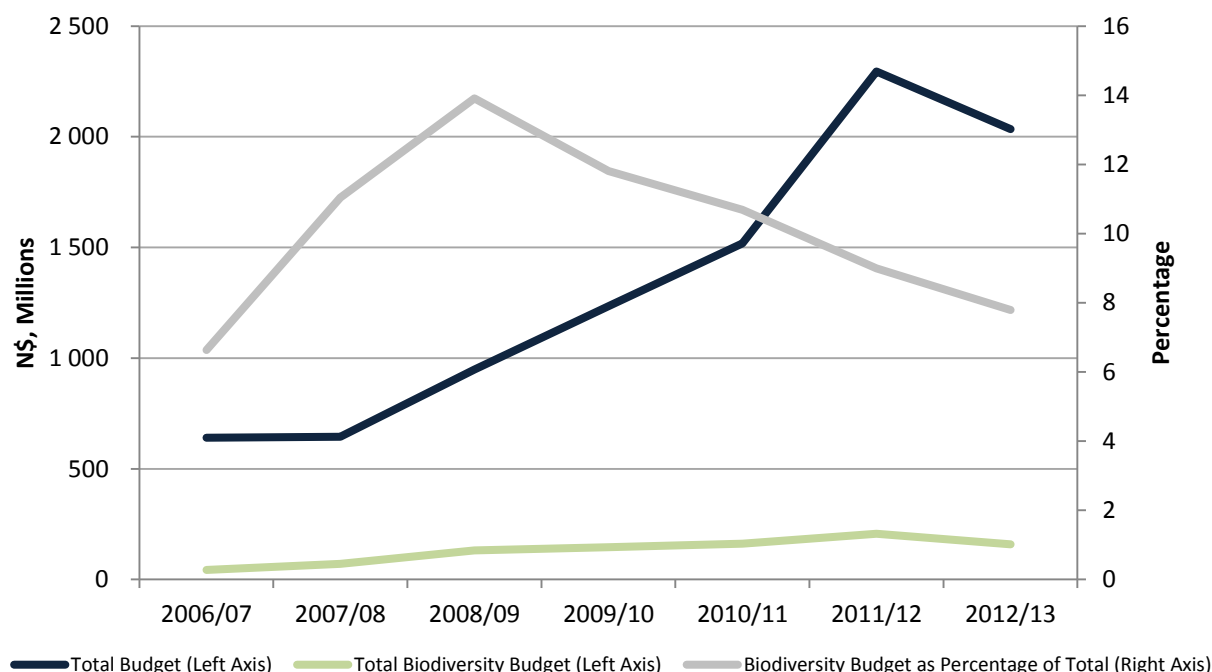
The 2007/08 overestimate can be partially attributed to a downward revision of the budget from the original MTEF estimate against which the activities are budgeted (N\$652.77m to N\$644.77m). However, even against this original estimate, the total budgeted activities represented an overestimate of N\$9.8m. This appears to be the result of the incorrect budgeting of activities in the Integrated Water Resources Management programme, in which N\$9.8m more is allocated to the individual activities than to the programme as a whole. The overestimate in 2009/10 is similarly the result of the incorrect budgeting of the Livestock Production, Improvement and Animal Health Control programme, which has an additional N\$10.5m allocated to its individual activities.

5.2.2 Biodiversity Budget

Figure 5.11²⁸ presents a comparison of the total MAWF biodiversity budget with the total budget for each year, alongside the proportion of the total budget that is relevant to biodiversity. Although the MAWF biodiversity budget has grown (273%) by more than the total MAWF budget (218%) as a whole in the 2006/07 to 2012/13 period, the majority of this growth came before 2008/09. As a result, since 2008/09, the proportion of the total MAWF budget that is relevant to biodiversity has decreased from 13.9% to 7.8%.

²⁸ The data supporting Figure 5.11 can be found in Table D2.1.

Figure 5.11: MAWF budget and biodiversity budget, 2006/07 – 2012/13



Following the procedure adopted for MET, we compare the total budget and the biodiversity budget by programme and year. First, however, a brief overview of the biodiversity-relevant activities within each programme is provided below.

1. Agricultural advice

The only activities within this programme that are included in the biodiversity budget are those relating to databases of animal disease information. Such databases can help to prevent the spread of animal disease, and consequently protect wildlife.

2. Training

No activities in training are considered explicitly relevant to biodiversity.

3. Agricultural infrastructures

No activities in agricultural infrastructures are considered explicitly relevant to biodiversity.

4. Planning, marketing and food security

No activities in planning, marketing and food security are considered explicitly relevant to biodiversity.

5. Integrated water resources management

Biodiversity-relevant activities in this programme relate to understanding water environments and improving water quality. This includes training of personnel to undertake such assessments, the monitoring of water quality and the development of relevant regulations.

6. Water supply to urban and rural communities

No activities in water supply to urban and rural communities are considered explicitly relevant to biodiversity.

7. Forestry

Almost all of the activities in the forestry programme are relevant to biodiversity, as they primarily relate to the management and conservation of forest resources and woodland areas, which in turn support biodiversity. Those activities excluded are the revision of tariffs to raise revenue and the renovations to the MAWF headquarters that fall under this programme. We include the promotion of value addition and trade in natural resource based products because it helps to provide incentives for its sustainable use.

8. Crop production and horticultural development

The biodiversity-relevant activities under the crop production and horticultural development programme relate to the study, conservation and support of indigenous plants, and the promotion of their sustainable use, as well as providing recommendations on the optimal use of resources such as soil, plant and animal feedstuff.

9. Livestock production, improvement and animal health control

For the years in which the maintenance of the animal disease information database falls under this programme, it is included as relevant. In addition to this, the improvement of grazing capacities through new technology is also included.

10. Co-operatives regulation, development and promotion services

No activities in co-operatives regulation, development and promotion services are considered explicitly relevant to biodiversity.

11. Agriculture planning, agro-business development and co-operatives regulation

No activities in agriculture planning, agro-business development and co-operatives regulation are considered explicitly relevant to biodiversity.

12. Institutional development and support services

Activities supporting general administration are classified as relevant within this programme following the methodology describes in Section 3.1.1.

It should be noted that for many of the activities listed, particularly under the agricultural programmes, their relevance to biodiversity depends on the specifics of the site at which they are taking place. For example, the outcomes of more intensive agriculture would represent a threat in areas of rich biodiversity, but may have very limited or no impact in areas that do not currently support much biodiversity.

Furthermore, some activities may have the potential to have positive impacts on biodiversity, but it depends on how these activities are implemented. The increased efficiency of agriculture (e.g. more crops produced on less land) could in theory free up more land for activities or uses that actively

promote biodiversity. Conversely, however, such efficiency improvements may be used to justify the expansion of agriculture, which could subsequently pose a threat to biodiversity.

As a result, we try and focus on activities for which there is a clear link to biodiversity. In some cases, activities will be included which have aspects that are not relevant to biodiversity; it is assumed that this will average out with some activities that are excluded that include biodiversity-relevant aspects.

Figure 5.12: MAWF budget and biodiversity budget by programme, 2006/07 – 2012/13

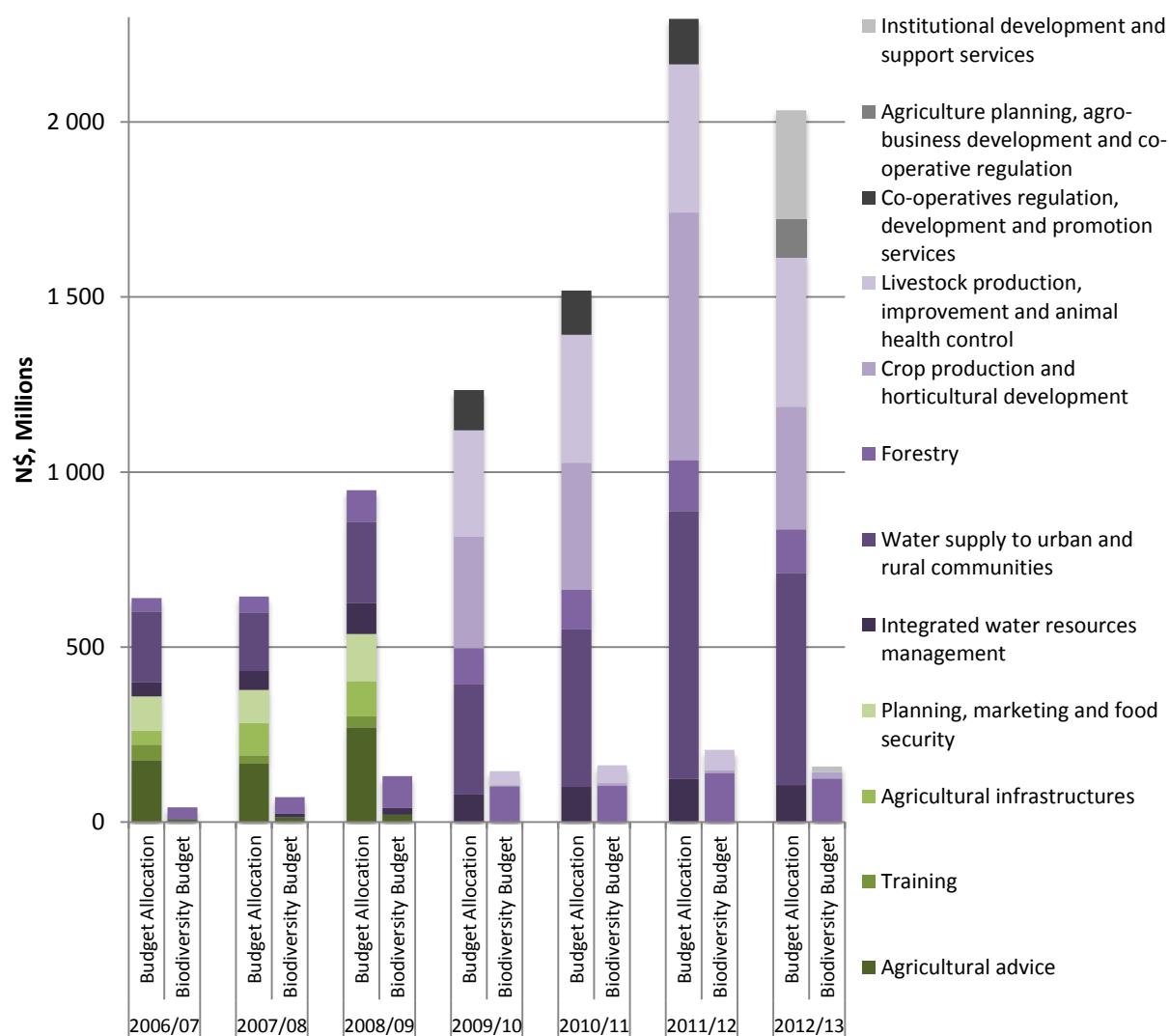


Figure 5.12²⁹ presents estimates of the MAWF biodiversity budget by programme and year, compared to the total budget allocations, for 2006/07 to 2012/13. The majority of the MAWF biodiversity budget arises through the forestry programme; even when the proportional

²⁹ The data supporting Figure 5.12 can be found in Tables D1.2 and D2.1. The calculations for each of the individual programmes are presented in Tables D2.2 – D2.13. Note that calculations are not shown for 2010/11 – 2012/13 because these estimates are taken directly from the Accountability Report activity-level budgets.

contribution of the forestry programme was at its minimum for this period, it still comprised more than 64% of the total biodiversity budget.

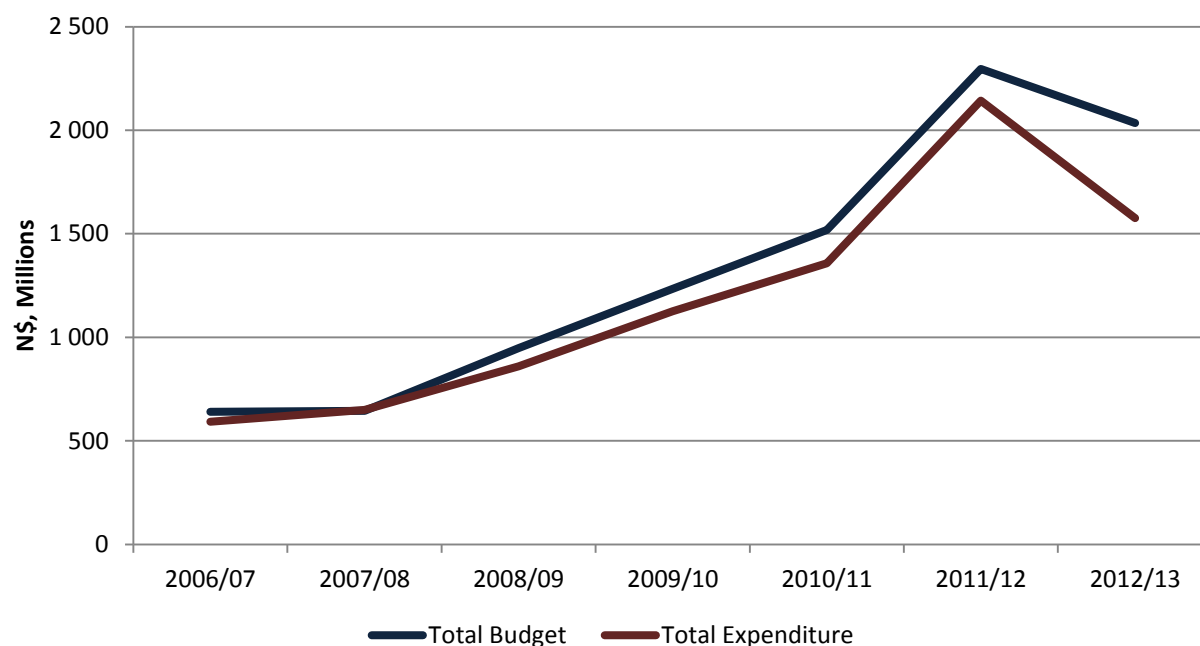
Five other programmes have contributed to the MAWF biodiversity budget during the 2006/07 – 2012/13 period. The agricultural advice programme represented between 16.7% and 20.2% of the total biodiversity budget between 2006/07 and 2008/09, before being merged with other programmes and renamed. The size of the biodiversity budget in the Crop production and horticultural development programme steadily increased between 2009/10 and 2012/13, but still only constituted 11.2% of the total biodiversity budget by 2012/13.

Livestock production, improvement and animal health control accounted for between 28% and 32% of the total biodiversity budget between 2009/10 and 2011/12. However, the biodiversity budget for this programme decreased by 96% in 2012/13, and consequently it only accounted for 1% of the total biodiversity budget in that year. This decrease was due to *animal disease information database* and the *improvement of grazing capacities* no longer representing budgeted activities. The integrated water resources management programme has not contributed to the biodiversity budget since 2008/09, and the institutional development and support services programme was introduced in 2012/13 and contributes through administration activities.

5.2.3 Total Expenditure

MAWF expenditure data is detailed by individual activity in the 2010/11 – 2012/13 Accountability Reports, by programme in the 2008/09 and 2009/10 Accountability Reports, and for the whole Vote in the 2006/07 and 2007/08 Estimates of Revenue and Expenditure Reports. Figure 5.13³⁰ presents a comparison of the total MAWF budget allocation and expenditure from 2006/07 to 2012/13.

Figure 5.13: MAWF total budget and expenditure, 2006/07- 2012/13



³⁰ The data supporting Figure 5.13, alongside a breakdown of expenditure by programme, can be found in Table D3.1.

2007/08 represents the only year in which MAWF overspent on its budget in the 2006/07 – 2012/13 period, and this was by less than 1%. In other years, the underspend was predominantly between 7 and 10% of the total budget, but in 2012/13, the underspend reached more than 22% (N\$458.6m) of the total budget.

The reason behind this significant underspend is not explicitly addressed in the Accountability Report. However, it is possible to see which activities did not execute their budget allocation. The majority of the underspend (N\$266.9m, or 58%) was due to a lack of execution of 'Provision of maintenance of water supply infrastructure to government institutions and community in rural communal areas'. The next largest underspend on a single activity was around N\$32m ('Facilitation the Affirmative Action Loan Scheme implementation'), and most other underspends were less than N\$10m.

5.2.4 Biodiversity Expenditure

Estimating the size of expenditure on biodiversity-related activities follows the approach set out in Section 3.1.2. The MoF Accountability Reports detail expenditure at the level of the individual activities for MAWF from 2010/11 – 2012/13 and at the programme level for 2008/09 and 2009/10. Figure 5.14³¹ compares estimates of the biodiversity budget with biodiversity expenditure at the level of the Vote.

Figure 5.14: MAWF biodiversity budget and biodiversity expenditure, 2006/07 – 2012/13



³¹ The data supporting Figure 5.14 can be found in Tables D2.1 and D4.1. A comparison of the MAWF biodiversity budget and biodiversity expenditure at the programme level is presented in Figure D4.1. The calculations of programme level biodiversity expenditure estimates can be found in Tables D4.2 – D4.13. Note that calculations are not presented for 2010/11 – 2012/13 because these estimates are taken directly from the Accountability Report activity-level expenditure estimates.

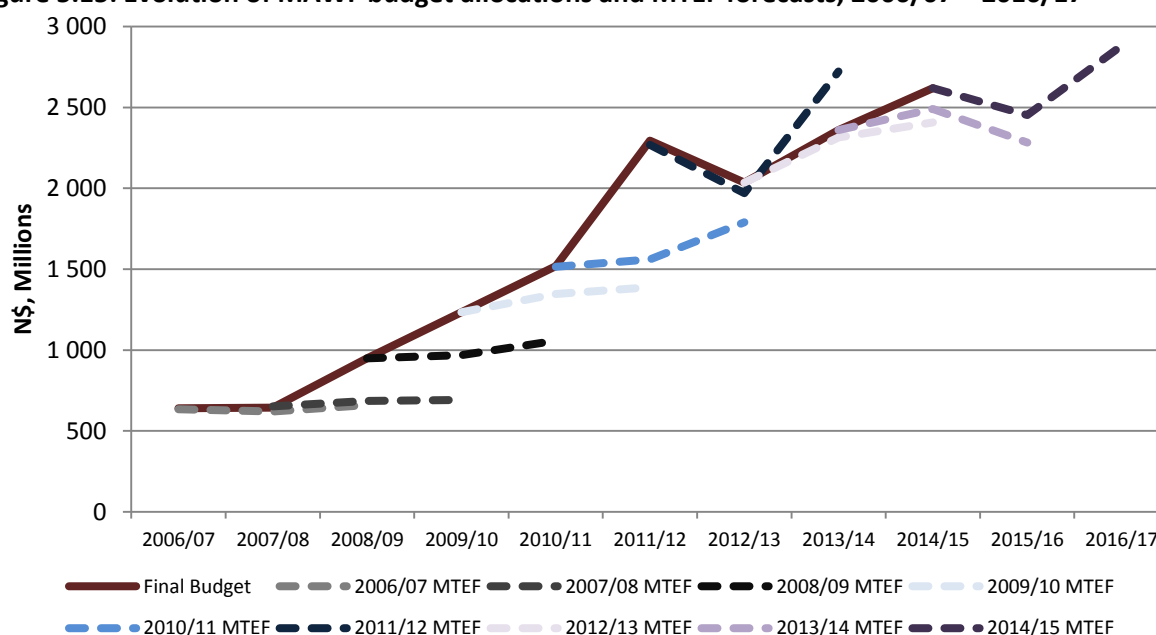
Between 2008/09 and 2012/13, the execution rate of the biodiversity budget has been between 90% and 99.5%, except for 2010/11 in which it was 78.7%. Due to the importance of the forestry programme in determining the size of the biodiversity budget, low execution rates are primarily as a result of underspending on the forestry programme. In line with the trend seen with in the MAWF biodiversity budget, the proportion of total MAWF expenditure that is relevant to biodiversity has fallen from 11.7% in 2008/09 to 7.1% in 2012/13.

In 2010/11, the underspend on the biodiversity budget was N\$34.6m, of which N\$34.7m occurred in the forestry programme (there was an overspend of N\$0.1m in Livestock production, improvement and animal health control). Within the forestry programme, the underspend primarily arose from the 'Integrated Forest Resource Management' activity (N\$28.5m), and to a lesser extent the procurement of resources to support the programme (N\$4.4m).

5.2.5 Projected Expenditure

Figure 5.15³² illustrates the evolution of MAWF budget allocations from 2006/07 to 2014/15, and the estimates and forecasts presented in each three-year MTEF period. As observed when discussing MET, the estimate of the allocation in the first year of each MTEF period is generally accurate; in this case, 2006/07, 2007/08, 2008/09 and 2011/12 do not match exactly, but the maximum deviation of the actual allocation from these estimates is 1.2%.

Figure 5.15: Evolution of MAWF budget allocations and MTEF forecasts, 2006/07 – 2016/17



However, the forecasts of the second and third years are much less accurate. Between 2006/07 and 2010/11 the actual allocations were consistently underestimated relative to the MTEF forecasts, although there has been some improvement in accuracy since then. It is consequently important to control for the possibility that the forecast allocations in the 2014/15 MTEF may not represent the best estimates of the actual allocations in 2015/16 and 2016/17.

³² The data supporting Figure 5.15 can be found in Table D5.1.

Figure 5.16: Estimates and projections of MAWF biodiversity expenditure, 2006/07 – 2020/21

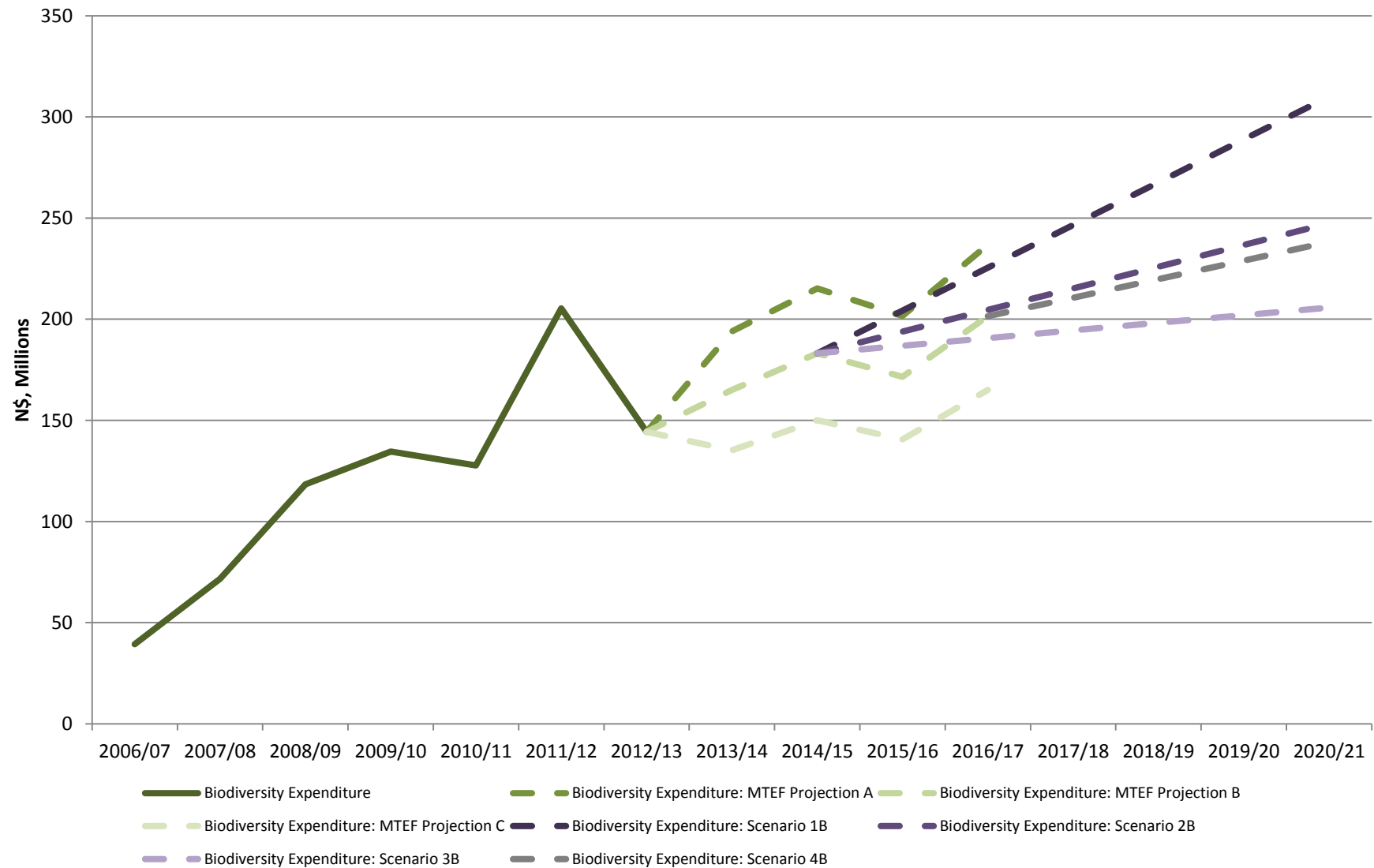


Figure 5.16³³ presents estimates of biodiversity expenditure for MAWF the period 2006/07 to 2020/21. This includes the estimates calculated previously (2006/07 – 2012/13) and subsequently projections for biodiversity expenditure from 2013/14 – 2020/21. As discussed in Section 3.1.3, the starting points for these projections are the budget allocations for 2013/14 and 2014/15 and the MTEF forecasts for 2015/16 and 2016/17. Three projections are presented for the 2013/14 – 2016/17 period, and are detailed below.

- Biodiversity expenditure: MTEF Projection A

The estimates and forecasts of budget allocations for 2013/14 – 2016/17 are presented at the activity level, but these activities are not sufficiently well disaggregated or described to use to assess what activities are relevant to biodiversity. The programmes also differ from those of previous years. This projection is therefore estimated following the methodology detailed for the third approach in Section 3.1.3³⁴.

- Biodiversity expenditure: MTEF Projection B

Since 2008/09, the proportion of the total biodiversity budget that is relevant to biodiversity has consistently decreased. Projection A does not account for this, as it only takes the average from 2010/11 – 2012/13. Projection B therefore follows the same methodology as in Projection A, but generates a more conservative projection by using only the 2012/13 estimated ratio to project future biodiversity budgets, and subsequently biodiversity expenditures³⁵.

- Biodiversity expenditure: MTEF Projection C

To generate an even more conservative projection, Projection C assumes that the decreasing trend in the proportion of the total budget that is relevant to biodiversity continues. This ratio, which is consequently smaller than the 2012/13 ratio, is then used to project future biodiversity budgets³⁶.

The impact of the different assumptions regarding the future proportion of the total budget that is relevant to biodiversity is quite significant, with Projection C some 30% smaller than Projection A by 2014/15. This uncertainty primarily arises because the 2013/14 – 2016/17 estimates and forecasts of budget allocations are not disaggregated sufficiently to generate robust estimates of the biodiversity budget in future years.

Consequently, it is not clear if the previously identified trend in the proportion of the total budget that is relevant to biodiversity will continue (Projection C), plateau (Projection B), or even be reversed (Projection A). We adopt Projection B as the basis for extrapolating biodiversity expenditure forwards as it offers a middle ground when there is a good deal of uncertainty surrounding the future path of MAWF

³³ The data supporting Figure 5.16 can be found in Table D5.5.

³⁴ MAWF MTEF Projection A estimates are presented in Table D5.2.

³⁵ MAWF MTEF Projection B estimates are presented in Table D5.3.

³⁶ MAWF MTEF Projection C estimates are presented in Table D5.4.

biodiversity budgets and subsequently biodiversity expenditure. Furthermore, with the MAWF total budget set to increase by 29% from 2012/13 to 2014/15, it would be expected that biodiversity expenditure would increase in this period. Four scenarios that extrapolate MAWF biodiversity expenditure forwards to 2020/21 are detailed below.

- Biodiversity expenditure: Scenario 1

Scenario 1 takes a linear trend of the estimates of biodiversity expenditure in the years 2006/07 to 2012/13, and applies it forward to 2020/21 from 2014/15.

- Biodiversity expenditure: Scenario 2

Scenario 2 takes a linear trend of the estimates of biodiversity expenditure in the years 2009/10 to 2012/13, and applies it forward to 2020/21 from 2014/15. The years 2006/07 to 2008/09 are excluded because they exhibit a much faster growth rate than more recent years.

- Biodiversity expenditure: Scenario 3

Scenario 3 takes a linear trend of the estimates of biodiversity expenditure in the years 2009/10 to 2012/13, excluding the outlier in 2011/12. This trend is then applied forward to project biodiversity expenditure from 2014/15 to 2020/21.

- Biodiversity expenditure: Scenario 4

Scenario 4 takes a linear trend of the MTEF Projection between 2014/15 and 2016/17. This trend is then applied forward to project biodiversity expenditure from 2016/17 to 2020/21.

Figure 5.16 illustrates that there is no clear trend on which to base projections of biodiversity expenditure. The estimates of biodiversity expenditure between 2006/07 and 2012/13 suggest that between 2006/07 and 2009/10 it was growing quite rapidly, but since then has slowed significantly. The clear outlier in 2011/12 adds further confusion. This uncertainty motivates the adoption of a number of different scenarios to project biodiversity expenditure forward.

Of the four scenarios that project biodiversity to 2020/21, we adopt Scenario 2 as our central estimate. It estimates that MAWF biodiversity expenditure will increase to N\$247m by 2020/21. Scenarios 1 and 3 represent our 'high' and 'low' estimates, respectively; it is felt that Scenario 1 places too much weight on the 2006/07 to 2009/10 period that exhibited much faster rates of growth in estimated biodiversity expenditure than more recent years, while Scenario 3 appears to be too cautious given the projected increases in the budget allocations to MAWF. These scenarios estimate biodiversity expenditure by MAWF in 2020/21 that is 25% and 17% greater and lower than the central estimate, respectively.

5.3 Ministry of Fisheries and Marine Resources

5.3.1 Total Budget

The MFMR budget allocation has increased at an annual average rate of 12.7% between 2006/07 and 2014/15, which is considerably less than the respective increases in the MET (19.6%) and MAWF (17.6%) budget allocations over this period. Figure 5.17 presents the evolution of the total MFMR budget allocations from 2006/07 to 2014/15, and the forecast allocations for 2015/16 and 2016/17. The total budget allocation for MFMR appears to display more deviation around the overall increasing trend than for MET and MAWF.

Figure 5.17: Actual and forecast total MFMR budget, 2006/07 – 2016/17

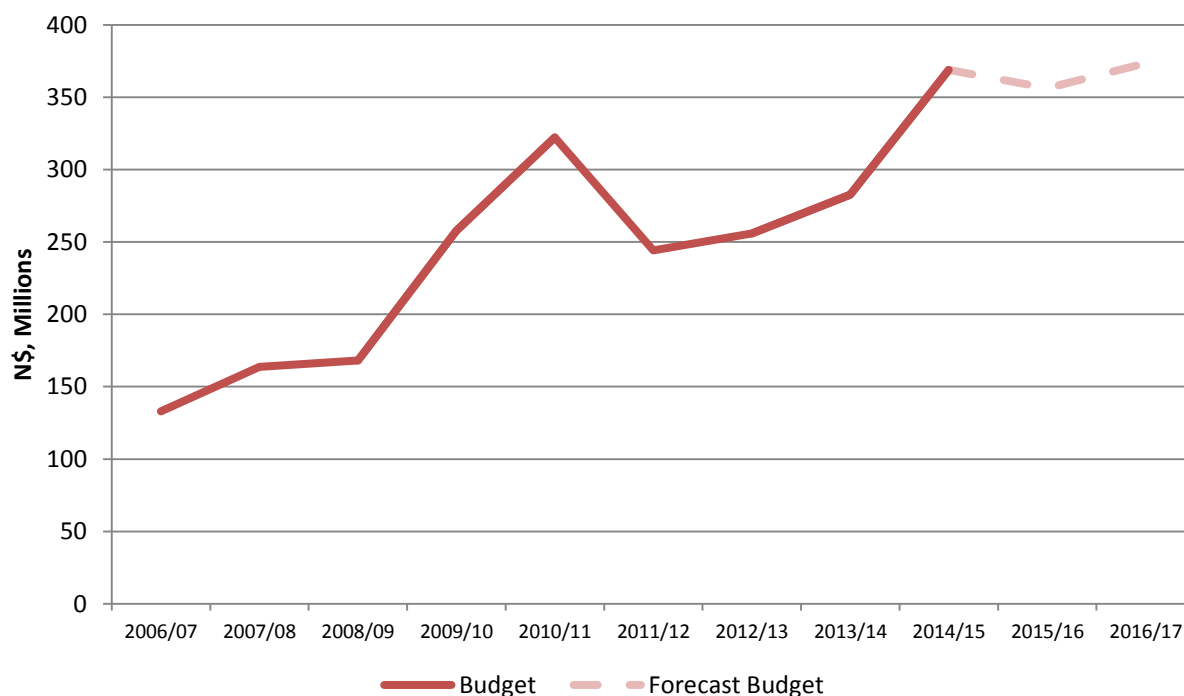


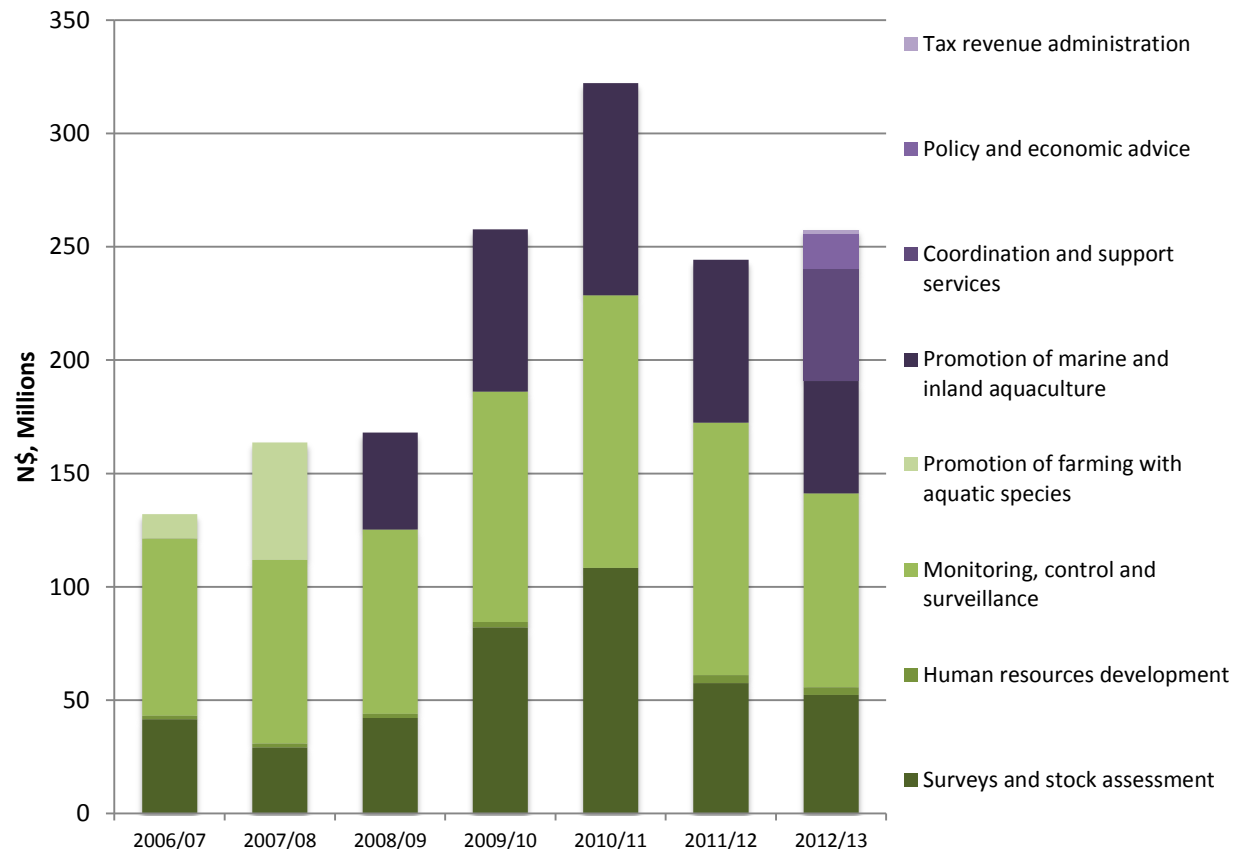
Figure 5.17 illustrates that there is a sharp increase in the MFMR budget between 2008/09 and 2010/11. This is followed by a 24% decrease in the allocation in 2011/12, and steady annual increases to 2013/14, before the budget increases sharply again in 2014/15. As with MET and MAWF previously, the MFMR budget can be reviewed at the level of the individual programmes to better understand the evolution of the total budget. A total of eight separate programmes are distinguished within the MFMR budget, and an overview of these programmes is presented in Table 5.6.

Table 5.6: Overview of MFMR programmes

Name of Programme	Aims
Surveys and Stock Assessment: 2006/07 - present	<ul style="list-style-type: none"> - Conduct research to provide advice to the government on the state of commercially important marine fish stocks and the levels of harvesting that would ensure a long-term sustainable harvest from the stock - Conservation of the marine ecosystem through the adoption of the EAF approach as per the Reykjavik declaration in 2001
Human resources development: 2006/07 – present	<ul style="list-style-type: none"> - Enhance human development skills in various fisheries related areas in order to improve service delivery - Train staff members to take up jobs held by expatriates (e.g. officers on patrol vessels) - Train staff members in fisheries management fields and improve their skills and qualifications to be able to perform effectively.
Monitoring, control and surveillance: 2006/07 – present (known as Marine and Inland monitoring, control and surveillance from 2008/09 – present)	<ul style="list-style-type: none"> - Monitor, control and undertake surveillance activities within the Namibia EEZ. - Monitoring and control of fishing related activities at the mid-water processing plants, and the undertaking of coastal patrols - Enforcement of fisheries legislation along rivers and freshwater bodies
Promotion of farming with aquatic species: 2006/07 – 2007/08	<ul style="list-style-type: none"> - The responsible and sustainable development of aquaculture to achieve socio-economic benefits for all Namibians and to secure environmental sustainability
Promotion of marine and inland aquaculture: 2008/09 – present	<ul style="list-style-type: none"> - Issuing of aquaculture licenses, zoning of sea and land based aqua parks, testing of water quality, and providing assistance to the farmers by the extension officers - Promote responsible and sustainable development of inland aquaculture and achieve social and economic benefits for 90% of the households living alongside the perennial rivers and seasonal rain-filled pans.
Coordination and support services: 2012/13 - present	<ul style="list-style-type: none"> - Provide administrative support to the Vote's programmes and to ensure proper financial management, optimal deployment of resources and capacity building.
Policy and economic advice: 2012/13 - present	<ul style="list-style-type: none"> - Advise the Ministry on the socio-economic performance of the fishing industry - Analyse the socio-economic impact of the determined total allowable catch on the fishing industry
Tax revenue administration: 2012/13 – present	<ul style="list-style-type: none"> - Verify and collect fees and levies which constitute the main means by which the government of Namibia wishes to collect resource rents from its fisheries.

Figure 5.18³⁷ presents the breakdown of the MFMR budget allocation by programme and year for the 2006/07 to 2012/13 period. The sharp increase in the budget allocation between 2008/09 and 2010/11 can be primarily attributed to the Surveys and stock assessments and Promotion of marine and inland aquaculture programmes, which more than doubled their allocations from the 2008/09 levels. The Monitoring, control and surveillance programme also had a 48% increase over this period.

Figure 5.18: MFMR budget by programme, 2006/07 – 2012/13



The increase in the Surveys and stock assessment programme is driven by a single activity, the ‘construction of a new research vessel’. The budget attributed to this activity increases from N\$7.6m in 2008/09 to N\$40m in 2009/10 and N\$50m in 2010/11, before falling back to N\$2m in 2011/12 (which in turn accounts for 94% of the reduction in the surveys and stock assessment programme budget in 2011/12, and 58% of the total MFMR budget reduction in that year).

The promotion of marine and inland aquaculture programme lists a number of construction projects in 2010/11, totaling N\$23.4m, which were not present in 2008/09. These projects, headlined by N\$18.4m to be spent on an aquaculture development project, were supposed to be single year investments, but a further N\$18m was subsequently carried into 2010/11 on the aquaculture project, as well as an extra

³⁷ The data supporting Figure 5.18 can be found in Table E1.2.

N\$9.5m on 'Administration' (from N\$4.6m in 2009/10). In addition, the 2010/11 allocation was revised upwards by N\$12m in the 2012/13 Accountability Report, although it is not possible to see to which activities this additional budget was allocated. The difference between the 2010/11 and 2011/12 programme budgets is mainly as a result of the 2010/11 upwards revision and a downwards revision to the 2011/12 allocation, which widened the gap from an initial N\$5m to N\$21.8m.

The increase in budget allocation to the Monitoring, control and surveillance programme was not focused on any particular activities, but rather more general in nature. Also of note in Figure 5.18 is the absence of the Human resources development programme in 2010/11; it was originally budgeted in the MTEF document, but had its allocation revised to zero as indicated in the 2012/13 Accountability Report.

Table 5.7 compares the total of the individually budgeted activities in each programme against the total budget for the MFMR Vote in each year. In all cases the total of the budgeted activities is either equal to or slightly less than the total budget for the Vote. As previously discussed, this is due to some activities not being explicitly budgeted, or the total budget being revised upwards without also revising the budgets for the individual activities. The differences are small enough that they are not of concern and we do not review them any further.

Table 5.7: Comparison of the total MFMR budget and the total budget assigned to individual activities, 2006/07 – 2012/13

Year	Total Budget (N\$ Millions)	Total Budgeted Activities (N\$ Millions)
2006/07	133.03	130.04
2007/08	163.71	159.95
2008/09	168.08	168.08
2009/10	257.69	257.59
2010/11	322.18	322.16
2011/12	244.18	238.47
2012/13	257.46	257.46

5.3.2 Biodiversity Budget

Figure 5.19³⁸ presents a comparison of the MFMR biodiversity budget and the total MFMR budget for the period 2006/07 – 2012/13. The biodiversity budget generally tracks the total budget, although in 2007/08 and 2012/13 the total MFMR budget increased while the biodiversity budget fell. As a result, the percentage of the total budget that was relevant to biodiversity was fairly steady between 75% and 80% from 2008/09 to 2011/12, but fell to 66% in 2012/13.

³⁸ The data supporting Figure 5.19 can be found in Table E2.1.

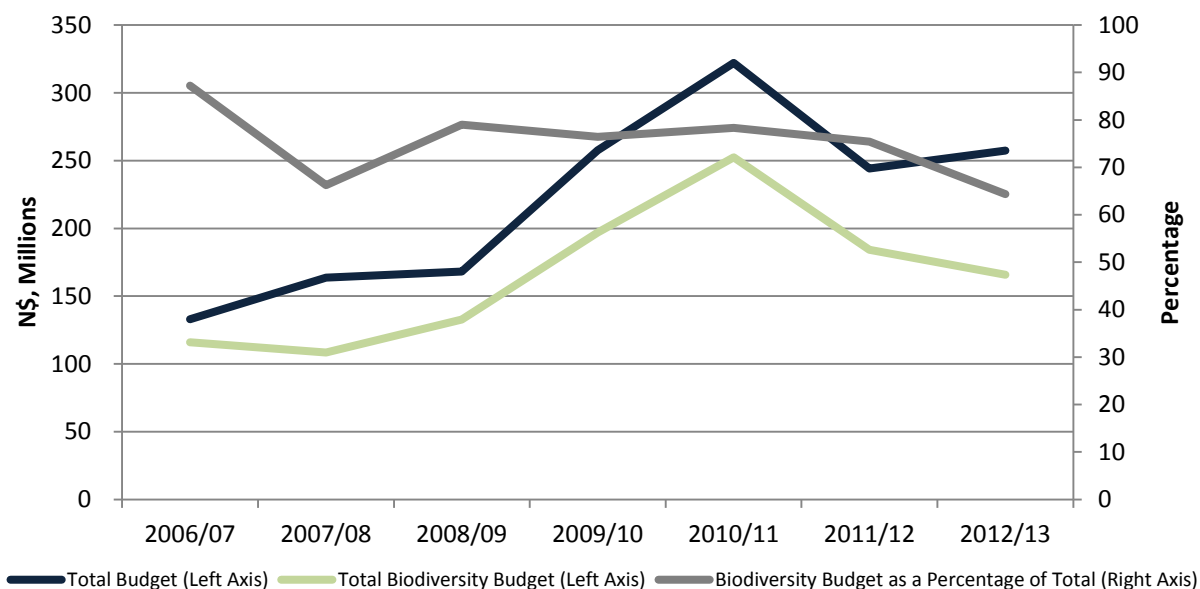
Figure 5.19: MFMR budget and biodiversity budget, 2006/07 – 2012/13

Figure 5.19³⁹ presents a comparison of the MFMR biodiversity budget and the total MFMR budget for the period 2006/07 – 2012/13. The biodiversity budget generally tracks the total budget, although in 2007/08 and 2012/13 the total MFMR budget increased while the biodiversity budget fell. As a result, the percentage of the total budget that was relevant to biodiversity was fairly steady between 75% and 80% from 2008/09 to 2011/12, but fell to 66% in 2012/13.

As with MET and MAWF previously we compare the total budget and the biodiversity budget by programme and year. A brief overview of the biodiversity-relevant activities within each programme is provided below.

1. Surveys and stock assessment

All activities in this programme are classified as relevant to biodiversity. This includes capital/investment projects such as the renovation and extension of existing offices, which can help to improve the efficiency and capacity of existing resources.

2. Human resources development

Activities included as relevant to biodiversity in this programme relate to the training of pilots (for surveillance), inspectors and scientists. We exclude training in revenue collection and customer services.

³⁹ The data supporting Figure 5.19 can be found in Table E2.1.

3. Monitoring, control and surveillance

The majority of activities in this programme are relevant to biodiversity. Those excluded involve the construction of regional offices, revenue collection and expenditures on the Luderitz Water Front Maritime Museum.

4. Promotion of farming with aquatic species

No activities in the promotion of farming with aquatic species are considered explicitly relevant to biodiversity. We exclude the construction of fish farms as it is not clear that they necessarily have a positive impact on biodiversity, and in some cases (for example the Leonardville fish farm) may not be appropriate for the local ecosystem.

5. Promotion of marine and inland aquaculture

The promotion of marine and inland aquaculture effectively replaces the 'Promotion of farming with aquatic species' programme, but has a broader remit. Activities relevant to biodiversity include water quality monitoring, testing, and the zonation of land and sea based aquaparks. We still exclude the construction of fish farms as they appear in this programme.

6. Coordination and support services

Activities supporting general administration are classified as relevant within this programme following the methodology described in Section 3.1.1.

7. Policy and economic advice

Activities within this programme relating to policy formulation, monitoring and evaluation, economic research, data collection and public education are included as relevant to biodiversity. Such activities can help to make the economic case for conservation.

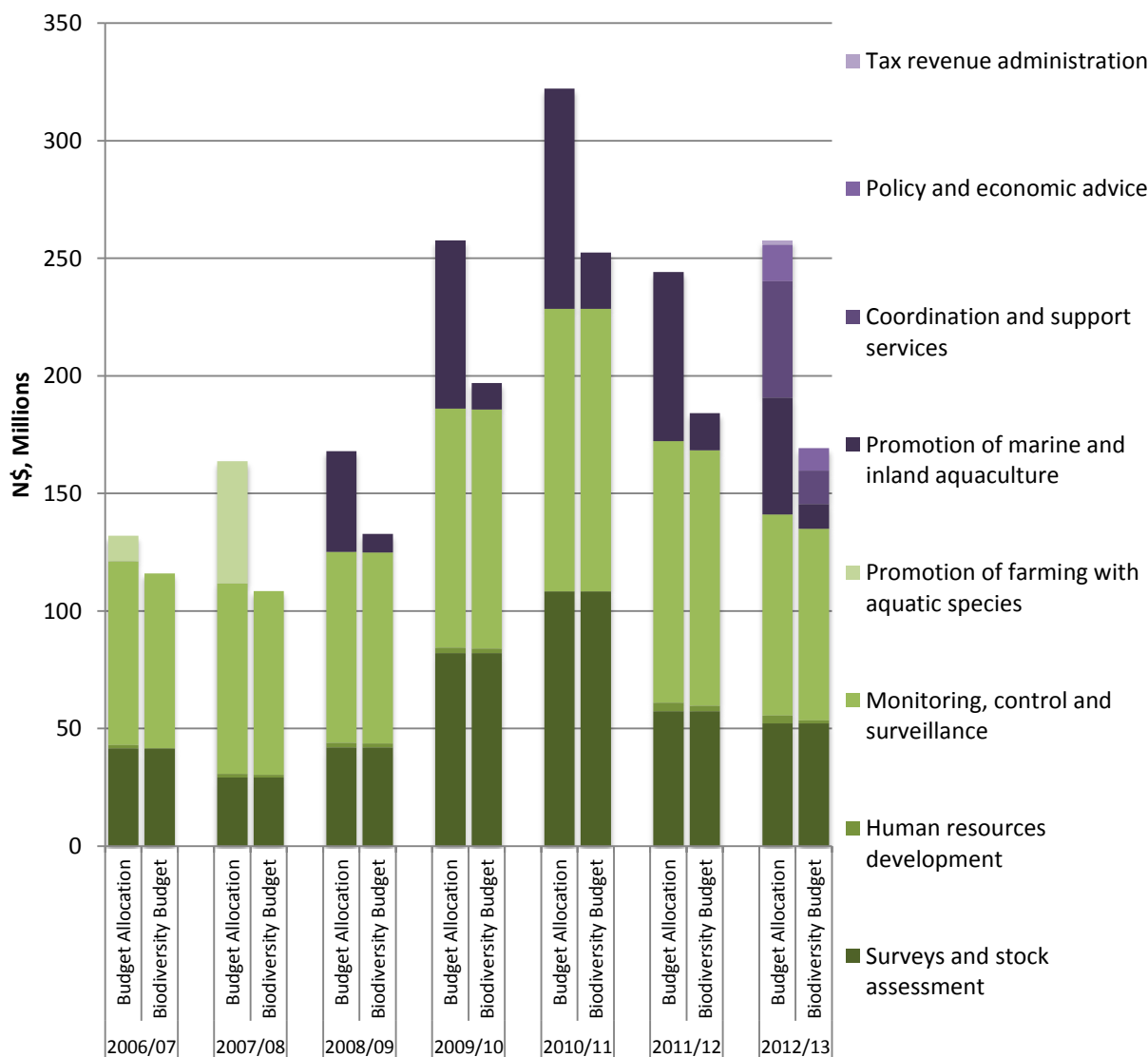
8. Tax revenue administration

No activities in the tax revenue administration programme are considered explicitly relevant to biodiversity.

Similar to the MAWF assessment, there are some activities for which the relevance to biodiversity depends on the area and the context in which they take place. The main example of this is fish farming. In theory, fish farming could have a positive impact on biodiversity, because it could reduce fishing pressure on rivers. However, in practice, this is unlikely to be the case, and consequently we do not include it as relevant to biodiversity.

Figure 5.20⁴⁰ presents estimates of the MFMR biodiversity budget by programme and year compared to the total budget allocations, for 2006/07 to 2012/13. The 'Monitoring, control and surveillance' programme accounts for more than 50% of the total biodiversity budget in every year except for 2010/11 and 2012/13 (48%). Differences between the biodiversity budget and the total budget allocations arise primarily from the 'Promotion of farming with aquatic species' (2006/07 and 2007/08) and the 'Promotion of marine and inland aquaculture' programme (2009/10 – 2011/12).

Figure 5.20: MFMR budget and biodiversity budget by programme, 2006/07 – 2012/13

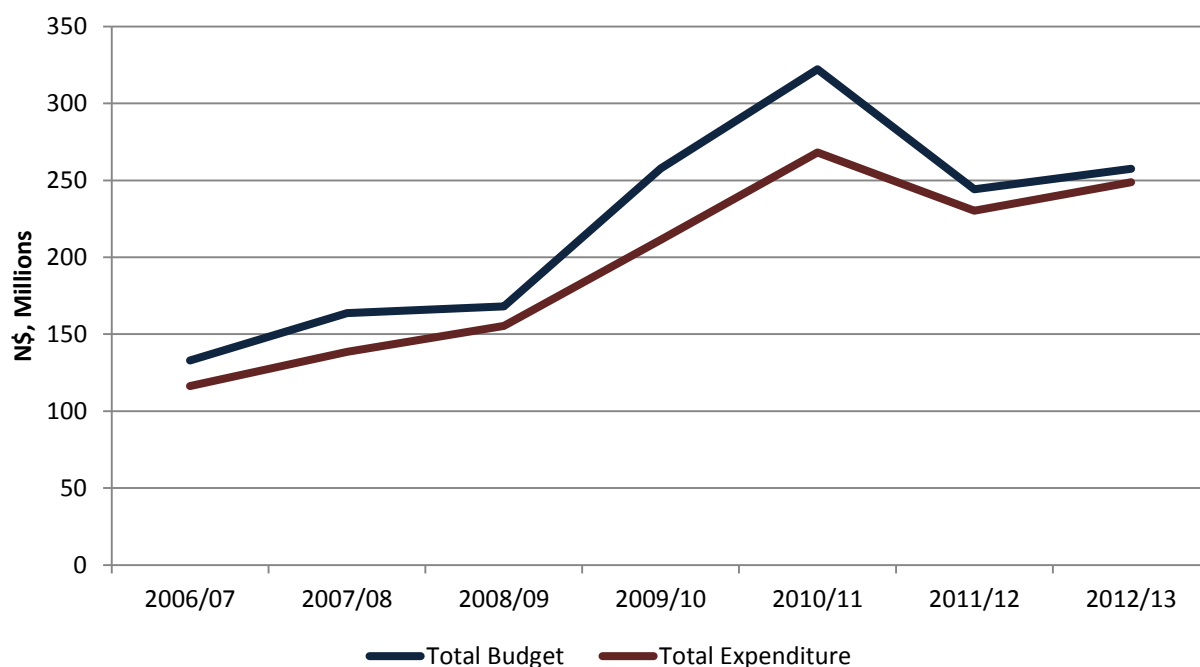


⁴⁰ The data supporting Figure 5.20 can be found in Tables E1.2 and E2.1. The calculations for the biodiversity budget for each programme are presented in Tables E2.2 – E2.9. Note that calculations are not presented for 2012/13 because these estimates are taken directly from the Accountability Report activity-level budgets.

5.3.3 Total Expenditure

A comparison of total MFMR expenditure to the total budget is presented in Figure 5.21⁴¹. The execution rate of the MFMR budget was as low as 82% and 83% in 2009/10 and 2010/11, respectively, but this has improved in recent years to 94% in 2011/12 and 97% in 2012/13, however. Expenditure data is detailed by activity for 2012/13 and by programme from 2008/09 to 2011/12 in the Accountability Reports. 2006/07 and 2007/08 expenditure data is taken from the Estimates of Revenue and Expenditure Reports.

Figure 5.21: MFMR total budget and expenditure



In comparison to MET and MAWF, MFMR has more consistent large underspends; on four occasions expenditure was more than 10% below the total budget, and in three of these more than 15%. The execution rate has improved in recent years, however, reaching more than 95% in 2012/13.

The 2009/10 underspend arises mainly from the 'Surveys and Stock Assessment' programme, in which only 46% of the N\$82.08m budget was spent. The Accountability Report attributes this primarily to N\$40m not being spent on the construction of a new research vessel. N\$48.3m (of the N\$50m budgeted) was spent in 2010/11 on this activity. The other two programmes with significant budgets both had an execution rate of greater than 99%. The 2010/11 underspend

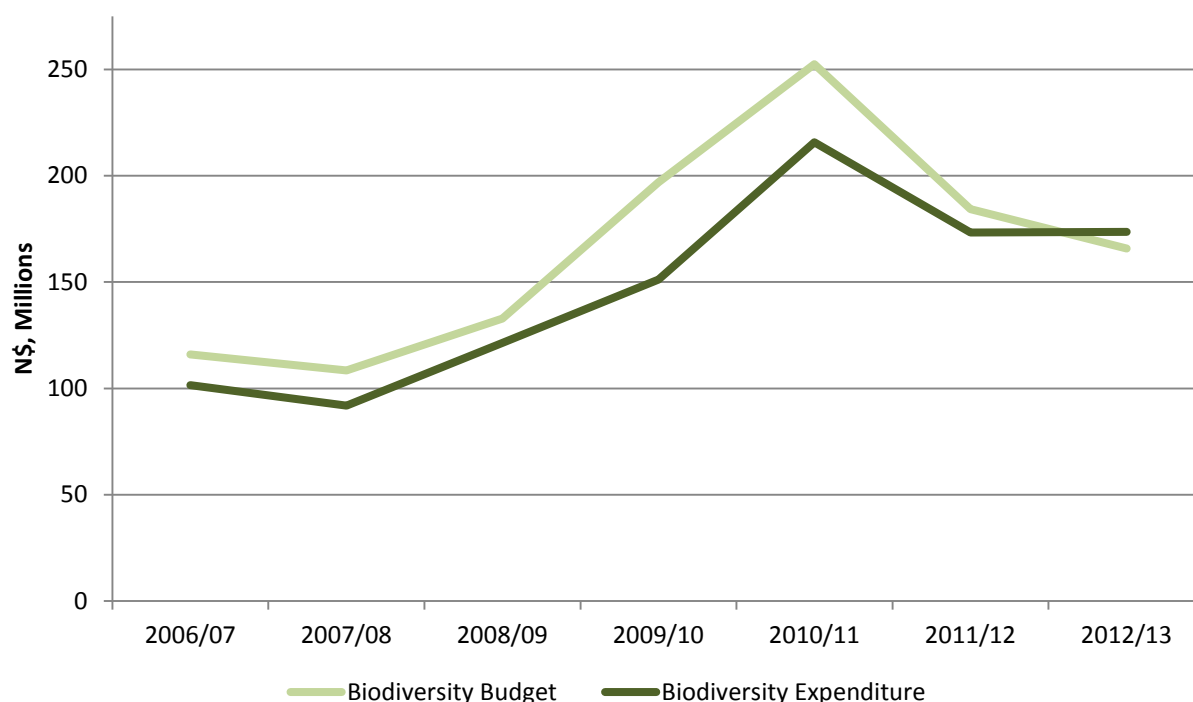
⁴¹ The data supporting Figure 5.21, alongside a breakdown of MFMR expenditure by programme, is presented in Table E3.1.

results from activities across all four programmes. This was primarily due to underspending on capital investment projects, such as the construction and extension of offices.

5.3.4 Biodiversity Expenditure

Estimating the size of expenditure on biodiversity-related activities follows the approach set out in Section 3.1.2. Figure 5.22⁴² compares estimates of the MFMR biodiversity budget with biodiversity expenditure. The execution rate of the biodiversity budget generally follows the execution rate of the total budget, although the former reaches a minimum of 77% in 2009/10. As with the total budget, this subsequently increases to 94% in 2011/12 and 104% in 2012/13.

Figure 5.22: MFMR biodiversity budget and biodiversity expenditure, 2006/07 – 2012/13



As a result of a large proportion of the total budget being relevant to biodiversity (generally more than 75%) the 2008/09 and 2009/10 underspends in the biodiversity budget are for similar reasons as the underspends in the total budget. The overspend of the biodiversity budget in 2012/13 was primarily due to a 14% (N\$11.7m) overspend on the 'Monitoring, control and surveillance' programme; this was due to relatively small overspends on a number of activities.

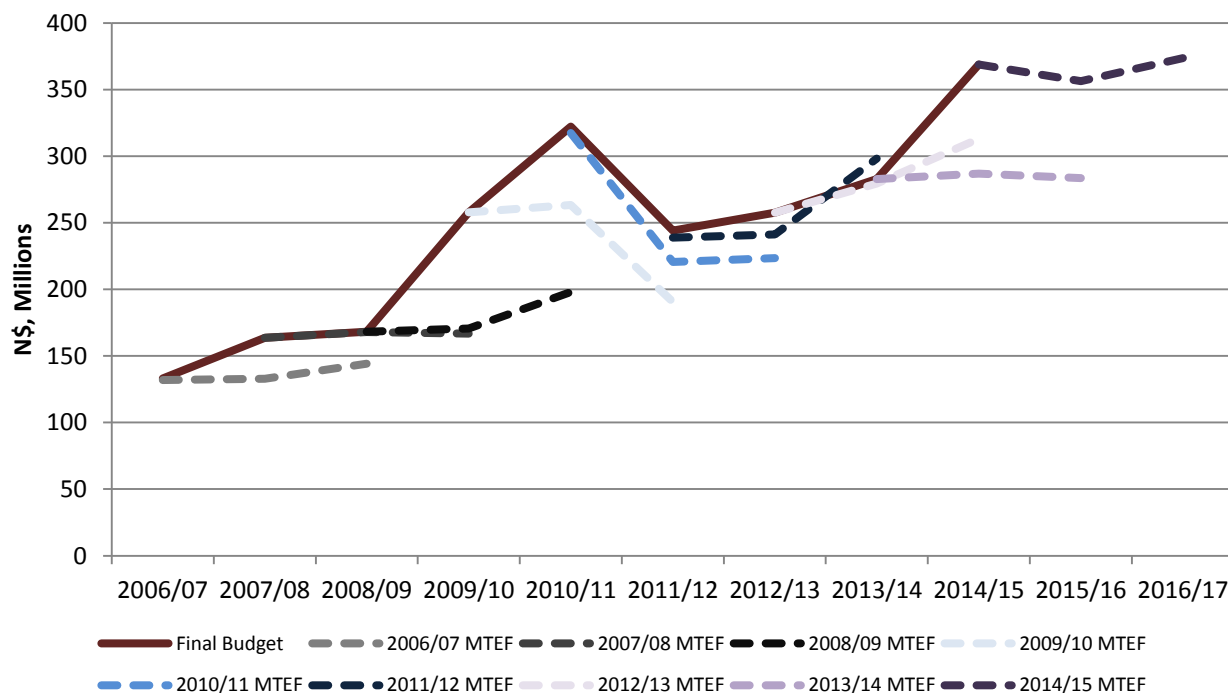
⁴² The data supporting figure 5.22 can be found in Tables E2.1 and E4.1. A breakdown of MFMR biodiversity expenditure by programme is presented in Figure E4.1. The calculations of programme level biodiversity expenditure estimates can be found in Tables E4.2 – E4.9. Note that calculations are not presented for 2012/13 because these estimates are taken directly from the Accountability Report activity-level expenditure estimates.

5.3.5 Projected Expenditure

Figure 5.23⁴³ illustrates the evolution of MFMR budget allocations from 2006/07 to 2014/15, and the estimates and forecasts presented in each three-year MTEF period. As with MET and MAWF previously, the allocation in the first year of each MTEF period is generally accurate; 2006/07, 2010/11 and 2011/12 do not match exactly, but the maximum deviation of the actual allocation from these estimates is 2.2%.

The accuracy of the MTEF forecasts for MFMR has varied quite significantly over the 2006/07 to 2014/15 period. Since 2010/11, these forecasts have become relatively good approximations of the actual allocations, although an exception is the 30% budget increase in 2014/15, which was not forecast in the 2012/13 or 2013/14 MTEFs.

Figure 5.23: Evolution of the MFMR budget allocation and MTEF forecasts, 2006/07 – 2016/17



Despite the apparent improved accuracy of the MTEF forecasts, it is still not clear that the forecasts in the 2014/15 MTEF represent the best estimates of the budget allocations for those years. As such, we adopt a similar approach to the MET and MAWF projections.

⁴³ The data supporting Figure 5.23 can be found in Table E5.1.

Figure 5.24: Estimates and projection of MFMR biodiversity expenditure, 2006/07 – 2020/21

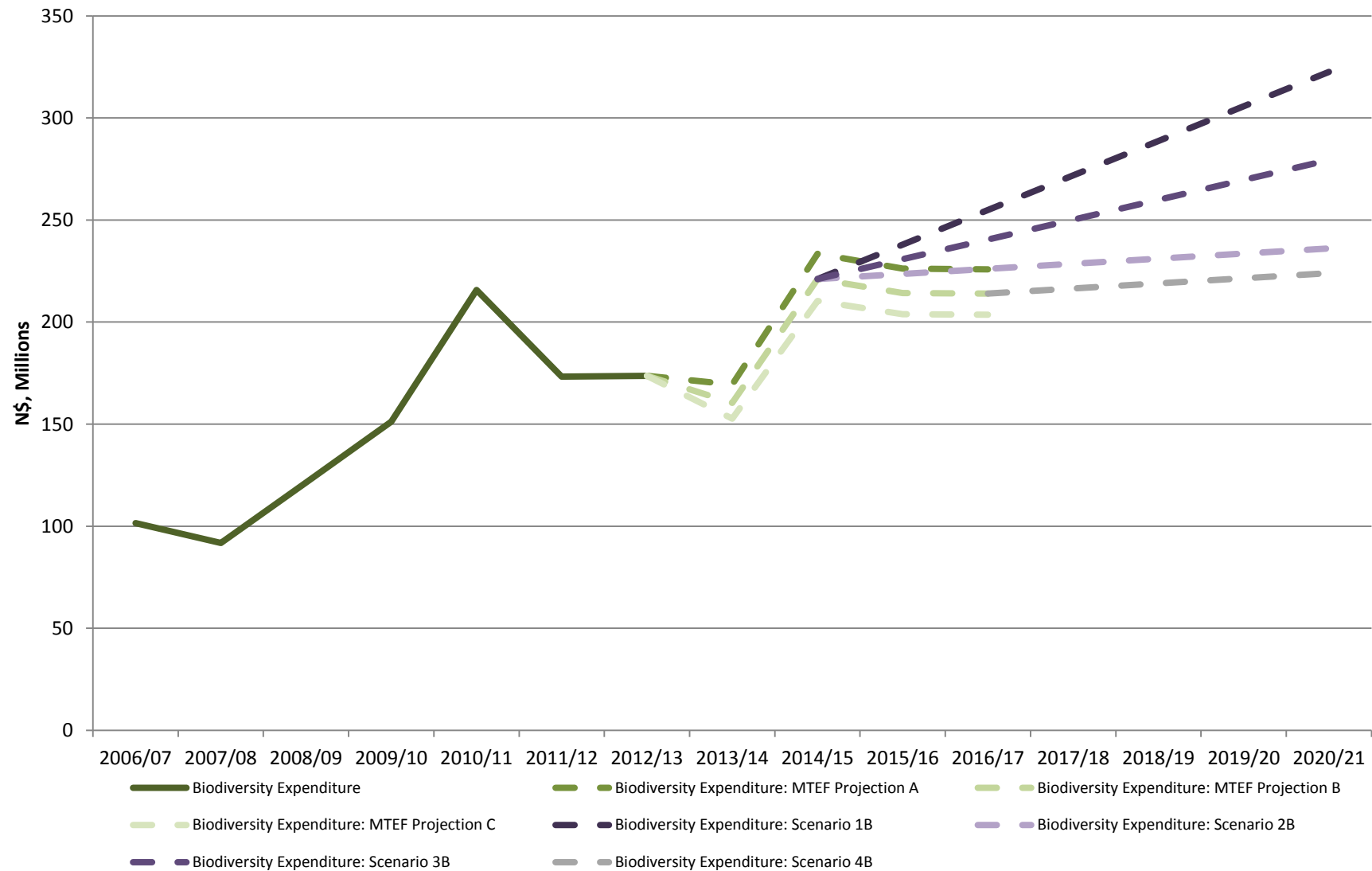


Figure 5.24⁴⁴ presents estimates of biodiversity expenditure for MFMR the period 2006/07 to 2020/21. This includes the estimates calculated previously (2006/07 – 2012/13) and subsequently projections for biodiversity expenditure from 2013/14 – 2020/21. As discussed in Section 3.1.3, the starting point for these projections are the budget allocations for 2013/14 and 2014/15 and the MTEF forecasts for 2015/16 and 2016/17. Three projections are presented for the 2013/14 – 2016/17 period, and are detailed below.

- Biodiversity expenditure: MTEF Projection A

The estimates and forecasts of budget allocations for 2013/14 – 2016/17 are presented at the activity level, so the biodiversity budget and consequently biodiversity expenditure for MFMR can be estimated directly. This projection is therefore estimated following the methodology detailed for the first approach in Section 3.1.3⁴⁵.

- Biodiversity expenditure: MTEF Projection B

The 2012/13 biodiversity budget execution rate was greater than 100%; this is unlikely to be repeated consistently in the future. In generating Projection B, we therefore follow the same methodology as in Projection A, but exclude 2012/13 when scaling the estimate of the biodiversity budget. This projection consequently takes the average of the 2010/11 and 2011/12 execution rates⁴⁶.

- Biodiversity expenditure: MTEF Projection C

To adopt a more conservative projection, Projection C includes 2009/10 as well as 2010/11 and 2011/12 when scaling the biodiversity budget to biodiversity expenditure⁴⁷.

The availability of budget allocations at the activity level for 2013/14 – 2016/17 yields a relatively tight spread of projections; by 2014/15 Projection C is only 11% smaller than Projection A, compared to the 30% difference for MAWF. Despite the increase in both the total MFMR budget allocation and the MFMR biodiversity budget from 2012/13 to 2013/14, all MTEF projections of biodiversity expenditure indicate a decrease for this period; this is because of the greater than 100% execution rate of the biodiversity budget in 2012/13 and the expected regression of this.

The sharp increase in projected biodiversity expenditure in 2013/14 is mainly as a result of the N\$56m (169%) increase in the 'Surveys and stock assessments programme'. We adopt Projection B as the basis for extrapolating forward MFMR biodiversity expenditure to 2020/21; four scenarios that build on this Projection are detailed below.

- Biodiversity expenditure: Scenario 1

Scenario 1 takes a linear trend of the estimates of biodiversity expenditure in the years 2006/07 to 2012/13, and applies it forward to 2020/21 from 2014/15.

⁴⁴ The data supporting Figure 5.24 can be found in Table E5.5.

⁴⁵ MFMR MTEF Projection A estimates are presented in Table E5.2.

⁴⁶ MFMR MTEF Projection B estimates are presented in Table E5.3.

⁴⁷ MFMR MTEF Projection C estimates are presented in Table E5.4.

- Biodiversity expenditure: Scenario 2

Scenario 2 takes a linear trend of the estimates of biodiversity expenditure in the years 2009/10 to 2012/13, and applies it forward to 2020/21 from 2014/15.

- Biodiversity expenditure: Scenario 3

Scenario 3 takes an average of the projected growth rates in scenarios 1 and 2 and uses this to project biodiversity expenditure forward from 2014/15 to 2020/21.

- Biodiversity expenditure: Scenario 4

Scenario 4 takes the same linear trend as in scenario 2, but applies it forward from the 2016/17 MTEF Projection estimate to 2020/21.

The four scenarios are much more widely spread than the MTEF Projections. This is because, like MAWF, there is no clear trend on which to base projections of MFMR biodiversity expenditure. Figure 5.24 illustrates that biodiversity expenditure was growing rapidly between 2007/08 and 2010/11, but expenditure fell in 2011/12 and grew only very slightly in 2012/13.

It appears that Scenario 1 places too much weight on the early period of fast growth in biodiversity expenditure, and would represent a very optimistic path for future growth. On the other hand, Scenario 2 implies a path for future biodiversity expenditure that is possibly too conservative. We therefore take the average of these two scenarios (Scenario 3) and use this as our central estimate for projecting biodiversity expenditure forward for MFMR; this yields an estimate of biodiversity expenditure of N\$279m in 2020/21. The starting point of 2014/15 is again chosen given uncertainty in the accuracy of MTEF forecasts. Scenarios 1 and 2 represent our 'high' and 'low' estimates, and are both 15.5% greater and smaller than the central expenditure estimate by 2020/21, respectively.

5.4 Other Ministries

As discussed in Section 3.1, 7⁴⁸ other Votes were identified as consistently having activities relevant to biodiversity in their budgets, but these activities may have been either few in number or small in value, or both. These Votes are dealt with in turn below, although for some activities it is not possible to sufficiently separate the budget that is relevant to biodiversity. These activities will be noted but not necessarily incorporated into the final estimates of GRN expenditure on biodiversity-related activities.

5.4.1 Ministry of Defence

The MoD budget allocations are only very broadly disaggregated within individual programmes. As a result, these individually budgeted activities may only contain small elements which are related to biodiversity, and therefore the budget allocation for that activity overstates the true allocation and subsequent expenditure on biodiversity-related activities by the MoD.

⁴⁸ Additional Ministries that we expected to find biodiversity-relevant activities for were the Ministry of Regional and Local Government, Housing and Rural Development (MRLGHRD) and the Ministry of Education (MoE). However, no explicit reference to biodiversity-relevant activities was made in the MTEFs over the period covered.

The activities with elements relevant to biodiversity in the MoD are 'Assist the civil authorities at times of drought, flood and other natural calamities and to combat illegal fishing by patrolling the Namibian waters; conduct surveillance, search and rescue, combat environmental threats and protect the exclusive economic zone' (2006/07 – 2011/12) and 'Assisting civil authorities' and 'Combating of environmental threats' (2012/13).

These activities have a large budget allocated to them (N\$1.4bn in 2012/13, 41% of the total MoD budget). However, as discussed above, the proportion of these activities that is relevant to biodiversity seems fairly small. As a result, we therefore do not include these activities in our final estimates of GRN expenditure on biodiversity, and thus neither in our projections of future expenditure.

5.4.2 Ministry of Social Security (Police)

As with the MoD, budget allocations for the MoSS (Police) are only very broadly disaggregated within individual programmes. As a result, these individually budgeted activities may only contain small elements which are related to biodiversity, and therefore the budget allocation for that activity overstates the true allocation and subsequent expenditure on biodiversity-related activities by the MoSS (Police).

The activities that are relevant to biodiversity are 'Combating unlawful dealing in protected natural resources by the Protected Resources Unit', 'Cross-border crime prevention' and 'Border crime investigation'. The former is not described explicitly in some MTEF documents, particularly recent ones, but implicitly falls under more general 'combating of crime' activities/programmes. The latter two are relevant as they may help to prevent poaching and the smuggling of protected resources, but they also contribute to non-biodiversity related outcomes and activities.

To put the above in some context, 'Reduce cross-border crime' had a budget of N\$31.3m of the total allocation of N\$2.36bn (1.3%) in 2012/13. We do not include the activities discussed above in our final estimates of GRN expenditure on biodiversity.

5.4.3 Ministry of Mines and Energy

The 'Environmental Protection' programme in the MME budget comprises of activities defined as 'Investigations and rehabilitation of abandoned mine sites' and 'Upgrading of geo-laboratories'. We classify these as relevant to biodiversity as they relate to the restoration of ecosystems and the improved understanding of them. Activities within the 'Understanding of the geo-environment' and 'Energy supply and security' programmes, the latter of which includes some allocation to the expansion of renewable energy, are not included. This is because it is felt they are unlikely to have appreciable impacts on biodiversity in Namibia.

The budget for the 'Environmental Protection' programme increased from N\$7.6m in 2006/07 to N\$11.9m in 2011/12, but subsequently decreased to N\$1.3m in the 2012/13 MTEF. The Accountability Report can be used to estimate expenditure on this programme from 2008/09 to 2011/12, but for 2012/13 presents identical allocations and estimates to 2011/12, and as such we do not use the figures for this year.

Table 5.8 presents estimates of the total MME budget and expenditure, and compares them to estimates of the biodiversity budget and expenditure from 2006/07 to 2011/12. Estimated

biodiversity expenditure demonstrates a steady increasing trend over the period, and the percentage of total expenditure that is biodiversity-relevant is between 5.5% and 8.4%.

Table 5.8: MME Actual budget and expenditure and estimated biodiversity budget and expenditure, 2006/07 – 2011/12

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Total Budget	139.94	96.44	152.33	164.31	177.16	220.06
Biodiversity Budget	7.67	8.12	10.22	8.94	12.13	12.24
Total Expenditure	128.25	88.38	125.31	152.14	157.39	200.27
Biodiversity Expenditure	6.76	7.15	7.71	7.78	10.78	11.01

The projection of MME biodiversity forwards is quite uncertain. From 2013/14, the 'Environmental Protection' programme is subsumed into a new programme 'Creation of knowledge of Namibian geological resources'. The budget is not disaggregated below the programme level. Furthermore, the reduction in the budget allocation to the 'Environmental Protection' programme in 2012/13 seems out of keeping with the allocations and expenditure in previous years, and we may not believe that this best represents the actual budget allocation in that year. We consequently adopt three scenarios.

The first scenario takes the trend in biodiversity expenditure between 2008/09 and 2011/12 and projects it forward from 2011/12. The second scenario takes the trend in the budget allocation from 2006/07 to 2012/13 and projects this forward from 2011/12; this represents a decline in future biodiversity expenditure due to the very low budget allocation in 2012/13. Scenarios 1 and 2 represent our 'high' and 'low' scenarios, respectively; to generate our central scenario, we take the average of these two trends and extrapolate that forward from 2011/12. By 2020/21, the central scenario estimates biodiversity expenditure of N\$15.3m, with the high and low scenarios approximately 50% greater and smaller than this, respectively. These scenarios are presented in Table 5.9.

Table 5.9: MME Projected biodiversity expenditure, 2012/13 – 2020/21

	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Central	11.48	11.96	12.44	12.91	13.39	13.87	14.34	14.82	15.30
High	12.30	13.59	14.88	16.17	17.45	18.74	20.03	21.32	22.61
Low	10.67	10.34	10.00	9.66	9.33	8.99	8.65	8.32	7.98

5.4.4 Ministry of Justice

The 2007/08 and 2008/09 MTEFs include a 'Natural Resources' programme for the MoJ. This programme is aimed at ensuring that complaints relating to the violation of natural resources in Namibia are investigated effectively and remedied, and consequently supports the protection of natural resources in Namibia and the conservation of biodiversity. The programme was allocated N\$0.68m and N\$0.06m in 2007/08 and 2008/09, respectively.

In 2009/10, the natural resources programme was expanded to include fair administration and human rights, and in 2010/11 expanded again to the 'Promotion of Good Governance', which continues to 2014/15. These programmes are not disaggregated in a way that allows the separation

of the budget for natural resources. However, we can use the 2008/09 allocations for fair administration (N\$5.0m) and human rights (N\$0.86m) to estimate that 1.04% of the 2009/10 programme budget of N\$7.3m, or N\$0.08m, is relevant to biodiversity.

Given the very small budget allocated to biodiversity –relevant activities from 2007/08 - 2008/09, and the difficulties of estimating the budget for the biodiversity –relevant activities from 2010/11 – 2014/15, we do not extrapolate the MoJ biodiversity budget forwards, and omit it from our final calculations of biodiversity expenditure. The estimations of the biodiversity-relevant budget for MoJ in 2008/09 and 2009/10 would represent just 0.03% of MET biodiversity expenditure, and 0.01% of combined MET, MAWF and MFMR biodiversity expenditure in those years. This omission is therefore unlikely to have any discernible effect on the overall picture of GRN biodiversity expenditure in Namibia.

5.4.5 Ministry of Works, Transport and Communication (Dept. of Transport)

From 2006/07 – 2012/13, the MWTC includes an activity named ‘The administration of marine legislation in order to ensure safety of life and property at sea, protection of the marine environment from pollution by ships and the promotion of national maritime interest.’ The ‘protection of the marine environment’ part of this activity is relevant to the conservation of biodiversity, but the budget is not broken down at this level.

In order to generate estimates of the biodiversity budget for MWTC, we therefore scale the total budget allocated to this activity. Our central estimate scales the activity budget allocation by a third, the high scenario by a half and the low scenario by a tenth. Expenditure data is presented at the programme level in the Accountability Reports, and given the extent to which we are altering the data and the relative size of the biodiversity budget to the total budget⁴⁹, we assume that biodiversity expenditure is equal to the biodiversity budget.

Estimates for the central scenario of the total MWTC (DoT) budget and expenditure, and the biodiversity budget and expenditure, are presented in Table 5.10 for the period 2006/07 – 2012/13.

Table 5.10: MWTC (DoT) Actual budget and expenditure and estimated biodiversity budget and expenditure, 2006/07 – 2012/13

	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Total Budget	645.14	713.22	1,027.1	1,398.2	1,308.8	2,494.2	2,167.4
Biodiversity Budget	0.23	0.26	0.30	0.75	0.86	2.73	1.02
Total Expenditure	650.13	713.22*	934.47	1,234.3	1,238.9	2,410.8	2,375.8
Biodiversity Expenditure	0.23	0.26	0.30	0.75	0.86	2.73	1.02

*The estimates of revenue and expenditure report was not available for MWTC (DoT) in this year so we assume that total expenditure was equal to total budget.

To generate estimates of projected biodiversity expenditure by MWTC (DoT), we extrapolate the three scenarios forward from 2012/13 by the trends in expenditure between 2008/09 and 2012/13. By 2020/21, the central scenario estimates MWTC (DoT) biodiversity expenditure to be N\$3.76m,

⁴⁹ The proportion of the total MWTC (DoT) budget that is relevant to biodiversity is at a maximum during the 2006/07 to 2012/13 period in 2011/12 at 0.11%.

with the high and low scenarios approximately 50% larger and 70% smaller. These scenarios are presented in Table 5.11.

Table 5.11: MWTC (DoT) Projected biodiversity expenditure, 2013/14 – 2020/21

	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Central	1.37	1.71	2.05	2.39	2.73	3.07	3.41	3.76
High	2.05	2.56	3.07	3.59	4.10	4.61	5.12	5.63
Low	0.41	0.51	0.61	0.72	0.82	0.92	1.02	1.13

5.4.6 Ministry of Lands and Resettlement

The MLR engages in land use planning and promotes the sustainable use of natural resources, both of which can help to ensure that decision making in these areas takes account of biodiversity conservation. Expenditure is presented at the programme level, and biodiversity expenditure is consequently estimated following the procedure detailed in Table 3.2. The biodiversity-relevant activities all occur within the same programme in each year ('Acquisition of land and resettlement' in 2006/07 and 2007/08, and 'Land Usage' from 2008/09 – 2012/13). Table 5.12 presents estimates for the MLR total and biodiversity budgets and expenditure for the period 2006/07 – 2012/13.

Table 5.12: MLR Actual budget and expenditure and estimated biodiversity budget and expenditure, 2006/07 – 2012/13

	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Total Budget	125.67	140.05	161.18	174.29	190.20	221.76	271.53
Biodiversity Budget	1.91	5.18	6.82	17.16	12.27	8.16	7.89
Total Expenditure	122.29	140.05*	162.66	156.29	158.51	212.53	244.73
Biodiversity Expenditure	1.91	5.18	6.82	16.08	6.59	7.58	7.73

* The estimates of revenue and expenditure report was not available for MLR in this year so we assume that total expenditure was equal to total budget.

In projecting future biodiversity expenditure, we take the trend in biodiversity expenditure from 2008/09 – 2012/13 (excluding 2009/10) and extrapolate forwards to 2012/13. 2009/10 is excluded because the programme budget was revised upwards by 63% from the MTEF to the Accountability Report, and it is not clear that this additional budget was biodiversity relevant (although in the absence of additional information we include it as so in Table 5.12). The figure for biodiversity expenditure in 2009/10 represents a clear outlier relative to the other years. We use this projection for the 'high' and 'low' scenarios as the trend is fairly steady, and any chosen variation would be largely arbitrary. This projection for future biodiversity expenditure is presented in Table 5.13.

Table 5.13: MLR Projected biodiversity expenditure, 2013/14 – 2020/21

	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Central	8.00	8.26	8.53	8.80	9.07	9.34	9.61	9.88

5.4.7 Ministry of Youth, National Services, Sport and Culture

MYNSSC includes three activities in its 'Youth Development' programme which are relevant to biodiversity. These are environmental education, youth exchange programmes (aimed at Namibian

youth acquiring practical conservation skills, environmental awareness and leadership skills) and rural youth development (integrating rural youth into CBNRM programmes).

Table 5.14 presents estimates of the MYNSSC total and biodiversity budgets and expenditure for the period 2006/07 – 2011/12. From 2012/13, the Youth Development programme is no longer sufficiently disaggregated to estimate the biodiversity budget directly. Expenditure data is provided at the activity level for 2010/11 – 2011/12, and so biodiversity expenditure can be estimated directly for these years. For 2008/09 – 2009/10, the budget estimates are used as expenditure estimates because the programme budget is revised upwards by 166% in the 2008/09 Accountability Report (relative to the MTEF) and expenditure is not recorded in the 2009/10 Accountability Report.

Table 5.14: MYNSSC Actual budget and expenditure and estimated biodiversity budget and expenditure, 2006/07 – 2011/12

	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12
Total Budget	189.91	205.47	319.17	380.31	459.26	516.17
Biodiversity Budget	16.42	18.56	21.64	20.98	70.46	18.05
Total Expenditure	159.19	205.47*	305.13	3091.26	2384.75	2138.23
Biodiversity Expenditure	13.77	18.56	21.64	20.98	69.30	17.98

* The estimates of revenue and expenditure report was not available for MYNSSC in this year so we assume that total expenditure was equal to total budget.

The 2010/11 estimate of biodiversity expenditure is more than three times the estimate in 2009/10. This increase does not appear to be planned because the budget assigned to the activities in the MTEF is N\$24m, but in the Accountability Report this increases to N\$70.5m.

When projecting biodiversity expenditure forward, we first estimate a scenario that takes the trend in biodiversity expenditure from 2006/07 to 2011/12 (excluding 2010/11) and extrapolates it forward. There is a significant increase from 2006/07 to 2007/08 that influences the overall trend, so we introduce a second scenario that follows the procedure for the first scenario but omits 2006/07. These represent our 'high' and 'low' scenarios, respectively. To get a 'central' scenario, we take the average of these two scenarios. These scenarios are presented in Table 5.15.

Table 5.15: MYNSSC Projected biodiversity expenditure, 2012/13 – 2020/21

	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21
Central	18.57	19.17	19.76	20.35	20.95	21.54	22.13	22.73	23.32
High	18.90	19.82	20.74	21.66	22.58	23.50	24.41	25.33	26.25
Low	18.25	18.52	18.78	19.05	19.32	19.59	19.86	20.12	20.39

Although the high and low scenarios are only 12.6% greater and smaller, respectively, than the central scenario by 2020/21, future biodiversity-relevant expenditure by MYNSSC is quite uncertain. Revised budgets for biodiversity-relevant activities are significantly greater in 2010/11 and 2011/12 than their original MTEF budgets, and the lack of disaggregation in more recent MTEFs means that the implications of expenditures in 2010/11 and 2011/12 is not clear. Indeed, it is possible that the biodiversity-relevant activities undertaken between 2006/07 and 2011/12 by the MYNSSC have been discontinued, and as a result future biodiversity expenditure would be zero.

5.5 GRN Expenditure Review: Summary

This section brings together estimates and projections of biodiversity expenditure by the individual Government Votes in Namibia from Sections 5.1 to 5.4 in order to provide an overview of GRN biodiversity expenditure in Namibia between 2006/07 and 2020/21. We start by detailing estimates of GRN biodiversity expenditure between 2006/07 and 2012/13, and subsequently deal with projections of GRN biodiversity expenditure from 2013/14 to 2020/21.

5.5.1 Estimates of GRN Biodiversity Expenditure, 2006/07 – 2012/13

Figure 5.25: Nominal GRN Biodiversity Expenditure, 2006/07 – 2012/13

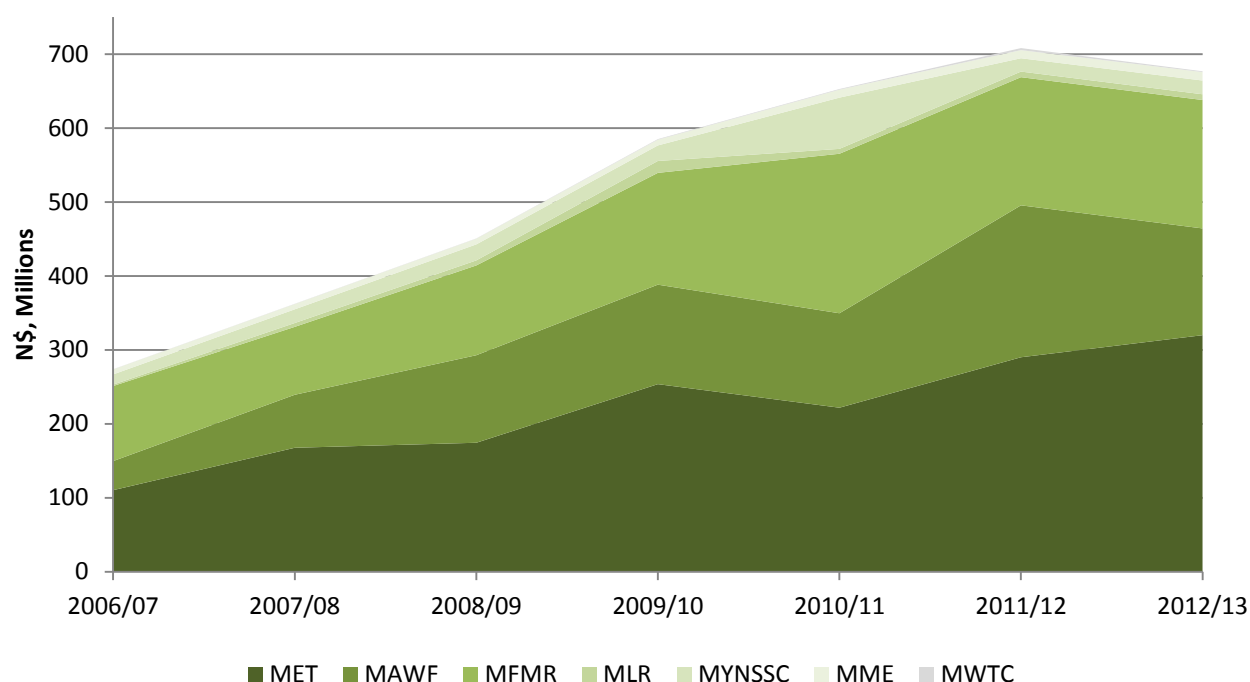


Figure 5.25 presents estimates of GRN biodiversity expenditure, disaggregated by individual Votes, between 2006/07 and 2012/13. These estimates are in nominal values. GRN biodiversity expenditure has increased by 147%, to N\$676.79m over the period, although expenditure in 2011/12 was actually N\$31.4m (4.6%) greater than in 2012/13. The rate of growth of MET biodiversity expenditure started to slow in 2009/10, before turning negative between 2011/12 and 2012/13.

The vast majority of GRN biodiversity expenditure is accounted for by MET, MAWF and MFMR. With the exception of 2010/11, these three Ministries are responsible for more than 90% of total GRN biodiversity expenditure in each year. For all years in the 2006/07 to 2012/13 period, MET has been the largest individual contributor to GRN biodiversity expenditure, responsible for between 34% and 47% of the total.

However, nominal values do not account for inflation: the rise in the general price level of goods and services over time. As a result of inflation, a given amount of money can buy fewer goods and services in the future than it could today; in the context of this report, this could be interpreted as a given level of expenditure maintaining fewer biodiversity-related activities in the future than today. Consequently, to ensure that expenditure levels are comparable over time, we need to hold the price level constant.

Figure 5.26: Real GRN Biodiversity Expenditure, 2006/07 – 2012/13

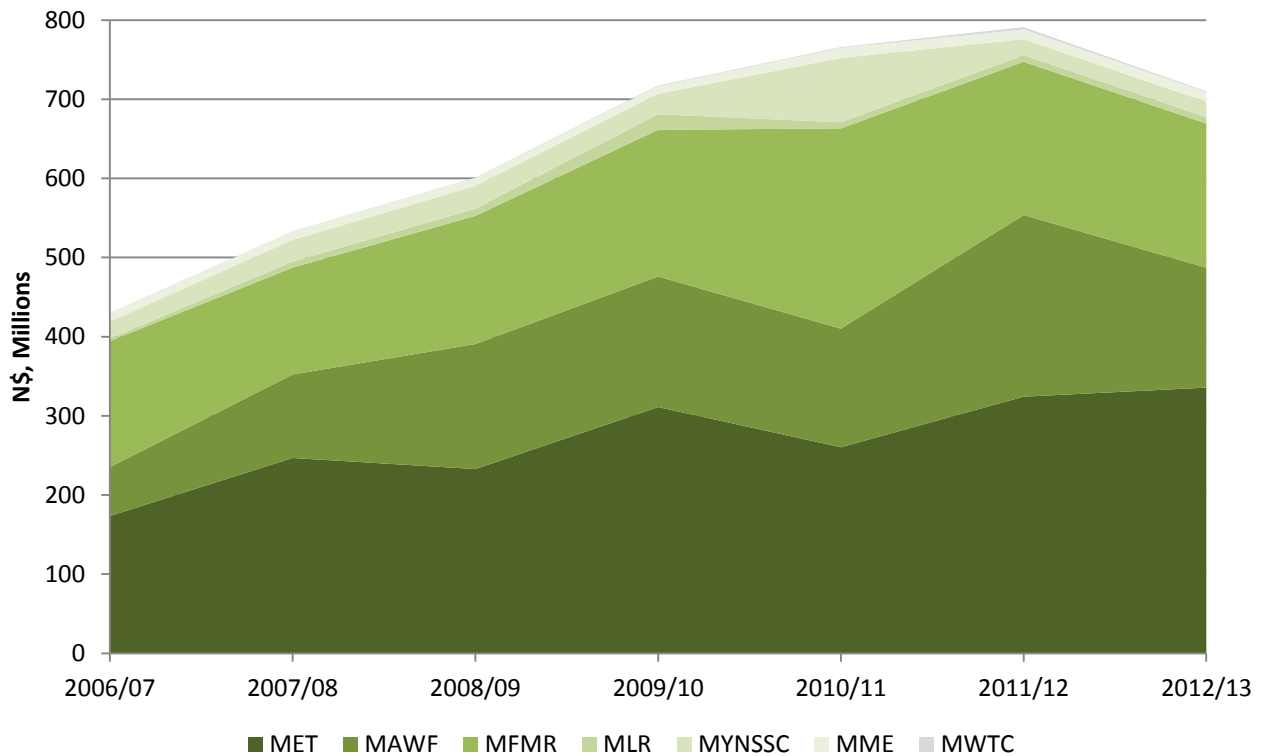


Figure 5.26 presents estimates of disaggregated GRN biodiversity expenditure between 2006/07 and 2012/13 in constant (2013) prices. Real GRN biodiversity expenditure is estimated to have risen by much less (65%) than nominal expenditure over the study period. The previously noted slowdown in the rate of growth of biodiversity expenditure post 2009/10 is more pronounced in real terms, with expenditure increasing to N\$791.1m in 2011/12, before falling back by 10.3% to N\$710.0m in 2012/13.

To put biodiversity expenditure into context, we can compare it to both total expenditure and GDP, as well as to GRN expenditure on other sectors of the economy. Figure 5.27 presents GRN biodiversity expenditure as a percentage of total government expenditure and GDP. In both cases, the percentage represented by biodiversity expenditure had demonstrated a steady increase between 2006/07 and 2009/10, before slowing down and subsequently decreasing markedly between 2010/11 and 2012/13. This decrease could indicate that biodiversity is becoming less of a priority for Namibian public funds.

Figure 5.27: Estimated biodiversity expenditure as a percentage of total government expenditure and GDP, 2006/07 – 2012/13

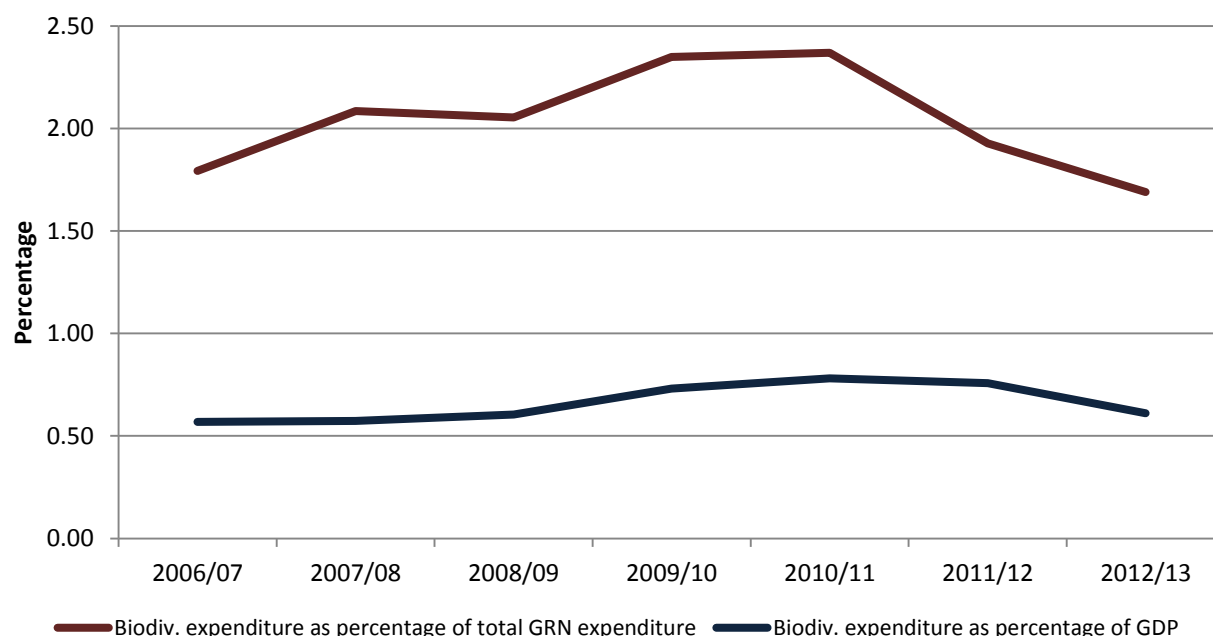


Figure F1.1 presents a comparison between estimated GRN biodiversity expenditure and expenditure by MoD, MoHSS and MoE as a percentage of total GRN expenditure. These Votes have much higher expenditures than biodiversity, with the proportion of total expenditure on defence between 8.5% and 10.9%, on health and social services 8.8% and 9.5% and on education 22.3 and 24.6%. This compares to the range of 1.7% and 2.4% estimated to be spent on biodiversity.

Interestingly, and similar to biodiversity, these Ministries all see their contribution to total expenditure peak in 2010/11, before subsequently decreasing. However, it is the scale of the decrease that is most striking; while the proportion of total expenditure on biodiversity-related activities falls by 28.1% from its peak by 2012/13, the respective figures for defence, health and education are 21.9%, 1.2% and 5.7%. Biodiversity expenditure has therefore seen its relative contribution to total expenditure fall drastically more than health or education, and also still more than defence.

5.5.2 Estimates and Projections of GRN Biodiversity Expenditure, 2006/07 – 2020/21

Figure 5.28: Nominal GRN Biodiversity Expenditure, 2006/07 – 2020/21

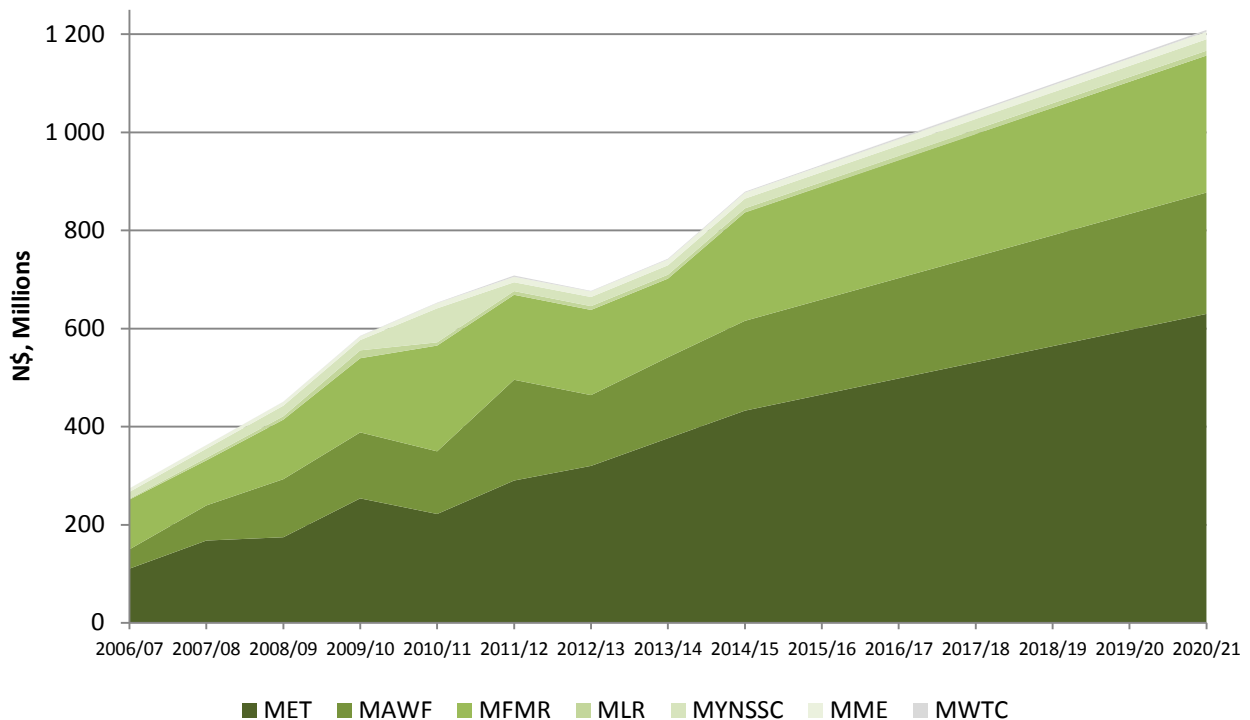


Figure 5.28 presents the central scenario for projected nominal GRN biodiversity expenditure. Under this scenario, biodiversity expenditure is projected to steadily increase from N\$676.79m in 2012/13 to N\$1,208.9m by 2020/21 (an increase of 79%), with the contribution of MET, MAWF and MFMR in this year projected to increase to 96% of total biodiversity expenditure.

The projections for the high and low scenarios are presented in Figures F2.1 and F2.2 respectively. By 2020/21, the high scenario is 18% greater than the central scenario, while the low scenario is 19% smaller. With the exception of MWTC⁵⁰, the different scenarios do not apply to the 2006/07 – 2012/13 period, so the divergence of projections of expenditure is only really apparent from 2014/15.

However, as stated previously, we need to focus on real expenditure to ensure that different time periods are comparable. In order to project biodiversity expenditure forward while holding prices constant, it is necessary to discount the projected future nominal values; this is primarily to control for expected future inflation.

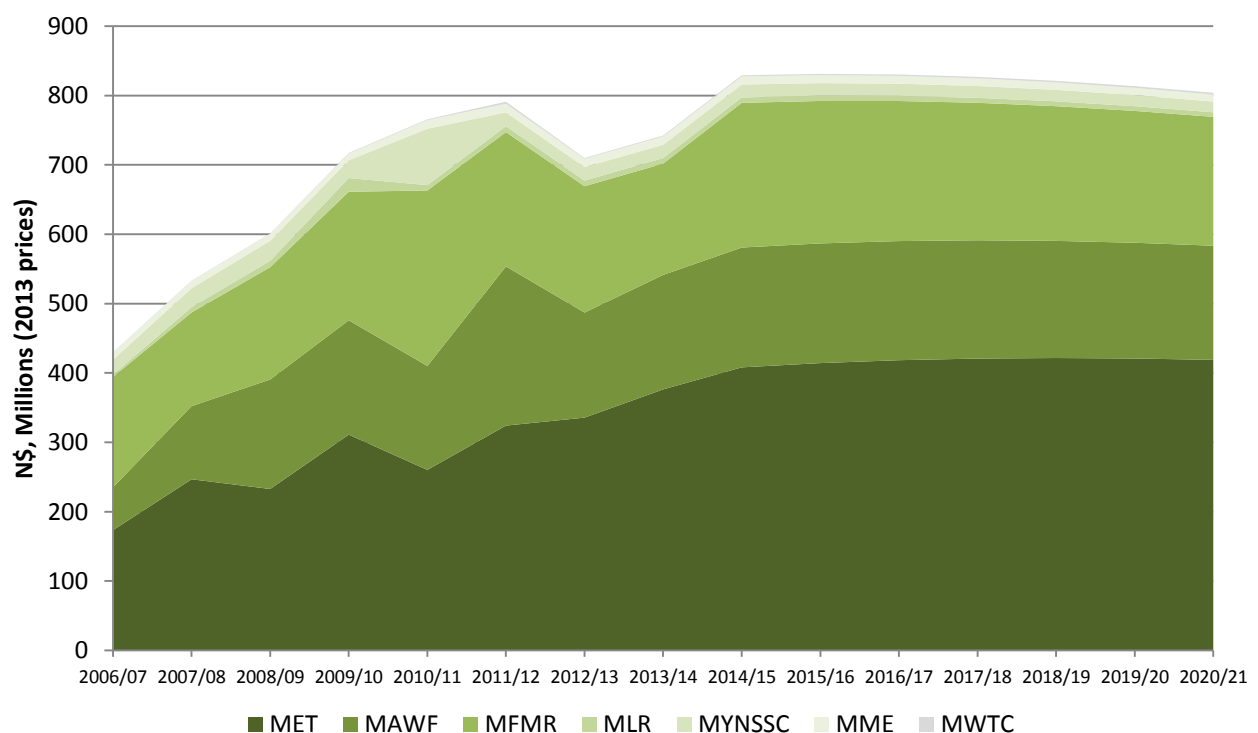
We adopt a discount rate of 6% as our main estimate. In justifying this rate, we refer to the average annual rate of inflation in Namibia between 2006 and 2013, which is approximately 6.5%; as a result, a 6% discount rate may even represent a slightly conservative estimate. Furthermore, in order to

⁵⁰ The MWTC high scenario is N\$0.52m greater than the central scenario, with the low scenario N\$0.71m smaller. These scenarios would represent a change in the estimated total GRN biodiversity expenditure in 2012/13 by $\pm 0.1\%$, and consequently have an insignificant impact on the results.

understand how sensitive our conclusions are to the chosen discount rate, we will conduct sensitivity analysis to assess the impact of discounting the future at higher or lower rates.

The central scenario for projected real GRN biodiversity expenditure is presented in Figure 5.29. Following the sharp decline seen in real expenditure between 2011/12 and 2012/13, expenditure increases rapidly to N\$829.20m in 2014/15, and reaches a maximum in the period of N\$831.20m in 2015/16. From 2015/16, real GRN biodiversity expenditure exhibits a gradual decline to N\$803.98m in 2020/21. This represents a decrease of 3.3% from the 2015/16 value. The projected decline in real GRN biodiversity expenditure could represent a reduced ability of Namibian Government Ministries to support biodiversity related activities from 2015/16 onwards.

Figure 5.29: Real GRN Biodiversity Expenditure, 2006/07 – 2012/13



As previously stated, we can assess the impact of utilizing a discount rate of 6% by conducting sensitivity analysis. Adopting a higher discount rate means that the present value of future biodiversity expenditure is lower, while for lower discount rates it is higher. Any change to the discount rate only alters the values from 2014/15 onwards.

Adopting a discount rate of 8% results in real biodiversity expenditure peaking at N\$813.8m in 2014/15, before subsequently decreasing to N\$705.4m in 2020/21. On the other hand, a discount rate of 4% results in projected biodiversity expenditure continuing to grow through the 2020/21 timeframe, peaking at N\$928.2m in 2024/25. These alternative discount rates would result in maximum real GRN biodiversity expenditure being 2.1% lower and 11.7% higher, respectively. These data are presented in Table F2.7 and F2.8 and Figures F2.5 and F2.6.

The key outcome from the sensitivity analysis is that the pattern for projected real biodiversity expenditure is consistent across all three discount rates. That is, in all three cases, real GRN biodiversity expenditure increases to a maximum after 2012/13, before continuously decreasing

from this point forwards; in the case of the 4% discount rate, this turning point just occurs after the end of the study period. If we were to adopt a 5% discount rate instead, for example, this turning point would occur in 2019/20, peaking at N\$861.1m

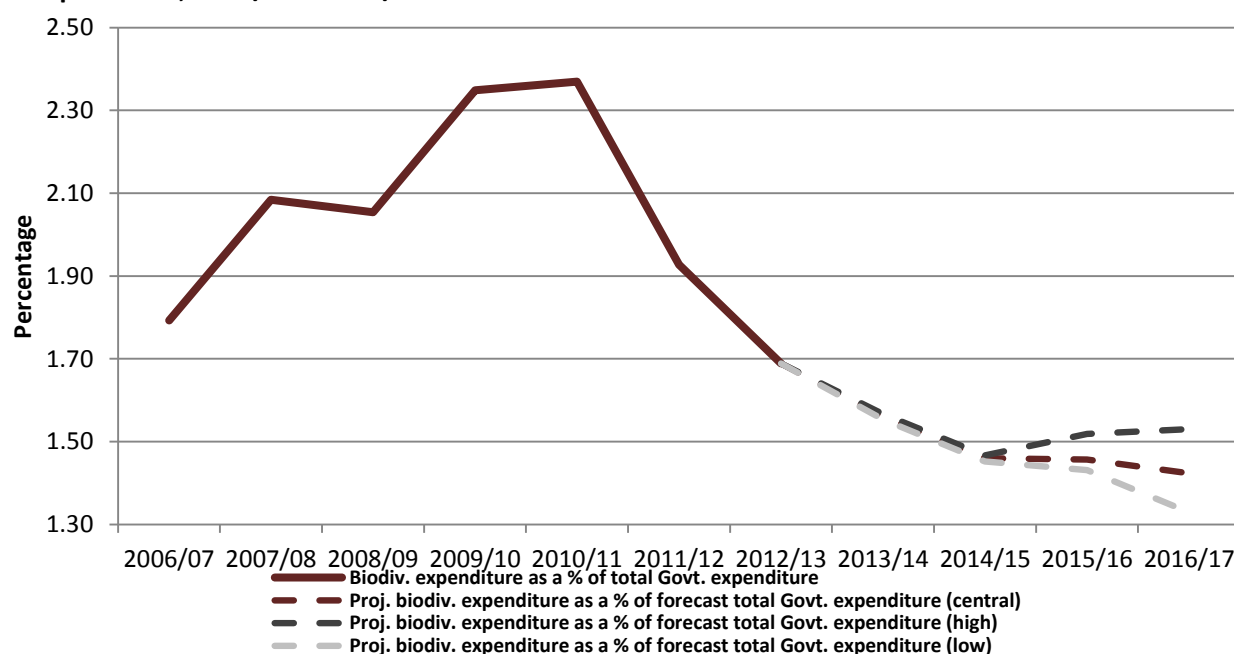
An indication of the level of uncertainty of projected biodiversity expenditure can be given by comparing the different projections of the high and low scenarios to the central scenario. The high scenario projects real GRN biodiversity expenditure to continue increasing through 2020/21. The projected expenditure of N\$946.8m in 2020/21 is 17.8% larger than the central scenario. However, the rate of increase in projected biodiversity expenditure is decreasing, and by continuing the projection forward, real GRN biodiversity expenditure would start declining in 2021/22. This illustrates that even in this very optimistic scenario, the increased mainstreaming and incorporation of biodiversity into national budgeting will be important in the future.

The low scenario projects real GRN biodiversity expenditure to peak at N\$824.9m in 2014/15, before decreasing quite rapidly to N\$651.3m in 2020/21 (19.0% less than the central scenario). As expected, the low scenario paints a very negative picture of future real GRN biodiversity expenditure, and would likely result in a significant reduction in biodiversity activities that could be supported by the Namibian Government. The high and low scenarios are presented in Figures F2.3 and F2.4, respectively.

We can also assess how the projection of biodiversity expenditure under the different scenarios compares to the forecasts of total GRN expenditure and GDP in the 2014/15 MTEF⁵¹. The comparison of GRN biodiversity expenditure and total GRN expenditure is presented in Figure 5.30; all three scenarios demonstrates a continued decline from 2012/13 to 2014/15, and following this, only the high scenario shows a slight recovery. By 2016/17, GRN biodiversity expenditure is projected to represent just 1.4% of total GRN expenditure under the central scenario, which is a full percentage point lower than its level in 2010/11.

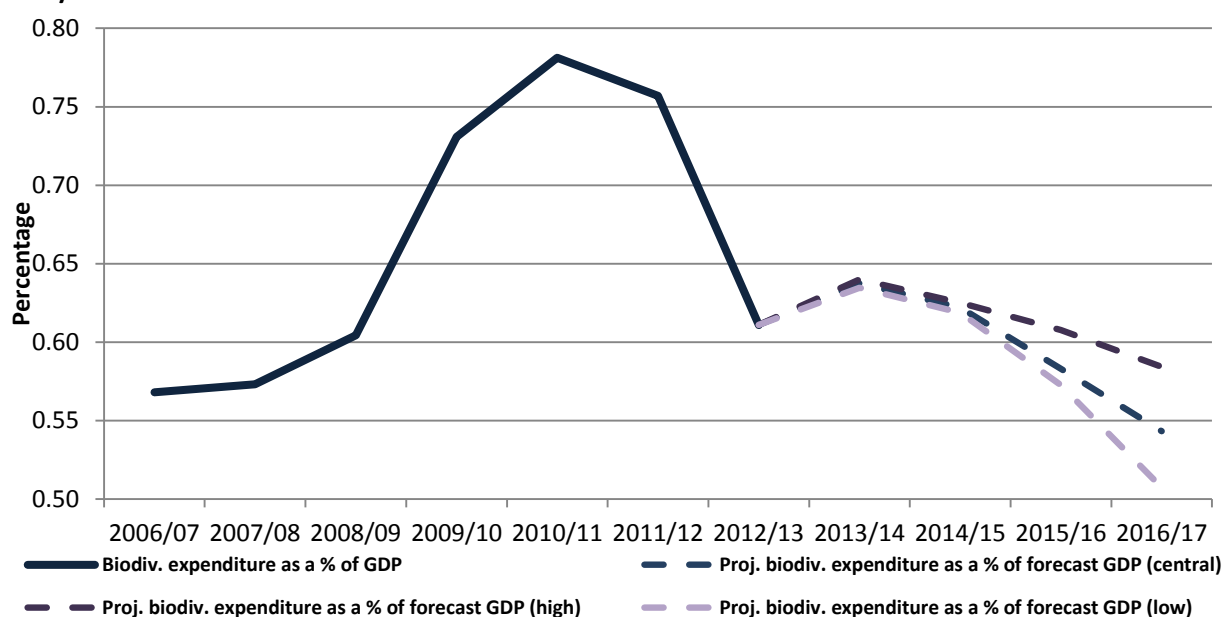
⁵¹ The supporting these graphs is presented in Tables F2.9 and F2.10.

Figure 5.30: Estimated and projected biodiversity expenditure as a percentage of total GRN expenditure, 2006/07 – 2016/17



The comparison between forecast GDP and projected GRN biodiversity expenditure is presented in Figure 5.31. In 2013/14, there is a slight increase in GRN biodiversity expenditure as a percentage of GDP, but by 2016/17 all three scenarios are below their 2012/13 level. Furthermore, the 2016/17 projection for the central scenario estimates GRN biodiversity expenditure as just 0.55% of GDP; this is below even the respective 2006/07 level.

Figure 5.31: Estimated and projected biodiversity expenditure as a percentage of GDP, 2006/07 – 2016/17



The most striking aspect of the projected decline in real GRN biodiversity expenditure is therefore that it represents a falling proportion of total GRN expenditure, and is in the context of a growing

economy. This reinforces the earlier assessment that biodiversity is becoming a reduced priority for Namibian public funds.

The estimates of GRN biodiversity expenditure presented in this report are likely to be underestimates. This is because it was not possible to sufficiently disaggregate all GRN expenditure to assess what is relevant to biodiversity; as a result, some activities were omitted (such as those by the MoD and the MoSS discussed in Section 5.4.1 and 5.4.2, respectively). However, we believe that the most significant expenditures have been captured, and so the extent to which GRN biodiversity expenditure is underestimated should be fairly small.

6 Expenditure Review: Non-GRN

This section presents estimates of baseline non-GRN biodiversity expenditure in Namibia. This arises primarily through donors, which in turn is generally linked to particular projects, but we also attempt to capture some expenditure by the private sector. We focus on expenditure from 2007 onwards, as this allows for consistency across all sources of non-GRN data. Where data is provided in calendar years and not financial years, we assume for simplicity that the calendar year 2007 is equivalent to the financial year 2007/08.

We proceed by first detailing donor-financed expenditure, with individual projects described in turn and grouped by the agency or donor through which they are primarily financed or implemented and subsequently we discuss private expenditures. There are no 'high' and 'low' scenarios for donor-funded projects, because we tend to have a good idea of what was spent, and we also do not project donor funding forwards because any uncommitted funds still need to be mobilized.

6.1 GEF

The Global Environmental Facility (GEF) is a "partnership for international cooperation where 183 countries work together with international institutions, civil society organization and the private sector, to address global environmental issues⁵²". It serves as a financial mechanism for a number of international conventions, including the CBD, and has provided US\$12.5bn in grants and leveraged US\$58bn in co-financing for 3,690 projects in 165 developing countries since 1991. It also operates a Small Grants Programme (SGP), which has made more than 20,000 grants worth US\$1bn to civil society and community-based organizations.

As of 2012, Namibia had received GEF grants totaling US\$55.9m for 25 national projects in the areas of biodiversity, land degradation, climate change and persistent organic pollutants. These grants leveraged a further US\$303.7m in co-financing. The projects relevant to biodiversity that have been at least partially financed by the GEF, and that have received funding from 2007 onwards, are discussed in this section. We also include external co-financing in providing the total funding of these projects, but note the source of this co-financing where appropriate.

Co-financing from the German Government is detailed where appropriate. However, this co-financing is excluded from the final estimates for the additional biodiversity-relevant expenditure through GEF projects. This is because such co-financing relates to funds committed to other projects, financed more widely by the German Government and detailed in Section 6.3, that assist in achieving the goals of the GEF project. An example is the N\$7.0m committed in co-financing by KfW to the Strengthening Protected Areas Network (SPAN) project, which actually represents part of the funding for the Bwabwata-Mudumu-Mamili (BMM) Parks Project. This approach therefore ensures there is no double-counting of expenditures by the German Government.

6.1.1 ICEMA

The Integrated Community-Based Ecosystem Management (ICEMA) project was aimed at fostering the shift from traditional natural resource management, which was mainly wildlife, to an integrated ecosystem management approach in targeted conservancies. This would consequently support

⁵² <http://www.thegef.org/gef/whatisgef>

globally significant biodiversity conservation and reduce land degradation, while also providing increased income-generation activities. The overall project objective was to “restore, secure and enhance key ecosystem processes in targeted conservancies with biodiversity and land conservation and sustainable use as a goal”.

The ICEMA project ran from 2005 to 2011. It had a total project cost of US\$32.43m, of which the GEF contributed US\$7.10m (22%) and the most significant donor was USAID (US\$10.29m, 32%). The Namibian Government contributed US\$6.11m (19%). Table 6.1 presents a breakdown of the total project cost by financier.

Table 6.1: ICEMA project funding by financier

Financier	Commitment (US\$ Millions)
USAID	10.29
European Commission	3.00
Finland: Ministry Foreign Affairs	1.00
France: French Agency for Development	1.75
GEF	7.10
KfW	3.00
Local Communities	0.18
GRN Co-financing	6.11
Total	32.43

6.1.2 NACOMA

The Namibian Coast Conservation and Management (NACOMA) Project has received two instances of funding through the GEF. The project is aimed at strengthening conservation, sustainable use and mainstreaming of biodiversity in coastal and marine ecosystems, with the additional finance supporting activities to scale up the project’s impact by implementing the Namibian Policy on Coastal Management (NPCM).

The initial project cost totaled US\$28.74m and was in effect from 2006 to 2012, with the additional financing covering the period 2013 to 2015 and totaling US\$7.80m. In both instances of funding, the Namibian Government was the majority contributor; US\$19.64m (68%) and US\$5.87m (75%), respectively. Table 6.2 presents the breakdown of the two instances of funding by financier.

Table 6.2: NACOMA project funding by financier

Financier	Commitment: Initial Funding (US\$ Millions)	Commitment: Additional Finance (US\$ Millions)
GEF	4.90	1.93
Government of Finland	2.00	-
Government of France	0.50	-
Government of Germany	1.70	-
GRN Co-financing	19.64	5.87
Total	28.74	7.80

6.1.3 SPAN

The Strengthening Protected Areas Network (SPAN) project ended in 2012 and was the first of two phases of a project focused on Namibia's Protected Areas. The six-year project had three main aims:

1. Strengthening systematic capacity, namely the enabling legal/policy environment and financial mechanisms for PA management;
2. Strengthening the institutional capacity for PA management; and
3. Demonstrating new ways and means of PA management, including partnerships with other government agencies, local communities and the private sector, to add to the range of options currently available.

Table 6.3 presents the breakdown of the total project cost by financier. The Namibian Government was the majority contributor through core budget funding from MET at US\$26.00m (63%), while GEF and KfW contributed 20% and 17%, respectively.

Table 6.3: SPAN project funding by financier

Financier	Commitment (US\$ Millions)
GEF	8.50
KfW	7.00
GRN Co-financing	26.00
Total	41.50

6.1.4 NAMPLACE

The Namibia Protected Landscape Conservation Initiative (NAMPLACE) project is a five-year project that is working to establish new Protected Landscape Conservation Areas (PLCAs) and formalize existing ones by introducing collaborative governance structures. There are five PLCAs under the NAMPLACE project: Mudumu Landscape (2047 km²); Greater Waterberg Landscape (18,763 km²); Greater Sossusvlei-Namib Landscape (5,730 km²); Greater Fish River Canyon Landscape (7,621 km²); and the Windhoek Green Belt Landscape (888 km²). The three main aims of the project are to ensure that:

1. Namibia's biodiversity and ecosystem values are conserved and continually provide sustainable benefit flows at local, national and global levels;
2. Through the introduction of collaborative governance structures, land uses in areas adjacent to existing Protected Areas are compatible with biodiversity conservation objectives; and
3. Corridors are established to sustain the viability of wildlife populations.

The total project cost is given as US\$20.84m, with US\$4.5m allocated through the GEF. The source of co-funding is unclear, and consequently we make a conservative assumption that only the GEF allocation is external, and the co-funding is from Government (which has been counted in Section 5).

6.1.5 PASS

The second phase of the GEF-implemented project focusing on Namibia's Protected Areas is named Strengthening the Capacity of the Protected Area System to Address New Management Challenges (PASS). These new management challenges include fire and poaching, which if not dealt with, could reverse recent conservation gains. The three main aims of the PASS project are:

1. Increased PA financing opportunities for new PAs covering 33,530 km² and new communal Conservancies covering an area of 30,837 km², by developing and implementing new and innovative revenue generation mechanisms;
2. Effective enforcement in PAs and deterrence of biodiversity-related crimes over a PA estate area of 136,796 km² and are of 123,347 km² comprising communal Conservancies; and
3. Effective fire management leading to reduced degradation of wildlife habitats.

The breakdown of the total project cost by financier is presented in Table 6.4. The Namibian Government is contributing more than 75% of the total funding, with GEF the majority external contributor (22%). The timeframe for the project is from 2013 to 2016.

Table 6.4: PASS project funding by financier

Financier	Commitment (US\$ Millions)
GEF	4.00
UNDP	0.50
GRN Co-financing	14.00
Total	18.50

6.1.6 CPP-ISLM

The Country Pilot Partnership for Integrated Sustainable Land Management (CPP-ISLM) project comprised of four inter-related components: Sustainable Adaptive Management (SAM); Enhancing institutional and human resource capacity through local level co-ordination of integrated rangeland management and support (CALLC); Climate Change Adaptation (CCA); and Promoting Environmental Sustainability through Improved Land Use Planning (PESILUP). The overall project goal was to “Combat land degradation using integrated cross-sectoral approaches which enable Namibia to reach its MDG#7: ‘environmental sustainability’ and assure the integrity of dryland ecosystems and ecosystem services”.

The Terminal Evaluation Report for the project indicates that the total project cost (at endorsement) was US\$64.05m, with GEF financing at US\$10.25m and Namibian Government funding of US\$36.47m. The other major external funder was the EU. It does not, however, provide the ‘at completion’ figures, nor does it provide a breakdown by component, but it does indicate that PESILUP was not undertaken.

To estimate external funding for the project, we therefore refer to the original project document and omit the PESILUP component. The breakdown of cost by component and financier for the SAM, CALLC and CCA components is presented in Table 6.5. The project document also presents an estimate of commitments for each year, with the CCA and CALLC components running from 2007 – 2010, and the SAM component from 2007 – 2012. The estimated annual external expenditure by component is presented in Table 6.6.

Table 6.5: CPP-ISLM project funding by financier

Financier	SAM Commitment (US\$ Millions)	CALLC Commitment (US\$ Millions)	CCA Commitment (US\$ Millions)
GEF	7.00	1.00	0.96
EU	10.54	1.51	1.51
UNDP	0.20	-	-
UNESCO	0.015	-	-
GRN Co-financing	23.60	4.29	4.29
Total	41.35	6.80	6.76

Table 6.6: CPP-ISLM project funding by year and component (US\$ Millions)

Component	2007	2008	2009	2010	2011	2012
SAM	2.11	3.37	3.31	3.09	3.03	2.84
CALLC	0.39	0.78	0.74	0.60	-	-
CCA	0.44	0.76	0.72	0.54	-	-
Total	2.94	4.91	4.77	4.23	3.03	2.84

6.1.7 BCLME SAP

The Benguela Current Large Marine Ecosystem Strategic Action Programme (BCLME SAP) is aimed at implementing the Benguela Current Commission's (BCCs) SAP for the 'development and adoption of an effective transboundary LME management structure'. This is with a primary focus on fish stocks and fisheries rejuvenation and sustainability.

The project has a regional focus, and consequently assigning the relevant proportion of budget and expenditure to Namibia is difficult. The GEF project website⁵³ puts the total project cost at US\$39.02m, with US\$15.11m from the GEF. Taking a conservative estimate, we assign a third of the GEF funding to Namibia (as the ecosystem also includes Angola and South Africa), which is approximately US\$5m over the period from 2009 – 2013, or an annual average of US\$1m.

6.1.8 NAFOLA

The Sustainable Management of Namibia's Forested Lands (NAFOLA) project is aimed at maintaining current dry forests and the ecosystem goods and services they provide. This is to be achieved through the wide-scale adoption of sustainable land and forest management techniques. Average annual external funding is estimated at US\$0.74m from 2014/15 to 2019/20⁵⁴.

6.1.9 Persistent Organic Pollutants

The GEF has also helped to finance the development of a national implementation plan for Namibia to facilitate its implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs). This project received funding of US\$0.28m from the GEF, accompanied by US\$0.04 from the Namibia Government; for the period 2013/14.

⁵³ http://www.thegef.org/gef/project_detail?projID=789

⁵⁴ The total project cost is estimated at US\$24.55m on the GEF project website, with a total of US\$20.00 min co-financing, but the breakdown of this co-financing is not provided. We consequently take the conservative estimate that all of the co-financing is from the Namibian Government.

6.1.10 NBSAP Revision and Development of Fifth National Report to the CBD

As part of its obligations to the CBD, Namibia is required to produce National Biodiversity Strategy and Action Plans every 10 years, and produce National Reports to the CBD. This project provides support to the Namibian Government to meet these obligations. The GEF provided financing of US\$0.22m in 2013 to supplement US\$0.40 provided by the Namibian Government.

6.1.11 GEF SGP

The GEF Small Grants Programme (SGP) has provided 137 grants to projects in Namibia since 2003. Since 2007, 92 grants have been awarded a total of US\$2.75m in GEF SGP funding, not counting co-funding either in cash terms or in-kind. Reviewing these 92 grants, we identify 55 that are relevant to biodiversity; these include all of the grants under the 'biodiversity' focal area, but also some under 'capital development' (e.g. developing environmental awareness and building capacity in biodiversity-relevant areas), 'land degradation' (e.g. addressing deforestation and sustainable land use) and multi-focal projects that include 'climate change'.

The total grant amount from the GEF SGP on biodiversity-related projects from 2007 to the present is US\$1.50m, with co-funding of US\$0.76m in cash and US\$0.72m in-kind. Our review indicates that no biodiversity-relevant grants were made in either 2010 or 2011; however, for grants that were allocated over a number of years, we assume for simplicity that these grants were made in equal installments over the designated period.

The estimated annual expenditure resulting from the GEF SGP on biodiversity related activities is presented in Table 6.7. The source of the co-funding, and whether it represents double counting with expenditure from Namibian Government Ministries or other external funding, is unclear. Consequently we present three separate estimates of annual biodiversity-related expenditure from the SGP: GEF grants only; GEF grants and cash co-financing; and GEF grants, cash co-financing and in-kind co-financing. The effect of including co-financing from SGP on the total size of expenditure by GEF projects is discussed in Section 6.1.12.

Table 6.7: SGP funding for biodiversity-related activities, 2007 - 2014 (US\$ Millions)

Component	2007	2008	2009	2010	2011	2012	2013	2014
GEF grants only	0.21	0.27	0.35	0.14	0.08	0.15	0.20	0.09
GEF grants & cash co-financing	0.23	0.31	0.59	0.37	0.25	0.17	0.24	0.11
GEF grants, cash & in-kind co-financing	0.34	0.42	0.76	0.42	0.27	0.26	0.34	0.15

6.1.12 Summary of GEF Projects

Tables 6.8 and 6.9 present total funding for biodiversity-related GEF projects between 2007 and 2012, and 2013 and 2019, respectively. Significant funds were committed to GEF projects in the early part of the study period, increasing from US\$8.34m in 2007 to US\$10.05m in 2011 and peaking at US\$11.31m in 2010. This was a result of multiple projects receiving particularly large instances of external funding; the conclusions of the ICEMA and SPAN projects accounted for 97% of the US\$4.25m reduction in funding from 2011 to 2012.

The continued decline in committed external funding for GEF projects is evident in Table 6.9, with total funding further decreasing from US\$4.21m in 2013 to an estimated US\$0.76m in 2019. It is possible that future funding increases above the current estimates with new GEF allocations, but lower levels of external funding for GEF projects are likely to increasingly become the norm as donor funding shifts away from Namibia following its designation as an upper-middle income country.

Table 6.8: Funding for biodiversity-related GEF projects, 2007 – 2012 (US\$ Millions)

Project	2007	2008	2009	2010	2011	2012
ICEMA	2.92	2.92	2.92	2.92	2.92	-
NACOMA	1.06	1.06	1.06	1.06	1.06	1.06
SPAN	1.21	1.21	1.21	1.21	1.21	
NAMPLACE	-	-	-	0.76	0.76	0.76
PASS	-	-	-	-	-	-
CPP-ISLM	2.94	4.91	4.77	4.23	3.03	2.84
BCLME SAP	-	-	1.00	1.00	1.00	1.00
NAFOLA	-	-	-	-	-	-
POPs	-	-	-	-	-	-
NBSAP Revision	-	-	-	-	-	-
SGP	0.21	0.27	0.35	0.14	0.08	0.15
Total	2.94	4.91	4.77	4.23	3.03	2.84

Table 6.9: Funding for biodiversity-related GEF projects, 2013 – 2019 (US\$ Millions)

Project	2013	2014	2015	2016	2017	2018	2019
ICEMA	-	-	-	-	-	-	-
NACOMA	0.64	0.64	0.64	-	-	-	-
SPAN	-	-	-	-	-	-	-
NAMPLACE	0.76	0.76	0.76	-	-	-	-
PASS	1.11	1.11	1.11	1.11	-	-	-
CPP-ISLM	-	-	-	-	-	-	-
BCLME SAP	1.00	-	-	-	-	-	-
NAFOLA	-	0.76	0.76	0.76	0.76	0.76	0.76
POPs	0.28	-	-	-	-	-	-
NBSAP Revision	0.22	-	-	-	-	-	-
SGP	0.20	0.09	-	-	-	-	-
Total	4.21	3.36	3.27	1.87	0.76	0.76	0.76

We can also assess the impact on total funding for biodiversity-related GEF projects of including the cash and in-kind co-financing for the SGP, as in Tables 6.8 and 6.9 only the GEF grant amount is included. The cash and in-kind co-financing only serve to increase the total by a small amount; generally this is between 1% and 2%, but in 2009 and 2013 the increases are 3.5% and 3.4% respectively. This does not have a major impact on the overall picture of expenditure by GEF projects, and given the uncertainty around the source of co-financing we choose to omit the additional co-financing from our future calculations.

6.2 US Government Funding

The US Government has helped to fund a number of biodiversity-related projects in Namibia, and has been a significant supporter of CBNRM activities since the programme's inception in the early 1990s. This section reviews the biodiversity-related projects the US Government has either funded or helped to fund during the period under review in this report.

6.2.1 LIFE

The LIFE (Living in a Finite Environment) project started supporting community-based conservation in Namibia in 1992. Its main objective was to support existing Government and NGO initiatives to devolve rights over wildlife and tourism to local communities in order to promote sustainable natural resource management on communal land. There were three phases to the project: LIFE 1, LIFE 2 and LIFE PLUS, over which USAID invested approximately US\$40m. This investment was matched by similar amounts through contributions from partner organisations and the Government of Namibia.

The LIFE PLUS phase ran from 2004 to June 2008, and is the only phase relevant to our study period. It received a total of US\$12.65m in funding, of which US\$7.83m was provided by USAID. Assuming the funding was distributed equally over the period of the project, we estimate that US\$1.96m of USAID funding was spent in 2007/08 on the project.

6.2.2 MCA

In the wake of the success of the LIFE project, the Namibian and US Government signed the MCA Namibia Compact. This provided grant funding for public investment in education, tourism and agriculture over the period 2009 – 2014, for a total of US\$305.1m. The breakdown of the budget allocation into the three projects and program management and monitoring and evaluation is presented in Table 6.10. Parts of the tourism and agriculture projects are relevant to biodiversity, and these are discussed below.

The tourism project includes three activities: the improvement management and infrastructure of Etosha National Park (ENP); marketing Namibian tourism; and Ecotourism development in Conservancies. The ENP activity is clearly relevant to biodiversity as it supports the maintenance of a Protected Area. We also classify Ecotourism Development in Conservancies as biodiversity-relevant as it not only directly builds capacity within Conservancies in protecting its natural resources, but it also helps to ensure the financial sustainability of communal Conservancies and the future of the Conservancy programme, which has been a major driver behind increased wildlife populations in Namibia.

The 'marketing Namibian tourism' activity is not included as relevant to biodiversity. An argument could be made that expenditure that results in increased tourism further supports the protection of biodiversity and that it consequently justifies its conservation from an economic point of view. Indeed, some 67% of holiday/leisure tourists stated 'wildlife' as one of the reasons for their visit (MET, 2013). However, the primary motive behind the expenditure is to increase tourist numbers and consequently revenue from tourism, and we take the slightly conservative approach of not including these as biodiversity expenditures.

The agriculture project also includes three activities: land access and management; livestock support; and Indigenous Natural Products (INP). The first of these activities has two components: improving the communal land regime and introducing effective community-based rangeland management (CBRLM) practices. We take the CBRLM component as relevant to biodiversity, because it is involved in the sustainable use of rangeland resources, but communal land support as not, because it is more focused on land rights and their formalization. In reality, we expect that some parts of the communal land support component may be relevant to biodiversity, while some parts of the CBRLM component would not, so the two would likely even out.

The INP activity is taken as wholly relevant to biodiversity as it supports the sustainable use natural resources and the protection of indigenous knowledge. The livestock support activity is not considered relevant to biodiversity. The breakdown of biodiversity-relevant expenditure by activity and year is presented in Table 6.11. To estimate the expenditure for CBRLM, we take half of the total allocated to the land access and management activity.

Table 6.11: MCA project funding for biodiversity-related activities in Namibia, 2009 – 2014 (US\$ Millions)

Project	2009	2010	2011	2012	2013	2014
Improved management of ENP	1.04	2.13	5.79	16.61	9.12	7.45
Ecotourism Development in Conservancies	0.98	1.27	5.13	5.00	4.47	1.42
CBRLM	-	0.10	4.00	3.63	2.72	1.19
INP	-	1.02	1.93	2.11	1.66	0.84
Total	2.02	4.52	16.85	27.35	17.97	10.90

Of the total budget allocation for the MCA-Namibia project, we estimate that 26% is relevant to biodiversity. Of this, the majority (76%) is through the tourism project. We can also assess the impact of leaving out the 'marketing tourism' activity; if included, the biodiversity-relevant total would increase to US\$88.29m, or 29% of the total MCA-Namibia budget. This exclusion does not dramatically change the outlook for biodiversity expenditure by MCA.

6.2.3 IRBM

The Okavango Integrated River Basin Management Project (IRBM) ran from July 2004 to September 2008 and received funding of US\$8.17m. It was aimed at supporting sustainable development activities in the Cubango-Okavango river basin, covering Angola, Botswana and Namibia. Specifically, the project enhanced organizations' ability to manage river basin resources, improved information systems for biodiversity and natural resource management and improved community management and local governance of natural resources. An estimated US\$1.19m was provided to Namibia in support of the biodiversity-related activities within this project.

6.2.4 SAREP

The South African Regional Environment Program (SAREP) was initiated as a follow on to the IRBM project. At a regional level, the objectives are to build capacity for water governance, support basin-level plans and priorities and integrate trans-boundary infrastructure and land use planning. SAREP has been allocated total funding of US\$23m between October 2010 and September 2015, of which it is estimated US\$2.53m is relevant to biodiversity in Namibia.

6.2.5 A Water Secure Future for Southern Africa

A Water Secure Future for Southern Africa also involves Botswana, Lesotho and South Africa as well as Namibia. This project received US\$2m for the June 2012 to June 2015 period, of which N\$0.5m is estimated to be relevant to biodiversity in Namibia. It supports *“scientific analysis and pilot programmes that balance ecosystem requirements and human development needs to ensure efficient and lasting water provisioning services in priority areas”* in the Orange-Senqu basin.

6.2.6 Summary of US Government Funding

Table 6.12 presents estimates of US Government funding for biodiversity-related activities in Namibia during the study period. Funding for biodiversity activities increased significantly as the MCA project got into full swing; by the third year of the MCA project (2011), total funding was US\$17.4m, an increase of US\$12.6m (264%). Total funding peaked in 2012 at US\$28.03m, with the Tourism activity within the MCA project accounting for 77% of this; in the six years for which the MCA Tourism activity was funded, it never accounted for less than 63% of total US Government funding for biodiversity-related activities.

The end of the MCA project in 2014 alone accounts for a reduction in total US Government funding for biodiversity-related activities in Namibia of US\$10.9m, or more than 96% of the decrease from 2014 to 2015. Although a great deal of this funding represented long-term capital investments, there could be a need for some future investments to ensure that capacity building and institutional development is maintained.

Table 6.12: US Government funding for biodiversity-related activities in Namibia (US\$ Millions)

Project	2007	2008	2009	2010	2011	2012	2013	2014	2015
LIFE	1.96	-	-	-	-	-	-	-	-
MCA Tourism	-	-	2.02	3.40	10.92	21.61	13.59	8.87	-
MCA Agriculture	-	-	-	1.12	5.93	5.74	4.38	2.03	-
IRBM	0.26	0.13	-	-	-	-	-	-	-
SAREP	-	-	-	0.25	0.51	0.51	0.51	0.51	0.25
Water Secure Future	-	-	-	-	-	0.17	0.17	0.17	-
Total	2.22	0.13	2.02	4.77	17.36	28.03	18.65	11.58	0.25

6.3 German Government Funding

German public funds have supported biodiversity conservation in Namibia for a number of years. These funds are targeted at specific projects which are implemented through German Technical Cooperation via GIZ and through German Financial Cooperation via KfW. A brief overview of each of the confirmed projects being funded by the German Government within the 2007 – 2020 period is provided below, with a summary of the estimated annual expenditure for each project presented in Section 6.3.9. The projects outlined in Sections 6.3.1 to 6.3.5 are implemented through GIZ and the projects in Section 6.3.6 to 6.3.8 are financed through KfW.

6.3.1 BSLM

The biodiversity and sustainable land management (BSLM) project has the overall objective of ‘improving the framework for the sustainable management of natural resources through private and public users’. There are three supporting objectives that feed into this: to strengthen the

institutional capacity and service delivery of MET; to implement the Environmental Management Act (EMA); and to sustain the use of biodiversity through biotrade and bio-prospecting.

The project had two phases, with the first phase from 2004 to 2008, and the second continuing from July 2008 to December 2012. The German Government provided funding of €1.5m for the first phase and €3.57m for the second phase.

6.3.2 BMCC

The objective of the biodiversity management and climate change (BMCC) project is to 'introduce policies, strategies and practices relevant to biodiversity and climate change in a coherent manner, thereby contributing to increasingly secure and diversified livelihoods for the local people who depend on natural resources'. This project runs from 2013 to 2016, and has been allocated funding of €5.2m.

6.3.3 Resource Mobilisation

The aim of the project is to mobilize resources to support the effective implementation of Namibia's Second National Biodiversity Strategy and Action Plan (NBSAP2). This is to be achieved on the basis of the economic valuation of ecosystem services and the sustainable mainstreaming of these values into national governance processes. The project will also build capacity within Namibia in carrying out economic valuation studies. The project is being financed primarily by the German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMUB), who are contributing €2.5m, with a further €0.15m provided by MET. The project runs from November 2013 to March 2017.

6.3.4 Conservation and Sustainable use of the BCLME

Between 2014 and 2019, the BMUB is providing €8.9m of funding to the conservation and sustainable use of the BCLME. The more specific aims of the project are to increase the capacity of the Benguela Current Commission (BCC) and its member states for enhanced sustainable management of the BCLME's marine biodiversity and natural resources. As the €8.9m funding is for Angola and South Africa as well as Namibia, an estimate of €3.0m is taken as the portion relevant to Namibia.

6.3.5 Biotrade / Access and Benefits Sharing Research and Development Project

€8.0m has been committed to a Biotrade / Access and Benefits Sharing research and development project pending the outcome of the results of a feasibility study that has recently started. This project will start in 2016, lasting for a duration of approximately four years.

6.3.6 Community Forest Programme (CFN) Phase I and II

The Community Forest Programme is supporting the Ministry of Agriculture, Water and Forestry in the conservation of the natural resource base through enabling rural communities to acquire the rights, capacity and resource information to manage their forests and pasture in a sustainable manner. The Programme has been allocated €6.5m.

6.3.7 Namibia National Parks Programme

The NamParks Programme (previously the BMM Parks Project) is aimed at enhancing integrated park management and infrastructure development in Namibia's North-Eastern Parks (Bwabwata

National Park, Mudumu NP, Nkasa Ruparo NP, Khaudum NP) . The Programme has been allocated €12m over the period 2009 – 2016.

6.3.8 Integrated National Park Management Programme

€26m has been allocated to the Integrated National Park Management Programme, which aims to support MET in the planning, development and management of the Tsau//Khaeb (Sperrgebiet) National Park and the Bwabwata Ecological Institute. Furthermore the development of an Integrated Coastal Parks Concept from the Orange River at the Southern border of Namibia to the Kunene River at the border with Angola in the north will be supported.

6.3.9 Summary of German Government Funding

Tables 6.13 and 6.14 present an overview of German Government funding for biodiversity-related projects in Namibia from 2007 to 2012 and 2013 to 2020, respectively. Total funding fluctuated around €2m from 2007 to 2012, growing to €2.80m in 2013. From 2013, expenditure is projected to increase rapidly to €9.23m to 2016, before falling back to €2.00m in 2019. Although we can likely expect that there will be greater funding for biodiversity-related activities in 2019 and 2020 than suggested in Table 6.14, this funding is not yet committed.

Table 6.13: German Government funding for biodiversity-related projects in Namibia, 2007 – 2012 (€ Millions)

Project	2007	2008	2009	2010	2011	2012
BSLM	0.38	0.38	0.79	0.79	0.79	0.79
CFN I	1.00	1.00	1.00	-	-	-
NamParks	-	-	1.00	1.00	1.00	1.00
Total	1.38	1.38	2.79	1.79	1.79	1.79

Table 6.14: German Government funding for biodiversity-related projects in Namibia, 2013– 2020 (€ Millions)

Project	2013	2014	2015	2016	2017	2018	2019	2020
BMCC	1.30	1.30	1.30	1.30	-	-	-	-
ResMob	-	0.83	0.83	0.83	-	-	-	-
NamParks	2.00	2.00	2.00	2.00	-	-	-	-
CFN II	-	1.00	1.50	1.00	-	-	-	-
Conservation, Sustainable Use of BCLME	-	0.60	0.60	0.60	0.60	0.60	-	-
Integrated National Park Management	-	2.00	4.00	6.00	8.00	4.00	2.00	-
Biotrade/ABS R&D	-	-	-	2.00	2.00	2.00	2.00	-
Total	3.30	7.73	10.23	13.73	10.60	6.60	4.00	0.00

6.4 WWF

Table 6.15: WWF expenditure on biodiversity-related projects in Namibia, 2012 – 2016 (N\$ Millions)

Project	2012	2013	2014	2015	2016
CBNRM - Sustainable Local Conservation by Improving Rural Livelihoods	2.35	1.49	2.98	2.98	0.16
Sustainable Wildlife Utilization	6.36	5.35	5.61	5.61	2.81
Zambezi/Chobe Fisheries	1.26	-	-	-	-
KAZA Project	0.73	1.21	1.87	1.53	1.19
TEKOA Project	0.36	0.24	-	-	-
CBNRM Project - Core	10.17	11.44	5.52	1.34	-
SIDA Project	3.46	2.19	-	-	-
Total	24.69	21.92	15.98	11.46	4.16

The WWF has extensively supported the biodiversity conservation in Namibia since the country's independence. It has been key to the development and success of the CBNRM programme, both as a partner in the primarily US Government funded LIFE and MCA projects as well as through funding its own projects in this area. Table 6.18 provides a breakdown of funds committed by WWF to each of the projects over the study period⁵⁵.

As with other major donors such as the GEF and the US Government, there is a clear downward trend in funding from 2012. This may also be a reflection of the changing priorities of donors, particularly as a result of Namibia's status as an upper-middle income country.

6.5 EU

The EU has provided financing for three projects supporting biodiversity in Namibia during the study period. These are: the establishment of community-based sustainable management systems for riverine/floodplain fisheries in the KAZA river basins (Community Conservation Fisheries in KAZA); the implementation of the ecosystem approach to fisheries in the BCLME and supporting the conservation of marine resources through the effective management of Marine Protected Areas (ECOFISH); and the commercialization of Hoodia production (HCPRP).

The Community Conservation Fisheries in KAZA and ECOFISH projects are regional, and consequently we have to adjust the budget total budget assigned to them to estimate their contribution to biodiversity expenditure in Namibia. In both cases we estimate that a third of the total budget is relevant to Namibia; Angola and South Africa are also involved in the ECOFISH project, while the KAZA area covers five countries, but this project is administered from Katima Mulilo in Namibia.

Expenditure estimates for the HCPRP project are presented in Namibian dollars on an annual basis from 2007 – 2010. The Community Conservation Fisheries in KAZA and ECOFISH projects are not finished yet, and consequently we estimate average annual expenditure by the EU by splitting the total budget equally over the project timeframe. These estimates are presented in Table 6.15.

⁵⁵ Currently only WWF data from 2012/13 onwards is available. The addition of historical data would not change the conclusions as it would not change the projections of expenditure looking forwards.

Table 6.16: EU funding for biodiversity-related projects in Namibia during the study period

Project	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
KAZA Fisheries (€ Millions)	-	-	-	-	-	-	0.12	0.12	0.12	0.12
ECOFISH (€ Millions)	-	-	-	-	0.075	0.075	0.075	0.075	0.075	-
HCPRP (N\$ Millions)	4.00	3.56	1.52	0.10	-	-	-	-	-	-

6.6 FAO

The FAO has supported a wide range of projects in Southern Africa. Over the period from 2007 to the present, we identify three projects that are relevant to biodiversity in Namibia. These are 'Preparation of a comprehensive conservation agriculture programme for Namibia' (2010-2011, US\$0.057m); 'Technical Support to MFMR to finalise the formulation of their strategic and Implementation Plans' (2008-2009, US\$0.030m) and 'Environmental Protection and Sustainable Management of the Okavango River Basin' (2007 – 2010, US\$1.80m). The latter of these three projects also involves Angola and Botswana, and as a result, we take the proportion of the budget relevant to Namibia as one third of the total. Estimated annual expenditure by the FAO on these projects is presented in Table 6.17.

Table 6.17: FAO funding for biodiversity-related projects in Namibia, 2007– 2016 (US\$ Millions)

Project	2007	2008	2009	2010
Conservation Agriculture	-	-	-	0.057
MFMR Assistance	-	0.03	-	-
Okavango River Basin	0.20	0.20	0.20	-
Total	0.20	0.023	0.20	0.057

6.7 SASSCAL

The Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) is a joint initiative between Angola, Botswana, Namibia, South Africa, Zambia and Germany. Its overall objective is to "conduct problem-oriented research in the areas of adaptation to climate change and sustainable land management and to provide evidence-based advice for all decision-makers and stakeholder to improve the livelihoods of people in the region and to contribute to the creation of an African knowledge-based society"⁵⁶.

SASSCAL have six projects in the biodiversity thematic area that are taking place over the period from 2014 – 2016. A brief overview of these projects is presented in Table G1, with a total budget of €0.796m. The average annual expenditure between 2014 and 2016 on biodiversity-related activities is consequently estimated at €0.265m.

⁵⁶ <http://www.sasscal.org/index.php>

6.8 Nedbank Go Green Fund

The GGF makes grants to 'enhance conservation and the protection of important habitats and natural resources in Namibia'. It is administered by the NNF. The GGF is funded by the sales of particular Nedbank products: 'for every home loan funded through Nedbank Namibia, N\$500 is put into the fund, while N\$150 is donated to the fund for every Nedbank Vehicle Finance arrangement exceeding a predetermined amount'. These funds are provided by Nedbank.

The total of the grants allocated by the GGF in each year are considered relevant to biodiversity. The estimated annual expenditure by the GGF for 2008/09 to 2013/14 is presented in Table 6.18, as this is the period for which data is available. There is no apparent trend in this data, so we estimate expenditure for 2007/08 and project future expenditure from 2014/15 to 2020/21 using the average of the available expenditure data; this is N\$0.54m.

Table 6.18: NedBank GGF expenditure on biodiversity-related projects in Namibia, 2008/09 – 2013/14 (N\$ Millions)

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
NedBank GGF	0.77	0.52	0.24	0.75	0.48	0.49

6.9 Private Investments in Wildlife

Total freehold (private) land in 10⁵⁷ regions of Namibia is estimated at 356,533 km² (Mendelsohn, 2006). Lindsey et al. (2013) estimate that approximately 287,000 km² (80.5%) of this involves wildlife-based land uses. Landholders involved in wildlife-based land uses make important investments towards the conservation of wildlife, and consequently biodiversity, which need to be considered.

Using data from NamibRand, a private nature reserve covering around 2,000 km² in southern Namibia, we estimate that their expenditure per square km has grown from approximately N\$500 to N\$1,000 between 2007/08 and 2013/14. This is illustrated in Table 6.19.

Table 6.19: Estimate of expenditure per sq. km by NamibRand, 2007/08 – 2013/14 (N\$)

Project	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Estimate of expenditure per sq. km	500	583	667	750	833	917	1,000

NamibRand is different to many of the other private landholders that engage in wildlife-based land uses as it is primarily a nature reserve. Indeed, Lindsey et al. find that only 32,391 km² (11.3% of total private land engage in wildlife-based land uses) engage in *only* wildlife-based land uses. As such, expenditure in Table 6.19 is unlikely to be representative of expenditure by private landholders per square km on a national basis⁵⁸.

⁵⁷ Erongo, Hardap, Karas, Khomas, Kunene, Omaheke, Omusati, Oshana, Oshikoto and Otjozondjupa.

⁵⁸ It should be noted, however, that some private reserves indicate expenditure per sq km in the region of N\$3,000 in 2013/14, so some areas may have higher expenditures.

To extrapolate expenditure by private landholders to the national level, we make the following assumptions. First, we assume that expenditure per km occurs at the same rate, on average, as in Table 6.19 for those km that are engaged in only wildlife-based land uses. Second, we assume that for those km that are engaged in multiple use, 25% of the expenditure per sq km in Table 6.19 is relevant to biodiversity. This is motivated by Lindsey et al.'s finding that of all the farms with any wildlife-based land uses, on average 23.6% of their income comes from wildlife-based land use.

Table 6.20 presents estimate of biodiversity-relevant expenditure by private landholders at the national level. Biodiversity expenditure by private landholders is estimated to have increased from N\$48m in 2007/08 to N\$96m in 2013/14. We generate high and low scenarios by varying the proportion of Table 6.19 expenditure per sq km by multiple-use landholders that is relevant to biodiversity; for the high scenario this is taken at 50%, and for the low scenario 10%.

Table 6.20: Estimates of total biodiversity-relevant expenditure by private landholders, 2007/08 – 2013/14 (N\$ Millions)

Scenario	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Low	28.93	33.73	38.59	43.39	48.19	53.05	57.85
Central	48.02	55.99	64.06	72.03	80.00	88.07	96.04
High	79.85	93.10	106.52	119.77	133.03	146.44	159.70

Based on the observed increased expenditures by certain private landholders between 2007/08 and 2013/14, it is reasonable to assume that these expenditures will continue to grow through to 2020/21. As a result, we project forward expenditure by private landholders based on trends in the existing data. The N\$160m difference between the high and low annual expenditure estimates in 2020/21 illustrates the uncertainty surrounding the extrapolation. These projections are presented in Table 6.21.

Table 6.21: Estimates of total biodiversity-relevant expenditure by private landholders, 2014/15 – 2020/21 (N\$ Millions)

Scenario	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Low	62.68	67.50	72.32	77.15	81.97	86.79	91.61
Central	104.06	112.06	120.06	128.08	136.08	144.08	152.09
High	173.02	186.34	199.63	212.96	226.27	239.57	252.89

It should be noted that this is a conservative estimate, with some private landholders that are not engaged in wildlife-based land uses still investing in the conservation of biodiversity in other ways. This is a topic that warrants further research.

6.10 NGOs

We reviewed biodiversity-related expenditure by three Namibian NGOs: NNF, IRDNC and DRFN. These and other NGOs contribute significantly to biodiversity conservation in Namibia, but primarily through the implementation of donor and public funded projects.

Indeed, the data from NGOs helps to highlight any significant sources of funds that may have been missed in Sections 6.1 – 6.9. In particular, data from IRDNC reveals four additional sources of funding that had not been previously accounted for: Evangelischer Entwicklungsdienst (EED); the Swiss

Agency for Development and Cooperation (SDC); the Embassy of Finland in Namibia; and the Icelandic International Development Agency (Iceida).

Table 6.22: Estimates of additional biodiversity expenditure through IRDNC, 2007/08 – 2014/15 (N\$ Millions)

Project	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
EED	2.52	2.52	5.26	5.26	4.25	5.23	5.23	4.09
SDC	0.65	0.33	0.83	0.83	-	-	-	-
Finnish Embassy	-	-	-	-	0.99	0.20	0.41	0.20
Iceida	-	-	-	0.42	0.42	0.21	-	-
Total	3.17	2.84	6.09	6.51	5.66	5.64	5.63	4.29

Estimated annual expenditure over the study period is presented in Table 6.22. Although this indicates that we have not been able to capture all non-GRN biodiversity expenditure, it also illustrates that those sources that have been missed are unlikely to make a significant difference to the overall picture of base non-GRN biodiversity expenditure in Namibia.

6.11 Summary of Total Non-GRN Biodiversity Expenditure

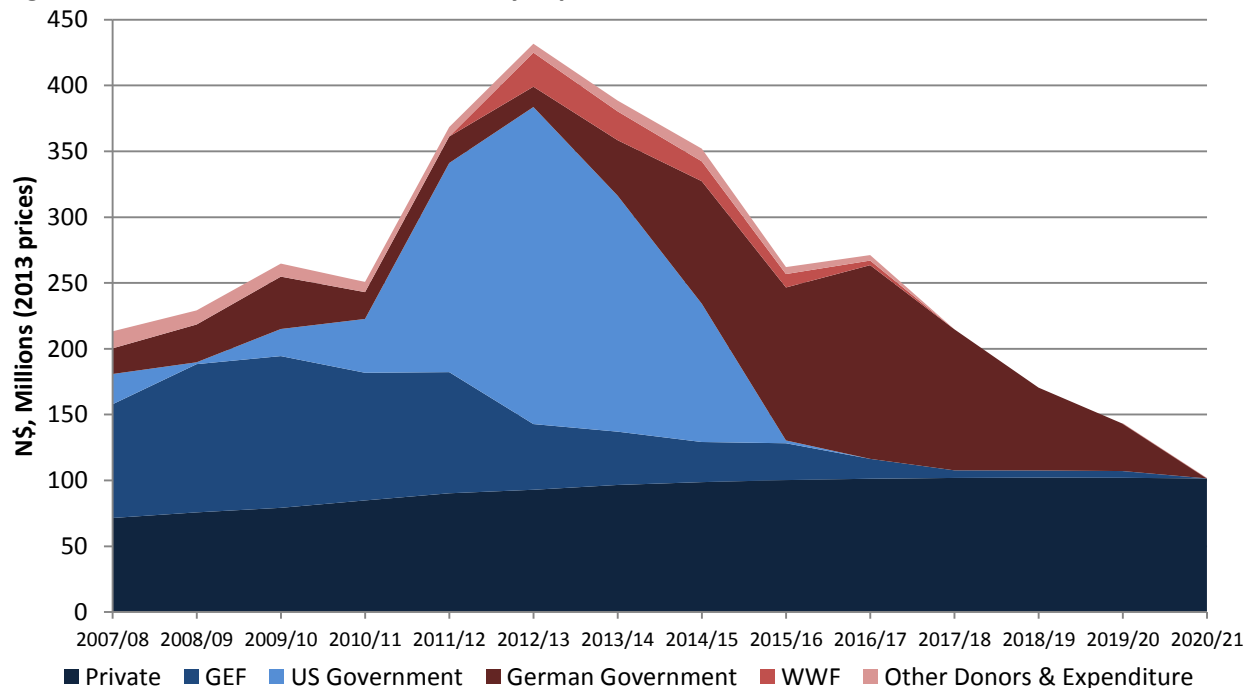
This section presents an overview of the results of the non-GRN biodiversity expenditure review, before discussing some of the assumptions embodied in the data detailed in Sections 6.1 to 6.10.

6.11.1 Central Scenario

Figure 6.1 presents the central scenario of estimated real⁵⁹ non-GRN biodiversity expenditure in Namibia between 2007/08 and 2020/21. All values are in Namibian Dollars (NAD), having been converted from US Dollars (USD) or Euros as necessary. Projected future expenditures are discounted at a rate of 6%. 'Other donors & expenditure' includes EU, FAO, SASSCAL and the additional donors identified through IRDNC data, while 'Private' includes the NedBank GGF and expenditure by PGRs.

The baseline of non-GRN biodiversity expenditure is characterized by a hump-shape. Total nominal non-GRN biodiversity expenditure increased steadily from N\$213.2m in 2007/08 to N\$264.7m in 2010/11, with funding through GEF projects accounting for between 41% and 49% of the total during this period. The conclusion of the first phase of the CFN project results in a dip in total real non-GRN biodiversity expenditure to N\$250.8m in 2010/11, before it rapidly increases by 72% to 431.8m in 2012/13. This sharp increase was driven by increased funding from the US Government, primarily through the MCA project (and in particular the tourism component). In 2012/13, US Government funding represented 56% of total non-GRN biodiversity expenditure, with the MCA project accounting for 98% of that.

⁵⁹ As discussed in Section 5.5, we focus on real values to ensure comparability of expenditure data over time.

Figure 6.1: Total real non-GRN biodiversity expenditure, 2007/08 – 2020/21

Following the peak in 2012/13, the reduction and eventual close out of MCA funding is expected to result in a sharp decline in non-GRN biodiversity expenditure to N\$262.1m in 2015/16. Indeed, the reduction in MCA funding would result in a greater fall in total real non-GRN biodiversity expenditure if it weren't for the increases in German Government expenditure and private expenditures over this period. Furthermore, continued growth in German Government expenditures is expected to result in an uptick in real non-GRN biodiversity expenditure in 2016/17. Declining real non-GRN biodiversity expenditure is evident between 2016/17 and 2020/21, by which point the baseline for real non-GRN biodiversity expenditure is estimated at N\$101.5m

Of note over the whole period is the changing relative importance of different sources of external funds. Funding through GEF projects in 2008/09 accounted for 49% of the total, but by 2012/13 this was just 12% as the MCA project was at its peak. Following the conclusion of the MCA project, German funds are projected to become more important, accounting for 54% and 50% of the estimated baseline of real non-GRN biodiversity expenditure in 2016/17 and 2017/18, respectively (compared to less than 4% in 2012/13). Private expenditures account for the majority of baseline expenditure from 2018/19 (60%) through to 2020/21 (100%)

The decision to group EU, FAO, SASSCAL and the additional donors identified through IRDNC data is because if included individually they would be too insignificant to identify in Figure 6.1; the same applies to grouping the NedBank GGF expenditures with those by private landholders. We can also assess the relative importance of the additional IRDNC donor funding; between 2007/08 and 2014/15, it accounts for 1.1% to 3.0% of real total non-GRN biodiversity expenditure. This indicates that other donor funds that are not identified in this report would be unlikely to significantly alter the overview of non-GRN biodiversity expenditure in Namibia.

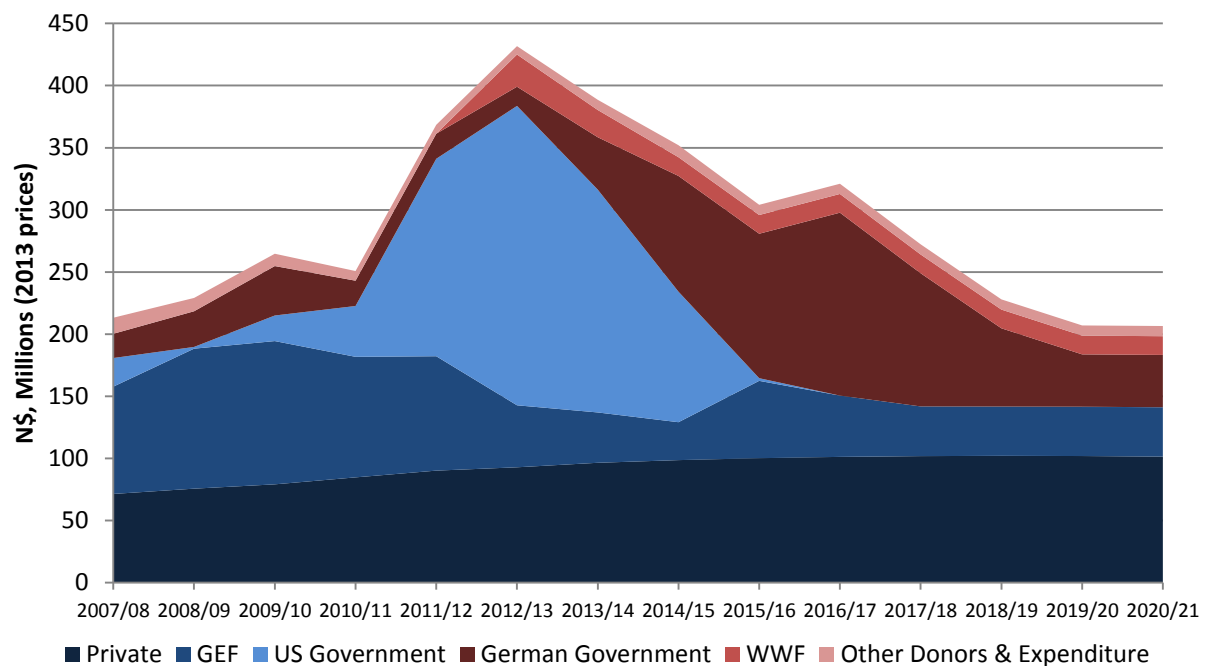
There are two key factors influencing the shape of non-GRN biodiversity expenditure as presented in Figure 6.1: the decision to include only committed funds from donors, and the MCA project. These factors are discussed in greater details in Section 6.11.2 and 6.11.3 respectively, followed by the results of some sensitivity analysis surrounding the central scenario in Section 6.11.4.

6.11.2 Including Non-Committed Projections of Biodiversity Expenditure

Figure 6.1 includes only committed funds from donors, while private expenditure is projected forward through to 2020/21. The primary motivation behind presenting donor expenditures in this way was to enable a relatively simple estimation of the financing gap in implementing NBSAP2; future donor funds may or may not correspond to activities in the action plan, whereas projections of government and private expenditures are assumed to represent the same activities that are already being undertaken by these actors.

However Namibia can expect additional donor funding within the timeframe considered in this report even in the absence of a distinct resource mobilisation strategy, and therefore baseline expenditure (disregarding the estimating of a financing gap for NBSAP2) may be better represented by projecting donor expenditure forwards. Figure 6.2 presents a scenario that maintains biodiversity expenditure by certain donors (namely the GEF, the German Government, WWF and those falling under ‘other donors’) at a given level after their current commitments have finished.

Figure 6.2: Total real non-GRN biodiversity expenditure including projections of non-committed funds, 2007/08 – 2020/21



The GEF-6 allocation to Namibia for the four years from 2015 (shown as 2015/16 in the graph) through 2018 (2018/19) is USD14.24m, representing an average of N\$34m a year over this period⁶⁰. This is additional to any already committed funds over that period. For the purpose of projecting GEF biodiversity-related expenditure through to 2020/21, it is assumed that it is maintained in real terms at its 2018/19 level.

There are no estimates for non-committed funds from other donors, so these are based on past expenditures: German Government expenditure is assumed not to fall below its 2013/14 level (N\$42m) throughout the period⁶¹; WWF expenditure is assumed to be maintained at its 2014/15 level (N\$15m) and expenditure by 'other donors' is assumed to be maintained at its 2013/14 level (N\$8m). There is not expected to be any additional donor funding for biodiversity-related activities from the US Government.

Including these projections of non-committed funds increases non-GRN expenditure in 2015/16 by N\$42m (16%), rising to N\$105m (104%) by 2020/21. However there is still a clear overall downward trend in non-GRN biodiversity expenditure following the 2012/13 peak; biodiversity expenditure in 2020/21 under this scenario still represents a decline of 52% from its 2012/13 estimated value. This is likely to be indicative of Namibia receiving less donor funding going forwards; Namibia's classification as an upper-middle income country has seen donors target their funds towards countries they perceive to be in greater need. This is perhaps already evidenced by the proportion of donor funding for GEF projects decreasing over time; projects that received funding during the early part of our study period, such as ICEMA, SPAN and CPP-ISLM, received relatively large proportions of their total funding from external donors (81%, 37% and 41%, respectively), while newer projects, for example NACOMA Additional Financing (25%) and PASS (24%), received smaller proportions from external donors⁶².

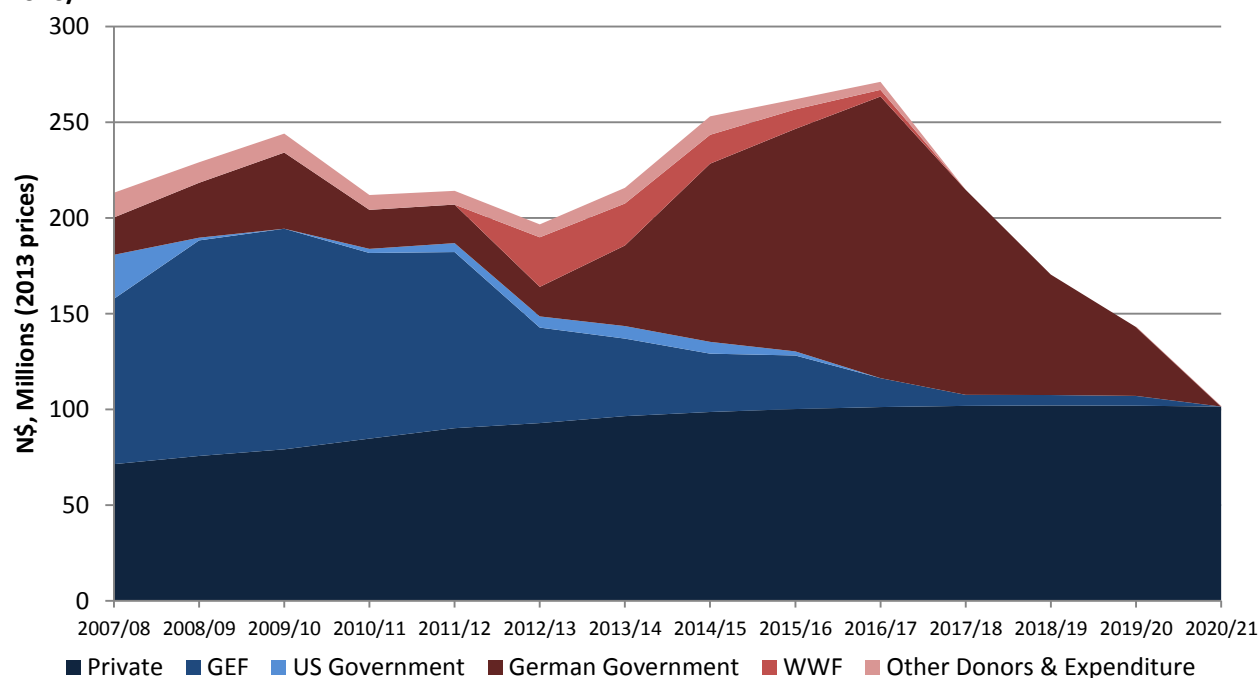
6.11.3 MCA Project

The hump-shape that characterizes Figure 6.1 is driven primarily by the MCA project. This project largely represented capital investments, and was likely a one-off in terms of its scale. Removing the MCA project presents a very different picture of non-GRN biodiversity expenditure under the central scenario, as demonstrated in Figure 6.3. In 2012/13, when the MCA project was at its peak, there is now a small trough, but the dramatic increase in German Government expenditure is even more evident, with Figure 6.3 reaching a maximum in 2016/17.

⁶⁰ Based on the exchange rate used for converting US Dollars into Namibian Dollars for 2013. This may overstate the total amount to be spent on biodiversity as it also includes climate change and land degradation (biodiversity is 46% of the total allocation, although these focal areas are closely interlinked). However on the other hand the Namibian Dollar has been weakening against the US Dollar since 2013 which could increase the allocation in Namibian Dollar terms.

⁶¹ Annual expenditures by the German Government on biodiversity-related activities in Namibia are expected to be significantly greater than this from 2014 – 2019. However these expenditures are linked to projects with significant capital outlays (for example Integrated National Park Management) which should not need to be continued at the same level in the future. Furthermore the annual real value of N\$42m may be optimistic given that German Government expenditures on biodiversity-related activities in Namibia did not reach this level until 2013/14.

⁶² The NAFOLA project is difficult to assess in this regard because the breakdown of co-financing is not provided, but this would generate useful additional evidence for discussion.

Figure 6.3: Total real non-GRN biodiversity expenditure excluding the MCA project, 2007/08 – 2020/21

The exclusion of the MCA project helps to illustrate just how significant its funding has been, and that we cannot necessarily expect a return to levels of donor funding seen between 2011/12 and 2013/14. However, alongside capital investments, the MCA project has also provided crucial support to Conservancies in institutional development and attempting to ensure their future financial stability; its conclusion will represent a significant drop in the level of assistance these Conservancies receive. Additional funding could be required to maintain some assistance for these Conservancies to ensure that they are financially sound and institutionally stable in the long run, otherwise there could be resultant negative impacts on biodiversity.

6.11.4 Sensitivity Analysis

Analyses using the high and low scenarios (which only affect private expenditures) and 8% and 4% discount rates (which affect expenditure from 2014/15 onwards) are presented in Figures G2.1 – G2.4. Changing the discount rate has only a relatively small impact on biodiversity expenditure through 2020/21⁶³, while the high and low scenarios increase and decrease estimated 2020/21 expenditure by 66% and 40%, respectively. As this is driven by estimates of expenditure by private landholders, this illustrates the extent of uncertainty surrounding expenditures from this source.

As with GRN biodiversity expenditure, the estimates of real non-GRN biodiversity expenditure presented in this report represent underestimates of actual real non-GRN biodiversity expenditure in Namibia. Due to the short timeframe for completing the report, it was not possible to contact all relevant donors and private sector actors. Our analysis of additional donor funding to NGOs indicates that the extent to which donor funding was underestimated is likely to be proportionally

⁶³ Estimates of biodiversity expenditure increase by 14% and decrease by 12%, respectively.

quite small, although there is considerable uncertainty about the extent of private sector biodiversity expenditure, and this would warrant further research. Furthermore, to reiterate what was stated in Section 5.5, the most important outcome is the clear decreasing trend in baseline non-GRN expenditure in the latter half of the study period.

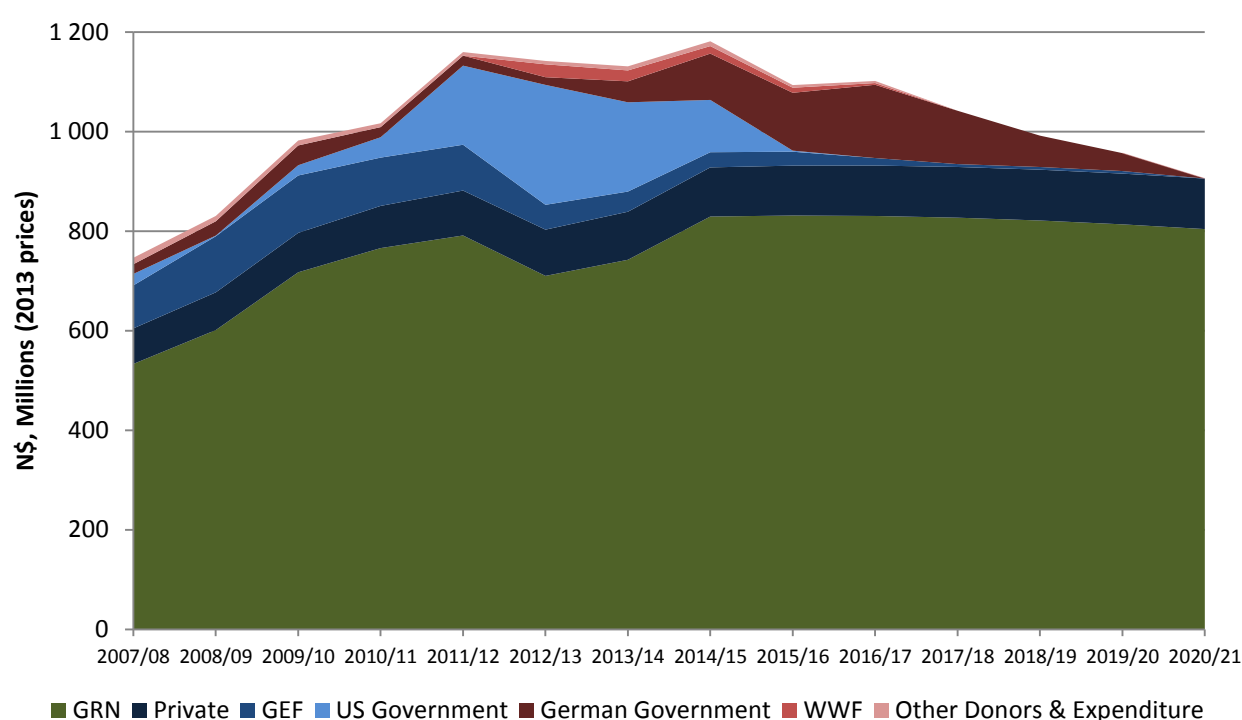
7 Total Biodiversity Expenditure

This section brings together the estimates of baseline GRN expenditure from Section 5 and the estimates of baseline non-GRN expenditure from Section 6 to provide an overview of the estimated baseline of total biodiversity expenditure in Namibia for the period 2007/08 to 2020/21.

7.1 Summary of Total Biodiversity Expenditure

Total real biodiversity expenditure is presented in Figure 7.1. It peaks at N\$1,181m in 2014/15, with a local maximum of N\$1,160m in 2011/12. Following 2014/15, it decreases by 23% to N\$905.5m by the end of the study period in 2020/21. GRN expenditure accounts for between 62% (2012/13) and 89% (2020/21) of the total baseline expenditure.

Figure 7.1: Total real biodiversity expenditure, 2007/08 – 2020/21



Between 2007/08 and 2009/10, total real biodiversity expenditure increased steadily, with the proportions of GRN expenditure, donor funding and private expenditure staying fairly stable. From 2009/10 to 2011/12, the growth of GRN biodiversity expenditure slowed, and was initially reflected in reduced growth of total expenditure. However, as the funding for the MCA project started to pick up in 2011/12, total real biodiversity expenditure increased by 14%, while real GRN biodiversity expenditure increased by just 3.3%.

Despite funding for the MCA project continuing to increase, real total biodiversity expenditure is estimated to fall by 1.5% in 2012/13 due to a reduction in GRN biodiversity expenditure and the end of two GEF projects. This decrease in total biodiversity expenditure is projected to continue through to 2013/14 in spite of a slight increase in GRN biodiversity expenditure, as MCA project funding declines from its peak and another GEF project is concluded.

Sharp increases in GRN biodiversity expenditure and funding from the German Government drive an increase in total real biodiversity expenditure to its maximum in 2014/15, which is also the last year

that the MCA project is funded. From this year forwards, the end of MCA funding and decreases in baseline GRN expenditure and donor funding result in a gradual decline in the baseline projection of total biodiversity expenditure, although there is a slight uptick in 2016/17 that is a result of the increase in real non-GRN biodiversity expenditures in this year.

The data presented in Figure 7.1 follows the assumptions adopted in the central scenario for real GRN and non-GRN biodiversity expenditure, namely that a discount rate of 6% is used for expenditures after 2013/14 and that only committed donor funds are included. These can be relaxed to assess how their impact on the baseline of total real biodiversity expenditure.

Increasing the discount rate to 8% brings peak real biodiversity expenditure forward to 2011/12 at N\$1,160m, with 2014/15 expenditure falling by 1.9% to N\$1,159m. From 2014/15, total real biodiversity expenditure decreases by 31% to N\$794m. The lower discount rate of 4% maintains 2014/15 as the maximum, and results in a much slower decline in biodiversity expenditure after this point. The 8% and 4% discount rates consequently result in 2020/21 expenditure that is 12.3% lower and 14.3% higher, respectively, than when a discount rate of 6% is used. These data are presented in Figures H1.3 and H1.4, respectively.

The alternative high and low scenarios have only a small impact on pre-2015/16 biodiversity expenditure, with 2014/15 baseline biodiversity expenditure increased and reduced by a modest 5.8% and 3.7%, respectively. In both cases, however, the post-2014/15 picture is quite significantly different from the central scenario. Although a downward trend from 2014/15 to 2020/21 is still apparent in the high scenario, it is much less steep, and total baseline biodiversity expenditure is projected to fall by 10.8% to N\$1,115m in 2020/21. In contrast, the low scenario would represent a drastic reduction of 37.4% in total baseline biodiversity expenditure between 2014/15 and 2020/21. These data are presented in Figures H1.1 and H1.2, respectively.

Including projections of donor expenditure, as detailed in Section 6.11.2, affects expenditures from 2015/16 onwards. Real expenditure increases by 3.8% (N\$42m) in 2015/16, rising to 11.6% (N\$105m) in 2020/21 under these projections; this is presented in Figure H1.5. Even though these projections may be somewhat optimistic, the overall picture of declining total real biodiversity expenditure after 2014/15 is maintained, and total real biodiversity expenditure in 2020/21 is within the range of the expenditure values generated from the sensitivity analysis discussed above.

The main conclusion to take from varying the discount rate, adopting high and low scenarios and projecting forwards donor expenditure is that, in all cases, the baseline of total real biodiversity expenditure in Namibia is set to decrease between 2014/15 and 2020/21. The consequent implication is that in order to simply maintain the current level of biodiversity-related activities in Namibia, it is likely that additional resources will need to be mobilized.

7.2 Baseline biodiversity expenditure review by major strategy group

Section 2 outlines the five categories of biodiversity strategies as defined in the BIOFIN workbook. Each of the biodiversity – relevant activities comprising GRN biodiversity expenditure in Section 5, and the projects and other non-GRN expenditures in Section 6, were classified into these five categories. In order to estimate GRN expenditure on the different strategies from 2012/13 – 2020/21, we take the average of the proportional expenditure on the different strategies between 2010/11 and 2012/13.

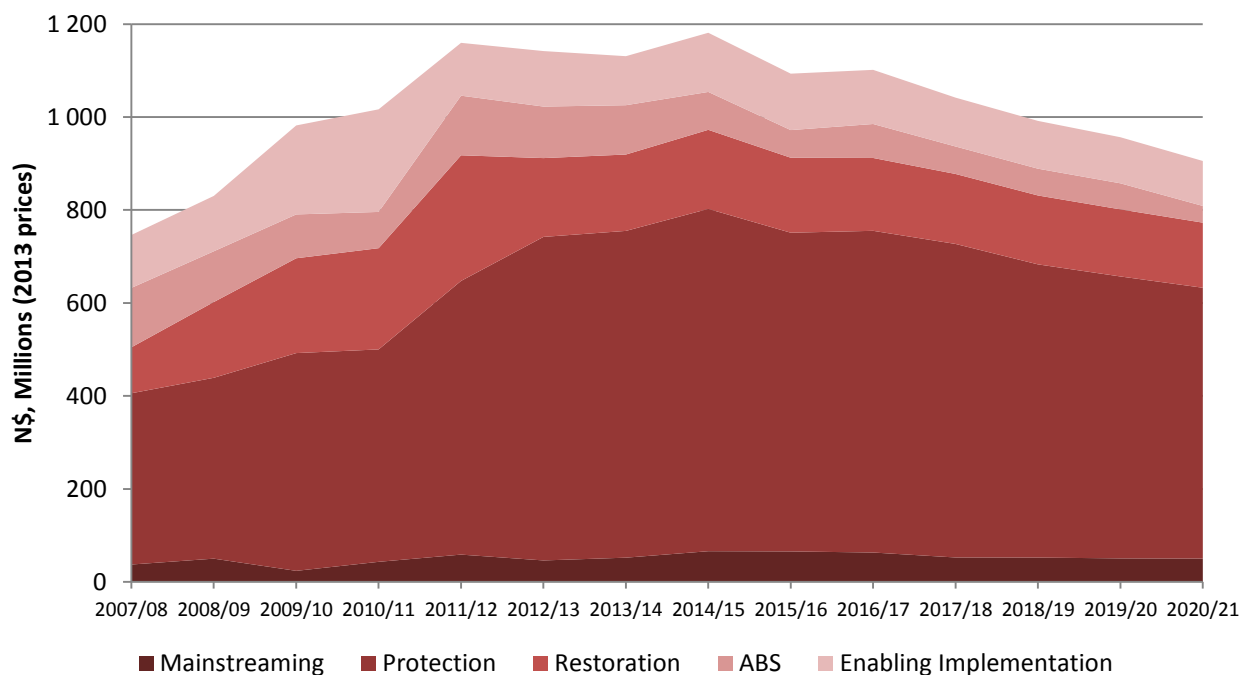
Figure 7.2: Total real biodiversity expenditure by major strategy group, 2007/08 – 2020/21

Figure 7.2 presents real biodiversity expenditure between 2007/08 and 2020/21 broken down by each of the five strategies. It is estimated that protection strategies account for the largest proportion of biodiversity expenditure in Namibia, between 45% (2010/11) and 65% (2017/18) of the total, followed by restoration strategies which account for 13% – 23%, enabling implementation 10% - 20%, ABS 4% - 17% and mainstreaming 2% – 6%. A breakdown of estimated expenditure by strategy and actor can be found in Tables H2.1 – H2.10.

These estimates should be treated with caution, however. The classification of biodiversity expenditure into these five categories is conducted by reviewing descriptions of the activities or the projects that underlie the expenditure. It is likely that in some cases this classification may not attribute an activity being relevant to a particular strategy because it was not clear from the description. Furthermore, many activities or projects are relevant to multiple categories, and it is not possible to disaggregate expenditure at the level of the biodiversity strategies; as a result, assigning proportions of expenditure by these activities or projects to different strategies is difficult to do accurately.

It is therefore necessary to make relatively broad assumptions both when classifying biodiversity expenditure into the different strategies, and when assigning proportions of biodiversity expenditure to the different strategies. As an example, we may believe that the proportion of biodiversity expenditure spent on mainstreaming indicated in Figure 7.2 underestimates the true proportion, but that many projects do not necessarily make clear their contribution to mainstreaming. We suggest that the disaggregation of biodiversity expenditure into these categories is only taken as indicative.

7.3 CBD benchmark for resource mobilisation

Decision XI/4, adopted by the Conference of the Parties to the CBD at its eleventh meeting, invited Parties to submit average annual biodiversity funding for the years 2006-2010 as a preliminary baseline through the preliminary report framework (UNEP/CBD/COP/11/14/Add.1). This would contribute to the reporting and monitoring of resources mobilised at both national and global levels.

This report presents estimates of GRN biodiversity expenditure from 2006/07 to 2020/21 and estimates of non-GRN biodiversity expenditure from 2007 to 2020. Given that the analysis in this report has been undertaken in line with the guidance provided in the preliminary reporting framework, a simple extrapolation of non-GRN biodiversity expenditure to 2006 is all that is required to report the figures as required by Decision XI/4; for simplicity, we assume that real non-GRN expenditure in 2006 is the same as that estimated for 2007.

Between 2006 and 2010, we estimate that a total of N\$3,207m was spent on biodiversity-related activities in Namibia in nominal terms. In constant 2013 prices, this corresponds to approximately N\$4,218m. 72% of biodiversity expenditure over this period came from GRN. These data are presented in Table 7.1.

Table 7.1: Estimates of total real biodiversity expenditure by GRN and non-GRN sources, 2006 – 2010 (N\$ Millions, 2013 prices)

Project	2006	2007	2008	2009	2010	Total
GRN	429.99	533.07	601.16	717.19	765.79	3,047.21
Non-GRN	213.24	213.24	229.16	264.72	250.78	1,171.15
Total	643.23	746.31	830.32	981.91	1,016.57	4,218.36

8 Conclusions

This report has provided an in-depth review of biodiversity expenditure in Namibia, involving GRN and non-GRN expenditure between 2007/08 and 2020/21. The main findings and conclusions of the report are presented below. All values expressed in real terms are in 2013 prices.

8.1 GRN Biodiversity Expenditure

Our central estimate of baseline GRN biodiversity expenditure suggests that real GRN biodiversity expenditure will fall by 3.3% between 2015/16 and 2020/21. The main implication of this is that, without the mainstreaming of biodiversity into national budgets and accounts and the subsequent additional mobilisation of resources, the range of biodiversity-related activities supported by the Namibian Government is likely to be reduced. This is particularly the case among the non-MET sources of GRN biodiversity expenditure.

Sensitivity analysis surrounding adopting different discount rates or utilising different scenarios for projecting growth rates of biodiversity expenditure generally supports this conclusion. Although there is considerable uncertainty about the extent of GRN biodiversity expenditure by 2020/21, the different scenarios indicate that further action will need to be taken to prevent GRN biodiversity expenditure falling in the future, even in the most optimistic scenario.

In addition to this, biodiversity expenditure as a percentage of both total GRN expenditure and Namibian GDP has been decreasing since 2010/11. Projecting this relationship forwards using forecasts of future government expenditure and GDP indicates that biodiversity expenditure as a percentage of these indicators will continue to fall. Perhaps the most striking aspect of the projected decline in GRN biodiversity expenditure is therefore that it represents a falling priority for Namibian public funds, and is in the context of a growing economy.

8.2 Non-GRN Biodiversity Expenditure

Non-GRN biodiversity expenditure over the 2007/8 – 2020/21 period is characterised by a hump-shape. This hump-shape is driven primarily by the MCA project, which has contributed approximately N\$720m to total non-GRN biodiversity expenditure in real terms between 2009 and 2014. Real non-GRN biodiversity expenditure is estimated to peak in 2012/13 at N\$431.8m, before falling by 76% by the end of the study period in 2020/21.

There is a considerable shift in the relative importance of different sources of non-GRN expenditure over the timeframe reviewed in this study. Initially, GEF-funded projects were the single largest contributors to these sources of expenditure, but in subsequent years this has been US Government funds and private landholders, with the German Government making a significant and sustained contribution.

We recognize that the decline in funding from donors in part reflects our decision not to extrapolate their expenditure forward beyond what is already committed. In order to assess the effect of this assumption, a scenario is presented where donor funding is projected forwards; this increases non-GRN biodiversity expenditure in 2020/21 by 104% (N\$105m). However expenditure in 2020/21 under this scenario would still represent a decline of 52% from its estimated 2012/13 level.

Furthermore, the reduction in GEF funding is not simply because the GEF-funded projects are being reduced in their total value, but also that the Namibian Government is being asked to contribute

proportionally more in co-funding. It appears that this is a wider symptom of changing priorities, with donors keen to focus on countries they assess to be in greater need of assistance, particularly as a result of Namibia's recent classification as an upper-middle income country. Indeed, in order to generate additional donor funding in the future, the Namibian government may have to commit proportionally more co-financing.

The reduction in non-GRN biodiversity expenditure is also likely to represent a reduction in the scale of biodiversity-related activities that can be supported in Namibia. However, some of this expenditure is focused on capital investments and capacity building, which should not need to be continued to the same extent in order to maintain the same level of activities. It is consequently not as clear cut as in GRN expenditure.

8.3 Total biodiversity expenditure

Total real biodiversity expenditure is estimated to peak at N\$1,181m in 2014/15, with a local maximum occurring in 2011/12 at N\$1,160m. From 2014/15 to 2020/21, total real biodiversity expenditure is projected to decrease by 23% to N\$905.5m. GRN expenditure accounts for between 62% (2012/13) and 89% (2020/21) of the total baseline expenditure, with the vast majority of the post 2014/15 fall in expenditure as a result of reductions in donor funding.

We assess how the baseline of total real biodiversity expenditure is affected by changing the discount rate, adopting high and low scenarios of GRN and private expenditure and projecting donor expenditure forwards to 2020/21. Although changing these assumptions can alter the actual levels of expenditure quite significantly, the main outcome from this analysis is that, in all cases, the baseline of total real biodiversity expenditure in Namibia is, on current projections, set to decrease between 2014/15 and 2020/21. This provides further support to the need to mobilize resources for biodiversity conservation in Namibia.

The BIOFIN Workbook requires that biodiversity expenditure is presented in terms of five different strategies: mainstreaming biodiversity; protection, restoration; access and benefits sharing; and enabling implementation. We estimate that majority of biodiversity expenditure in Namibia is focused on protection strategies (between 45% and 65%), with as little as 2% - 6% being spent on mainstreaming. The outcomes of this analysis should be largely taken as indicative, as it is difficult to split expenditures by projects and activities accurately among these activities. However, they may still illustrate the need for greater resources directed towards mainstreaming.

8.4 Recommendations

This report indicates that in excess of N\$1bn is currently being spent on biodiversity conservation in Namibia. This is an impressive figure, but both GRN and non-GRN biodiversity expenditure are projected to decline from their current levels. Furthermore, GRN biodiversity expenditure as a percentage of total GRN expenditure has been declining since 2010/11, and this is projected to continue; the implication is that biodiversity is becoming a lower priority for Namibian public funds.

In order to reverse this trend, there is a clear need for greater mainstreaming of biodiversity into the Namibian Government's accounting, budgeting and planning processes, and also into the private sector. To support this mainstreaming, it is likely that the total economic costs and benefits of biodiversity and its conservation need to be better understood.

References

Lindsey, P. A., Havemann, C. P., Lines R. M., Price A. E., Retief, T.A., Rhebergen, T., Van der Waal, C. and S. S. Romañach (2013). Benefits of wildlife-based land uses on private lands in Namibia and limitations affecting their development. *Oryx*, 47, pp 41-53. doi:10.1017/S0030605311001049.

Mendelsohn, J. (2006). Farming Systems in Namibia. *Namibian National Farmers Union, Windhoek, Namibia*.

Ministry of Environment and Tourism (2013). Report on the Namibia Tourist Exist Survey 2012-2013. *Produced by Millenium Challenge Account for the Directorate of Tourism*. Windhoek, Namibia.

Ministry of Finance (2012). 2012/13 Budget Statement: Fiscal Sustainability and Job Creating Growth. *Presented by Hon. Saara Kuugongelwa-Amadilha, Minister of Finance*.

Ministry of Finance (2014). Statement for the 2014/15 Budget: Fiscal Sustainability and Job-Creating Growth – Doing More with Less. *Presented by Hon. Saara Kuugongelwa-Amadilha, Minister of Finance*.

NACSO (2013). The state of community conservation in Namibia – a review of communal conservancies, community forests and other CBNRM initiatives (2012 Annual Report). NACSO, Windhoek.

UNDP (2014). Transforming Biodiversity Finance: The Biodiversity Finance (BIOFIN) Workbook for assessing and mobilizing resources to achieve the Aichi Biodiversity Targets and to implement National Biodiversity Strategies and Action Plans. *Version 7.0, February 10, 2014*.