THE REPUBLIC OF UGANDA

THE BIODIVERSITY EXPENDITURE REVIEW (BER)

DECEMBER 2017

Biodiversity Finance Initiative (BIOFIN)

NEMA National Environment Management Authority
ENSURING SUSTAINABLE DEVELOPMENT

This project is co-funded by the European Union

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

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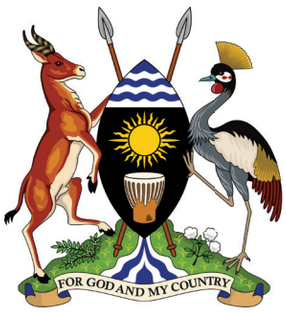

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FOREWORD

I am pleased to present to you the Biodiversity Expenditure Review report 2016 which provides comprehensive information on financing biodiversity conservation and management in Uganda for the fiscal period 2005/6-2014/15. The report also evaluated the effectiveness of the current budget spending on ecosystems and environmental degradation.

This review analysed biodiversity financing based on four major sectors of agriculture, tourism, energy and water and environment. The findings revealed that on average environment and biodiversity conservation was allocated about UGX 91 billion in real terms per fiscal year that translates to about 1.2% of the annual budget for GOU.

On the other hand, protection and restoration seems to be the backbone of biodiversity and environmental conservation for economic development. In light of protection and restoration, for the period under review, reduction and management of negative impacts while enhancing positive impacts on biodiversity was allocated about 13% of the biodiversity budget translating into about UGX 14.6 billion per fiscal year which is about **0.15%** of the national budget. This allocation seems too little to have an impact on the already degraded environment and ecosystems.

Findings revealed that improvement in environment has been observed in only about 18% of the communities. Furthermore, 65% of the communities observed that environmental conservation had worsened. This implies that the current budget and strategies in conserving the environment and biodiversity seems not effective. Not surprising forests and wetlands were the most degraded natural resources in Uganda. For example, about 48% of the forests and 32 % of the wetlands have been degraded by 2015. The rate of degradation of forests and wetland shows the high dependence of the population on the natural resources for their livelihoods

For God and my country

Dr. Tom O. Okurut
EXECUTIVE DIRECTOR
NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY (NEMA)

ACKNOWLEDGMENTS

This Biodiversity Expenditure Review (BER) is a result of collaboration and support of various institutions and individuals. The National Environment Management Authority (NEMA) would like to acknowledge with profound thanks the contribution of NEMA Board, the experts, advisors, consultants, BIOFIN Technical Steering Committee members, representatives from Government Ministries, Departments and Agencies (MDAs), the Private Sector, Indigenous Peoples and Local Communities (IPLCs), and Civil Society Organisations (CSOs).

NEMA is grateful to the following institutions for their contribution and active participation in developing the BER:

Animal Genetic Resources Centre
Aquaculture Research & Development Centre - Kajjansi
Buikwe District Local Government
Bujagali Energy Limited (BEL)
Bwindi Impenetrable National Park
Department of Forestry, Biodiversity and Tourism, Makerere University
Department of Water Resources Management (DWRM)
International Union for the Conservation of Nature (IUCN)
Isimba Hydro Power Project
Jinja District Local Goverment
Kayunga District Local Government
Makerere University Department of Biological Sciences
Ministry of Agriculture, Animal Industry and Fisheries Department of Fisheries (MAAIF)
Ministry of Finance, Planning and Economic Development (MoFPED)
Ministry of Tourism, Wildlife and Antiquities (MTWA)
Ministry of Water and Environment (MWE)
Mukono District Local Government
National Agricultural Research Organization (NARO) and its affiliate Research Institutes
National Animal Genetic Resources Centre and Data Bank (NAGRC&DB)
National Fisheries Resources Research Institute (NaFIRRI)
National Forestry Authority (NFA)
National Planning Authority (NPA)
Nature Uganda
Oyam District Local Government
Plant Genetic Resource Centre, Entebbe
Rhino Fund Uganda
The Technical Committee on Biodiversity Conservation
Total E&P Uganda
Uganda Bureau of Statistics (UBOS)
Uganda Export Promotion Board (UEPB)
Uganda National Council for Science and Technology (UNCST)
Uganda Wildlife Authority (UWA)
Uganda Wildlife Conservation Education Centre (UWCEC)
Wetlands Management Department (WMD)
Wildlife Conservation Society (WCS)
World Wide Fund for the Conservation of Nature (WWF)

NEMA further acknowledges the technical support from the United Nations Development Programme (UNDP) Uganda Country Office, Global Biodiversity Finance Initiative (BIOFIN) team. Special thanks also go to the European Union (EU), Government of Germany, Norway, and Switzerland for the financial support. NEMA is also grateful to the Convention on Biodiversity (CBD) National Focal Point for effectively coordinating and guiding the BIOFIN project on behalf of Government. NEMA extends appreciation to Ms Monique Akullo, for supporting the CBD National Focal Point in coordinating the BIOFIN implementation activities in Uganda.

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Acronyms

BER	Biodiversity expenditure Review
BEL	Bujagali Energy Limited
BIOFIN	Biodiversity Finance Initiative
CBD	Convention on Biological Diversity
CCU	Climate Change Unit
CDM	Clean Development Mechanism
CFRs	Central Forest Reserves
CNDF	Comprehensive National Development Framework
COCTU	Coordinating Office for Control of Trypanosomiasis in Uganda
CSOs	Civil Society Organizations
DDA	Dairy Development Authority
DAR	Directorate of Animal Resources
DCC	Directorate of Climate Change
DCR	Directorate of Crop Resources
DEA	Directorate of Environmental Affairs
DESS	Department of Environmental Support Services
DES	Department of Environmental Services
DFR	Directorate of Fisheries Resources
DDA	Dairy Development Authority
DWRM	Department of Water Resources Management
ENRs	Environment & Natural Resources
EU	European Union
FSSD	Forestry Sector Support Department
FMIS	Financial Management Information System
FSSD	Forestry Support Services Department
GDP	Gross Domestic Product
GHG	Green House Gas
GOU	Government of Uganda
HTTI	Hotel and Tourism Training Institute
IUCN	International Union for the Conservation of Nature
KP	Kyoto Protocol
KRAs	Key Result Areas
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MEMD	Ministry of Energy and Mineral Development
MoFPED	Ministry of Finance, Planning and Economic Development
MTEF	Medium –Term Expenditure Framework
MTTI	Ministry of Tourism, Trade and Industry
MTWA	Ministry of Tourism, Wildlife and Antiquities
MWE	Ministry of Water and Environment
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organization
NAGRC&BD	National animal Genetic Resources Center and Data Bank

NBSAP	National Biodiversity Strategy Action Plan
NDA	National Designated Authority
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NFP	National Forestry Plan
NGOs	Non-Governmental Organizations
NPA	National Planning Authority
NSCG	Non-Sectoral Conditional Grant
NTR	Non-Tax Revenues
ODA	Official Development Assistance
PGRC	Plant Genetic Resource Centre
PMA	Plan for Modernization of Agriculture
REDD	Reducing Emission from Deforestation and Forest Degradation
RWSS	Rural Water Supply and Sanitation
SPRs	Sector Performance Reports
TCC	Tourism Coordination committee
UBOS	Uganda Bureau of Statistics
UCDA	Uganda Coffee Development Authority
UCDO	Uganda Cotton Development Organization
UCOTA	Uganda Community Tourism Association
UGGDS	Uganda Green Growth Strategy
UNDP	United Nation Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNMA	Uganda National Meteorology Authority
WPC	Water Policy Committee
WMZ	Water Management Zones
UTA	Uganda Tourism Association
UTB	Uganda Tourism Board
UWA	Uganda Wildlife Authority
UWCEC	Uganda Wildlife Conservation Education Centre
UWSS	Urban Water Supply and Sanitation
UWTI	Uganda Wildlife Training Institute
WfP	Water for Production
WMD	Wetland Management Department
WRM	Water Resources Management
WSS	Water Supply & Sanitation
WTTC	World Travel & Tourism Council
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

Sufficient financial resources are pivotal to the process of scaling up efforts geared towards achieving the 20 Aichi Targets defined in the CBD's Strategic Plan for 2011-2020. The Biodiversity Finance Initiative (BIOFIN) has been launched to bridge the financing gap for biodiversity management which is a hindrance for compliance by the Parties to the Convention on Biological Diversity (CBD).

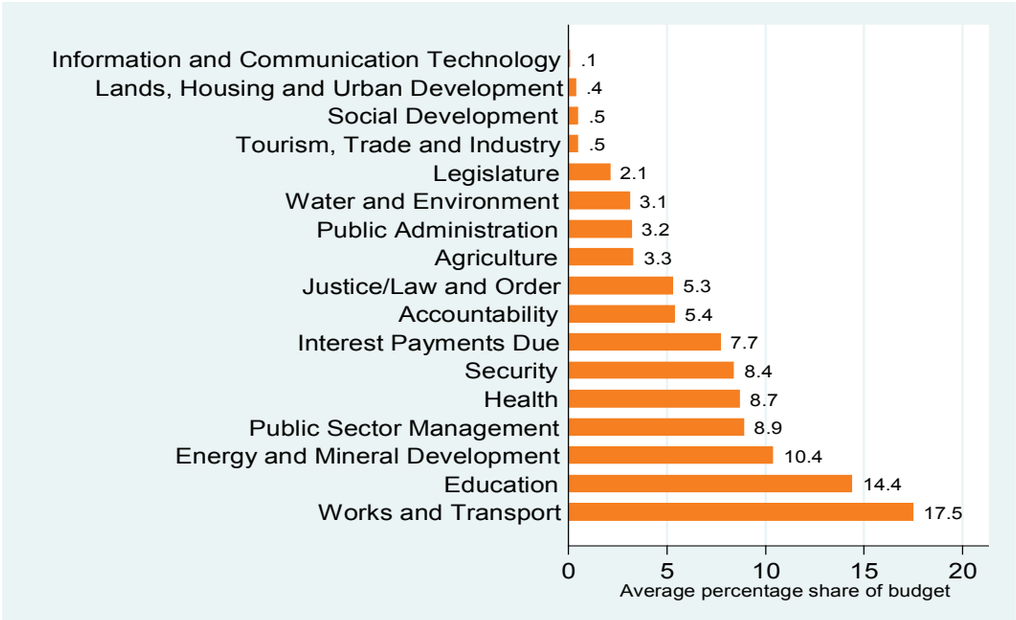
BIOFIN seeks to address the financing needs for achieving the Aichi Biodiversity Targets estimated to range between US$150 and 440 billion annually as calculated by the High-level Panel on Global Assessment of Resources for Implementing the CBD Strategic Plan. To help countries appreciate the importance of biodiversity and subsequently bridge the financing gap, the ministries responsible for finance, economics, planning and environment were tasked to take lead in the national level activities. The implementation of the BIOFIN in Uganda was hinged on the seven strategic objectives of the National Biodiversity Strategic Action Plan II (NBSAP II) which are: (1) to strengthen stakeholder co-ordination and frameworks for biodiversity management, (2) to facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity, (3) to put in place measures to reduce and manage negative impacts on biodiversity, (4) to promote the sustainable use and equitable sharing of costs and benefits of biodiversity, (5) to enhance awareness and education on biodiversity issues among the various stakeholders, (6) to harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment, (7) to promote innovative sustainable funding mechanisms to mobilize resource for implementing the Strategy.

These objectives were operationalised through the following steps:

i. Analysis of the integration of biodiversity and ecosystem services in sectoral and development policy, planning and budgeting;
ii. Assessing future financing flows, needs and gaps for managing and conserving biodiversity and ecosystem services;
iii. Developing comprehensive national Resource Mobilisation Strategy to meet the biodiversity finance gap; and,
iv. Initiating implementation of the Resource Mobilisation Strategy at national level.

Budget allocations for major biodiversity related sectors

Figure 106 Relative expenditures of three ministries relative to government budget over time



Trend in budget share of the major biodiversity ministries

At the national level, the budget favours social service sectors (security, health and education) and industry sectors (works and transport, energy and mineral development) over the more biodiversity related sectors (agriculture, forestry and fishing, water, and tourism).

Biodiversity financing

This review analysed biodiversity financing based on four major sectors of agriculture, tourism, energy, and water and environment. The findings revealed that on average biodiversity was allocated about **UGX 91** billion in real terms per fiscal year that translates to about **1.2 per cent** of the annual budget for GOU. The biodiversity budget allocations were linearly increasing at an average rate of about UGX 7.8 billion in real terms per fiscal year.

Biodiversity Expenditure Review for Water and Environment

The Water and Environment sector comprises of two sub-sectors: the Environment and Natural Resources (ENR) and Water and Sanitation sub-sectors. The ENR sub-sector expectedly had a budget that was responsive to biodiversity management financing with average of 6 % of the budget going towards biodiversity management for the fiscal period 2005/6- 2014/15.

Biodiversity Expenditure Review for Agriculture, Animal Industry, and Fisheries

Within the Ministry of Agriculture with the highest expenditure on biodiversity management were the (Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) headquarters and National Agricultural Research Organization (NARO). The Uganda Coffee Development Authority (UCDA) and the Cotton Development Organization (CDO) are agencies under the agriculture sector that also maintain a small but significant expenditure in organic and sustainable value chains alongside expenditures in the dominant conventional value chains. Findings revealed that only 12.1% of MAAIF budget was spent on agro-biodiversity and the expenditures were growing at an average rate of about UGX 4.24 billion per fiscal year.

Biodiversity Expenditure Review for Tourism, Wildlife, and Antiquities

The Tourism and Wildlife Sector had the highest relative attribution of expenditure going to biodiversity management. The Uganda Wildlife Authority (UWA), for instance, had 100% of its expenditure attributed to biodiversity management while Uganda Wildlife Education Centre had a 75 % attribution of total expenditure going towards biodiversity management. Findings revealed that about 96% of the expenditures at MTWA are biodiversity.

Furthermore, the distribution of biodiversity budget allocations across the seven strategic objectives was also analysed. Findings revealed that about 46 per cent of the biodiversity budget that is about **0.55 per cent** of the national budget was allocated for strengthening stakeholders' partnerships and policy formulation this translated to about **UGX 49.8** billion per fiscal year. Therefore, there is need to evaluate the effectiveness of the policies in enhancing biodiversity conservation.

Research and development are very important tools in the sustainable management and utilization of natural resources. Findings revealed that capacity building for research on biodiversity was allocated about 14 per cent of the budget translating into **UGX 15** billion per fiscal year; which is about **0.16 per cent** of the national budget. This allocation seems to be rather on the lower side given the importance of research in establishing the value and methods and/or approaches for sustainable utilization of the natural resources. There is need for increased investment in research on biodiversity and environment to enable quantification of the value and impacts.

On the other hand, protection and restoration is the backbone of biodiversity conservation for economic development. For the period under review, reduction and management of negative impacts while enhancing positive impacts on biodiversity was allocated about 13 per cent of the biodiversity budget translating into about **UGX 14.6** billion per fiscal year; about **0.15 per cent** of the national budget. This allocation is too little to have an impact on the already degraded environment and ecosystems. There is an urgent need to increase the budget allocations for restoration and protection of biodiversity. Furthermore, there is need to set up a system to protect and monitor the environment and natural resources.

For sustainable utilization of natural resources, government and private sector must invest in restoration and protection of biodiversity in Uganda. Biodiversity conservation is also managed through awareness and education of stakeholders. Our findings revealed that enhancing awareness and education on biodiversity among stakeholders was allocated about 18.6 per cent of the biodiversity budget translating into about UGX 21.2 billion per fiscal year. The annual budget of about **UGX 21.2** billion per fiscal year which is about **0.22 per cent** of the national budget might not be sufficient to cause the desired awareness in a population of about 36 million people.

Sustainable use and equitable sharing of costs and benefits of biodiversity with the population is critical in protection of natural resources. Lack of clear strategies on how the benefits of biodiversity are share among the population always leads to unsustainable use of natural resources hence their depletion. Findings revealed that promotion of sustainable use and equitable sharing of costs and benefits of biodiversity was allocated only 8.5 per cent of the biodiversity budget translating into **UGX 9** billion per fiscal year. This allocation on sustainable use and equitable sharing of benefits which is about **0.1 per cent** of the national budget seems to be too little to stop the growing population from degrading the natural resources. It should be noted that over 75 per cent of the population in Uganda depend on the natural resources for their livelihoods (UBOS, 2015). Therefore for better management of biodiversity there is need to invest more in understanding strategies for sustainable use and equitable sharing of benefits in Uganda.

Lastly harnessing modern-biotechnology for socio-economic development with adequate measures for health and environment is one of the way through which pressure on natural resources could be reduced. Less than 0.5 per cent of the biodiversity budget was allocated for this strategic objective. The less than one percent translates into about **UGX 0.4** billion per fiscal year; which is about **0.005 per cent** of the national budget. This budget allocation is too little to have an impact and hence provide alternatives for the already depleted natural resources. Therefore, more resources need to be mobilized not only for modern biotechnology but biodiversity conservation at large if the situation is to improve.

Recommendations

1. The sectors responsible for biodiversity and ecosystem management demonstrate their relevance and contribution to the national economic development through the following types of interventions:
   a. Protection and sustainable/efficient use of biodiversity resources and ecosystem services;
   b. Restoration of degraded ecosystems and management of existing systems including through increased compliance to the existing laws and regulations;
   c. Increased investment in biodiversity management where the economic returns are proven such as nature-based (biodiversity-based) tourism, organic agriculture and sustainable value chains.
   d. Integrated investments where the development of industrial and services sectors is integrated with investments in agriculture, forestry and fishing to boost synergies and achieve higher multipliers.
2. Government support to these activities is very low relative to support for other sectors but unlike some other sectors – government support is essential for maintaining biodiversity and ecosystem services that provide essential services to the economy and national livelihoods.
3. Additional analysis would be beneficial on expenditures at the sub-national/district levels as well as for donors, non-governmental organizations and private sector to consider financing biodiversity management investments to complement Government effort especially in the agriculture, forestry, wetlands and fishing.
4. The water and environment and agriculture sectors are especially important for jobs, energy, and food security and likely deserve increased relative government expenditures
5. New financing solutions and instruments are needed to stimulate biodiversity investment and better biodiversity management from the industrial and services sector. The new instruments can also boost the growth of these sectors, but should guarantee increased effort to protection of and minimizing loss of biodiversity and ecosystem degradation associated with these sectors' activities.

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CHAPTER ONE: INTRODUCTION

1.1 Background

The United Nation Development Programme (UNDP) launched the Biodiversity Finance Initiative (BIOFIN) to address finance issues for biodiversity management in support of the Convention on Biological Diversity (CBD). Sufficient financial resources are pivotal to the process of scaling up efforts geared towards achieving the 20 Aichi Targets defined in the CBD's Strategic Plan for 2011-2020. BIOFIN is a new global partnership seeking to address the biodiversity finance challenge in a comprehensive manner. BIOFIN seeks to address the financing needs to achieve the Aichi Biodiversity Targets which the High-level Panel on Global Assessment of Resources for Implementing the CBD Strategic Plan estimated to range between 150 and 440 billion US$ annually. While useful, this and similar other global estimates are based on extrapolations which are sensitive to the underlying assumptions. These assumptions may not hold in many instances and thus detailed national-level (bottom-up) assessments are recommended to determine related challenges and opportunities for resource mobilisation. BIOFIN aims to enable governments build sound business cases for increased investment in conservation, sustainable use and equitable sharing of benefits of ecosystem and biodiversity. The project particularly focuses on identifying and addressing financial needs at the national level. Uganda is among the initial 30 countries that are implementing the initiative. These include: Belize, Brazil, Botswana, Bhutan, Chile, Colombia, Costa Rica, Cuba, Ecuador, Fiji, Georgia, Guatemala, India, Indonesia, Kazakhstan, Kyrgyzstan, Malaysia, Mexico, Mongolia, Mozambique, Peru, Philippines, Rwanda, Seychelles, South Africa, Sri Lanka, Thailand, Uganda, Vietnam, Zambia and Namibia.

BIOFIN is managed by UNDP Ecosystems and Biodiversity Programme, in partnership with the European Union and the Governments of Germany, Switzerland, Norway and Flanders, who finance the initiative. In relation to this Biodiversity Expenditure Review, BIOFIN has been promoting a new methodological framework for undertaking national-level "bottom-up" analyses of the finance-relevant enabling context. This framework addresses the following;

- Understanding the baseline context for biodiversity finance in the country – Biodiversity Finance Policy and Institutional Review
- Determining the current/baseline investment in biodiversity – Biodiversity Expenditure Review
- Quantifying the full cost of meeting national biodiversity conservation targets and the resulting finance gap – Financial Needs Assessment
- Assessing the suitability of financial mechanisms and developing national resource mobilisation strategies that are fully appropriated by national governments and other key in-country stakeholders – Biodiversity Finance Plan.

The methodologies applied in the project were refined through regional and global learning, and are to be made available to a wider audience and/or stakeholders.

1.2 Adaptation and implementation of this new methodological framework at national level

To help countries appreciate the importance of biodiversity and subsequently bridge the financing gap, the work at national level is being led by ministries concerned with finance, economics or planning, water and environment. It is anticipated that the expenditure review component will be achieved through the following steps:

a. Analysis of the integration of biodiversity and ecosystem services in sectoral and development policy, planning and budgeting
b. Assessing future financing flows, needs and gaps for managing and conserving biodiversity and ecosystem services
c. Developing comprehensive national Biodiversity Finance Plan (BFP) to meet the biodiversity finance gap
d. Initiating implementation of the Biodiversity Finance Plan (BFP) at national level

To help countries quantify the biodiversity finance gap, improve cost-effectiveness through mainstreaming of biodiversity into national development and sectoral planning, and to develop comprehensive national resource mobilisation strategies, the BIOFIN global team and implementing countries are developing and piloting the BIOFIN Workbook. The Workbook is a tool designed to promote consistent application of resource mobilisation steps and foster adoption of key principles by BIOFIN

partner countries. In addition, the BIOFIN Workbook and related products provide concrete guidance to countries on how to assess existing biodiversity-related expenditures, gauge costs for implementing their National Biodiversity Strategy Action Plan (NBSAP), and useful strategies for mobilizing the financial resources required to implement their revised NBSAPs. By so doing, countries can improve biodiversity sectoral policies, and align their national expenditures with the biodiversity development goals; hence achieving the Aichi Biodiversity Targets at a national level.

1.3: Objectives of the review

The objectives of this assignment were to

i. Assess the extent of integration of biodiversity financing in development cooperation including Official Development Assistance (ODA). The review was also intended to document trends in development cooperation, obtain baseline overview of support for biodiversity financing in Uganda, project a future scenario, and identify key challenges and opportunities for financing biodiversity through development cooperation. Review private sector expenditure on biodiversity financing from FY 2005/06 - FY 2014/15 and document the expenditure trends to obtain baseline overview of expenditure by private sector, project a future scenario, identify key challenges affecting private sector expenditure on biodiversity financing and identify opportunities for addressing them.

ii. Review bilateral and multilateral support for biodiversity conservation including north to south cooperation, and document the bilateral support trends to obtain baseline overview of bilateral and multi-lateral support for biodiversity financing in Uganda, project a future scenario, identify key challenges affecting bilateral and multi-lateral support for financing biodiversity in Uganda and identify opportunities for addressing them.

iii. Identify potential sources for biodiversity finance from the different institutions at the national level (Government, the private sector, NGOs) and development partners/donors.

iv. Provide key technical leadership on Public Finance and substantial technical expertise in assuring horizontal integration and consistency of work streams/studies.

v. Contribute to preparation of press releases and briefing notes for Government, UNDP, among others.

CHAPTER TWO: METHODOLOGY

2.1 Research design

This review was based on an ex-post evaluation of budgets and expenditures of key ministries that directly or indirectly intentionally impact positively on biodiversity. The focal areas are the core biodiversity management sectors of water and environment, tourism, agriculture, and energy and mineral development. The review was conducted through data collection and analysis, literature review, discussions with officials of the relevant implementing agencies, as well as through simulations and analysis of scenarios.

2.2 Data collection and sources

The current BER covered the last 10- year period from 2005/6 to 2014/15. Copies of the budgets from the participating ministries, departments and agencies (MDAs) were obtained. The study attempted to capture both public and private biodiversity related expenditures in the implementing MDAs. The expenditures were stratified by Central Government, Donors and semi-autonomous bodies. Expenditures for CSOs, the private sector and other foundations implementing activities in biodiversity conservation and management were partly captured in the off-budget support. However, further analysis was not possible since no additional information from CSOs could be obtained.

2.3 Expenditure of Government and Donors

Data of government and donor expenditures on biodiversity related activities were retrieved from the approved estimates of revenue and expenditure (recurrent and development) reports prepared by Ministry of Finance, Planning and Economic Development (MoFPED) based on Financial Management Information System (FMIS). These data were then verified with financial data from the implementing MDAs.

National level budget documents were reviewed focusing on the "Approved Estimates of Revenue and Expenditure" sections spanning the following FY 2005/6 - 2014/15. Any budgetary allocation associated with biodiversity for key sectors, that is, vote and vote functions were entered into a pre-designed excel spreadsheet database. The vote refers to the ministry and vote function is the agency that actually spends the funds; for example, Ministry of Water and Environment is a vote, while NEMA is a vote function. The biodiversity budget allocations were entered under their specific vote with the corresponding finance actor. The Taxonomy for biodiversity actors and expenditures (BIOFIN Workbook ANNEX 1); were categorized into two biodiversity expenditures and costs were stratified under the following themes; Sectoral mainstreaming, Natural resources use, Protection, Restoration, Access and benefit sharing, enhancing implementation and Other. These were assessed using the expected project's description and outputs of each of the biodiversity allocation and referencing the outputs. Each of the budget allocations that corresponded to biodiversity expenditure and cost categories were summed up and entered into the BIOFIN Workbook for each specific financial actor. Further analysis of the budget allocations was carried out to estimate the proportion of the budget attributed to biodiversity conservation and management in line with NBSAPII. The BIOFIN Workbook was used to generate graphs after data corresponding to the various categories of biodiversity expenditures and costs were filled in.

2. 4 Expenditure of semi-autonomous bodies

In addition to expenditures at the central level, the study team collected expenditure data from the respective Government Departments and Agencies and State-owned enterprises that implement biodiversity conservation related activities. Financial and annual sector performance reports were considered in the review. The study concentrated on reviewing the sector performance reports from four major ministries that implement biodiversity conservation related activities namely: MAAIF, MTWA, MWMD, and MWE.

Table 1: List of institutions and departments that were reviewed

Ministry	Institutions/departments
MWE	National Environmental Management Authority (NEMA) National Forestry Authority (NFA), Department of Water Resources Management (DWRM), Forestry Support Services Department (FSSD), Department of Environmental Support Services (DESS) Wetland Management Department (WMD)Climate Change (DCC)
MAAIF	National Agricultural Research Organization (NARO) Directorate of Animal resources Directorate of crop resources Agricultural support services Directorate of fisheries resources National Agricultural Advisory Services (NAADS) Uganda Coffee Development Authority (UCDA) Uganda Cotton Development Organisation (UCDO) Dairy Development Authority(DDA)
MTWA	Hotel and Tourism Training Institute (HTTI), Uganda Tourism Board (UTB), Uganda Wildlife Authority (UWA), Uganda Wildlife Education Centre (UWCEC) Uganda Wildlife Training Institute (UWTI)
MEMD	Department of energy resources Department of Geological survey and Mines Department of Petroleum Exploration and Production Department of petroleum supply Department of support services

2.5 Data management

The data were retrieved from the Sector Performance Reports (SPRs) based on the BER objectives. A structured questionnaire was developed to collect data and conduct the biodiversity expenditure document reviews at the different implementing institutions. The template included budget allocations, releases, and expenditures for each output. To better manage the various datasets, a database was designed in Excel spread sheet. Data entry screens that are similar to the program allocations and expenditures were designed to capture the collected data with necessary logic and consistency checks. The data clerks who supported data entry were trained and oriented to the database for two days. For quality assurance, two independent data entries were conducted, followed by validation and correction of any data entry errors.

2.6 Expenditure review analysis

Data were analysed in stages using STATA statistical package starting with descriptive analysis to describe the allocations and sources of funding for each of the biodiversity related activities. The data were summarised into means, standard deviations minimums and maximum values and percentages. In addition to the summary statistics, the study explored the status and trends in biodiversity financing based on expenditures of the various ministries and agencies in Uganda. In this regard, the review identified and assessed the sources of biodiversity spending, budget performance and absorptive capacity of the implementing agencies. The study also assessed the efficiency of biodiversity spending in achieving the set annual targets of the activities in the implementing agencies. Trend analysis was further carried out by fitting parametric curves to the data. The latter procedure was undertaken to make forecasts for the future.

Biodiversity expenditure attribution

The Convention on Biological Diversity (CBD) refers to biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems." Therefore, all expenditures in sectors of; preservation, conservation, restoration and protection of the species are biodiversity related expenditures. The expenditures attributed to biodiversity were computed by analysing the objectives of the institutions. The percentage attributed to biodiversity was computed as the ratio of the number of objectives related to preservation, conservation, restoration and protection of species to the total number of objectives implemented by the MDA multiplied by 100. The percentages were then applied to the total expenditures in each fiscal year to compute biodiversity expenditures associated with preservation, conservation, restoration and protection. These proportions were then used as the biodiversity coefficients that determine the extent of the budget allocations attributed to biodiversity conservation and management within the institution. The ministry's biodiversity budget allocations were determined by aggregating the department's biodiversity budgets to the total budget allocations in a fiscal year. The percentage of the ministry's biodiversity expenditures were computed as the ratio of the expenditures from the departments and agencies to the total expenditures multiplied by 100. The overall biodiversity expenditures in a fiscal year were computed as the total biodiversity related budget from all the agencies. The percentage attributable to biodiversity at national level was computed as the ratio of total biodiversity related expenditures to the total annual budget multiplied by 100.

2.7 Summary

This chapter described the data collection methods and analysis for the biodiversity expenditure review in Uganda. The next chapter presents the results of government spending and GDP growth rate for the fiscal period 2005/6-2013/14. Furthermore, the results of trend analysis on government budget allocations and expenditures are also presented.

CHAPTER THREE: GOVERNMENT SPENDING AND NATIONAL INCOME

3.1 Government of Uganda national budget and expenditures 2005/6-2013/14

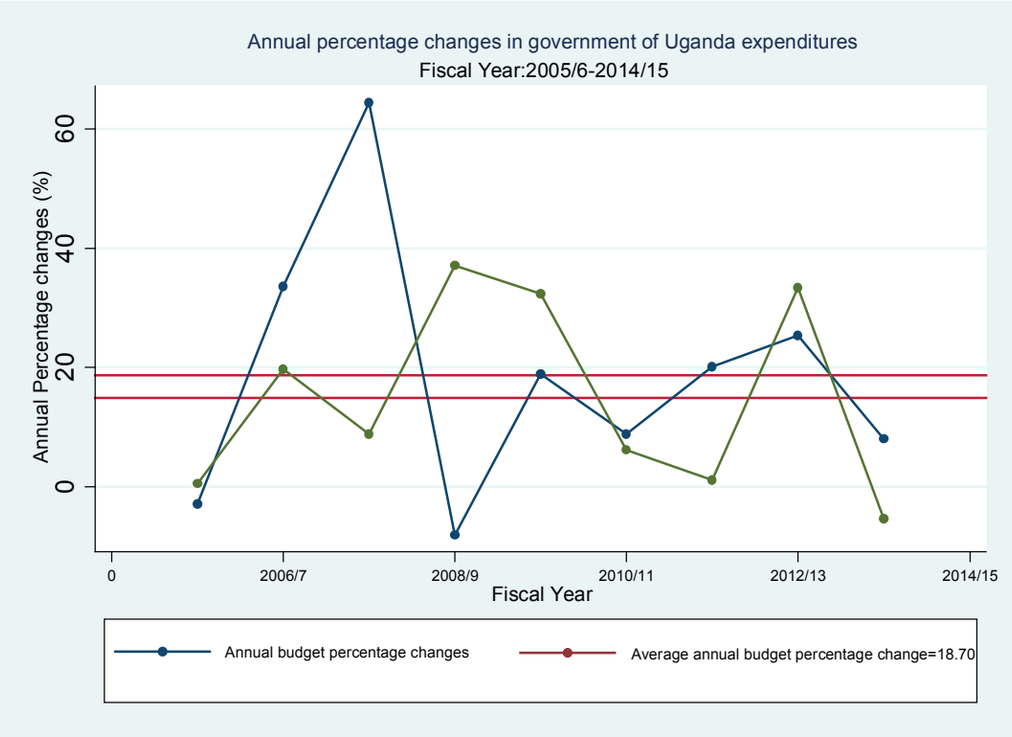
Table 2 shows the average budget for the Government of Uganda was UGX 8.34 trillion with a minimum of UGX 3.5 trillion and a maximum amount of UGX 14.8 trillion over the period 2005/6 to 2013/14. Meanwhile, the mean expenditure was UGX 7.6 trillion with a minimum of UGX 3.4 and a maximum of UGX 13.5 trillion over the same period. GDP growth rate at 2002 constant price was on average 6.8 per cent with a minimum growth rate of 3.2 per cent and a maximum growth rate of 10.8 per cent over 2005/6 -2013/14 fiscal years. This implies that the government of Uganda has been growing at a moderate rate compared to other countries.

Table 2: Government spending and GDP growth rate

Fiscal Year	Annual budget (UGX-trillion)	Expenditure (UGX trillion)	GDP growth rate 2002 price (%)	GDP constant 2002 price (UGX)	GDP current Price (UGX)
2005/6	3.591	3.958	10.8	557,235	657,708
2006/7	3.488	3.977	8.4	583,780	742,159
2007/8	4.661	4.763	8.7	613,162	827,823
2008/9	7.667	5.182	7.3	634,701	981,725
2009/10	7.04	7.106	5.9	659,924	1,118,218
2010/11	8.37	9.407	6.7	679,222	1,206,866
2011/12	9.11	9.99	3.2	676,422	1,463,961
2012/13	10.94	10.103	5.1	675,101	1,546,731
2013/14	13.721	13.481	4.7	688,324	1,651,379
Average (Std.dev)	**8.341** (3.945)	**7.552** (3.360)	**6.76** (2.33)	**640,874.6** (362245.8)	**1,132,952** (46879.35)

The Government of Uganda Annual Budget percentage change was estimated at about 18.7 per cent while its expenditure change was 14.9 per cent for the period 2005/6 -2013/14 fiscal year, Figure 3. This implies that the overall annual percentage changes in Government of Uganda budget and expenditures are positive. This is an indication that the budget and expenditures might be increasing.

Figure 1: Annual percentage in GOU budget allocations and expenditures in real terms



Based on this analysis, it is extremely hard to assess the trend and growth rate in the budget and expenditures using the average annual percentage changes. Moving averages were therefore computed to better understand the significant underlying trends in the Government of Uganda budget and expenditures. The moving averages are a good tool to smoothen the errors caused by short-term price fluctuation. The trends in the Government of Uganda budget and expenditures were re-assessed based on four moving averages reflecting different time frames.

The two-year moving average reflects a short-term trend associated with a two-year planning frame work, while a three-year moving average reflects intermediate-term trends based on a three-year plan. The four and five year moving averages reflect a longer-term trend in the Uganda budget and expenditure based on a five-year plan.

Figure 2 explores the Government of Uganda budget with a three year moving average. It reveals that there has been a general increase in the budget allocations from 2005/6 - 2014/15 financial years. The three year moving average suggests an underlying linear trend in the Government of Uganda budget. The five year moving average clearly reflects the longer-term trend in government spending. This implies that the Government of Uganda budget is based on a 5-year annual development plan. The budget has been linearly growing from about UGX 3.5 trillion in 2005/6 fiscal year to UGX 14.8 trillion in 2013/2014 fiscal year. Regression analysis revealed that the Government of Uganda budget has been increasing in real terms at about UGX 1.27 *(±0.1012) trillion per fiscal year. This growth in the budget allocations could be attributed to increased economic activity as well as revenue collection. At this current growth rate, holding all other factors constant, it is projected that the Uganda* Government budget is expected to be UGX 26.77 trillion in 2024/25 fiscal year.

The growth rate is linear from UGX 3.1 trillion in 2005/6 fiscal year to about UGX 13.5 trillion in 2013/14 fiscal year growing at a rate of UGX 1.146 (±0.098) trillion per fiscal year.
With the current growth rate in government expenditures, it is projected that keeping all the factors constant in the fiscal year 2024/25 the Government of Uganda expenditures will be about UGX 24.70 trillion.

Figure 2: Trends in Government of Uganda budget allocations in real terms

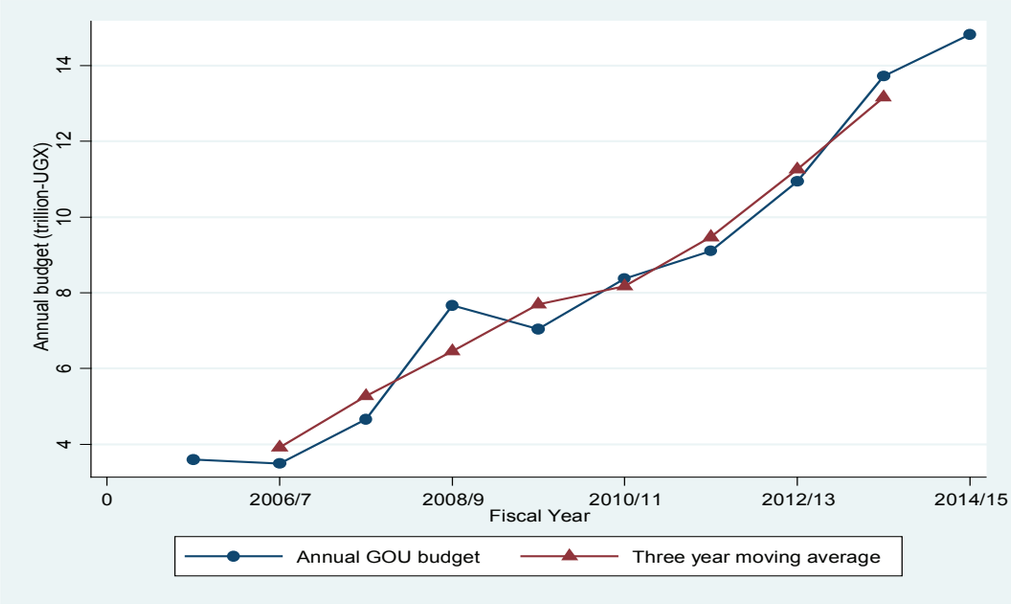


Figure 3: Trends in Government of Uganda expenditures in real terms

3.2 Past and future annual budgets and expenditures

Using the linear growth model, we predicted budget allocations and expenditures for the Government of Uganda and obtained results as shown in Table 3. Furthermore, we computed projected budget and government expenditures together with their 95 per cent confidence limits. The results revealed that in the fiscal year 2024/25 Uganda's budget will be approximately UGX 26.77 trillion. Similarly, the projected government spending in (2024/25) fiscal year will be approximately UGX 24.7 trillion.

Table 3: Predicted annual budget allocations and expenditures

Fiscal Year	Projected budget allocations (trillion)			Projected Expenditures (trillion)		
	Lower bound	Average	Upper bound	Lower bound	Average	Upper bound
2015/16	11.32	15.33	19.35	10.50	14.38	18.26
2016/17	12.36	16.60	20.85	11.42	15.52	19.63
2017/18	13.39	17.88	22.36	12.34	16.67	21.00
2018/19	14.43	19.15	23.86	13.26	17.82	22.37
2019/20	15.47	20.42	25.37	14.18	18.96	23.74
2020/21	16.51	21.69	26.87	15.11	20.11	25.12
2021/22	17.54	22.96	28.38	16.03	21.26	26.49
2022/23	18.58	24.23	29.88	16.95	22.40	27.86
2023/24	19.62	25.50	31.39	17.87	23.55	29.23
2024/25	20.66	26.77	32.89	18.79	24.70	30.60

Figure 4 presents past and future budget allocations for Government of Uganda for the period 2005/6-2024/25. While past budget allocation (2005/6-2014/15) is seen to generally increase with bumps, the future budget allocations (2015/16-2024/25) are predicted to increase gently without any bumps in the allocation. This projection is attributed to the linear model that was used in computing the future budget allocations. It should be noted, that there will be variations from the predicted trend caused by fluctuations in prices and budget cuts, but they will fall within the confidence limits. Past expenditures for Government of Uganda are seen to fluctuate (2005/6-2014/15) while future expenditures are predicted to sharply increase (2024/25).

Figure 4: Past and future budget allocations for GOU

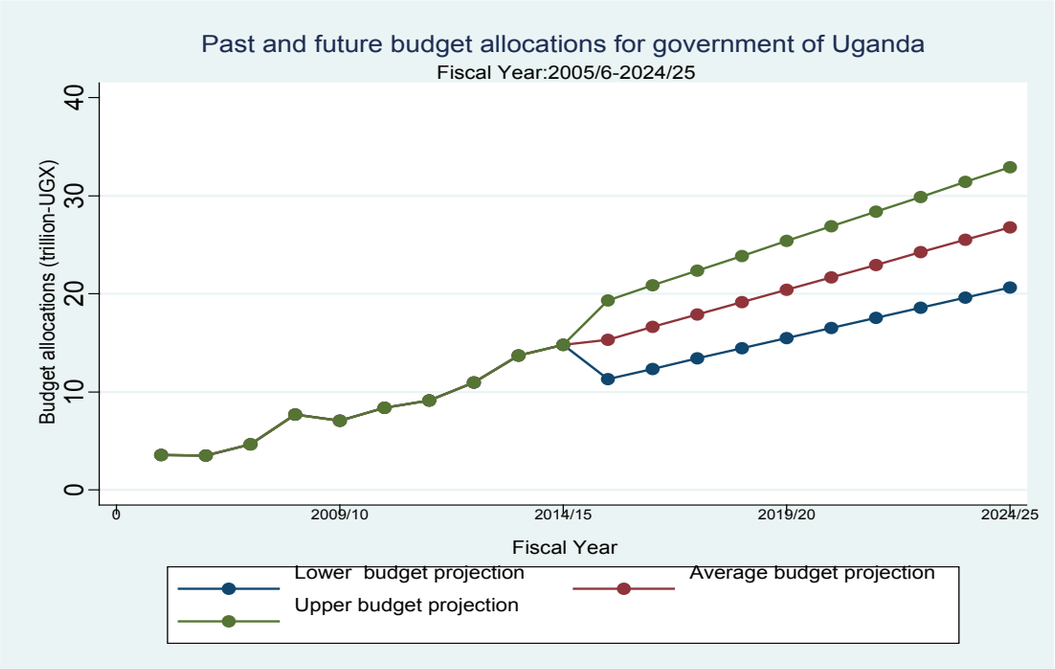
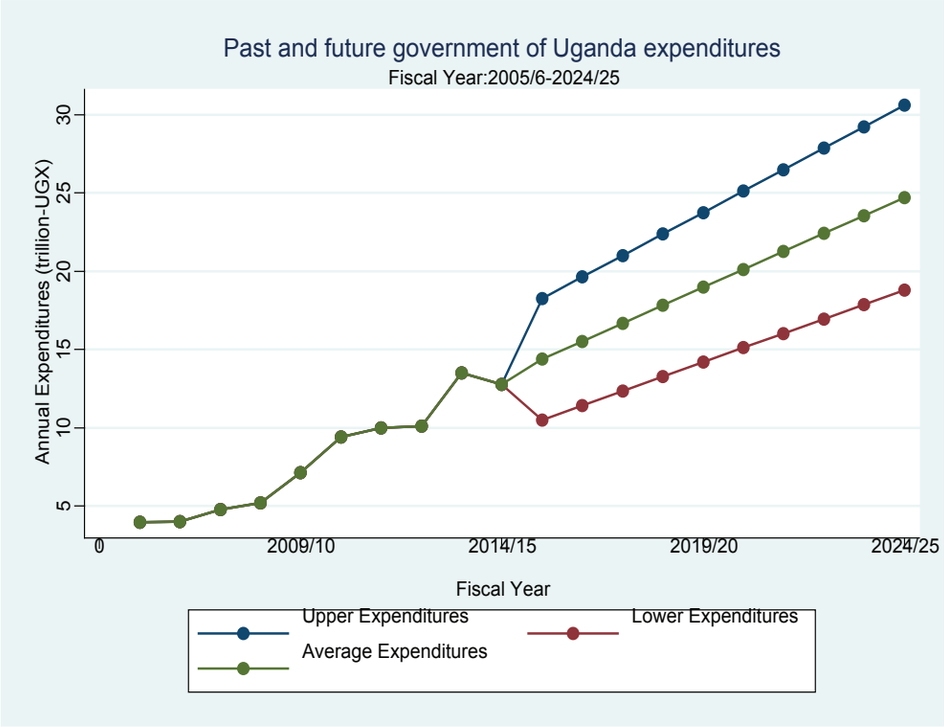


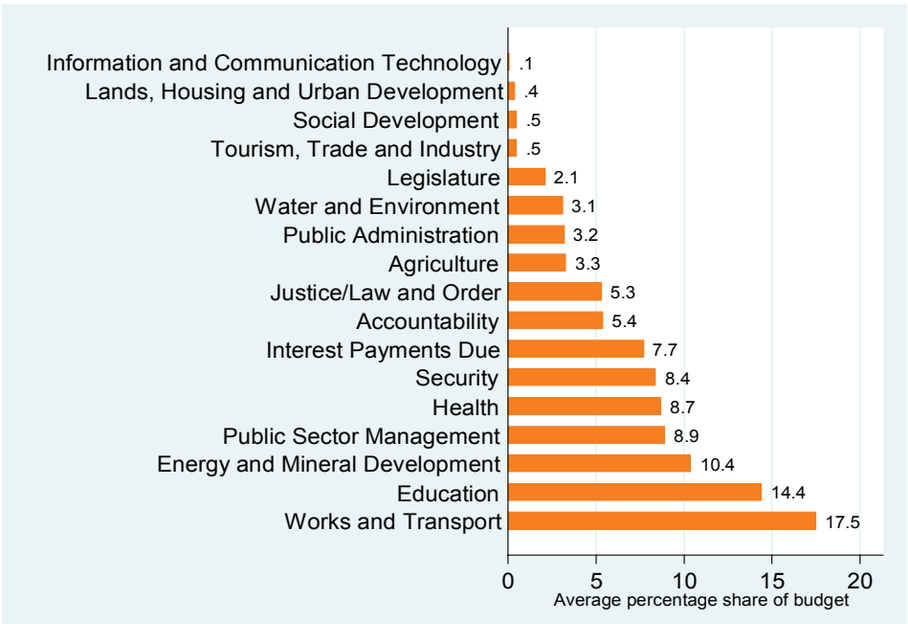
Figure 5: Past and future GOU expenditures



3.3 Budget share of all sectors

Figure 6 shows the average percentage share of the budget allocations for the period 2005/6-2014/15.

Figure 6: Average budget share among all ministries

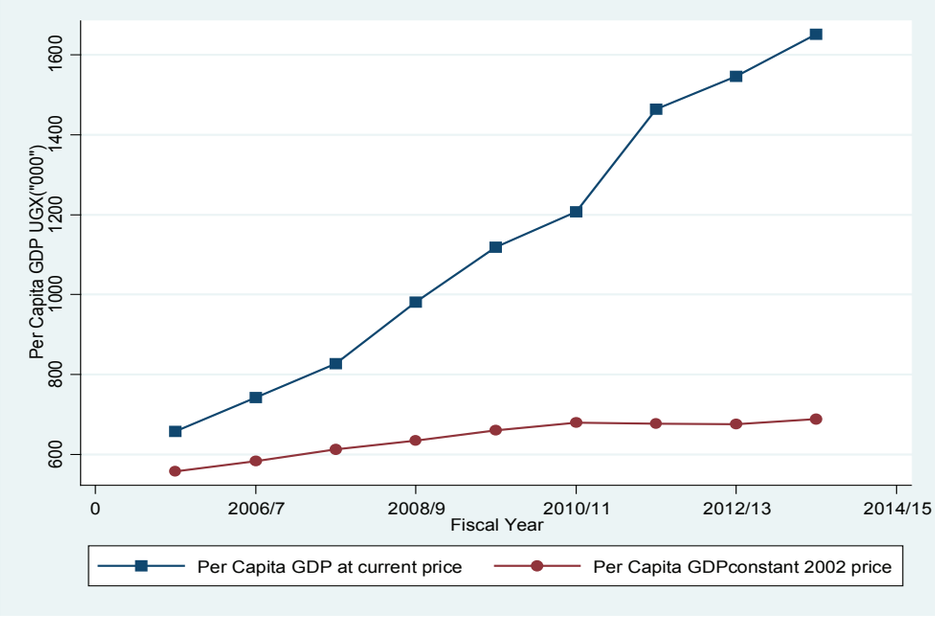


At the national level, the budget favours social service sectors (security, health and education) and industry sectors (works and transport, energy and mineral development) over the more biodiversity related sectors (agriculture, forestry and fishing, water, and tourism).

3.4 Government of Uganda GDP per capita and GDP growth rate

Figures 7 and 8 provide trends in GDP per capita and GDP growth rate in 2005/6 -2013/14 fiscal years. Figure 6 shows that over the period 2005/6 -2013/14 fiscal years, GDP per capita at current price has been generally increasing. However, using the 2002 constant prices, there has been a general decline in GDP per capita from fiscal year 2005/6 - fiscal year 2013/14. This has mainly been as a result of inflation which was partly due to a decline in world prices of Uganda's export crops such as coffee, coupled with other macroeconomic factors in the economy. Furthermore, this may be explained by the increase in Uganda's population that is not matched by a similar expansion in the economy.

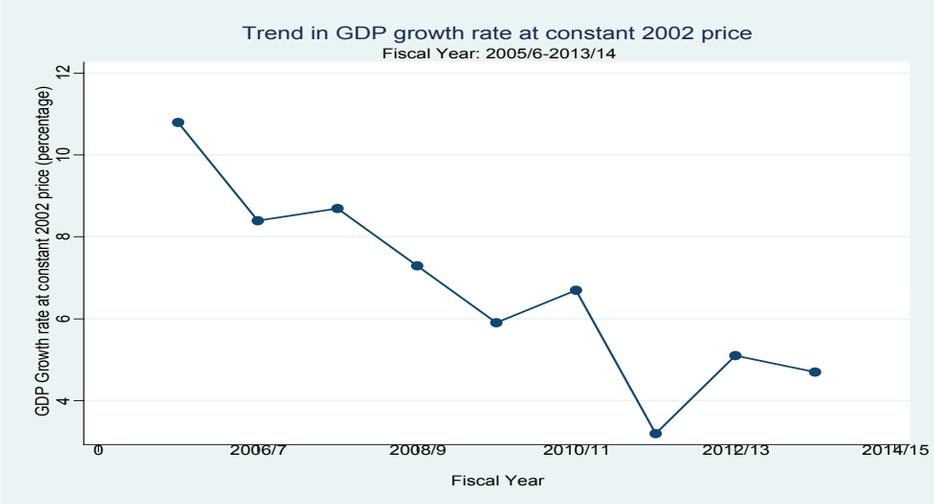
Figure 7: Uganda's GDP per capita



3.5 Real GDP Growth rate of Uganda in 2005/6-2013/14 fiscal years

Figure 8 shows a general decline in the real growth rate from 2005/6- 2013/14 fiscal years. This has led to a general slowdown in the economy which affects all sectors, biodiversity related activities inclusive. The sharpest decline was observed in 2011/12 fiscal year, probably due to a general increase in prices of commodities within Uganda and globally.

Figure 8: Trends in GDP growth rate at constant 2002 price



One element of this Biodiversity Expenditure Review is to explore the choices of budget expenditure relate to national policies and priorities. A measure of priority for a country is the contribution of a sector to GDP and jobs. Table 3 compares the average (over three years) of % contribution to GDP and % of the budget of the related ministry for the four main sectors reviewed here.

Table 3. Shows the comparison between % contributions to GDP with % of government budget for key biodiversity related sectors and related ministries (average of last three year's data).

Table 4: Budget share to GDP ratio for key biodiversity sectors

Sector	Ministry	%GDP	%Budget	Ratio GDP/Budget
Agriculture	MAAIF	24%	3.3%	7.3
Electricity and Mining	MEMD	2.2%	10.4%	0.2
Accommodation and Food Service Activities	MTWA	2.7%	0.51%	5.2
Water	MWE	2.5%	3.1%	0.8

Some economic activities are self-sustaining and do not require strong government intervention – and thus we would not expect heavy government investment in industry which is a private sector activity where small government interventions to incentivize and regulate are often all the public investment needed (note the high GDP/Budget ratio of 16.5).

3.6 Summary

This chapter presented the analysis of GOU budget allocations and expenditure for the 2005/6-2013/14 fiscal years. The annual budget allocations have been linearly growing at an average nominal rate of about UGX 1.27 trillion per fiscal year. Furthermore, the Government of Uganda annual expenditures have been growing at an average nominal rate of about UGX 1.15 trillion per fiscal year. Both the budget and expenditures predict growth implying an expanding and growing economy. However, the GDP growth rate reveals a declining trend signifying a slowdown in economic growth. This possibly implies that the increasing expenditures might not be in productive parts of the economy.

The budget allocations favours social service sectors (security, health and education) and industry sectors (works and transport, energy and mineral development) over the more biodiversity related sectors (agriculture, forestry and fishing, water, and tourism).

CHAPTER FOUR: MINISTRY OF ENERGY AND MINERAL DEVELOPMENT (MEMD)

4.1 Introduction

The mandate of the Ministry of Energy and Mineral Development (MEMD) is to "Establish, and promote the development, strategically manage and safeguard the rational and sustainable exploitation and utilization of energy and mineral resources for social and economic development". The priorities of the sector include to; (i) Increase electricity generation capacity and expansion of the transmission networks, (ii) Increase access to modern energy services through rural electrification and renewable energy development, (iii) Promote and monitor petroleum exploration and development in order to achieve local production; and (iv) Promote mineral investment through acquisition of geo-scientific data, capacity building and attraction of mining companies to undertake detailed exploration programs and mining. The ministry is organized into five main departments: (1) Department of Energy Resources, (2) Department of Geological Survey and Mines (3) Department of Petroleum Exploration and Production, (4) Department of Petroleum Supplies and (5) Department of Support Services. The department of support services is further divided into administration, accounting and human resources.

4.2 Financing Ministry of Energy and Mineral Development (MEMD)

Since the fiscal year 2009/10 Government of Uganda started implementing Output Based Budgeting. The Output Based Budgeting helped the study link each of the budget allocations to biodiversity strategic objectives. A review of budget allocations and expenditures at MEMD for the 2009/10-2014/15 fiscal years was conducted. Table 5 shows the distribution of the budget allocations across all the five departments at MEMD. The output budgets were further analysed and aligned to the NBSAP II strategic objectives. The strategic objectives of the NBSAPII are (1) to strengthen stakeholder co-ordination and frameworks for biodiversity management, (2) to facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity, (3) to put in place measures to reduce and manage negative impacts on biodiversity, (4) to promote the sustainable use and equitable sharing of costs and benefits of biodiversity, (5) to enhance awareness and education on biodiversity issues among the various stakeholders, (6) to harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment, (7) to promote innovative sustainable funding mechanisms to mobilize resource for implementing the Strategy. Alignment of the budget allocations helped to estimate the proportion of the budget that is allocated to biodiversity conservation.

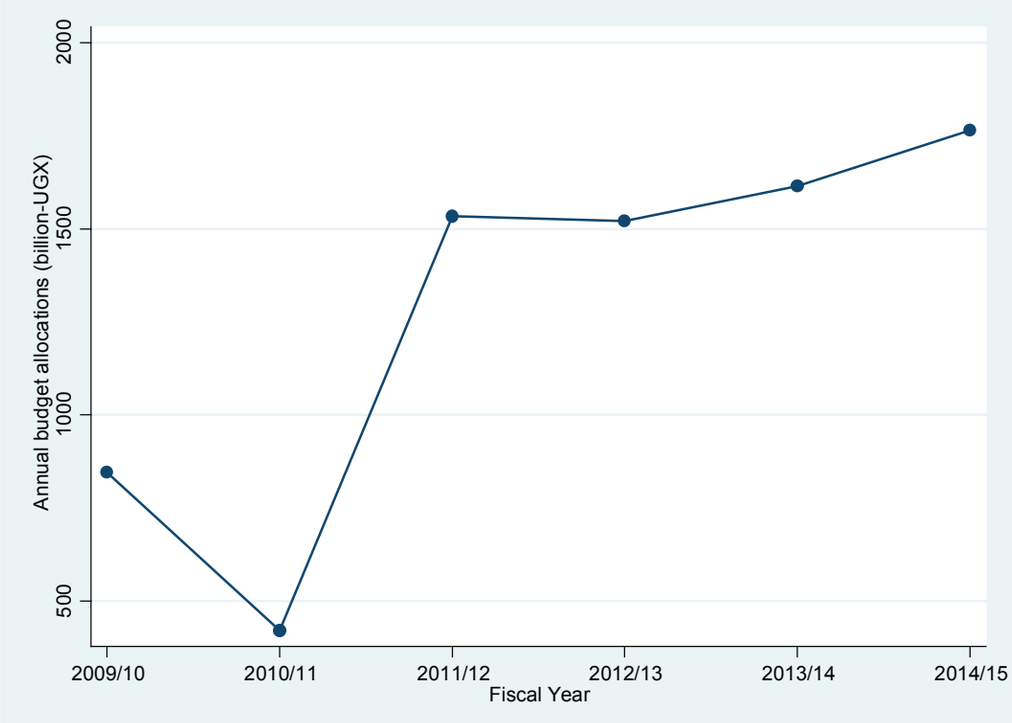
Table 5: Budget allocations at MEMD

	Fiscal Year						
Departmental budget (billion-UGX)	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**Average**
Department of Support Services (DSS)-billion-UGX	2.1	1.7	2.7	8.7	19.9	9.5	**7.4**
Energy Resources Department (ERD) -billion-UGX	800	390	1510	1460	1570	1660	**1231.7**
Geological Survey and Mines Department (GSMD) -billion-UGX	24.9	14.4	1.6	2.4	8.5	8.7	**10.1**
Petroleum Exploration Production Department (PEPD) -billion-UGX	17.5	13.7	24.7	53.3	19.8	68.1	**32.9**
Petroleum Supply Department (PSD)-billion-UGX	0.9	1.2	1.2	1.2	0	14.1	**3.1**
Overall budget allocations(-billion-UGX)	**845.5**	**421.0**	**1540.2**	**1525.7**	**1618.2**	**1760.4**	**1285.2**

biodiversity related share of the MEMD budget allocations							
biodiversity related budget (billion-UGX)	34.4	83.9	285	70.3	45.3	34.5	**92.2**
Non- biodiversity related Budget (billion-UGX)	811	337	1250	1450	1570	1730	**1191.3**
Percentage share (per cent)	4.1	19.9	18.6	4.6	2.8	2.0	**8.7**

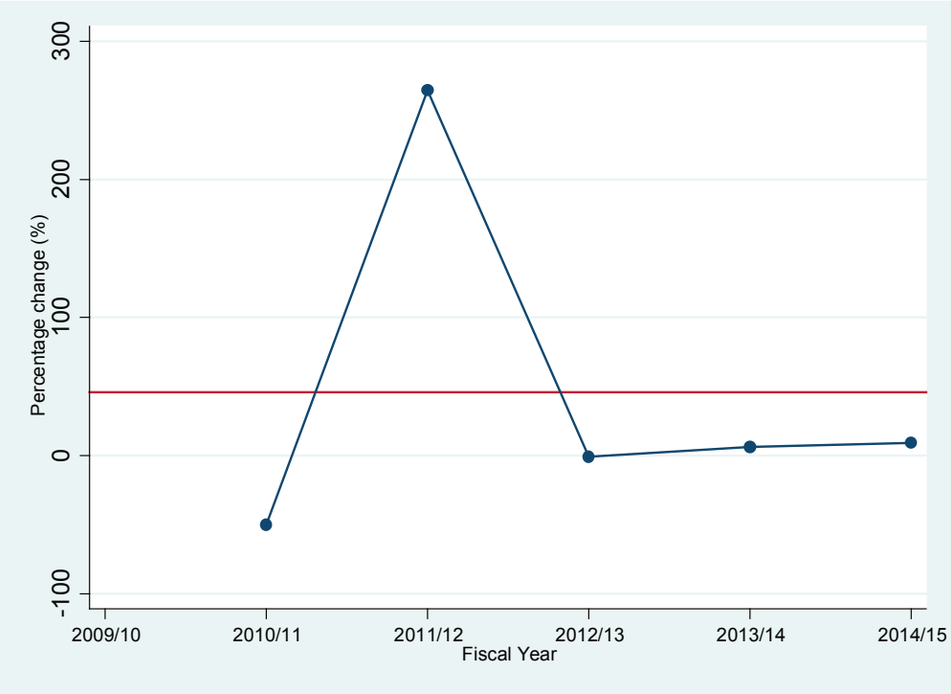
On average MEMD was allocated about UGX 1,285.2 billion per fiscal year in real terms for the 2009/10-2014/15 fiscal period. Budget allocation data were used to explore the trend in financing activities at MEMD. The highest budget allocation was in 2014/15 fiscal year, while the lowest was in 2010/11fiscal year (Table 4). The sharp increase in budget allocation to the MEMD observed starting 2011/12 fiscal year is attributed to the capital developments in terms of hydropower constructions in the sector. This was a result of the government policy of increasing infrastructure development especially in the energy sector. Figure 9. Shows the variation in budget allocations at MEMD for the 2009/10-2014/15 fiscal years.

Figure 9: Trend in budget allocations at MEMD



There has been a general increase in budget allocations and expenditures at MEMD for the 2009/10-2014/15 fiscal periods. There was a decline in budget allocations for the fiscal year 2010/11 followed by a sharp increase in the budget for the fiscal year 2011/12. In the subsequent fiscal years there has been a steady increase in the budget allocations to MEMD. Simple linear regression was therefore used to assess the trend in budget allocations and expenditures at MEMD. Results show that expenditures at MEMD were increasing at an average rate of about UGX 232.9 billion in real terms per fiscal year. To better understand the underlying trend in annual expenditures at MEMD in real terms, annual percentage change were computed between two successive fiscal years and the results are presented in Figure 10.

Figure 10: Annual percentage change in expenditures in real terms at MEMD

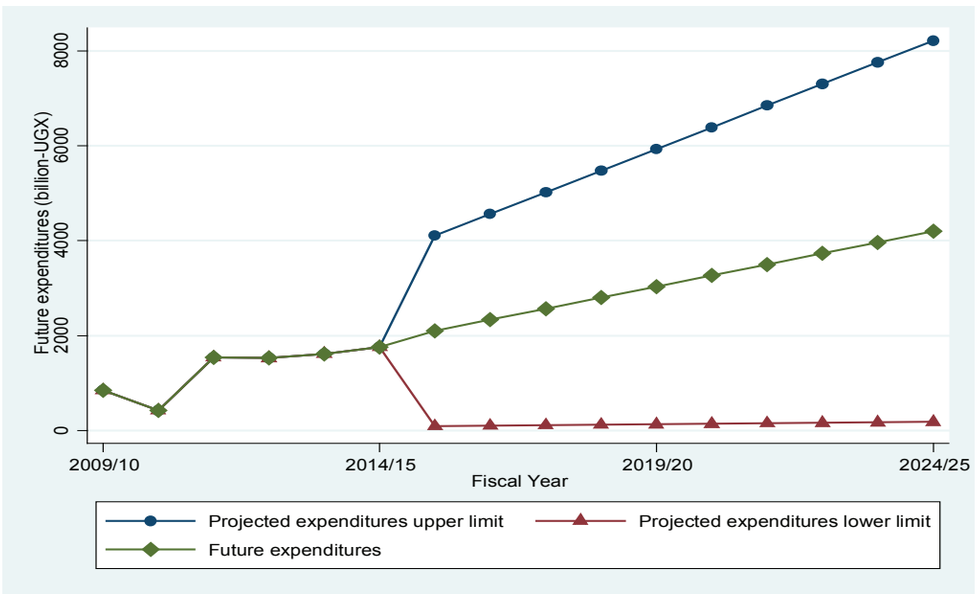


As shown in Figure 10, the average annual percentage change in expenditures in real terms at MEMD was about 46per cent per fiscal year. The highest percentage increase in the budget allocations was observed in the 2011/12 fiscal year. In the subsequent years, there was almost constant percentage change in expenditures in real terms at MEMD.

4.2.3 Past and future expenditures in real terms at MEMD

Figure 11 shows the past and future expenditures at MEMD for the 2009/10 -2024/25 fiscal years. It also shows that by 2024/25 fiscal year, the expected expenditures in real terms at MEMD will be about UGX 4000 billion.

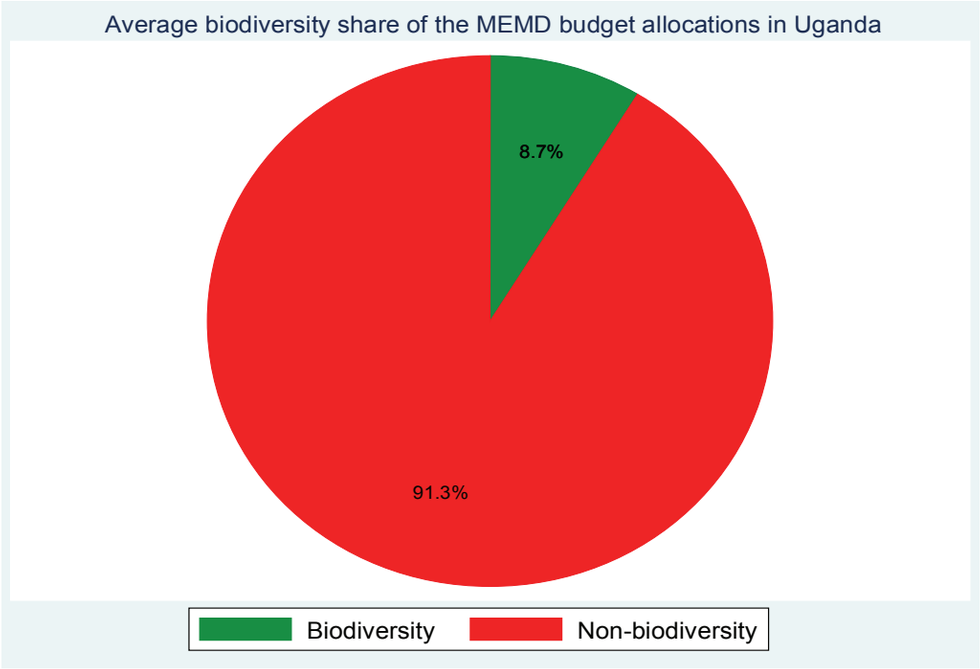
Figure 11: Past and future expenditures at MEMD in real terms



4.4 Biodiversity related expenditures at the MEMD 2009/10-2014/15 in real terms

One of the objectives of the review is to establish the proportion of the budget allocations to the sector that have intentional biodiversity positive activities. The study analysed the MEMD budget to assess the proportion that is attributed to biodiversity related activities. The activities that were classified as biodiversity related include: partnerships, policy formulation and regulation, promotion of energy efficiency, renewable energy, monitoring and enforcement of oil and gas laws. On the other hand, non-biodiversity activities were: capital development, hydropower construction, purchase of equipment and land acquisition. The results are summarized in Figure12.

Figure 12: Biodiversity budget share at MEMD in Uganda



Findings revealed that in the 2009/10-2014/15 fiscal period, biodiversity related budget allocations were on average about UGX 92.2 billion in real terms translating into about 9 per cent of the MEMD budget allocations. This implies that in the MEMD, 91per cent of the budget is allocated to hydropower construction and acquisition of other machines and equipment. Further analysis was carried out to assess the distribution of the biodiversity related budget to the NBSAPII strategic objectives.

4.5 Financing biodiversity strategic objectives (NBSAPs) at MEMD

The distribution of the biodiversity related budget allocations across the seven biodiversity strategic objectives as spelt out in the NBSAP II were also assessed. The results of the analysis are summarised in Figure 13.

Figure 13: Average budget share of NBSAPs at MEMD in real terms

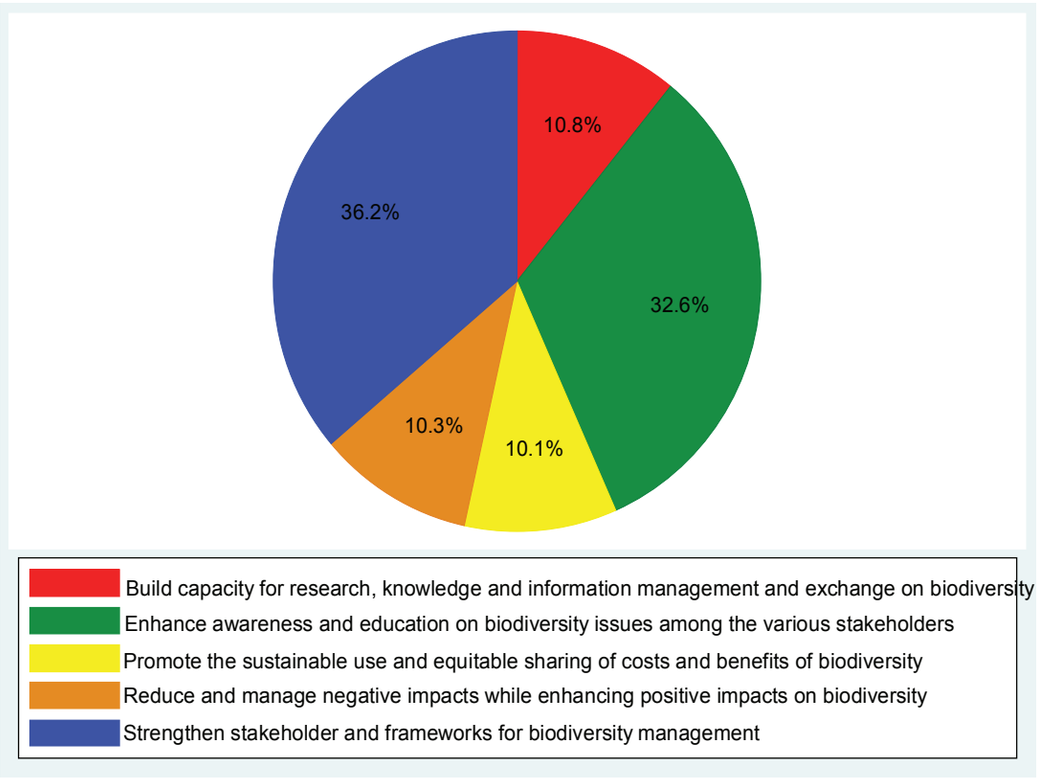


Figure 13. Shows that about 36 per cent of the biodiversity budget allocation at MEMD was towards strengthening partnerships and policy formulation. Similarly, about 33 per cent of the biodiversity related budget was allocated to enhance awareness and education on biodiversity issues among the various stakeholders. The remaining strategic objectives were each allocated about 10 per cent of the budget. These include: facilitate and build capacity for research, knowledge and information management and exchange on biodiversity, reduce and manage negative impacts while enhancing positive impacts on biodiversity, and promote the sustainable use and equitable sharing of costs and benefits of biodiversity. Details on the variation in budget allocations across the strategic objectives are summarised in Table 6.

Table 6: Distribution of budget allocations in real terms across NBSAPII objectives

Strategic objectives	Fiscal Year						
1.To strengthen stakeholder and frameworks for biodiversity management							
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	**Average**
Allocation (billion-UGX)	8.6	6.4	212.0	37.3	16.7	7.0	**48.0**
Percent (%)	24.7	7.7	74.4	53.1	36.9	20.3	**36.2**
2.To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity							
Allocation (billion-UGX)	3.0	4.0	4.3	9.9	8.9	5.6	**6.0**
Percent (%)	8.7	4.7	1.5	14.1	19.7	16.3	**10.8**
3.To reduce and manage negative impacts while enhancing positive impacts on biodiversity							

Allocation (billion-UGX)	1.7	6.7	3.1	7.9	7.2	7.2	**5.6**
Percent (%)	4.9	8.0	1.1	11.2	15.8	20.7	**10.3**
4.To promote the sustainable use and equitable sharing of costs and benefits of biodiversity							
Allocation (billion-UGX)	14.7	6.2	0.8	0.4	1.8	1.9	**4.3**
Percent (%)	42.5	7.4	0.3	0.5	4.1	5.6	**10.1**
5.To enhance awareness and education on biodiversity issues among the various stakeholders							
Allocation (billion-UGX)	6.6	60.6	64.7	14.8	10.6	12.8	**28.4**
Percent (%)	19.2	72.2	22.7	21.1	23.4	37.1	**32.6**

4.6 Conclusions

The study reviewed the expenditures of MEMD and its departments to assess their contribution to NBSAPs financing. The findings revealed that only 9 per cent of the budget allocations to MEMD were geared towards biodiversity related activities. The 9 per cent biodiversity related budget at MEMD translated on average to about UGX 92.2 billion in real terms per fiscal year. The budget allocations at MEMD were estimated to be growing at an average rate of about UGX 233 billion in real terms per fiscal year. This implies that the biodiversity related budget allocations at MEMD were growing at an average of about UGX 21 billion in real terms per fiscal year. The allocations of the biodiversity budget towards the NBSAP II strategic objectives revealed that about 10.3 per cent of the biodiversity related budget was allocated for reduction and management of negative impacts while enhancing positive impacts on biodiversity. This translated into 0.9 per cent of the MEMD budget allocations. Similarly, promotion of sustainable use and equitable sharing of costs and benefits of biodiversity was allocated about 10.1per cent translating into 0.9 per cent of the MEMD budget allocations per fiscal year. Furthermore, about 91per cent of the budget allocations to the sector were allocated for construction of hydropower dams and capital development, Future allocations should therefore target increasing the budget allocations to; monitoring negative and positive impacts of these investments, sustainable use and equitable sharing of costs and benefits of biodiversity, and mobilizing resources to enhance implementation.

CHAPTER FIVE: MINISTRY OF WATER AND ENVIRONMENT

5.1 Introduction

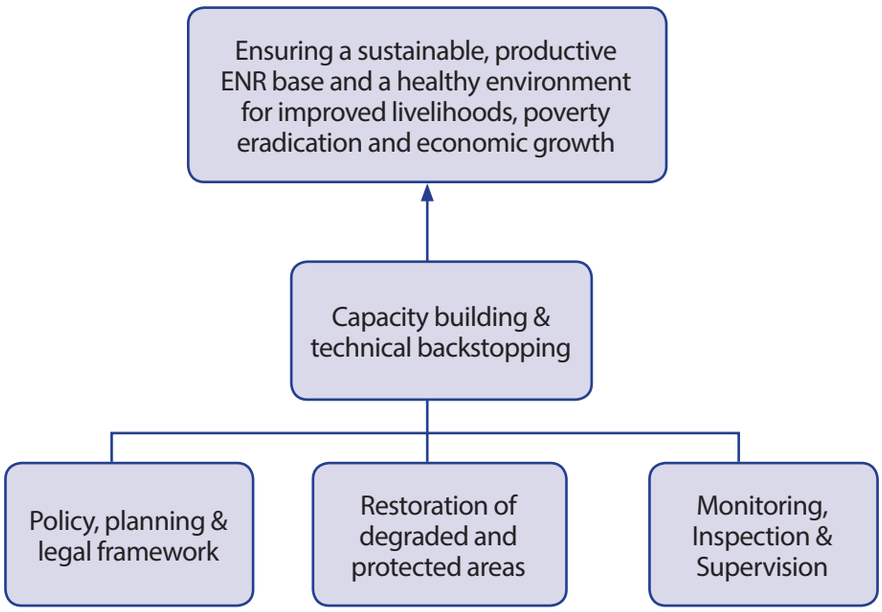
The Ministry of Water and Environment (MWE) sector consists of two sub-sectors: the Water & Sanitation (WSS) and the Environment & Natural Resources (ENR). The Water and Sanitation Sub-Sector comprises; Water Resources Management (WRM), Rural Water Supply and Sanitation (RWSS), Urban Water Supply and Sanitation (UWSS), and Water for Production (WFP). The Environment and Natural Resources Sub-Sector comprises; environmental management; management of forests and trees; management of wetlands and aquatic resources; and climate, weather and climate change. According to the definition of biodiversity, all expenditures in Environment and Natural Resources were considered to be biodiversity related. However, in the Water Supply and Sanitation sub-sector only expenditures in Water Resources Management and Water for Production were considered biodiversity related.

5.2 Department of Environmental Support Services

5.2.1 Introduction

The Department of Environmental Support Services (DESS) is one of the four departments in the Directorate of Environmental Affairs (DEA) responsible for formulation of environment policies, regulation, coordination, inspection, supervision and monitoring of the environment and natural resources as well as the restoration of degraded ecosystems and mitigating and adapting to climate change. The department performs its mandate through five Key Result Areas (KRAs) which are illustrated in Figure 14 below.

Figure 14: Key Result Areas of DESS



5.2.2 Financing Environmental support services in Uganda 2008/9-2014/15

The DESS has been receiving financial support since its establishment in 2008/9 fiscal year. The results in Table 7 show that the funds released are less than the amounts allocated. On average, environmental support services were allocated about UGX 0.178 billion in real terms per fiscal year. Out of the annual budget allocations to the department, about 79.4 per cent (UGX 0.143 billion) of the funds were released and 98.8 per cent of the funds were spent by the department in the respective fiscal years.

Table 7: Budget allocations and expenditures at DESS in real terms

Fiscal Year	Released (billion)	Expenditure (billion)	Performance (%)	Absorption (%)	Biodiversity budget (billion)	Percentage biodiversity (%)
2008/9	0.063	0.062	39.4	99.4	0.012	20
2009/10	0.135	0.135	84.9	100.0	0.027	20
2010/11	0.140	0.140	77.8	100.0	0.028	20
2012/13	0.156	0.156	89.1	100.0	0.031	20
2013/14	0.146	0.136	89.6	93.2	0.027	20
2014/15	0.220	0.220	95.7	100.0	0.044	20
Average **Std.dev**	**0.143** **0.050**	**0.142** **0.050**	**79.41** **8.35**	**98.76** **1.13**	**0.028**	

Figure 15: Trend in financing Environment Support Services in real terms

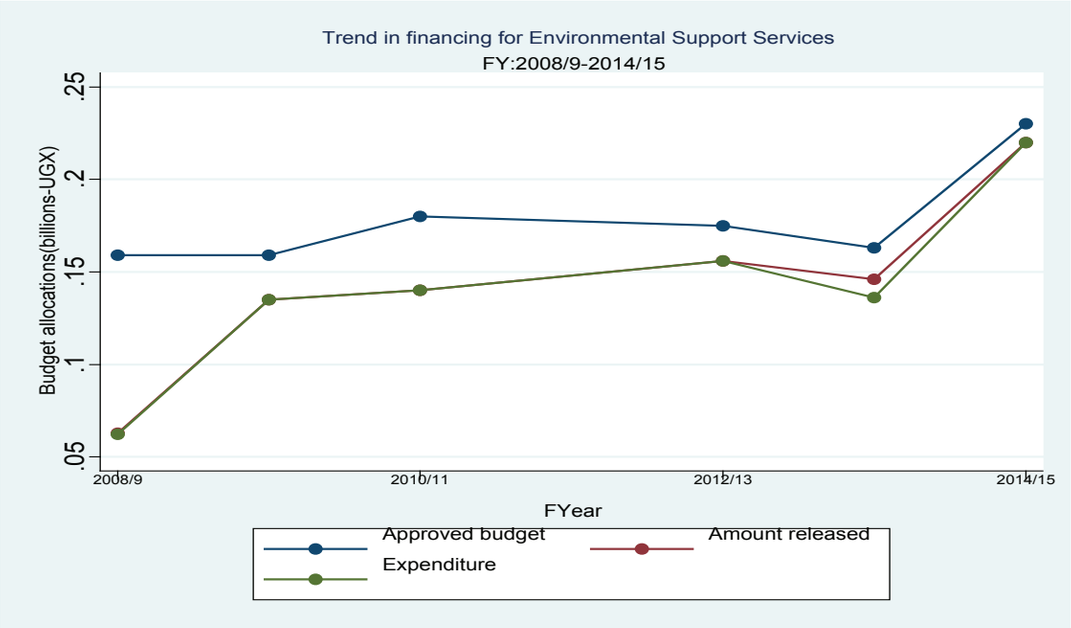
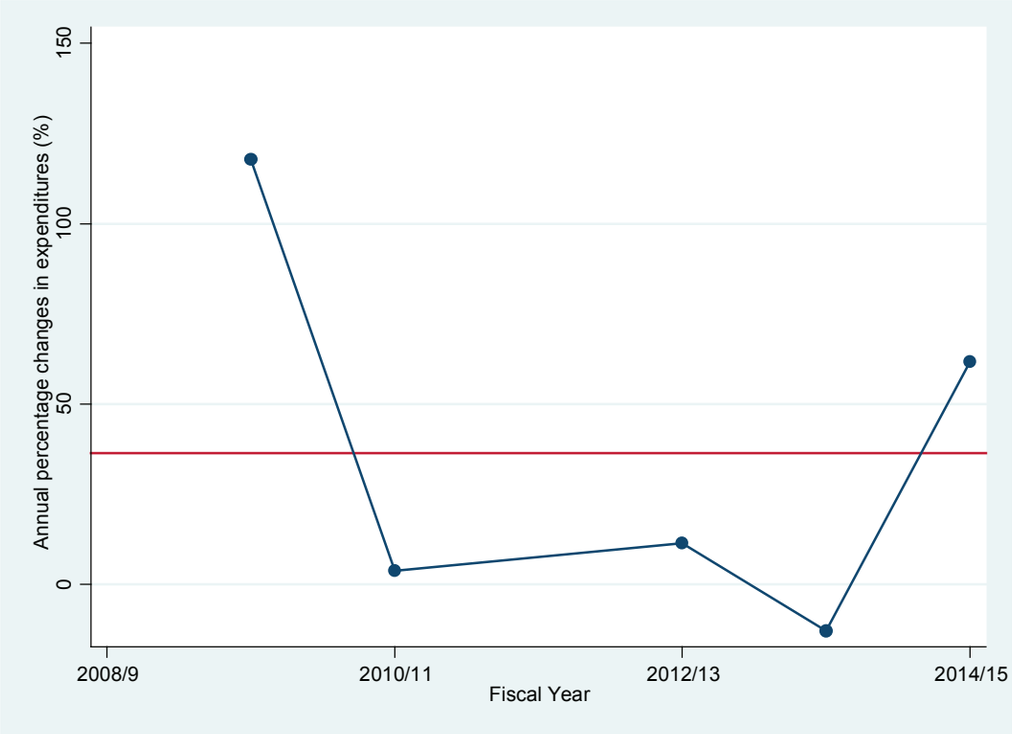


Figure 15 shows the variation in financing environmental support services in Uganda during 2008/9-2014/15fiscal period. Although the budget and expenditure for environmental support services in Uganda is generally increasing; the budget allocations and expenditure for environmental support services were almost constant between the 2010/11-2013/14 fiscal years with a slight increase in 2014/15 fiscal year. Further analyses to explore the underlying trends in financing environmental support services were carried out. Annual percentage changes in budget allocations and expenditures were computed and the results are shown in Figure 17.

Figure 16: Trend in annual percentage change in expenditures at DESS



The average annual percentage change in expenditures for environmental support services in Uganda was about 36.4 per cent for all the fiscal years covered in this analysis. It should be noted that for the 2010/11-2013/15 fiscal years, the average percentage changes were below the average change. Further analyses of the trend in expenditure for DESS are shown in Figure 16 The moving average smoothing suggests that the long-term underlying trend in financing DESS in Uganda is linear. Therefore, simple linear regression was used to estimate the growth in expenditure for environmental support services in Uganda. The results showed that expenditures on environmental support services were on average increasing by about UGX 0.023 (±0.007) billion in real terms per fiscal year.

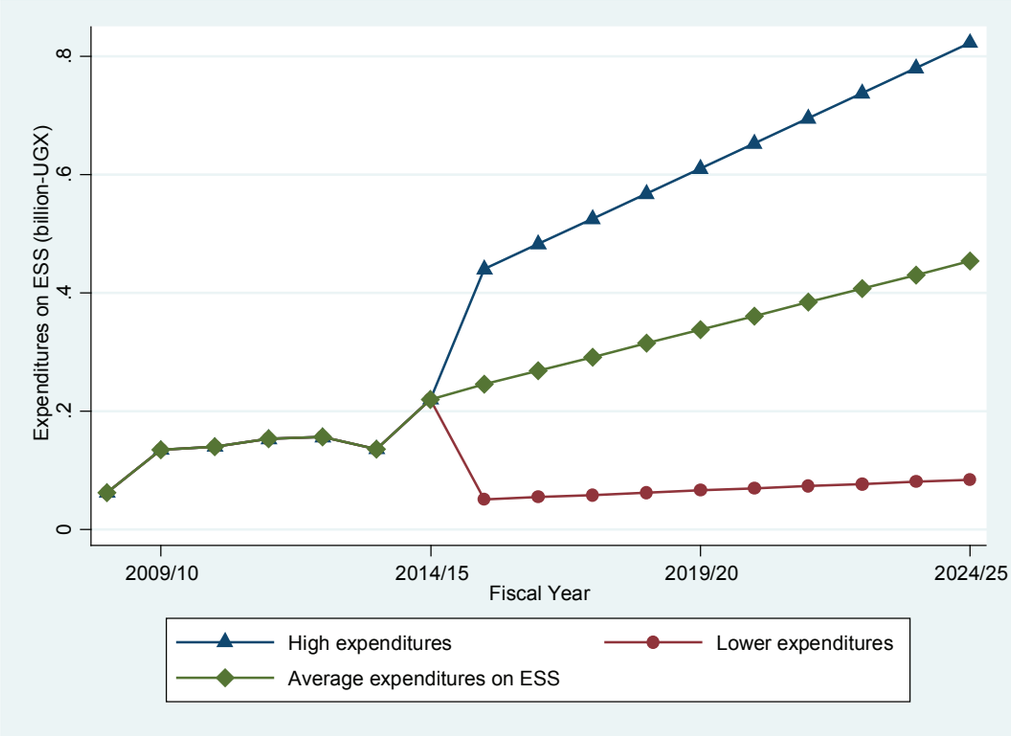
Biodiversity financing at DESS

Analysis on the specific objectives of the department revealed that only that is to say restoration of degraded and protected areas was directly associated with biodiversity conservation and management. On average the department spent about UGX 0.028 billion on biodiversity conservation and management translating in about 20% of their budget. All their budget is financed by government of Uganda i.e. no donor funds.

5.2.3 Future expenditures on environmental support services in Uganda 2008/9-2024/25

Figure 17 provides a prediction of future expenditures from past expenditures. The results indicate that expenditures on environmental support services will be increasing and it is projected that in the fiscal year 2024/25 the expected expenditures will be about UGX 0.454 billion in real terms. The figure further shows three scenarios that might happen to expenditures at the department of environmental support services.

Figure 17: Past and future expenditures at DESS in real terms



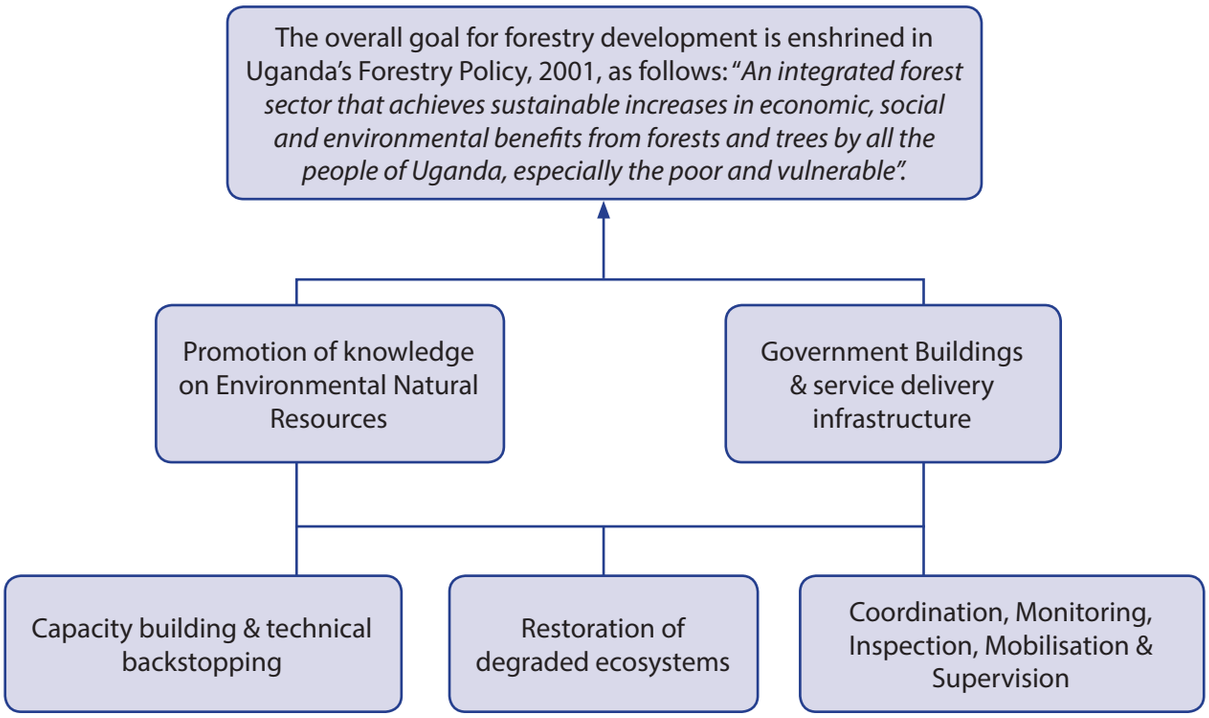
The scenario indicated by the green colour, gives the projected expenditures for environmental support services if their expenditures will grow at an average rate of about UGX 0.454 billion per fiscal year. The second scenario, blue colour shows the expected growth per fiscal year if the growth rate increased by about 5%. The last scenario shows the expected growth per fiscal year if the growth rate was reduced by about 5%.

5.3 Forestry Sector Support Department (FSSD)

5.3.1 Introduction

The FSSD oversees the forest sector to improve on compliance, co-ordination and performance, it focuses on 4 strategic objectives: (i) Formulate and oversee forestry policies, standards, and legislation, (ii) Provide technical support and monitor forestry in local governments, (iii) Monitor the National Forestry Authority (NFA) using a performance contract, (iv) Provide advice, public information and advocacy to sector stakeholders, and (v) Ensure effective National Forestry Plan (NFP) co-ordination and cross-sectoral linkages. The (KRAs for the FSSD are summarised in Figure 18.

Figure 18: Key Result Areas at FSSD in Uganda



5.3.2 Financing Forestry support services in Uganda 2008/9-2014/15

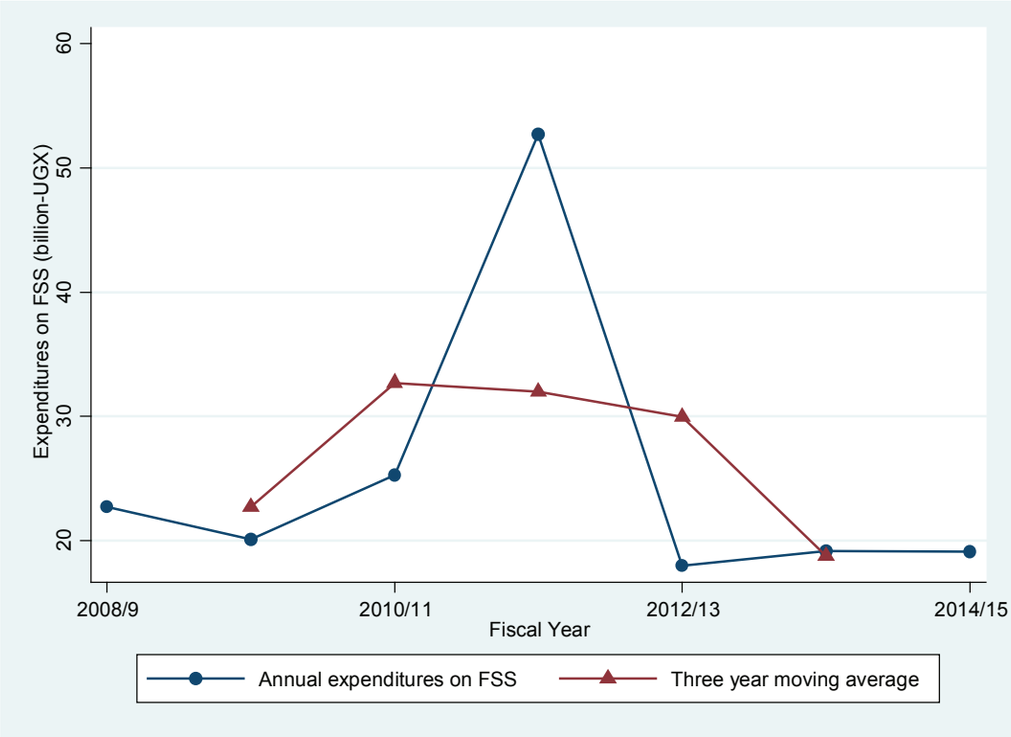
The FSSD executes its mandate using funds allocated to the department by the Government of Uganda and donors. Therefore, the budget allocations and expenditures for FSSD for the period 2008/9-2014/15 fiscal years were reviewed.

Table 8: Budget allocations and expenditures at FSSD in real terms

Fiscal Year	Donor allocations (billion)	Govt allocations (Billion)	Total Expenditure (billion)	Performance (%)	Biodiversity budget (billion)	Percent biodiversity (%)
2008/9	22.6	0.60	22.73	96.8	4.55	20
2009/10	36.6	4.21	20.10	65.4	4.02	20
2010/11	45.4	1.82	25.28	66.4	5.06	20
2011/12	28.8	7.68	52.73	163.6	10.55	20
2012/13	0.0	19.49	17.97	92.2	3.59	20
2013/14	0.0	10.25	19.16	68.1	3.83	20
2014/15	8.8	19.53	19.14	68.4	3.83	20
Average Std.dev	**20.317.95**	**9.1 7.85**	**25.30 12.35**	**88.7 13.42**	**5.06 2.47**	

On average, the forestry support services were allocated about UGX 32 billion in real terms per fiscal year. Out of the total fiscal year allocations, only about 89 per cent of the funds were released to the department. Out of the released funds, expenditure on forestry support services was on average about 92 per cent. This implies that over 90 per cent of the funds released for forestry support services in Uganda are spent by the department. One of the objectives of this analysis was to explore the underlying trends in financing forestry support services that are linked to biodiversity. The link to biodiversity was analysed through the NBSAP II strategic objectives.

Figure 19: Trends in expenditures in real terms at FSSD in Uganda



The moving averages in Figure 19 show that the underlying trend in expenditures for forestry support services. The estimates revealed that in 2008/9 fiscal year, the average expenditures on FSS in Uganda were about UGX 22.8 (±1.55) billion in real terms. There was a sharp increase in the expenditures in real terms at FSSD in 2011/12 fiscal year. This may be attributed to donor funding specifically the EU grant provided in that fiscal year. Furthermore, annual percentage changes in forestry support service expenditures in real terms were computed for each fiscal year. On average, the nominal expenditures on forestry support services in Uganda were increasing by about 10.6 per cent per fiscal year. Figure 20 shows the trend in financing forestry support services in Uganda.

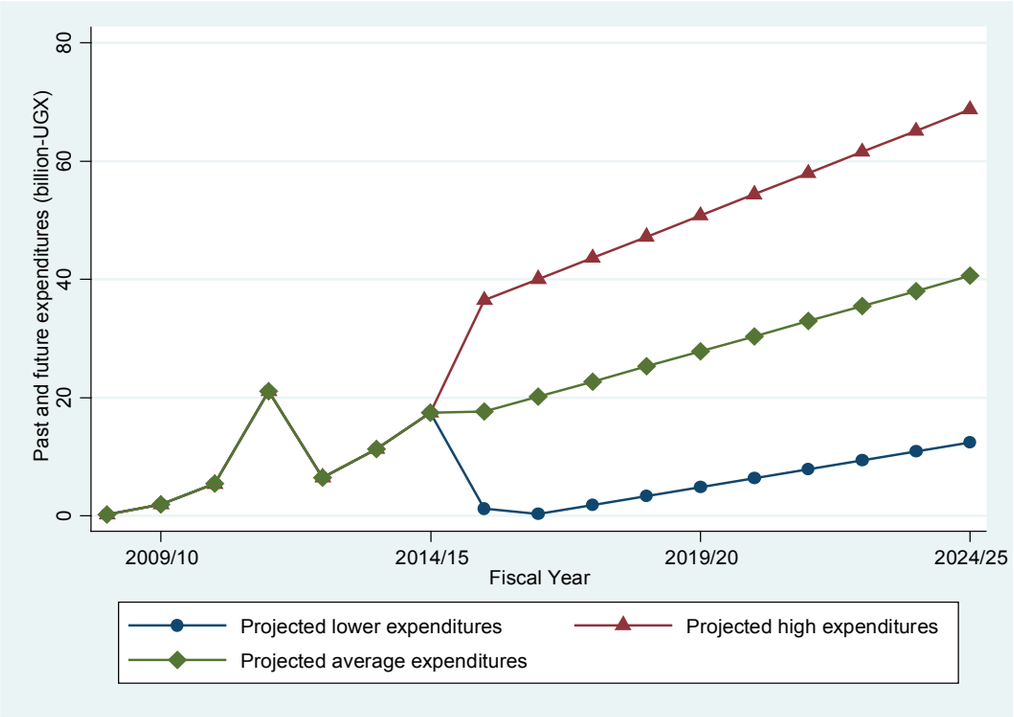
Biodiversity financing at FSSD

The department operates around five key result areas however its only one area on restoration of degraded ecosystems which have direct impact on biodiversity conservation and management. Further analysis into the budget allocations revealed that about 20% of the department's budget is associated with biodiversity conservation and management translating in about UGX 5.06 billion on average per fiscal year. Furthermore, about 69% of the departments were funded by donors in the review period.

5.3.3 Past and Future expenditures on forestry support services in Uganda 2008/9-2024/25

Using the trend model we projected the future likely expenditures on forestry support services in Uganda. The modelling was based on the assumption that expenditures remained constant. The results are shown in Figure 20. The projections show that in the fiscal year 2024/25 the expected expenditure on forestry support services will be about UGX 13.2 billion in real terms.

Figure 20: Past and future expenditures in real terms at FSSD in Uganda



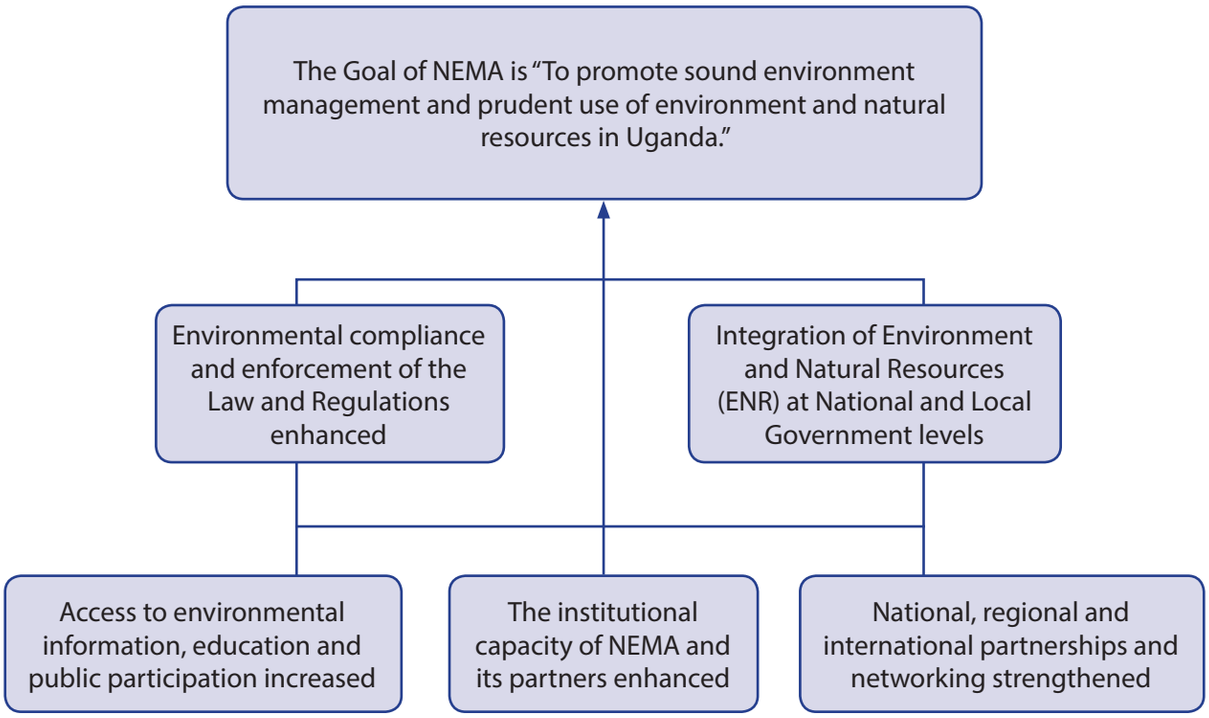
The scenario indicated by the green colour, gives the projected expenditures for forestry support services if their expenditures will grow at an average rate of about UGX 5.06 billion per fiscal year. The second scenario, blue colour shows that if the growth rate increases by about 5% the current expenditures. The last scenario shows that if the growth rate reduced by about 5% then the expenditures will follow the red curve.

5.4 National Environmental Management Authority (NEMA)

5.4.1 Introduction

The National Environment Management Authority (NEMA) is responsible for the regulatory functions and activities that focus on compliance and enforcement of the existing legal and institutional frameworks on environmental management in Uganda. NEMA's mandate covers both green and brown issues of environmental management. It oversees the implementation of all environment conservation programmes and activities of the relevant agencies both at the national and local Government level. NEMA executes its mandate through five KRAs as summarised in Figure 21.

Figure 21: Key Result Areas at NEMA Uganda



5.4.2 Financing NEMA activities in Uganda 2008/9-2014/15

NEMA gets budget allocations and financial assistance from the Government of Uganda and donor partners. This review records budget allocations, release and expenditures extracted from annual performance reports of NEMA. Table 17 shows the summary of the expenditures for NEMA for the 2008/9-2014/15 fiscal period.

Table 9: Budget allocations and expenditures in real terms at NEMA Uganda

Fiscal Year	Government allocations (billion)	Donor allocations (billion)	Expenditure (billion)	Performance (%)	Biodiversity budget (billion)	Percent share biodiversity
2008/9	5.42		5.42	99.4	1.08	20
2009/10	6.68		6.68	40.9	1.34	20
2010/11	5.41	2.55	7.96	81.5	1.59	20
2011/12	8.09		8.09	83.0	1.62	20
2012/13	4.68		4.68	80.7	0.94	20
2013/14	7.65		7.65	92.2	1.53	20
2014/15	8.11	0	8.11	90.7	1.62	20
Average	**6.58**	**1.28**	**6.94**	**81.18**	**1.39**	
Std.dev	**1.42**	**1.80**	**1.40**	**7.19**	**0.28**	

Std.dev =standard deviation

Table 9 shows that on average, NEMA was allocated about UGX 9.7 billion in real terms per fiscal year to deliver on its mandate. Out of the allocations for a fiscal year, about 81 per cent of the funds were released to NEMA and over 95 per cent of the funds were spent. This translates to about UGX 6.9 billion in real terms per fiscal year.

One of the major objectives of the review was to assess the trend in biodiversity related expenditures.

Figure 22: Trend in expenditures in real terms at NEMA Uganda

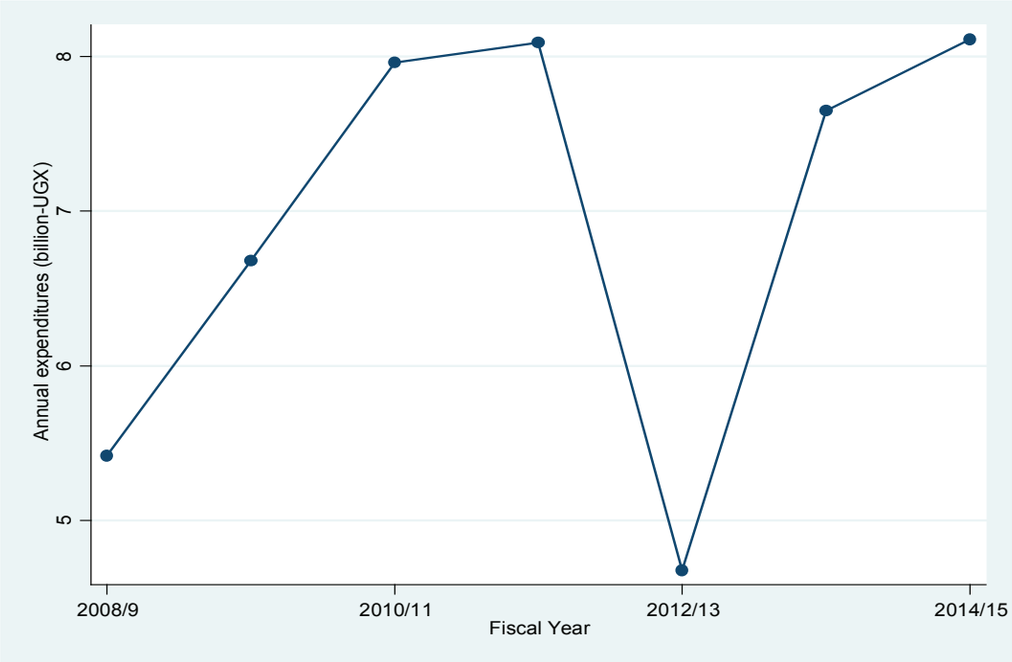


Figure 22 shows the long-term underlying trend in expenditure in real terms for NEMA in Uganda. The annual expenditures in real terms have been increasing since 2008/9 fiscal year. However, there was a sharp decline in the annual expenditures in real terms in 2012/13 fiscal year. This sharp decline in annual expenditures in real terms was attributed to the World Bank withdraw of support under the Environment Management Capacity Building Project I & II (EMCBP). This indicated that NEMA had not planned for sustainability of expenditure in the event that the World Bank withdrew its support. Further analysis suggests that the expenditures at NEMA in real terms have been increasing on average at about UGX0.93 billion per fiscal year.

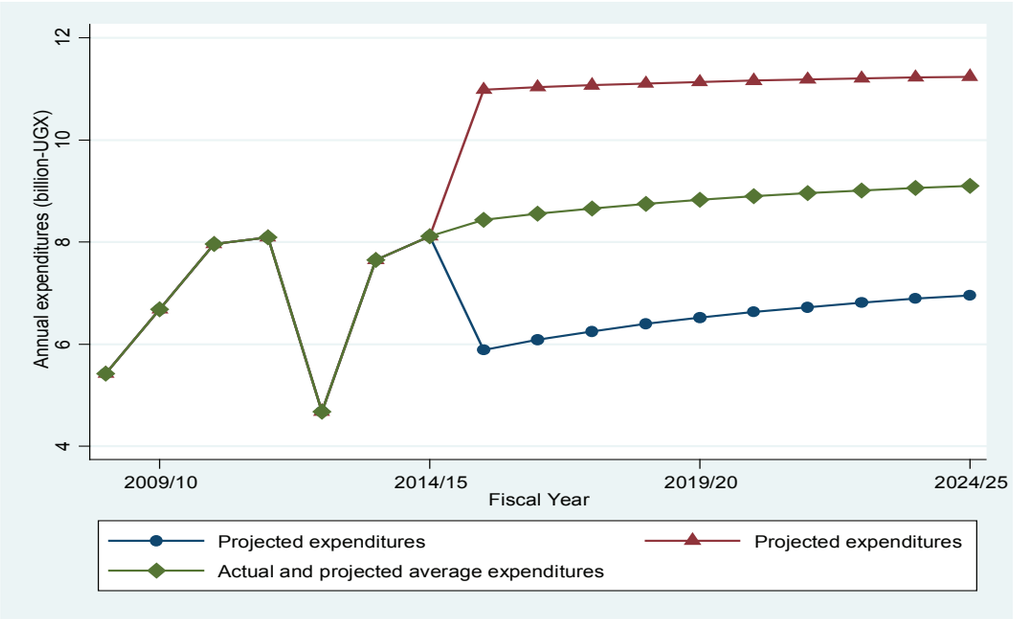
Biodiversity financing at NEMA

NEMA implements their mandate through five strategic objectives of which only one objective is associated with biodiversity conservation and management. Analysis based on the key results areas revealed that only 20% of NEMA's budget is spent on biodiversity conservation and management translating in about UGX 1.4 billion per fiscal year. Currently the NEMA budget is financed by government of Uganda with the last donor funding came in 2010/11 fiscal year.

5.4.3 Past and Future expenditures for NEMA, Uganda 2008/9-2024/25

Model predictions for future expenditures for NEMA are presented in Figure 23. Our predictions show that in the 2024/25 fiscal year, the annual average expenditures in real terms will be about 9.1 billion Uganda shillings.

Figure 23: Past and future expenditures at NEMA Uganda



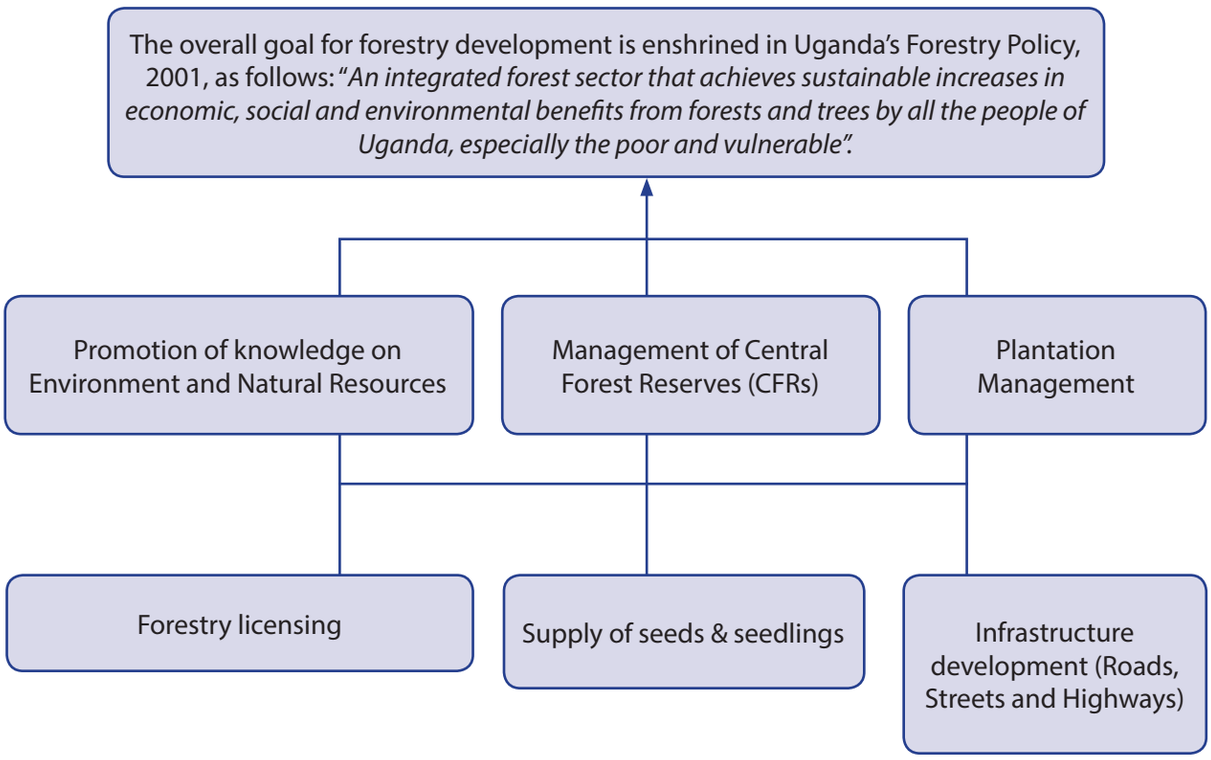
The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.4 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate on environmental management were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate on environmental management were decreased by about 5%.

5.5 National Forestry Authority

5.5.1 Introduction

The National Forestry Authority (NFA) is responsible for sustainable management of Central Forest Reserves (CFRs), supply of seed and seedlings, and provision of technical support to stakeholders in the forestry subsector. NFA is a semi-autonomous business entity and generates most of its own revenues and finances its activities. In other words, NFA's support is contingent upon payment for its services. The mandate of NFA is accomplished through six Key Result Areas (KRAs) summarised in Figure 24.

Figure 24: Key Result Areas at NFA



5.5.2 Financing National Forestry Authority in Uganda 2008/9-2014/15

To assess the expenditure of the National Forestry Authority (NFA), financial data on expenditures were extracted from the annual performance reports and reviewed. Table 18 shows the summary of the budget allocations and expenditure for NFA for the fiscal years 2008/9-2014/15.

Table 10: Budget allocations and expenditures in real terms at NFA Uganda

Fiscal Year	Govt allocations (billion)	Donor allocations (billion)	Expenditure (billion)	Performance (%)	Biodiversity budget (billion)	Percentage share of biodiversity
2008/9	0.20	0	0.16	81.0	0.03	17
2009/10	9.51	0	1.94	54.5	0.33	17
2010/11	1.20	14.03	5.40	35.5	0.92	17
2011/12	18.30	0	21.06	115.1	3.58	17
2012/13	5.50	10.938	6.48	74.6	1.10	17
2013/14	29.87	0	11.28	96.5	1.92	17
2014/15	6.46	0	17.40	88.5	2.96	17
Average **Std.dev**	**10.15** **10.57**	**3.57** **6.16**	**9.10** **7.84**	**77.94** **10.01**	**1.55** **1.33**	

Std dev = standard deviation

Table 10 shows that on average, NFA had a budget allocation of about UGX 12.1 billion in real terms per fiscal year. Out of the average allocation about UGX 9.7 billion was released annually in real terms translating into about 78 per cent of the budget. It is expected that all funds released are spent as per the plan; however, the data shows that only 90 per cent of the released funds were actually spent indicating a low absorption capacity by NFA.

Figure 25: Trend in annual expenditures in real terms at NFA

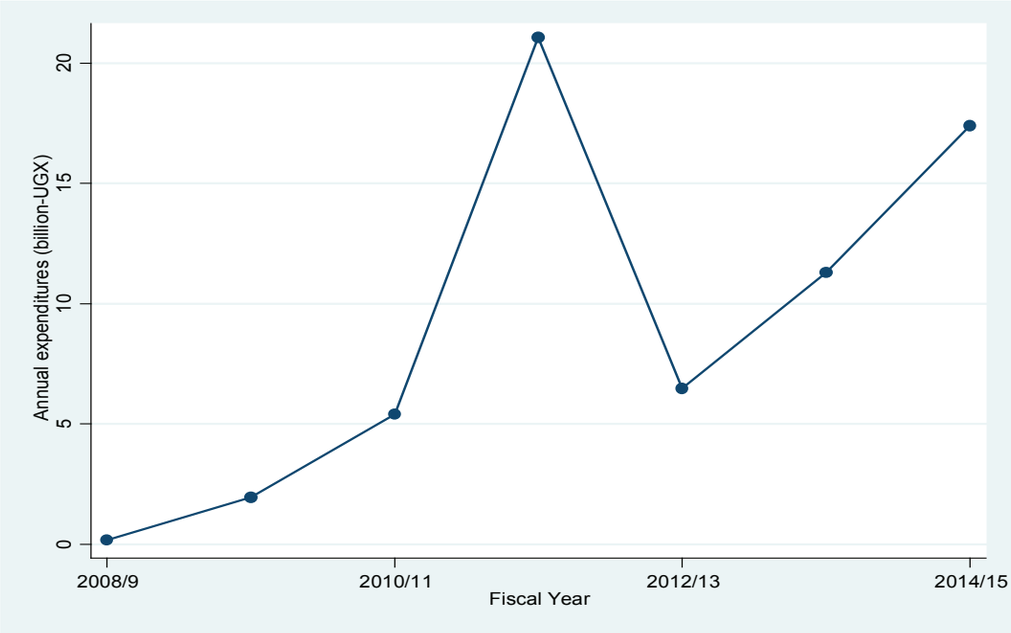


Figure 25. Shows that the annual expenditures in real terms at NFA have been gradually increasing. However, there was a sharp increase in expenditures in real terms in the 2011/12 fiscal year. This sharp increase was attributed to the EU funded project under the farm income enhancement. The results further show that the expenditures in real terms were growing at an average rate of about UGX 1.39 (±0.319) billion per fiscal year. The budget at NFA is funded from government of Uganda, donor and internally generated resources.

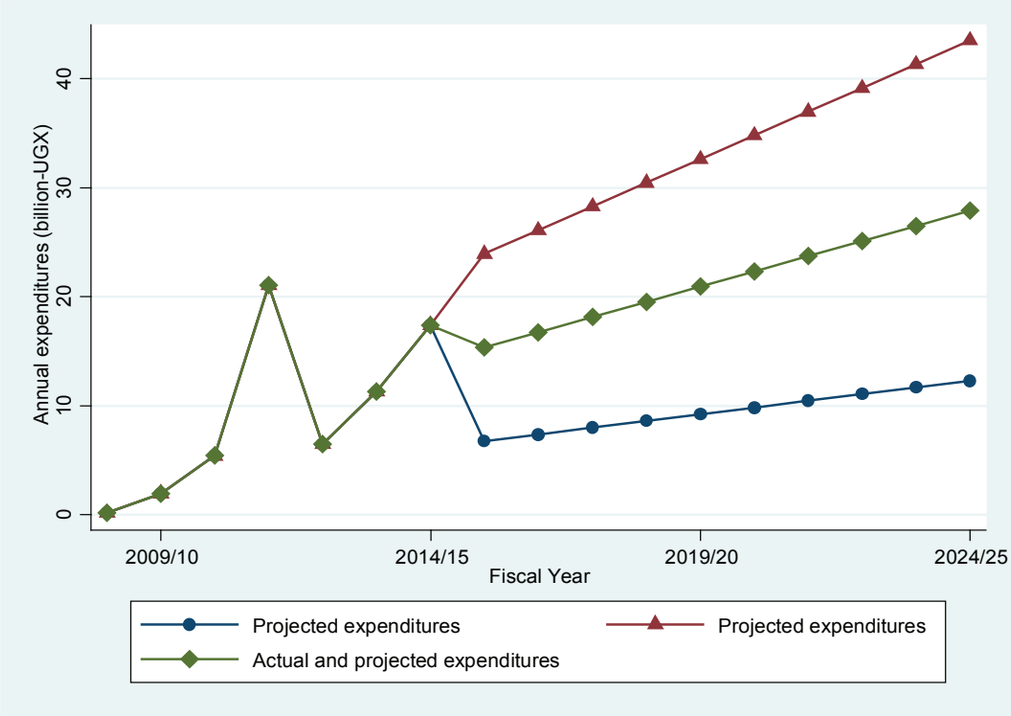
Biodiversity financing at NFA

NFA implements activities around six key results areas of which only the management of central forests is associated with biodiversity conservation and management. Analysis of the budget revealed that about 17% of NFA budget is attributed to biodiversity conservation and management. On average NFA spent about UGX 1.6 billion per fiscal year.

5.5.3 Past and Future expenditures at NFA in Uganda 2008/9-2024/25

Figure 26 shows the variation in the past and predicted annual expenditures in real terms at NFA in Uganda for the 2008/9-2024/25 fiscal period.

Figure 26: Past and future expenditures at NFA



The predictions show that in 2024/25 fiscal year the annual expenditures in real terms at NFA will be about UGX 40.6 billion.

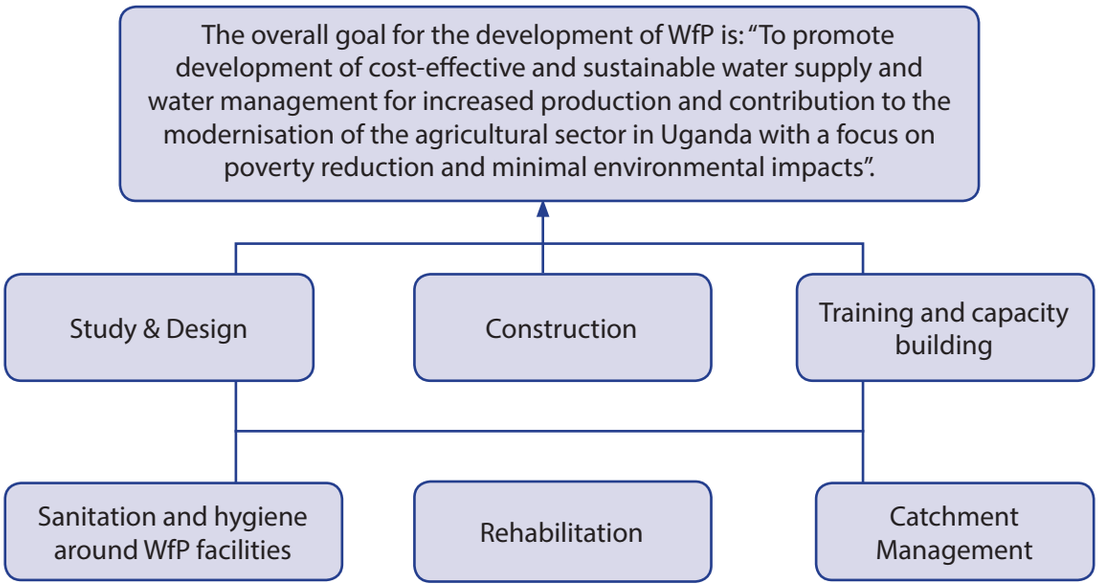
The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.39 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate on management of central forests in Uganda were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate on management of central forests in Uganda were decreased by about 5%.

5.6 Water for Production

5.6.1 Introduction

Water for Production (WfP) refers to the development and utilisation of water resources for productive use in crop irrigation, livestock, aquaculture, rural industries, wildlife, recreation, hydropower generation, transport, commercial uses, or security. The Water for Production task in Uganda is a largely shared responsibility. The key ministries are MWE and MAAIF. MWE is responsible for "off farm" activities. These involve the planning and development of multi-purpose water infrastructures like bulk water facilities, dams, valley tanks, and primary irrigation facilities. The key functions of the MWE for WFP as spelt out in Cabinet Minute 168 (CT 2007) of 25th April 2007 are; coordination of the national development agenda, planning, budgeting and reporting, management of implementation of programs, regulation and quality assurance as well as capacity building of other stakeholders. MAAIF is responsible for "on-farm" activities with respect to irrigation, livestock and aquaculture. On the other hand Ministry of Tourism, Trade and Industry (MTTI) is responsible for in-house facilities for rural industries, wildlife, and recreation. Figure 27 shows the summary of the mandate for WfP.

Figure 27: Key Result Areas at WfP in Uganda



5.6.2. Financing WfP in Uganda 2005/6-2014/15

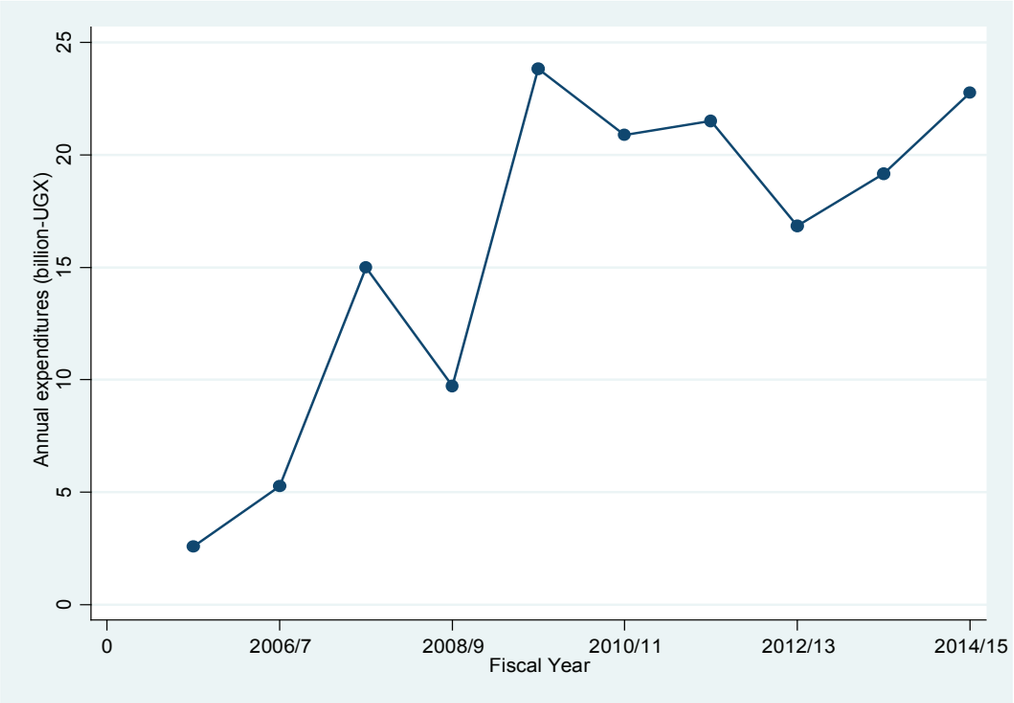
Table 11: Budget allocations and expenditures in real terms at WfP in Uganda

Fiscal Year	Govt expenditures (billion)	Donor expenditures (billion)	Total Expenditures (billion)	Performance (%)	Biodiversity budget (billion)	Biodiversity budget share
2005/6	2.57	0.00	2.57	70.9	0.44	17
2006/7	5.20	0.05	5.26	80.4	0.89	17
2007/8	11.76	3.22	14.98	107.4	2.55	17
2008/9	7.30	2.43	9.73	97.1	1.65	17
2009/10	23.03	0.81	23.84	99.7	4.05	17
2010/11	20.28	0.61	20.89	88.8	3.55	17
2011/12	21.51	0.00	21.51	99.1	3.66	17
2012/13	16.55	0.30	16.85	77.4	2.86	17
2013/14	19.17	0.00	19.17	98.6	3.26	17
2014/15	22.77	0.00	22.77	71.4	3.87	17
Average **Std.dev**			**15.76** **7.513**	**89.07** **4.16**	**2.68** **1.28**	

Std.dev = standard deviation

The average budget allocation to Water for Production (WfP) was about 17.7 billion Uganda shillings per fiscal year during the 2005/6- 2014/15 period. Table 11 shows that out of the average annual budget allocated to WfP about 89.1per cent of the funds was released by government and donor partners. On average, all the released funds were utilised by the Water for Production Department.

Figure 28: Trend in annual expenditures in real terms at WfP

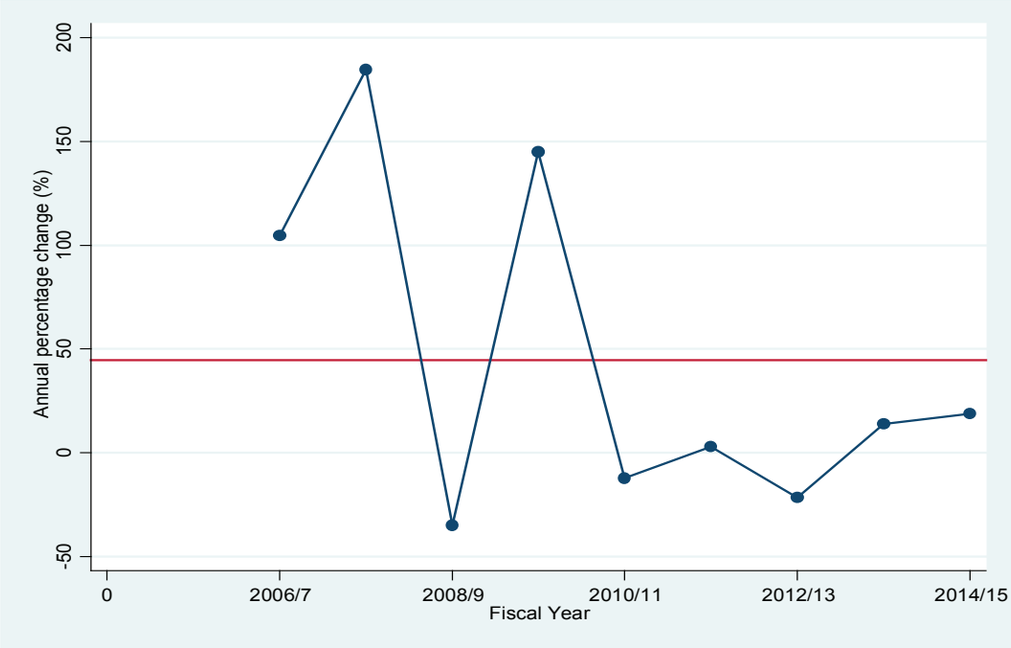


To explore the trend in the expenditure for WfP, rate of change and regression analysis were applied. Figure 28 shows the variation in trend in annual expenditures in real terms. There was a general increase in annual expenditures in real terms at water for production. However, there was slight decline in the expenditures in real terms in 2008/9 and 2012/13 fiscal years. These declines might be attributed to annual budget cuts by the government resulting from shocks. Furthermore, annual expenditures in real terms for WfP were increasing linearly at an average rate of about UGX 1.94 (±0.54) billion per fiscal year. Figure 29 shows the variation in annual percentage changes in expenditures for WfP in Uganda. The average annual percentage change in expenditures in real terms for WfP in Uganda was about 44.5per cent.

Biodiversity financing at WfP

Biodiversity financing refers to the expenditures that are used in preservation, protection and restoration of biological species and their ecosystems. In this department only expenditures on catchment management of water sources and sheds are dimmed biodiversity. On average about UGX 2.7 billion was spent on biodiversity related activities per fiscal year translating in about 17% of the budget for water for production.

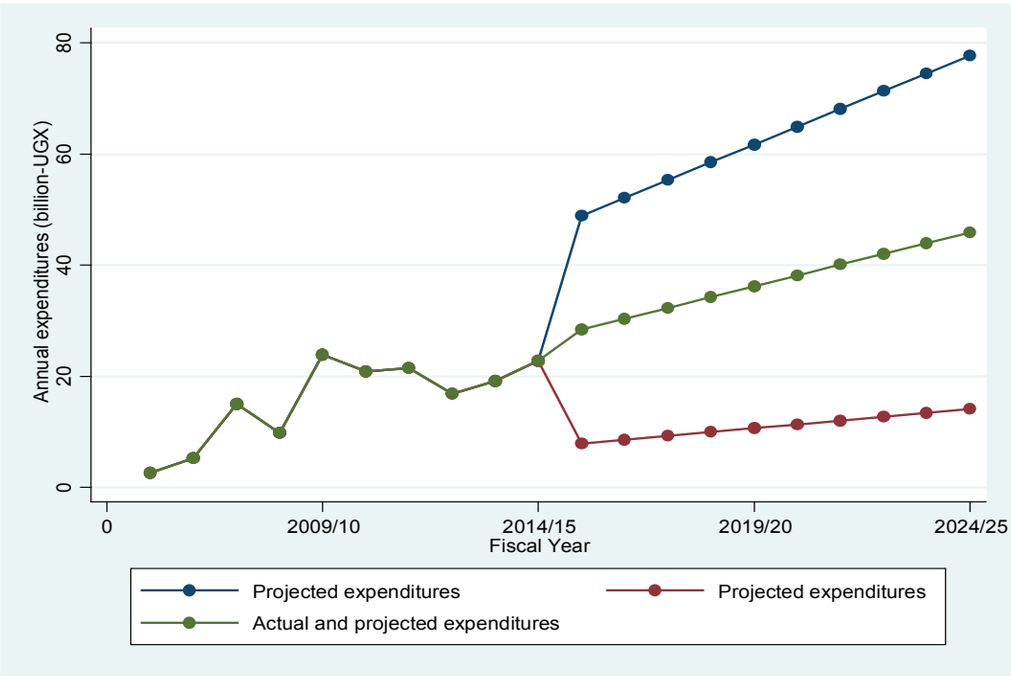
Figure 29: Annual percentage changes in expenditures in real terms at WfP



5.6.4 Past and Future expenditures for WfP in Uganda 2005/6-2024/25

The linear model was used to predict the expected expenditure for WfP in Uganda. Figure 30 shows the variation of the predicted average expenditures with their 95per cent confidence limits.The results show that the expected expenditure in real terms for fiscal year 2024/25 will be about UGX 45.9 billion.

Figure 30: Past and future expenditures in real terms at WfP



The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.94 billion per fiscal year.The red curve describes the projected expenditures if the

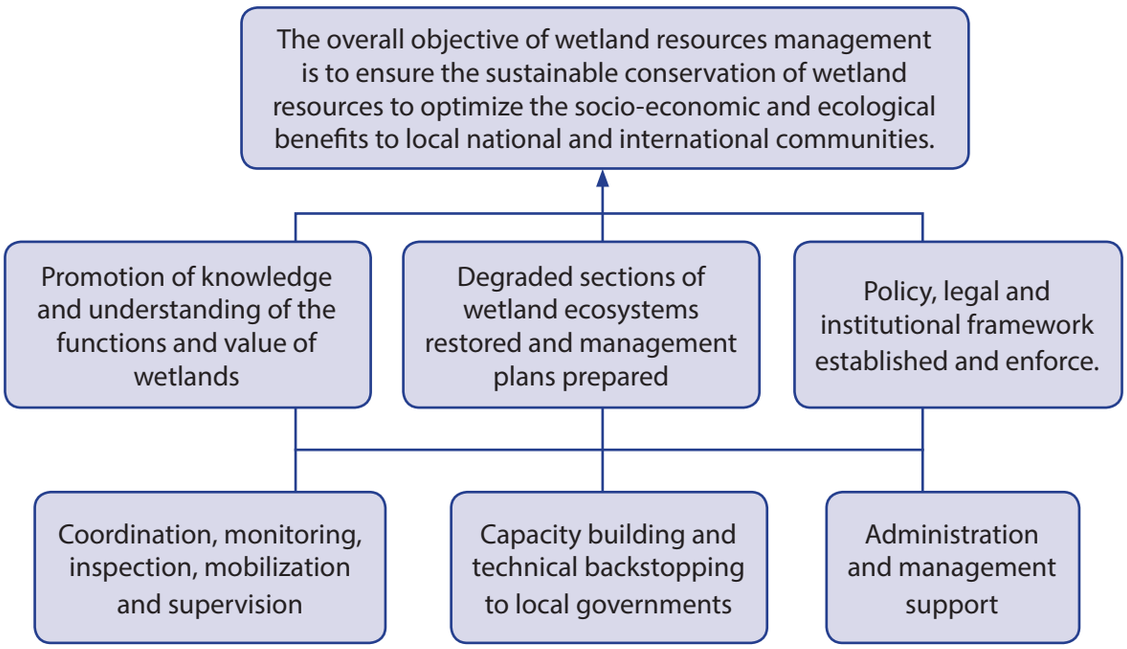
annual growth rate at water for production were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at water for production were decreased by about 5%.

5.7 Wetland Management Department

5.7.1 Introduction

The overall objective of Wetland Management Department (WMD) is to ensure the sustainable conservation and management of wetland resources to optimize the socio-economic and ecological benefits to local, national and international communities as stipulated in the National Wetlands Policy 1995 and the Wetlands Sector Strategic Plan 2001-2010. The Mandate of the WMD is delivered through six Key Result Areas (KRAs) as summarised in the Figure 31.

Figure 31: Key Result Areas at WMD



5.7.2 Financing of wetland management services in Uganda 2008/9-2014/15

Table 12 shows the summary of the expenditures for the Wetland Management services in Uganda for the 2008/9-2014/15 fiscal period.

Table 12: Budget allocations and expenditures in real terms at WMD in Uganda

Fiscal Year	Allocation (billion)	Released (billion)	Expenditure (billion)	Performance (%)	Absorption (%)
2008/9	4.30	4.12	4.16	96.0	101.0
2009/10	0.80	0.76	0.74	95.5	97.5
2010/11	0.69	0.66	0.66	95.7	100.0
2011/12	0.78	0.71	0.71	91.0	100.0
2012/13	2.97	2.54	3.12	85.4	123.0
2013/14	5.60	5.59	5.55	99.7	99.2
2014/15	2.94	2.79	2.76	94.9	98.9
Average **Std.dev**	**2.58** **1.93**	**2.45** **1.91**	**2.53** **1.92**	**94.02** **1.72**	**102.8** **3.39**

As shown in Table 20, the average annual budget allocations for the wetland management services in real terms were about UGX 2.6 billion. Out of the average annual allocations to the department, about 94 per cent of the funds were released by Government and development partners. The funds released to the department were spent on the planned activities within the fiscal year.

Figure 32: Annual expenditures in real terms at WMD

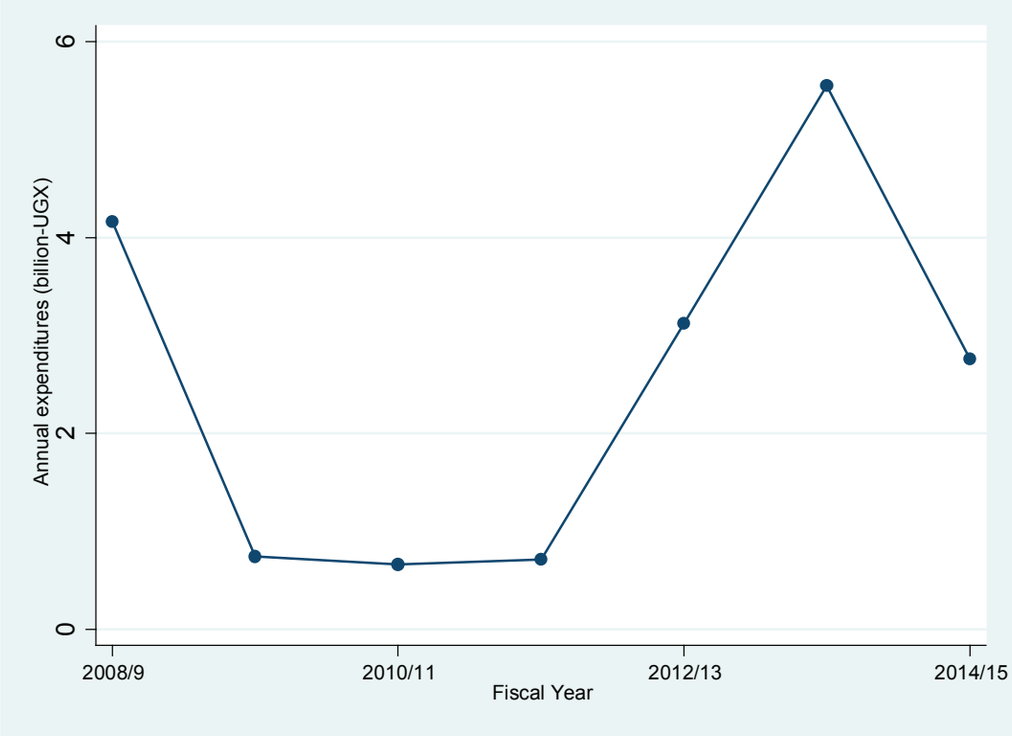


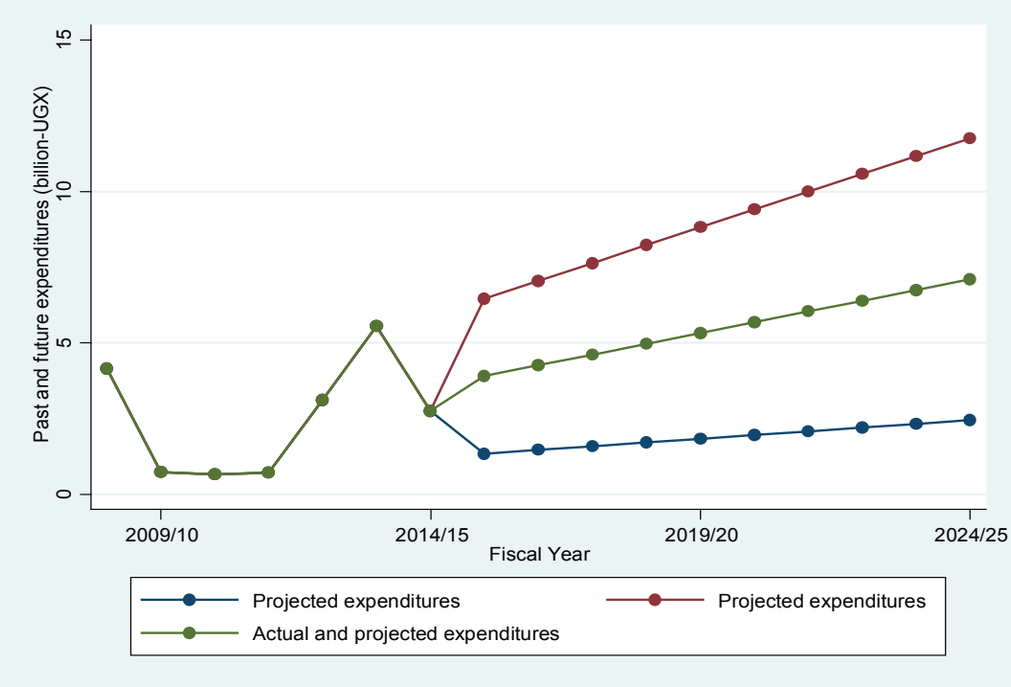
Figure 32 shows that the underlying trend in the expenditure for the wetland management services in Uganda. There was a general increase in expenditures in real terms for wetland support services. However, there was a decline in expenditures in the 2009/10 fiscal year which remained almost constant till 2011/12 fiscal year. There was an increase in annual expenditures in real terms between 2011/12 -2013/14 before registering a decline in 2014/15 fiscal year. A rate of change and regression analysis was conducted to estimate the trends in annual expenditures in real terms at WMD. The annual expenditures in real terms at WMD were growing at an average rate of about UGX 1.208 (±0.373) billion per fiscal year. Furthermore, the annual expenditures for the Wetland management services were examined to understand the underlying trends. The annual percentage changes were computed and Figure 33, shows the variation in the percentage changes in expenditures. The average annual percentage change in expenditures in real terms at WMD was about 46.9per cent per fiscal year.

Biodiversity financing at wetland management department

Wetlands play an important role in the survival of many living organisms therefore; expenditures towards their conservation and management are dimmed to be 100% biodiversity. Therefore the wetland management department spent on average about UGX 2.5 billion on biodiversity conservation and management through the protection and restoration of wetlands in Uganda per fiscal year.

5.7.3 Past and Future expenditures at WMD 2008/9-2024/25

Figure 33: Past and future expenditures in real terms at WMD



The results show that the expected expenditures in real terms for fiscal year 2024/25 will be about UGX 22.7 billion. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.21 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at wetland management department were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at wetland management department were decreased by about 5%.

5.8 Water Resources Management (WRM)

5.8.1 Introduction

According to the Constitution of the Republic of Uganda, water resources management is not decentralised and the function has therefore traditionally been performed at the central level. Directorate of Water Resources Management (DWRM) is the national institution mandated for the management of water resources. Its main goal is to promote sustainable management of Uganda's water resources to ensure availability of water of adequate quantity and quality for domestic water supply, agriculture, industry, fisheries, generation of hydroelectric or geothermal energy, navigation, fishing, preservation of flora and fauna and recreation and other uses in ways which minimize harmful effects to the environment for both present and future generations. DWRM is comprised of three departments namely i) Water Resources Monitoring and Assessment, ii) Water Resources Planning and Regulation and iii) Water Quality Management.

5.8.2 Financing WRM in Uganda 2005/6-2014/15

Table 13 shows the distribution of budget allocations and expenditures for water resources management in Uganda for the period 2005/6-2014/15.

Table 13: Budget allocations and expenditures at WRM in Uganda

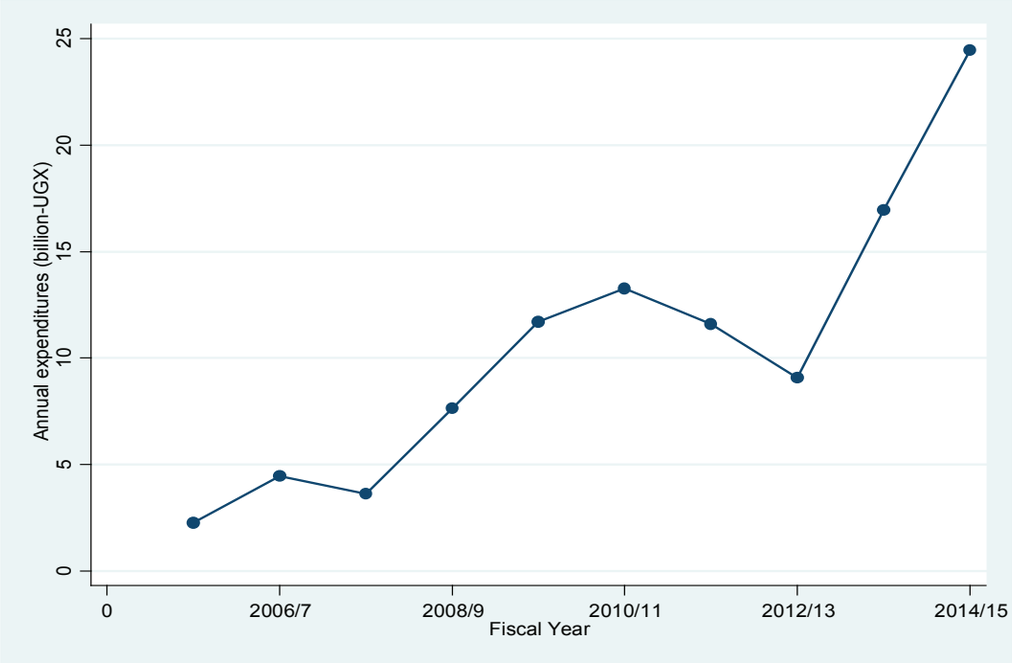
Fiscal Year	Donor (UGX-billion)	Govt (UGX-billion)	Expenditure(UGX-billion)	Performance (%)	Biodiversity expenditures (billion)
2005/6	1.55	0.72	2.27	96.7	0.45
2006/7	2.31	2.16	4.46	69.6	0.89

2007/8	1.17	2.46	3.63	57.2	0.73
2008/9	3.23	4.42	7.64	85.8	1.53
2009/10	6.02	5.70	11.71	95.8	2.34
2010/11	8.95	4.31	13.26	61.5	2.65
2011/12	6.19	5.42	11.61	51.5	2.32
2012/13	2.93	6.14	9.06	105.0	1.81
2013/14	11.32	5.62	16.94	69.8	3.39
2014/15	18.30	6.16	24.46	147.5	4.89
Average	**6.2**	**4.31**	**10.51**	**84.03**	**2.10**
Std.dev	**5.39**	**1.90**	**6.74**	**9.1**	**1.35**

Std.dev =standard deviation

From Table 13, the average budget allocations in real terms for WRM for the 2005/6-2014/15 fiscal period were estimated to be about UGX 17.1 billion. Out of the allocations about UGX 13.9 billion on average was released translating into a budget performance of about 84 per cent. Additionally, only 11per cent of the released funds were spent by the WRM department. Furthermore, on average about 54% of the budget at WRM was funded by donors.

Figure 34: Trend in expenditures in real terms at WRM in Uganda

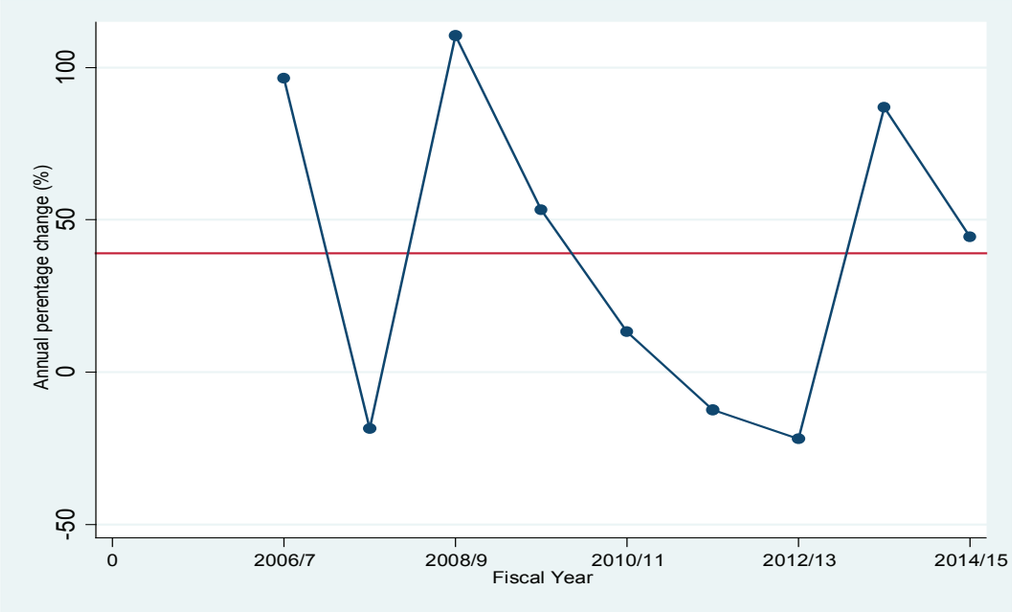


One of the main objectives of the review is to explore the trend in the annual expenditures on WRM in Uganda for the 2005/6-2014/15 fiscal period. There was a general increase in annual expenditures in real terms for water resources management. The results revealed that the underlying trend in the annual expenditures for WRM in Uganda seems to be linear. Regression analysis and rate of change were used to estimate the trend in the expenditures in real terms for WRM in Uganda. The annual expenditures in real terms for WRM were growing linearly at an average rate of about UGX 1.99 (±0.35) billion per fiscal year. To assess the trend in the expenditures for WRM, annual percentage changes were computed. The average percentage change in expenditures for WRM was about 39.1per cent for the fiscal years 2005/6-2014/15.

Biodiversity financing at WRM

In the directorate of water resources management, activities towards preservation of flora and fauna and recreation contribute positively to biodiversity conservation and management. On average WRM spends about UGX 2.1 billion per fiscal year on the preservation of flora and fauna and recreation related activities. This implies that about 20% of the budget at WRM is attributable to biodiversity conservation and management.

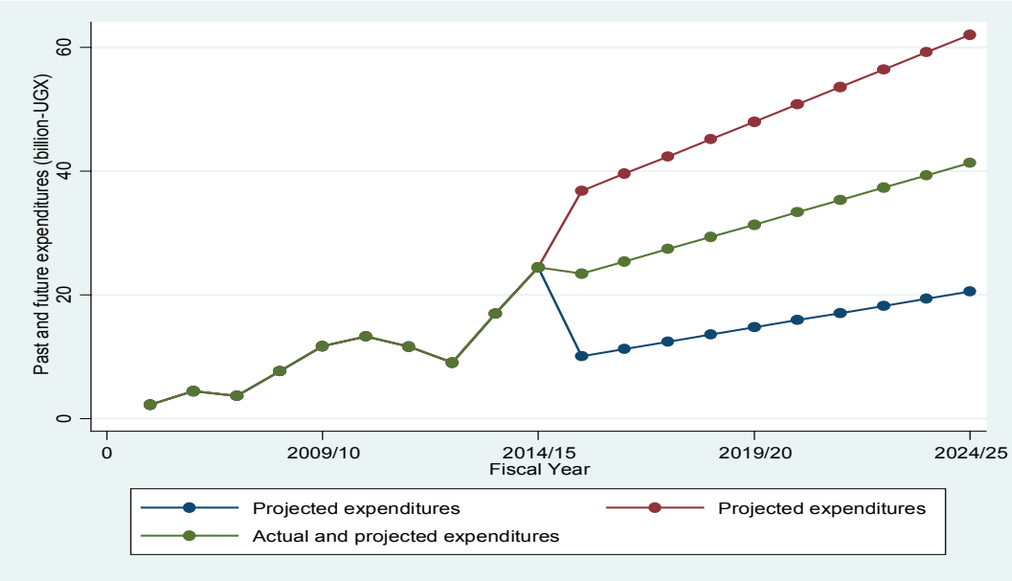
Figure 35: Annual percentage changes in expenditures in real terms at WRM



5.8.3 Past and Future expenditures for WRM in Uganda 2005/6-2024/25

The trend model based on the past expenditures for WRM was used to predict the future likely expenditures. The results of the predictions are shown in Figure 36.

Figure 36: Past and future expenditures at WRM in Uganda



The projections revealed that in the 2024/25 fiscal year the average expenditure on WRM in Uganda will be approximately UGX 41.3 billion. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.99 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at water resources management were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at water resources management were decreased by about 5%.

5.9 Meteorology and climate change

5.9.1 Introduction

The focal institution for Climate Change in Uganda is the Climate Change Unit (CCU) under the MWE, which has a broad mandate of providing technical advice to government on climate change, coordinating implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP). The unit also performs the duties of the secretariat of the National Designated Authority (NDA) for carbon trading including Clean Development Mechanism (CDM). The NDA Framework consists of an Inter-Ministerial/ Institutional Climate Change Policy Committee that gives policy guidance on climate changes, and advises the Minister responsible for Environment (NDA) on carbon trading. An Inter-Institutional Technical Committee comprising of climate change desk officers (from key Institutions/ Ministries) was set up with the aim of supporting MWE in the sector-specific implementation of Climate Change interventions. The National Development Plan I (2010/11 to 2014/15), the instrument that guides Uganda's 5-year development strategy, recognises climate change under the following four objectives:

1. Ensure climate proof development planning.
2. Develop national capacity for coordination and implementation of climate change adaptation and mitigation activities in the country in support of social welfare and national development
3. Promote low carbon economic development path
4. Meet Uganda's international obligations to implement climate change conventions and the Kyoto Protocol

5.9.2 Financing Meteorology and climate change in Uganda 2008/9-2014/15

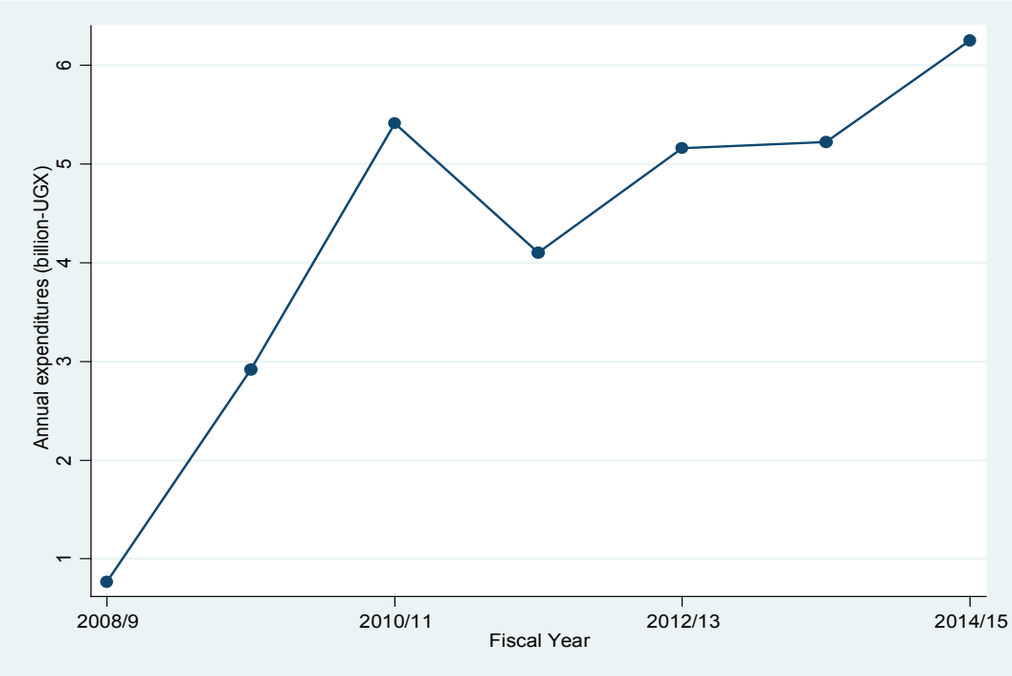
The average budget allocations for meteorology and climate change were about 7 billion Uganda shillings for the 2008/9-2014/15 fiscal period. Out of the average allocations only 4.4 billion Uganda shillings were released translating into a budget performance of about 70 per cent., over 95per cent of the released funds were spent by the department.

Table14: Budget allocations and expenditures for Meteorology & climate change

Fiscal Year	Allocation (billion)	Released (billion)	Expenditure (billion)	Performance (%)	Absorption (%)
2008/9	1.12	0.78	0.77	69.1	98.9
2009/10	3.38	3.22	2.92	95.3	90.7
2010/11	8.41	5.45	5.41	64.8	99.2
2011/12	8.79	4.11	4.10	46.8	99.8
2012/13	6.08	5.16	5.16	84.9	100.0
2013/14	13.04	5.71	5.22	43.8	91.4
2014/15	7.83	6.50	6.25	83.0	96.2
Average **Std.dev**	**6.950** **3.891**	**4.419** **1.933**	**4.261** **1.872**	**69.67** **7.37**	**96.57** **1.50**

The trend in expenditures for climate change department was explored first using moving averages and then regression analysis. Figure 37 shows the variation in expenditures and the moving averages for expenditures for the climate change department.

Figure 37: Trend in expenditures at MCC in Uganda



There was a general increase in the annual expenditures in real terms at MCC. Therefore, the trend in the annual expenditures in real terms for the climate change department was examined using regression and annual percentage change in expenditures. The results showed that on average the annual expenditures for climate change and meteorology in Uganda were increasing at an average rate of about UGX 0.74 (±0.20) billion in real terms per fiscal year. The trend in financing meteorology and climate change activities in Uganda for annual percentage changes were also examined and computed.

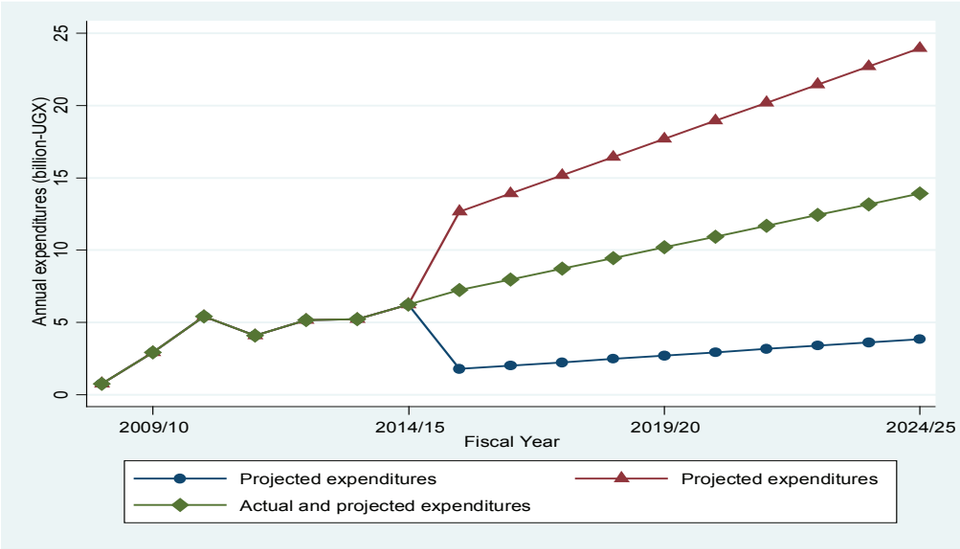
Biodiversity financing at Meteorology and climate change

None of the objectives and activities of climate change department are associated with preservation, restoration, and protection of biological species in Uganda. Therefore, none of the expenditures under this directorate could be positively associated with biodiversity conservation and management in Uganda.

5.9.3 Past and Future expenditures on Meteorology and climate change in Uganda 2008/9-2024/25

The linear trend revealed that the expected expenditures on meteorology and climate change activities in the fiscal year 2024/25 will be about UGX 13.9 billion.

Figure 38: Past and future expenditures at MCC in Uganda



The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.74 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate directorate of climate change were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at directorate of climate change were decreased by about 5%.

5.10: Ministry of Water and Environment budget and expenditures 2005/6-2014/15

The results of the expenditure review in the ministry of water and environment for fiscal years 2005/6-2014/15 are presented. Table 15 shows the summary of the expenditures under the water and environment for all the above sub-sectors for the period under review.

Table 15: Budget allocations and expenditures in real terms at MWE

Fiscal Year	Allocation (billion)	Releases (billion)	Expenditure (billion)	Overall budget performance (per cent)	Share of National Budget (per cent)
2005/6	158.496	108.231	102.858	64.90	4.4
2006/7	142.858	124.65	120.53	84.37	4.1
2007/8	125.282	123.961	117.886	94.10	2.8
2008/9	179.492	169.87	165.001	91.93	2.4
2009/10	238.4	196.29	180.301	75.63	4.5
2010/11	256.428	200.253	187.551	73.14	4.2
2011/12	281.7	188.371	176.948	62.81	3.1
2012/13	316.021	203.69	199.059	62.99	2.8
2013/14	439.091	386.188	347.957	79.24	3.2
2014/15	444.65	345.717	325.7	73.25	3.0
Average (Std.dev)	**258.242 (114.93)**	**204.722 (92.27)**	**192.379 (82.936)**	**76.23 (11.27)**	**3.45 (0.77)**

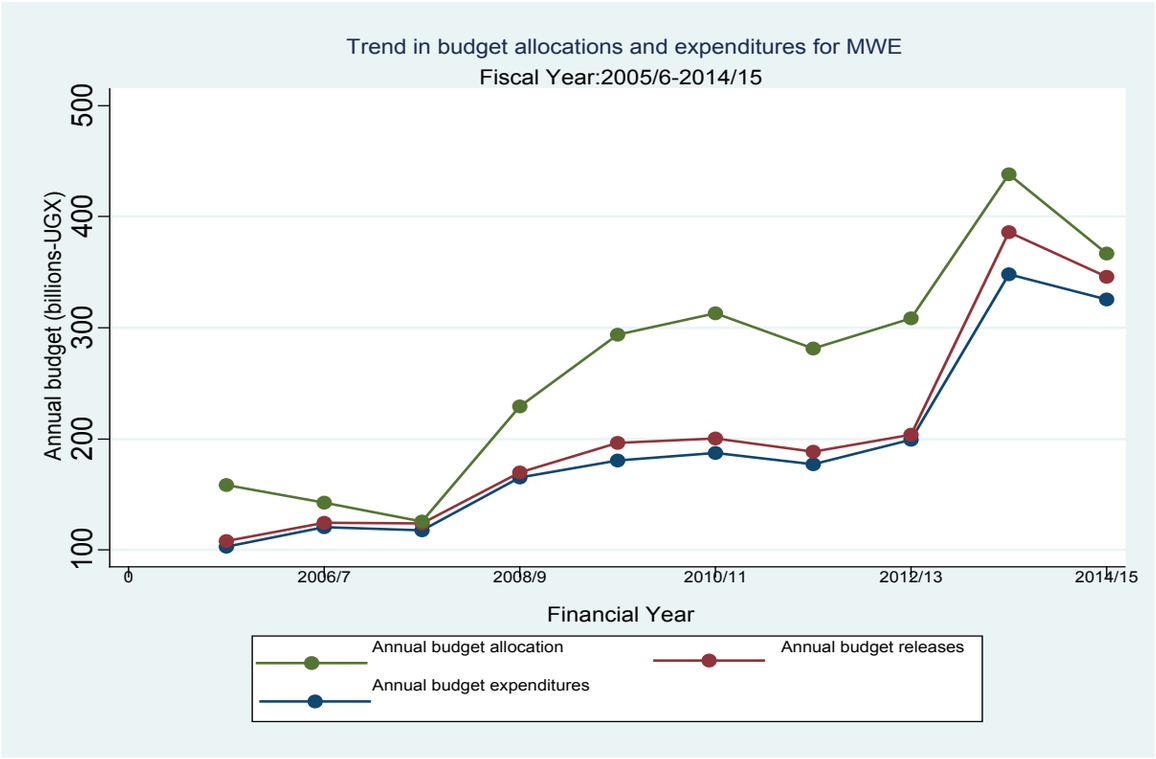
Std dev *=standard deviation*

Table 22 above shows that on average, the MWE was allocated about UGX 258.2 billion in real terms; UGX 204.7 billion was released by government to the ministry and on average about UGX 192.4 billion was spent. On average, the ministry's share of the national budget was about 3.5per cent for the period

under review. Further analysis on the budget allocations and actual expenditures in real terms shows an average budget performance of about 76.2 per cent. This implies that more than 75 per cent of the funds allocated to the ministry are released and spent by the different agencies within the ministry.

Figure 39 shows the trend in budget allocations, releases and expenditures for the MWE for the fiscal years 2005/6-2014/15.

Figure 39: Trend in budget allocations and expenditures in real terms at MWE

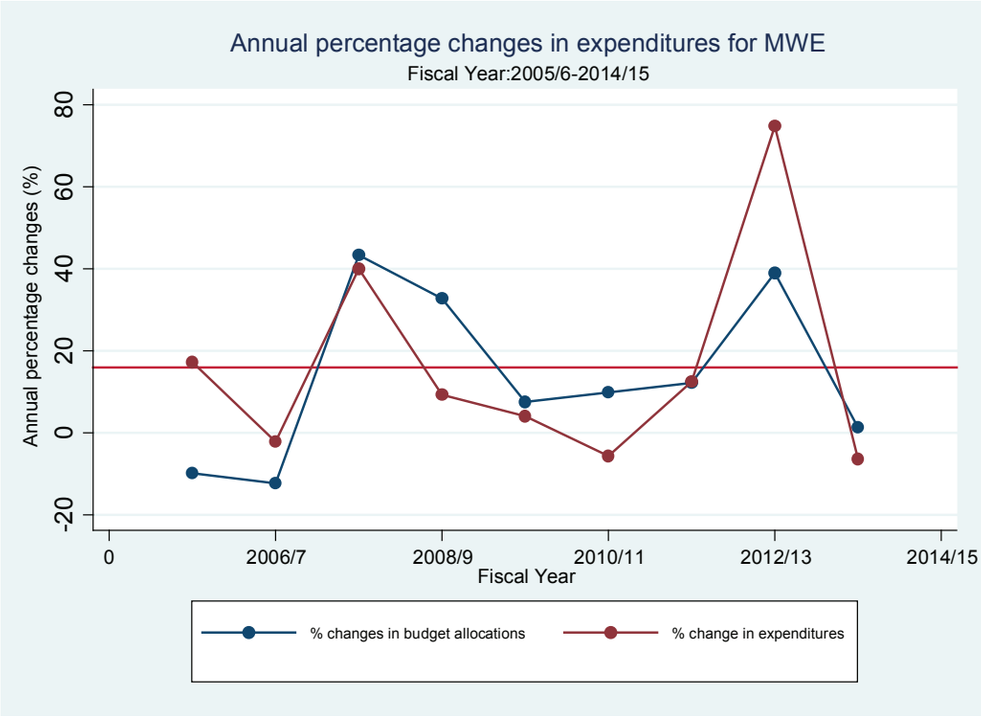


The trend suggests a general increase in the budget allocations, releases and expenditures for the ministry of Water and environment. Further analyses revealed that there is a small gap in absorption of funds released by government an indication of improved efficiency within the sector.

5.10.1 Trend in MWE budget allocation and expenditures

The trend also shows a slight decline in the financing of activities in the MWE in the 2014/15 fiscal year. This necessitated further analysis to understand the trend in budget allocations expenditures for the MWE and thus further analysis was undertaken. The results from further analysis revealed that the budget allocations and expenditures in real terms were growing linearly at a rate of about UGX 35.92 (±4.34) and UGX 24.52 (±4.31) billion per fiscal year respectively.

Figure 40: Annual percentage changes in expenditures in real terms at MWE



The average percentage change in budget allocations for Ministry of Water and Environment was about 13.8per cent per fiscal year. On the other hand, the average percentage change in expenditures was about 15.9per cent (Figure 5.10.32). There is a likelihood that the budget allocations and expenditures were increasing since most of the percentage changes are positive. Figure 40 shows the variation in budget allocations and expenditures for the Environment sector for the 2005/6-2014/15 fiscal period. It should be noted that the main objective of this analysis was not to assess trend in expenditure for the MWE but rather to analyse the biodiversity related expenditures. Therefore, the analysis below gives an insight into the biodiversity related expenditures in the MWE for the fiscal Years 2005/6-2014/15.

5.10.2 Biodiversity related expenditures at the MWE 2005/6-2014/15

The expenditures of MDAs at MWE were reviewed to establish the percentage of their budget associated to biodiversity conservation and management. Table 16 show the summary in biodiversity expenditures and their percentage attribution.

Table 16: Biodiversity related expenditures and attributions at MWE

Fiscal year	Biodiversity expenditures	Percentage share (%)
2005/6	0.89	0.87
2006/7	1.79	1.48
2007/8	3.27	2.78
2008/9	13.01	7.89
2009/10	12.85	7.13
2010/11	14.46	7.71
2011/12	22.43	12.68
2012/13	13.46	6.76
2013/14	19.50	5.61
2014/15	19.97	6.13
Average	**12.16**	**5.9**
Std.dev	**7.76**	**3.5**
Biodiversity budget attribution among MDAs in MWE		

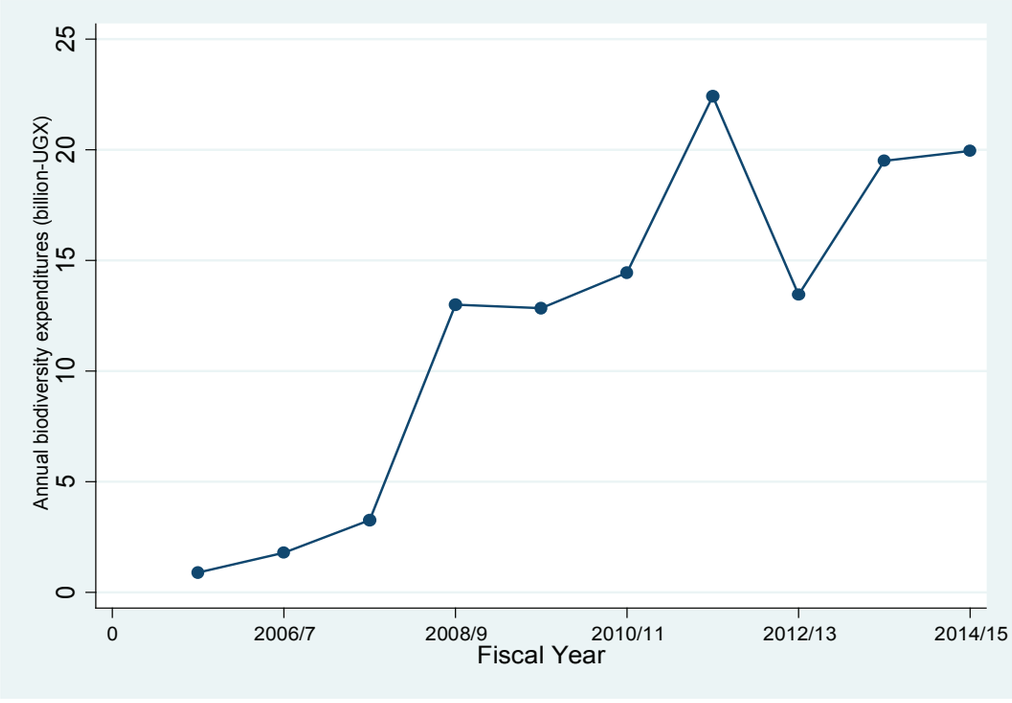
Department/Agency	% budget attributed to Biodiversity
Department of Environmental support services(DESS)	20
Department of Forestry support services(FSSD)	20
National Environmental Management Authority NEMA	20
National Forestry Authority (NFA)	17
Water for production (WfP)	17
Wetland Management Department (WMD)	100
Water resources Management (WRM)	20

Std.dev=standard deviation

Biodiversity budget allocation share at MWE

Analysis of the share of biodiversity related activities was undertaken for the Ministry of Water and Environment (MWE). Table 16 above reveals that on average biodiversity related activities constitute about 6 per cent of the ministry's budget allocations. The biodiversity budget allocations have also been increasing from about 0.9 per cent in 2005/6 fiscal year to approximately 13 per cent in 2011/12 fiscal year. However, there was a drop in the biodiversity expenditures in 2012/13 fiscal year. The actual biodiversity expenditures were on average about 12.2 billion per fiscal year translating into a budget performance of about 84.3 per cent and absorption capacity of approximately 92.1 per cent. This implies that most of the funds received for biodiversity related activities are spent within the financial year. Figure 42 shows the variation in annual percentage change in budget allocations and expenditures for biodiversity related activities and Figure 41 shows the trend analysis of biodiversity related activities in the MWE.

Figure 41: Trend in biodiversity financing at MWE, Uganda
Scale 1:5



Trend in biodiversity budget allocations at MWE 2005/6-2014/15

There was a general increase in both budget and expenditures at MWE for the 2005/6 to 2014/15 fiscal period with a slight decline in the budget in the 2012/13 fiscal year. The slight decline in expenditures at MWE could be attributed to budget cuts where all the funds are not released to the ministry. Furthermore, the observed increased allocation in biodiversity related activities might be attributed to increased government investment in environment related activities that are directly linked with biodiversity. We analysed the trend in biodiversity expenditures for the MWE. The results suggest that the biodiversity expenditures are growing linearly at an average rate of UGX 2.28 (±0.41) billion in real terms per fiscal year.

Figure 42: Annual percentage changes in biodiversity financing in Uganda

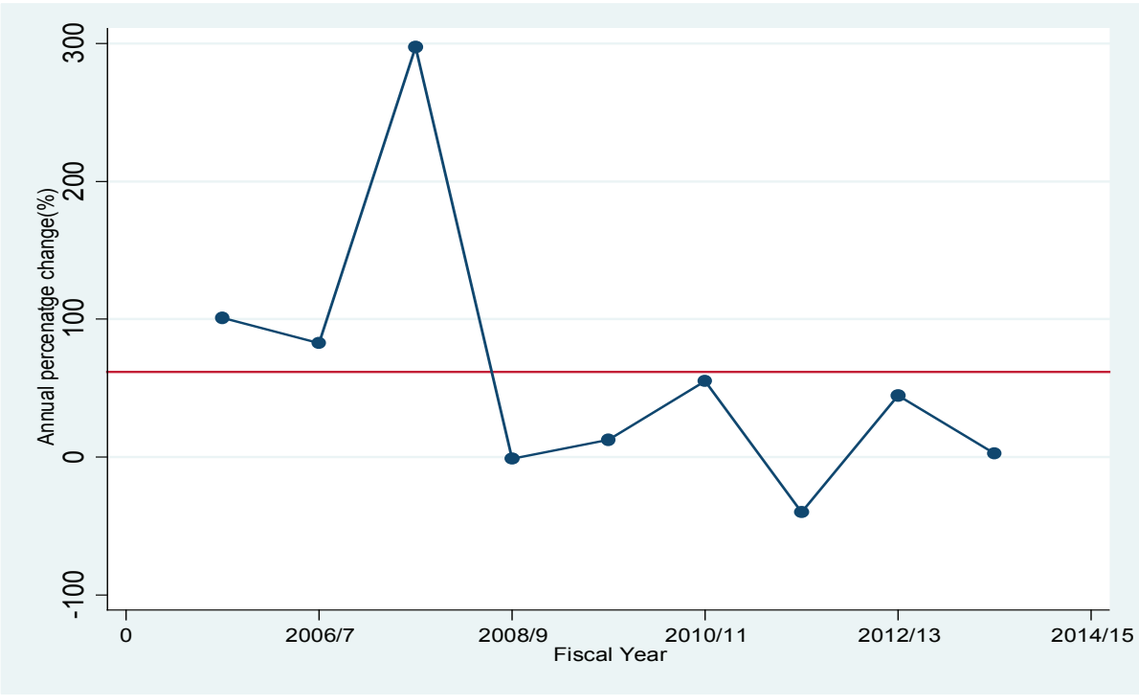


Figure 42 shows the variation in annual percentage change for biodiversity financing for the MWE. The results reveal that the average percentage change for the biodiversity expenditures is about 61.7per cent per fiscal year.

5.10.4 Financing biodiversity strategic objectives (NBSAPs)

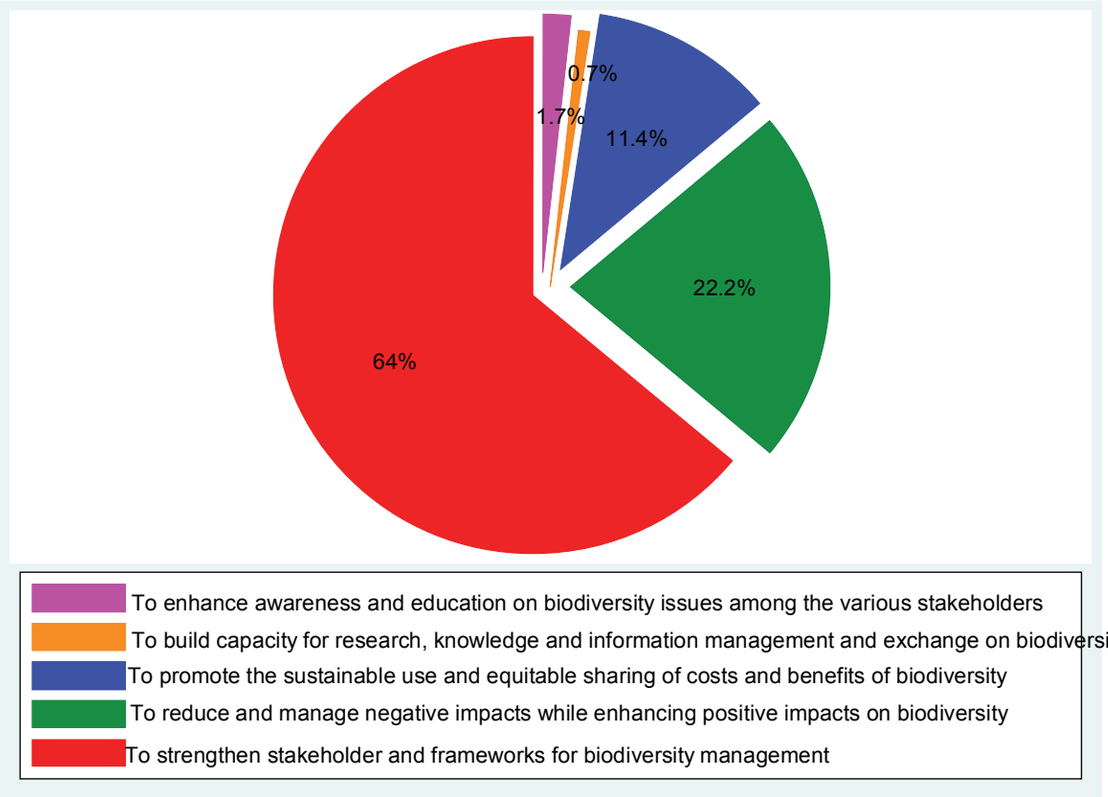
There are seven strategic objectives in the National Biodiversity Strategy and Action Plan (NBSAP). The seven strategic objectives are; (1) To strengthen stakeholder and frameworks for biodiversity management, (2) To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity, (3) To reduce and manage negative impacts while enhancing positive impacts on biodiversity, (4) To promote the sustainable use and equitable sharing of costs and benefits of biodiversity, (5) To enhance awareness and education on biodiversity issues among the various stakeholders, (6) To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment and (7) To promote innovative and sustainable funding mechanisms to support NBSAP implementation. Therefore, we present the budget allocations on each of the strategic objectives of the NBSAP in Table 17.

Table 17: Budget allocations for biodiversity strategic objectives

Strategic objectives	Fiscal Year						
To strengthen stakeholder and frameworks for biodiversity management							
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	**Average**
Allocation (billion-UGX)	7.80	8.54	16.49	6.22	14.18	14.72	**10.65**
Percent (%)	60.7	59.1	73.5	46.2	72.7	73.7	**64.3**
To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity							
Allocation (billion-UGX)		0.23	0.27	0.15	0.26	0.10	**0.20**
Percent (%)		1.2	0.7	1	0.4	0.2	**0.7**
To reduce and manage negative impacts while enhancing positive impacts on biodiversity							
Allocation (billion-UGX)	2.94	2.98	3.75	4.33	4.25	3.90	**3.65**
Percent (%)	22.9	20.6	16.7	32.2	21.8	19.5	**22.3**
To promote the sustainable use and equitable sharing of costs and benefits of biodiversity							
Allocation (billion-UGX)	1.86	2.63	1.62	2.42	0.98	1.26	**1.79**
Percent (%)	14.5	18.2	7.2	18	5	6.3	**11.5**
To enhance awareness and education on biodiversity issues among the various stakeholders							
Allocation (billion-UGX)	0.24	0.14	0.43	0.34	0.04	0.04	**0.21**
Percent (%)	1.9	1	1.9	2.5	0.2	0.2	**1.75**

Findings revealed that within the subsectors in MWE, there is no subsector which seemed to be implementing activities on strategic objective six and seven of the NBSAP II. Out of the biodiversity related budget, on average over 60 per cent was allocated to strategic objective one which focuses on strengthening stakeholders and frameworks for biodiversity management. The rest of the strategic objectives share the remaining 36 per cent of the biodiversity budget. Furthermore, it seems within strategic objective one efforts have concentrated on the development of polices within the agencies, which has consumed most of the budget as seen in Table 17. There is therefore need to shift the allocations to enhance implementation of the policies so as to test their suitability.

Figure 43: Average budget share of NBSAPs at MWE



5.10.5 Conclusions and discussion

The study assessed the budget allocations for biodiversity within MWE and its subsectors. Findings revealed that out of the budget allocations to MWE only 6 per cent of the budget was spent on biodiversity related actions. The budget allocation seems to be relatively low despite the fact that most of the activities of the ministry and the country are largely dependent on biodiversity. The biodiversity budget allocations were growing linearly at an average rate of UGX 2.28 (±0.41) billion in real terms per fiscal year. It is important to note that not all the resources budgeted for are released and spent by the biodiversity agencies. The findings also revealed that there was an uneven budget allocation for biodiversity across the seven strategic objectives. For example, strengthening stakeholder and frameworks for biodiversity management was allocated on average about 64per cent, translating into about 17 per cent of the ministry's annual budget allocations yet facilitation and capacity building for research, knowledge and information management and exchange on biodiversity was allocated only 0.7per cent which translated into about 0.2 per cent of the annual ministry budget. The findings also indicated low allocations to strategic objectives that deal with mitigation of impacts and sharing of benefits. This is likely to accelerate the harmful activities of the population on biodiversity. See figure 43

CHAPTER SIX: MINISTRY OF AGRICULTURE ANIMAL INDUSTRY AND FISHERIES

6.1 Introduction

The Ministry is structured into four directorates namely; Directorate of Animal Resources (DAR), Directorate of Crop Resources (DCR), Directorate of Agricultural Support Services (DASS); and Directorate of Fisheries Resources (DFR). The DAR consists of three departments namely: Livestock Health; Animal Production and Marketing, and Entomology. The three agencies that are linked with DAR are: Dairy Development Authority, National Animal Genetic Resources Centre and Data Bank (NAGRC&DB), and Coordinating Office for Control of Trypanosomiasis in Uganda (COCTU). The mandate of DAR is to support sustainable animal diseases and vector control, market oriented animal production, food quality and safety, for improved food security and household incomes. The DASS directorate has three departments i.e. Agricultural Planning or Agribusiness, Agricultural Infrastructure and Water for Agricultural Production.

The DCR has the mandate to promote crop production, value addition and marketing, crop pests and disease control; enforcement of regulations and standards on agricultural chemicals, plant health and seed quality; farm development, agricultural mechanization, water for agricultural production; promotion of sustainable use of natural resources. The mandate of the Directorate of Fisheries Resources (DFR) is to ensure sustainability of the fisheries resources at an optimal level and maintain availability for present and future generations. The specific objectives include; creating an enabling environment for increasing fish production; promoting recovery of depleted stocks of the large commercial fishes; developing the fishery of small pelagic fishes; Promoting aquaculture to a commercial level. The mandate of this ministry is to promote and support sustainable and market oriented agricultural production, and food security of households. The ministry executes its mandate through the following specific objectives:

a. Initiate the formulation and review of policy and legal framework for the sector,
b. Establish and implement systems for service provision in the sector,
c. Strengthen and implement strategies, regulatory framework, standards institutional structures and infrastructure for quality assurance and increased quantities of agricultural products to access and sustain local regional and export markets,
d. Design and implement sustainable capacity building programmes for stakeholders in the agricultural sector through training, retooling, infrastructure provision of logistics, and ICT,
e. Develop strategies for sustainable food security,
f. Develop appropriate agricultural technologies for improved agricultural production, productivity and value addition through research,
g. Develop effective collaborative mechanism with affiliated institutions,
h. Take lead and establish a system and institutional framework for agricultural data collection, analyses, storage and dissemination to stakeholders including UBOS.

Table 18: Budget allocations and expenditures at MAAIF headquarters

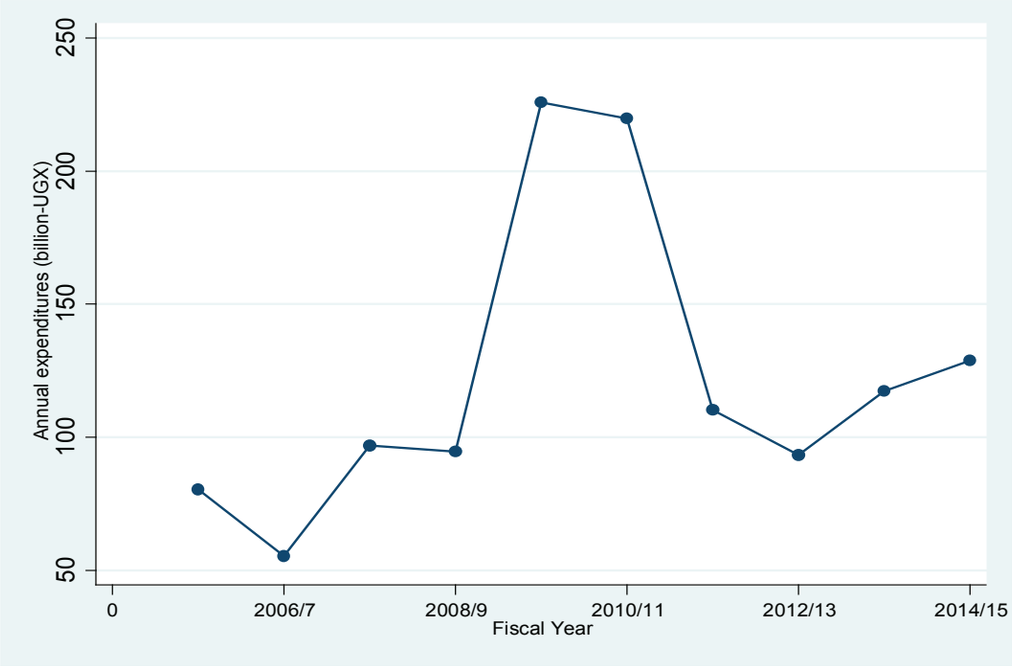
Fiscal Year	Govt allocation (billion)	Donor allocation (billion)	Expenditures (billion)	Performance (%)	Biodiversity expenditures
2005/6	91.17	0	80.43	88.2	10.5
2006/7	20.84	48.88	55.39	79.4	7.2
2007/8	115.14	0	96.79	84.1	12.6
2008/9	79.08	0	94.58	119.6	12.3
2009/10	243.51	0	225.92	92.8	29.4
2010/11	231.17	0	219.84	95.1	28.6
2011/12	137.33	0	110.25	80.3	14.3
2012/13	99.74	0	93.33	93.6	12.1
2013/14	86.34	0	117.41	136.0	15.3
2014/15	148.07	0	128.85	87.0	16.8
Average **Std.dev**	**125.24** **68.58**	**4.89** **15.46**	**122.28** **56.72**	**95.6** **18.18**	**15.9** **7.37**

Std.dev =standard deviation

Table 25 shows the distribution in budget allocations, expenditures and performance at the MAAIF directorates for the 2005/6-2014/15 fiscal period. The average budget allocations for the directorates at MAAIF headquarters were about UGX130.1 per fiscal year. Out of the average annual budget allocations, UGX 122.3 billion was spent by the departments, translating into 96per cent of budget performance.

The underlying trends in expenditures for departments at MAAIF headquarters were examined and moving averages computed. Figure 44 shows the variation in expenditures for departments at MAAIF headquarters with their moving averages for the 2005/6-2014/15 fiscal period.

Figure 44: Trend in expenditures at MAAIF headquarters

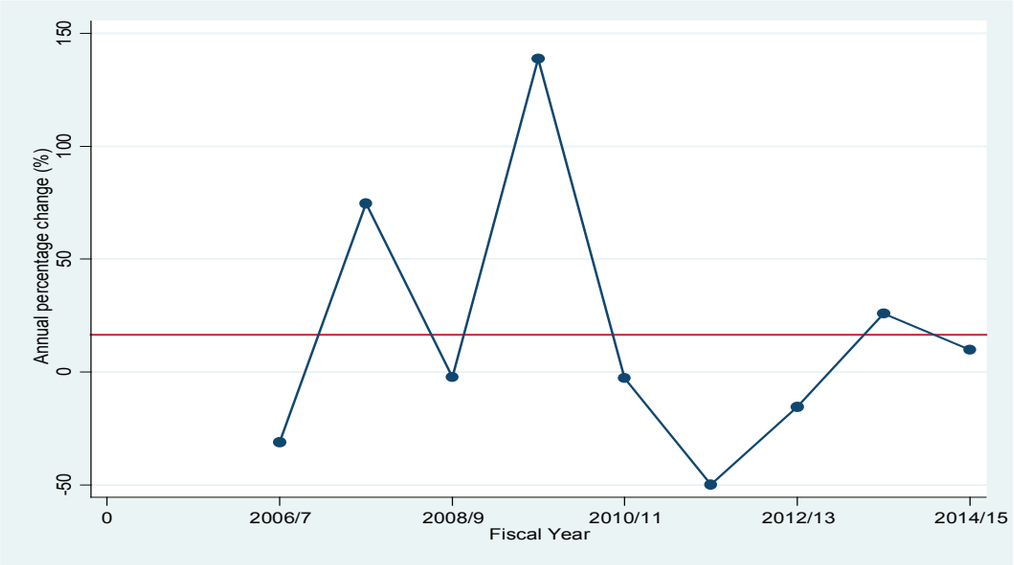


Generally, the annual expenditures for the departments at MAAIF headquarters have been increasing for the 2005/6-2014/15 fiscal period. The highest expenditure of about UGX 225.9 billion in real terms was observed in the 2009/10 fiscal year. There was a slight decline in the expenditures from UGX 225.9 billion in 2009/10 to UGX 219.8 billion in 2010/11 fiscal year. With the exception of the two extreme expenditures in the 2009/10 and 2010/11 fiscal years, the moving averages show that there is a possibility of linear trend in expenditures. The findings revealed that the annual expenditures for departments at MAAIF headquarters were increasing at an average rate of about UGX 5.5 (±1.82) billion in real terms per fiscal year.

Biodiversity financing at MAAIF headquarters

The main objective of the analysis is to assess the expenditures at MAAIF headquarters that are associated with biodiversity conservation and management. We assessed expenditures on policies/activities at this level that promote the preservation of biodiversity in Uganda. Finding revealed that on average about UGX 15.9 billion were spent on activities that promote preservation of biodiversity translating in about 13% of the budget at the ministry headquarters. Most of this budget is financed by government of Uganda.

Figure 45: Annual percentage change in expenditures in real terms at MAAIF headquarters

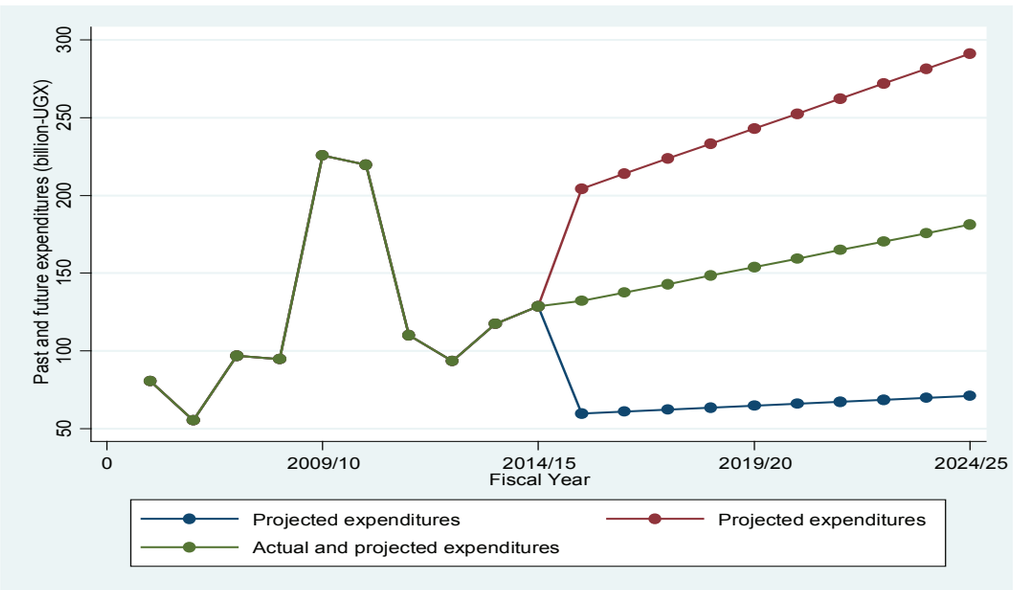


The average percentage change in expenditures for departments at MAAIF headquarters was about 16.4per cent for the 2005/6-2014/15 fiscal years.

6.2.2 Past and Future expenditures for departments at MAAIF HQ in Uganda, 2005/6-2024/25

Figure 46 shows the variation in past and future expenditures for departments at MAAIF headquarters for the 2005/6-2024/25 fiscal period.

Figure 46: Past and future expenditures at MAAIF headquarters



Our predictions show that in the 2024/25 fiscal year, the expected expenditures for departments at MAAIF headquarters will be about UGX 181.2 billion. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 5.5 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at MAAIF headquarters (directorates) were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at MAAIF headquarters (directorates) were decreased by about 5%.

6.3 Dairy Development Authority (DDA)

6.3.1 Introduction

The mandate of DDA is to guide developments in the dairy sector embracing the needs of all the stakeholders in the industry. Its specific objectives include:

1. To strengthen dairy production and productivity through improved feeding, breeding, selection from genetic improvement, management capacity of farmers and improved access to veterinary services
2. To increase dairy marketing and value addition through rehabilitation of existing and development of new milk cold chain and promotion of more local consumption.
3. Institutional capacity strengthening for extension and veterinary services

6.3.2 Financing DDA in Uganda 2011/12-2014/15

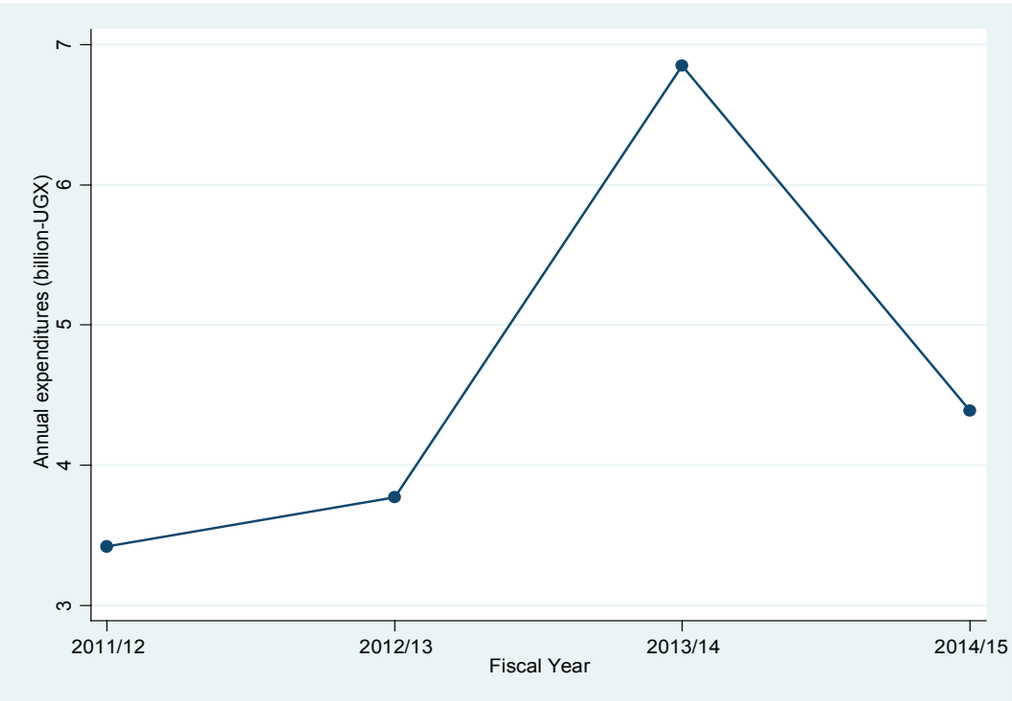
Table 19: Budget allocations and expenditures at DDA in Uganda

Fiscal Year	Allocation (billion)	Expenditures (billion)	Performance (%)	Biodiversity budget
2011/12	4.26	3.42	80.3	0
2012/13	4.03	3.77	93.5	0
2013/14	5.04	6.85	135.9	0
2014/15	5.04	4.39	87.1	0
Average **Std.dev**	**4.59** **0.525**	**4.607** **1.549**	**99.2** **25.06**	**0**

Std,dev =standard deviation

The average budget allocation for the Dairy Development Authority (DDA) was about UGX 4.59 billion per fiscal year in the 2011/12-2014/15. Similarly, the average expenditures were estimated to be UGX 4.61 billion per fiscal year for the period 2011/12-2014/15. Figure 47 shows the variation in expenditures at DDA for the 2011/12-2014/15 fiscal period.

Figure 47: Trend in expenditures in real terms at DDA

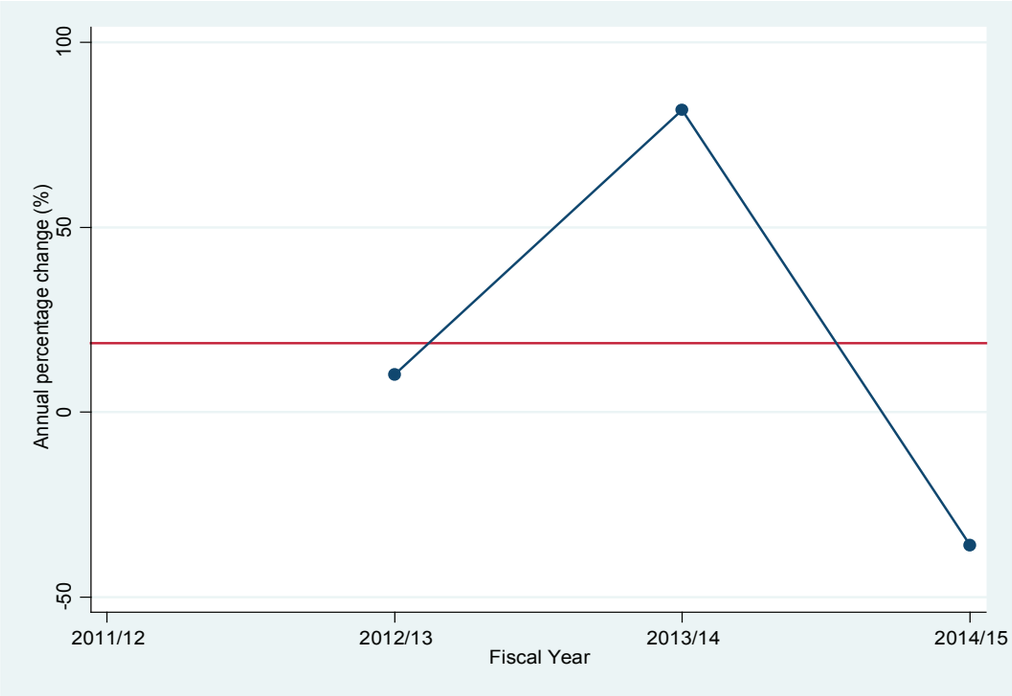


For the 2011/12 - 2014/15 fiscal years, the annual expenditure at DDA was generally increasing, although a slight decline was observed in the 2014/15 fiscal year from about UGX 6.9 billion to UGX 4.4 billion. Results of regression analysis show that the DDA expenditures were growing linearly at an average rate of UGX 0.37 (±0.14) billion in real terms per fiscal year. In addition to the summary statistics, annual percentage changes in expenditures were computed (Figure 48). The average annual percentage change in expenditures at DDA was estimated to be about 18.7 per cent per fiscal year.

Biodiversity financing at DDA

Biodiversity financing refers to expenditures incurred by departments and agencies towards preservation, conservation, restoration and protection of the species are biodiversity related expenditures. None of the activities carried out by DDA are related to preservation, conservation, restoration and protection of species. Therefore, the expenditures at DDA are non-biodiversity.

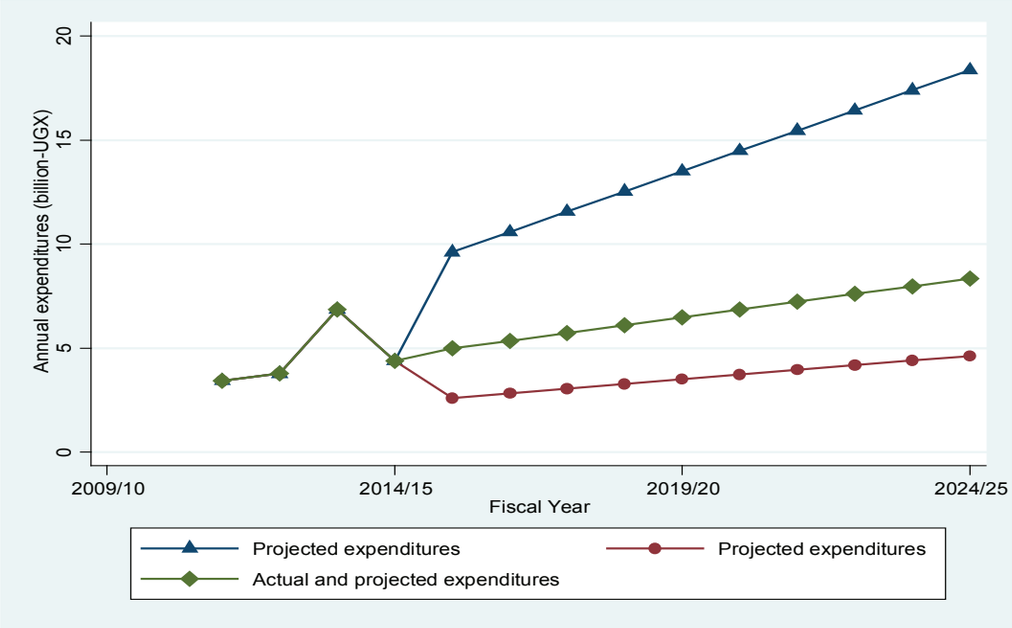
Figure 48: Annual percentage changes in expenditures in real terms at DDA



6.3.3 Past and future expenditures at DDA in Uganda 2011/12-2024/25

Figure 49 shows past and future expenditures at DDA for the 2011/12-2024/25 fiscal period. Model based projections forecast an expected expenditure of about UGX 8.3 in real terms.

Figure 49: Past and future expenditures at DDA



The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.37 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at Diary Development Authority were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at Diary Development Authority were decreased by about 5%.

6.4 Uganda Coffee Development Authority

6.4.1 Introduction

The Uganda Coffee Development Authority (UCDA) is mandated to oversee the implementation of the national coffee policy and guide activities in the coffee industry so as to increase quality, yields and production. UCDA has the following specific objectives

1. Coffee production and productivity increase; to promote and support adoption of good agronomic practices at farm level, increase area under coffee production, intensify integrated coffee pests and disease control programs, promote environmental and biodiversity conservation practices and promote business development in the coffee value chain
2. Strengthen the coffee research system through agricultural technology and agribusiness advisory services
3. To provide an effective coffee extension services delivery systems through agricultural technology and agribusiness advisory services.

6.4.2 Financing UCDA 2006/7-2014/15

The budget allocations and expenditures at UCDA for the 2006/7-2014/15 fiscal period are summarised in Table 20.

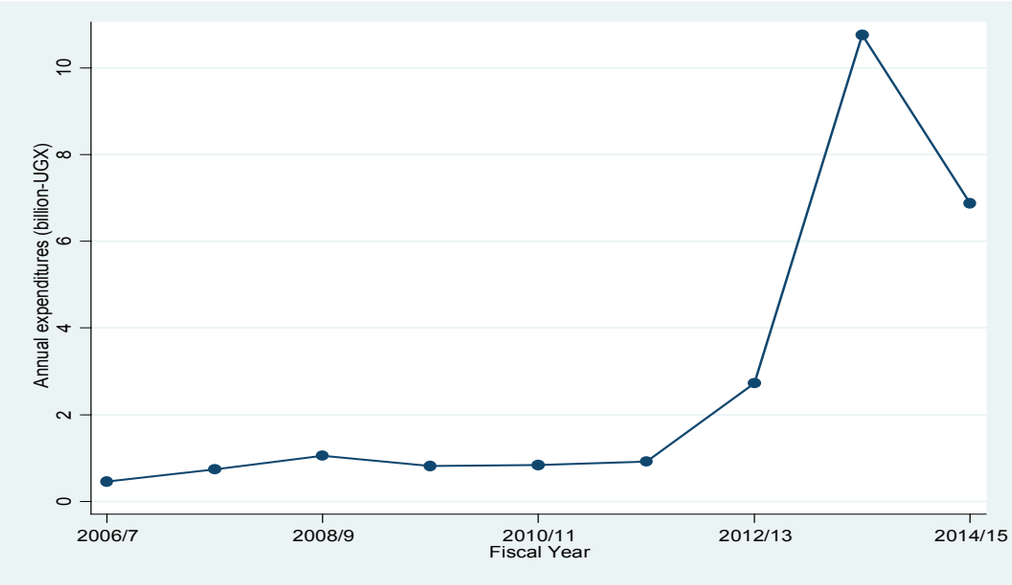
Table 20: Budget allocations and expenditures at UCDA

Fiscal Year	Allocation (billion)	Expenditures (billion)	Percentage (%)
2006/7	0.58	0.46	79.3
2007/8	0.88	0.74	84.1
2008/9	0.88	1.05	119.3
2009/10	0.88	0.82	93.2
2010/11	0.88	0.84	95.5
2011/12	1.15	0.92	80.0
2012/13	2.91	2.72	93.5
2013/14	7.91	10.76	136.0
2014/15	7.91	6.88	87.0
Average	**2.66**	**2.80**	**96.4**
Std.dev	**3.05**	**3.61**	**19.09**

Uganda Coffee Development Authority (UCDA) std.dev =standard deviation

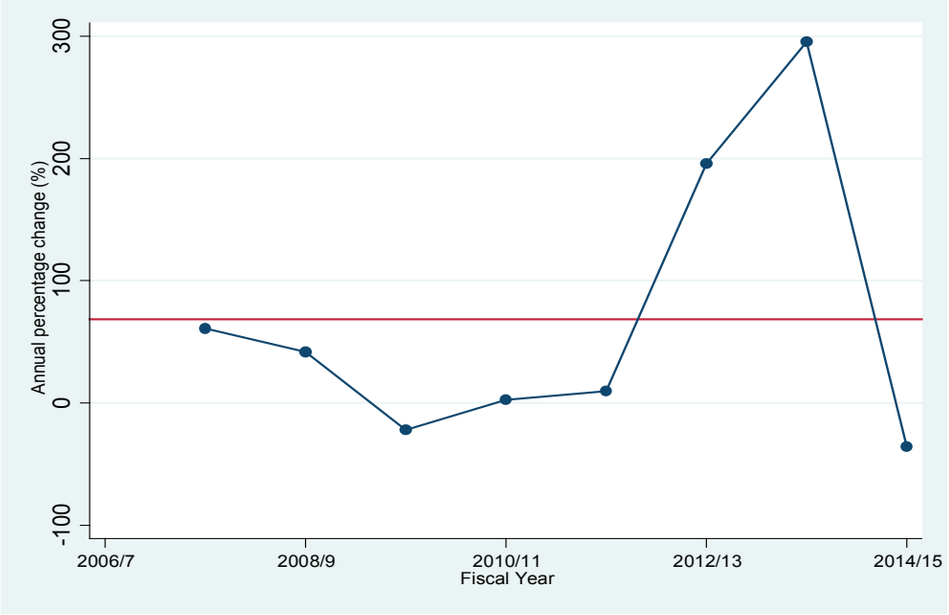
Results show that on average UCDA was allocated UGX 2.66 billion per fiscal year during the 2006/7-2014/15 period. On average the expenditures were estimated to be about UGX 2.8 billion per fiscal year translating into a budget performance of about 96per cent, (Table 20).

Figure 50: Trend in expenditures in real terms at UCDA



There was a general increase in annual expenditures at UCDA in real terms as displayed in Figure 50. The trend in expenditures at UCDA seems to be linear, if the effects of extreme expenditures are minimized. Furthermore, all the moving averages seem to confirm that the trend in expenditures is indeed linear. Results of the trend analysis revealed that the annual expenditure at UCDA is growing linearly at an average rate of UGX 0.588 (±0.175) billion in real terms per fiscal year. To explore the trends in expenditures at UCDA, annual percentage change in expenditures were computed. Figure 51 shows the variation in annual percentage change in expenditures at UCDA for the 2006/7-2014/15 fiscal period.

Figure 51: Annual percentage change in expenditures at UCDA



Findings show that the average annual percentage change in expenditures at UCDA was about 68.5per cent for the 2006/7-2014/15 fiscal period. Further analysis shows that there was a 75per cent chance that the annual percentage change is not likely to go beyond the average of 68.5per cent. It is worth noting that analysis of the annual percentage change in expenditure alone might not explore the trends.

Biodiversity financing at UCDA

As already observed with DDA, none of the activities undertaken by UCDA are associated with preservation, conservation, restoration and protection of natural resources and species. Therefore, the budget under this authority is non-biodiversity.

6.4.3 Past and Future expenditures at UCDA in Uganda 2006/7-2024/25

Figure 52: Past and future expenditures at UCDA

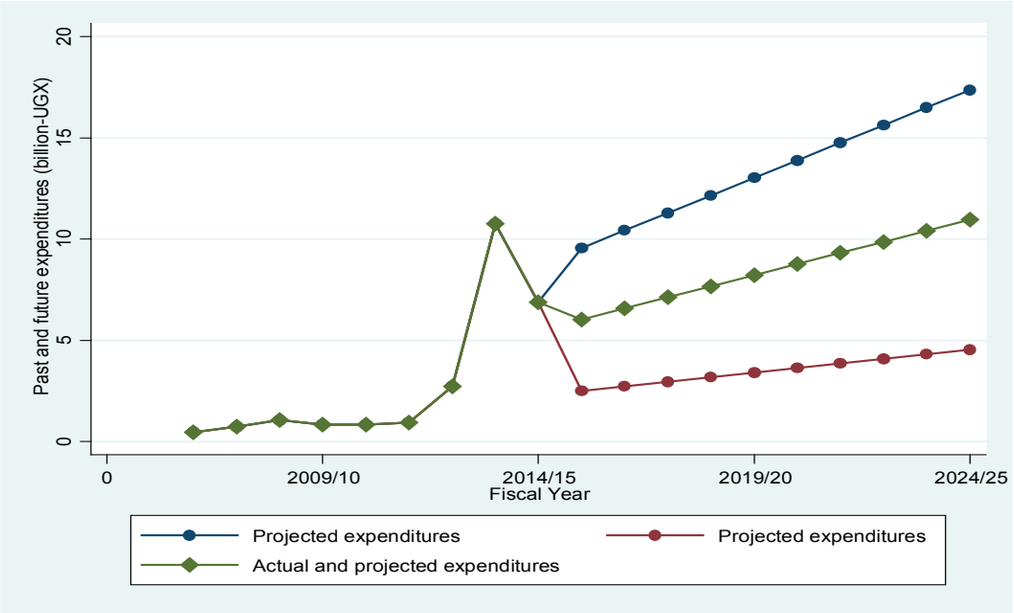


Figure 52 shows the past and future expenditures at UCDA for the 2006/7 - 2024/25 fiscal period. The projected expenditures for 2024/25 fiscal year will be about UGX 10.7 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.588 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at Uganda Coffee Development Authority were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at Uganda Coffee Development Authority were decreased by about 5%.

Cotton Development Organization

6.5.1 Introduction

The Uganda Cotton Development Organization (UCDO) is mandated to attain increase in income along the cotton value chain and increase the contribution of cotton and its by-products to export earnings. UCDO has the following specific objectives:

1. Strengthening cotton research in cooperation with NARO through agricultural technology and agribusiness advisory services
2. To strengthen cotton farmers production and support programs through the cotton development organization
3. Formation of farmer's associations and capacity building

6.5.2 Financing UCDO 2006/7-2014/15

Table 21: Budget allocations and expenditures at UCDO

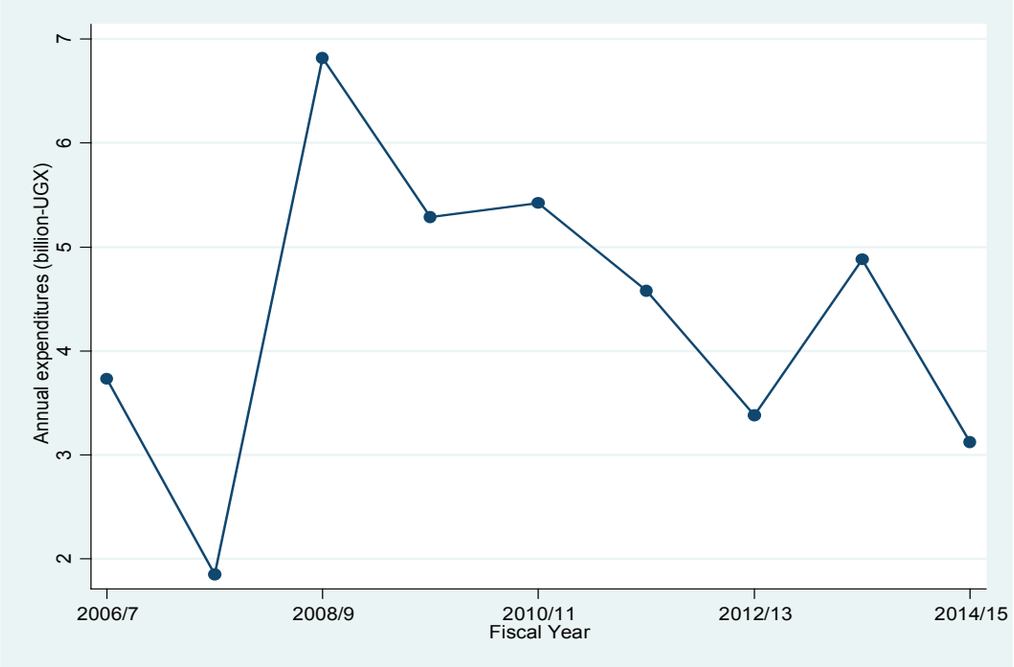
Fiscal Year	Allocation (billion)	Expenditures (billion)	Performance (%)
2006/7	4.7	3.73	79.4
2007/8	2.2	1.85	84.1
2008/9	5.7	6.82	119.6
2009/10	5.7	5.29	92.8
2010/11	5.7	5.42	95.1
2011/12	5.7	4.58	80.4
2012/13	3.61	3.38	93.6
2013/14	3.59	4.88	135.9
2014/15	3.59	3.12	86.9
Average	**4.50**	**4.34**	**96.4**
Std.dev	**1.30**	**1.48**	**19.08**

Std.dev = standard deviation

The budget allocations for UCDO activities were about UGX 4.5 billion in real terms. On the other hand, the average expenditures on activities for the 2006/7-2014/15 fiscal years were about UGX 4.3 billion in real terms (Table 21).

The expenditures on activities at UCDO are generally decreasing as shown in Figure 53. Further analysis shows that the underlying trend in expenditures at UCDO might be linear as predicted by the moving averages. Simple linear regression was used to estimate the trend in annual expenditures at UCDO for the 2006/7-2014/15 fiscal years.

Figure 53: Trend in expenditures at UCDO



The linear model results revealed that expenditures at UCDO were linearly decreasing at an average rate of UGX 0.499 (±0.137) billion per fiscal year.

Figure 54: Annual percentage changes in expenditures at UCDO

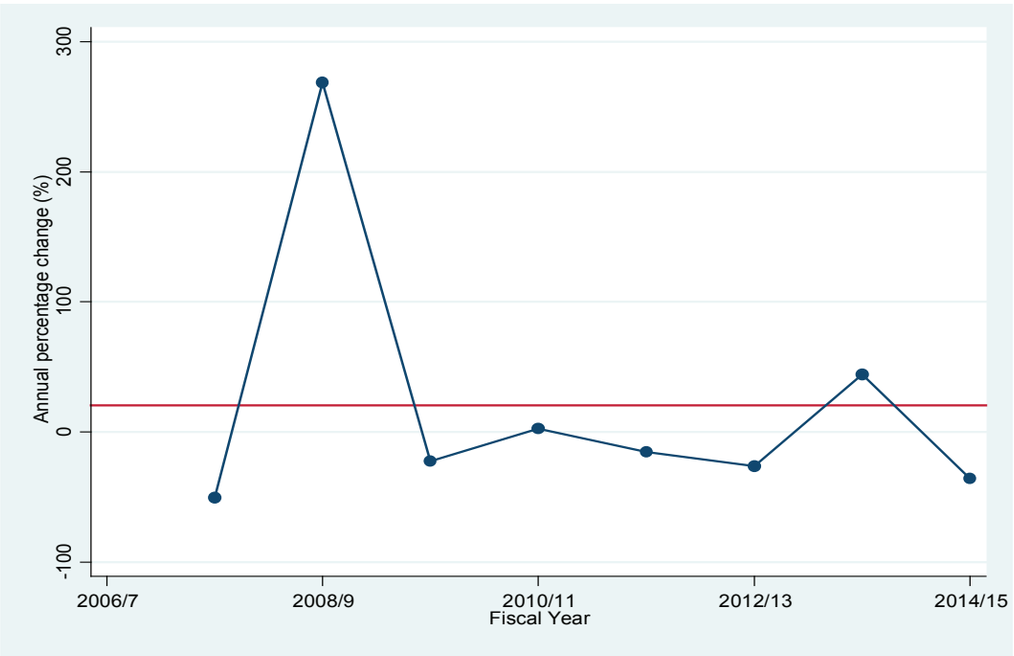


Figure 54 shows the variation in the annual percentage changes in expenditures at UCDO for the 2006/7-2014/15 fiscal years. The findings show that the average annual percentage change in expenditures on activities at UCDO for the 2006/7-2014/15 fiscal period was about 20.6per cent. Furthermore, there is a 75per cent probability that the annual percentage change in expenditures does not go beyond the

average of 20.6per cent. In addition to the annual percentage change, moving averages were computed for the period under review.

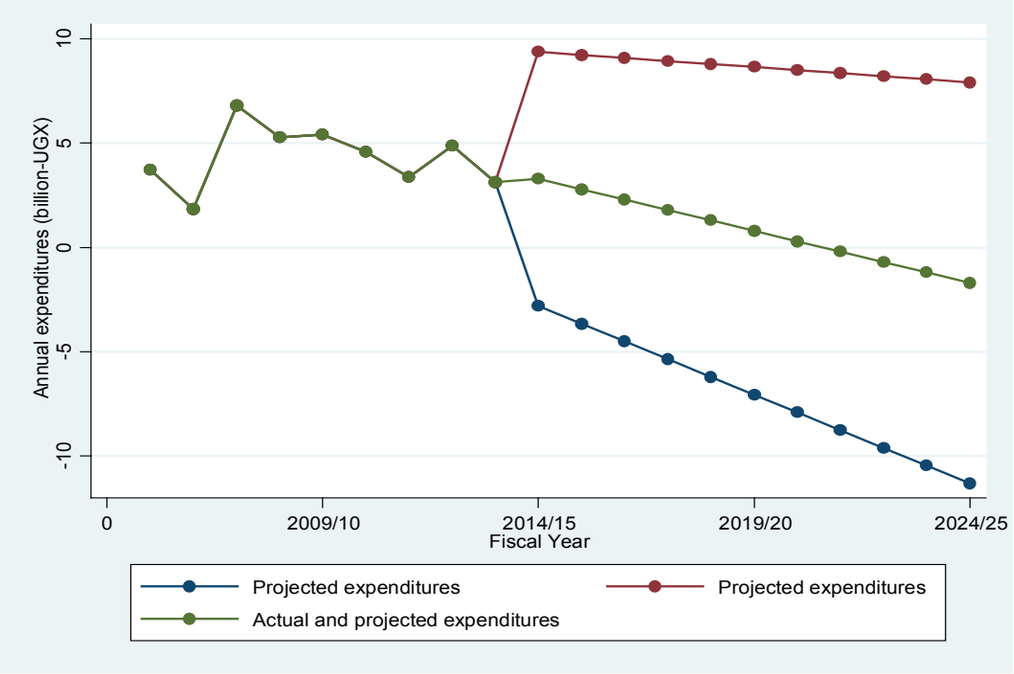
Biodiversity financing at UCDO

None of the activities under the cotton organization are associated with conservation, restoration and protection of natural resources and species. The activities at this organization are geared towards promotion of cotton growing and marketing. Therefore all these expenditures are non biodiversity.

6.5.3 Past and Future expenditures at UCDO 2006/7-2024/25

Figure 55 shows a current decline in expenditures at UCDO. It is projected that by 2019/20 the expected expenditures on activities will be about UGX 0.795 billion. The projection also reveals that by that time, UCDO might not have funds to spend on its activities.

Figure 55: Past and future expenditures at UCDO



The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.588 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at Uganda Coffee Development Authority were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at Uganda Coffee Development Authority were decreased by about 5%.

6.6 National Agricultural Research Organization

6.6.1 Introduction

The mandate of the National Agricultural Research Organization (NARO) is to enhance the contribution of agricultural research to sustainable agricultural productivity, sustained competitiveness, economic growth, food and nutrition security and poverty eradication. The

Specific objectives are:

1. Generation of new technologies, practices and strategies; this component supports strategic national, and zone-specific programs to maintain ongoing research as well as under taking new work including(activities in climate change and sustainable land management
2. To improve the uptake of technology and knowledge; this ensures more effective research linkages along with other links to service providers, farmer's organizations , processors and marketing agents.
3. To strengthen the effectiveness of the national agricultural research system.

6.6.2 Financing of NARO 2005/6-2014/15

Presented above shows that the average budget allocations for activities at NARO were about UGX 60.9 billion in the 2005/6-2014/15 fiscal period (Table 22),. Meanwhile the average expenditures on activities at NARO were about UGX 56.4 billion in the same period.

Table 22: Budget allocations and expenditures at NARO

Fiscal Year	Govt allocation (billion)	Expenditures (billion)	Biodiversity expenditures (billion)
2005/6	25.27	22.29	7.4
2006/7	20.31	16.14	5.3
2007/8	41.32	34.74	11.5
2008/9	39.35	47.06	15.5
2009/10	43.65	40.50	13.4
2010/11	74.4	70.75	23.3
2011/12	99.97	80.26	26.5
2012/13	83.08	77.74	25.7
2013/14	33.87	46.06	15.2
2014/15	147.54	128.39	42.4
Average	**60.88**	**56.39**	**18.61**
Std.dev	**40.14**	**33.52**	**11.06**

Std.dev =standard deviation

In addition to the summary budget allocations and expenditures, annual average percentage changes in expenditures were computed and the results are presented Figure 57. To explore more on the underlying trend moving averages were computed. The results of the analysis are shown in Figure 56.

Figure 56: Trend in expenditures at NARO

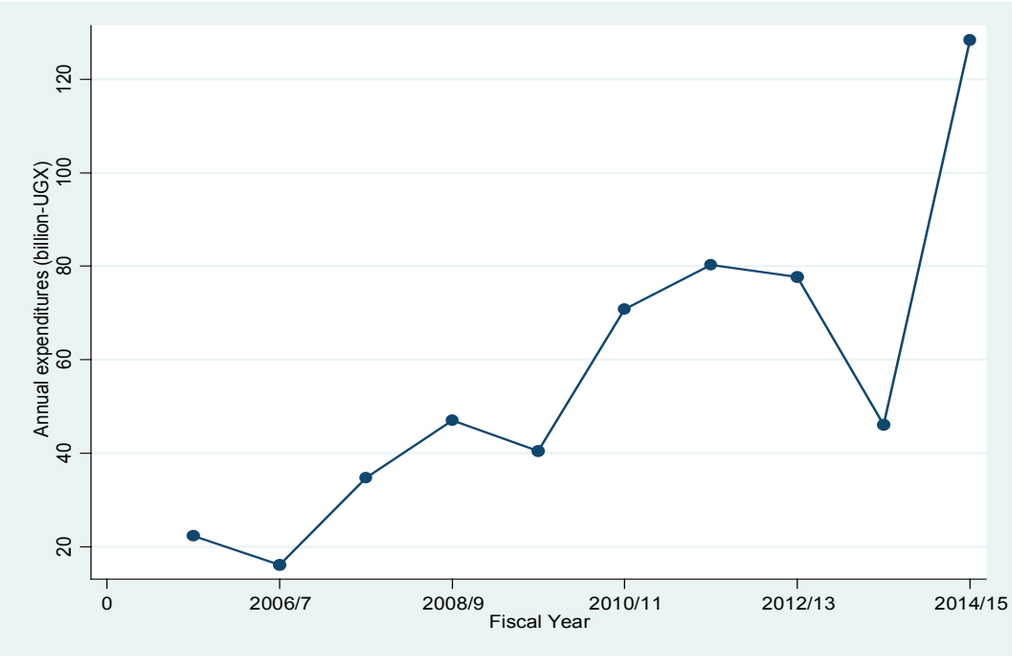
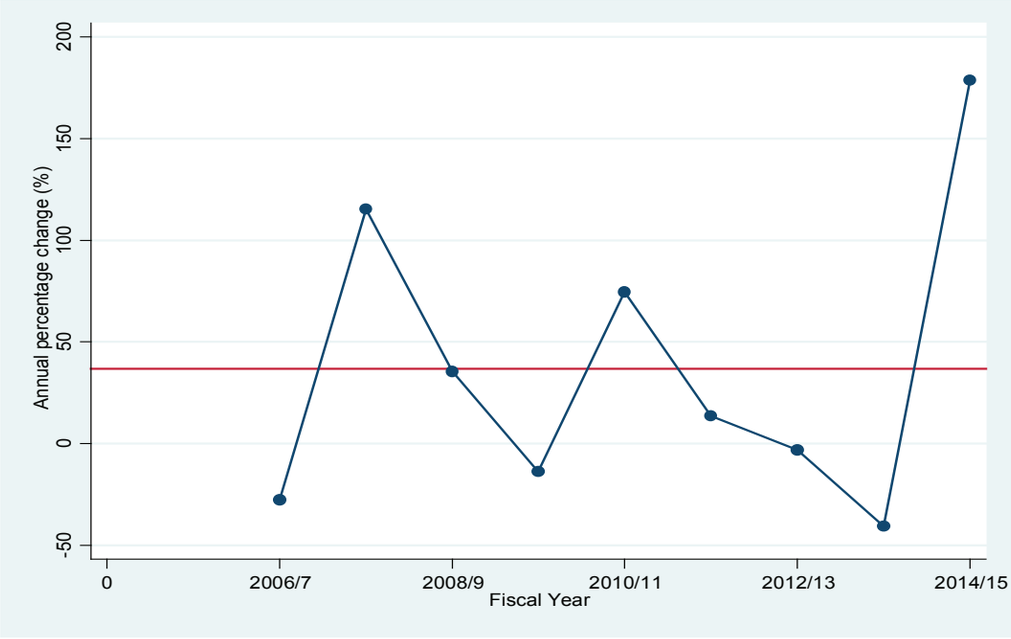


Figure 56 shows that there was a general increase in the expenditures at NARO in the 2005/6-2014/15 fiscal period. Furthermore, the moving averages indicate that the underlying trends in the expenditures at NARO seemed to be linear. The findings further reveal that expenditures at NARO were linearly increasing at an average rate of about UGX 9.15 (±2.21) billion in real terms per fiscal year.

Biodiversity financing at NARO

Under the NARO, we considered expenditures on the development of varieties that promote agro-biodiversity through introduction say drought, pest resistant, varieties were considered biodiversity conservation and management. On average about UGX 18.6 billion were spend on activities that promote agro-biodiversity through development of new varieties translating in about 33% of the budget at the research station.

Figure 57: Annual percentage changes in expenditures at NARO

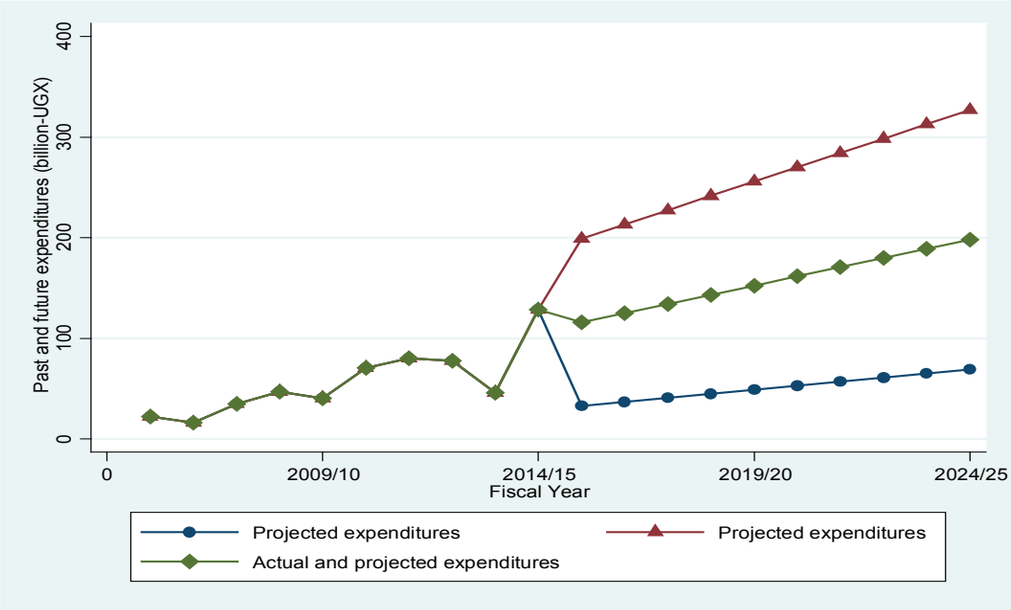


The average percentage change in expenditures at NARO was about 36.9per cent. Further analysis showed that in the last 10 years under review there was a 66.7per cent likelihood that the percentage changes in expenditures did not exceed the computed average of 36.9per cent.

6.6.3 Past and Future expenditures at NARO 2005/6-2024/25

Figure 58 shows the past and future expenditures at NARO for the 2005/6-2024/25 fiscal period.

Figure 58: Past and future expenditures at NARO



The projections indicate that in 2024/25 fiscal year the expenditures at NARO will be approximately UGX 198.2 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 9.15 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at NARO were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at NARO were decreased by about 5%.

6.7 National Agricultural Advisory Services

6.7.1 Introduction

The National Agricultural Advisory Services (NAADS) is mandated to increase farmer access to relevant information, knowledge and technology through effective, efficient, sustainable and decentralized extension services, and increasing private sector involvement in line with government policy.

The Specific objectives are:

1. Farmer institutional development through establishment and strengthening of farmer institution, farmer fora and higher level organizations
2. Technology promotion and information access to farmers through promotion of various technologies, strengthening research extension farmer linkages, provision of agricultural advisory services and support for technology uptake.
3. Strategic/ special interventions i.e. initiative for civilian veterans for wealth creation, food security initiative for constituencies, agribusiness development and value addition.

6.7.2 Financing NAADS activities in Uganda 2005/6-2014/15

Table 23: Budget allocations and expenditures at NAADS

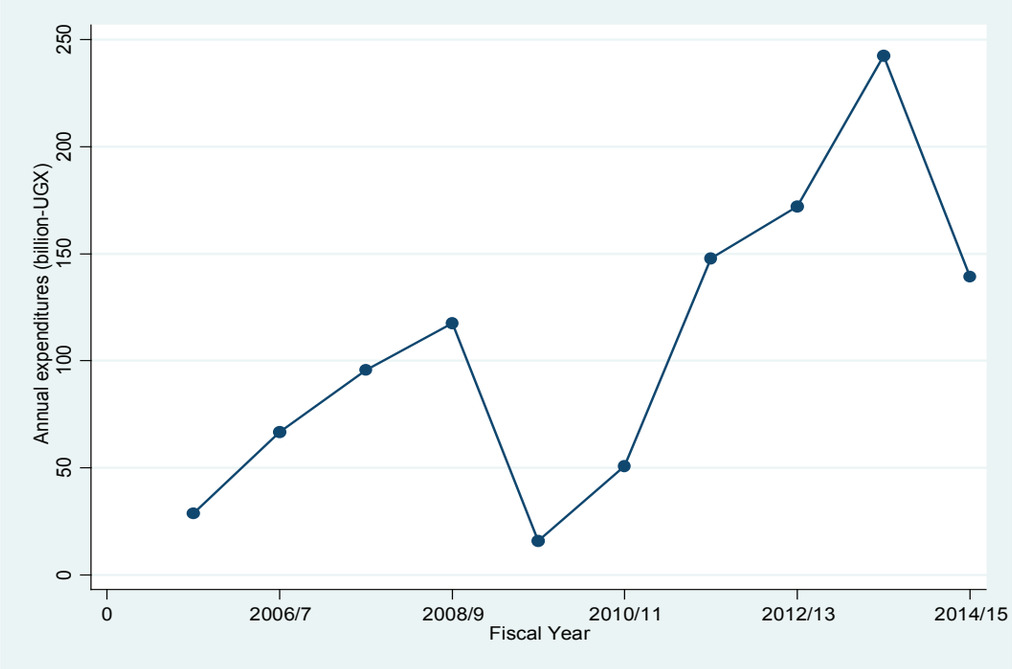
Fiscal Year	Allocation (billion)	Expenditures (billion)
2005/6	32.4	28.58
2006/7	84.06	66.78
2007/8	113.94	95.78
2008/9	98.24	117.49

2009/10	17	15.77
2010/11	53.37	50.75
2011/12	184.21	147.88
2012/13	183.91	172.09
2013/14	178.37	242.55
2014/15	159.93	139.18
Average	110.54	**107.69**
Std.dev	**63.98**	**70.55**

Std.dev=standard deviation

The average budget allocations for NAADS were about UGX 110.5 billion for the 2005/6-2014/15 fiscal years. Out of the average budget allocations, about UGX 107.7 billion was spent on different activities under the NAADS program for the 2005/6-2014/15 fiscal years, (Table 23). In addition to the average budget allocations and expenditures, annual percentage changes in expenditures were computed. The results as summarised in Figure 59 shows the variation in expenditures at NAADS with the computed moving averages for the 2005/6-2014/15 fiscal period

Figure 59: Trend in expenditures at NAADS in Uganda

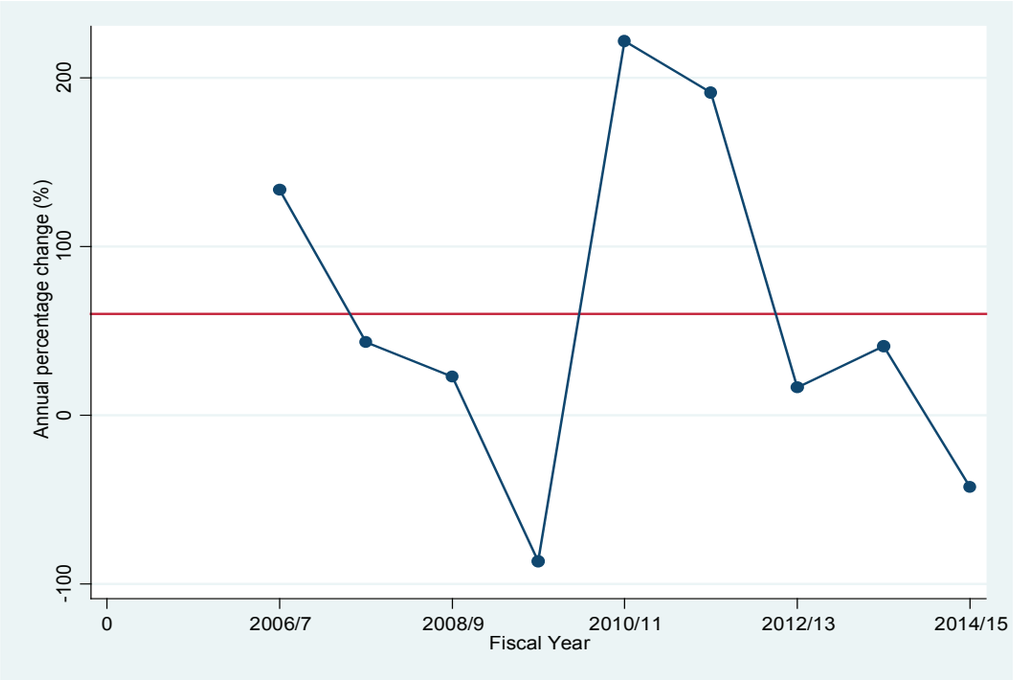


There was a general increase in annual expenditures at NAADS for the period under review. However, there was a sharp decline in expenditure in 2009/10 fiscal year which was attributed to the presidential directive to suspend releases to the NADDS program because of poor performance. The moving averages computed reveal that the underlying trend in expenditures at NAADS seems to be linear. On the other hand, the regression analysis reveals that the expenditures at NAADS were increasing at an average rate of UGX 16.57 (±3.66) billion in real terms per fiscal year.

Biodiversity financing at NAADS

The objectives and activities at NAADS are linked with resource utilization of developed varieties, natural resources like land, water among others. None of these activities are associated with conservation, restoration, preservation and protection of biological species. Therefore, all the expenditures at NAADS are non-biodiversity.

Figure 60: Annual percentage changes in expenditures at NAADS in Uganda

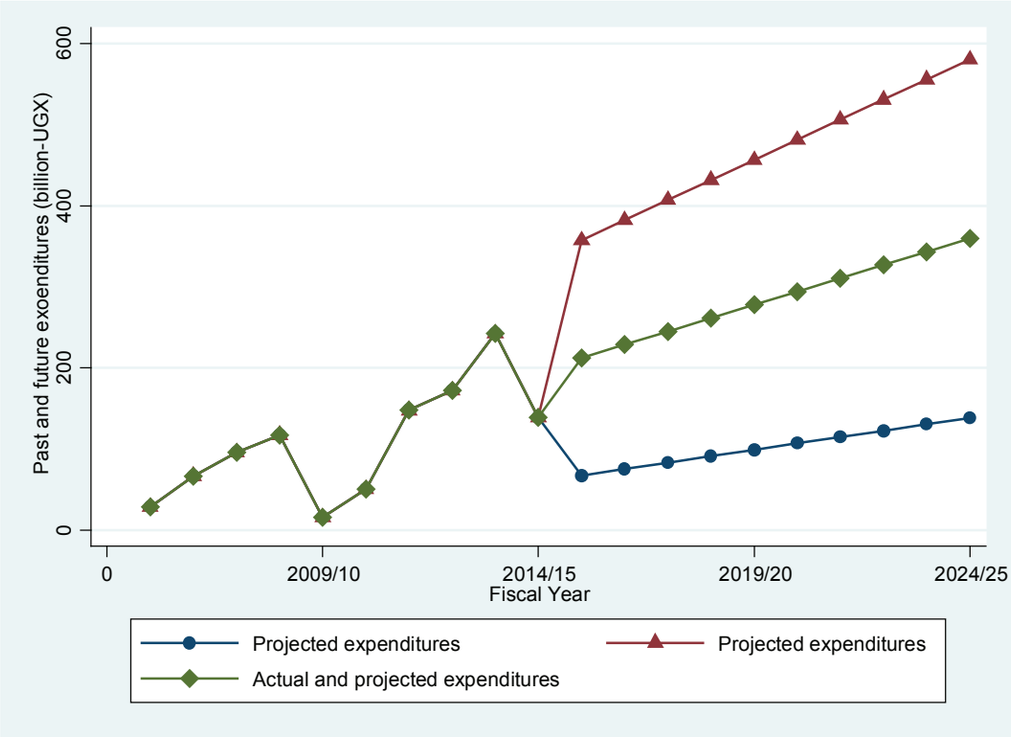


The average percentage change in expenditures at NAADS was about 60per cent for the 2005/6-2014/15 fiscal period (Figure 60). Furthermore, there was a 66.7per cent probability that the annual percentage changes in expenditures for the last ten years under review did not go beyond the average of 60per cent.

6.7.3 Past and future expenditures at NAADS 2005/6-2024/25

Figure 61 shows the past and future expenditures at NAADS for the 2005/6 to 2024/25 fiscal period. The projections reveal that in the 2024/25 fiscal year, expected expenditures at NAADS will be about UGX 359.7 billion in real terms.

Figure 61: Past and future expenditures at NAADS in Uganda



The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 16.57 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at NAADS were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at NAADS were decreased by about 5%.

6.8 Financing MAAIF in Uganda 2005/6-2014/15

The objective of the expenditure review for the sector was to explore the underlying trends for purposes of making future projections. Table 24 shows the summary of budget allocations, expenditures and budget share of the national budget at MAAIF in the 2005/6-2014/15 fiscal period. The average budget allocation for MAAIF for the 2005/6-2014/15 period was about UGX 281 billion per fiscal year. This budget allocation translated into about 4.4per cent share of the Government of Uganda national budget per fiscal year. In terms of expenditures, MAAIF spent on average about UGX 295 billion per fiscal year slightly higher than the allocated budget. The expenditures were higher than the allocated budget and this was partly attributed to supplementary budgets that came up during the fiscal year.

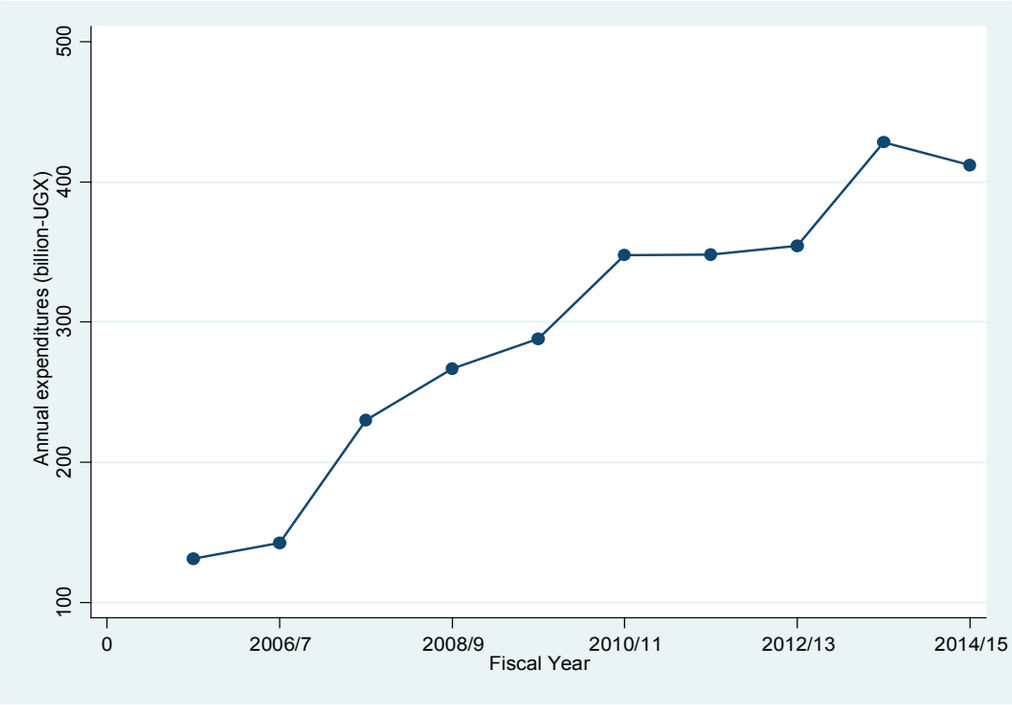
Table 24: Budget allocations and expenditures at MAAIF, Uganda

Fiscal Year	Allocation (billion)	Expenditure (billion)	Share of National budget (%)	Expenditure (billion)	Overall budget performance (%)
2005/6	148.85	131.3	4.1	131.3	88.21
2006/7	179.37	142.5	5.1	142.5	79.44
2007/8	273.48	229.9	5.9	229.9	84.06
2008/9	223.24	267	2.9	267	119.60
2009/10	310.75	288.3	5.8	288.3	92.78
2010/11	289.3	347.6	5.1	347.6	120.15
2011/12	294.6	348.4	4.7	348.4	118.26
2012/13	305	354.3	3.8	354.3	116.16
2013/14	315.129	428.5	3.3	428.5	135.98
2014/15	473.72	412	3.2	412	86.97
Average Std.dev	**281.344 (88.947)**	**294.98 (103.154)**	**4.39 (1.09)**	**294.98 (103.154)**	**104.16 (19.84)**

Std.dev = standard deviation

Figure 62 shows the variation in annual expenditures at MAAIF for the period 2005/6-2014/15. All the moving averages revealed that the underlying trend in the annual expenditures at MAAIF seemed to be linear. Findings of the regression analysis further show that expenditures at MAAIF were on average increasing at an average rate of about UGX 33.1(±2.92) billion in real terms per fiscal year.

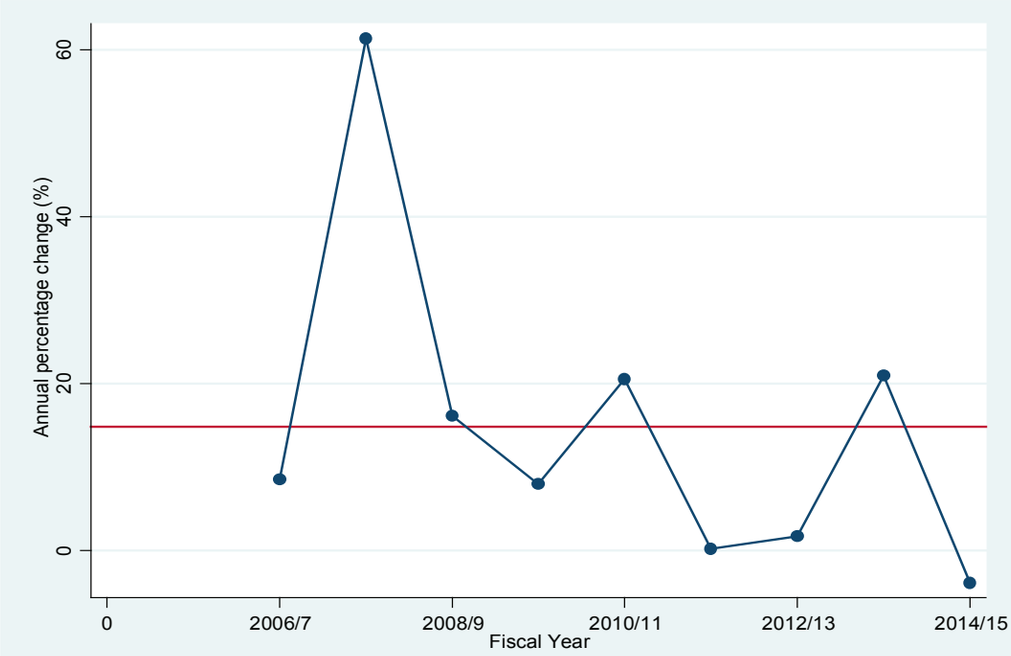
Figure 62: Trend in expenditures in real terms at MAAIF, Uganda



Annual percentage change in expenditures at MAAIF 2005/6-2014/15

Figure 63 shows the variation of annual percentage change in expenditures at MAAIF for the 2005/6-2014/15 fiscal period.

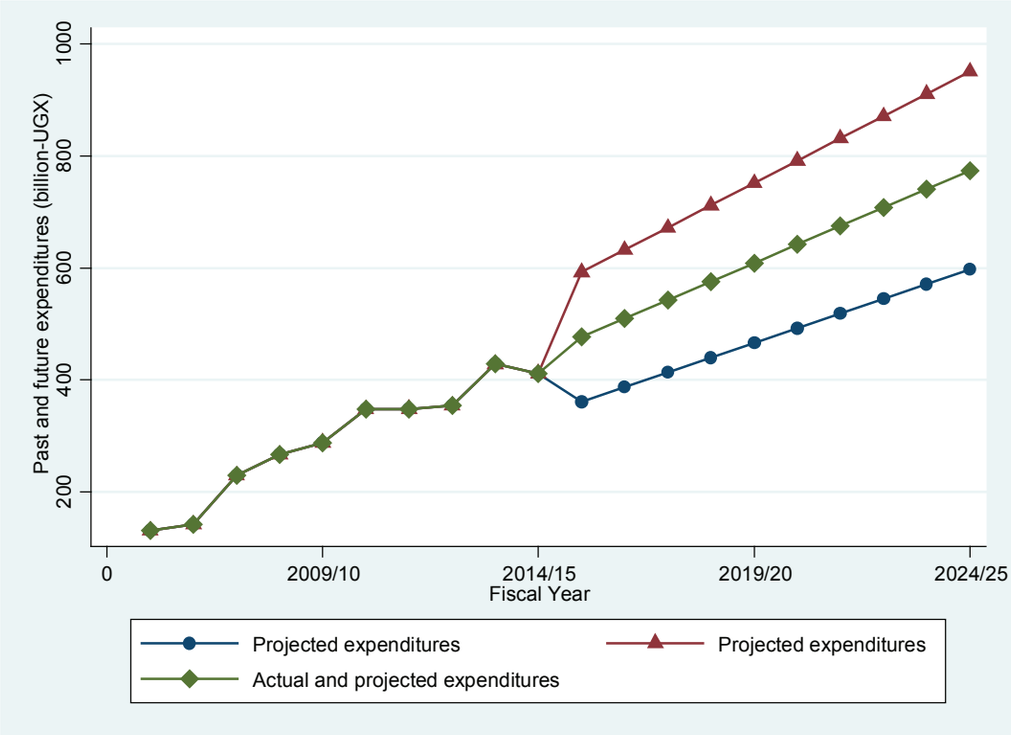
Figure 63: Annual percentage changes in expenditures at MAAIF, Uganda



The average percentage change in annual expenditures at MAAIF was estimated to be about 14.8per cent per fiscal year. Details on the variation on the annual percentage change in expenditures at MAAIF are shown in Table 24.

6.8.3 Past and Future expenditures at MAAIF in Uganda 2005/6-2024/25

Figure 64: Past and future expenditures at MAAIF, Uganda



The trend analysis projected that in 2024/25 fiscal year the expected expenditures at MAAIF will be about

UGX 774.3 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 33.1 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at MAAIF were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at MAAIF were decreased by about 5%.

Biodiversity financing at MAAIF

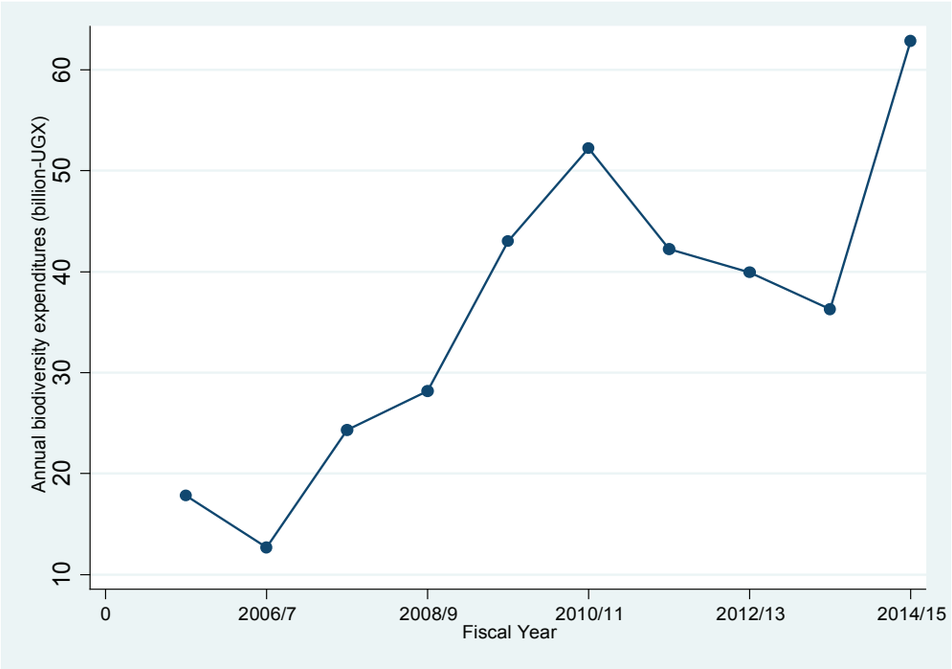
Table 25 shows the summary of biodiversity related expenditures and the percentage attribution for each of the agencies and departments within MAAIF in Uganda.

Table 25: Biodiversity attribution and financing at MAAIF

Fiscal year	Biodiversity expenditures (billion-UGX)	Percentage share (%)
2005/6	17.81	12.0
2006/7	12.68	7.0
2007/8	24.29	8.8
2008/9	28.17	12.5
2009/10	43.01	13.8
2010/11	52.20	17.9
2011/12	42.25	13.9
2012/13	39.93	12.4
2013/14	36.27	9.7
2014/15	62.84	12.5
Average	**35.95**	12.03
Std.dev	**15.49**	3.04

Department/Agency	% budget attributed to Biodiversity
MAAIF headquarters	13
Dairy Development Authority (DDA)	0
Uganda Coffee Development Authority (UCDA)	0
Uganda Cotton Development Organization (UCDO)	0
National Agricultural Research Organization (NARO)	33
National Agricultural Advisory Services (NAADS)	0

Figure 65 shows the variation in past and future expenditures at MAAIF in the 2005/6-2024/25 fiscal.



Trend in biodiversity financing at MAAIF was growing linearly at an average rate of about UGX 4.24 (±1.01) billion per fiscal year.

6.9 Financing biodiversity strategic objectives (NBSAPs) at MAAIF

Analysis of biodiversity attributed the expenditures at the agencies and departments established that about 12% of the budget at MAAIF was associated with preservation, and protection of species especially indigenous varieties of crops. Some of the agencies in this ministry contribute to the specific objectives of the National Biodiversity Strategic Action Plan II (NBSAP II).

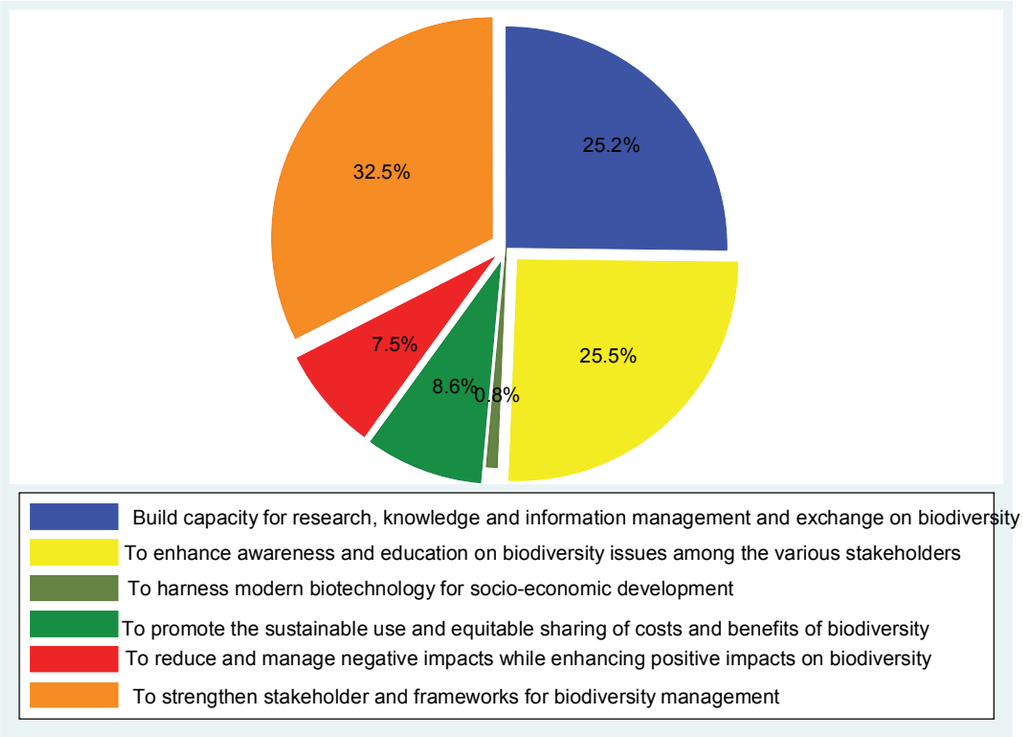
There are seven strategic objectives in the National Biodiversity Strategic Action Plan (NBSAP II). The seven strategic objectives are (1) To strengthen stakeholder and frameworks for biodiversity management, (2) To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity, (3) To reduce and manage negative impacts while enhancing positive impacts on biodiversity, (4) To promote the sustainable use and equitable sharing of costs and benefits of biodiversity, (5) To enhance awareness and education on biodiversity issues among the various stakeholders, (6) To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment and (7) To promote innovative and sustainable funding mechanisms to support NBSAP implementation. The budget allocations on each of the strategic objectives of the NBSAP II are presented in Table 26.

Table 26: Trend in financing NBSAPs at MAAIF

Strategic objectives	Fiscal Year						
To strengthen stakeholder and frameworks for biodiversity management							
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	**Average**
Allocation (billion-UGX)	10.24	18.38	18.08	12.18	14.47	14.26	**14.60**
Percent (%)	23.8	35.2	42.8	30.5	39.9	22.7	**32.5**
To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity							
Allocation (billion-UGX)	9.63	13.99	12.04	12.74	7.33	13.26	**11.50**
Percent (%)	22.4	26.8	28.5	31.9	20.2	21.1	**25.2**
To reduce and manage negative impacts while enhancing positive impacts on biodiversity							
Allocation (billion-UGX)	6.84	3.86	3.51	1.84	2.14	2.01	**3.37**
Percent (%)	15.9	7.4	8.3	4.6	5.9	3.2	**7.5**
To promote the sustainable use and equitable sharing of costs and benefits of biodiversity							
Allocation (billion-UGX)	2.88	2.82	2.37	3.15	7.22	3.77	**3.70**
Percent (%)	6.7	5.4	5.6	7.9	19.9	6	**8.6**
To enhance awareness and education on biodiversity issues among the various stakeholders							
Allocation (billion-UGX)	12.77	12.58	5.96	9.66	5.11	29.35	**12.57**
Percent (%)	29.7	24.1	14.1	24.2	14.1	46.7	**25.5**
To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment							
Allocation (billion-UGX)	0.56	0.57	0.38	0.44	0.15	0.25	**0.39**
Percent (%)	1.3	1.1	0.9	1.1	0.4	0.4	**0.8**

There is a general increase in the budget allocations for the NBSAPs under MAAIF. However the allocations seem to be biased towards strategic objective one. For example, the average percentage share for strengthening stakeholders and frameworks for biodiversity management was about 33 per cent, while research enhancement and dissemination both tied at about 25 per cent. Efforts towards reducing negative impacts while promoting positive impacts, as well as awareness creation seem to be of little importance (Figure 66).

Figure 66: NBSAPs budget share at MAAIF



6.10 Conclusion

The objective of the expenditure review for the sector was to explore the underlying trends and their contribution to biodiversity strategic objectives. Findings revealed that only 12.1% of MAAIF budget was spent on agro-biodiversity and the expenditures were growing at an average rate of about UGX 4.24 billion per fiscal year. The average percentage change in annual biodiversity expenditures in real terms at MAAIF was estimated to be about 21.4per cent per fiscal year. There is a general increase in the budget allocations for the NBSAP II under MAAIF. However, the allocations seem biased towards strategic objective one. For example, the average percentage share for strengthening stakeholder and frameworks for biodiversity management was about 33per cent while that for both research enhancement and dissemination was about 25per cent. Efforts towards reducing negative impacts while promoting positive impacts as well as awareness creation seem to be of little importance. The budget allocations for NBSAP II in MAAIF are a little more balanced towards all the objectives as compared to MWE. However; there is need to allocate more funds for the strategic objective on monitoring and equitable sharing of the benefits from biodiversity.

CHAPTER SEVEN: MINISTRY OF TOURISM, WILDLIFE CONSERVATION AND ANTIQUITIES

7.1 Introduction

The main objective of the Ministry of Tourism, Wildlife Conservation and Antiquities (MTWA) is to formulate and implement policies, strategies, plans and programs that promote tourism, wildlife and cultural heritage conservation for socio-economic development and transformation of the country. The Specific Objectives are:

i. Formulate, Implement Policies of Tourism, Wildlife and Cultural heritage.
ii. Sustain and manage wildlife and cultural heritage conservation areas.
iii. Diversify Tourism Product.
iv. Promote and market Uganda as a preferred tourism destination.
v. Develop human resource capacity in Tourism, Wildlife and Heritage sector
vi. Regulate and Quality Assure Tourism, Wildlife and Heritage programs and services.
vii. Disseminate and manage Tourism, Wildlife and Heritage Research, information.
viii. Negotiate, conclude and implement bilateral and multilateral agreements on Tourism, Wildlife and Heritage in Uganda

7.2 Financing MTWA in Uganda 2008/9-2014/15

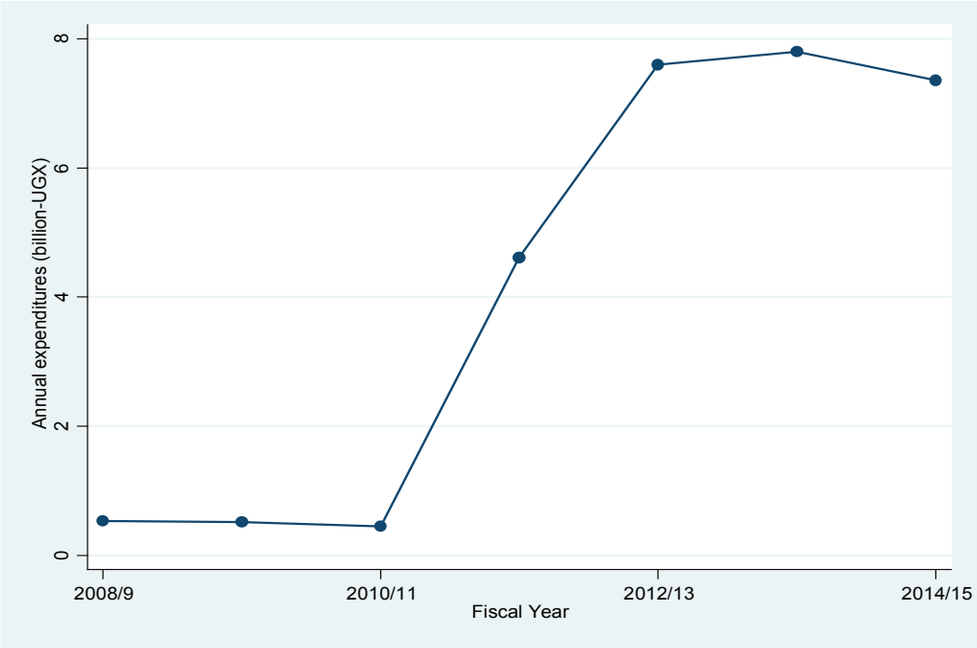
Table 27: Budget allocations in real terms at MTWA headquarters

Fiscal Year	Allocation (billion)	Biodiversity expenditures (billion)
2008/9	0.53	0.53
2009/10	0.512	0.512
2010/11	0.451	0.451
2011/12	4.613	4.613
2012/13	7.604	7.604
2013/14	7.8	7.8
2014/15	7.361	7.361
Average **Std.dev**	**4.124** **3.55**	**4.124** **3.55**

Std.dev =standard deviation

Table 27 shows the distribution of budget allocations for MTWA headquarters. The average allocation for activities was about UGX 4.1 billion for the 2008/9-2014/15 fiscal period. The first three years received the least allocation, although the allocation kept gradually increasing over time. Figure 67 shows the variation in expenditures at MTWA headquarters and the moving average for the 2008/9-2014/15 period.

Figure 67: Trend in budget allocations and expenditure at MTWA headquarters



There was a general increase in annual expenditures in real terms for the 2008/9-2014/15 fiscal period. Between 2008/9-2010/11 the expenditures were almost constant. This might be attributed to the fact that the MTWA was still a department under Ministry of Trade. Since becoming a ministry the expenditures have been increasing gradually. The moving averages for MTWA headquarters are presented in Figure 67 revealed that the underlying trends in expenditures at MTWA were linear and the estimated average rate of growth was about UGX 1.51 (±0.29) billion in real terms per fiscal year. In addition to the summary statistics, annual percentage changes in expenditures at MTWA headquarters were computed and the results are summarised in Figure 27.

Figure 68: Annual percentage changes in expenditures at MTWA headquarters

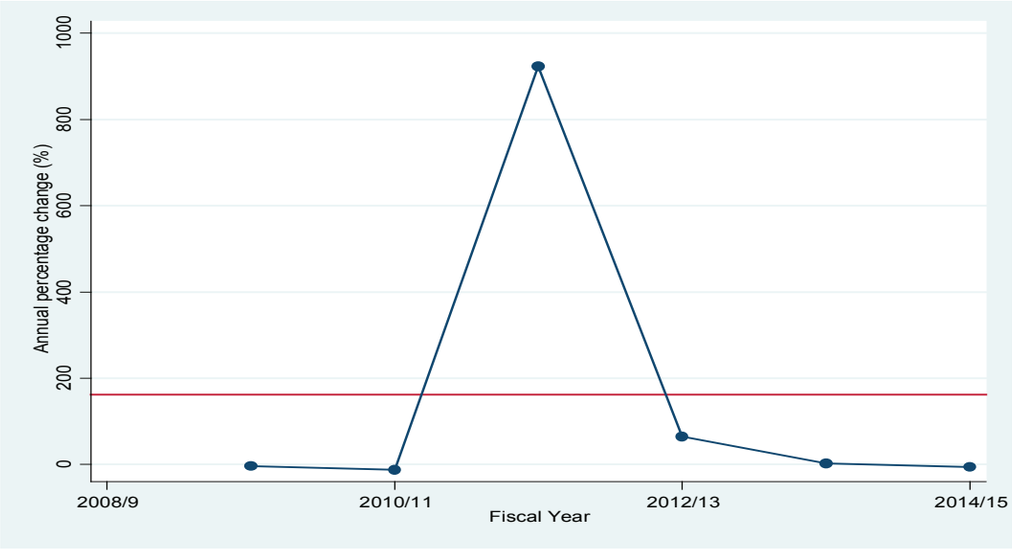


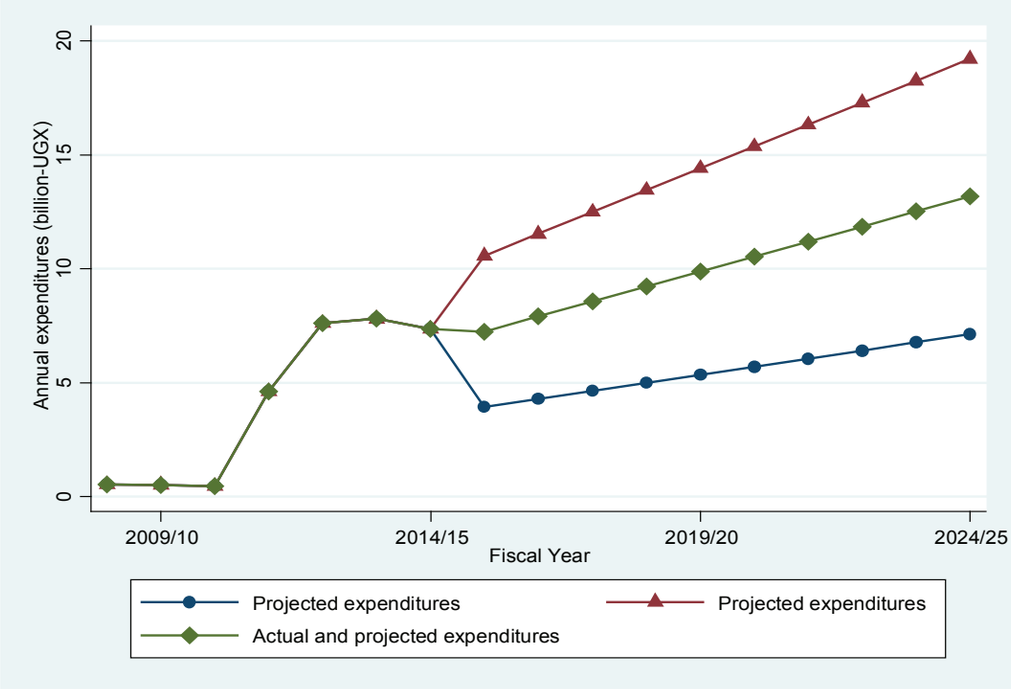
Figure 68 shows that the average percentage change in expenditures at MTWA headquarters in Uganda was about 161.6 per cent in the 2008/9-2014/15 fiscal years. The figure also shows that there is 83.3 per cent probability that the annual percentage changes in expenditures for the last seven years under review, does not go beyond the average of 162per cent.

Biodiversity financing at MTWA headquarters

At the headquarters of the ministry, they are entrusted with drafting for policies that promote conservation, restoration, preservation and protection of wild life species and their habitants. This implies that all the policies at the ministry are biodiversity positive. Therefore, all expenditures at the headquarters are dimmed to be 100% biodiversity conservation and management.

7.2.3 Past and Future expenditures at MTWA headquarters in Uganda 2008/9-2024/15

Figure 69: Past and future expenditures at MTWA headquarters



Projections derived from the past expenditures are presented in Figure 69. The projections reveal that for the 2024/25 fiscal year, the expected expenditures at MTWA headquarters will be about UGX 23.7 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.51 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at MTWA headquarters were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at MTWA headquarters were decreased by about 5%.

7.3 Uganda Wildlife Authority

7.3.1 Introduction

The Objective of the Uganda Wildlife Authority (UWA) is to have sustainably managed wildlife areas that provide enjoyment, support community livelihoods and contribute to national development.

The Specific Objectives are:

1. Sustainable management of wildlife conservation areas
2. Coordination of wildlife management
3. Development, management and monitoring of collaborative arrangements
4. Developing management plans for protected areas

7.3.2 Financing UWA activities 2005/6-2014/15

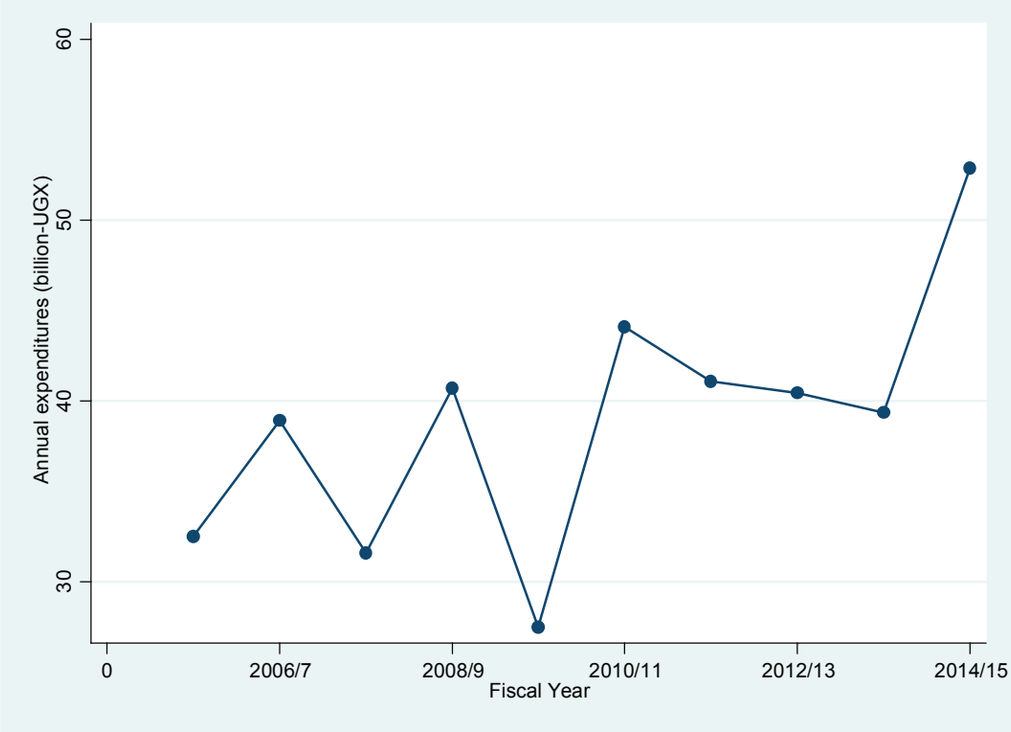
Table 28: Budget allocations and expenditures in real terms at UWA

Fiscal Year	Allocation (billion)	Biodiversity Expenditures (billion)
2005/6	32.5	32.5
2006/7	38.9	38.9
2007/8	31.6	31.6
2008/9	43.192	40.7
2009/10	36.594	27.5
2010/11	45.196	44.112
2011/12	43.209	41.085
2012/13	45.373	40.452
2013/14	47.765	39.36
2014/15	52.892	
Average	**41.72**	**37.36**
Std.dev	**6.77**	**5.48**

Std.dev =standard deviation

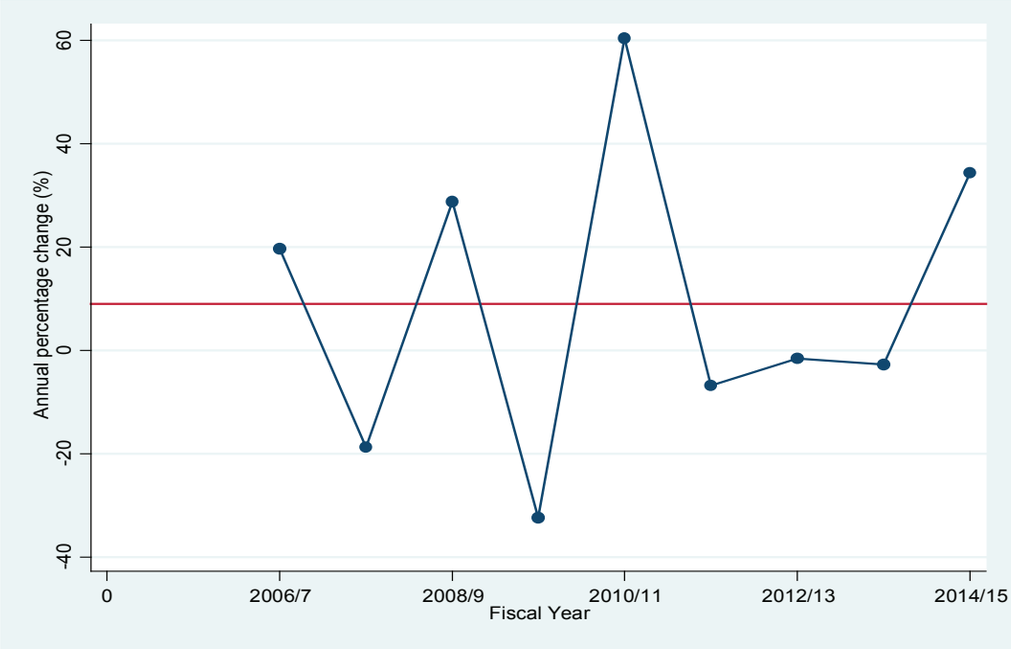
Table 28 shows the average budget allocation for activities at UWA annually, was about UGX 41.7 billion. Furthermore, UWA spent on average about UGX 37.4 billion on conservation activities translating into a budget performance of about 90per cent.

Figure 70: Trend in expenditures in real terms at UWA



There was a general increase in expenditures in real terms at UWA, though with some fluctuations. The moving averages in Figure 70 reveal that the underlying trend in expenditures at UWA seems to be linear. The results revealed that expenditures at UWA were increasing at an average rate of about UGX 1.51 (±0.64) billion in real terms per fiscal year. In addition to average budget allocations and expenditures, annual percentage changes in expenditures were computed and the results are shown in Figure 28.

Figure 71: Annual percentage change in expenditures in real terms at UWA



Results show that the average percentage change in expenditures at UWA was about 9per cent per fiscal year. There is also a 55.6per cent probability that the annual percentage changes in expenditures for the last ten years under review does not go beyond the average of 9per cent. Figure 73 shows the variation in expenditures at UWA and the moving average for the 2005/6-2014/15 fiscal period.

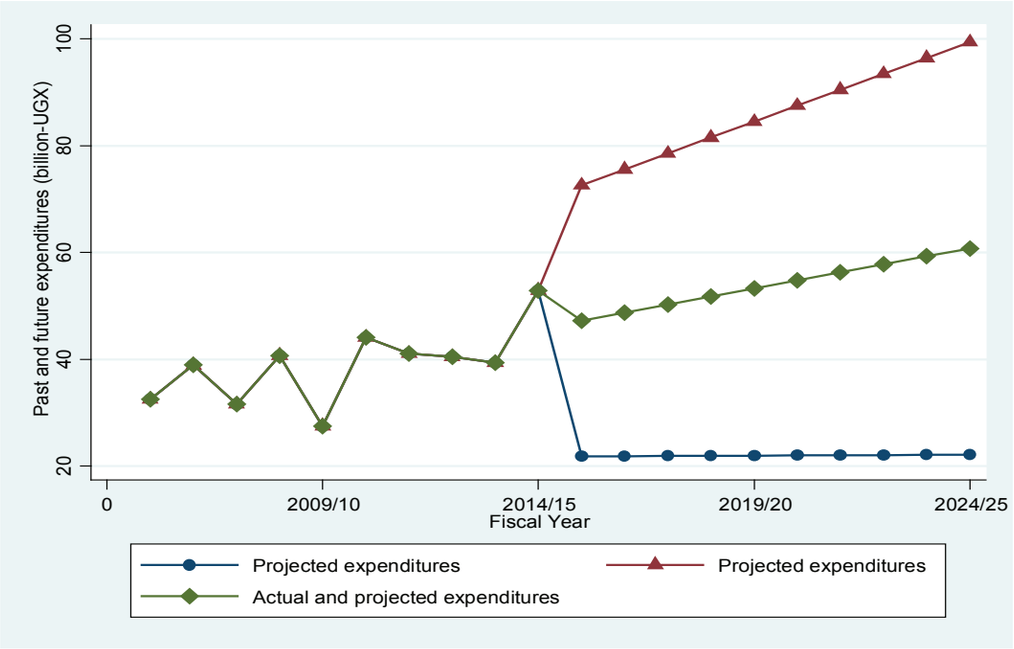
Biodiversity financing at UWA

The mandate of UWA is to protect wild life and its habitants. Conservation of wild life and its habitants are directly associated with biodiversity conservation and management. Therefore, the expenditures at UWA are dimmed to be 100% biodiversity.

7.3.3 Past and Future expenditures at UWA 2005/6-2024/25

Figure 72 shows the past and future expenditures at UWA for the fiscal years 2005/6-2024/25.

Figure 72: Past and future expenditures at UWA



The past expenditures predict that expenditures at UWA in 2024/25 fiscal year will be about UGX 60.8 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 1.5 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at UWA headquarters were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at UWA headquarters were decreased by about 5%.

7.4 Uganda Wildlife Conservation Education Centre

7.4.1 Introduction

The main objective of the Uganda Wildlife Conservation Education Centre (UWCEC) is to provide wildlife conservation education and awareness. The specific objectives are to:

1. Carry out conservation education to the Ugandan public with emphasis on young generation
2. Carry out rescue and rehabilitation of injured, confiscated, abandoned or orphaned wildlife species
3. Offer entertainment to visitors who learn about wildlife as they have fun at the centre
4. Undertake captive breeding of endangered wildlife species with the aim of reintroducing them back to the wild

7.4.2 Financing UWCEC activities 2008/9-2014/15

The average budget allocation for UWCEC was about UGX 0.73 billion for the 2008/9-2014/15 fiscal years as shown in Table 29. The budget allocation was also used to analyse expenditures, since data on actual expenditures were not available.

Table 29: Budget allocations at UWCEC

Fiscal Year	Allocation (billion)	Biodiversity expenditures (billions)
2008/9	0.3	0.23
2009/10	0.365	0.27
2010/11	0.365	0.27
2011/12	0.365	0.27
2012/13	0.065	0.05
2013/14	0.65	0.49
2014/15	3.001	2.25
Average Std.dev	**0.730 (1.015)**	**0.55 (0.76)**

Std.dev =standard deviation

Figure 73: Trend in expenditures in real terms at UWCEC

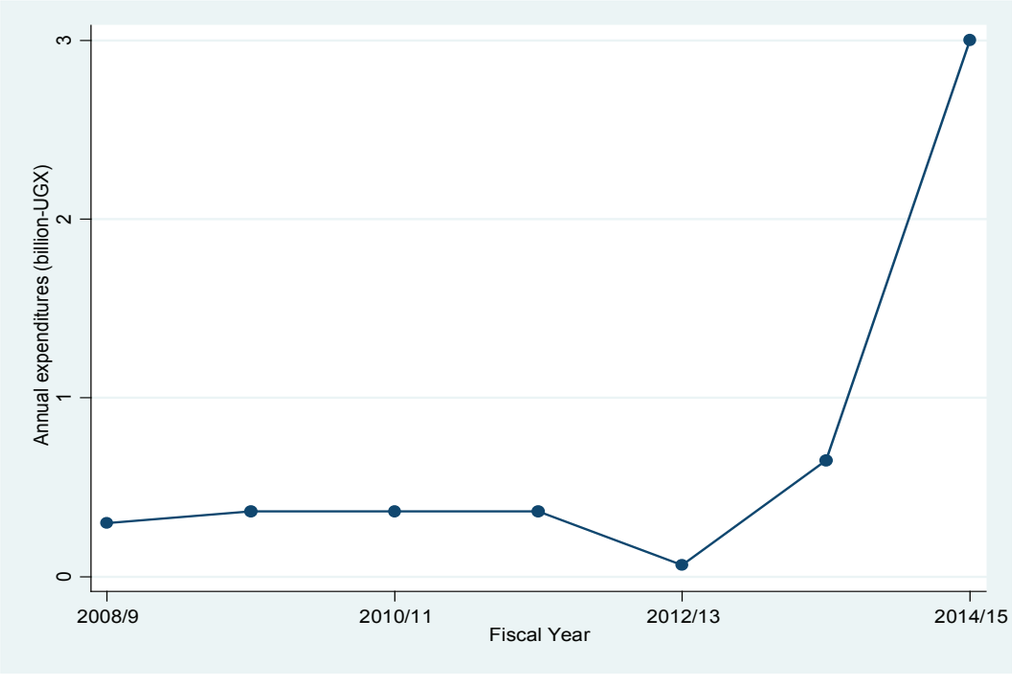


Figure 73 shows that in the period under review, the budget allocations and expenditures at UWCEC were gradually increasing. Between 2008/9 -2013/14 the budget allocations to UWCEC seem to have been constant for those financial years. The budget allocation drastically increased in the 2014/15 fiscal year to about UGX 3.1 billion Table 29. The moving average smoothing revealed that the underlying trend in budget allocations and expenditures seems to be constant. Results show that expenditures at UWCEC were increasing at an average rate of about UGX 0.3 (±0.16) billion in real terms per fiscal year.

Figure 74: Annual percentage change in expenditures at UWCEC

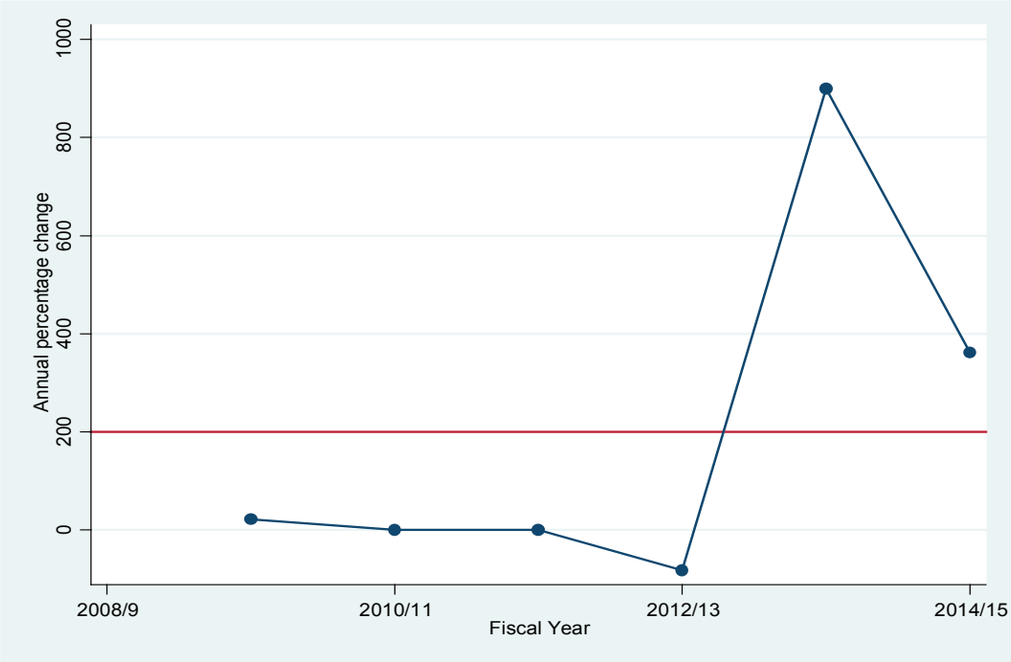


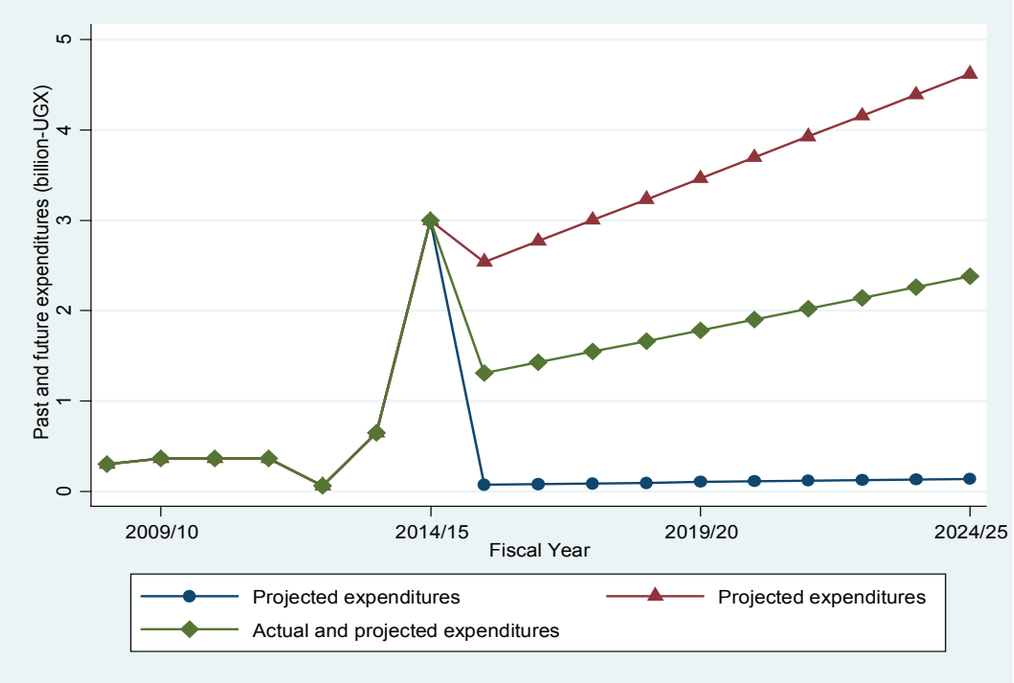
Figure 74 shows the average percentage change in expenditures at UWCEC was about 200.2 (±376.18) per cent. This implies that in 2008/9-2014/15 fiscal period, expenditures at UWCEC increased on average by about 200per cent. Furthermore, there is a very high risk of experiencing high budget cut by government at UWCEC as predicted by the very high standard deviation. Moving averages were also computed and the results are shown in Figure 73.

Biodiversity financing at UWCEC

The core activities of UWCEC rotates about four key results areas of conservation education, rescue and rehabilitation of wildlife species, captive breeding of endangered wildlife species and entertaining visitors. With the exception of entertaining visitors, the rest of the key result areas are associated with preservation, conservation, restoration and protection of wildlife. Therefore the expenditures at UWCEC are estimated to be about 75% biodiversity conservation and management.

7.4.3 Past and Future expenditures at UWCEC 2008/9-2024/25

Figure 75 shows the past and future expenditures at UWCEC for the 2008/9-2024/25 fiscal years.



The average expenditures at UWCEC in 2024/25 fiscal year are projected to be about UGX 5.8 billion in real terms, as displayed in Figure 75. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.3 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at UWCEC were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at UWCEC were decreased by about 5%.

7.5 Uganda Tourism Board

7.5.1 Introduction

The main objective of the Uganda Tourism Board (UTB) is to promote and popularize Uganda as a viable holiday destination.

The specific objectives are:

1. Formulate in cooperation and in consultation with the private sector and relevant entities, a marketing strategy for tourism in Uganda
2. Implement the marketing strategy and promote Uganda as an attractive and sustainable tourist destination
3. Encourage and promote domestic tourism within Uganda
4. Promote and sponsor educational programs and training in the tourism sector including schools, in consultation and cooperation with appropriate entities

7.5.2 Financing UTB activities 2008/9-2014/15

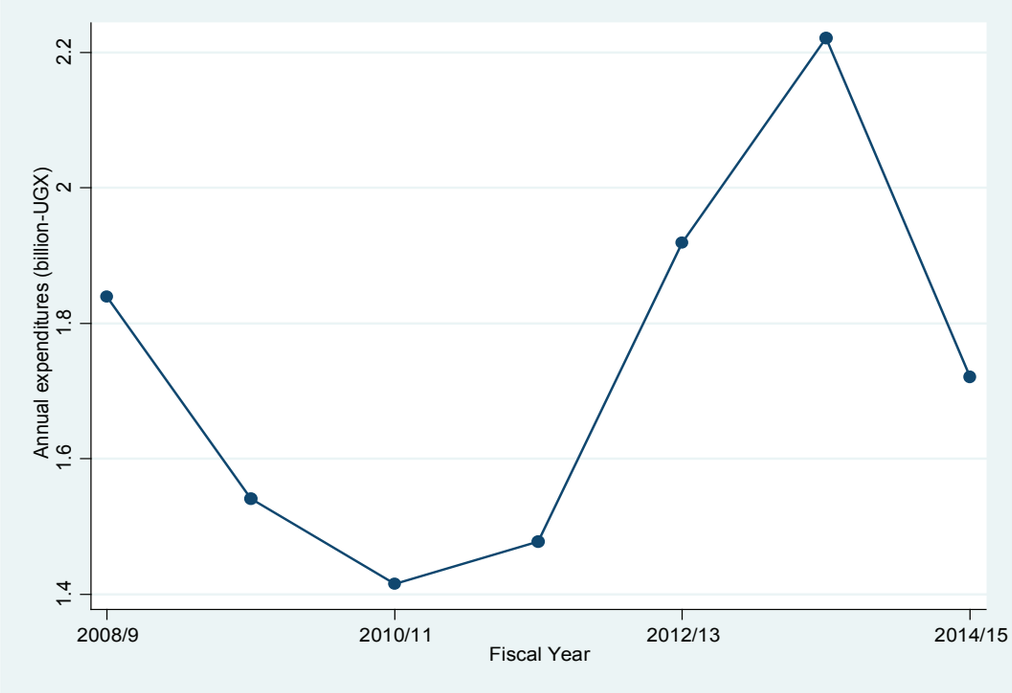
Table 30: Budget allocations at UTB

Fiscal Year	Allocation (billion)	Biodiversity expenditures (billion)
2008/9	1.839	0.46
2009/10	1.541	0.39
2010/11	1.415	0.35
2011/12	1.478	0.37
2012/13	1.919	0.48
2013/14	2.221	0.56
2014/15	1.721	0.43
Average	**1.733**	**0.43**
Std.dev	**0.284**	**0.07**

Std.dev = standard deviation

On average, UTB was allocated about UGX 1.73 billion per fiscal year for the period 2008/9-2014/15. Budget allocation data was used to explore the trend in financing activities at UTB. In addition to the average budget allocations, annual percentage change in budget allocations were computed and the results are summarised in Table 30.

Figure 76: Trend in expenditures in real terms at UTB



A general increase in annual expenditures in real terms at UTB was observed. There was however, a decline in expenditures in real terms between 2008/9 -2010/11 that was later followed by a gradual increase. Results revealed that the budget allocations at UTB might be linear if the effects of extreme allocations are smoothened out. Results show that expenditures at UTB were increasing at an average rate of about UGX 0.054 (±0.054) billion in real terms per fiscal year.

Figure 77: Annual percentage change in expenditures in real terms at UTB

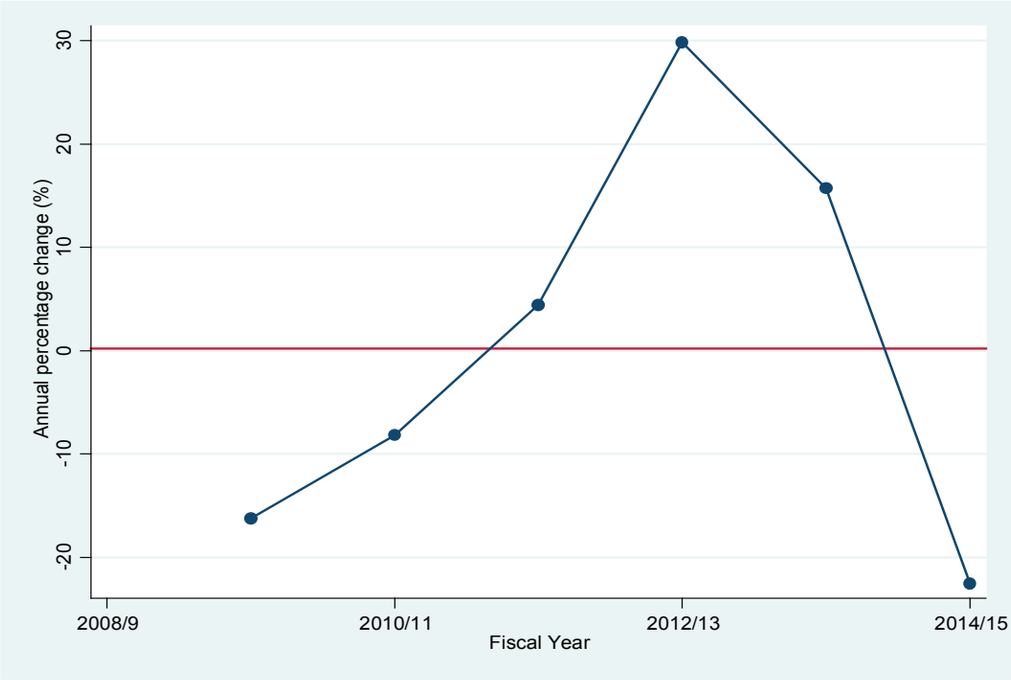


Figure 77 shows that the average annual percentage change in expenditures at UTB was about 0.2per cent per fiscal year. There is a 50per cent probability that the annual percentage change in budget allocations at UTB will exceed the observed average of 0.2per cent. Figure 76 shows the variation in budget allocations at UTB for the 2008/9-2014/15 fiscal years.

Biodiversity financing at UTB

The mandate of UTB is entrechat in the promotion of tourism in the country. The tourism industry in Uganda is mainly about wildlife and their habitants in protected areas. The promotion of some wildlife species and their habitants plays an important role in the conservation and protection of the species. Therefore, the budget at UTB is estimated to be about 25% biodiversity conservation and management.

7.5.3 Past and future expenditures at UTB 2008/9-2024/25

Figure 78: Past and future expenditures in real terms at UTB

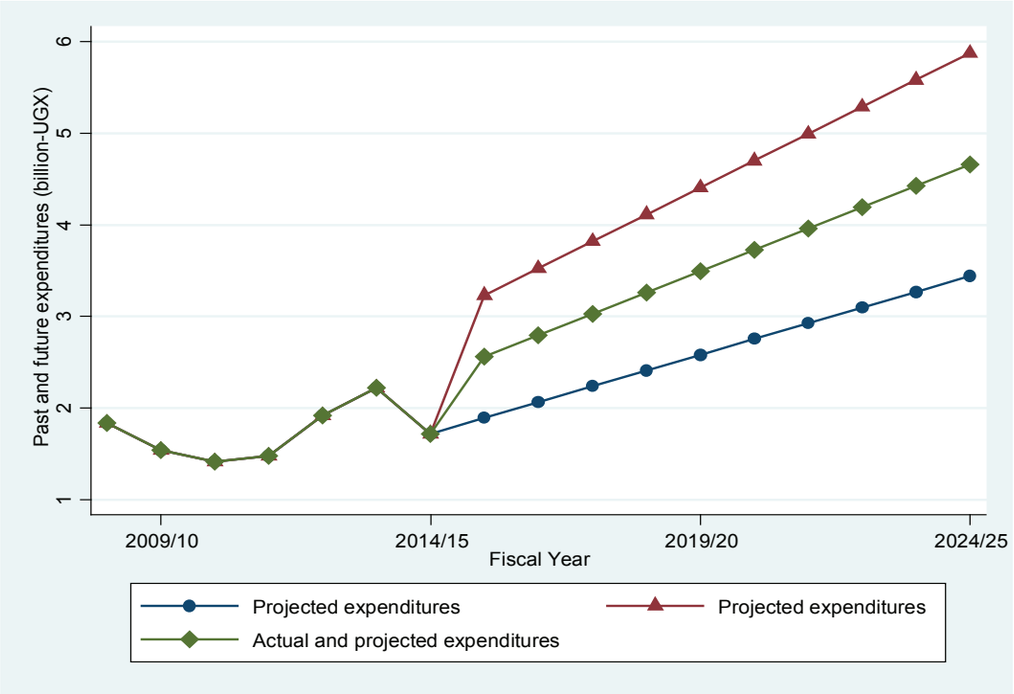


Figure 78, shows that the expected expenditures at UTB will be about UGX 2.4 billion in real terms in 2024/25 fiscal year.The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.054 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at UTB were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at UTB were decreased by about 5%.

7.6 Hotel and Tourism Training Institute

7.6.1 Introduction

The main objective of Hotel and Tourism Training Institute (HTTI) is to provide studies and training in subjects related to tourism, hotel management and catering

The specific objectives are:

1. To organize and conduct courses in hotel and catering and to make provision for advertisement, transmission and preservation of knowledge
2. To conduct examination and grant certificates, diplomas and other awards of the institute
3. To consult and cooperate with anybody or organization in or outside Uganda having similar functions to those described by the act

7.6.2 Financing HTTI in Uganda 2010/11-2014/15

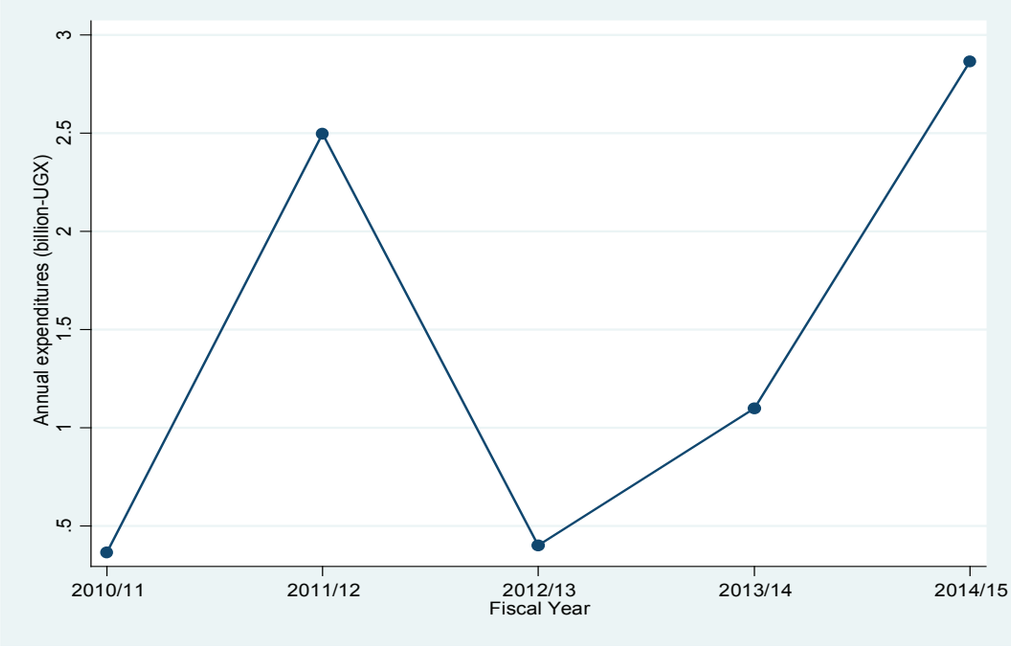
Table 31: Budget allocations at HTTI in Uganda

Fiscal Year	Non-biodiversity allocation (billion)
2010/11	0.366
2011/12	2.499
2012/13	0.4
2013/14	1.1
2014/15	2.867
Average	**1.29**
Std.dev	**1.114**

Std.dev =standard deviation

On average, HTTI was allocated about UGX 1.29 billion in real terms per fiscal year for the 2010/11-2014/15 fiscal period.

Figure 79: Trend in expenditures in real terms at HTTI



Budget allocation data was used to explore the trend in financing activities at HTTI as presented in Table 31. The highest budget allocation was in 2014/15 fiscal year while the least was in 2010/11fiscal year Results further revealed that the budget allocations at HTTI might be linear if the effects of extreme allocations are smoothened out. In addition, the expenditures at HTTI were increasing at an average rate of about UGX 0.605 (±0.089) billion in real terms per fiscal year. Annual percentage change in budget allocations was also computed and the results are presented in Figure 80.

Figure 80: Annual percentage change in expenditures in real terms at HTTI

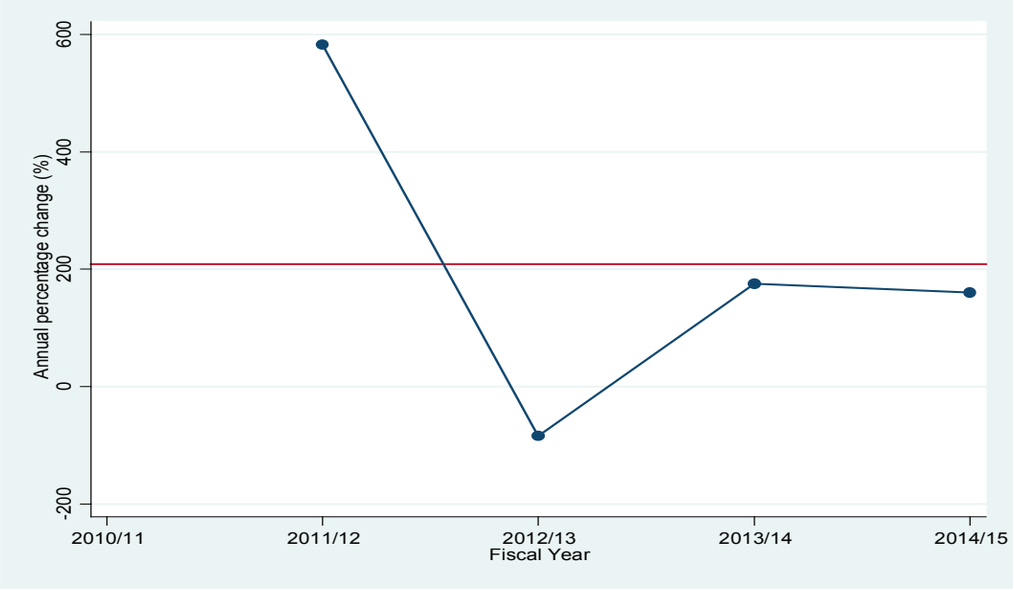


Figure 80 shows that the average annual percentage change in expenditures at HTTI was about 208.6per cent per fiscal year. There is a 75per cent probability that the annual percentage change in budget allocations at HTTI will not exceed the observed average of 208.6per cent. Figure 79 shows the variation in budget allocations at HTTI for the 2010/11-2014/15 fiscal years.

Biodiversity financing at HTTI

The mandate of the institute is to training the population in tourism and hotel management. Although our tourism industry depend mainly on wildlife conservation there is little link with protection, restoration and preservation of biological species. Therefore, the expenditures at this institute are non-biodiversity.

7.6.3 Past and future expenditures at HTTI 2010/11-2024/25

Figure 81: Past and future expenditures at HTTI

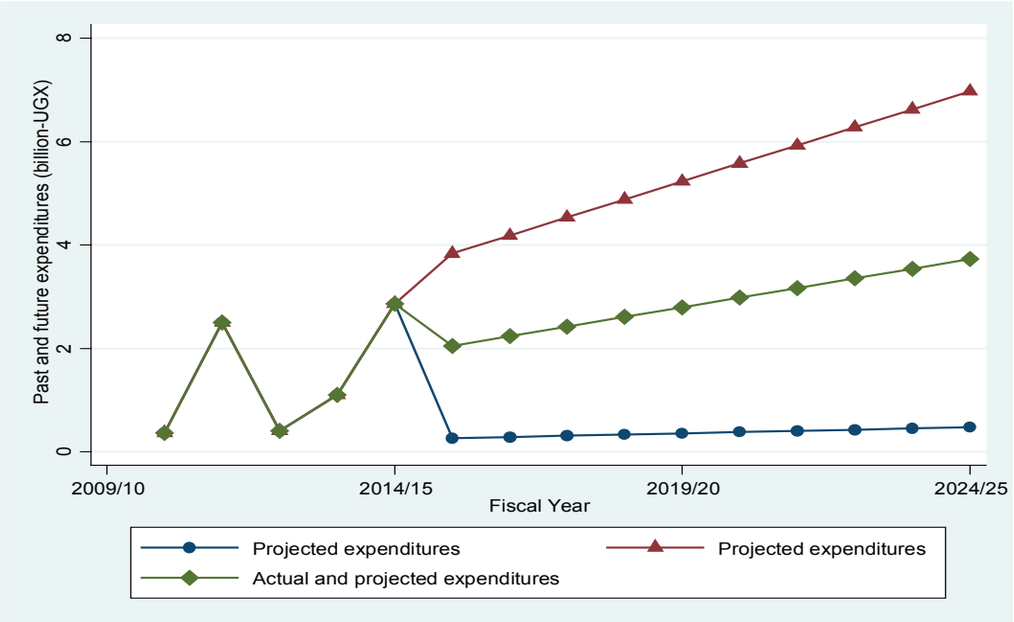


Figure 81, in 2024/25 fiscal year, the expected expenditures at HTTI will be about UGX 8.99 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.605 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at HTTI were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at HTTI were decreased by about 5%.

7.7 Uganda Wildlife Training Institute (UWTI)

7.7.1 Introduction

The main objective of UWTI is to provide research, training and consultancy services in the wildlife sector

Its specific objectives are:

i. To review and update the institutes training curriculum to match the current wildlife sector needs
ii. To develop the human resource capacity of the institutes to match its mandate
iii. To develop modern training and research infrastructure
iv. To build a strong framework for partnership
v. To equip the institute with modern training and research tool

7.7.2 Financing UWTI activities 2009/10-2014/15

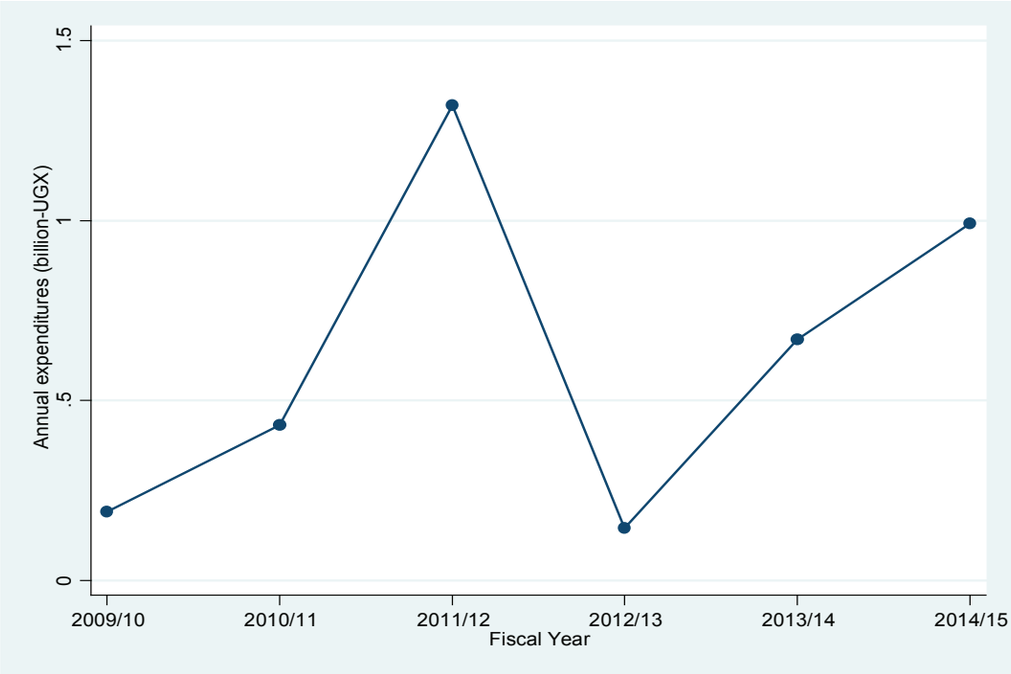
Table 32: Budget allocations in real terms at UWTI

Fiscal Year	Allocation (billion)	Biodiversity expenditures (billion)
2009/10	0.19	0.19
2010/11	0.431	0.431
2011/12	1.321	1.321
2012/13	0.145	0.145
2013/14	0.67	0.67
2014/15	0.992	0.992
Average	**0.624**	**0.624**
Std.dev	**0.464**	**0.464**

Std.dev =standard deviation

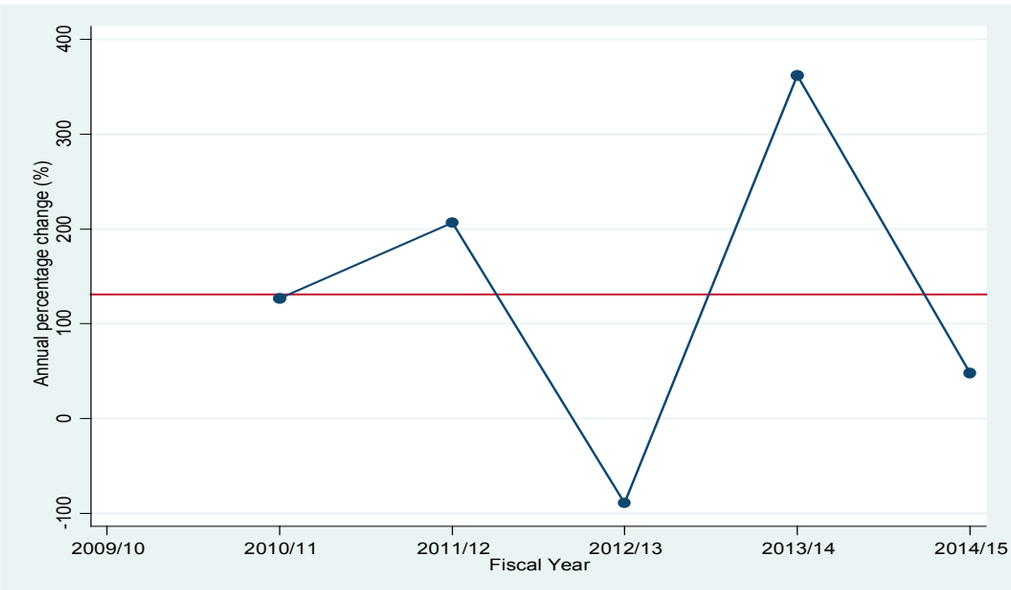
On average UWTI was allocated about UGX 0.624 billion in real terms per fiscal year for the period 2009/10-2014/15. Budget allocation data was used to explore the trend in financing activities at UWTI. The highest budget allocation was in 2011/12 fiscal year while the lowest was in 2009/10 Table 32.
In addition to the average budget allocations, annual percentage change in budget allocations were computed and the results are presented in Table 32.

Figure 82: Trend in expenditures in real term at UWTI



The actual expenditures fluctuate a lot with the highest peaks in 2011/12 and 2014/15 and the lowest peaks at 2009/10 and 2012/13. Results showed that the budget allocations at UWTI might be linear if the effects of extreme allocations are smoothened out. Results show that expenditures at UWTI were increasing at an average rate of about UGX 0.135 (±0.023) billion in real terms per fiscal year.

Figure 83: Annual percentage change in expenditures at UWTI



As shown in Figure 83, the average annual percentage change in expenditures at UWTI was about 130.9per cent per fiscal year. There is a 40per cent probability that the annual percentage change in budget allocations at UWTI will not exceed the observed average of 130.9per cent. Figure 82 shows the variation in budget allocations at UWTI for the fiscal years 2009/10-2014/15.

Biodiversity financing at UWTI

The mandate of this institute is entrusted in training and capacity building to enhance wildlife conservation in Uganda. The programs of capacity building through training are highly important in promoting conservation efforts of wildlife in Uganda. Therefore, expenditures at this institute are estimated to be 100% biodiversity.

7.7.3 Past and future expenditures in real terms at UWTI 2009/10 -2024/25

Figure 84: Past and future expenditures at UWTI

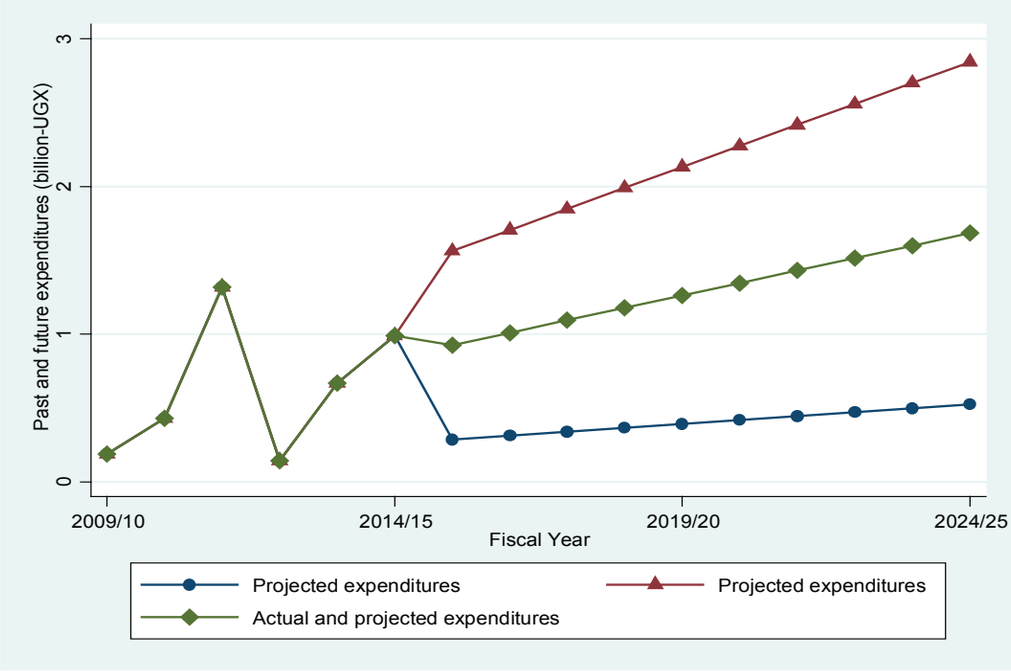


Figure 84, in 2024/25 fiscal year, the expected expenditures at UWTI will be about UGX 2.28 billion in real terms. The green curve describes the average growth in projected expenditures if the current expenditures grow at about UGX 0.605 billion per fiscal year. The red curve describes the projected expenditures if the annual growth rate at UWTI were to be increased by about 5%. Lastly the blue curve describes the projected growth in expenditures if the annual growth rate at UWTI were decreased by about 5%.

Biodiversity financing among institutions in MTWA

Further analysis of the biodiversity financing and management among the institutions in MTWA revealed that about 96 percent of their budgets are biodiversity.

Table 33: Biodiversity attribution and financing at MTWA

Fiscal year	Expenditures	Biodiversity Expenditures	% biodiversity expenditures
2005/6	32.5	32.5	100.0
2006/7	38.9	38.9	100.0
2007/8	31.6	31.6	100.0
2008/9	43.369	41.9	96.6
2009/10	30.108	28.7	95.4
2010/11	47.14	45.3	96.0
2011/12	51.361	46.6	90.7
2012/13	50.585	48.6	96.1

2013/14	51.801	48.3	93.3
2014/15	68.834	63.1	91.7
Average	**44.62**	**42.56**	**96.0**
Std.dev	**11.96**	**10.24**	**3.37**

Departments/Agency	% budget attributed to Biodiversity
MTWA headquarters	100
Uganda Wildlife Authority (UWA)	100
Uganda Wildlife Education Centre (UWCEC)	75
Uganda Tourism Board (UTB)	25
Hotel and Tourism Training Institute (HTTI)	0
Uganda Wildlife Training Institute (UWTI)	100

7.8 Financing biodiversity strategic objectives (NBSAPs) at MTWA

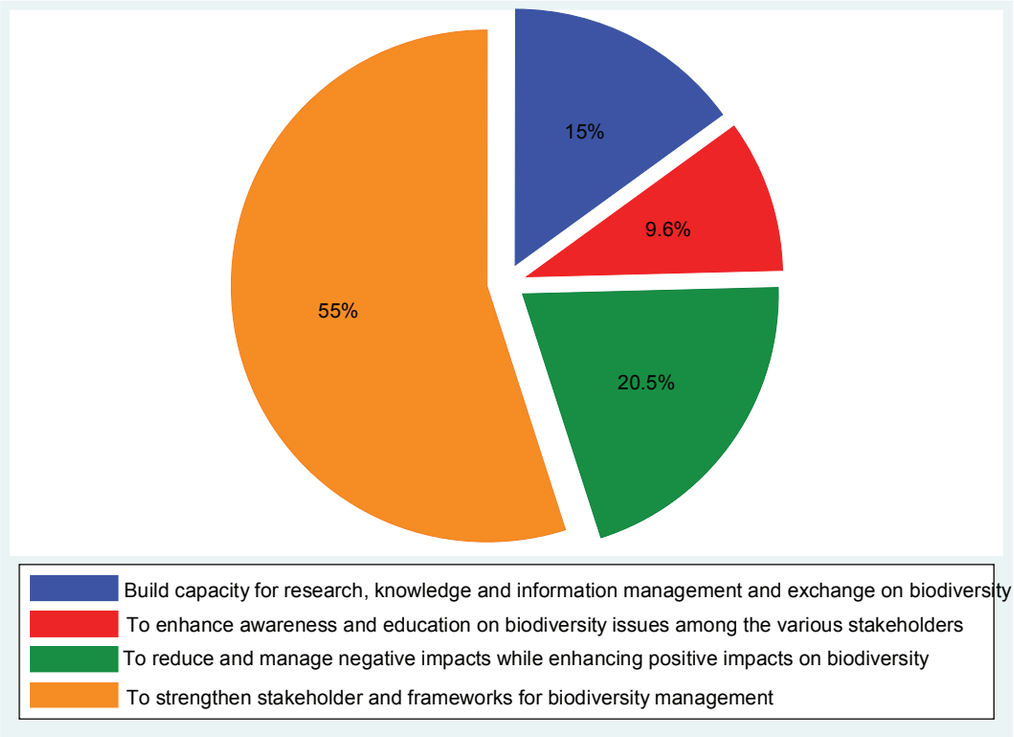
It should be noted that about 96% of the expenditures at MTWA are biodiversity. Each of the agencies in this ministry contributes to the specific objectives of the National Biodiversity Strategic Action Plan (NBSAP). There are seven strategic objectives in the National Biodiversity Strategic Action Plan (NBSAP). Therefore we present the budget allocations on each of the strategic objectives of the NBSAP II in Table 34.

Table 34: Trend in financing NBSAPs at MTWA

Strategic objectives	Fiscal Year						
To strengthen stakeholder and frameworks for biodiversity management							
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	**Average**
Allocation (billion-UGX)	17.9	2.94	7.09	9.9	12	13.4	**10.54**
Percent (per cent)	85.2	44.4	52.5	66.4	63.5	17.8	**55**
To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity							
Allocation (billion-UGX)	1.25	1.64	3.73	1.08	3.74	3.29	**2.46**
Percent (per cent)	5.9	24.8	27.7	7.3	19.8	4.4	**15**
To reduce and manage negative impacts while enhancing positive impacts on biodiversity							
Allocation (billion-UGX)	1.08	1.22	1.88	0.7	1.47	55.3	**10.28**
Percent (per cent)	5.1	18.4	14	4.7	7.8	73.3	**20.5**
To enhance awareness and education on biodiversity issues among the various stakeholders							
Allocation (billion-UGX)	0.77	0.83	0.82	3.26	1.71	3.44	**1.81**
Percent (per cent)	3.7	12.5	6.1	21.9	9.1	4.6	**9.6**

At MTWA, biodiversity allocation towards the NBSAPs is biased towards objective one. For example on average in the fiscal period 2009/10-2014/15, strengthening stakeholder and frameworks for biodiversity management was allocated about 55per cent of the ministry budget. Furthermore, monitoring activities aimed at reducing negative impacts while enhancing positive impacts was allocated about 21per cent Figure 85. There were no resources that were allocated for promotion of sustainable use and equitable sharing of costs and benefits of biodiversity as well as mobilizing resources to enhance implementation.

Figure 85: NBSAPs share of the MTWA budget allocations



7.9.1 Conclusions

We reviewed the expenditures for MTWA and its agencies to assess their contribution to NBSAPs financing. All the budget allocations at MTWA were assessed to be biodiversity related. The budget allocations at MTWA were estimated to be growing at an average rate of about UGX 1.51 (±0.29) billion in real terms per fiscal year. At MTWA, biodiversity allocations towards the NBSAPs are biased towards objective one. For example, on average in the fiscal period 2009/10-2014/15, strengthening stakeholder and frameworks for biodiversity management was allocated about 55per cent of the ministry budget. Furthermore, monitoring activities aimed at reducing negative impacts while enhancing positive impacts was allocated about 21per cent. There were no resources that were allocated for promotion of sustainable use and equitable sharing of costs and benefits of biodiversity as well as mobilizing resources to enhance implementation.

CHAPTER EIGHT: BIODIVERSITY BUDGET ALLOCATIONS AND NBSAP II

8.1 Introduction

The National Biodiversity Strategy and Action Plan (NBSAP) is the main instrument for implementation of the Convention at country level. NBSAP provides Government with a framework for implementing its obligations under CBD as well as the setting of conservation priorities, channelling of investments and building of the necessary capacity for the conservation and sustainable use of biodiversity in the country. The strategic objectives of the NBSAP2 are (1) to strengthen stakeholder co-ordination and frameworks for biodiversity management, (2) to facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity, (3) to put in place measures to reduce and manage negative impacts on biodiversity, (4) to promote the sustainable use and equitable sharing of costs and benefits of biodiversity, (5) to enhance awareness and education on biodiversity issues among the various stakeholders, (6) to harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment, (7) to promote innovative sustainable funding mechanisms to mobilize resource for implementing the Strategy.

To assess biodiversity related financing, budgets and expenditures in four major sectors (ministries) were reviewed. The four major sectors that implement biodiversity related activities that were reviewed include Water and Environment sector (MWE), MAAIF, MTWA and Ministry of Energy and Mineral Development (MEMD). The sector budgets are financed through two main arrangements namely on-budget aid and off-budget aid. The on-budget support refers to Aid that is included in the Medium-Term Expenditure Framework (MTEF) and presented in the Government of Uganda (GOU) budget estimate books. A second category of on-budget aid includes Technical Assistance (TA) and basket funds that support GOU activities and institutions whose budgets are included in the MTEF and official estimate books. The off-budget support refers to Aid that is not reported in the MTEF and budget estimate books of the GOU. This is either because it is not reported to the GOU, or because it is not related to institutions included in the MTEF and GOU official budget estimates. This might include some aid to local Governments, as well as support to parastatals and NGOs, although many Development Partners (DPs) do provide information on such aid to MoFPED.

Table 35: Biodiversity budget share of national budget

Fiscal year	Biodiversity budget (billion-UGX)	Share of national budget (%)
2005/6	51.20	1.4
2006/7	53.36	1.5
2007/8	59.16	1.3
2008/9	83.10	1.1
2009/10	84.56	1.2
2010/11	111.94	1.3
2011/12	111.29	1.2
2012/13	102.00	0.9
2013/14	104.11	0.8
2014/15	145.95	0.9
Average	**90.67**	**1.17**
Std.dev	**30.33**	**0.24**

Findings revealed that on average government of Uganda through its MDAs spends about UGX 91 billion per fiscal year on biodiversity conservation and management. This translates into about 1.2% of the national budget per fiscal year. This budget is distributed among the seven strategic objectives of the NBSAP II.

8.2 Financing biodiversity and NBSAPs in Uganda

We analysed the budget allocations to the specific objectives of the institutions in line with the seven objectives of the NBSAPs in Uganda to establish the budget allocations under each strategic objective. Table 36 shows the summary and distribution of the biodiversity budget allocations from the four major sectors that were reviewed for the fiscal period 2009/10-2014/15. Furthermore the distribution of the biodiversity budget across the seven strategic objectives was computed together with their percentage share of the budget.

Table 36: Distribution of budget share for biodiversity in Uganda

Strategic objectives	Fiscal Year						Average
To strengthen stakeholder and frameworks for biodiversity management							
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	**Average**
Allocation (billion-UGX)	33.7	41.6	69.3	40.3	59.3	54.7	**49.8**
Percent (per cent)	39.8	37.2	62.3	39.5	57.0	37.5	**45.5**
To facilitate and build capacity for research, knowledge and information management and exchange on biodiversity							
Allocation (billion-UGX)	10.7	16.8	12.8	20.6	10.4	18.7	**15.0**
Percent (per cent)	12.7	15.0	11.5	20.2	10.0	12.8	**13.7**
To reduce and manage negative impacts while enhancing positive impacts on biodiversity							
Allocation (billion-UGX)	13.8	13.0	8.6	13.0	15.3	23.9	**14.6**
Percent (per cent)	16.3	11.6	7.7	12.7	14.7	16.4	**13.2**
To promote the sustainable use and equitable sharing of costs and benefits of biodiversity							
Allocation (billion-UGX)	10.7	10.6	4.2	9.1	11.1	8.0	**9.0**
Percent (per cent)	12.6	9.5	3.8	8.9	10.7	5.5	**8.5**
To enhance awareness and education on biodiversity issues among the various stakeholders							
Allocation (billion-UGX)	15.2	29.3	15.9	18.5	7.8	40.4	**21.2**
Percent (per cent)	18.0	26.2	14.3	18.1	7.5	27.7	**18.6**
To harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment							
Allocation (billion-UGX)	0.6	0.6	0.3	0.6	0.1	0.3	0.4
Percent (per cent)	0.7	0.5	0.3	0.6	0.1	0.2	**0.4**
Overall budget (billion-UGX)	**84.56**	**111.94**	**111.29**	**102.00**	**104.11**	**145.95**	**110.0**

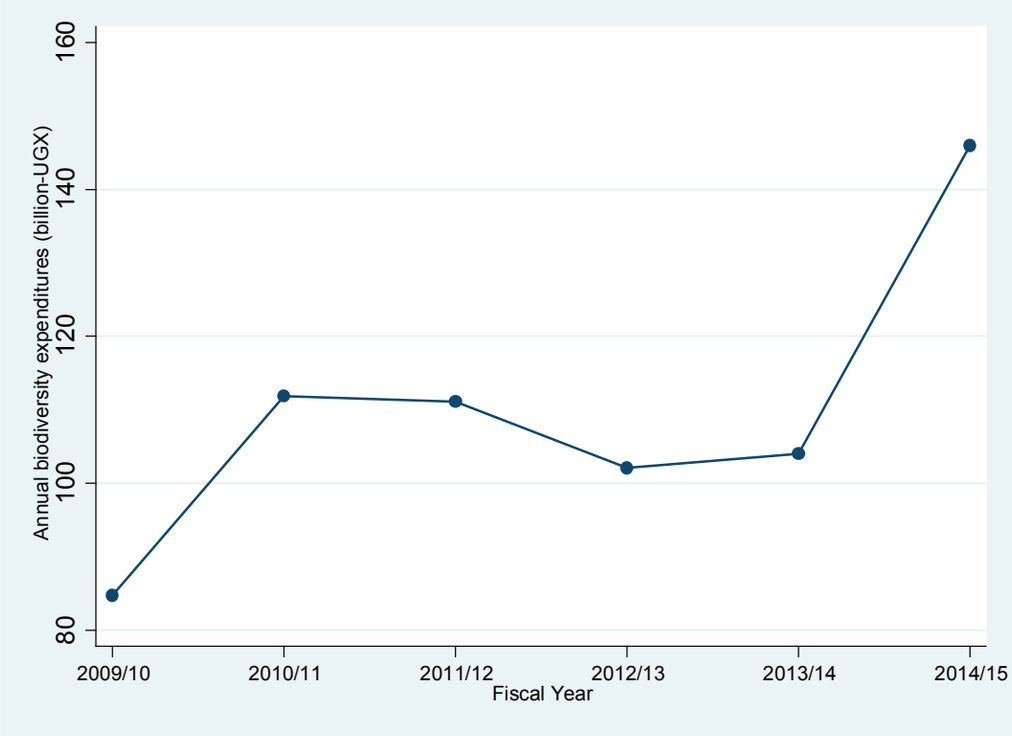
8.2.1 Biodiversity budget allocations in Uganda 2009/10-2014/15

On average, the four ministries combined had a budget of about UGX 91 billion in real terms per fiscal year allocated for biodiversity related activities.This budget allocation for biodiversity related constitutes about 1.2 per cent of the overall government of Uganda budget per fiscal year.

Trend in biodiversity budget allocations 2009/10-2014/15

The moving averages were used to smoothen out the effects of price fluctuations and hence revealing the underlying trend. Figure 86 shows the combined annual budget allocations with the two-year, three-year, moving averages for biodiversity budget allocations in Uganda.

Figure 86: Trend in budget allocations in real terms for biodiversity related activities in Uganda



The biodiversity budget allocations have been generally increasing with the budget almost remained constant in the period 2010/11 to 2013/14. However, the long-term underlying trend in the budget allocation seems to suggest a linear structure based on a five year plan. To estimate the growth rate in the budget allocations, a simple linear regression was used. The results reveal that the annual biodiversity budget was growing at an average rate of about UGX 7.8 billion per fiscal year.

Annual percentage change in biodiversity financing in Uganda

One of the objectives of this review is to assess the trend in financing biodiversity in Uganda. The trend in financing biodiversity related activities was assessed by first computing the annual percentage changes in the budget allocations and expenditures. Figure 36 show the summary of the annual percentage changes in budget allocation to four main sectors that implement biodiversity related activities.

Figure 87: Nominal Annual percentage changes in biodiversity expenditures

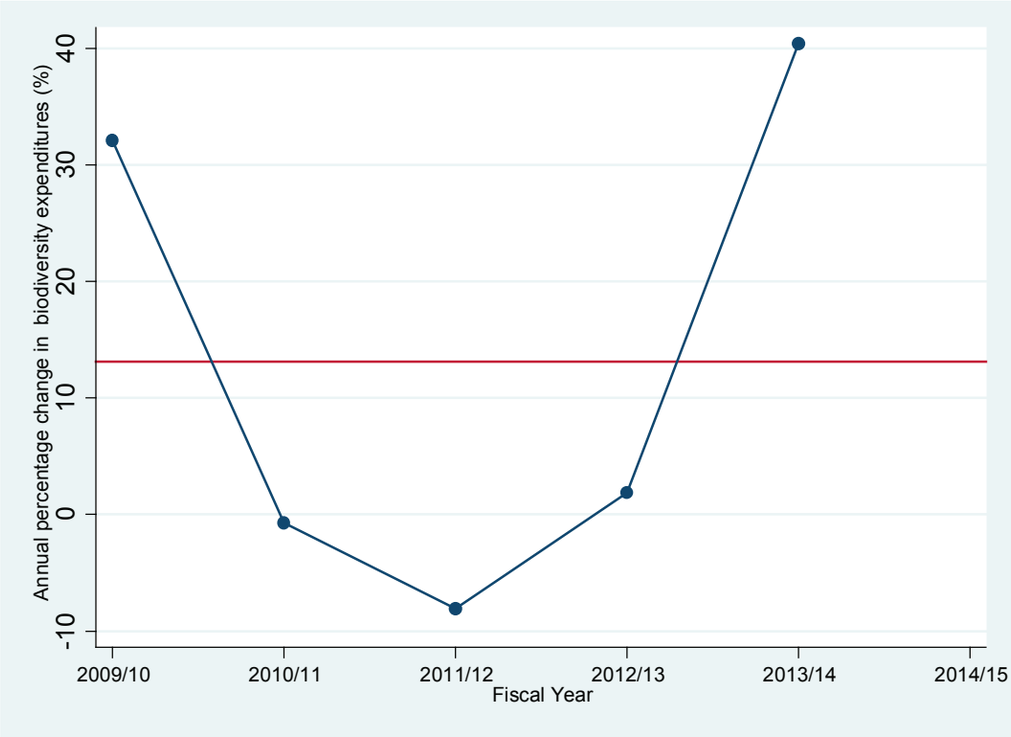
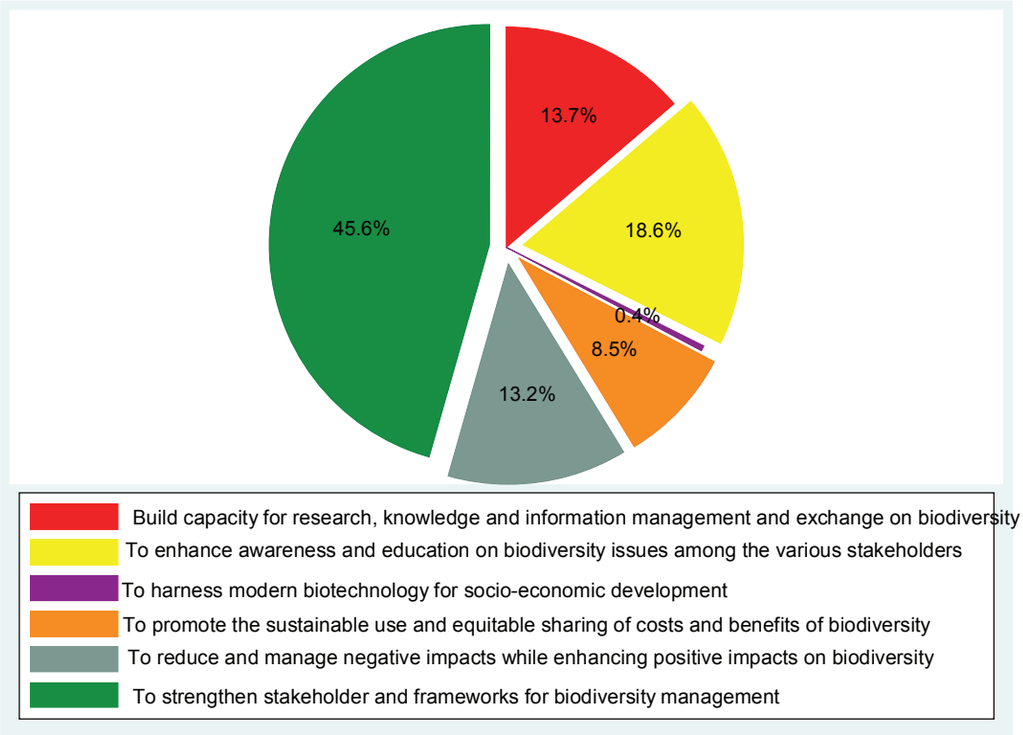


Figure 87 shows that on average, the combined annual biodiversity related budget allocations in the four sectors (MAAIF, MEMD, MWE and MTWA) were increasing at about 13.1per cent per fiscal year. Furthermore, there is a higher likelihood that the annual percentage increase in biodiversity budget allocations for a preceding fiscal year will be more than 13.1 per cent of the budget for the previous fiscal year.

8.2.2 Share of biodiversity budget across the strategic objectives

Biodiversity related activities are implemented within the different ministries' mandates. This implies that biodiversity expenditures can be derived from the implementing sectors by analysing their specific objectives and mandates in line with biodiversity strategic objectives. Therefore, the combined three sector budgets were analysed to assess the proportion of the budget attributed to the different strategic objectives in the NBSAP II. The results of the budget share of biodiversity are summarised in Figure 90

Figure 88: Biodiversity budget share across strategic objectives



Our findings revealed that out of the biodiversity budget allocations in the four sectors under review, strengthening stakeholders' partnerships and policy on biodiversity related issues constitutes about 46 per cent of the budget translating into an average of about UGX 49.8 billion. Similarly capacity building for research was allocated only about 14 per cent translating into an average budget allocation of about UGX 15.0 billion in real terms. Public awareness and information sharing with stakeholders, takes about 18.6per cent of the budget translating into an average allocation of about UGX 21.2 billion in real terms per fiscal year. Enhancing modern biotechnology for socio-economic development with adequate safety measures for human health and the environment is the least funded with only 0.4 per cent of the biodiversity budget translating into about UGX 0.4 billion per fiscal year Figure 90.

8.3: Financing stakeholder coordination and framework for biodiversity management

The first strategic objective of the NBSAP in Uganda is to strengthen stakeholder co-ordination and frameworks for biodiversity management. This objective deals with strengthening the capacity of implementing institutions as well as having enabling policies and legislations in place. The budget allocation under this objective was reviewed and annual percentage changes were computed for each fiscal year. Figure 87 show the variation in the annual percentage change in budget allocations 2009/10-2014/15.

Figure 89: Annual percentage change in expenditures for strategic objective one

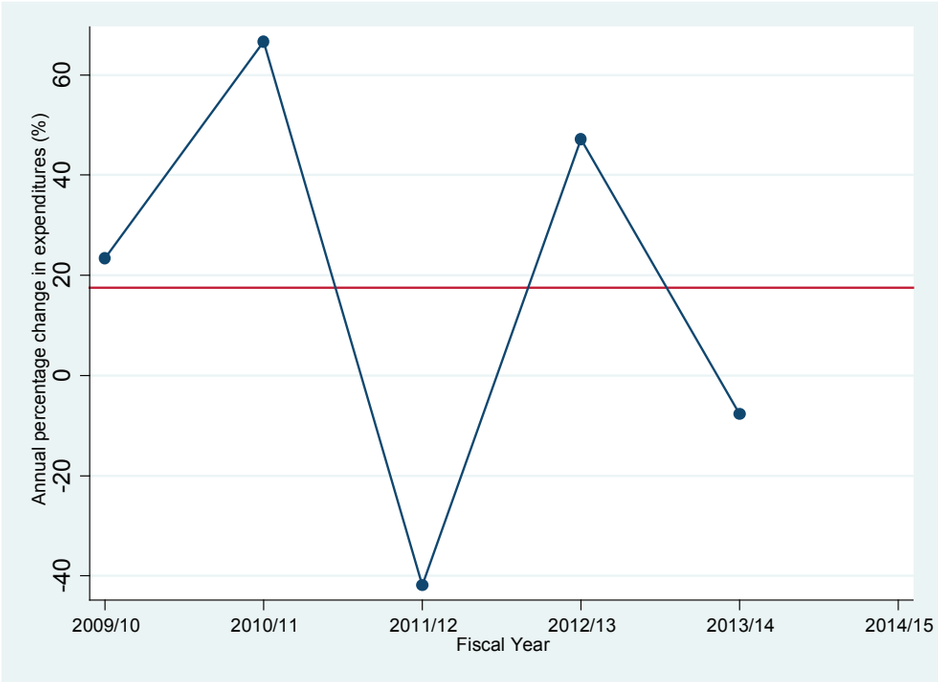
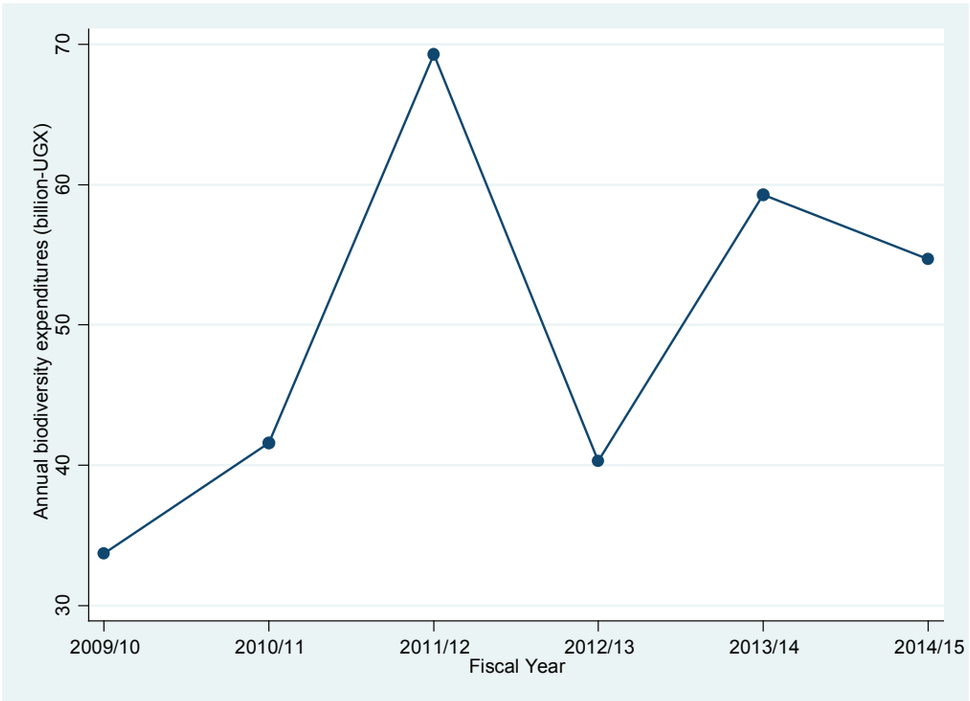


Figure 91 shows that the average annual percentage change in budget allocations for stakeholders' strengthening and policy formulation was about 17.5per cent per fiscal year.This implies that the annual budget allocations for stakeholder strengthening and policy formulation were increasing. Figure 90, shows the trend in budget allocations for stakeholder coordination and policy formulation in Uganda.

Figure 90: Trend in budget allocations for stakeholder coordination and policy



There was a general increase in the budget allocations for stakeholder coordination and policy formulation

in the fiscal years 2009/10-2014/15. However, there was a decline in the budget allocation in the fiscal year 2012/13. This sharp decline in the budget allocations could be attributed to budget cuts within government and donors. The underlying long-term trend in financing stakeholder coordination and policy formulation seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for stakeholder coordination and policy formulations were increasing at an average rate of about UGX 6.5 billion in real terms per fiscal year. Furthermore, it seems there has been much attention in strengthening stakeholders and policy formulation in biodiversity in the last 6 years of the review.

8.4: Financing capacity for research, monitoring and information exchange on biodiversity

The second strategic objective of the NBSAP in Uganda is to facilitate and enhance capacity for research, monitoring, information management and exchange on biodiversity. This objective deals with research and management of information about biodiversity among stakeholders in Uganda. We assessed the annual budget allocations under research and information exchange for the fiscal year 2009/10-2014/15. Figure 91 shows the annual percentage change in budget allocations for research and information exchange among stakeholders working on biodiversity related activities.

Figure 91: Annual percentage change in expenditures for research and information exchange

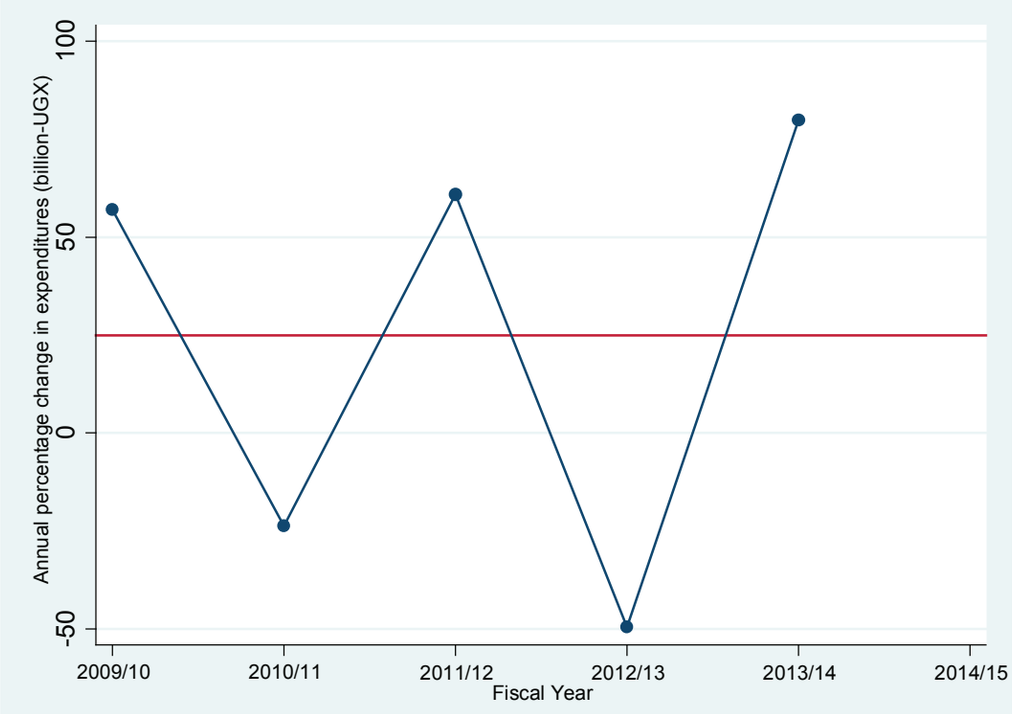
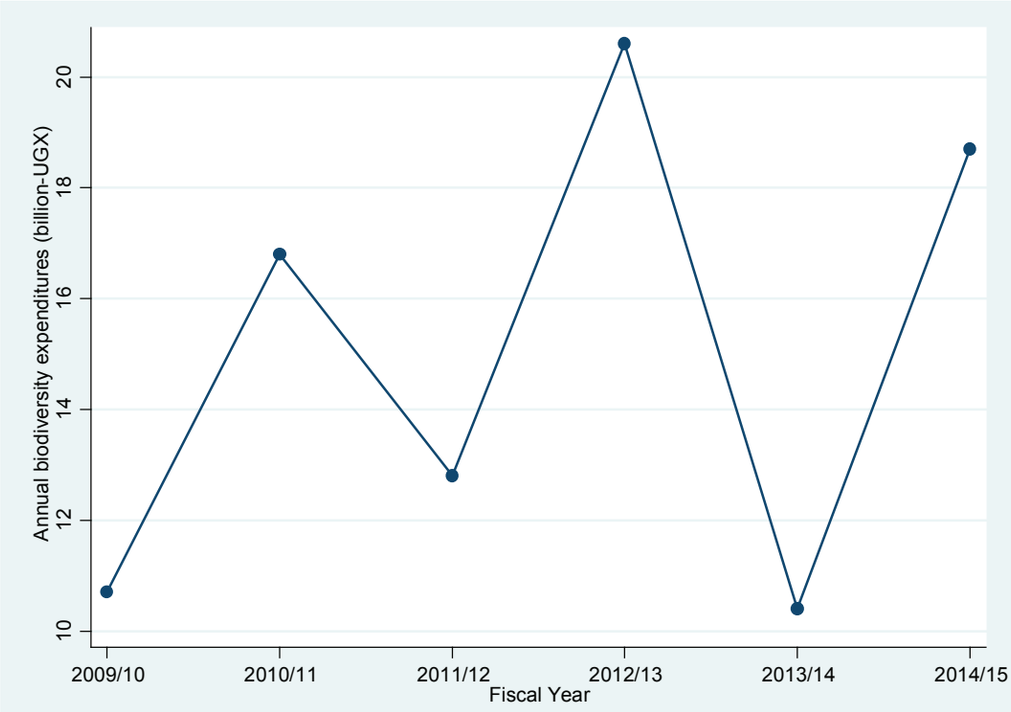


Figure 91 shows that the average annual percentage change in budget allocations for research and information exchange on biodiversity was about 24.9 per cent per fiscal year. This implies that the annual budget allocations for research and information exchange on biodiversity were generally increasing. Figure 92 shows the trend in budget allocations for research and information exchange in Uganda.

Figure 92: Trend in expenditures for research and information exchange on biodiversity



There was a general increase in the budget allocations for research and information exchange on biodiversity in the fiscal years 2009/10-2014/15. However, there was a decline in the budget allocation in the fiscal year 2011/12 and 2013/14. This sharp decline in the budget allocations could be attributed to budget cuts within government and donors. The underlying long-term trend in financing research and information exchange seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for research and information exchange on biodiversity were increasing at an average rate of about UGX 1.94billion per fiscal year. The observed trend in financing research and information exchange on biodiversity seems to be gradually increasing but still a lot more need to be done on biodiversity research in Uganda. Therefore the current budget allocations might not be sufficient to have an impact on biodiversity.

8.5: Financing management of positive and negative impacts on biodiversity in Uganda

The third strategic objective of the NBSAP in Uganda is to put in place measures to reduce and manage negative impacts on biodiversity. This objective deals with protection and restoration of biodiversity among stakeholders in Uganda. We assessed the annual budget allocations under protection and restoration for the fiscal year 2009/10-2014/15.

Figure 93: Annual percentage change in expenditures for protection and restoration of biodiversity

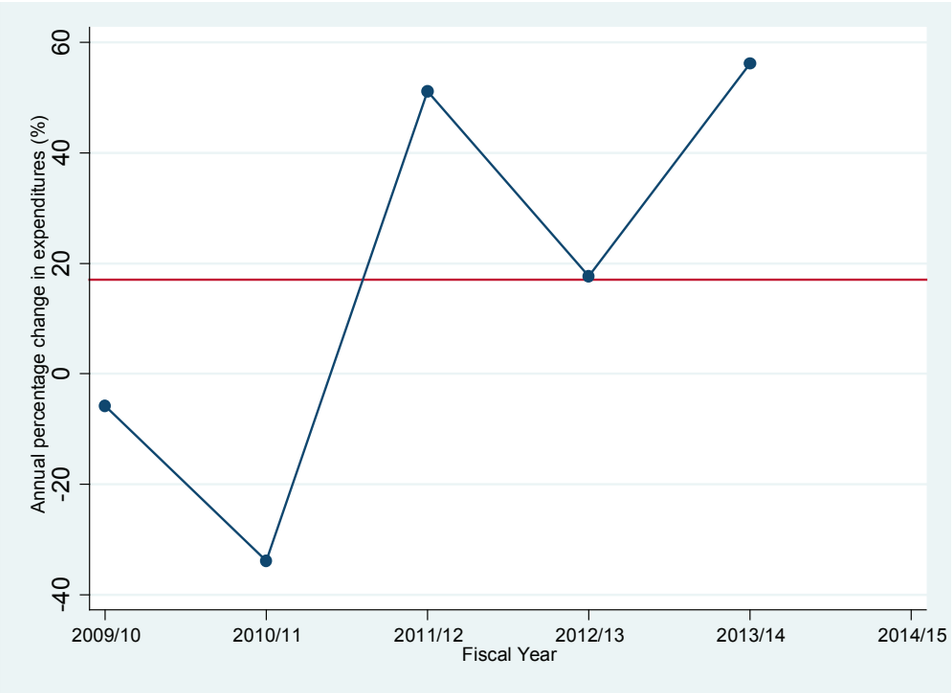
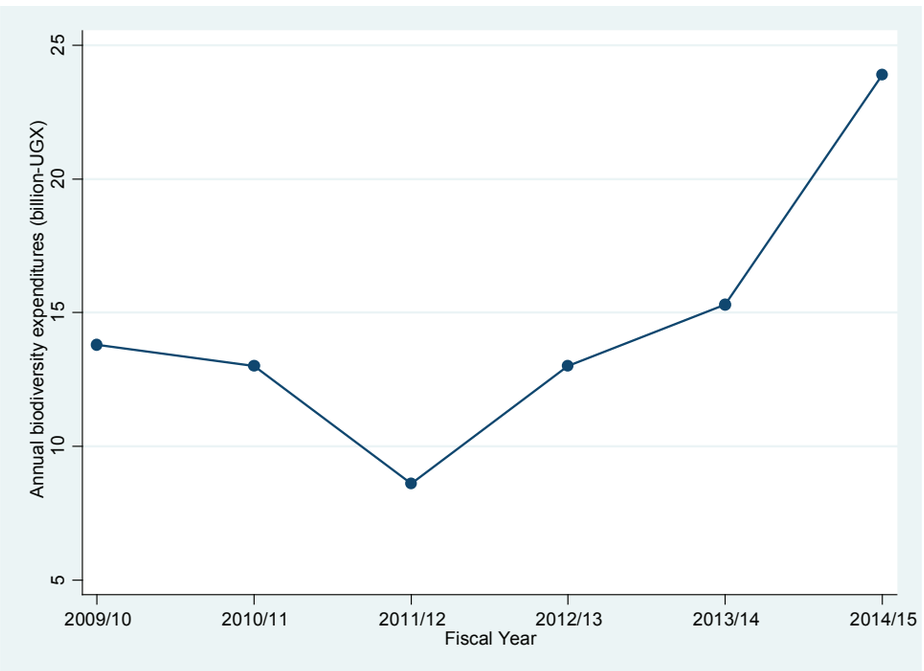


Figure 93 shows that the average annual percentage change in budget allocations for biodiversity protection and restoration was about 17per cent per fiscal year. This implies that the annual percentage increase in budget allocations for protection and restoration of biodiversity in Uganda has been increasing below 17per cent. Figure 94 shows the trend in budget allocations for protection and restoration of biodiversity in Uganda.

Figure 94: Trend in expenditures for protection and restoration of biodiversity

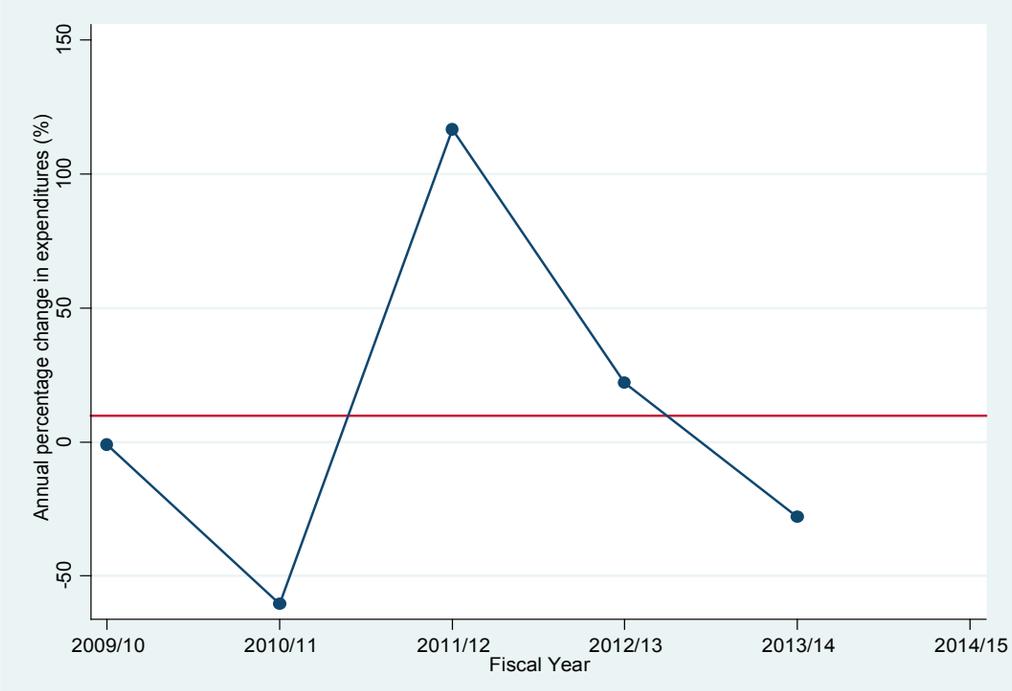


There was a general increase in the budget allocations for protection and restoration of biodiversity in the fiscal years 2009/10-2014/15. However, there was a decline in the budget allocation in the fiscal year 2011/12. This lowest decline might be attributed to the budget cuts resulting from the 2010/11 general elections. The underlying long-term trend in financing protection and restoration of biodiversity seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for protection and restoration of biodiversity were increasing at an average rate of about UGX 1.9 billion per fiscal year. The observed trend in financing protection and restoration of biodiversity seems to be rapidly increasing but still a lot more needs to be done on protection and restoration of biodiversity in Uganda. Therefore, the current budget allocations might not be sufficient to have an impact on biodiversity protection and restoration.

8.6 Financing sustainable use and equitable sharing of costs and benefits of biodiversity

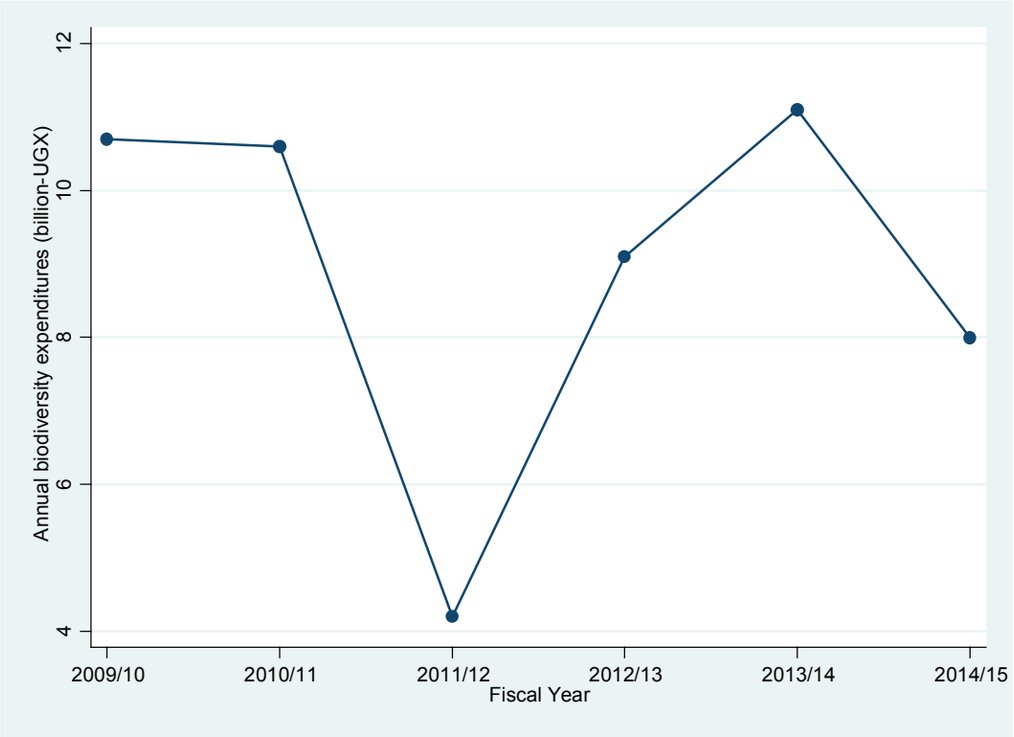
The fourth strategic objective of the NBSAP in Uganda is to promote the sustainable use and equitable sharing of costs and benefits of biodiversity. This objective deals with Access and Benefit Sharing (ABS) among stakeholders in Uganda. We assessed the annual budget allocations under access and benefit sharing (ABS) for the fiscal year 2009/10-2014/15. Figure 95 shows the annual percentage change in budget allocations for sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda.

Figure 95: Annual percentage change in expenditures for sustainable use and equitable sharing of costs and benefits



The average annual percentage change in budget allocations for sustainable use and equitable sharing of costs and benefits of biodiversity was about 9.9per cent per fiscal year. This implies that the annual percentage increase in budget allocations for promotion of sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda has been changing but below 9.9per cent per fiscal year. Figure 96 shows the trend in budget allocations for sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda.

Figure 96: Trend in expenditures for sustainable use and equitable sharing of costs and benefits



There was a general increase in the budget allocations for sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda for the fiscal years 2009/10-2014/15. However, there was a decline in 2011/12 fiscal year and sharp increase in the budget allocation in the fiscal year 2013/14. The decline in the 2011/12 fiscal year could be associated to the 2011/12 general elections while the sharp increase might be attributed to shifts in budget allocations towards promoting sustainable utilization of natural resources. The underlying long-term trend in financing sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda were increasing at an average rate of about UGX 1.1billion in real terms per fiscal year. The observed trend in financing sustainable use and equitable sharing of costs and benefits of biodiversity in Uganda seems to suggest the little attention of government using biodiversity resources for poverty reduction in the country.

8.7 Financing awareness and education on biodiversity issues among the various stakeholders

The fifth strategic objective of the NBSAP in Uganda is to enhance awareness and education on biodiversity issues among the various stakeholders. This objective deals with knowledge and awareness creation on biodiversity among all stakeholders in Uganda. We assessed the annual budget allocations under awareness and education on biodiversity issues among the various stakeholders for the fiscal year 2009/10-2014/15. Figure 98 shows the annual percentage change in budget allocations for awareness and education on biodiversity issues among the various stakeholders in Uganda.

Figure 97: Annual percentage change in expenditures for awareness and education on biodiversity

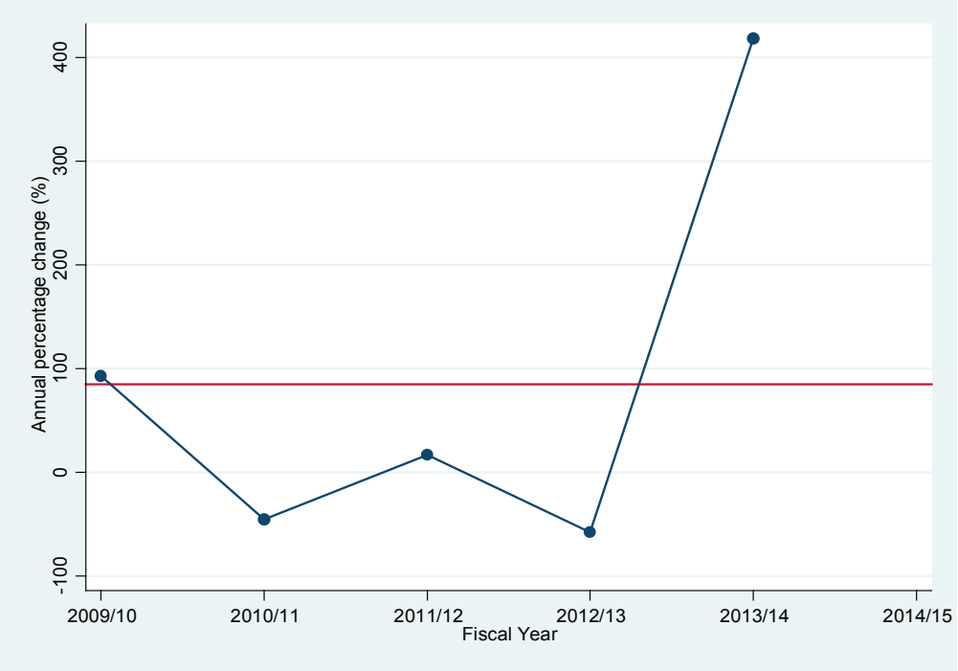
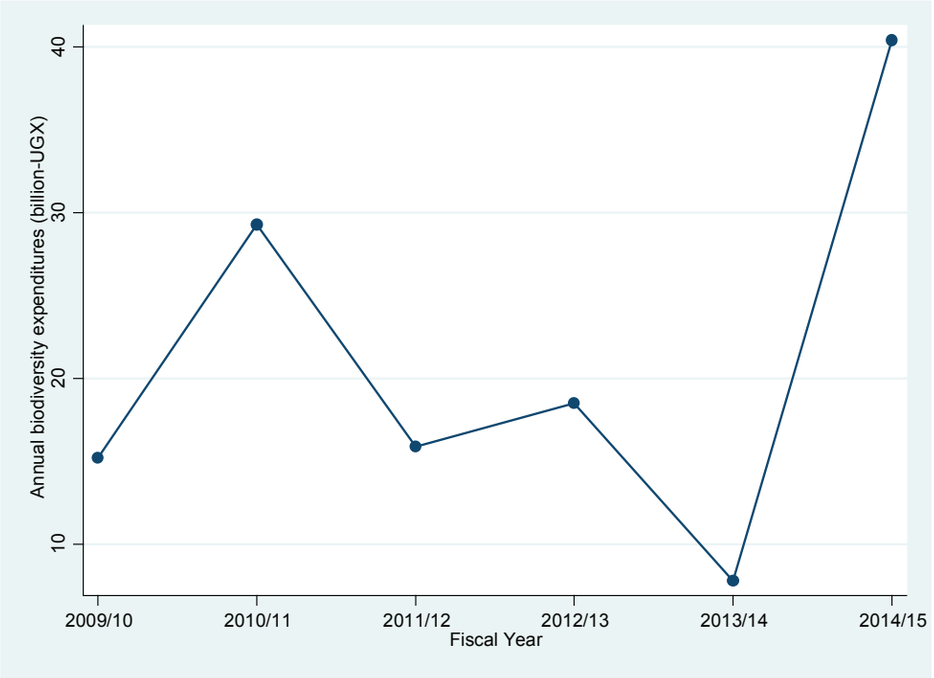


Figure 97 shows that the average annual percentage change in budget allocations for awareness and education on biodiversity issues among the various stakeholders was about 84.6per cent per fiscal year. Furthermore, in the fiscal years 2011/12-2013/14, there was declining annual percentage change in the budget allocations for awareness creation among the stakeholders in Uganda. This was followed by a sharp increase in the annual percentage change of over 400per cent. This implies that the budget allocations for knowledge and awareness creation in 2014/15 were 4 times the budget of 2013/14.

Figure 98: Trend in expenditures for awareness and education on biodiversity



There was a general increase in the budget allocations for awareness and education on biodiversity

issues among the various stakeholders in Uganda for the fiscal years 2009/10-2014/15. However, there was a decline in budget allocations between 2010/11 till 2013/14 fiscal year and sharp increase in the budget allocation in the fiscal year 2014/15. The decline in budget allocations for knowledge and awareness creation seems to indicate less commitment in saving biodiversity through knowledge or lack of enough research for dissemination. The underlying long-term trend in financing awareness and education on biodiversity issues among the various stakeholders in Uganda seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for awareness and education on biodiversity issues among the various stakeholders were increasing at an average rate of about UGX 2.8billion in real terms per fiscal year. The observed trend in financing awareness and education on biodiversity issues among the various stakeholders might be the way for sustainable use and poverty reduction through knowledge.

8.8 Financing modern biotechnology for socio-economic development

The sixth strategic objective of the NBSAP in Uganda is to harnessing modern biotechnology for socio-economic development with adequate safety measures for human health and the environment. This objective deals with use of safe biotechnology for socio-economic development while monitoring their effect on human health and environment in Uganda. We assessed the annual budget allocations under harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment for the fiscal year 2009/10-2014/15. Figure 101 shows the annual percentage change in budget allocations to harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment in Uganda.

Figure 99: Annual percentage change in expenditures for modern biotechnology for socio-economic development

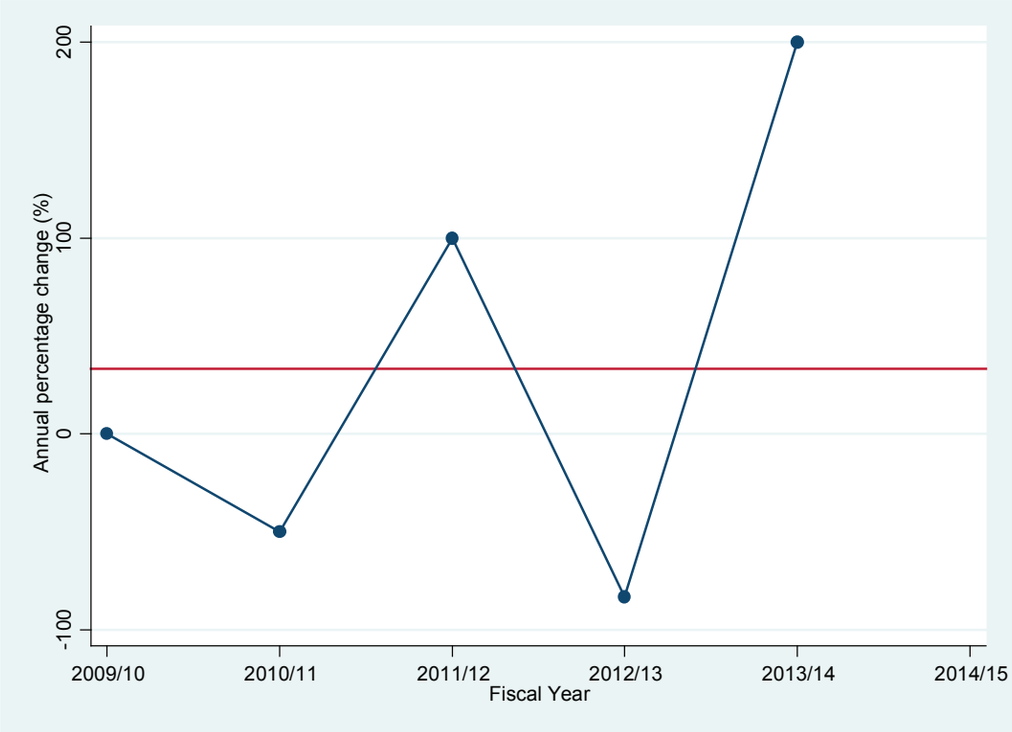
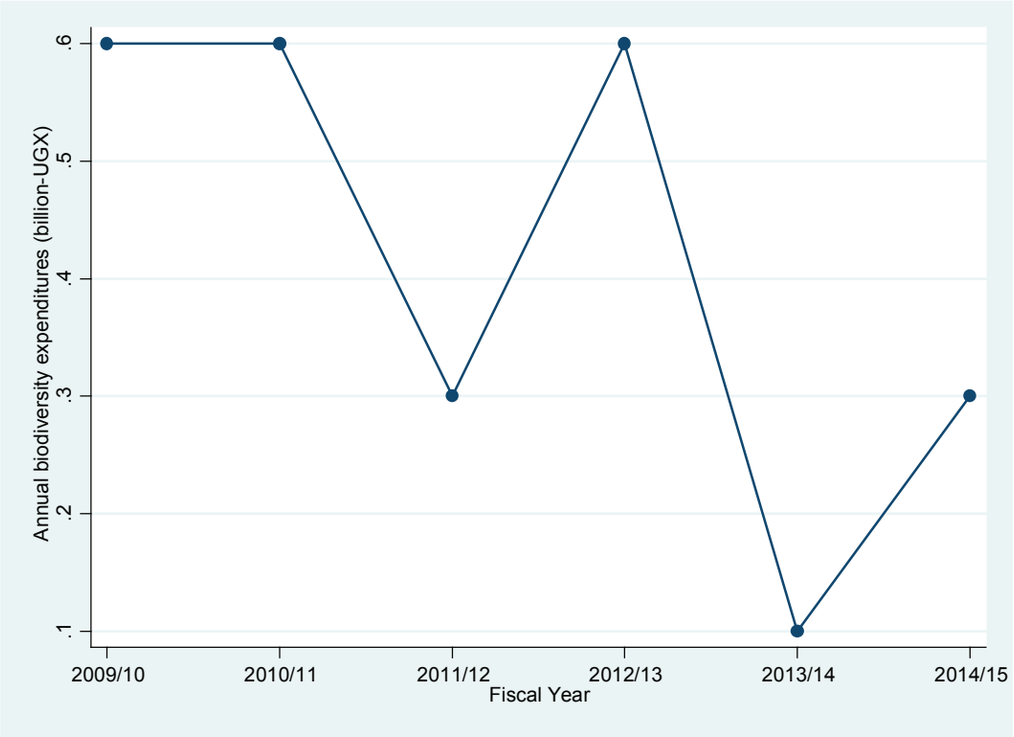


Figure 99 shows that the average annual percentage change in budget allocations for modern biotechnology for socio-economic development was about 33.3per cent per fiscal year. Between 2011/12 and the 2012/13 the budget for financing modern biotechnology for socio-economic development almost remained constant. This was followed by a decline in budget allocations in 2013/14 and a subsequent increase in 2014/15 of about 50per cent. Figure 100 shows the trend in budget allocations for modern biotechnology for socio-economic development in Uganda.

Figure 100: Trend in expenditures for modern biotechnology for socio-economic development



There was a general decrease in the budget allocations for harnessing modern biotechnology for socio-economic development with adequate safety measures for human health and the environment in Uganda for the fiscal years 2009/10-2014/15. Between 2009/10-2012/13 there was a gradual increase in budget allocations for harnessing modern biotechnology for socio-economic development while ensuring human and environmental safety in Uganda. This gradual increase in budget allocations were followed with a sharp decline in budget allocations in 2013/14 fiscal year. There was a slight increase in the budget allocation in the fiscal year 2014/15. The observed trend under this strategic objective is a clear manifestation of lack of funding for modern biotechnology and its ability to reduce poverty among the population in Uganda. The underlying long-term trend in financing harnessing modern biotechnology for socio-economic development with adequate safety measures for human health and the environment in Uganda seems to be linear. Therefore, we used simple linear regression to estimate the trend in budget allocations under this strategic objective. Our results show that allocations for harnessing modern biotechnology for socio-economic development with adequate safety measures for human health and the environment were decreasing at an average rate of about UGX 0.08billion in real terms per fiscal year. The observed trend in financing harness modern biotechnology for socio-economic development with adequate safety measures for human health and the environment does not anger well for Uganda's development.

8.9 Conclusion and discussion

This chapter analysed biodiversity financing based on four major ministries that is agriculture, tourism, energy and water and environment. The findings revealed that on average biodiversity related activities were allocated about UGX 91 billion in real terms per fiscal year that translates to about 1.2 per cent of the annual budget for GOU although that percentage has decreased in the last few years to below 1%. The biodiversity budget allocations were increasing at an average rate of about UGX 7.8 billion in real terms per fiscal year. Furthermore, the distribution of biodiversity budget allocations across the seven strategic objectives was also analysed. Findings revealed that about 46 per cent of the biodiversity budget was allocated for strengthening stakeholders' partnerships and policy formulation translating into about 0.54 per cent of the national budget. This 46% translates to about UGX 49.8 billion in real terms per fiscal year.

Research and capacity building are very important tools in the sustainable management and utilization of natural resources. Findings revealed that capacity building for research on biodiversity was allocated about 14per cent of the budget translating into UGX 15 billion in real terms per fiscal year which is about 0.12per cent of the national budget. This allocation seems to be rather on the lower side given the importance of research in establishing the value and ways of sustainably utilizing the natural resources. On the other hand, protection and restoration seems to be the backbone of biodiversity and environmental conservation for economic development.

In light of protection and restoration, for the period under review, reduction and management of negative impacts while enhancing positive impacts on biodiversity was allocated about 13per cent of the biodiversity budget translating into about UGX 14.6 billion per fiscal year which was about 0.12per cent of the national budget. This allocation seems too little to have an impact on the already degraded environment and ecosystems. For sustainable utilization of natural resources, government and private sector must invest in restoration and protection of biodiversity in Uganda.

Biodiversity conservation is also managed through awareness and education of stakeholders. Our findings revealed that enhancing awareness and education on biodiversity among stakeholders was allocated about 18.6 per cent of the biodiversity budget translating into about UGX 21.2 billion in real terms per fiscal year. The annual budget of about UGX 21.2 billion per fiscal year is about 0.22 per cent of the national budget might not be sufficient to cause the desired awareness in a population of about 36 million people.

Sustainable use and equitable sharing of costs and benefits of biodiversity with the population is critical in protection of natural resources. Lack of clear strategies on how the benefits of biodiversity are share among the population always leads to unsustainable use of natural resources hence their depletion. Findings revealed that promotion of sustainable use and equitable sharing of costs and benefits of biodiversity was allocated only 8.5per cent of the biodiversity budget translating into UGX 8.95 billion per fiscal year. This allocation on sustainable use and equitable sharing of benefits which translates to about 0.1per cent of the national budget seems to be too little to stop the growing population from degrading the natural resources.

It should be noted that over 75 per cent of the population in Uganda depend on the natural resources for their livelihoods (UBOS, 2015). Therefore for better management of biodiversity there is need to invest more in understanding strategies for sustainable use and equitable sharing of benefits in Uganda.

Lastly harnessing modern-biotechnology for socio-economic development with adequate measures for health and environment is one of the way through which pressure on natural resources could be reduced. However the situation is like that in Uganda. For example, only less than 0.4per cent of the biodiversity budget was allocated for this strategic objective. The less than one percent translates into about UGX 0.4 billion per fiscal year; about 0.005per cent of the national budget. This budget allocation is too little to have an impact and hence provide alternatives for the already depleted natural resources. Therefore, more resources need to be mobilized not only for modern biotechnology but biodiversity conservation at large if the situation is to improve.

CHAPTER NINE: EFFECTIVENESS OF SPENDING ON BIODIVERSITY

9.1 Introduction

Increased public and private expenditure on biodiversity conservation does not necessary translate into better conservation outcomes and hence, sustainable utilization of natural resources for socio-economic development of the country. In Uganda and many Sub-Saharan African countries, skewed resource allocation towards biodiversity conservation tends to be used mainly policy formulation with extremely little left for protection and restoration which hinders the improvement of conservation outcomes. The extent to which conservation outcomes and sustainable utilization outcomes are achieved with the available resources is commonly referred to as effectiveness. Assessing the extent to which allocated funds are utilized in the achievement of the set outcomes in biodiversity conservation is important for sustainable utilization of natural resources.

Biodiversity conservation in most governments is financed through taxpayers' money, who demands to know the extent and state of ecosystems and species and how much more is required for better management (Stem et al. 2005, Hockings et al. 2003). According to Butchart et al. 2010, increasing investment in conservation is translating into decreasing state of biodiversity. This implies that increased funding for biodiversity will not necessary translate into improved state of the environment and hence, sustainable utilization of resources. Therefore, assessing effectiveness of public and private spending on biodiversity allows establishing the areas that need more funding for better management of biodiversity. Studies by Kapos et al. 2009; Nicholson et al. 2012 and James et al. 1999, established that identifying general mechanisms of achievements allows prediction of future achievements and better allocations of available resources. Therefore, we assess the effectiveness of public spending on biodiversity in the achievement of the set targets on the strategic objectives in the NBSAP II.

9.2 Methods

The analysis on the effectiveness was carried out at in two stages. The conservation data on the state of the environment was obtained from the National Service Delivery Survey (NSDS 2015) report that was released by UBOS. Meta-analysis on the results on biodiversity state and consequences was carried out using analysis of variance across the regions.

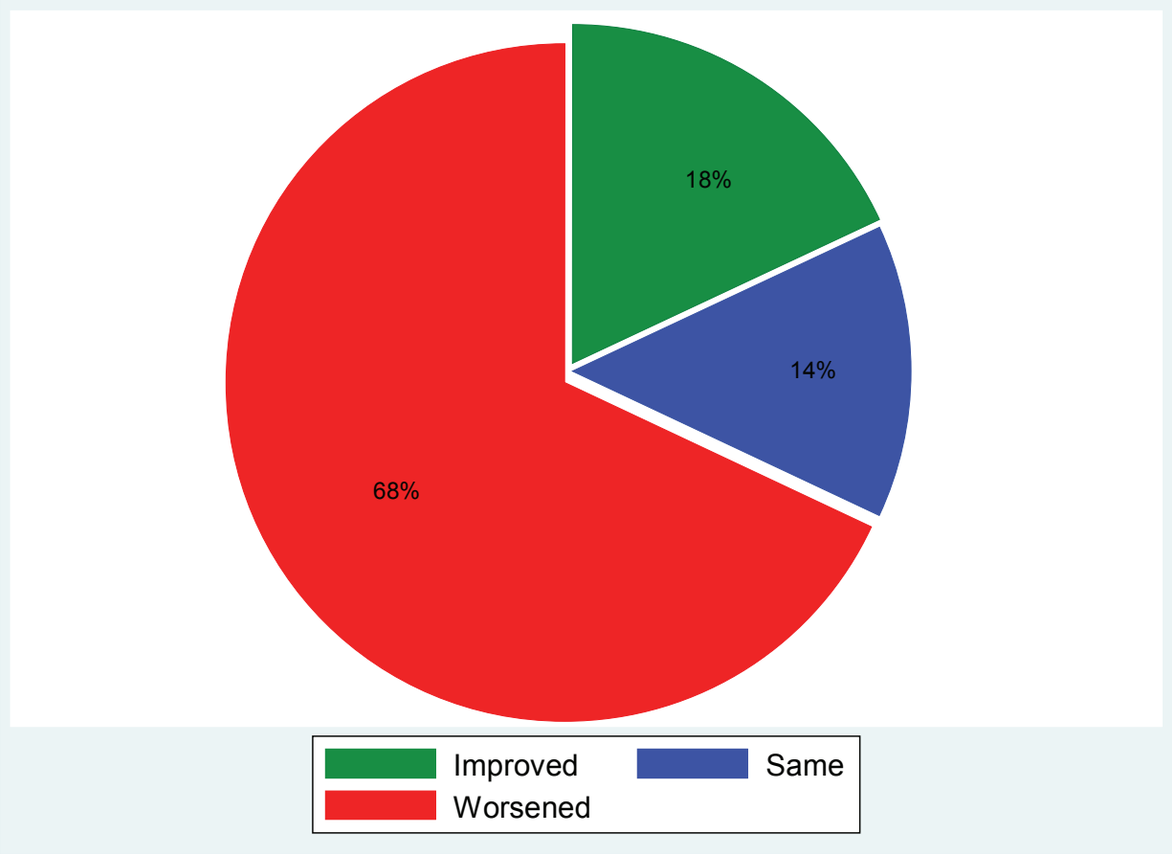
10.3: Results

The results of the effectiveness of public spending on biodiversity were analysed in terms of environmental protection and degradation as well as benefits from biodiversity enhancing and harmful projects to the population.

9.3.1 Environmental Protection

Information on whether environmental protection had changed since the year 2000 was collected from the communities. Figure 101 show the distribution of the state of environmental protection across the 106 districts that were visited during data collection.

Figure 101: Change in environment status since 2000

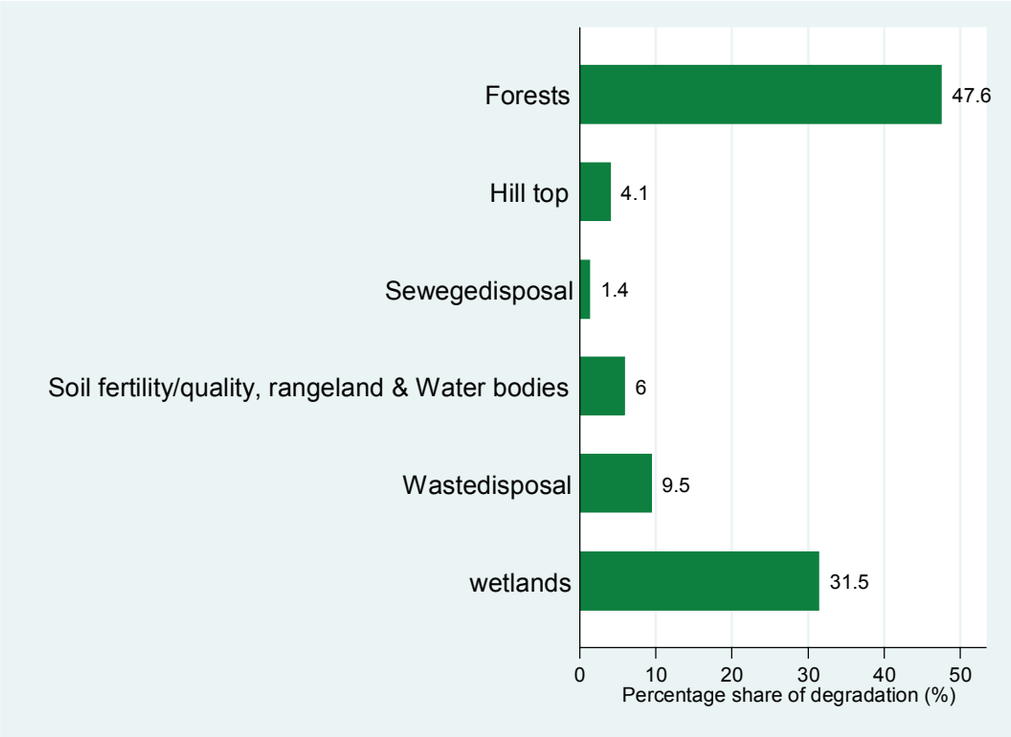


The results indicate that only 18 per cent of the communities have observed an improvement in environment protection since the year 2000 Figure 101. Furthermore over 65 per cent of the communities have observed that environmental protection has actually worsened since the year 2000. This implies that although the budget allocations and expenditures towards biodiversity conservation have been gradually increasing, it seems not to be deriving the desired conservation outcomes.

9.3.2: Degradation of natural resources and ecosystems

Data on degradation of the different natural resources and ecosystems were collected and analysed. Figure 102 shows the variation in the level of degradation of the different natural resources and ecosystem.

Figure 102: Distribution of level of natural resources degradation in Uganda

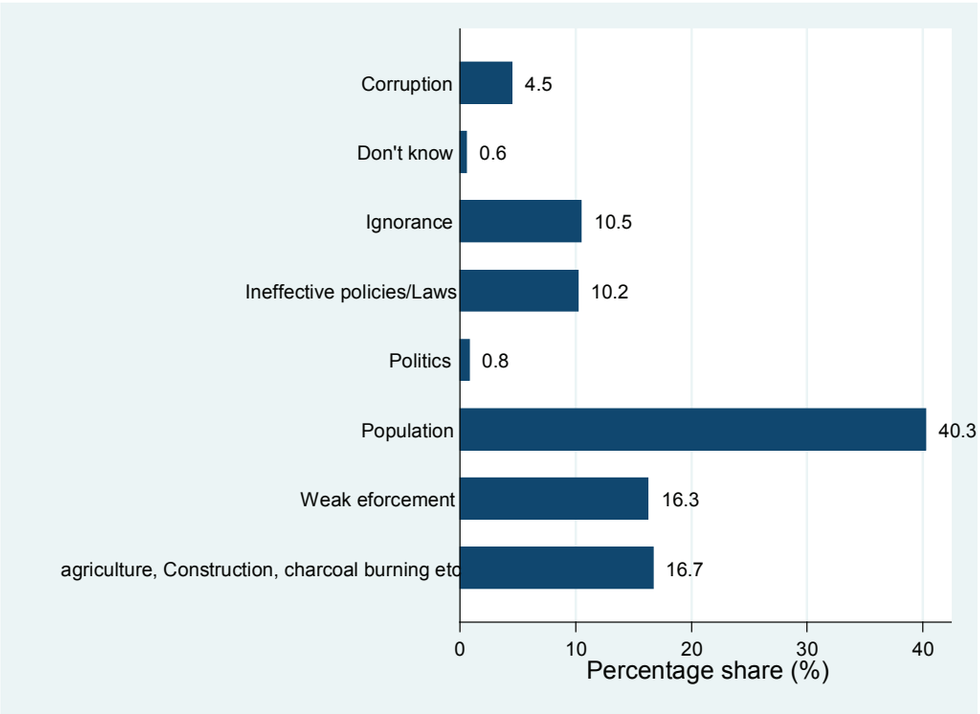


Findings revealed that forests and wetlands are still the most degraded natural resources in Uganda. For example, about 48per cent of the districts affirmed that their forests had been degraded. Similarly, about 32per cent of the wetlands in the districts are reported to have been degraded since the year 2000. The rate of degradation of the forestry and wetland resources cast droughts on the effectiveness of the current budget allocations and the efficiency of the institutions in conserving these resources for sustainable use. This implies that there is need to revisit the current budget allocations towards protection and restoration of forestry and wetland resources in Uganda.

9.3.3: Causes of Degradation of the Ecosystem

The survey also examined the root cause of the observed degradation of natural resources in the country. Figure 103 shows the variation in the different causes of natural resources degradation.

Figure 103: Causes of natural resources degradation in Uganda



Population pressure

Findings revealed that about 40per cent of the degradation is resulting from the growing population. This cause could be related to the budget allocations and expenditures on research and value of the natural resources. This implies that the current research in biodiversity have not matched the constant resources with the increasing population. Results of the expenditure review established that only 14per cent of the biodiversity budget is allocated for capacity building for research translating in an average budget allocation of only 73 billion Uganda shillings per fiscal year. Therefore, to effectively manage the natural resources with increasing population there is need to invest in research on how the resources can best be utilized.

Ineffective policies and laws

Findings revealed that about 10per cent of the degradations in natural resources especially forestry and wetlands are attributed to ineffective policies and laws. This implies that our existing policies and laws might not be sufficient to handle matters of environmental degradation in Uganda. Furthermore, findings from expenditure review established that out of the biodiversity budget allocations in the four sectors, strengthening stakeholders' partnerships and policy on biodiversity related issues constitutes about 46per cent of the budget translating into an average of about UGX 49.8 billion per fiscal year. However, this has not translated into reduced degradation of the natural resources and hence, less effective. Although the current budget allocations favour policy formulation and partnerships, their effectiveness on reducing the degradation might lie in their application.

Weak enforcement

Another factor in promoting degradation of natural resources is weak enforcement. Results revealed that about 16per cent of observed degradation of natural resources is attributed to weak enforcement. This finding implies that the current system of monitoring and protecting natural resources in Uganda seems not effective. Setting up an effective system to monitor and protect natural resources plays an important role in the sustainable and equitable utilization of the resources. This finding is not surprising given the fact that management of negative impacts while enhancing positive impacts on biodiversity

is currently allocated about 13per cent of the biodiversity budget translating into only about UGX 14.6 billion per fiscal year. The current budget available for protection and restoration is too small to have a significant impact on environment and biodiversity conservation in Uganda.

Poverty, inadequate land for agriculture and construction charcoal burning

Results show that factors like Poverty, changes in climate, inadequate land for agriculture, charcoal burning, lack of proper garbage disposal facilities, lack of proper drainage, encroachment on the land for construction of buildings, congestion, lack of market for agricultural produce and lack of sensitisation account for about 17per cent of the observed degradation of natural resources. The factor is related to the Access Benefit Sharing (ABS) of natural resources which articulated as promotion of sustainable use and equitable sharing of costs and benefits of biodiversity in NBSAP II. The current trend is a manifestation that the people are just looking for livelihoods from the natural resources leading to degradation since it is not regulated. Furthermore, expenditure review results established that out of the biodiversity budget allocations, only 8.5per cent was allocated for promotion of sustainable use and equitable sharing of costs and benefits of biodiversity. This translates to about UGX 9 billion per fiscal year which might not effectively handle issues of sustainable use and equitable sharing of the benefits from biodiversity. Therefore, the current budget allocation seems not effective in handling degradations from the population as a source of livelihood.

Ignorance

Lack of information or ignorance is one of the causes of degradation of natural resources mainly forests and wetlands in Uganda. Results show that 11per cent of the observed degradation of forests and wetlands are attributed to ignorance of the population. Awareness creation about biodiversity is articulated as to enhance awareness and education on biodiversity issues among the various stakeholders in NBSAP II. This finding is not surprising since the strategy is only allocated about 19per cent of the biodiversity budget translating into about UGX 21.1 billion per fiscal year. Awareness creation requires generation of information and disseminating it to the different stakeholders in different forms. The different forms of the information require a substantial amount of funds which currently seems not available. Therefore, there must be a communication strategy to deliver biodiversity conservation information as a package to effectively conserve the natural resources.

9.7 Conclusions and discussions

This chapter evaluated the effectiveness of public spending and current budget allocations on biodiversity conservation and benefits to the population. On biodiversity conservation the analysis concentrated on the state of the environment, level of degradation and its causes or drivers.

Findings revealed that improvement in environment has been observed in only about 18per cent of the communities. Furthermore, 65per cent of the communities observed that environmental conservation had worsened. This implies that the current budget and strategies in conserving the environment and biodiversity seems not effective. Not surprising forests and wetlands were the most degraded natural resources in Uganda. For example, about 48per cent of the forests and 32 per cent of the wetlands have been degraded by 2015. The rate of degradation of forests and wetland shows the high dependence of the population on the natural resources for their livelihoods. For example about 98per cent of Uganda use biomass as the sources of cooking energy (UBOS, 2016).

Degradation of environment and biodiversity seems to be driven by many factors. Findings revealed that population pressure accounts for about 40per cent of the observed degradation of the environment and biodiversity. The other drivers that are accelerating environmental degradation are agriculture, construction and charcoal burning accounting for about 17per cent while weak enforcement accounts for about 16per cent of the observed degradation. This finding implies that lack of an environmental monitoring system that involves the population at large makes conservation work extremely ineffective. Furthermore, ineffective policies and laws accounts for about 10.2per cent while lack of knowledge accounts for about 10.5per cent of the observed degradation of the environment and biodiversity. This implies that although the current budget has been biased towards policies and regulations these seems not effective in improving the status. The lack of knowledge on the different strategies of conservation and utilization is a clear manifestation that the communications and sharing of information seems to be lacking and therefore requires scaling up.

CHAPTER TEN: CONCLUSIONS AND RECOMMENDATIONS

10.1 Biodiversity financing in Uganda

This review analysed biodiversity financing based on four major ministries of agriculture, tourism, energy and water and environment. The findings revealed that on average biodiversity was allocated about UGX 91 billion in real terms per fiscal year that translates to about 1.2 per cent of the annual budget for GOU. The biodiversity budget allocations were linearly increasing at an average rate of about UGX 7.8 billion in real terms per fiscal year.

Furthermore, the distribution of biodiversity budget allocations across the seven strategic objectives was also analysed. Findings revealed that about 46 per cent of the biodiversity budget was allocated for strengthening stakeholders' partnerships and policy formulation which was about 0.5 per cent of the national budget. This translated to about UGX 49.8 billion per fiscal year. Therefore there is need to evaluate some of the policies by enhancing implementation to assess for their effectiveness on biodiversity conservation.

Research and capacity building are very important tools in the sustainable management and utilization of natural resources. Findings revealed that capacity building for research on biodiversity was allocated about 14 per cent of the budget translating into UGX 15 billion per fiscal year; which is about **0.16 per cent** of the national budget. This allocation seems to be rather on the lower side given the importance of research in establishing the value and ways of sustainably utilizing the natural resources. There is need for increased investment in research on biodiversity and environment to enable quantification of the value and impacts.

On the other hand, protection and restoration seems to be the backbone of biodiversity and environmental conservation for economic development. In light of protection and restoration, for the period under review, reduction and management of negative impacts while enhancing positive impacts on biodiversity was allocated about 13per cent of the biodiversity budget translating into about UGX 14.6 billion per fiscal year which is about **0.15 per cent** of the national budget. This allocation seems too little to have an impact on the already degraded environment and ecosystems. There is urgent need for increasing the budget allocations for restoration and protection of biodiversity. Furthermore there is need to set up a monitoring system to protect and monitor environmental natural resources.

For sustainable utilization of natural resources, government and private sector must invest in restoration and protection of biodiversity in Uganda. Biodiversity conservation is also managed through awareness and education of stakeholders. Our findings revealed that enhancing awareness and education on biodiversity among stakeholders was allocated about 18.6per cent of the biodiversity budget translating into about UGX 21.2 billion per fiscal year. The annual budget of about UGX 21.2 billion per fiscal year which is about **0.22per cent** of the national budget might not be sufficient to cause the desired awareness in a population of about 36 million people.

Sustainable use and equitable sharing of costs and benefits of biodiversity with the population is critical in protection of natural resources. Lack of clear strategies on how the benefits of biodiversity are share among the population always leads to unsustainable use of natural resources hence their depletion. Findings revealed that promotion of sustainable use and equitable sharing of costs and benefits of biodiversity was allocated only 8.5per cent of the biodiversity budget translating into UGX 9 billion per fiscal year. This allocation on sustainable use and equitable sharing of benefits which is about **0.1per cent** of the national budget seems to be too little to stop the growing population from degrading the natural resources. It should be noted that over 75per cent of the population in Uganda depend on the natural resources for their livelihoods (UBOS, 2015). Therefore for better management of biodiversity there is need to invest more in understanding strategies for sustainable use and equitable sharing of benefits in Uganda.

Lastly harnessing modern-biotechnology for socio-economic development with adequate measures for health and environment is one of the way through which pressure on natural resources could be reduced.

However the situation is like that in Uganda. For example, only less than 0.1per cent of the biodiversity budget was allocated for this strategic objective. The less than one percent translates into about UGX 0.4 billion per fiscal year; which is about **0.005per cent** of the national budget. This budget allocation is too little to have an impact and hence provide alternatives for the already depleted natural resources. Therefore, more resources need to be mobilized not only for modern biotechnology but biodiversity conservation at large if the situation is to improve.

10.2 Effectiveness of biodiversity financing in Uganda

Findings revealed that improvement in environment has been observed in only about 18per cent of the communities. Furthermore, 65per cent of the communities observed that environmental conservation had worsened. This implies that the current budget and strategies in conserving the environment and biodiversity seems not effective. Not surprising forests and wetlands were the most degraded natural resources in Uganda. For example, about 48per cent of the forests and 32 per cent of the wetlands have been degraded by 2015. The rate of degradation of forests and wetland shows the high dependence of the population on the natural resources for their livelihoods. For example about 98per cent of Uganda use biomass as the sources of cooking energy (UBOS, 2016).

Degradation of environment and biodiversity seems to be driven by many factors. Findings revealed that population pressure accounts for about 40per cent of the observed degradation of the environment and biodiversity. The other drivers that are accelerating environmental degradation are agriculture, construction and charcoal burning accounting for about 17per cent while weak enforcement accounts for about 16per cent of the observed degradation. This finding implies that lack of an environmental monitoring system that involves the population at large makes conservation work extremely ineffective. Furthermore, ineffective policies and laws accounts for about 10.2per cent while lack of knowledge accounts for about 10.5per cent of the observed degradation of the environment and biodiversity. This implies that although the current budget has been biased towards policies and regulations these seems not effective in improving the status. The lack of knowledge on the different strategies of conservation and utilization is a clear manifestation that the communications and sharing of information seems to be lacking and therefore requires scaling up.

Findings revealed that male sub-population were benefiting more than their female counterparts on biodiversity enhancing projects. This finding seems to suggest that although most females are employed and working in agriculture, the benefits go mainly to the men. This implies that projects should be designed to cater for gender sensitive issues associated with being female to increase their benefits.

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