Rwanda
The Biodiversity Finance Initiative (BIOFIN)

Biodiversity Expenditure Review

FINAL REPORT

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It is hoped that these findings will enable Rwanda to understand historic trends in biodiversity expenditures, the composition of these expenditures and how biodiversity-related spending is anticipated to change in the future. These results will support Rwanda in developing a financial needs assessment to understand the cost implications of achieving the biodiversity targets identified in Rwanda's NBSAP.

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List of Acronyms

ABS	Access and Benefits Sharing
ARCOS	Albertine Rift Conservation Society
BAU	Business as Usual
BFP	Budget Framework Paper
BIOFIN	Biodiversity Finance Initiative
BMUB	German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (German acronym)
CBD	Convention on Biological Diversity
CoEB	Center of Excellence in Biodiversity and Natural Resource Management
CRS	Creditor Reporting System
DFID	Department for International Development (U.K.)
DFGFI	Dian Fossey Gorilla Fund International
EDPRS	Economic Development and Poverty Reduction Strategy
FONERWA	Rwanda's Green Fund for the Environment and Climate Change
GEF	Global Environment Facility
GoR	Government of Rwanda
IKI	International Climate Initiative (German acronym)
MGVP	Mountain Gorilla Veterinary Project
MINAGRI	Ministry of Agriculture and Animal Resources
MINECOFIN	Ministry of Finance and Economic Planning
MINIRENA	Ministry of Natural Resources
MTEF	Medium Term Expenditure Framework
NAEB	National Agriculture Export Board
NBSAP	National Biodiversity Strategy and Action Plan
NIRDA	National Industrial Research and Development Agency
NGO	Non-governmental organization
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PEER	Public Environmental Expenditure Review
PIR	Finance Policy and Institutional Review (BIOFIN)
PSF	Private Sector Federation
RAB	Rwanda Agriculture Board
RDB	Rwanda Development Board
REMA	Rwanda Environmental Management Authority
RLMA	Rwanda Land Management and Use Authority
RNRA	Rwanda Natural Resource Authority
RWPGB	Rwanda Mines, Petroleum and Gas Board
RWF	Rwanda franc
RWFA	Rwanda Water and Forestry Authority
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society

Executive Summary

There is a critical need to sustainably manage the biological resources and ecosystem services on which individuals, communities, and economies depend. Rwanda is especially dependent on nature with over 65 percent of its population dependent on the country's agriculture, forestry, tourism resources for income and food security. Protecting and investing in biodiversity, which underpins these ecological goods and services is an essential component of sustainably developing economies and lifting people out of poverty. Under the UN Convention on Biological Diversity's 2011-2020 Aichi Biodiversity Targets, countries have committed to scale up resources for biodiversity conservation.

Developing a resource mobilization strategy begins with a baseline assessment of how Rwanda is currently investing in biodiversity across the public and private sectors, how these investments are changing over time, and how they are anticipated to change into the future. For this study, "biodiversity expenditure" was defined as any expenditure with an explicit purpose of achieving one of the Convention on Biological Diversity's three main objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the use of genetic resources[1]. This biodiversity expenditure review examines expenditures on biodiversity conservation and management across the six-year period of 2011-2017 to estimate a baseline of biodiversity expenditures, and to project future biodiversity expenditures to 2025 based on budget forecasts and past trends.

Rwanda's economy has been steadily growing, from 4.46 trillion RWF in 2011 to 6.30 trillion RWF in 2016 (constant 2014 prices), reflecting an average annual GDP growth rate of 7.2 percent (about 5 to 9 percent annually for a combined 41 percent from 2011 to 2016). The national government budget of Rwanda has consequently continued to grow, from 1.37 trillion RWF in 2011/12 to 1.86 trillion RWF in 2016/17 (2014 prices), reflecting a cumulative annual growth rate of 6.3 percent (36 percent from 2011/12 to 2016/17), only slightly lower than the growth of the economy.

[1] This definition aligns with the BIOFIN definition of biodiversity expenditures as well as the OECD "biodiversity" Rio Marker.

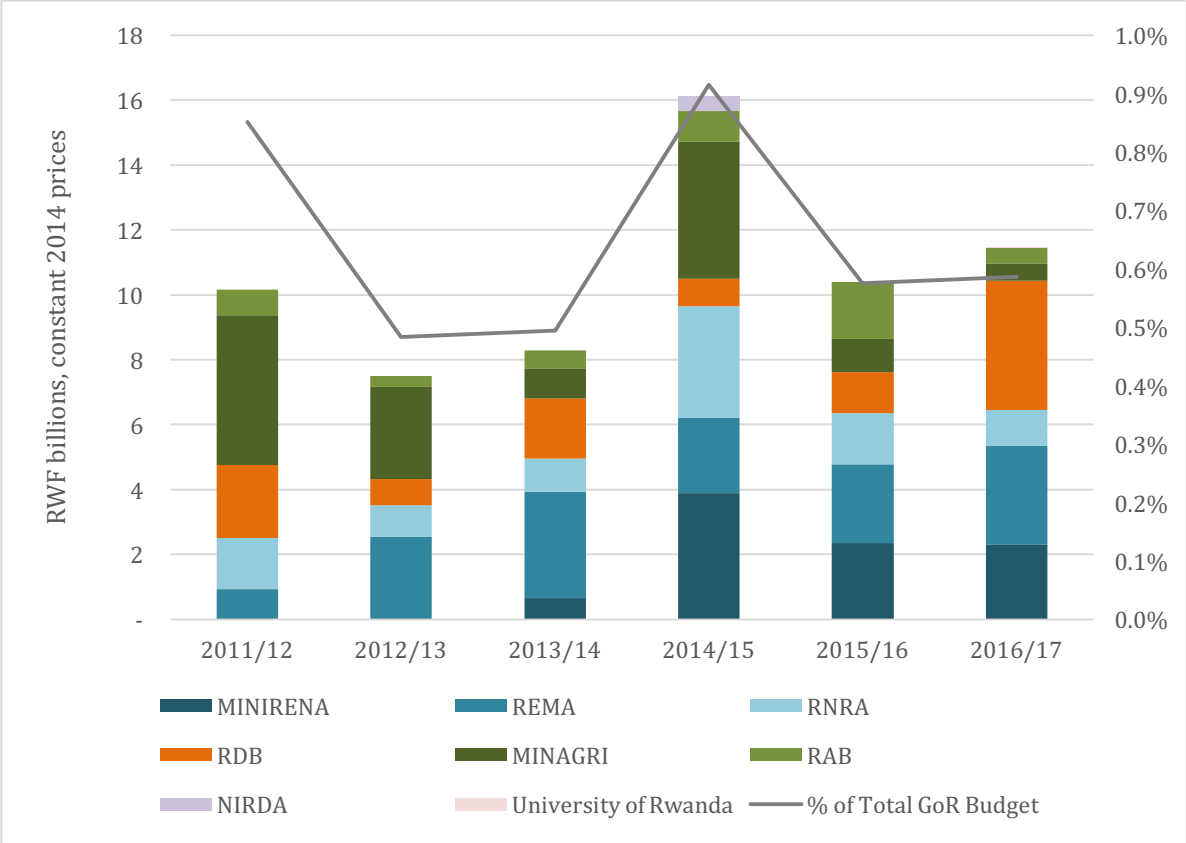
Table 1 Summary of national budgets and biodiversity expenditure findings and trends, 2011/12 – 2016/17 (billion RWF, real 2014 prices)

	11/12	12/13	13/14	14/15	15/16	16/17	Average
GDP	**4,459**	**4,852**	**5,079**	**5,466**	**5,951**	**6,304**	**5,352**
GDP Growth Rate		**9 %**	**5 %**	**8 %**	**9 %**	**6 %**	***7.2 %***
GoR Budget	**1,372**	**1,667**	**1,705**	**1,762**	**1,809**	**1,861**	**1,696**
GoR Budget (as percent GDP)	**30.8 %**	**34.3 %**	**33.6 %**	**32.2 %**	**30.4 %**	**29.5 %**	**32 %**
GoR Budget Growth Rate		***21 %***	***2 %***	***3 %***	***3 %***	***3 %***	***6.3 %***
GoR Biodiversity Budget	10.17	7.50	8.56	16.42	10.60	11.53	**10.8**
GoR Biodiversity Budget (as percent Budget)	0.74 %	0.45 %	0.50 %	0.93 %	0.59 %	0.62 %	**0.64 %**
GoR Biodiversity Budget Growth Rate		***-26 %***	***14 %***	***92 %***	***-35 %***	***9 %***	***2.5 %***

The expenditure review included an assessment of eight budget agencies across and within the Ministry of Agriculture, Ministry of Natural Resources, Rwanda Development Board, Ministry of Trade and Industry, and the University of Rwanda. Analysis indicates that current real (2014 prices) biodiversity expenditures amounted to a low of 7.5 billion RWF (USD 11 million) in 2012/13 to a high of 16.4 billion RWF (USD 24 million) in 2014/15. Government biodiversity expenditures have been increasing over time from 10.17 billion RWF in 2011/12 to 11.5 billion RWF in 2016/17, representing a cumulative growth rate of 2.5 percent annually. In reality, however, expenditures have varied quite significantly from year-to-year, declining by one-quarter from 2011/12 to 2012/13, followed by doubling from 2013/14 to 2014/15, as reflected in Figure 1 below. Over this time, biodiversity-related expenditures have accounted for about 0.5 percent to 0.9 percent of the total central government budget.

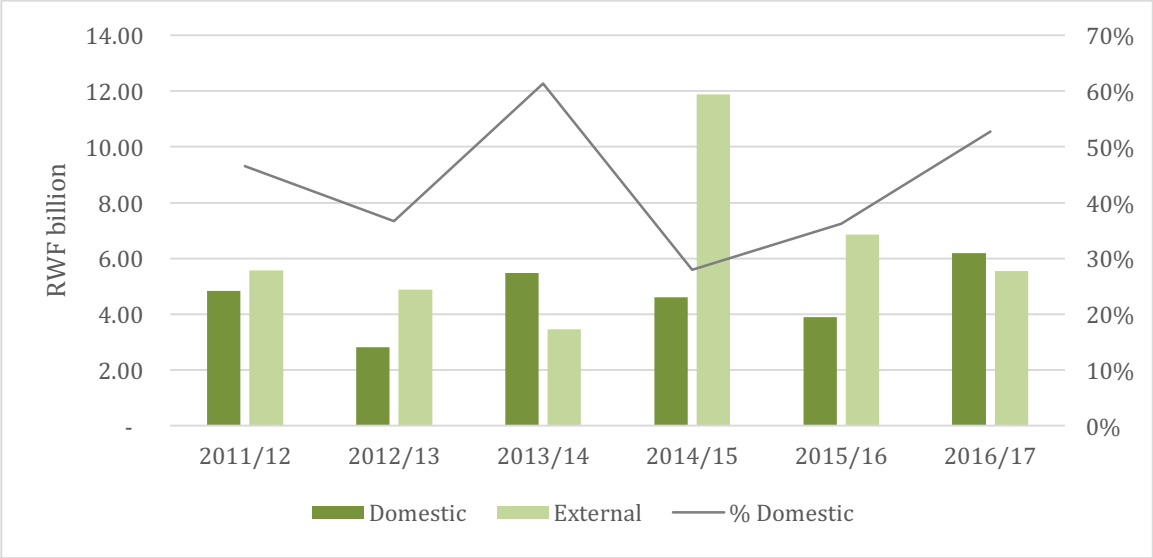
The below graph reflects biodiversity expenditures by the Government of Rwanda for the time period and Budget Agencies assessed. These expenditures include both domestic resource allocation as well as external grants and loans to projects partially or wholly-financed by development partners and international finance institutions. As can be seen, the environment and natural resource sector, represented by MINIRENA, REMA, and RNRA, account for just over one-half of all biodiversity-related expenditures in Rwanda. Biodiversity-related expenditures in the agricultural sector have been variable in both absolute terms (5.41 billion RWF in 2011/12 to 1.03 billion RWF in 2016/17) and as a proportion of total government biodiversity expenditures (53 percent in 2011/12 to 9 percent in 2016/17), reflecting a lack of consistent mainstreaming of biodiversity objectives across programs. Agriculture programs within MINAGRI and RAB are largely focused on resource intensification and value chain development, with a small proportion dedicated to conservation and land husbandry. RDB's biodiversity budget has also been variable, reflecting a drop from 2.3 billion RWF in 2011/12 to 0.85 billion RWF in 2014/15. The significant recent (2016/2017) increase in RDB biodiversity expenditures, in comparison with previous years, should be interpreted with caution as these include expenditures from own sources of revenue, not included in the prior years.

Figure 1 Biodiversity-related expenditures by Government of Rwanda Budget Agency, 2011/12 – 2016/17, 2014 prices



In order to better understand the sources of biodiversity finance, the below figure reflects annual biodiversity expenditures by the Government of Rwanda allocated through domestic resources and external resources including grants and loans from bilateral and multilateral development partners. External sources of funds accounted for 56 percent of biodiversity expenditures and domestic resource allocation has accounted for the remainder (44 percent) on average. Year over year variability is dramatic. Especially large increases in external grants and loans were made in 2014/15, including contributions to the FONERWA fund (12 billion RWF with 25 percent biodiversity relevance) to support operations and funding proposals, as well as a large external grant contribution to MINAGRI's Gishwati Land and Water Management Project (13.1 billion RWF with 25 percent biodiversity relevance).

Figure 2 Total Government of Rwanda biodiversity expenditures by source of funds, 2011/12 – 201/17, 2014 prices



Non-government expenditures were also studied including those from bilateral donors, GEF-funded projects, NGOs and the private sector. Incremental expenditures by non-government implementing entities account for 4.6 billion RWF to 5.7 billion RWF annually (2014 prices). These expenditures, however, have remained relatively flat over the time period assessed here, increasing from 4.6 billion RWF in 2011/12 to 5.1 billion RWF in 2016/17, reflecting a modest average growth in biodiversity expenditures of 2 percent.

Table 2 Summary of biodiversity expenditure findings and trends, 2011/12 – 2016/17 (RWF bill, real 2014 prices)

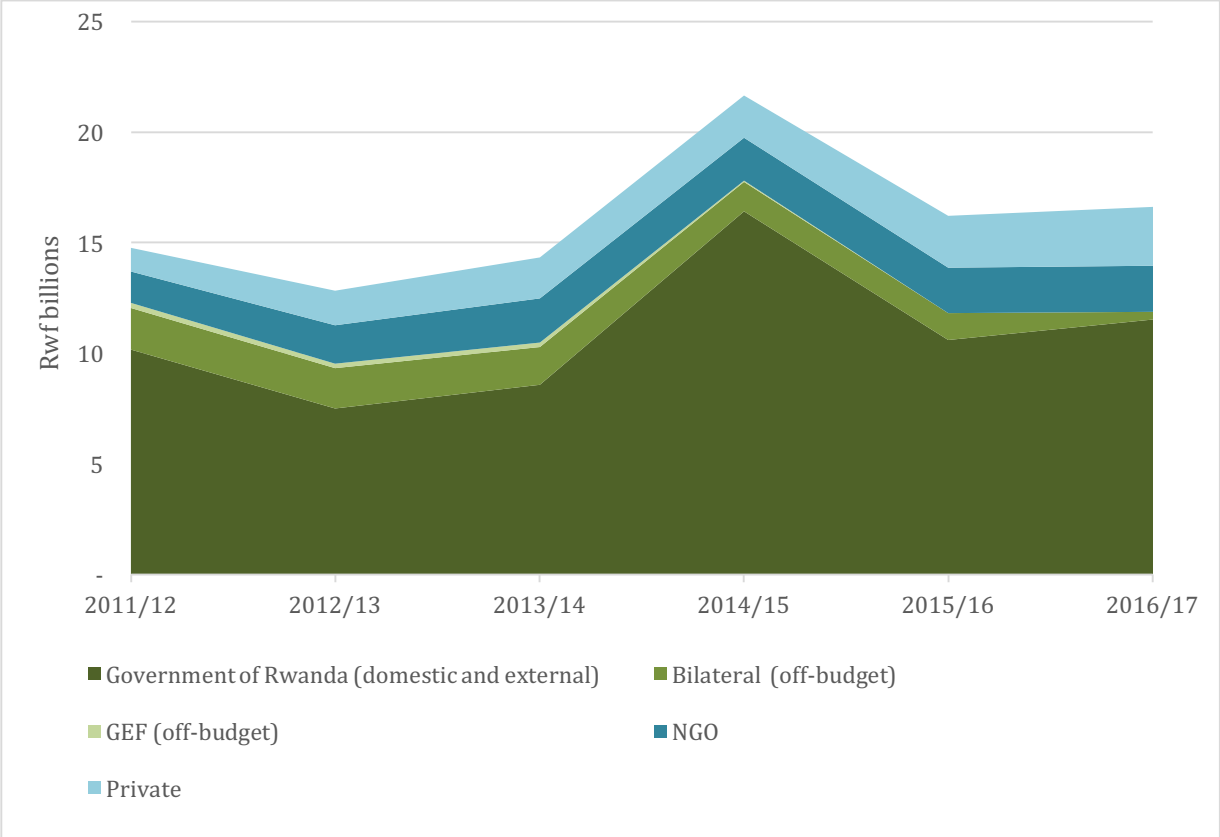
	11/12	12/13	13/14	14/15	15/16	16/17	Average
GDP	**4,459**	**4,852**	**5,079**	**5,466**	**5,951**	**6,304**	**5,352**
GDP Growth Rate		**9 %**	**5 %**	**8 %**	**9 %**	**6 %**	***7.2 %***
Total Rwanda Biodiversity Expenditures	**14.78**	**12.82**	**14.33**	**21.66**	**16.22**	**16.60**	**16.1**
Total Biodiversity Expenditure Growth Rate		***-13 %***	***12 %***	***51 %***	***-25 %***	***2 %***	***2.4 %***
Total Biodiversity Expenditure (as percent GDP)	**0.32 %**	**0.26 %**	**0.28 %**	**0.40 %**	**0.27 %**	**0.26 %**	**0.30 %**

Note: To allow for a side-by-side comparison of national budgets, GDP is reflected by government fiscal year (for example 2011 GDP is considered 2011/12 here, etc.). Average growth rates are based on cumulative annual growth from 2011/12 to 2016/17.

Biodiversity expenditures are estimated to account for, on average 0.3 percent of the national economy. Ranging from 12.82 billion RWF in 2012/13 to 21.66 billion RWF in 2014/15, over the time period assessed (2011/12 to 2016/17) total biodiversity expenditures have grown by 12.4 percent, or 2.4 percent annually, well below the growth of the economy and national

budget. This may indicate that as the government prioritizes other development objectives, biodiversity is not gaining a correspondingly increasing share of its budget despite the high dependency on agriculture, water, tourism, and fuel wood. In addition, biodiversity budgets appear to fluctuate year-over-year for many budget agencies, perhaps signalling a lack of consistent financial commitment to biodiversity objectives within government budget agencies. However, these fluctuations are partly due to the fact that for many budget agencies, the majority of biodiversity-related activities are embedded within development projects that stop and start over the years, rather than integrated into recurrent programs.

Figure 3 Total real biodiversity expenditures, 2011/12 – 2016/17



Rwanda continues to be heavily reliant on foreign aid, with external grants and loans accounting for between 40-60 percent of development budgets depending on the year. This is no exception for biodiversity budgets, where external grants and loans account for 39-72 percent of the total government biodiversity expenditures (average 56%). The combined aid dependency, fluctuations in biodiversity expenditures, and low biodiversity mainstreaming in the natural resource sector create high uncertainty in future biodiversity finance and management. Future projections using high and low scenario estimates indicated that, by 2024/25, government expenditures on biodiversity could reach between 13.6 and 28.7 billion RWF, reflecting the large uncertainty in future projections. As 56 percent, on average, of

government spending on biodiversity is through the development (project) budget, future spending is almost entirely dependent on government policy and program choices unless changes are made to increase sustainable financing sources for biodiversity management.

In order for Rwanda to achieve the targets set forth in its National Biodiversity Strategy and Action Plan, further action needs to be taken to mobilize domestic and international resources and ensure that these resources are secure into the future. Although it is important to ensure biodiversity conservation objectives are more effectively integrated into the development agenda, it is equally important to embed biodiversity conservation into recurrent government programs to ensure a sustainable flow of resources into the future despite fluctuating donor contributions.

Better tracking of biodiversity expenditures, particularly in national budgets, would enable the Government of Rwanda to assess trends in biodiversity spending over time to ensure they are on track to meet their national biodiversity targets. Through a tagging system, budgeted activities could be screened and assessed by budget agencies for biodiversity-relevance. The Government of Rwanda uses the computerized Integrated Financial Management Information System (IFMIS), which uses budget classifications to facilitate the production of Government accounts consistent with the internationally-recognized UN system of national accounts, Classification of the Functions of Government (COFOG). Through these COFOGs, direct biodiversity expenditures are tracked, but these do not include indirect biodiversity expenditures – the large majority of biodiversity expenditures. For instance, these expenditures do not capture biodiversity mainstreaming in productive sectors such as forestry and agriculture. A more sophisticated tagging system would enable all expenditures to be screened and tracked for biodiversity relevance.

1. Introduction

1.1 Background

Rwanda is endowed with rich biological resources that provide a stream of goods and services to its economy and society. Over 65 percent of Rwandans are directly reliant on these biological resources for their livelihoods, including agriculture, forestry, and tourism (NISR, 2016)[2]. Biodiversity, or the variability among living organisms, habitats, and ecosystems, supports and underpins these goods and services that Rwandan citizens rely on. In order to ensure a sustainable development pathway that protects these natural resources, Rwanda has committed to the protection, sustainable use, and equitable sharing of benefits from these biological resources.

As a signatory to the UN Convention on Biological Diversity (CBD), Rwanda has made a commitment to achieving the Aichi Biodiversity Targets as defined in the 2011-2020 Strategic Plan for Biodiversity, established at the 10th meeting of the Conference of Parties in 2010. Principle to implementing the commitments made under the CBD is the development of a National Biodiversity Strategy and Action Plan (NBSAP), which provides a framework for the conservation, sustainable use and equitable sharing of benefits from biodiversity and ecosystem services in the country. In 2016, Rwanda prepared and submitted a revised NBSAP laying the foundation for how it aims to achieve these commitments. In addition to the Aichi Targets setting goals for, inter alia, the protection and sustainable use of biodiversity, Target 20 commits Rwanda to aim to achieve:

> "By 2020, at the latest, the mobilization of financial resources for an effective implementation of NBSAP from all potential sources, and in accordance with agreed process in the strategy for resource mobilization, is reinforced and increased substantially from the current levels. "

To date, there remains a significant gap in finance to achieve the Aichi Biodiversity Targets under the 2011-2020 Strategic Plan. In order to understand the challenges and opportunities for mobilizing the financial resources necessary to achieve these targets, national-level assessments are necessary. In response to this need, the UNDP-managed Biodiversity Finance Initiative (BIOFIN) was established as a global partnership to assess and address this biodiversity finance gap by providing the methodologies and tools to enable countries to measure their current biodiversity expenditures, assess the medium and long term financial needs and identify financial solutions to close the biodiversity finance gap.

[2] Note: although the percentage of the population reliant on these natural resource sectors has dropped since the EICV3 (73 percent), due to population growth, the number of people in these sectors has not decreased substantially.

1.2 Objective

This biodiversity expenditure review aims to contribute to this national-level assessment by reviewing and better understanding the current status of biodiversity-related expenditures and projecting future spending scenarios (i.e. the 'business as usual' – BAU – baseline) to guide the development of a financial needs assessment and financial plan to ensure Rwanda achieves its biodiversity targets. In short, the main objectives of this report are to:

- Estimate past and future biodiversity expenditures across the public, private, and civil society sectors
- Identify what activities these biodiversity expenditures are targeting and map them according to biodiversity categories
- Determine policy alignment and spending efficiencies for the main biodiversity actors.

1.3 Past Expenditures: A literature review

Previous expenditure reviews have been conducted upon which this work can draw. In 2003 and repeated in 2013 a public environmental expenditure review (PEER) was conducted in Rwanda, under the auspices of the UNDP/UNEP Poverty Environment Programme, to quantify expenditures for environment, natural resources, and climate change (REMA, 2013). The most recent PEER covered the period from 2008 to 2012 to assess environmental integration during the implementation of the Economic Development and Poverty Reduction Strategy 2 (EDPRS 2). One key finding of this PEER was that Rwanda had increased its commitment to environment and natural resource protection by putting in place enabling policies, legislation, and institutional frameworks and strategies in the sector. Spending on environmental protection, as a share of the total government budget, rose from 1.4 percent in 2009/10 fiscal year to 2.5 percent in 2012/13, accounting for 0.89 percent of GDP. The allocation of government budget to the Ministry of Natural Resources, the lead institution overseeing the protection and conservation of the environment, remained very low, under 1 percent from 2008 through 2012 and execution rates for recurrent and development expenditures remained below 90 percent. Failing to attain 100 percent execution rates inhibits ministries from justifying budget allocation increases year-over-year, as the sector has not demonstrated the absorption capacities necessary to spend its budget and meet its targets. Reasons for failing to attain a 100 percent execution rate included:

- Limited staffing and capacities to absorb all funds;
- Institutional reforms slowed down planning and requests for funds;
- Activities were often dependent on nature (e.g. tree planting based on rainfall) and implementation delayed due to drought or other natural weather events.

This biodiversity expenditure review is intended to only capture expenditures on biodiversity-related activities and therefore represents a subset of the previous environment, natural resource and climate change expenditure review. This is in part because of the strict definitions of activities classified as 'biodiversity-related', and the attribution methodology laid out in the BIOFIN methodology, which is followed here. However, some comparisons to the previous PEER may be possible, including the total government budget allocated to 'environmental

protection' according to functional classification, and budget allocations execution rates for key biodiversity budget agencies.

Rwanda has undergone many upgrades to its public financial management performance. The Organic Finance Laws published annually by the Ministry of Finance and Economic Planning (MINECOFIN) provides detailed budget allocations by budget agency, program, sub-program, project, and funding type. This allows for a detailed analysis of biodiversity-related expenditures at a finer level of detail than previous expenditure reviews.

1.4 Organization of the Report

This report is organized into nine sections. The following section offers a brief overview of the Rwandan public institutions involved with biodiversity conservation and sustainable use, drawing from the Biodiversity Finance Policy and Institutional Review (PIR). The third section provides a brief profile of Rwanda's macroeconomic performance in order to set the context for biodiversity past expenditures and trends. The fourth section then reviews the methodology employed in conducting this expenditure review. Section 5 turns to estimating biodiversity expenditures from the Government of Rwanda (GoR). As this analysis aimed to account for biodiversity expenditures following the implementing entity approach (e.g. all biodiversity activities carried out by a GoR budget agency is accounted for as a GoR expenditure), this section includes all expenditures from domestic and external resources for programs and projects implemented by a GoR budget agency. Future biodiversity expenditure projections are also estimated using forecasted budgets and linear trends in Section 6. The following Section 7 looks beyond government-implemented projects to account for biodiversity expenditures from bilateral and multilateral development partners, NGOs and the private sector. Section 8 combines these expenditures from GoR and non-GoR implementing entities to provide a comprehensive assessment of baseline biodiversity expenditures in Rwanda. The final section concludes the findings and provides selected recommendations for improving biodiversity expenditure tracking in the future.

2. Public Institutional Profile

Prior to calculating the biodiversity-related expenditures, a Biodiversity Finance Policy and Institutional Review was conducted to identify and assess the existing policies, practices and institutions in Rwanda and their capacity to effectively advance biodiversity objectives and mobilize resources to achieve the biodiversity targets set forth in Rwanda's NBSAP. This process identified those core public institutions with mandates for biodiversity-related activities, and lead implementers of the NBSAP strategy. As a result, the focus of the BER will be on these institutions, which are reviewed below.

There is no central government agency whose primary mandate is to protect and conserve biodiversity in Rwanda. Rather, the mandate to protect and conserve of biodiversity straddles across multiple government ministries and agencies. As such, there is not a single public institution where it can be assumed that a majority of their programs and expenditures are directly targeted towards biodiversity objectives. The primary responsibilities for biodiversity conservation lie both within the Ministry of Natural Resources (MINIRENA)[3], with broader environmental mandates, and the Rwanda Development Board (RDB), whose Tourism and Conservation Department is charged with conserving biodiversity within Rwanda's protected areas and developing sustainable tourism. Other public institutions also address biodiversity conservation through mainstreaming activities, public education and research and development. Each of these public institutions is described below.

The ***Ministry of Natural Resources*** (MINIRENA) is the lead institution ensuring the protection and conservation of the environment, as well as the optimal and rational utilization of Rwanda's natural resources for sustainable national development. In addition to MINIRENA, two budget agencies also function under MINIRENA:

- **Rwanda Environmental Management Authority** (REMA) is the regulatory agency for the environment, legally mandated to ensure that the environment is protected and natural resources are sustainably managed. REMA is the focal institution for the Convention on Biological Diversity and other related environmental conventions such as the UN Framework Convention on Climate Change
- **Rwanda Natural Resources Authority** (RNRA), established in 2010, was the lead authority ensuring that Rwanda's natural resources, including land, water, forests, mines, and geology, are effectively managed. RNRA was responsible for implementing policies, strategies, and regulations on natural resources. The RNRA has since been restructured and divided into (1) the Rwanda Land Management and Use Authority (RLMA), (2) the Rwanda Water and Forest Authority (RWFA), and (3) the Rwanda Mines, Petroleum and Gas Board (RMPGB). RNRA and the subsequent bodies play an important role in implementing Rwanda's strategic plan for the environment and natural resources sector, including the target to increase the proportion of protected areas for biodiversity preservation to 10 percent, a target that has since been met. RNRA and the subsequent bodies lead the promotion and implementation of interventions related to sustainable

[3] In, 2017 during the drafting of this report, MINIRENA was split into the Ministry of Environment and the Ministry of Lands and Forestry. All expenditures included in this review occurred prior to the split.

natural resource use and biodiversity conservation, including the restoration of degraded ecosystems and watersheds and protection of forest biodiversity. Many of their programs promote the sustainable utilization of biological resources and are thus important institutions for indirect biodiversity expenditures. Assessing the expenditures in natural resource sectors will determine how well biodiversity and ecosystem service considerations are integrated into these productive sectors.

The ***Ministry of Agriculture and Animal Resources*** (MINAGRI) is charged with leading the transformation and modernization of agriculture from subsistence to high value farming, with a focus on diversification and intensification of production and the sustainable management of agricultural inputs such as soil and water. The two primary agencies under MINAGRI are:

- **Rwanda Agriculture Board** (RAB) oversees the coordination of agricultural research activities and promoting sustainable agriculture development based on sound science-based technologies. These research activities include crop production, livestock, forestry, agro-forestry, post-harvest management, land conservation, and water management.
- **National Agriculture Export Board** (NAEB) is charged with increasing Rwanda's agricultural exports through policy formulation and implementation, support agricultural extension services, quality control and investment promotion for agricultural and livestock products. Programs implemented through NAEB include the intensification and expansion of tea, coffee, pyrethrum, flowers, and horticulture, as well as support to develop agriculture export chains. It is anticipated that biodiversity spending will be insignificant under NAEB and is therefore excluded from this analysis.

The ***Rwanda Development Board*** (RDB), through the Department of Tourism and Conservation, is mandated to conserve the rich biodiversity within the countries protected areas and develop sustainable tourism to generate revenues that contribute to the country's socio-economic development. Under this mandate, RDB ensures the ecological integrity of the national parks through research, innovations, and sound management.

The ***National Industrial Research and Development Agency*** (NIRDA) sits under the Ministry of Trade, Industry and East African Community Affairs (MINEACOM), and is mandated to promote industrial development through research in industrial and technology development, training and capacity building of entrepreneurs and small and medium enterprises, and provide prototype development and engineering. NIRDA hosts the National Herbarium of Rwanda and has a research focus on biodiversity, environmental monitoring and analysis, waste management, eco-tourism industry, renewable energies, and biotechnology[4].

The ***University of Rwanda*** houses two colleges focused on biodiversity and agro-biodiversity, The College of Agriculture, Animal Science and Veterinary Medicine (CAVM) and the College of Science and Technology (CST). In addition, since 2007 Rwanda established a Center of Excellence in Biodiversity and Natural Resource Management (CoEB), recognizing the need for

[4] NIRDA is currently undergoing an organizational restructuring to align with the institutional mandate of focusing on industrial development activities. Consequently, NIRDA will not host a division, unit or staff member relevant to the herbarium and, by extension, to biodiversity conservation. Discussions are underway to determine where the herbarium can be transferred to improve efficiency.

knowledge-based approaches to the sustainable management of biodiversity and natural resources in the Albertine Rift. Region. A government institution, the CoEB is comprised of a network of research and learning institutions as well as NGOs, with a central coordinating hub hosted by the University of Rwanda. The mission of the CoEB is to "enhance knowledge of biodiversity and natural resource management for sustainable development". The services provided by the CoEB include capacity building training, networking, education, advocacy, and research support.

In total, eight budget agencies were consulted and assessed for biodiversity expenditures: MINIRENA, REMA, RNRA (and three split authorities in 2016/17 fiscal year), MINAGRI, RAB, RDB, NIRDA, and the University of Rwanda. Although other budget agencies may have expenditures that are relevant to biodiversity protection and conservation, the aim of this review is to capture a majority of expenditures by applying the 80/20 rule. That is, twenty percent of biodiversity spenders account for 80 percent of biodiversity expenditures. In line with the PIR findings, these eight budget agencies are believed to represent a vast majority of biodiversity expenditures in Rwanda and the omission of other budget agencies will not have a significant impact on the overall results of this expenditure review.

Other multilateral, NGO and private sector institutions consulted and included in this assessment will be clarified in the relevant results section.

3. Macroeconomic Profile

Figure 4 below shows Rwanda's nominal GDP and national budget allocations from 2009 through 2016. To allow for a side-by-side comparison of GDP to government budgets, GDP figures are reflected by government fiscal year rather than calendar year (e.g. 2016 GDP is reflected as 2016/17 below). As can be seen, GDP has been growing steadily at around 12 percent annually. The national budget has also been increasing, but this growth has varied year over year. In the 2011/12 fiscal year, for example, the total national budget increased 21 percent from 2010/11, and then in 2012/13, grew 30 percent. The following years, however, the budget grew more steadily by around 3-7 percent annually. The national budgets have accounted for 29-34 percent of GDP each year over this time period.

Figure 4 GDP and Total Government Budget, 2009/10 - 2016/17

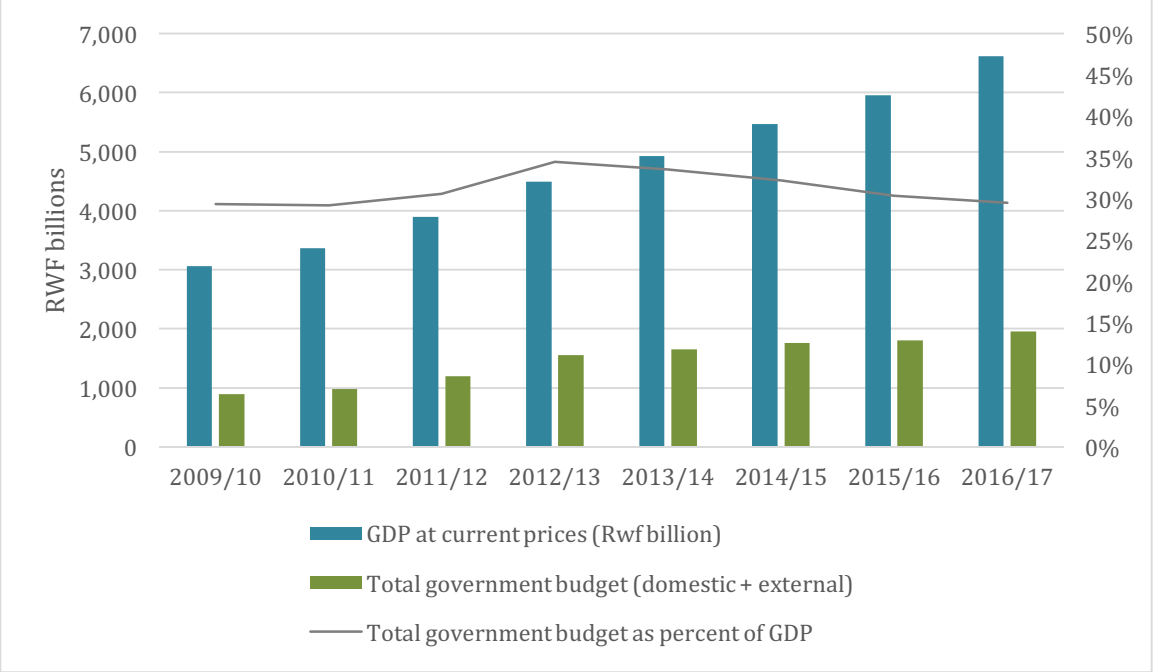
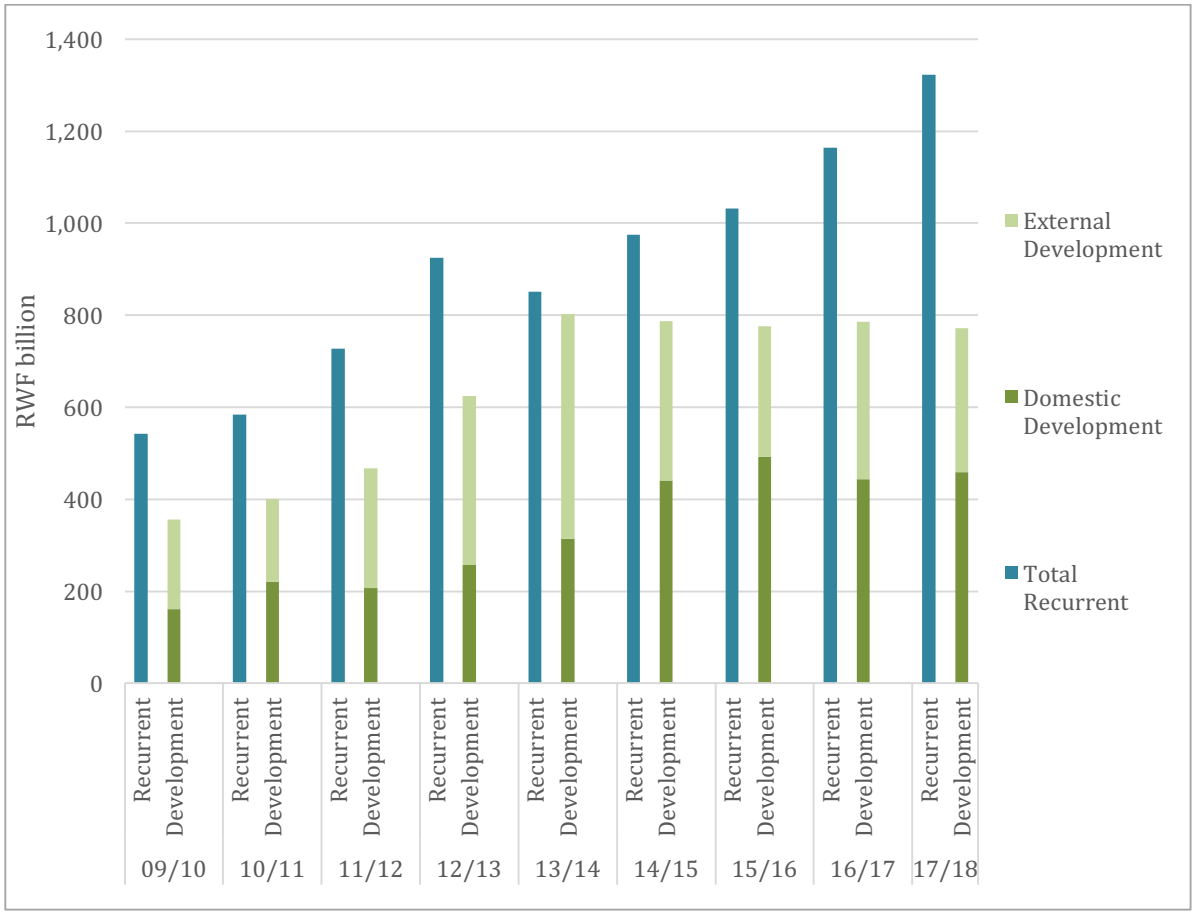


Figure 5 reflects Rwanda's annual budgeted recurrent and development expenditures, including the recently Cabinet approved 2017/18 national budget. Although, overall, the budget has increased seven percent over the 2016/17 budget, a reduced proportion of this is anticipated to come from externally-financed development expenditures (from 43 percent of the development budget in 2016/17 to 40 percent in 2017/18). This downturn reflects Rwanda's commitment to increasing the proportion of its budgets from domestic resources.

Figure 5 Total budgets by recurrent and development expenditures, and source of funds, 2011/12 – 2017/18



4. Methodology

4.1 Defining the Parameters

Prior to data collection and analysis, it is important to clearly define which expenditures are considered to be biodiversity-related. While some expenditures may be obvious, such as the management of protected areas, others may be less direct, such as investments in improved soil husbandry in the agricultural sector, or improved woodlot management in the forestry sector. These activities, although possibly not primarily targeted towards biodiversity objectives, have co-benefits that support the conservation and sustainable utilization of biodiversity and ecosystem services. Therefore, it is important to clearly articulate expenditures that are considered biodiversity-related, and distinguish those expenditures which are directly-related and indirectly-related to biodiversity objectives.

Box 1 outlines the definitions used in this analysis to identify and classify biodiversity-related expenditures.

Box 1. Definition of biodiversity-related expenditures

Biodiversity-related expenditures: Expenditures that support activities that contribute to at least one of the three objectives of the Convention on Biological Diversity (CBD), including:

1. The conservation and restoration of biodiversity (ecosystems, species, and genetic diversity) and the maintenance of related ecosystem services;

2. The sustainable use and management of biodiversity and ecosystems (including activities within agriculture, forestry, fisheries, and other sectors), and

3. The fair and equitable sharing of the benefits of the utilization of genetic resources, with foreseen benefits to the conservation, sustainable use and management of biodiversity and ecosystem services.

Direct biodiversity-related expenditures: An expenditure that directly and explicitly aims to achieve one or more of the three CBD objectives. The conservation, sustainable utilization, and/or equitable sharing of biodiversity benefits is a fundamental objective to the design and impact of the activity.

Indirect biodiversity-related expenditures: An expenditure that has a primary objective *other than* the three CBD objectives, but where the conservation, sustainable utilization, and/or equitable sharing of biodiversity benefits is an important objective of the activity.

Once all biodiversity-related expenditures are identified, a methodology must be established to allocate indirect biodiversity expenditures. While direct expenditures, based on the definition in Box 1 above, are considered to be 100 percent attributable to biodiversity-related spending, it would be an overestimation to apply the same method to indirect expenditures whose primary purpose was not for biodiversity-related activities (e.g. wetland restoration to improve drinking water supply).

Although somewhat straightforward to define in principal, in practice identifying and quantifying expenditures directed towards biodiversity objectives is challenging. Particularly for programs or projects where biodiversity conservation is an indirect or secondary objective, quantifying the biodiversity-relevant expenditures requires reviewing more detailed budgets and activities that may not be easily available or accessible. This is a recurring challenge among many expenditure reviews conducted on the 'environment, or 'climate change', or 'natural resources' and is an inherent limitation in quantifying expenditures on cross-cutting issues. Therefore, two primary approaches were used to identify the biodiversity relevance for these indirect programs and projects, depending on the level of detail available. These approaches align with the global BIOFIN methodology and draw on other country approaches to adapt the methodological framework to the local context and data availability.

Approach 1: For some institutions (e.g. MINIRENA, MINAGRI), a program/project approach is applied. This approach involved reviewing all programs and projects within an institution's budget to screen for biodiversity relevance, and *required the use of information external to the budget reports*. In consultation with government and development partners that provide external project financing, various project documents were reviewed and classified according to biodiversity-relevance. These documents included project proposals, appraisals, and evaluations. Projects were then identified as having no relevance, direct relevance, or indirect relevance to biodiversity conservation, based on the project objective, components, outputs and activities. For specific sectors (e.g. agriculture, forestry) a list of activities considered to be biodiversity-relevant was developed to screen and attribute projects. Then, an attribution coefficient was applied to the budgets assigned to these various projects, applying 0-100 percent of the program or project's budgeted activities towards biodiversity budgets. The methodology for assigning programs and projects followed the table below.

Table 3 Methodology for Biodiversity Relevance and Attribution by program or project

Biodiversity Relevance	Criteria	Attribution
Direct	Biodiversity conservation is the *primary* objective of the program or project	100 %
Indirect High	Biodiversity conservation is a significant objective of the program or project	75 %
Indirect Medium	Biodiversity is an important objective of the program or project	50 %
Indirect Low	Biodiversity is a secondary/tertiary objective of the program or project	25 %

Biodiversity Relevance	Criteria	Attribution
Indirect Very Low	Biodiversity is relevant to the overall objectives of the activity, but not explicitly stated as an objective.	5 %
None	Biodiversity is not relevant to the overall objectives of the program, project or activity or the amount of financing is negligible.	0 %

Although applying the full spectrum of 0 to 100 percent would have resulted in a more precise quantification of biodiversity expenditures, this level of assessment was not possible given time and resource constraints. Rather, the general high-medium-low-very low relevance of biodiversity to the overall project provided an adequate assessment for the purposes of this exercise in order to quantify and identify trends in biodiversity expenditures. Changing a project attribution from, say, 25 percent to a possibly more accurate 21 percent would have little relevance to the overall assessment of biodiversity expenditures and trends and does not merit the additional level of effort required.

Approach 2: For other government agencies and institutions, rather than assigning an attribution to a program or project, categorization of individual activities was possible and those identified as directly relevant to biodiversity are fully-included as a biodiversity-related expenditure (e.g. 100 percent). This approach was applied for institutions where 1) a majority of their budgeted activities were not anticipated to be biodiversity-relevant (e.g. RAB, RDB), and 2) sufficient information was provided within the budgets on specific activities that were carried out under programs and projects. Consultations were made with relevant institutions, but *no use of additional information on programs or budgets was used*, and the assessment is based entirely on the information provided in the national budgets. For these institutions, a list of biodiversity-relevant activities was compiled and screened in the budgets, in consultation with local stakeholders. When this approach was used, the individual activities considered biodiversity-relevant would be listed within each of the institution's programs and projects, and 100 percent of the activity's budget would be allocated to biodiversity.

The approach applied in this analysis depended primarily on a) the overall relevance of biodiversity in the institution's activities and b) the level of detail provided in the program and budget documents. For instance, the national budgets for the Rwanda Agriculture Board (RAB) provide detailed activities and budgets associated with their programs, and therefore both recurrent and development expenditures can be assessed according to Approach 2 above. In contrast, MINAGRI's level of detailed activities, particularly within its development projects is not sufficient to assess the biodiversity relevance of the project. As an example, the Land Husbandry, Hillside Irrigation, and Water Harvesting Project (LWH), financed by the World Bank and a number of contributing bilateral donors, includes only one budgeted activity, *Land and Water Management*, at 8.6 billion RWF. This level of detail is insufficient to identify and quantify biodiversity expenditures within this project, and therefore additional resources external

to the national budgets were used, following Approach 1 above. The specific methodology employed will be indicated in the results section under each institution assessed.

4.2 Classifying Biodiversity-related Expenditures

The BIOFIN Workbook identifies and defines nine BIOFIN categories associated with biodiversity-related expenditures. These categories consist of:

Biodiversity Awareness and Knowledge: Any campaign, action or initiative aimed at raising awareness about biodiversity, its use and/or its value, whether in informal or formal settings; and any action aimed at generating and providing the data and/or information required to make sound decisions regarding biodiversity; scientific research and investigation into key areas related to all aspects of biodiversity, including ecological, social, economic sciences.

Green Economy: Sustainable biodiversity benefits from private and public-sector actions that aim to reduce negative impacts on nature through improved design, engineering, planning, investing, operations, policy, and management. Certain initiatives go beyond reducing negative impacts to encompass the financing and management of nature through green infrastructure, biodiversity-friendly business, sustainability certification, and greening supply chains. Climate change mitigation (industry) benefits biodiversity indirectly and is included.

Pollution Management: Biodiversity benefits that derive from activities whose primary purpose is the prevention, reduction and elimination of pollution. This category covers most of the activities in the Environmental Protection category used by the SEEA Central Framework excluding 6, Protection of biodiversity and landscapes (and 8.6, Research on species, etc.). It overlaps with certain pollution control measures in the sustainable use category, such as promotion of sustainable agriculture; if the written objective is to reduce negative impacts it will included here, or if it is to improve biodiversity in production systems it should be in "sustainable use".

Sustainable Use: Sustainable use of renewable natural resource as defined by the CBD. This category is distinguished from the Green Economy by its focus on ecosystem services, primarily production and the underlying support services. Activities are targeted towards improving biodiversity outcomes in coordination with other co-benefits related to natural resource use.

Biosafety: Prevention, containment, and eradication of invasive alien species (AIS) as well as safe handling, transport and use of living modified organisms (LMOs/GMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.

Protected Areas and other Conservation Measures: In situ measures and ex situ measures to protect and safeguard biodiversity at genetic, species and ecosystem levels.

Restoration: The restoration or the rehabilitation of degraded ecosystems for biodiversity and ecosystem services objectives.

Access and Benefit Sharing (ABS): Access to genetic resources, with a focus on prior informed consent, and the distribution of the benefits of genetic diversity, with a focus on equity and transparency (to those whose knowledge is used) and on mutually agreed terms.

Biodiversity and Development Planning: National, state or local level planning, policy, finance, legal, coordination, and enforcement actions that cover multiple biodiversity categories or general issues such as biodiversity and development planning and policy.

Each program, project, or activity identified as biodiversity relevant is classified according to the above nine categories.

4.3 Methodology: Government of Rwanda as Implementing Entity

Every effort was made throughout this expenditure review to capture and reflect biodiversity expenditures from the implementing institution, rather than the financing institution. Therefore, where possible, projects financed by development partners through grants and loans are included with the institution in charge of implementing the project or program. For example, a UNDP-funded program, implemented by REMA, will be reflected in the REMA budgets below. Where possible, the source of funds for these externally-financed projects is noted.

In order to estimate a baseline of biodiversity expenditures from the Central Government, national budgets are assessed for the Budget Agencies identified as being key implementers of biodiversity-related programs and activities (see Institutional Profile in Section 3). The Ministry of Finance and Economic Planning (MINECOFIN) publishes the Annual Finance Law every fiscal year and is the key source of information for this review.

The Organic Law on State Finances and Property (N^{o} 12/2013/OL of 12/09/2013) establishes the principles and modalities for sound financial management of the Central Government, local administration, and public institutions and parastatal organizations. The national budget constitutes the budget of the Central Government, adopted by the Chamber of Deputies, and the budget of decentralized entities (e.g. Districts), adopted by their respective Councils prior to the beginning of the fiscal year (July 1 – June 30).

Prior to adoption of the State budget, the Ministry of Finance and Planning (MINECOFIN) prepares a medium-term budget framework and annual budget estimates. This Budget Framework Paper (BFP) is the government statement of the global and domestic economic context of the forthcoming proposed budget along with the fiscal policy objectives for the following three-year period. The fiscal policy should reflect and support Rwanda's commitments put forth in the Economic Development and Poverty Reduction Strategy 2 (EDPRS 2) and VISION 2020.

MINECOFIN communicates to both Central Government and Decentralized Entities the strategic priorities as laid out in the BFP and provides guidance to the Chief Budget Managers within budget agencies for the preparation of their annual budgets. Annual budgets are then developed

and submitted to the Minister of Finance, including both externally and internally financed projects, internally generated revenues, earmarked transfers to districts (in the case of Central Government), and budget agencies medium term expenditure framework for the consecutive two budget cycles. Budget consultations are held between line ministries and MINECOFIN prior to submitting to Cabinet and Parliament (or Councils for decentralized entities) for approval. Chief Budget Managers within all budget agencies are responsible for closely monitoring the implementation of their budget, and submitting quarterly and annual execution reports to the Minister of Finance[5].

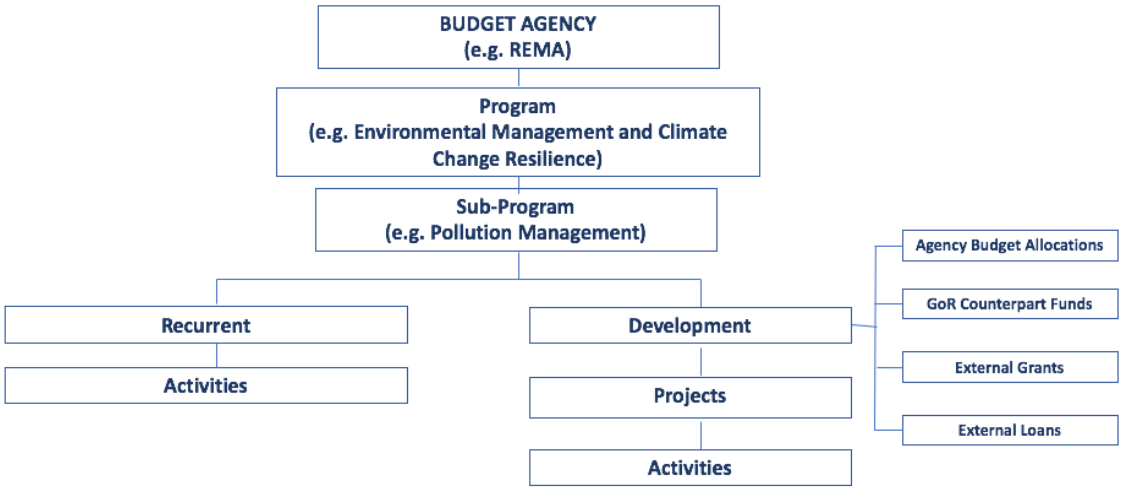
The draft Finance Law, submitted to Parliament in June of each year, details the main spending and revenue categories. Each Finance Law is accompanied by a list of Annexes that details spending by:

- Budget Agency
- Program
- Sub-program
- Project
- Funding Type
- Economic Classification
- Classification of the Function of Government (COFOG) Division and Groups
- EDPRS Initiative

The budget for each Budget Agency is broken down by program and sub-program, and also into both recurrent and development activities. The recurrent budget represents the expenditures required to maintain day-to-day activities, while the development budget represents typically time-bound projects that are either funded through domestic resources, external resources (grants or loans), or both. The figure below represents a schematic of the level of detailed budget allocations and expenditures provided by MINECOFIN, by fiscal year and by Budget Agency.

[5] Expenditures are not publically reported alongside budgets. Execution figures were included in the spreadsheets provided by MINECOFIN, but many activities reflect a '0' expenditure. It was confirmed with multiple project officers that this is not in fact indicative of no spending, rather expenditure reports submitted to MINECOFIN are not always uploaded into the IFMIS system. Therefore, it is not possible to accurately track expenditures in the national budgets, and budget allocations were employed instead. As a result, assessing spending capacity would be misrepresentative as it would be based on incomplete data. Here, spending capacity was only assessed for selected budget agencies with no to minimal '0' reporting, and for recurrent budgets only.

Figure 6 Example of organizational breakdown of budgeted activities in MINECOFIN Finance Laws



As mentioned above, the time period reviewed here is from the 2011/12 fiscal year to the 2016/17 fiscal year for the Budget Agencies identified as routinely having biodiversity-related activities (highlighted in section 2.1). The rationale behind this time period is that MINIRENA, the lead institution in charge of protecting the environment, was formed in 2011. Prior to then, it was structured as the Ministry of Environment and Land, making it difficult to compare programs and projects across this time period. The BAU baseline of biodiversity-related expenditures for the Central Government is calculated for each Budget Agency by assessing budgeted activities of development projects and recurrent programs. Where administrative services and support are included, the proportion of biodiversity-related spending corresponds to the proportion of biodiversity-related spending within the recurrent and development activities according to the table below.

Table 4 Estimation of biodiversity budget in State budget

Type of Data	Calculation
Total administrative services and support	A
Total recurrent and development budgets (non-administrative)	B
Biodiversity-related recurrent and development expenditures	C
Proportion of biodiversity-related expenditures	C/B
Biodiversity-related total expenditures	C + A*(C/B)

Article 45 of the Organic Law on State Finances and Property allows for the revision of the budget after six months of implementation. The changes must be consistent with the approved medium-term strategies and budget framework. Therefore, for the purposes of this expenditure review, the revised budgets are used to estimate a BAU scenario.

4.4 Methodology: Non-Government of Rwanda Implementing Entities

In order to capture externally-financed biodiversity programs and projects, a variety of resources were used. The development landscape is very fragmented in Rwanda with many donors operating in the environment and natural resource space. Without a central repository of development projects that provides the level of detail needed to track biodiversity-related expenditures, a variety of data sources was used including 1) the Organisation for Economic Co-operation and Development (OECD) Creditor Reporting System (CRS), 2) the Ministry of Finance and Economic Planning's Development Assistance Database (DAD), and 3) individual donor resources as supplied directly for this expenditure requested by the donors.

Bilateral and multilateral donors. The OECD Creditor Reporting System (CRS) tracks bilateral official development assistance (bilateral ODA) targeted towards environmental objectives through the application of Rio markers. All aid activities entered into the CRS are screened for environmental significance, including climate change, desertification, and biodiversity and marked with the relevant 'Rio marker: screened not targeted, significant, or principal. Aid activities that aim to achieve biodiversity outcomes -- either as a 'principal' objective or a 'significant' objective -- are marked in the database. This database was consulted to identify the key development partners that finance environment and natural resource projects with biodiversity-related activities. From 2009 to 2015, the top five bilateral donors are listed in the table below.

Table 5 Top Biodiversity-related bilateral ODA donors, 2009-2015

Top 5 Biodiversity-Related ODA Donors	2009-2015 Total Committed (USD thousands)
United Kingdom	54,745
United States	53,403
Belgium	51,083
Sweden	22,837
Netherlands	17,139

Note: Totals include both Principal activities and Significant activities, and therefore is an overestimation of biodiversity expenditures. The database was used simply to identify those donors with the largest amount of biodiversity 'Rio Marked' data.

Over three-quarters of these aid activities, however, are marked with the 'significant' biodiversity Rio-marker, which indicates that these activities cannot be fully attributed as a biodiversity-expenditure. Therefore, this database was used simply to identify the top bilateral biodiversity donors, and then additional sources of project financing and descriptions were used to more accurately quantify biodiversity-related expenditures. These sources are identified in the results section below.

Multilateral ODA was tracked primarily through government budgets, which reflect external grants and loans in addition to domestic resource allocations. The largest sources of international financing for projects with environmental objectives are the World Bank (through

IDA), the Global Environment Facility (through the GEF Trust Fund and Least Developed Country Fund), and UNDP and the UN Environment Programme. (UNEP). MINECOFIN hosts a repository of development assistance projects, commitments and disbursements through the Development Assistance Database (DAD), where development partners report on programs and aid amounts committed and disbursed in Rwanda. A report that was pulled from the DAD database on June 27, 2017 reflected 161 projects implemented between 2009 and 2016.

When bilateral and multilateral ODA is channelled through a government agency (i.e. a government agency is the implementing entity), those resources are reflected in the national budgets and are therefore not double counted in the total expenditures. Where off-budget programs or activities are not accounted for in the national budgets, these are included alongside the national budgets (when the government is the implementing entity). If bilateral and multilateral institutions reflect expenditures in project budgets not accounted for in the national budgets, these expenditures are considered 'off-budget' and are accounted for separately under the non-government of Rwanda implementing entities.

Non-Governmental Organizations (NGOs). NGOs with biodiversity conservation objectives, as identified in the PIR, were directly solicited for biodiversity expenditure information through a simple questionnaire requesting a) the name and description of projects implemented between 2011 and 2017, b) the annual expenditures for these projects, and c) the source of funds. Caution was taken not to double-count contributions from donors and expenditures from recipients[6]. In total, ten non-governmental organizations with biodiversity programs were included in this expenditure review.

Business entities. Private companies were also directly solicited for biodiversity expenditure information through a simple questionnaire requesting a) their qualitative understanding of their dependence on biodiversity and ecosystem services, b) information on any attempts to quantify their impacts and dependencies on biodiversity, and c) any expenditures made to protect and conserve biodiversity. The questionnaire was distributed to members of two chambers within the Private Sector Federation (PSF): the Chamber of Tourism and the Chamber of Agriculture. The PSF, established in 2009, is a professional organization with a mission to promote and represent the interests of the Rwandan business community. There are currently ten chambers, and the Chambers of Agriculture and Tourism were targeted for this survey as they directly depend on and impact biodiversity in Rwanda[7]. In addition, the Akagera Management Company, a joint venture between RDB and African Parks established to manage Akagera National Park, was also directly solicited for expenditure data.

[6] The survey instrument used to elicit biodiversity spending from NGOs is contained in Annex H.

[7] The survey instrument used to elicit biodiversity spending from the private sector is contained in Annex I.

5. Biodiversity Spending: Government of Rwanda

As discussed previously in the methodology section, biodiversity-related budgets are estimated for the Government of Rwanda (GoR) based on MINECOFIN's annual finance laws, which reflect budget allocations from domestic and external resources. Therefore, external finances for biodiversity-related activities are included in this section, where a GoR budget agency is the implementing entity for the externally-financed program or project. The amount of external resources reflected in the finance laws may not necessarily be representative of the total budgets, as some activities may be extra-budgetary (i.e. not channelled through the budget agency) and therefore may not be captured or reported to MINECOFIN. The 2017/18 Finance Law now requires that all expenditures be included in a budget agency's budget[8]; however, in prior years this was not the case. Where possible, the total expenditures for externally-financed development projects are confirmed through consultations with government representatives or donors for the individual projects. The difference between total project costs and budgeted activities reflected in the national budges are considered to be extra-budgetary and will then be accounted for in the non-government of Rwanda (non-GoR) section by the source of funds below (Section 7).

5.1 Ministry of Natural Resources (MINIRENA)

The Ministry of Natural Resources' (MINIRENA) mission is to *"ensure the protection and conservation of the environment and ensure optimal and rational utilization of natural resources for sustainable national development*". Established in 2011[9], the implementation strategy is based on regional, national, and global policies to achieve sustainable land, water, and forest resource management, protect ecosystem functioning, ensure the sustainable exploitation of mines and minerals, mainstream environmental sustainability into development policies, programs and projects, and harmonise policy, legal and regulatory frameworks for environment and natural resource management with other East African Community Countries.

Other affiliated institutions lie under MINIRENA, including the Rwanda Environment Management Authority (REMA), and the (former) Rwanda Natural Resource Authority (now split into three authorities described below). This section reflects only the budget allocation to MINIRENA; the other affiliated institutions are assessed separately. The methodology applied to the MINIRENA assessment followed approach 1 in Section 4.1 above.

MINIRENA's budget allocation has, on average, been increasing since the 2011/12 fiscal year, as reflected in Figure 7 below[10]. The total budget in 2011/12 was 1.19 billion RWF, increasing to 14.09 billion RWF in 2016/17. The sharp spike in budget in the 2014/15 fiscal year is primarily explained by the establishment of FONERWA, Rwanda's first environment and climate change investment fund, currently operating as a project under MINIRENA's development budget. FONERWA has enabled Rwanda to pool resources from a variety of national and international

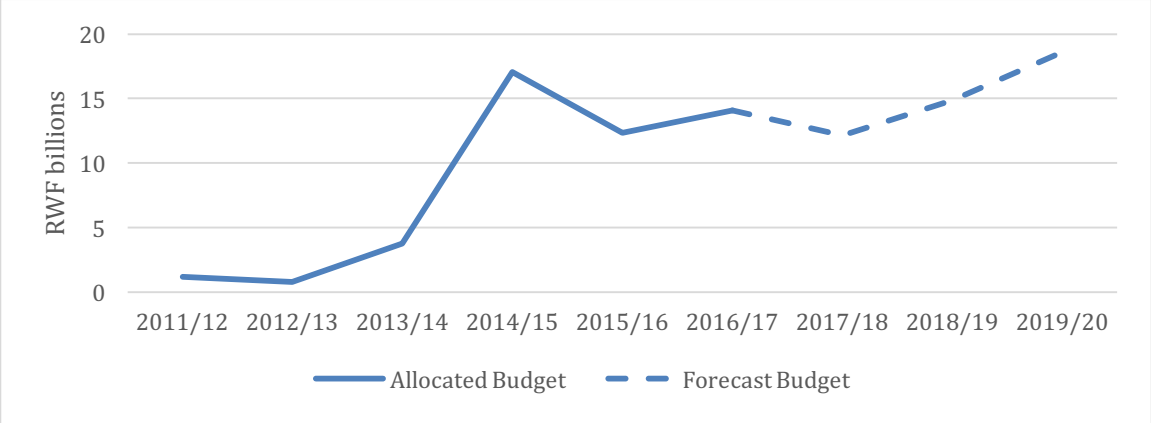
[8] Law N. 30/2017 of 29/06/2017. Determining the State Finances for the 2017/18 Fiscal Year. Article 10: Incurring extra budgetary expenditures.

[9] Previously the Ministry of Environment and Lands

[10] The data supporting Figure 7 can be found in Table A.1

revenue streams and then allocate resources through a variety of instruments to projects using a competitive process. FONERWA has mobilized over 64 billion RWF from both domestic resources and a number of bilateral and multilateral development partners (e.g. DFID, KfW, UNDP) and international environment and climate funds (e.g. Adaptation Fund and the Least Developed Country Fund). The budget allocations for FONERWA reflected in the MINIRENA budget include support to FONERWA operations, support to project proposals, and financial disbursements to awarded projects.

Figure 7 MINIRENA budget allocation and forecast, 2011/12 – 2019/20



Taking a closer look, Figure 8 reflects MINIRENA's budget by recurrent and development activities[11]. Prior to the 2013/14 fiscal year, MINIRENA's budget consisted of a nominal amount of administrative and support services. In 2013/14, the FONERWA fund was established and the GoR contributed 2.1 billion RWF to provide operational support to the fund. In the following year, both through agency budget allocations and external grants, MINIRENA was allocated over 12.48 billion RWF to provide operational support as well as support to project proposals. The establishment of FONERWA can be seen in the sharp spike in development budget allocations in the 2013/14 and 2014/15 fiscal years. One other development project was also implemented during this time; a study on petroleum exploration. In addition, two programs began implementation under the recurrent budget: policy development and sector planning and coordination. These recurrent programs provide legal and regulatory support to the environment and natural resource (ENR) sectors, monitor and evaluate the implementation of ENR activities, prepare, develop, implement and evaluate ENR policies and strategies, and provide outreach on relevant laws and policies.

[11] The data in Figure 8 can be found in Table A.2

Figure 8 MINIRENA recurrent and development budget, 2011/12 – 2016/17

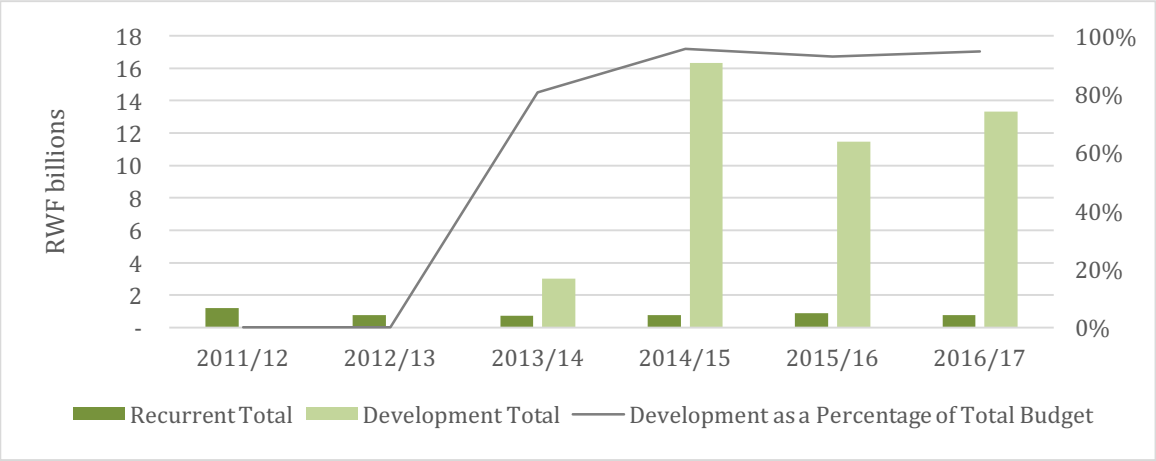


Table 5 below shows the total recurrent and development budget by fiscal year for MINIRENA. As can be seen, the development budget accounts for 80-95 percent of the total annual budget allocations in recent years, with over three-quarters of that budget allocated to FONERWA.

Table 6 FONERWA budget as percent of development and total budget

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Recurrent Total	1.19	0.77	0.73	0.76	0.86	0.76
Development Total	-	-	3.02	16.32	11.47	13.33
FONERWA Budget	-	-	2.10	12.49	8.11	9.04
Total Budget	**1.19**	**0.77**	**3.75**	**17.08**	**12.33**	**14.09**
Development as a percent of Total Budget	0%	0%	81%	96%	93%	95%
FONERWA as a percent of Development Budget	n/a	n/a	69%	77%	71%	68%

FONERWA is a demand-based fund with bi-annual calls for proposals around four broad funding windows and entry-points:

1) Conservation and sustainable management of natural resources
- ecosystem rehabilitation
- sustainable land management
- integrated water resources management
- sustainable mining and quarrying
- sustainable forest management
- promotion and protection of biodiversity

2) Research & Development and Technology Transfer and Implementation
- renewable energy and energy efficiency

- pollution management
- water storage, conservation and irrigation technologies
- applied and adaptive research (agro-forestry, waste, urban planning)
- disaster risk reduction
- data collection, monitoring and management information systems (MIS)

3) Environment and climate change mainstreaming
- strategic environment and climate assessments (SECAs)
- sector specific (or national) adaptation and/or mitigation
- support to implementation of cross-sectoral integrated planning

4) Environmental Impact Assessment (EIA) Monitoring and Enforcement
- monitoring and implementation of environment management plans for capital projects
- environmental auditing

As of June, 2017, the FONERWA portfolio includes 32 projects implemented by a mix of government agencies (78 percent of disbursements), private companies (16 percent of disbursements), and NGO/CSOs (6 percent of disbursements). Projects range in size from 30 million RWF to 3.7 billion RWF. Although access to the fund is open to government (line ministries and districts), charitable organizations, and private institutions including businesses, research institutions, and civil society, 20 percent of FONERWA resources are earmarked for the private sector. Nonetheless, to date there has been limited participation from the private sector. Table 6 lists projects funded by FONERWA through its eight calls for proposals between 2013 and 2016.

Table 7 Projects funded under FONERWA from 2013 to 2016

#	Project Title	Lead Organization	Type of Organization	FONERWA contribution (RWF)
First Call for Proposals (July 2013)				
1	Sustainable Management and Environmental Rehabilitation for Poverty Reduction	Send A Cow Rwanda (SACR)	NGO	465,608,168
2	Rainwater Harvesting project in high density areas of Nyarugenge, Gasabo, Kicukiro, Musanze, Nyabihu and Rubavu districts	RNRA	Government	2,255,846,638
3	Integrated land, water resources and clean energy management toward poverty reduction project in Musanze District	Musanze District	District	701,461,152
4	Vulnerable ecosystem recovery programme towards climate change	REMA	Government	3,724,188,800

#	Project Title	Lead Organization	Type of Organization	FONERWA contribution (RWF)
5	National e-waste management strategy for Rwanda to support the establishment of sustainable recycling industries	RRECPC/MINICOM	Government	1,473,647,300
Second Call for Proposals (January 2014)				
6	Gaseke Minis-Hydro Power Plant	Novel Energy Limited	Private Sector - line of credit	770,000,000
7	Strengthening Meteo Rwanda's Weather and Climate Services to Support Development	Meteo Rwanda	Government	1,645,740,200
8	Supporting the Integration of Greening District Development Plans	Ministry of Local Government (MINALOC)	Government	526,190,000
9	Technical & Structural Studies For Incorporating Resource efficient and Environmentally friendly Features into Family Homes at CACTUS GREEN PARK (CGP), Gasabo District, Kigali City.	Horizon Group Limited	Private Sector	126,862,297
10	Sustainable biodiversity: mapping and domesticating the mycological riches of Rwanda's forests	Kigali Farms	Private Sector	36,172,000
11	Ankanyaru Watershed Protection Project - GISAGARA	Gisagara District	District	2,125,218,594
12	Karongi District integrated greening village Program	Karongi District	District	738,301,350
Third Call for Proposals (April 2014)				
13	Congo Nile Ridge Foothills Integrated Environmental Management Project in Muhanga District	Muhanga District	District/Caritas Dioscese	1,311,452,171
14	Zero carbon affordable housing solution in Rwanda	Zero Carbon designs Ltd, Rwanda	Private Sector	158,911,350
15	Rice Husk (biomass) to power project	Novel Energy Limited	Private Sector - line of credit	81,200,000
16	Restoring Yanze River and watershed through scaling up agroforestry technologies for resilience to climate change	Rulindo District	District	1,597,743,000
Fourth Call for Proposals (July 2014)				
17	Environmental Protection in and around Refugee Camps	MIDMAR	Government	1,084,870,733
18	Sustainable forestry, agro forestry and biomass energy management for climate resilience in Gatsibo District	RNRA	Government	1,469,171,600
Fifth Call for Proposals (May 2015)				
19	RUSULI Comminity Led /WHH	WHH	NGO/WHH	533,722,000

#	Project Title	Lead Organization	Type of Organization	FONERWA contribution (RWF)
20	Integrated Project of Ecosystem Rehabilitation and Green Village Promotion (IPERGP)	Nyamasheke District	District	725,124,000
21	Sustainable forest and watershed resources management in nyagatare district	Nyagatare District	District	632,475,165
Sixth Call for Proposals (2016)				
22	Rain Water Harvesting and Reuse in KAMONYI District	Kamonyi District	District	1,022,914,900
23	The Water_Energy_Food Security Nexus in the Akagera Watershed: Linking evidence collection, local action and stakeholder dialogue for sustainable development and climate change resilience.	ARCOS	ARCOS	573,289,490
24	Supporting sustainable, climate resilient livelihoods for poor farming households in Bugesera	AVVAIS CSO	AVVAIS CSO	458,044,827
25	MWOGO Watershed Protection Project	Nyamagabe District	District	640,334,000
26	Nyandungu Urban wetland Eco-tourism Park (NUWEP)	REMA	Government	2,413,699,149
27	Off-Grid Solutions / WakaWaka Rwanda Ltd.	Off-Grid Solutions / WakaWaka Rwanda Ltd.	Private Sector	30,739,811
28	RUSHASHI ENVIRONMENTAL FRIENDLY MINING PROJECT (REFMP)	STANDARD MINING COMPANY LTD	Private Sector	92,750,000
Seventh Call for Proposals (2016)				
29	Local partnership for rehabilitation of biodiversity and ecosystems in Nyabarongo Watershed.	NGORORERO	District	1,702,936,220
30	Rwanda Air Quality and Climate Change Monitoring Project	REMA	Government	927,341,175
31	Climate mainstreaming pilot for the coffee and tea sectors	MINAGRI	Government	1,999,149,242
32	Model mining	ZIKS MINING COMPANY LTD	PRIVATE SECTOR	698,435,500
			TOTAL	**32,743,540,831**

A review of the project summaries and key outputs for these projects reveals that, although a majority are funded through the *Conservation and Sustainable Management of Natural Resources* window, most projects focus on two entry points: sustainable land management (primarily through terracing and agroforestry), and ecosystem rehabilitation (primarily through tree planting and protection of riparian buffers). Only two projects are found to directly target biodiversity conservation.

The assessment of biodiversity relevance follows the first approach in the methodology section above (i.e. each program and project is assessed for its biodiversity relevance). Each project funded by FONERWA was screened for biodiversity relevance and assigned an attribution score based on the criteria in Table 7.

Table 8 Methodology for assessing biodiversity-relevance of FONERWA projects

Biodiversity-relevance	Attribution	Criteria	Example
Direct	100 %	Biodiversity conservation is the primary objective	biodiversity mapping, wetland restoration
Indirect High	75 %	Biodiversity conservation is a significant objective.	protected area buffer zones; sustainable agricultural practices
Indirect Medium	50 %	Biodiversity conservation is an important objective.	control of invasive species, rehabilitation and protection of fragile ecosystems
Indirect Low	25 %	Biodiversity conservation is a secondary/tertiary objective.	soil and water conservation through terracing, tree planting, agroforestry, riparian buffer zones
Indirect Extremely Low	5 %	Biodiversity conservation is not explicitly stated, but is an indirect benefit of the activity.	soil and water conservation primarily through terracing
No relevance	0 %	Biodiversity is not relevant to the overall objectives of the program, project or activity or the amount of financing is negligible.	rainwater harvesting, e-waste management, hydropower, green villages

A total of 17 projects was found to have either direct or indirect biodiversity relevance, based on the project summaries and key outputs. By applying the attribution percentages in the table above, the total amount of biodiversity-related expenditures is 8.35 billion RWF, or 25 percent out of a total 32.7 billion RWF of project financing between 2013 and 2016. The projects and their biodiversity attribution are listed in Table 8 below.

Table 9 Biodiversity-relevant FONERWA projects, biodiversity expenditure and BIOFIN Category

Project Title	FONERWA contribution (RWF million)	Biodiversity Attribution	Biodiversity-related expenditure	BIOFIN Category
Direct				
Nyandungu Urban Wetland Eco-tourism Park (NUWEP)	2,414	100 %	2,414	Restoration
Sustainable biodiversity: mapping and domesticating the mycological riches of Rwanda's forests	36	100 %	36	Sustainable Use/Biodiversity awareness and knowledge
Indirect High				
Sustainable Management and Environmental Rehabilitation for Poverty Reduction	466	75 %	349	Sustainable Use

Project Title	FONERWA contribution (RWF million)	Biodiversity Attribution	Biodiversity-related expenditure	BIOFIN Category
Integrated land, water resources and clean energy management toward poverty reduction project in Musanze District	701	75 %	526	Sustainable Use/Green Economy/Protected areas and other conservation measures/Biosafety
Indirect Medium				
The Water_Energy_Food Security Nexus in the Akagera Watershed: Linking evidence collection, local action and stakeholder dialogue for sustainable development and climate change resilience.	573	50 %	287	Biodiversity Awareness and Knowledge
Vulnerable ecosystem recovery programme towards climate change	3,724	50 %	1,862	Restoration
Sustainable forest and watershed resources management in Nyagatare District	632	50 %	316	Sustainable use
Supporting sustainable, climate resilient livelihoods for poor farming households in Bugesera	458	50 %	229	Sustainable Use
Indirect Low				
MWOGO Watershed Protection Project	640	25 %	160	Pollution Management/Sustainable Use
Restoring Yanze River and watershed through scaling up agroforestry technologies for resilience to climate change	1,598	25 %	399	Restoration/Sustainable Use/Pollution Control
Congo Nile Ridge Foothills Integrated Environmental Management Project in Muhanga District	1,311	25 %	328	Sustainable Use
Sustainable forestry, agro forestry and biomass energy management for climate resilience in Gatsibo District	1,469	25 %	367	Sustainable Use
Ankanyaru Watershed Protection Project - GISAGARA	2,125	25 %	531	Sustainable Use/Restoration
Local partnership for rehabilitation of biodiversity and ecosystems in Nyabarongo Watershed.	1,703	25 %	426	Sustainable Use
Indirect Very Low				
RUSULI Community Led /WHH	534	5 %	27	Sustainable Use/Restoration
Integrated Project of Ecosystem Rehabilitation and Green Village Promotion (IPERGP)	725	5 %	36	Sustainable Use/Restoration

Project Title	FONERWA contribution (RWF million)	Biodiversity Attribution	Biodiversity-related expenditure	BIOFIN Category
Environmental Protection in and around Refugee Camps	1,085	5 %	54	Sustainable Use/Green Economy/Biodiversity awareness and knowledge
TOTAL (percent of FONERWA TOTAL)			**8,348**	**(25 percent)**

Because FONERWA is a demand-led funding mechanism, projects have tended to concentrate within the first two funding windows, supporting primarily sustainable land management and rehabilitation, energy efficiency, and water storage. As most of these projects are 3-years or less in duration, predicting the future biodiversity-related expenditures through FONERWA remains a challenge. There nonetheless exists an opportunity to further promote FONERWA as a fund for biodiversity conservation.

MINIRENA implemented two other projects between 2011 and 2016 with indirect biodiversity-relevance. The project, ***Reducing Vulnerability to Climate Change in North West Rwanda through Community Based Adaptation*****,** was funded by the Adaptation Fund and implemented through the Rwanda Natural Resources Authority (RNRA). This project received operational support from MINIRENA totalling 2.3 billion RWF between 2014 and 2016. As this project was implemented by RNRA, the biodiversity-relevant expenditures will be accounted for under RNRA below. The key outputs of this project are:

- Community-level mobilisation and climate adaptation planning
- Investments in integrated land and water management technologies
- Diversification and integration of crop and livestock production systems to minimise the impact of variable rainfall on rural livelihoods,
- Introduction of climate-resilient crop/fodder varieties and agronomic practices
- Introduction of climate resilient post-harvest processing and storage systems for safe handling and storage.

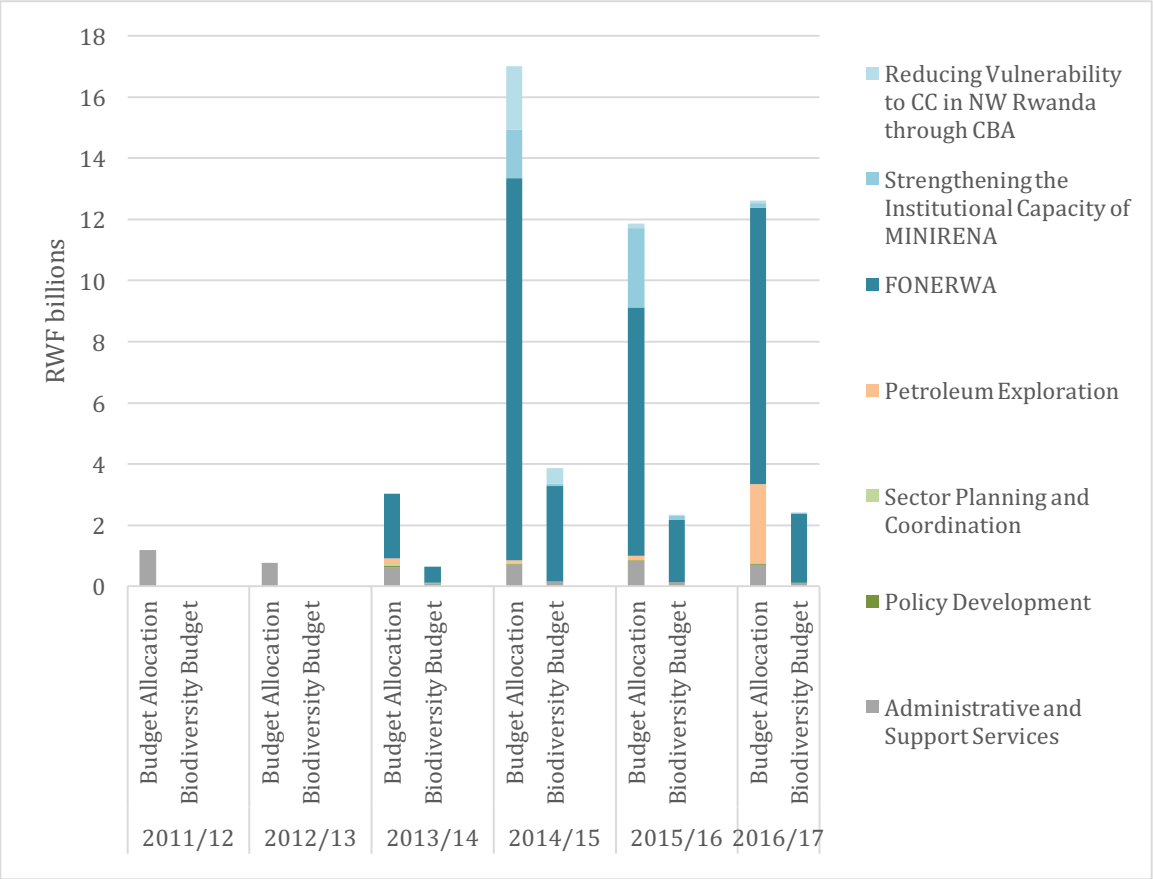
This project is considered to have 'indirect low' biodiversity relevance, and is assigned an attribution percentage of 25 percent. Therefore, 25 percent of MINIRENA's management budget to support this project is attributed as biodiversity-relevant.

The final project with indirect biodiversity relevance is UNDP's support to ***'Strengthening Institutional Capacity of MINIRENA in Rwanda'***. These funds supported MINIRENA to bolster its planning, coordination, operational, and outreach capacities, as well as legal and fiscal frameworks in order to increase the Ministry's effectiveness at developing, implementing, and enforcing environmental policies. As MINIRENA is mandated to ensure that environment and biological resources are safeguarded and sustainably utilized, this support has indirect biodiversity-objectives, and is assigned as 'indirect very low' biodiversity-relevance. Therefore, five percent of these funds are considered biodiversity expenditures.

For all recurrent budget activities, including policy development and sector planning and coordination, an attribution score of 'indirect very low' is assigned, and 5 percent of these budgets are considered biodiversity-relevant. Administrative and Support Services are assigned a biodiversity-relevance percentage according to the methodology in Table 1 above.

As can be seen from Figure 9 below, total biodiversity-related budgets account for approximately 20 percent of the total MINIRENA budget from 2013/14 through 2016/17[12]. As the 2011/12 and 2012/13 fiscal years only represent administrative and support services, no biodiversity attribution is made for these years. Given the small budget from these years, this did not impact the overall biodiversity-relevance of MINIRENA's budget.

Figure 9 MINIRENA budget allocation and biodiversity-related budget by program (recurrent) and project (development), 2011/12 – 2016/17

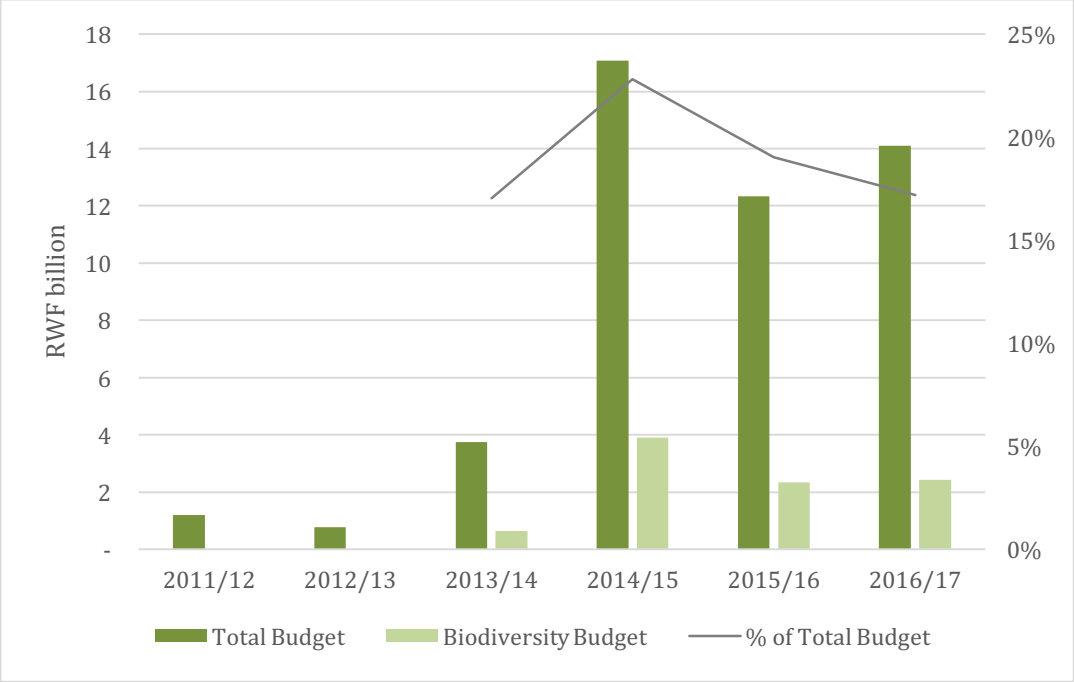


Another depiction of the total budget, total biodiversity budget, and percent of the total MINIRENA budget is provided below[13], reflecting total MINIRENA budget allocation, MINIRENA biodiversity budget, and the biodiversity percentage of the total budget.

[12] The data supporting Figure 9 can be found in Table A.4.

[13] The data supporting Figure 10 can be found in Table A.

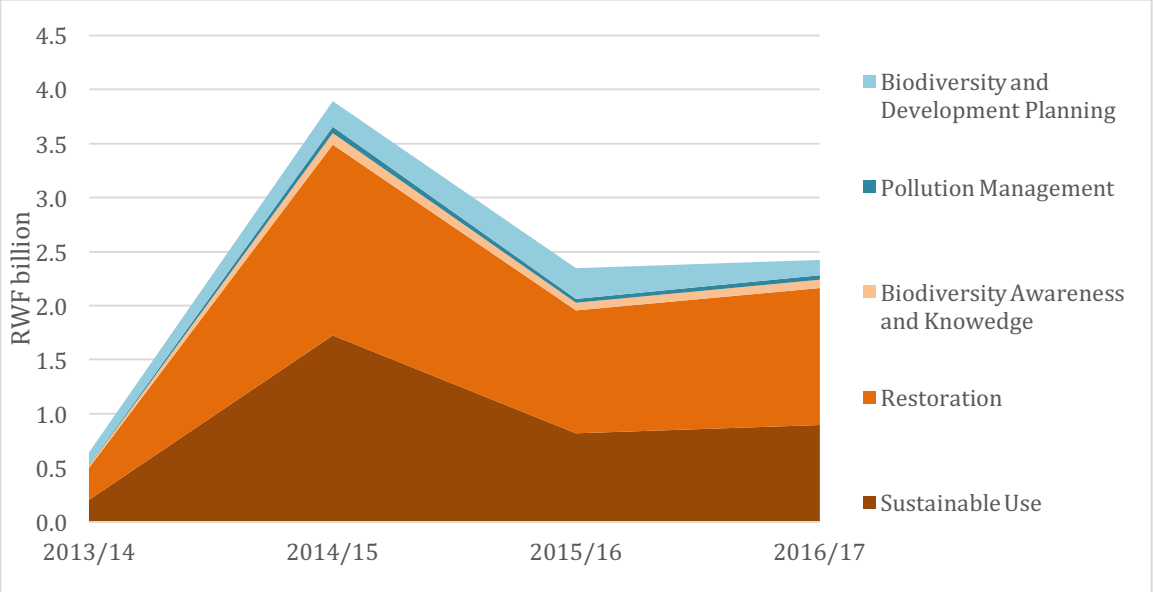
Figure 10 MINIRENA Total Annual Budget and Biodiversity Budget, 2011/12 – 2016/17



Each biodiversity-relevant project was classified according to the BIOFIN categories based on its primary objective, as reflected in Figure 11 below[14]. Many projects have multiple objectives that align with a number of BIOFIN categories (e.g. sustainable use and biodiversity knowledge and awareness), but each program and project was assigned according to its primary objective. Prior to 2013/14, the only budgeted activities for MINIRENA was for administrative and support services, and therefore these activities were not classified. In other years, administrative budgets were classified under Biodiversity and Development Planning.

[14] The data supporting Figure 11 can be found in Table A.6.

Figure 11 MINIRENA biodiversity budgets by BIOFIN classification, 2011/12 – 2016/17



Note: 2011/12 and 2012/13 budgets included administrative and support activities only and were therefore not classified.

As noted, a majority of MINIRENA's budget is attributed to restoration and sustainable use, with nominal activities supporting biodiversity and development planning as well as pollution management. FONERWA accounts for over 80 percent of the biodiversity-related budget, which comes as no surprise as a review of the FONERWA funded projects reveals that most projects obtain financing under the same two entry points (ecosystem rehabilitation and sustainable land management).

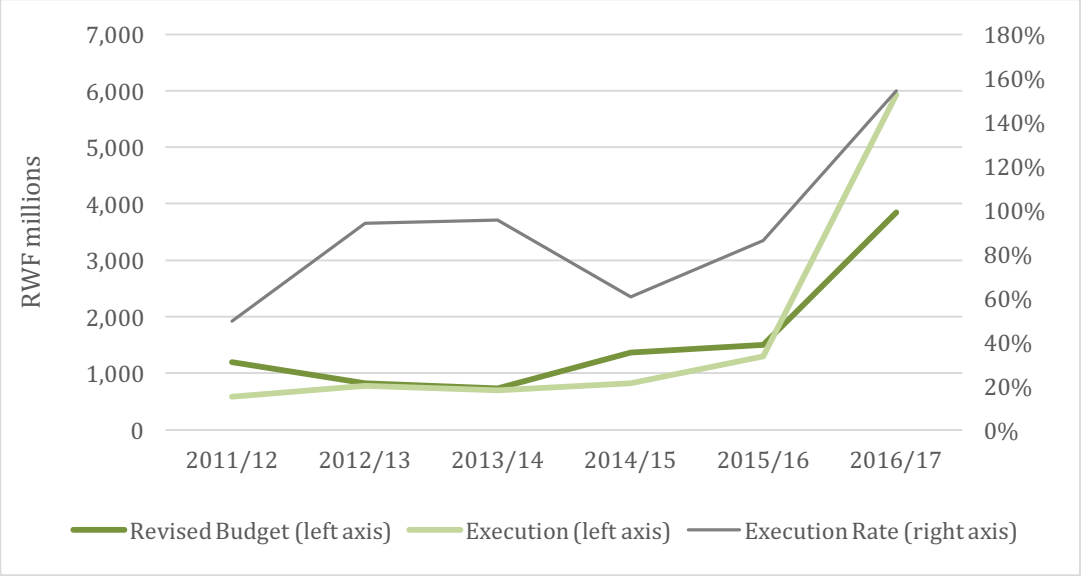
The above biodiversity spending assessment is based solely on budget allocations. Expenditures, although not publically available in the State Finance Laws, were provided alongside budget allocations by MINECOFIN. Caution must be taken in interpreting expenditure rates, however, as there is a high under-reporting of expenditures in MINECOFIN's financial management system (IFMIS), particularly for MINIRENA. Although a budgeted activity may reflect a '0' expenditure, this does not imply that the finances were not spent, rather that the expenditure was not uploaded into the IFMIS system. Development budgeted activities have a higher propensity to not reflect an expenditure alongside the budget Therefore, execution rates are estimated only at the budget agency level, and for recurrent expenditures only.

As shown in Figure 12, MINIRENA's execution rates have been quite variable, from a low of 49 percent in 2011/12, to a high of 154 percent in 2016/17[15]. Of particular note is the dramatic increase in agency budget allocations from 2015/16 to 2016/17, followed by a drastic overspending of budget. This can be largely accounted for by a near doubling of the agency budget allocation to carry out oil and gas exploration, budgeted initially for 2.5 billion RWF. By the end of the fiscal year, however, over 4.5 billion RWF had been committed to the project. Aside from this outlier, between 2012/13 and 2015/16, execution rates varied between 60 and 96

[15] Data supporting Figure 12 can be found in Table A.7

percent. Again, caution must be taken in interpreting these findings, as execution rates are based on incomplete data.

Figure 12 MINIRENA budget, execution, and execution rates, 2011/12 – 2016/17



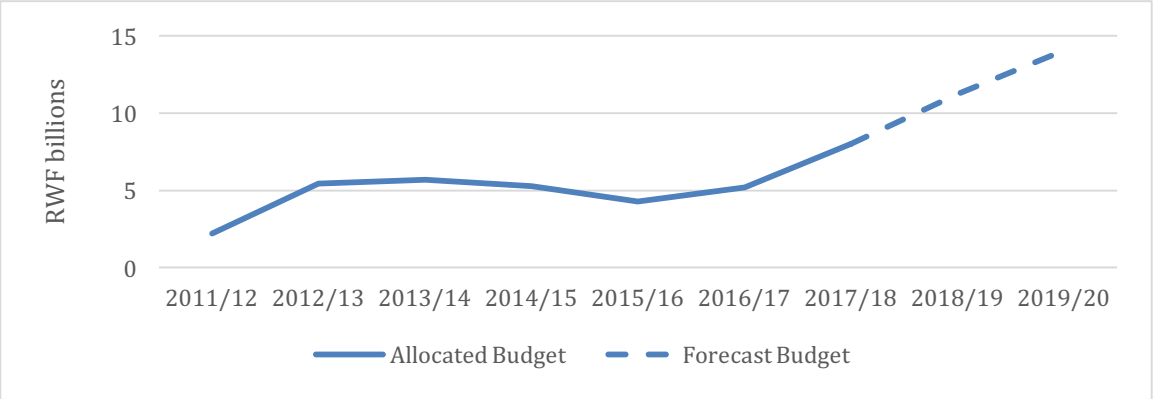
Note: 2011/12 expenditures were not provided by MINECOFIN. Therefore, expenditure rates were used from the Rwanda PEER, 2013. Budgets, executions, and execution rates are based on agency budget allocations only, and do not incorporate external grants and loans.

5.2 Rwanda Environmental Management Authority (REMA)

REMA's mission is *"to promote and ensure the protection of the environment and sustainable management of natural resources through decentralized structures of governance and seek national position to emerging global issues with a view of enhancing the well-being of the Rwandan people*." The figure below reflects the total budget allocated to the Rwanda Environment Management Authority (REMA), from 2011/12 through 2017/18 and the forecasted budget from 2018/19 to 2019/20 based on the projections in the 2017/18 budget. For past budget years, budgets are reflected as the revised budget allocations. Overall, REMA's budget has been increasing, with a slight dip from 2013/14 to 2015/16[16].

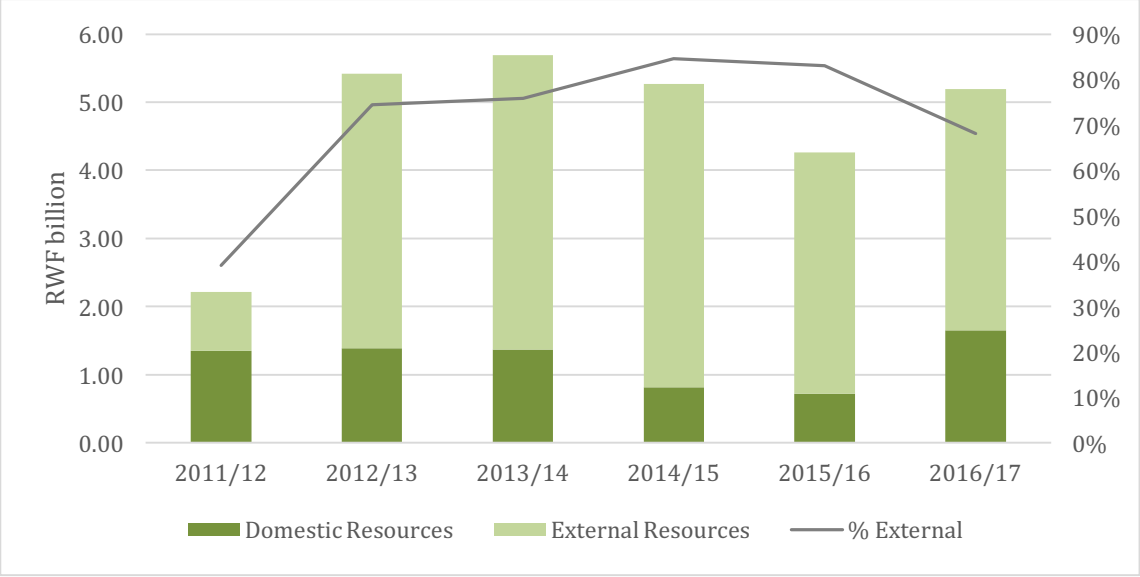
[16] Data supporting Figure 13 can be found in Table B.3

Figure 13 REMA Annual Allocated and Forecasted Budget, 2011/12 – 2019/20



The graph below reflects the budget according to recurrent and development expenditures[17]. As can be seen, there is a large spike in development expenditures from 2011/12 to 2012/13. In the 2011/12 fiscal year, development expenditures accounted for just under 40 percent of the total budget. The following year, however, the development budget increased nearly fourfold to 75 percent of the budget. The following years the development budget remained approximately 75-85 percent of the budget.

Figure 14 REMA Recurrent and Development Budgets, 2011/12 – 2016/17



To further understand the change in the development budget, it is important to look at budget allocations according to the various programs and sub-programs REMA manages. REMA operates under five key programmatic areas:

[17] Data supporting Figure 14 can be found in Table B.1

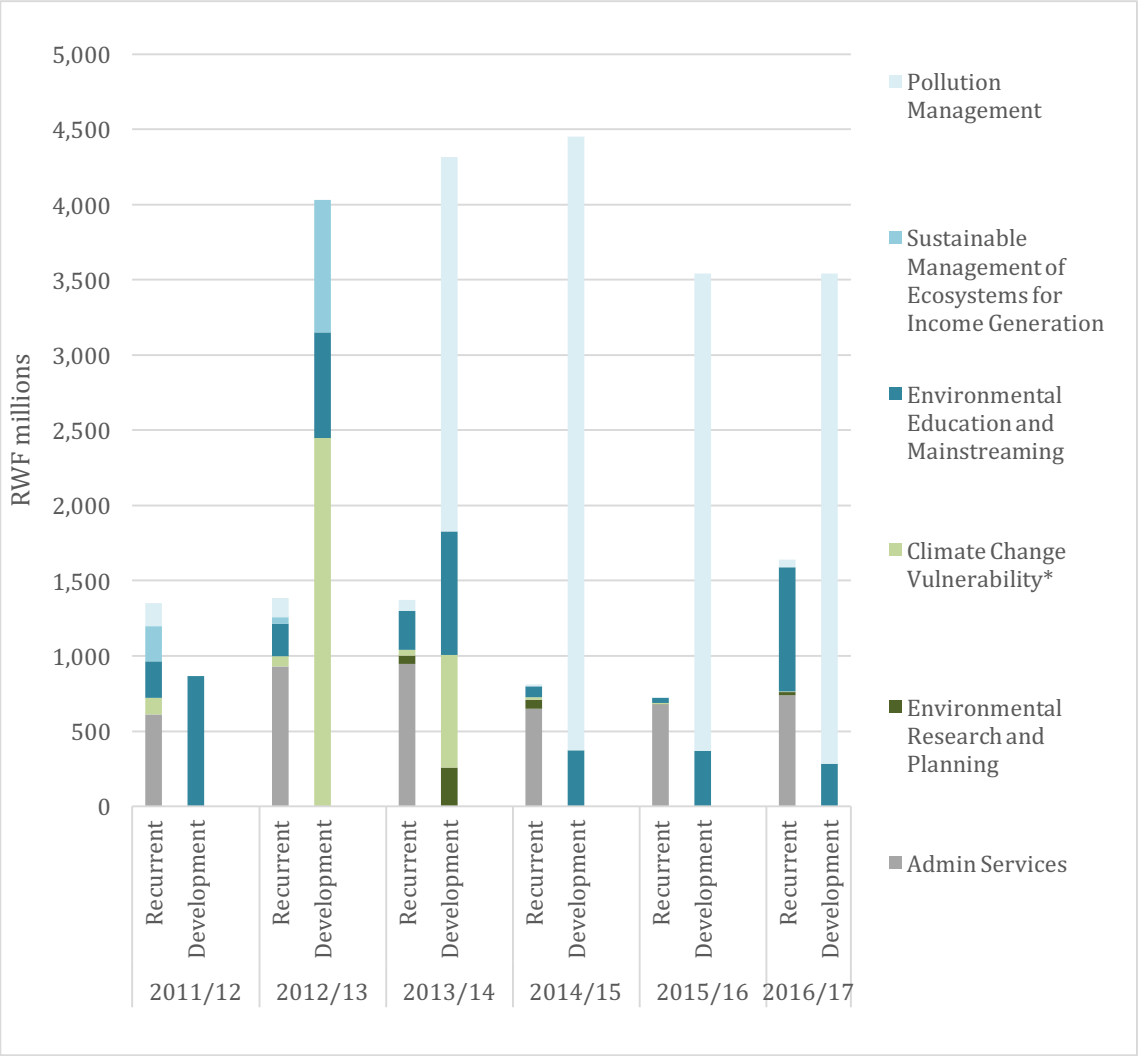
1) Environmental Research and Planning
2) Climate Change Vulnerability
3) Environmental Education and Mainstreaming
4) Sustainable Management of Ecosystems for Income Generation
5) Pollution Management.

Figure 14 below represents the recurrent and development budgets from 2010 through 2016 by program. All program activities in the recurrent budget are domestically-financed through agency budget allocations, whereas 100 percent of the development budget is externally financed through grants. REMA currently does not allocate any of its agency budget to development projects.

A few changes in the composition of the total budget allocation to REMA can be seen from Figure 15 below[18]. First, the climate change vulnerability program was greatly expanded in the 2012/13 development budget. This was largely due to three externally-financed projects that commenced during that time period. The first project, *'Supporting Integrated and Comprehensive Approach to Climate Change Adaptation in Africa – Building Comprehensive National Approach in Rwanda'*, was under the Africa Adaptation Programme (AAP) umbrella, a program launched to support African countries to develop their capacity to identify, design and implement adaptation and disaster risk reduction programs. The project was funded by the Government of Japan through UNDP to support the GoR, through REMA, to build the institutional, individual, and systematic capacity to address climate change risks and opportunities through a national adaptation approach. The second was a GEF-funded project, executed under the UNEP, entitled '*Reducing Vulnerability to Climate Change by Establishing Early Warning and Disaster Preparedness Systems and Support for Integrated Watershed Management in Flood Prone Areas'*. The project's objective was to reduce the vulnerability of the Gishwati ecosystems and its associated Nile-Congo crest watersheds, and the people that derive their livelihoods from it, due to increased floods and droughts as a result of climate change. The third is the ongoing *Lake Victoria Environmental Management Project,* a regional project funded by the GEF through the World Bank that commenced in the 2012/13 fiscal year. This five-year project aims to improve collaboration and environmental management of targeted pollution hotspots in the Lake Victoria Basin. Although this project initially fell under the climate change vulnerability program, in 2013/14 it was shifted to the pollution management program, hence the peak in pollution management budget in 2013/14.

[18] The data supporting Figure 15 can be found in Table B.2.

Figure 15 REMA budget by program, 2011/12 – 2016/17



The assessment of biodiversity attribution follows approach 1 in the methodology section. For recurrent programs, the list of budgeted activities under each program was assessed for biodiversity relevance, and then scored based on biodiversity relevance (as applied at the program level) based on the criteria in the below table.

Table 10 Methodology for biodiversity attribution in REMA budgets

Biodiversity Relevance	Criteria	Example	Attribution
Direct	Biodiversity conservation is the primary objective of the program or project	Establishing a new protected area, conserving an existing protected area	100 %
Indirect High	Biodiversity conservation is a significant objective	Restoring wetlands and watersheds	75 %
Indirect Medium	Biodiversity conservation is an important objective	Soil and water conservation, improved forest management	50 %
Indirect Low	Biodiversity conservation is a secondary/tertiary objective	Climate mitigation activities, pollution management activities	25 %
Support Services	n/a	Administration and Support Services	Based on calculations in Table 2

The recurrent programs are described below along with their biodiversity attribution.

Sustainable Management of Ecosystems for Income Generation: This program included the development of Lake Kivu island's conservation plan, a study on the restoration, recreational, and educational development plan of Nyandungu wetland, as well as rehabilitation of degraded ecosystems. This recurrent program is only reflected in the 2011/12 and 2012/13 budget, however, and no resource allocations are made to the recurrent budget after the 2012/13 fiscal year. These budgeted activities are assigned as 'directly' related to biodiversity and 100 percent of the budget allocation is attributed to biodiversity.

Environmental Education and Mainstreaming: This program includes, *inter alia,* activities to support the central and district governments in environmental and climate change planning processes, implement school greening activities, produce and disseminate education materials, train higher learning institutions and NGOs, and prepare and commemorate environmental events. This recurrent program is assigned as 'indirect medium' and 50 percent of the budget allocations are attributed to biodiversity.

Climate Change Vulnerability: This program includes, *inter alia*, the development of emission factors of GHG inventories, monitoring climate change impacts and updating climate change data, training on GHG mitigation and carbon trading projects, and monitoring the implementation of climate projects. This program is assigned as 'indirect low' and 25 percent of the budget allocations are attributed to biodiversity.

Pollution Management: This program includes monitoring and enforcement of environmental regulations, regulation of transport sector emissions, supporting the development of pollution control plans, and building the capacity on cleaner production and sustainable consumption. This program is assigned as 'indirect low' and 25 percent of the budget allocations are attributed to biodiversity.

Environmental Research and Planning: This program supports the production of the state of environment reports, status updates on ecosystems and species status, supporting and upgrading REMA's environmental information, and conducting assessments of invasive species status and generating national strategies. This program is assigned as indirect medium' and 50 percent of the budget allocations are attributed to biodiversity.

REMA's development budget accounts for over three-quarters of total annual budget allocations since 2011/12, and is almost entirely funded by external grants and loans. Budgeted activities under development projects are often times not detailed enough to assign biodiversity-relevance. Given the large budget allocations to project activities, a different approach was taken to more accurately estimate biodiversity expenditures. Rather than assigning biodiversity relevance based on the program the project falls under, project documents were reviewed in consultation with REMA project coordinators to assign a biodiversity relevance and attribution to each project. From 2011/12 through 2016/17, 15 projects were implemented by REMA and reflected in the national budgets. Each project's objectives, components, outputs and activities were reviewed to determine the significance of biodiversity objectives. Table 10 highlights these projects and their biodiversity-relevance assessment.

Table 11 REMA projects implemented between 2011/12 and 2016/17 fiscal years with biodiversity relevance

PROJECT TITLE	START - END DATES	Total Budget Allocation FY2011/12 to FY2016/17 (RWF millions)	BIODIVERSITY-RELEVANCE (Direct, Indirect High, Med, Low)	BIOFIN CATEGORY	PROJECT OBJECTIVE	SOURCE OF FUNDING
Climate Change Management						
Supporting Integrated and Comprehensive Approach to Climate Change Adaptation in Africa – Building Comprehensive National Approach in Rwanda (AAP)	2010-2013	1,272	Indirect Low	Biodiversity and Development Planning	Rwanda has the institutional, individual, and systematic capacity to address climate change risks and opportunities through a national approach to adaptation.	Government of Japan through UNDP
Reducing Vulnerability to Climate Change by Establishing Early Warning and Disaster Preparedness System and Support for Integrated Watershed Management in Flood-Prone Areas (LDCF)	2010-2014	731	Indirect Low	Restoration; Biodiversity knowledge and awareness	Reduce the vulnerability of the Gishwati ecosystems and its associated Nile-Congo Crest watersheds, and the people that derive their livelihoods from it, to increased floods and droughts due to climate change.	UNEP-UNDP (GEF)
Lake Victoria Environment and Natural Resource Management Project (LVEMP II) *This project falls under the Pollution Management program in later years)	2012-ongoing	8,072	Indirect Medium	Pollution Management; Sustainable Use	Address the social, economic, and environmental impacts of environmental degradation in the Lake Victoria basin, targeting all those who live in and depend on the natural resources of LVB (fishers, fish traders, farmers, and communities living in targeted degraded watersheds, among others)	World Bank (GEF)
Environment Mainstreaming						

PROJECT TITLE	START - END DATES	Total Budget Allocation FY2011/12 to FY2016/17 (RWF millions)	BIODIVERSITY-RELEVANCE (Direct, Indirect High, Med, Low)	BIOFIN CATEGORY	PROJECT OBJECTIVE	SOURCE OF FUNDING
The SIDA-Supported Natural Resources and Environment Programme (NREP)	2011-2016	1,299	Indirect Low	Biodiversity and Development Planning; Biodiversity Awareness and Knowledge	Strengthen capacity of MINIRENA and REMA to secure effective environmental pollution control for sustainable development, mainstreaming environment in different sectors, strategies, programmes, and policies, and to address climate change issues.	SIDA
Poverty and Environment Initiative (PEI)	2008-2018	2,117	Indirect Medium	Biodiversity and Development Planning	Enhance contribution of sound environmental management to poverty reduction, sustainable economic growth and achievement of the Millennium Development Goals.	UNDP-UNEP
Environmental Research and Planning						
National Biodiversity Strategies and Action Plans	2012-2014	97	Direct	Biodiversity and Development Planning	Enable Rwanda to revise and update its national biodiversity strategies and action plans (NBSAPS0 and to develop the Fifth National Report to the CBD.	UNEP (GEF)
National Biosafety Framework for Rwanda	2013-2017	160	Direct	Biosafety	Assist Rwanda in implementing its National Biosafety Framework and strengthen its institutions and human resources through capacity building.	UNEP (GEF)
Pollution Management						
Management and Disposal of PCBs in Rwanda	2012-2015	1,017	Indirect Low	Pollution Management; Green Economy	Reduce environmental and human health risks from PCB releases through the introduction of cost-effective environmentally sound management to PCB oils, equipment and wastes held by electrical utilities in the country.	UNEP

PROJECT TITLE	START - END DATES	Total Budget Allocation FY2011/12 to FY2016/17 (RWF millions)	BIODIVERSITY-RELEVANCE (Direct, Indirect High, Med, Low)	BIOFIN CATEGORY	PROJECT OBJECTIVE	SOURCE OF FUNDING
Ozone	2013-2015	120	Indirect Low	Pollution management; Green economy	Ensure that the consumption of ozone depleting substances in Rwanda is reduced especially those found in group 1 of the table below for they deplete the ozone layer most.	UNEP
Strengthening Institutional Capacity of the Ministry of Natural Resources in Rwanda	2014-ongoing	1,630	Indirect Low	Sustainable Use	**D**evelop the institutional capacity of MINIRENA to manage the ENR sector in an integrated manner at the national and local levels	UNDP
Supporting Ecosystem Rehabilitation for Pro Poor Green Growth Program (SERPG)	2014-ongoing	707	Indirect Medium	Restoration; Sustainable Use	Identify and rehabilitate fragile ecosystems through innovative approaches to restore and conserve fragile islands and wetland ecosystems, promote the sustainable management of natural resources and support the livelihood diversification to enhance incomes and reduce the number of people dependent on subsistence agriculture	UNDP
Landscape Approach to Forest Restoration and Conservation (LAFREC)	2015 - ongoing	1,949	Direct	PA and Other Conservation Measures	Demonstrate landscape management for enhanced environmental services and climate resilience in one priority landscape: the Gishwati-Mukura landscape.	World Bank (GEF)
Decentralization and Environment Management (DEMP)	2008-2013	1,296	Indirect High	Sustainable Use	Contribute to poverty reduction and economic development through sustainable use and management of natural resources districts through the proposed initiatives. Districts should have the capacity to plan, manage, and ultimately benefit from environmentally sound development activities.	UNDP

PROJECT TITLE	START - END DATES	Total Budget Allocation FY2011/12 to FY2016/17 (RWF millions)	BIODIVERSITY-RELEVANCE (Direct, Indirect High, Med, Low)	BIOFIN CATEGORY	PROJECT OBJECTIVE	SOURCE OF FUNDING
Protected Areas Biodiversity (PAB) Strengthening Biodiversity Conservation Capacity in the Forest Protected Area System of Rwanda	2007-2012	42	Direct	PA and Other Conservation Measures	Sustainable management of renewable natural resources, protects biodiversity while contributing to equitable economic and social development of all segments of society	UNDP (GEF)
National Environment and Youth Project (NYEP)	2009-2011	240	Indirect High	Restoration; Pollution Management; Biosafety	Protect the banks and catchment areas of Nyabarongo River System from land degradation and solid waste pollution while creating employment opportunities for youth in both rural and urban districts.	UNDP

REMA implemented a number of additional projects not reflected in their national budgets. Three projects funded by FONERWA are:

- Vulnerable ecosystem recovery program towards climate change, VERP
- Nyandungu Urban Wetland Eco-Tourism Park, NUWEP
- Rwanda Air Quality and Climate Change Monitoring Project

These projects are assessed under the MINIRENA budget, which includes financial costs of projects funded by FONERWA to avoid double counting.

Figure 16 below reflects the combined biodiversity-relevant budget allocations across recurrent programs and development projects[19]. Biodiversity-related activities have historically accounted for one-third to two-thirds of the total REMA budget allocations per year. An overall positive trend in biodiversity-related budgets is an encouraging sign that more resources are being allocated to biodiversity conservation and sustainable use over time, although a majority of this budget comes from development projects that are time-bound. Therefore, it is difficult to determine how biodiversity budgets will vary in the future.

Figure 16 REMA Total Annual Budget and Biodiversity Budget, 2011/12 – 2016/17

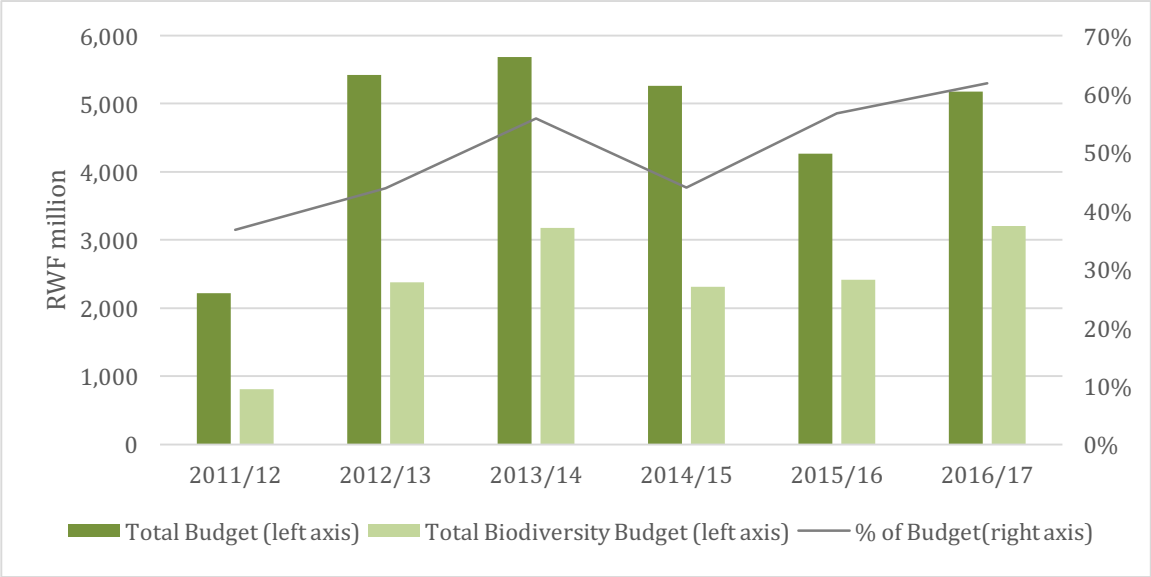
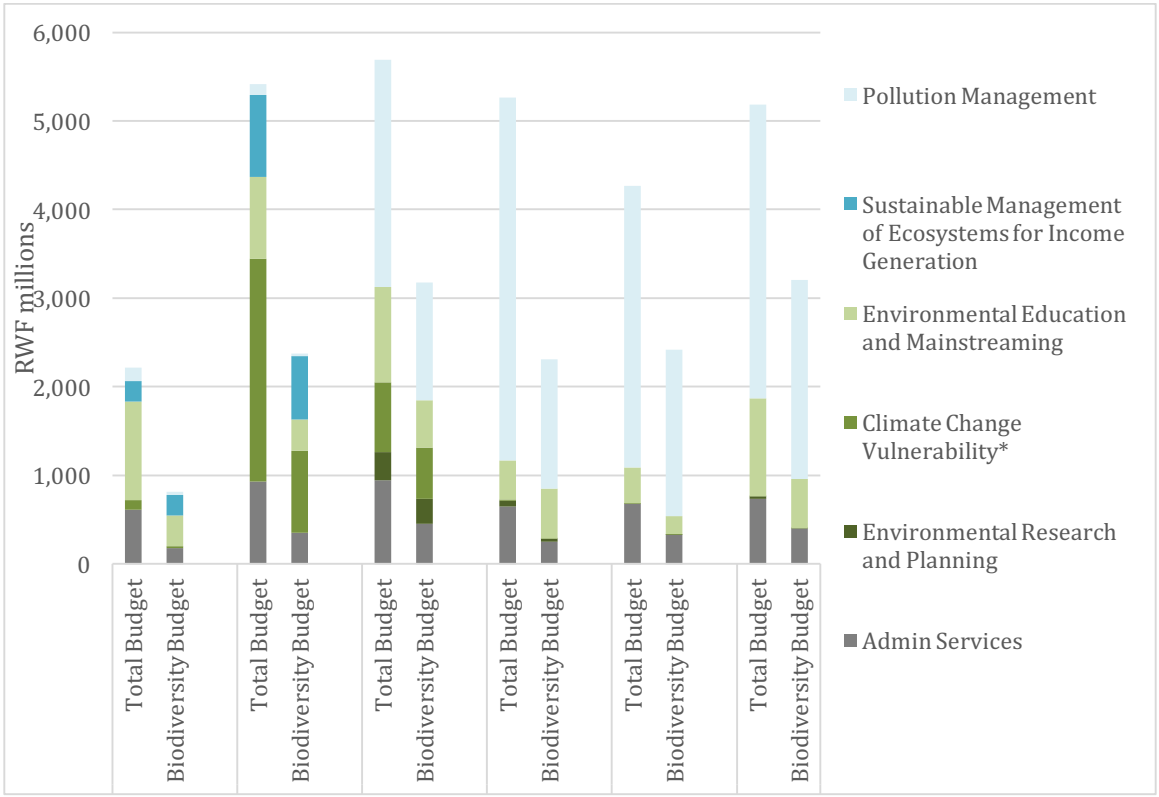


Figure 17 presents a comparison of the total REMA budget allocations by program alongside the proportion of budget relevant to biodiversity for each year, combining both recurrent and development budgets based on the assessment above[20]. As indicated, the proportion of the budget attributable to biodiversity has varied over time, accounting for approximately one-third to two-thirds of the total REMA budget by year.

[19] The data supporting Figure 16 can be found in Table B.5

[20] The data supporting Figure 17 can be found in Table B.9

Figure 17 REMA biodiversity budget by program, 2011/12 – 2016/17



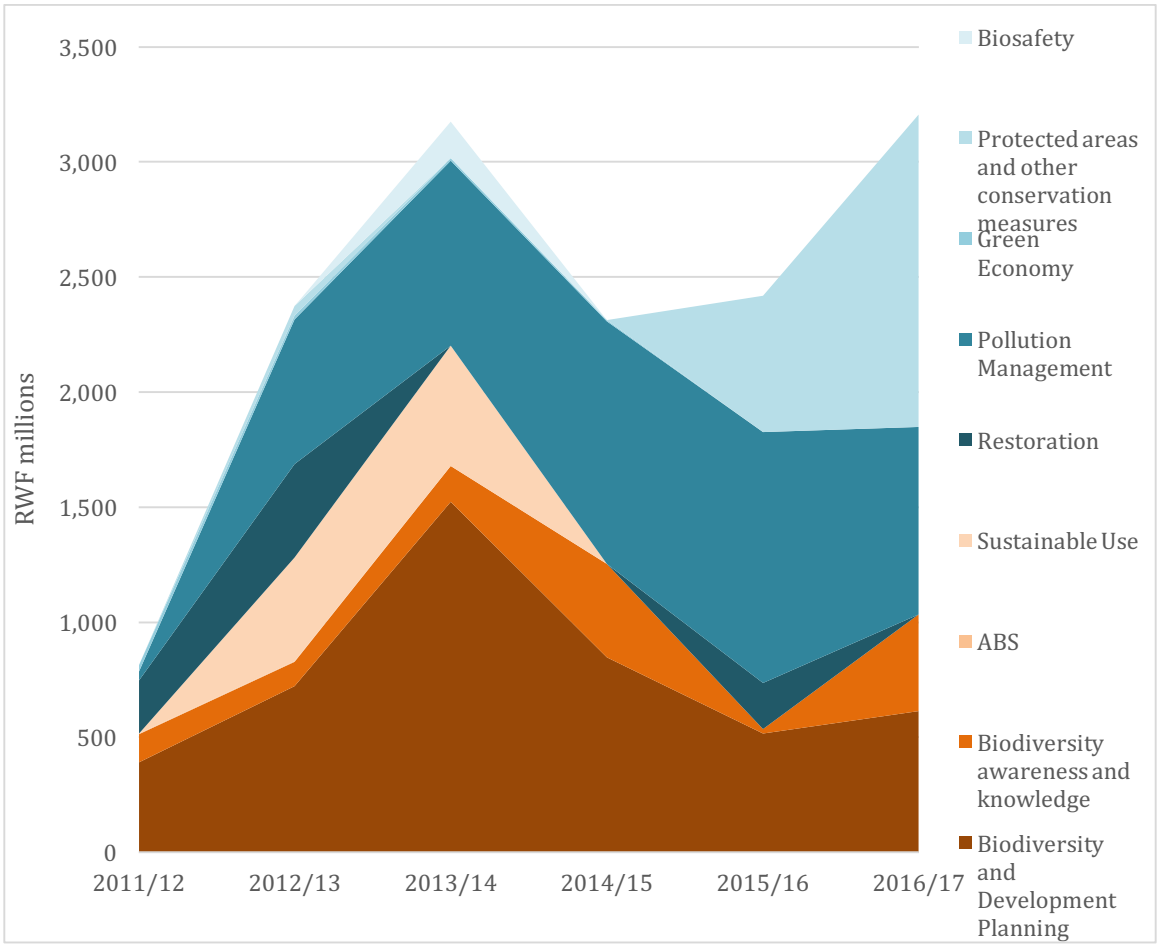
As can be seen, a majority of the biodiversity budget originates from the pollution management programme, as this is the largest program implemented under REMA in recent years. This program contains two large development projects, *the Lake Victoria Environmental Management Project* (LVEMP, Phase-II), and the *Landscape Approach to Forest Restoration and Conservation* (LAFREC), both ongoing GEF-funded projects. When reclassifying these programm and projects according to the BIOFIN methodology, LAFREC more closely aligns with *Protected Areas and other Conservation Measures*, as the objective of this project is to restore the landscape around and within the newly established Gishwati-Mukura National Park.

We can therefore look at how the REMA recurrent programs and development projects align with the BIOFIN categories to determine where resources are being directed, and where there may be gaps. Figure 18 compares biodiversity budgets according to BIOFIN category in 2011/12 to the categories in 2016/17[21]. As can be seen, there have been large changes in the composition of biodiversity budgets. In the 2011/12 fiscal year, nearly one-half of the REMA budget was allocated to Biodiversity and Development Planning. This is in part because administrative and management support activities are assigned to this category, which accounted for nearly one-third of the total

[21] The data supporting Figure 18 can be found in Table B.6.

budget. Restoration accounted for just over one-quarter of the budget, which included the development of a conservation plan for the islands within Lake Kivu as well as a study on the restoration and recreational developments of Nyandungu wetlands. In 2016/17, the composition of biodiversity budgets is quite different. Nearly one-half (42 percent) of the budget aligns with Protected Areas and Other Conservation Measures, attributed to the LAFREC project that began implementation the year prior. The Lake Victoria Environmental Management Project began in 2012/13 with a primary objective of improving the management of the transboundary natural resources of the Lake Victoria basin among other Partners States and to improve the management of targeted pollution hotspots for the benefit of surrounding communities. Although this project could also be classified as Sustainable Use, all programs and projects are classified according to their primary objectives, and is therefore included in the Pollution Management category below.

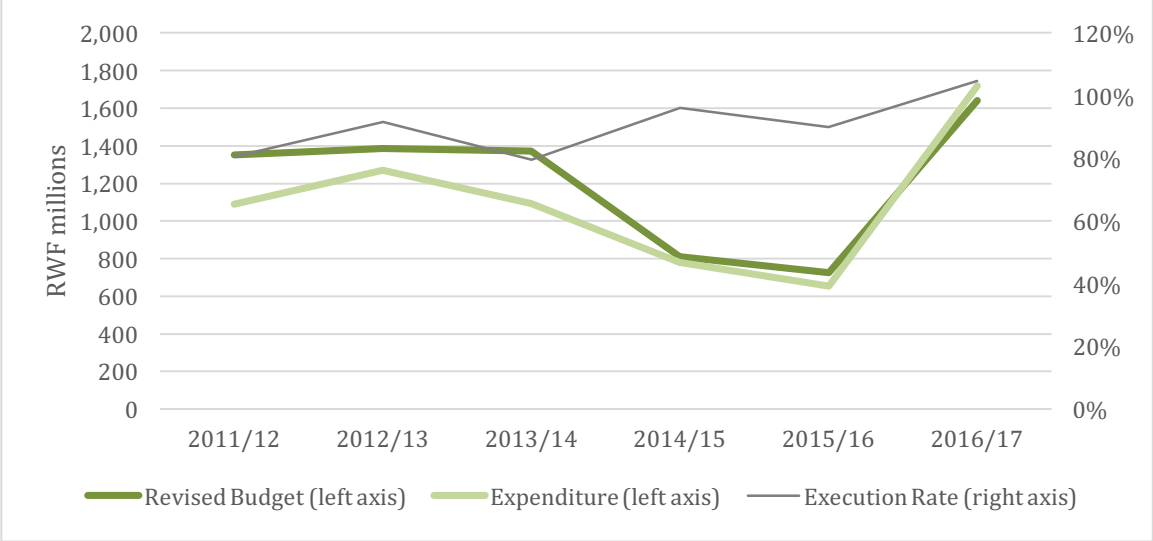
Figure 18 REMA Biodiversity Budgets according to BIOFIN Classification by fiscal year , 2011/12 – 2016/17



The above analysis provides historic spending in REMA based on budget allocations to both domestically-financed and externally-financed programs and projects. It is also possible to estimate expenditures on biodiversity-related activities and to calculate an execution rate to understand REMA's spending capacity. This form of assessment has been conducted in the past for REMA, which determined that the overall spending capacity of the institution was between 79 percent and 99 percent in the 2008-2012time period[22]. Although expenditures are not reported publicly alongside budgets in the State Finance Laws, MINECOFIN was able to provide data on expenditures with the Excel spreadsheets provided for this analysis. There is a very low reporting rate for development projects, with some missing data on execution within the recurrent budgets. Therefore, spending capacity was only assessed at the budget agency level, and for domestic expenditures only (e.g. no development projects are included). Therefore, caution must be taken when interpreting these results as it may be an underestimation of spending.

The graph below reflects the revised budget allocation alongside the expenditures for REMA's domestic resources from 2011/12 through 2016/17[23]. REMA's execution rate for recurrent program activities ranges from 81 percent in 2011/12 to 105 percent in 2016/17. Overall, spending capacity in REMA has been high and generally improving.

Figure 19 Revised Budgets, Expenditures, and Execution Rates for REMA's domestic resource allocations, 2011/12 – 2016/17



[22] Public Expenditure Review for Environment and Climate Change, Rwanda 2008-2012

[23] The data supporting Figure 15 can be found in Table B.11.

5.3 Rwanda Natural Resource Authority (RNRA)

RNRA's mission is to *"lead the management of promotion of natural resources which is composed of land, water, forests, mines, and geology. It shall be entrusted with supervision, monitoring and to ensure the implementation of issues related to the promotion and protection of natural resources in programs and activities of all national institutions*[24]*."*

Intended to streamline services, RNRA was formed in 2010 through the merger of the National Land Center, the National Forestry Authority, and the Rwanda Geology and Mines Authority. The institution has four departments:

- Forestry and Nature Conservation
- Lands and Mapping and the Office of the Registrar of Land Titles
- Integrated Water Resource Management
- Geology and Mining

In 2017, however, Parliament passed laws to split RNRA back into independent authorities, namely the Rwanda Water and Forestry Authority (RWFA), the Rwanda Land Management and Use Authority (RLMA), and the Rwanda Mines, Petroleum and Gas Board (RMPGB), with the rationale that financial and administrative autonomy would allow these institutions to better focus on their specific objectives.

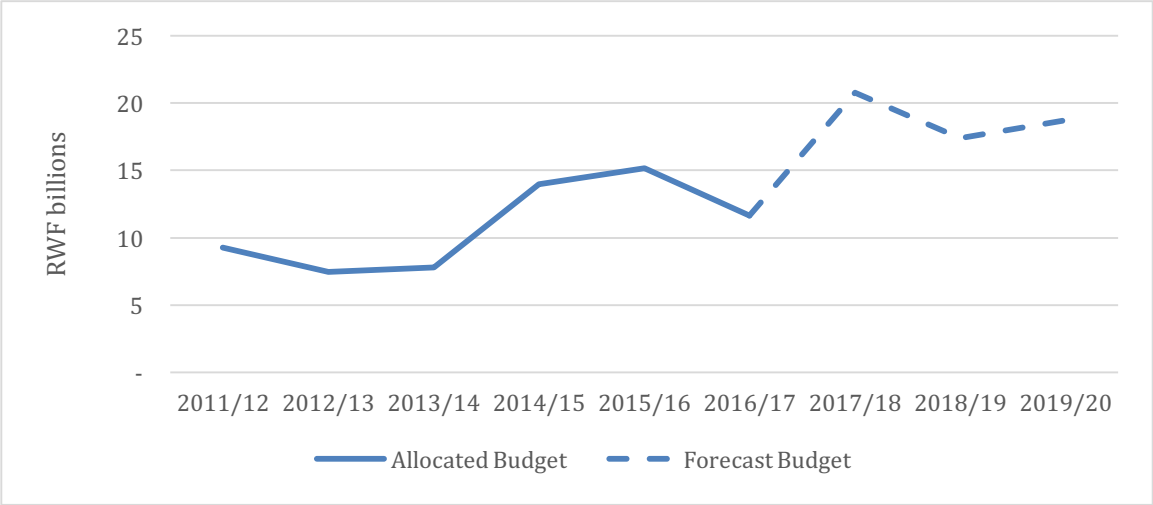
The biodiversity expenditure review timeframe of 2011-2017 means that for the final year of the analysis, FY 2016/17, the budget allocations are split among the former RNRA and the three new authorities. In order to maintain consistency of program and project budgets and expenditures, budget allocations and executions from RNRA and the three newly-formed institutions for the 2016/17 fiscal year are combined.

Figure 20 below reflects the trends in total budget allocations to RNRA, with forecasted budgets for the three new authorities for 2017/18 through 2019/20[25]. Overall, the budget has been steadily increasing from just under 10 billion RWF in 2011/12 to just over 20 billion RWF in 2017/18.

[24] Law No. 53/2010

[25] The data supporting Figure 20 can be found in Table C.1.4.

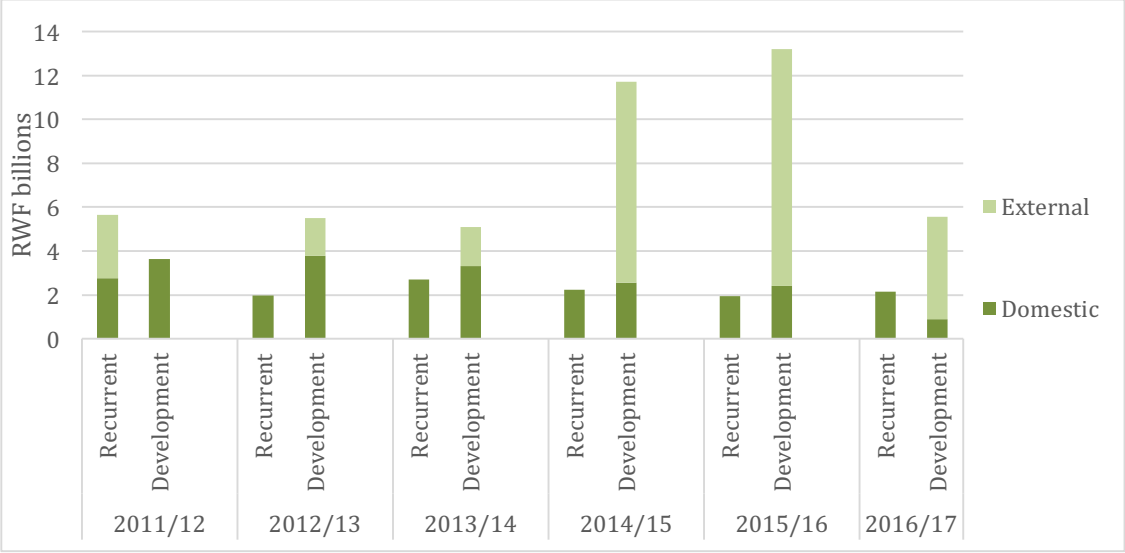
Figure 20 RNRA total budget allocations and forecasts, 2011/12 – 2019/20



Note: The 2016/17 fiscal year includes budget allocations to RNRA, RWFA, RLMA, and RMPGB. For the forecasted years of 2017/18 through 2019/20, the budget allocations include RWFA, RLMA, and RMPGB.

As can be seen from Figure 21 below, RNRA is heavily reliant on external resources to implement its development programs[26]. Prior to 2014/15, approximately one-third of RNRA's budget allocations came from external resources, but by 2015/16, external grants accounted for over 70 percent of the total budget allocations, whereas domestic expenditures have seen an overall decline from 2011/12 to 2016/17, both within recurrent budgets and development budgets.

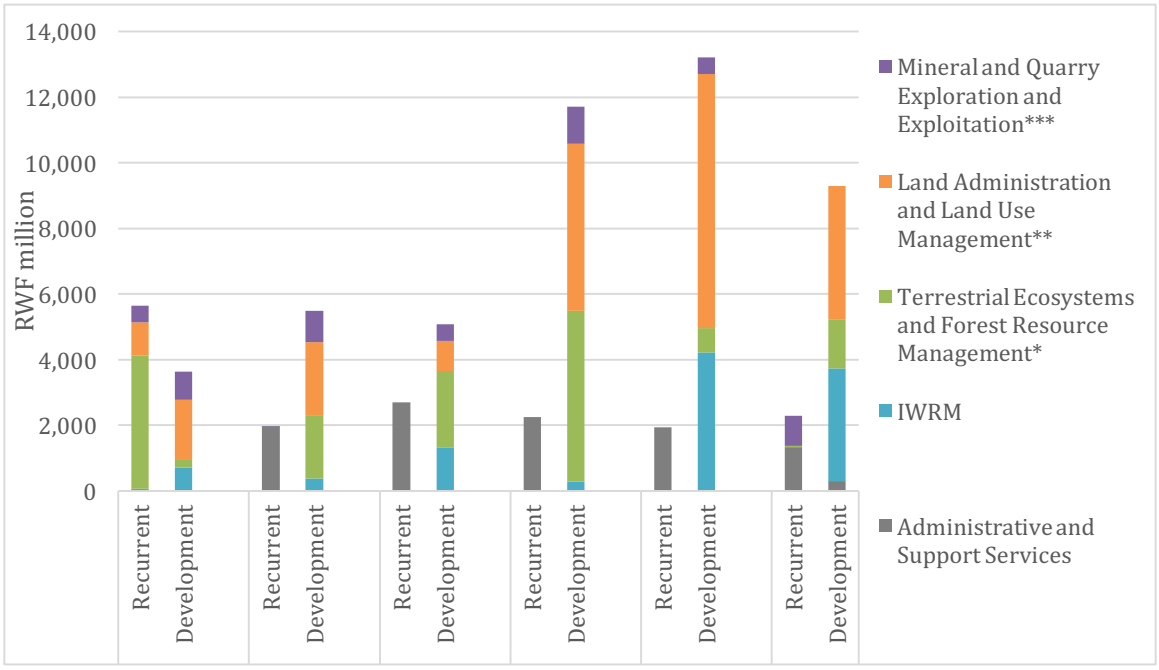
Figure 21 RNRA Recurrent and Development Budget Allocations by Source of Funding, 2011/12 – 2016/17



[26] The data supporting Figure 21 can be found in Table C.1.2

Looking at the budget allocation by program reveals that the increase in budget allocation is due in part to a substantial increase in the land administration and mapping department, growing in budget from just under 1 billion RWF in 2013/14 to over 5 billion RWF the following year. This increase was primarily due to the implementation of a large land tenure regularisation support project, with external support from DFID, Netherlands, Sweden, and the EU[27].

Figure 22 RNRA budget allocations by program, 2011/12 – 2016/17



Note: 2016/17 Development Budget includes RNRA, RWFA, RLMA, and RMPGB projects.
* Prior to 2013, the program was titled Sustainable Land Management
** Prior to 2013, the program was titled Forest Management and Afforestation
*** Prior to 2013, the program was titled Promotion and Value Addition to Mines and Quarries

These programs will be reviewed individually for each of the four departments previously headed under RNRA. These departments were housed under RNRA until 2017, when, as noted above, the agency was split by departmental function into three autonomous budget agencies: Rwanda Water and Forest Authority (RWFA), Rwanda Land Management and Use Authority (RLMA), Rwanda Mines, Petroleum and Gas Board (RMPGB). Therefore, the 2016/17 budget reflect both the budgets and expenditures for all four budget agencies according to programs.

Following the same methodology applied in the MINIRENA and REMA assessments, recurrent programs and development projects have been assigned a biodiversity

[27] The data supporting Figure 22 can be found in Table C.1.3.

relevance scoring along with an attribution coefficient to adjust the budget allocations and executions. For the 2016/17 fiscal year, budgets for the three newly formed natural resource agencies were not provided. Therefore, development project budgets for 2016/17 were sourced directly from the publically-available State Finance Laws.

5.3.1 Forest and Nature Conservation (RNRA, RWFA)

The Nature and Forest Conservation Department's objectives are to ensure the sustainable management of forestry and agroforestry resources, increase national forest coverage, and ensure the conservation of nature. This Department accounts for just over one-quarter of the budget allocations to RNRA (and the three split authorities in 2016/17). Two recurrent programs have operated under Rwanda's Nature and Forestry Department within the timeframe of this review, accounting for 4 billion RWF of the total 16.5 billion RWF allocated to the Forest and Nature Conservation Department under RNRA and subsequently RWFA.

Management of Forestry and Agroforestry. Activities under this recurrent program include the production of seedlings, creation of tree nurseries, training and support for the implementation of district forest management plans. These activities primarily focus on increasing the productive capacity of woodlots and tree plantations for energy use, and therefore in general, this program is considered to have an '*indirect low* 'relevance to biodiversity, and 25 percent of these recurrent budgeted activities are considered biodiversity-related, totalling 781 million RWF. Development projects that fall under this program will be reviewed in more detail to identify the project objectives, outputs, and intended results to assess biodiversity relevance.

Regulatory and Institutional Framework. Activities under this recurrent program include the promotion of forestry and agroforestry through legislation and policy, awareness raising and training. The same rationale applies here in that the promotion of forestry and agroforestry is not directly targeting biodiversity conservation objectives, rather the increased productive capacity of forests and farmland. Therefore, this program is assigned an '*indirect low'* biodiversity relevance, and 25 percent of the budgeted activities are considered biodiversity relevant, totalling 20 million RWF.

In addition to these recurrent activities, the Forest and Nature Conservation department has implemented nine development projects from the fiscal year 2011/12 through 2016/17. Each project was assessed for biodiversity relevance by reviewing project objectives, outcomes, outputs and results. Biodiversity relevance was determined by the number of defined conservation measures that were included in the project, such as soil and water conservation (e.g. terracing, agroforestry, riparian buffer zones), non-timber forest products (e.g. bee keeping), and the promotion of native or indigenous species. The more conservation measures that were included in the project design, the higher the biodiversity relevance. For some projects, it was difficult to obtain the level of detailed activities and budgets needed to make an accurate assessment, and therefore a conservative approach was used here.

Table 12 Projects implemented by RNRA's Forest and Nature Conservation Department between 2011/12 and 2016/17 with biodiversity relevance

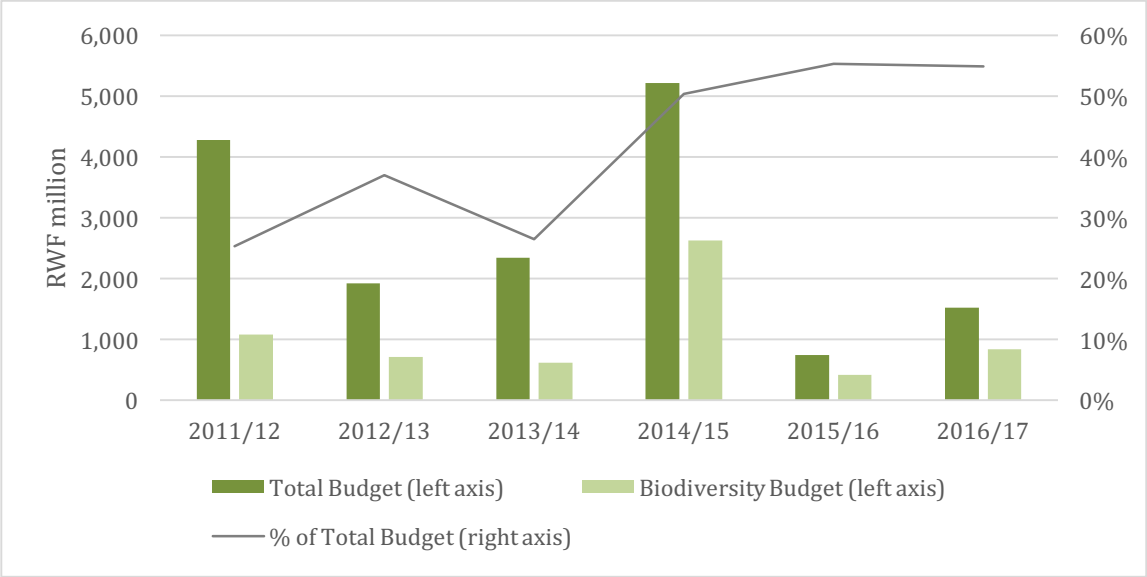
Project Title	Start and End Dates	Total Budget Allocation FY 2011/12 to 2016/17 (RWF million)	Biodiversity Relevance (Direct, Indirect, High, Med, Low, Very Low)	BIOFIN Category	Project Objective	Source of Funding
China Bamboo	2011-ongoing	515.93	Low	Sustainable use	The specific objectives of this policy are to increase bamboo resources, reduce soil erosion, siltation of rivers and water bodies, reverse deforestation and raise the percentage of permanent green cover towards the national goal of 30percent land cover, and increase economic opportunities of Rwandan population as well as diversifying forests products and promoting export.	GoR
Gishwati Afforestation	2011-onging	1,916.85	Direct	Restoration	To return back the original assemblage of species and forest structure to the site and to provide good livelihoods for the communities in the area by recovering ecosystem goods and services lost due to human disturbances of Gishwati Natural Forest.	GoR
PAREF I (Netherlands and Belgium)	2008-2012	1,578	Low	Sustainable Use	The quantitative and qualitative degradation of the forest resources is controlled and needs of the country for forest products are increasingly met. The implementation of the National Forest policy contributes to poverty alleviation, economic growth and environment protection.	Belgium, Netherlands, GoR

Project Title	Start and End Dates	Total Budget Allocation FY 2011/12 to 2016/17 (RWF million)	Biodiversity Relevance (Direct, Indirect, High, Med, Low, Very Low)	BIOFIN Category	Project Objective	Source of Funding
PAREF II (Netherlands and Belgium)	2013-2017	4,242	Low	Sustainable Use	The bases of a system of sustainable management of the forest resources of Rwanda are established and needs of the country for forest products are increasingly met.	Belgium, Netherlands, GoR
Rwanda Sustainable Woodland Management and Natural Forest Restoration (PGREF)	2011-2015	3,318	Medium	Sustainable Use	The overall objective of the Rwanda Sustainable Woodland Management and Natural Forest Restoration Project is to contribute to reducing deforestation and poverty in Rwanda through increasing forest cover and improving the living conditions of forest-area dwellers, and creating basic conditions that would win Rwanda eligibility for carbon market benefits and payment for ecosystem services.	African Development Bank
Support to National Forestry Research and Extension/Forest Coverage Increased	2014-15	240	Low	Biodiversity Awareness and Knowledge	Organize National Planting Week, support districts in producing seedlings and other planting materials for energy production, training	GoR

Project Title	Start and End Dates	Total Budget Allocation FY 2011/12 to 2016/17 (RWF million)	Biodiversity Relevance (Direct, Indirect, High, Med, Low, Very Low)	BIOFIN Category	Project Objective	Source of Funding
Sustainable Forestry, Agroforestry, and Biomass Energy Management For Climate Resilience in Gatsibo	2016-ongoing	132	Medium	Sustainable Use	The project has been developed to respond to the national strategic objectives for rural development and environmental conservation which include (i) increasing and diversifying national forest and agroforestry resources (Vision 2020 and forest policy); (ii) conserving and sustainably rehabilitating forest and agroforestry resources (EDPRS and forest policy); (iii) assessing the contribution of goods and services provided by the forestry sector to the national economy (forest policy); and (iv) developing an agriculture that seeks to preserve the environment and natural resources (National Agricultural Policy).	FONERWA
Border to border Landscape Restoration Project (IUCN)	2016-ongoing	530	Medium	Restoration	Initiate a learning network of forest landscape restoration model sites in the Congo Basin – with a particular emphasis on DRC, Rwanda and Cameroon – for demonstration, exchange of experience and dissemination of best practices, integrated within the International Model Forests Network and the GPFLR learning network for broad outreach and influence.	IUCN

The combined Forest and Nature Conservation Department budget and biodiversity budget is reflected in Figure 23 below, including all recurrent programs and development projects[28]. Overall, the proportion of the Forest and Nature Conservation budget with biodiversity objectives is increasing, from 25 percent in 2011/12 to over 50 percent by 2014/15, although budget allocations to the forestry sector have been variable over the years, ranging from just over 4 billion RWF in 2011/12 to a low of 751 million RWF in 2015/16. The large spike in budget allocations in the 2014/15 fiscal year is largely accounted for by the implementation of an African Development Bank-funded project, entitled *Rwanda Sustainable Woodland Management and Natural Forest Restoration Project to Increase Forest Cover in the Southern Province* (PGREF). This project scored an 'indirect medium' (50 percent) biodiversity relevance, higher than other reforestation projects such as PAREF, due primarily to its stated objectives of rehabilitating natural forests and the promotion of non-timber forest products such as honey and mushrooms.

Figure 23 FNC Total and Biodiversity Budgets, 2011/12 – 2016/17

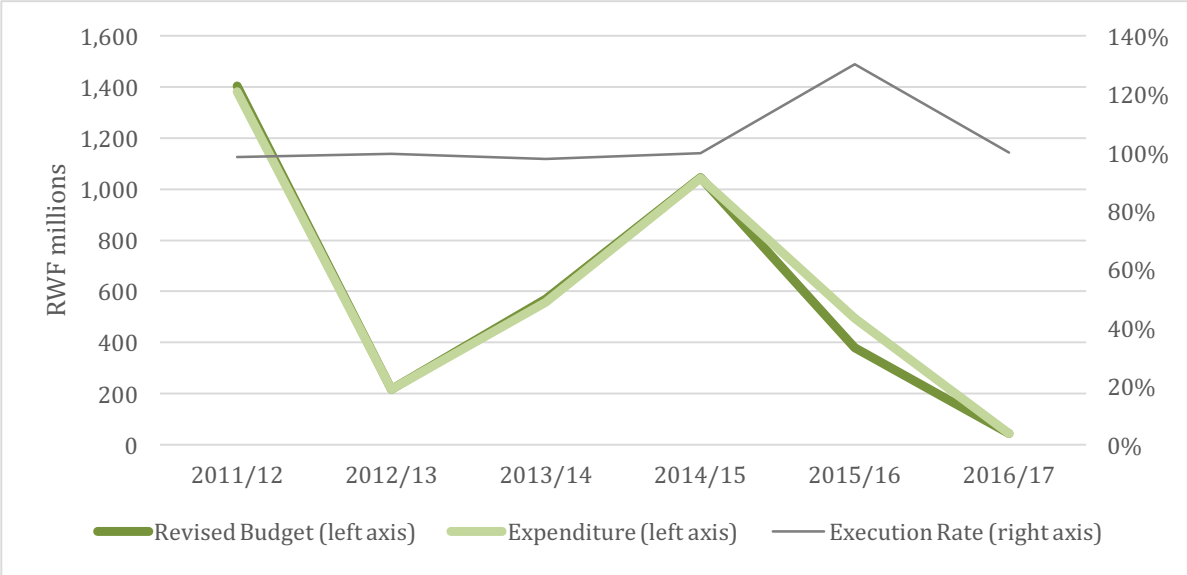


Similar to REMA, there are a number of omitted expenditure figures alongside budget allocations in the spreadsheets provided by MINECOFIN, particularly for externally financed projects. Accordingly, spending capacity was only assessed at the overall budget agency level and for domestic resource allocations only. As can be seen from Figure 24 below, the Forest and Nature Conservation Department has historically had very high expenditure rates, from 98-100 percent[29]. In 2015/16, there was an over-expenditure compared to the budgeted allocations, due to an increase from 110 million RWF allocated to the Gishwati afforestation projects, to 316 million RWF executed.

[28] The data supporting Figure 23 can be found in Table C.2.2

[29] The data supporting Figure 24 can be found in Table C.2.3.

Figure 24 FNC Revised budgets, expenditures and execution rates, 2011/12 – 2016/17



5.3.2 Integrated Water Resources Management (RNRA, RWFA)

Integrated water resources management (IWRM) is a water resource management approach that addresses the interdependence of different users of water resources. Rwanda's steep terrain, intense rainfall, and high population densities have put high pressures on Rwanda's soil and water resources. Crop intensification to meet food security and economic development goals is increasing the demand for water as irrigation schemes are introduced to increase crop production.

Managing water resources sustainably requires the coordination of the multiple sectors and communities reliant upon these resources and the information to monitor and assess water qualities and quantities over time. It also requires investing in the rehabilitation and sustainable management of critical watersheds. The IWRM Department within RNRA (now under RWFA) has carried out programs in water resources governance and monitoring, watershed rehabilitation and management, and water quality and quantity assessments

During the time-frame assessed, the IWRM Department had only one recurrent program on Water Resources Governance. This program supported the establishment, training, and support of catchment committees. This program's biodiversity-relevance is 'indirectly low', and therefore 25 percent of the 73 million RWF allocated to this program in 2011/12 and 2012/13 are considered biodiversity-related.

During the same time-frame, the IWRM Department implemented eleven development projects with blend of domestic and external resources. All projects under IWRM's development budget were assessed for biodiversity relevance, and assigned with a classification and attribution similar to other departments and budget agencies.

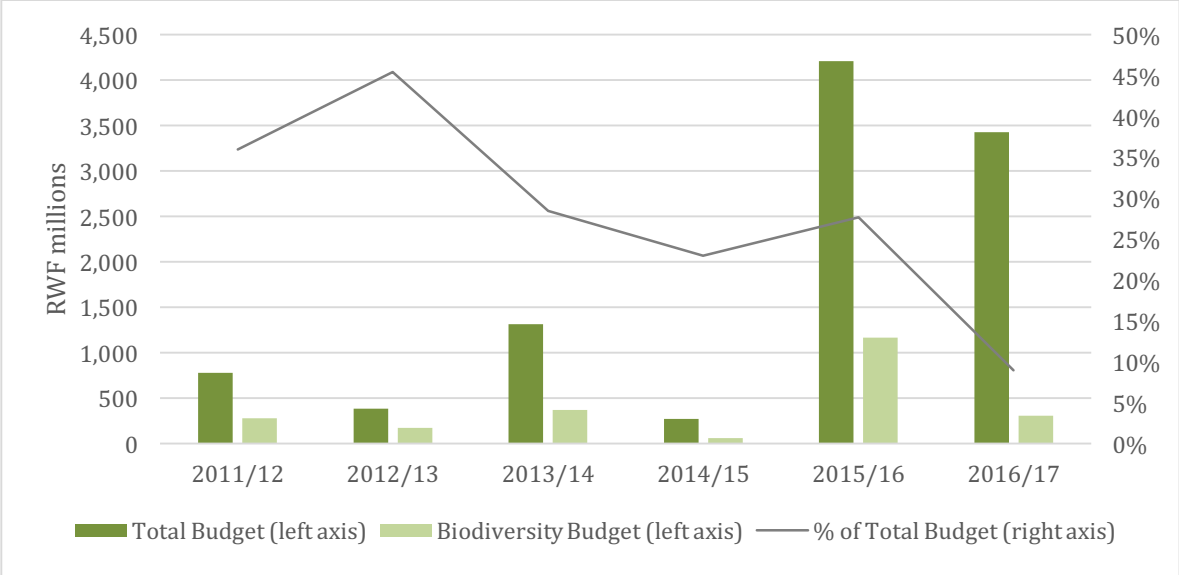
Table 13 List of projects implemented by IWRM department between 2011/12 and 2016/17 and biodiversity-relevance assessment

Project Title	Start End Dates	Total Budget Allocation FY 2011/12 to 2016/17 (RWF million)	Biodiversity Relevance (Direct, Indirect, High, Med, Low)	BIOFIN Category	Project Objective	Source of Funding
Information on water quality improved	2011-2013	572.79	Medium	Biodiversity awareness and knowledge	1. Prepare position papers and policy briefs on Rwanda's position on shared water 2. Develop a national water cooperation framework 3. Develop surface water quality guidelines 4. Field sampling and water analysis 5. Produce water quality status report	GoR
Degraded watersheds rehabilitated	2011-2016	1,055.94	Medium	Restoration	1. Mapping of all critical watersheds and establish their ecological and economic functions 2. Construction of 1000m3 of Gabions"	GoR
Water Hyacinth Controlled	2011-2012	82.00	Direct	Biosafety	1. To carry out a study on water hyacinth 2. Control of water hyacinth in Mukungwa and Nyabarongo rivers and in 4 Eastern Lakes 3. Sensitize the community on the water hyacinth control and use for income generation	GoR
Rainwater harvesting promoted	2011-2013	299.10	No	N/A	1. Construct rainwater collection systems in 10 public schools 2. Develop National Strategy of rain water harvesting 3. Rehabilitate and maintain rainwater collection systems constructed by CUEP project	GoR
Support to Lake Kivu Basin and River Rusizi Authority - ABAKIR	2013-ongoing	634.26	Extremely Low	Biodiversity and Development Planning	Support Lake Kivu and Rusizi River Authority (ABAKIR)	GoR

Project Title	Start End Dates	Total Budget Allocation FY 2011/12 to 2016/17 (RWF million)	Biodiversity Relevance (Direct, Indirect, High, Med, Low)	BIOFIN Category	Project Objective	Source of Funding
Water Resources Management Master Plan	2013-2014	736.68	Low	Biodiversity and development planning	1. Develop and implement a Water Resources Development and Management Master Plan 2. Follow-up on the establishment of sectoral plans for water demand and utilisation 3. Develop and implement Catchment-based Water Allocation Master plan reflecting rights and obligations of water users 4. Set up an inclusive and effective WRM sub-sector coordination and monitoring mechanism 5. Contribute to the establishment of a Trans-boundary Water Cooperation framework 6. Establish a framework for continuous capacity building in WRM	GoR
Reducing Vulnerability to Climate Change in North West Rwanda Through Community Based Adaptation	2014-ongoing	4,952.45	Low	Sustainable Use	To increase the adaptive capacity of natural systems and rural communities living in exposed areas of North Western Rwanda to climate change impacts.	Adaptation Fund
Rainwater Harvesting Project (FONERWA)	2015-ongoing	1,930.73	No		The project overall objective (expected impact) is “Renewable energy and other environmentally sustainable, low-carbon and climate resilient technologies adopted, developed, and/or improved for use in Rwanda."	FONERWA
Living Water International Project	2016-ongoing	52.00	No		Well construction in Ruhango, Nyanza, and Huye.	Living Water International

The combined recurrent and development budgets for IWRM programs and projects, along with the biodiversity-related budgets, are reflected in Figure 25 below[30]. As can be seen the budget allocated to the IWRM Department grew substantially from the 2014/15 fiscal year to the 2015/16 fiscal year. This growth is largely explained by the project, *Reducing Vulnerability to Climate Change in North West Rwanda Through Community Based Adaptation*, an Adaptation Fund financed project with the objective to increase the adaptive capacity of natural systems and rural communities living in exposed areas of North Western Rwanda to climate change impacts. The project commenced in 2014, but obtained substantial funding in the following year. Project components include integrated land and water management, diversification of livelihoods, and institutional capacity building to adapt to climate changes. As this project is primarily targeting soil and water conservation measures for improved livelihood impacts, it scores a low biodiversity relevance (25 percent).

Figure 25 IWRM Department total and biodiversity budget, 2011/12 – 2016/17



5.3.3 Land Administration and Land Use Management (RNRA, RLMA)

The Land Administration and Land Use Management Department (now the Rwanda Land Management and Use Authority) is in charge of implementing Rwanda's National Land Policy, which sets out the vision and direction for land tenure, land use and land administration, with an overall objective of establishing a land tenure system that guarantees security to the entire population with respect to

- Putting in place mechanisms that guarantee land tenure security to land users without discrimination
- Promoting rational use of land in Rwanda

[30] The data supporting Figure 25 can be found in Table C.2.5.

- Establishing a legal and institutional framework
- Building institutional capacity.

In 2005, Rwanda initiated the National Land Tenure Reform (LTR) Program, which manages the process of land tenure reform from design, phasing, implementation, monitoring and evaluation. The LTR Program received technical and financial assistance from the UK Department for International Development (DFID) and other development partners (Netherlands, Sweden, and the EU). The objectives of the LTR Program were to register title to all parcels of land in Rwanda, issue titles to land owners, and build the capacity of land institutions in Rwanda to set up a sustainable Land Administration System. The expected impacts of the program are poverty reduction, increased productive land-based investments, optimization of land use, gender equality and social harmony in Rwanda.

In addition, the GoR has initiated land use planning procedures that resulted in the preparation and adoption of the National Land Use Development Master Plan, completed and approved by the Cabinet in 2011. This master plan provides national guidelines for the better use and management of land in Rwanda and outlines guidelines for the development of detailed District Land Use Plans.

Although land use planning and land tenure reform may lead to improved biodiversity outcomes, neither of these initiatives has explicit biodiversity objectives in budgeted activities, and therefore these expenditures are not considered biodiversity-relevant. In the 2014/15 fiscal year, the RNRA Land Department received a budget allocation of 757.7 million RWF to implement the *Landscape Approach to Forest Restoration and Conservation Project* (LAFREC), a GEF-LDCF funded project implemented by REMA. As this project was identified to be directly targeting biodiversity conservation objectives, 100 percent of this budget is considered as biodiversity-spending. In the national budgets, however, the execution amount equates to zero, so either this activity a) wasn't implemented by the Land Department or b) it was never input into the financial management system. Here, however, this expenditure is included in the biodiversity estimates.

5.3.4 Mines, Petroleum, and Gas (RNRA, RMPGB)

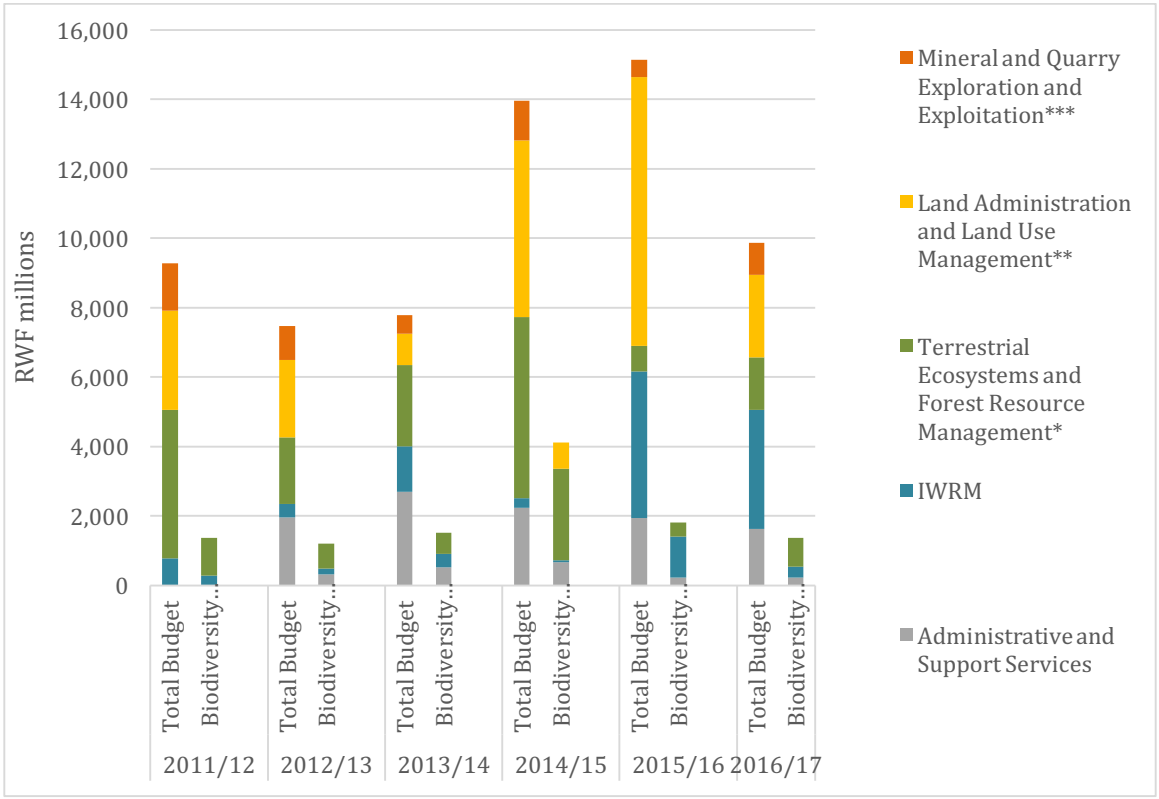
MINIRENA is responsible for designing the mining sector's legal framework as well as granting prospecting, exploration and mining licences. Mining is the second largest export in the Rwandan economy, generating over USD 200 million in foreign exchange in 2014. Mineral exports from Rwanda are all traceable through a tagging system. The geology and mining department of RNRA (now the Rwanda Mines Petroleum, and Gas Board) received budget allocations under three broad programs: geological and mining capacity development, geological and mining investments enabling environment, and mineral and quarry resources value addition. Activities carried out include the promotion of small-scale mining, training, exploration and acquisition of seismological station equipment, surveying of key minerals, mine site inspections and monitoring, and enforcement of national and regional standards.

Although Rwanda's Mining Policy sets out standards to ensure mining activities reduce their harmful impact on the environment, and, where feasible, rehabilitate mines and quarries, no activities in the budget could be identified as biodiversity-relevant.

5.3.5 Combined RNRA Department Budgets

The combined budget allocations by program, along with the biodiversity-relevant budget, across these four departments (now divided into independent authorities) is reflected in Figure 26[31] below. Administrative and Support Services were allocated a biodiversity-budget based on the approach in Table 2.

Figure 26 Biodiversity Budget by RNRA Department, 2011/12 - 2016/17



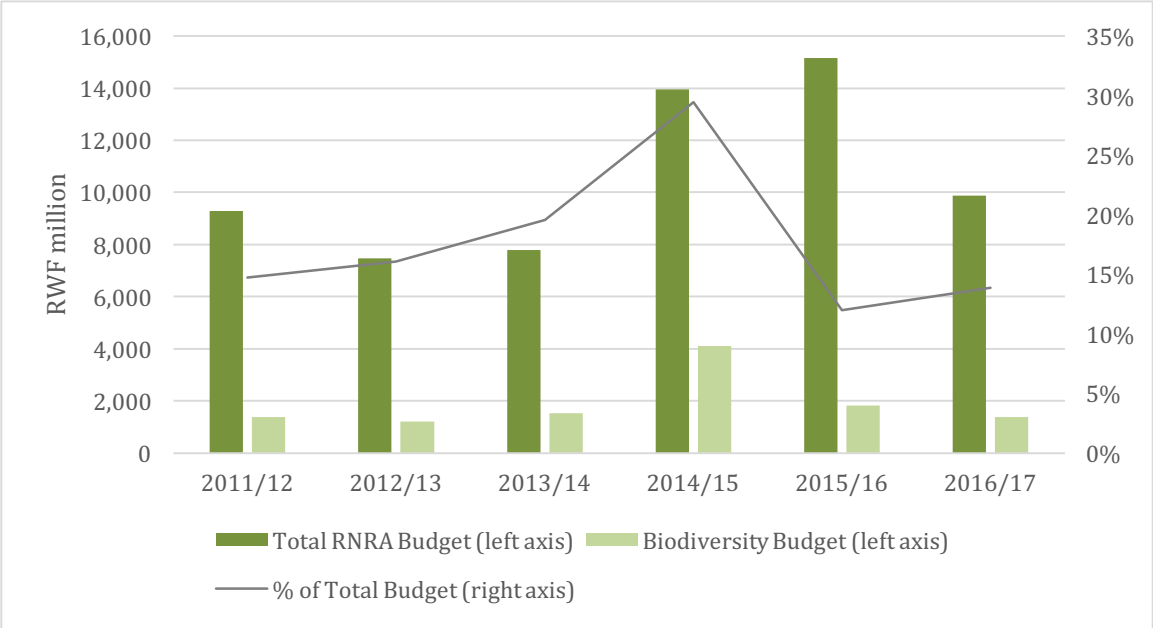
* Prior to 2013, Sustainable Land Management
** Prior to 2013, Forest Plantation Management and Afforestation
*** Prior to 2013, Promotion and Value Addition to Mines and Quarries
**** 2016/17 budgets include RNRA plus development budgets for RWFA, RLMA, and RLPGB

The total biodiversity budget for RNRA has been variable over the time period assessed here, reaching a high in 2014/15 with 4.11 billion RWF allocated to biodiversity-related activities, accounted for primarily by the substantial budget increase for the PGREF project in that year, with a medium (50 percent) biodiversity relevance. However, the biodiversity budget has been decreasing since 2014/15 to only 1.37 billion allocated to

[31] The data supporting Figure 26 can be found in Table C.1.5

biodiversity-related activities in 2016/17. Relative to the total RNRA budget, biodiversity has historically accounted for between 12 and 29 percent of activities, with no clear trend over time[32].

Figure 27 RNRA biodiversity expenditures as a proportion of RNRA budget, 2011/12 – 2016/17



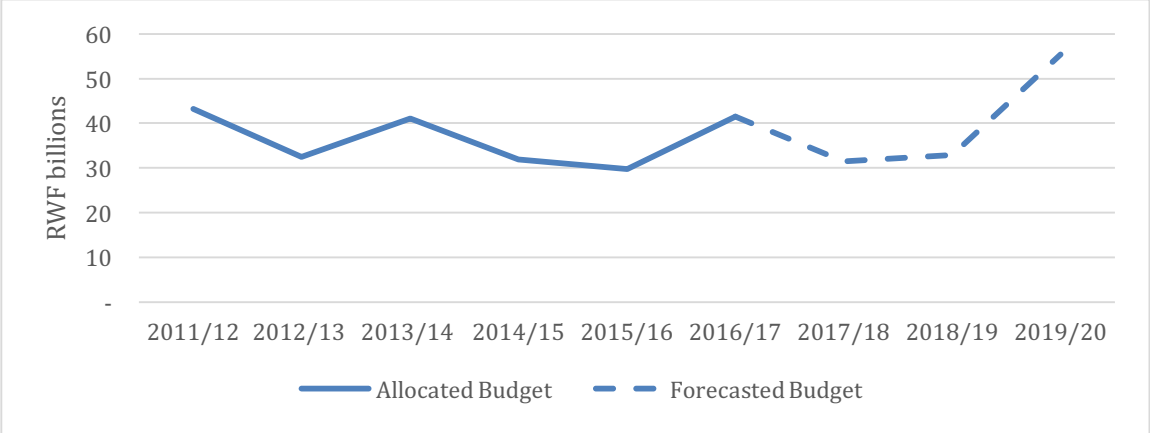
5.4 Rwanda Development Board (RDB)

The Rwandan Development Board is mandated to both promote investment in Rwanda, conserve and manage its protected areas, and to develop sustainable tourism with the objective of the country becoming a premier eco-tourism destination. Figure 28 below reflects RDB's total annual budget allocations, fluctuating between a high of 43 billion RWF in the 2011/12 fiscal year, to 29 billion RWF in 2015/16[33]. The medium-term expenditure framework in the 2017/18 original finance law reflects the total RDB budget to increase to 55 billion RWF by 2019/20.

[32] The data supporting Figure 27 can be found in Table C.1.6.

[33] The data supporting Figure 28 can be found in Table D.1.

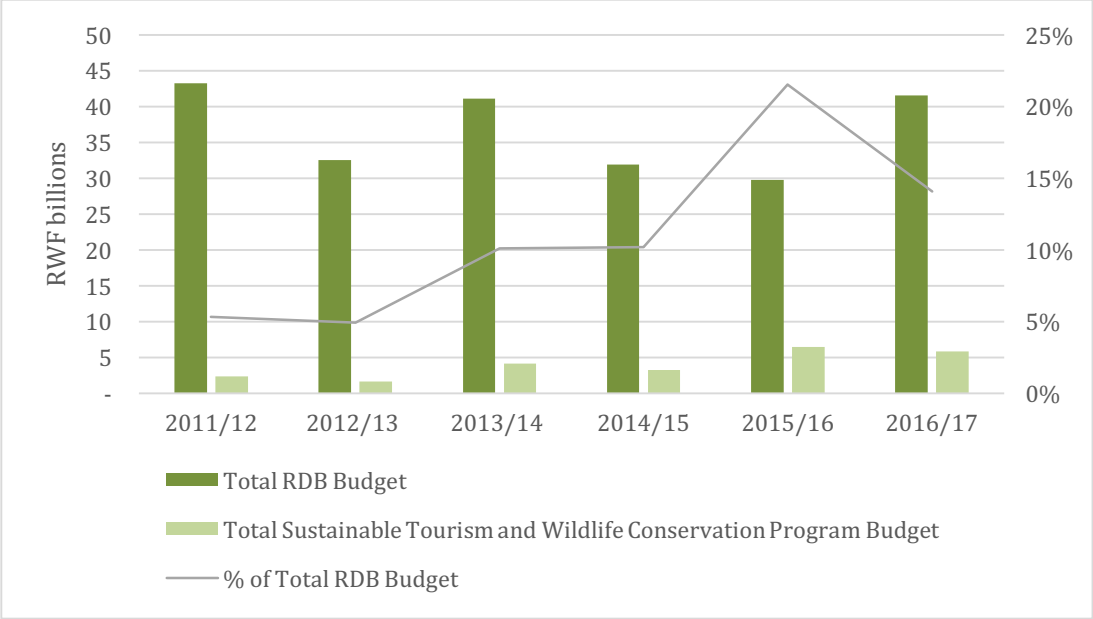
Figure 28 RDB total annual budget and forecasted budget, 2011/12 – 2019/20



A thorough review of all of RDB's activities was not conducted here, as a majority of these budgeted activities are to promote private investment in Rwanda. Rather, only activities under the Sustainable Tourism and Wildlife Conservation Program budget were assessed here, which, as can be seen below, account for 5-20 percent of the total RDB budget. RDB's Department of Tourism and Conservation is mandated to protect Rwanda's national parks through research, innovations, and sound management, and is the department in RDB in charge of biodiversity protection within its protected areas. Although the total annual RDB budget has not shown a steady increase, the proportion of budget allocations to the Tourism and Wildlife Conservation Program has steadily increased, from 5 percent in 2011/12 to 14 percent in 2016/17 as reflected in Figure 29 below[34].

[34] The data supporting Figure 29 can be found in in Table D.6.

Figure 29 RDB total budget and Sustainable Tourism and Wildlife Conservation Program Budget, 2011/12 – 2016/17



The assessment of RDB's budgets followed the second approach as outlined in the methodology section (e.g. biodiversity-relevant activities were identified within programs and projects). From 2011/12 through 2016/17, there were six projects implemented under the Sustainable Tourism and Wildlife Conservation Program. Each project was assessed for biodiversity relevance.

1. **Wildlife Protection and Conservation of National Parks**

All activities under this project are considered direct biodiversity expenditures. Activities included in this project include:

- Nyungwe and Volcanos National Parks management
- Wildlife research and monitoring
- Law enforcement and parks security
- Tourism revenue sharing with neighbouring communities
- Transboundary collaboration for biodiversity conservation
- Veterinary services
- Biological Resource Center
- Compensation of damages caused by wildlife
- Gishwati and Mukura conservation program and physical demarcation into new National Park
- Strengthening wildlife health program in parks
- Kitabi College of Conservation and Environmental Management

2. Diversification of Tourism Projects and Product Development

A select group of activities are considered biodiversity-relevant under this project, including (i) avitourism and hiking development, (ii) reinforcing tourism and conservation planning, (iii) the Rwanda Natural Resource Conservation and Historic Preservation project, and (iv) developing Gishwati as a new tourism product. The justification behind the last is that the Gishwati-Mukura forest is a newly established national park and developing tourism products will ensure its continued protection and the development of management plans. No tourism infrastructure or promotion expenditures were included.

3. Tourism Research, Statistics and Marketing Project

Costs for monitoring equipment as well as survey and research costs to assess the current threats to biodiversity are included as direct expenditures. All other budgeted activities, such as branding and event promotion were excluded.

4. Tourism Quality Management and Standardisation of New Accommodation Establishment

No activities under this project are considered biodiversity-relevant, as the focus of this project was on grading and classifying new tourism accommodation establishments and monitoring and evaluating tourism facilities and services.

5. Rwanda tourism visibility and presence

This project was only budgeted for under the 2011/12 fiscal year, and most activities under this project are not considered biodiversity-relevant, as these include the organizing and promotion of cultural tourism events such as dancing and sporting. The expenditures allocated to organizing Kwita Izina, the annual gorilla-naming ceremony, are considered biodiversity relevant and included in this review.

6. Development of MICE Tourism project[35]

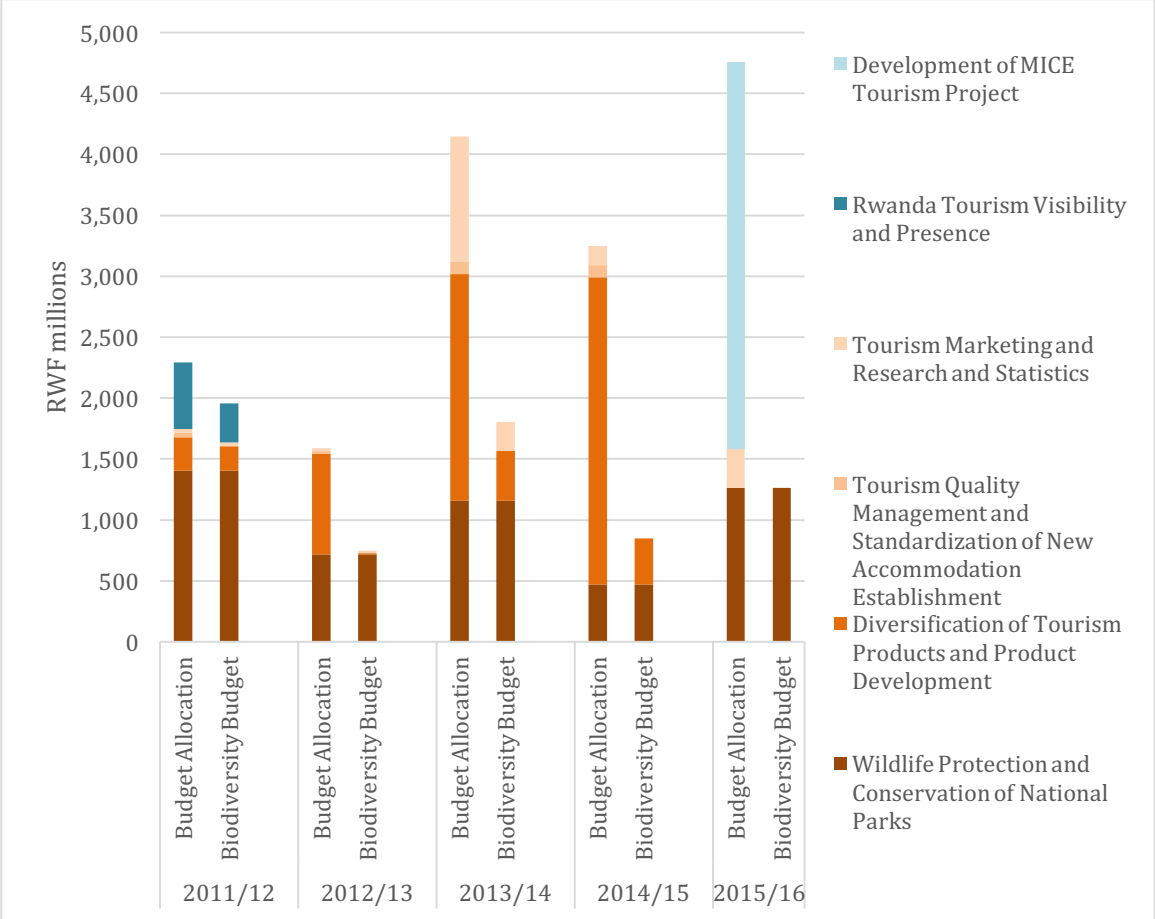
No activities under this project are considered biodiversity-relevant, as the focus is on the development of tourism infrastructure facilities and tourism sector operations.

The annual biodiversity-related budgets by project and year for 2011/12 to 2015/16 are presented in Figure 30 below, alongside the total annual budget for the

[35] MICE (meetings, incentives, conferences, and exhibitions) is a form of tourism resulting from hosting large business-oriented events. RDB began implementing a National MICE tourism strategy in 2014 to attract the international meetings, conference and events industry.

Sustainable Tourism and Wildlife Conservation Program[36]. In the 2011/12 fiscal year, the biodiversity budget amounted to 1,700 million RWF, accounting for 71 percent of the total Sustainable Tourism and Wildlife Conservation Program budget (3.8 percent of the total RDB budget). By 2015/16, the total program budget increased from 2,291 million RWF to 4,757 million RWF, whereas the biodiversity-related component dropped to 27 percent of this total (4.3 percent of the total RDB budget), amounting to 1,265 million RWF.

Figure 30 RDB total and biodiversity budget by projects within Sustainable Tourism and Wildlife Conservation Program, 2011-12 – 2015/16



Note: The Budget allocation and biodiversity budget by project is not reflected for the 2016/17 fiscal year because the reports provided by MINECOFIN did not reflect budget allocations by project. Rather, the individual biodiversity-related activities were summed to calculate the total biodiversity budget for 2016/17.

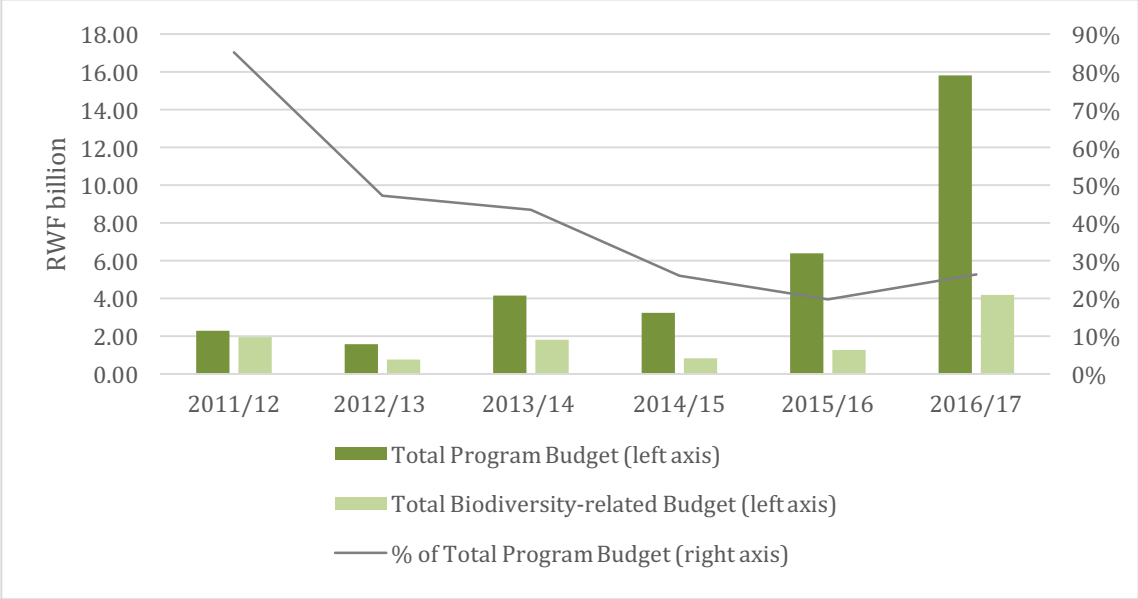
The GoR is investing heavily in tourism promotion, particularly through new support to operations of the Rwanda Convention Bureau and the development of new tourism infrastructure, as can be seen from the rise in budgets to the *Tourism Quality*

[36] The data supporting Figure 30 can be found in Table D.7.

Management and Standardization of New Accommodation Establishment Project, as well as the *Development of MICE Tourism Project*. Budget allocations to Wildlife Protection and Conservation of National Parks, however, have been quite variable over the years, ranging from 468 million RWF in 2014/15 to 1,407 million RWF in 2011/12.

The total annual budget allocation for RDB's Sustainable Tourism and Wildlife Conservation Program and the total biodiversity-related budget are reflected in Figure 31 below[37]. The total biodiversity-related budget summed to 1.95 billion RWF in 2011/12, accounting for 85 percent of the program budget. By 2016/17, the total biodiversity-related budget increased to 4.18 billion RWF, but declined as a percentage of the total program budget to 26 percent. This is due to the great increases in budget allocations within the Sustainable Tourism and Wildlife Conservation Program to tourism promotion, particularly concentrated on infrastructure development and event promotion.

Figure 31 RDB total and biodiversity budget for Sustainable Tourism and Wildlife Conservation Program, 2011/12 – 2016/17



Note: The program and biodiversity-related budgets for 2016/17 are based on separate budget documents provided by MINECOFIN, and not provided in the same format as previous years (2011/12 through 2015/16). The 2011/12 budget allocations included agency budget allocations, GoR counterpart funds, and external grants and loans only. The 2016/17 budgets also included budgets from RDB's own revenues, and extra budgetary expenditures. All biodiversity-related activities for this year appeared under own revenues, and therefore included here. RDB may have had biodiversity expenditures in previous years from their own revenues which were not provided here.

It is important to note that for 2016/17, RDB budgets also included expenditures from its own revenue sources, not provided in previous years. Therefore, these estimations

[37] The data supporting Figure 31 can be found in Table D.8.

may underestimate the biodiversity expenditures for the years 2011/12 through 2015/16.

One important trend to note is the divergence of the total program budget from the biodiversity-related estimates, as more of RDB's tourism and conservation budgets are allocated to promoting the tourism industry in Rwanda, whereas the direct biodiversity expenditures have not seen similar increases. Rather, budget allocations to biodiversity, notably allocations to wildlife conservation and protection of national parks has been variable over the time period assessed here, ranging from 1.4 billion RWF in 2011/12, down to 0.5 billion RWF in 2014/15. This fluctuation in budget allocations reflects either a lack of strong commitment to biodiversity protection particularly in the protected areas systems, or a reliance on external sources of funds (e.g. NGO contributions) to fill the gap in low budget years. Given the importance of biodiversity to the tourism sector in Rwanda, consistent, reliable funding of wildlife protection and national parks is critical to ensure a sustainable tourism industry.

5.5 Ministry of Agriculture and Animal Resources (MINAGRI)

MINAGRI's mission is "*to initiate, develop, and manage suitable programs for transformation and modernization of agriculture and livestock to ensure food security*". Rwanda's Economic Development and Poverty Reduction Strategy prioritizes the increased productivity of agriculture through irrigation, land husbandry, proximity advisory services as well as connecting farmers to agribusiness as a means to reduce poverty and develop rural areas.

The timeframe of this analysis, 2011/12 through 2016/17, straddles across Phase II (2008-2012) and Phase III (2013-2017) of the Strategic Plan for the Transformation of Agriculture, Rwanda's key strategy for achieving its ambitious agricultural and GDP growth goals and for meeting the targets of the EDPRS II and Vision 2020. Programs and sub-programs implemented under MINAGRI and RAB are aligned to the programs and sub-programs outlined in the PSAT. Although these program names have changed slightly between Phase II and Phase III, it is easy to compare program activities and expenditures over time. The summary table below outlines the programs, sub-programs, and proportion of the total budget as outlined in the PSAT II and III[38].

[38] PSAT-II was accessed via: http://www.minagri.gov.rw/fileadmin/user_upload/documents/RWANDA_SAKSS/PSTA_II__2008-12_.pdf. PSTA-III was accessed via: http://www.minagri.gov.rw/fileadmin/user_upload/documents/RWANDA_SAKSS/PSTA_III___2013-17_.pdf.

Table 14 Comparison of MINAGRI's PSTA II and PSTA III, and percent budget allocations

PSTA II (2008-2012)	%	PSAT III (2013-2017)	%
1: Intensification & development of sustainable production systems	**77**	**1: Agriculture and Animal Resource Intensification**	**73**
1.1. Sustainable management of natural resources and water and soil preservation	22	1.1 Soil conservation and land husbandry	4
1.2. Integrated systems of crops and livestock	16	1.2 Irrigation and water management	12
1.3 Marshland development	5	1.3 Agricultural mechanization	29
1.4 Irrigation Development	23	1.4 Agrochemical use and markets	13
1.5 Supply and use of agricultural inputs	6	1.5 Seed Development	3
1.6 Food security and vulnerability management	4	1.6 Livestock Development	9
		1.7 Nutrition and Household Vulnerability	3
2: Support to the professionalization of the producers	**10**	**2: Research and Technology Transfer, Advisory Services and Professionalization of Farmers**	**1**
2.1 Promotion of farmers organizations and capacity building for producers	1	2.1 Research and Technology Transfer	0
2.2 Restructuring proximity services	2	2.2 Extension and proximity services for producers	1
2.3 Research for transforming agriculture	7	2.3 Farmers cooperatives and farmers organizations	0
3: Promotion of commodity chains and agribusiness development	**12**	**3: Value Chain Development and Private Sector Investment**	**25**
3.1 Creating conducive environment for business development and market access	1	3.1 Creating an environment to attract private sector investment, encourage entrepreneurship and facilitate market access	0
3.2 Development of traditional exports	4	3.2 Development of priority value chain: Food Crops	0
3.3 Development of non-traditional high-value export products	1	3.3 Development of priority value chain: Export Crops	2
3.4 Production and value addition for domestic staple products	1	3.4 Development of priority value chains: dairy and meat	1
3.5 Market-oriented rural infrastructure	2	3.5 Development of priority value chains: Fisheries	4
3.6 Strengthening rural financial systems	2	3.6 Development of priority value chains: apiculture	0
		3.7 Agricultural finance	0
		3.8 Market oriented infrastructure for post-harvest management	17

PSTA II (2008-2012)	%	PSAT III (2013-2017)	%
		systems	
4: Institutional development	**2**	**4: Institutional Development and Agricultural cross cutting issues**	**1**
4.1 Institutional strengthening and capacity building	1	4.1 Institutional capacity building	1
4.2 The policy and regulatory framework for the sector	0	4.2 Decentralization	0
4.3 Agricultural statistics and ICT	1	4.3 Legal and Regulatory Framework	0
4.4 M&E systems and coordination of the agricultural sector	0	4.4 Knowledge Management, Agricultural Statistical Systems and M&E	0
4.5 The decentralisation programme in agriculture	0	4.5 Gender and Youth in Agriculture	0
		4.6 Environmental Mainstreaming in Agriculture	0
TOTAL BUDGET (billions RWF)	**532**	**TOTAL BUDGET (billions RWF)**	**1,115**

The total budget for the five-year strategic plan was estimated at 532 billion RWF for PSTA-II, and nearly doubling to 1.1 trillion RWF under PSTA-III. Under PSTA II, a large proportion, over 20 percent, was allocated to the sub-program for *Sustainable Management of Natural Resources and Water and Soil Preservation*, a program that may include activities with biodiversity-related objectives. The objectives of this sub-program are listed in the PSTA as a) to decrease sharply the rate of soil erosion, b) provide irrigation to hillside farmers, and c) to increase the water retention capacity of watersheds.

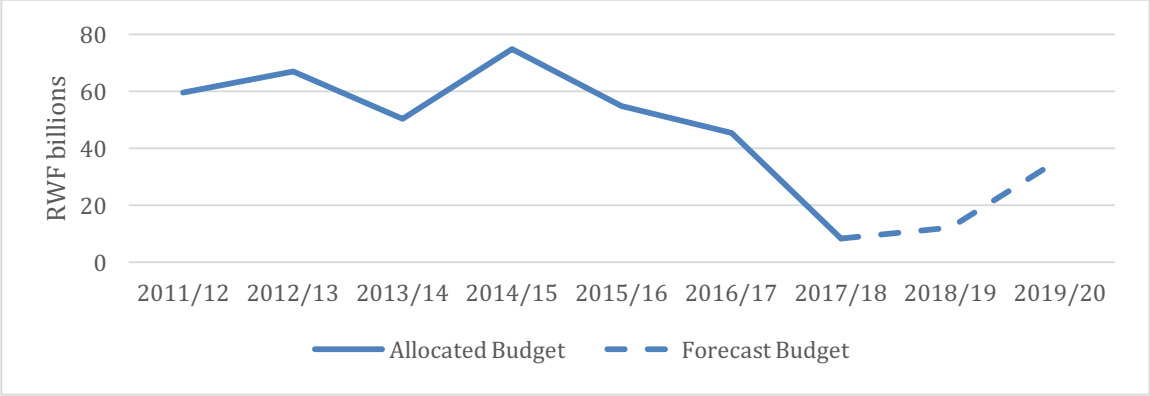
Under PSTA III, the program was revised and water management was moved to the irrigation sub-program. Under a new, *Soil Conservation and Land Husbandry* program, activities include land protection through terracing, training on crop residue management to encourage composting, promoting agroforestry, and improving knowledge of Rwanda's soil suitability, with clear links to biodiversity. Although biodiversity may not be a direct objective within this sub-program, individual activities are targeted indirectly towards biodiversity objectives, such as the promotion of agroforestry, creating buffer zones around national parks, and organic composting. Therefore, projects and activities under this sub-program were closely screened for biodiversity relevance. This sub-program now only accounts for 4 percent of the estimated budget, signalling that biodiversity expenditures under the agricultural activities may be nominal.

Other sub-programs contain biodiversity-related activities as well and are identified in the MINAGRI and RAB budgets, such as the maintenance and expansion of the

National Gene Bank under the PSTA-III Seed Development sub-program, which aims is to collect and conserve germplasm to ensure genetic variability, and to control and monitor pest and disease incidences and crop losses under the Research and Technology Transfer sub-program.

The MINAGRI budget allocations have been variable over the time period assessed here, but generally have declined from 60 billion RWF in 2011/12 to 45 billion RWF in 2016/17, as reflected in Figure 32[39]. The budget recently approved for the 2017/18 fiscal year, however, reflects an even more dramatic decline in budget allocations to MINAGRI, down to 8 billion RWF in 2017/18, with an increase back up to 36 billion RWF projected for 2019/20.

Figure 32 MINAGRI annual budget allocation and forecasted budget, 2011/12 – 2019/20

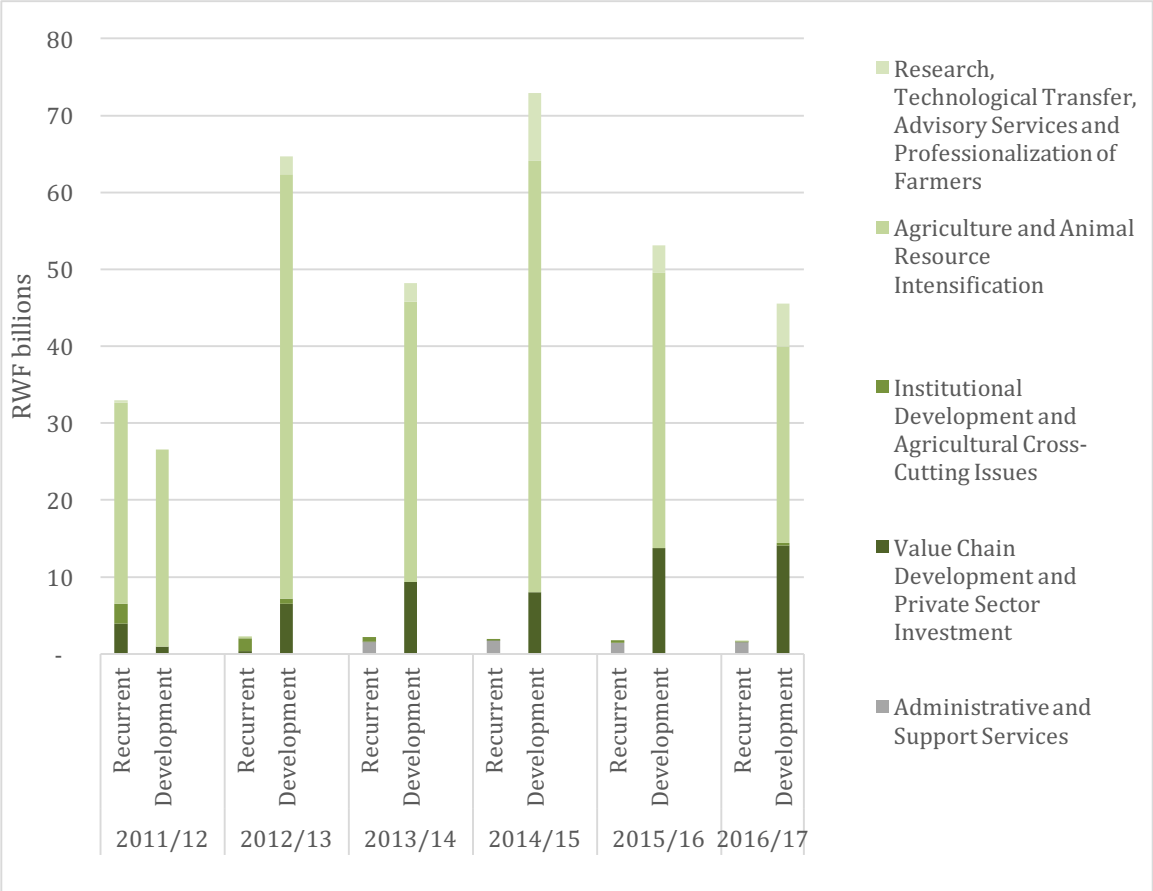


A closer look at the program budgets reveals that a vast majority -- 54-87 percent of MINAGRI's budget -- is allocated to the Agriculture and Animal Resource Intensification Program, which also contains sub-program activities in soil and land husbandry [40]. On average, the proportion of MINAGRI's budget allocated to intensification has been declining over time, with a higher proportion of activities supporting agricultural research and value chain development. Institutional development, including addressing agricultural cross-cutting issues such as gender and the environment, has accounted for a decreasing proportion of the budget, from 4 percent in 2011/12 to less than 1 percent in 2016/17.

[39] The data supporting Figure 32 can be found in Table E.2.

[40] The data supporting Figure 33 can be found in Table E.3.

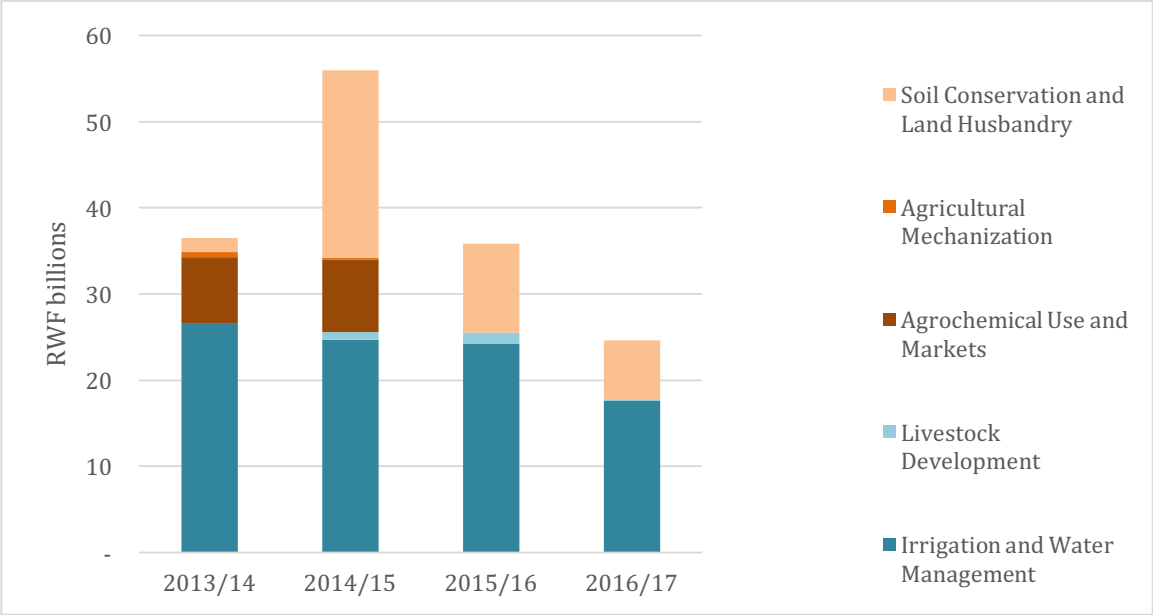
Figure 33 MINAGRI recurrent and development budget by program, 2011/12 – 2016-17



Taking a closer look at the Agriculture and Animal Resource Intensification Program for the PSTA-III period (2013-2017) reveals that a vast majority of budgeted activities are allocated to irrigation and water management, as noted in Figure 34[41].

[41] The data supporting Figure 34 can be found in Table E.5.

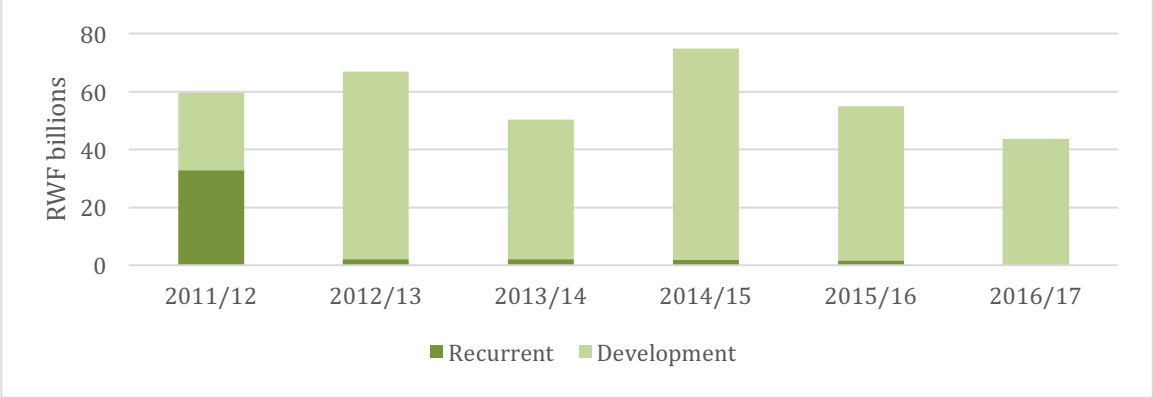
Figure 34 MINAGRIs Agriculture and Animal Resource Intensification Program Budget Allocation under PSTA-III, 2013/14 – 2016/17



A sufficient level of detail is contained in the budgeted activities under MINAGRI's *recurrent* programs to attribute programs and sub-programs based on biodiversity-relevance. For projects under the *development* budgets, however, this was not possible. For example, the World Bank's *Land Husbandry, Water Harvesting, and Hillside Irrigation (LWH) Project* has a budget of 8.5 billion RWF in 2012/13, with only one line item activity for 'land and water management', rendering it impossible to accurately account for biodiversity-relevance. Therefore, following approach 1 above, development project documents are reviewed in consultation with MINAGRI to assign a biodiversity attribution score (e.g. direct, indirect, no relevance to biodiversity) for each development project. As can be seen from Figure 35 below, recurrent budget account for less than 4 percent of MINAGRI's budget since 2012/13[42].

[42] The data supporting Figure 35 can be found in Table E.1.

Figure 35 MINAGRI Annual Recurrent and Development Budget Allocations, 2011/12 – 2016/17



Recurrent programs were reviewed and assigned a biodiversity-attribution based on the budgeted set of activities. Although the programs and sub-program names changed from the PSTA-II to PSTA-III implementation phases, for consistency, all programs are referred to by the program names under PSTA-III

Agricultural and Animal Resource Intensification. Sub-program activities targeting soil, land, and water conservation objectives, such as terracing, are considered biodiversity-related and attributed as 'indirect low', under the classification of sustainable use.

Research, Technology Transfer, Advisory Services and Professionalization. No activities are considered biodiversity-relevant.

Institutional Development and Agricultural Cross-Cutting Issues. Activities targeting animal and plant health are considered biodiversity-relevant and attributed as 'indirect low', under the classification of biosafety. Environmental mainstreaming activities, under the cross-cutting sub-program, are also included and considered to be 'indirect-low' under the sustainable use BIOFIN classification. No other activities are included.

Value Chain Development and Private Sector Investment. Activities targeting animal and plant health are considered biodiversity-relevant and attributed as 'indirect low', under the classification of biosafety. No other activities are included.

From 2011/12 through 2016/17, MINAGRI implemented 28 projects with a blend of domestic resource allocation and external grants and loans, totalling over 309 billion RWF. A majority (16) of these development projects are under the Agriculture and Animal Resource Intensification Program, with primary objectives of increasing agricultural inputs, access to markets, and rural households' income. Only three of these projects were implemented under the Soil Conservation and Land Husbandry sub-program.

All development projects were assessed based on project objectives, components, outcomes, and activities. In order to determine the biodiversity-relevance of a project, a list of activities considered to be biodiversity-relevant was determined in consultation with MINAGRI, which included the below:

- pest management and disease control
- promotion of indigenous or native species
- agroforestry
- agricultural buffer zones
- composting/organic agriculture
- water quality monitoring and regulation
- improvements to grazing capacities
- agrobiodiversity

Only six projects were identified to have biodiversity-relevance, although biodiversity conservation and sustainable use were not significant objectives of these projects. The below table reflects each project's name, program, project objective, source of funding, and the biodiversity attribution based on the prevalence of the above-mentioned activities (e.g. direct, indirect high, medium, low, or extremely low) and percentage of budget considered biodiversity relevant.

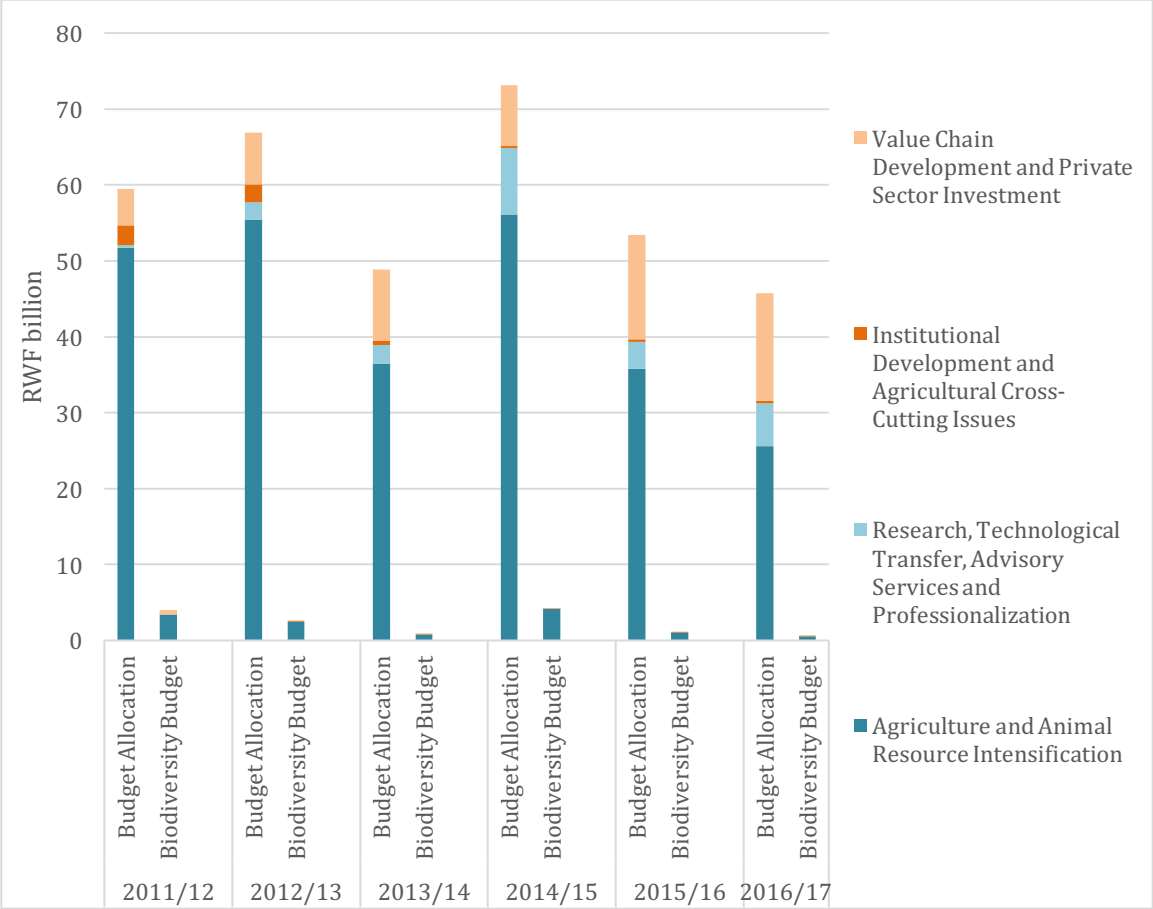
Table 15 List of MINAGRI Development Projects with Biodiversity Relevance, 2011/12 – 2016/17

PROJECT TITLE	SUB-PROGRAM	START - END DATES	Budget Allocation between 2011-2016 (RWF million)	BIODIVERSITY RELEVANCE	BIOFIN CATEGORY	PROJECT OBJECTIVE AND OUTCOMES	SOURCE OF FUNDING
GLWM	Soil Conservation and Land Husbandry	2012-15	15,568	Indirect Low	Sustainable Use	Harmonize the healthy co-existence of the agrarian communities with the fragile eco-system of Gishwati; maximize sustainable economic contribution of Gishwati to the communities improved way of life.	GoR
PAIGELAC	Soil Conservation and Land Husbandry	2012-13	5,671	Indirect Low	Sustainable Use	**By** 2012, increase fisheries sector production from 17 to 400 tons per year.	African Development Bank
LWH	Soil Conservation and Land Husbandry	2012-ongoing	34,383	Indirect Extremely Low	Sustainable use	Increase productivity and commercialization of hillside agriculture through a comprehensive watershed approach to facilitate soil erosion control and increase land productivity.	World Bank, CIDA, USAID, GAFSP, GoR
RSSP	Irrigation and Water Management	2011-ongoing	48,768	Indirect Extremely Low	Sustainable Use	To increase agricultural productivity of organized farmers in the marshlands and hillsides of sub-watersheds targeted for development in an environmentally-sustainable manner and strengthen the participation of women and men beneficiaries in market-based value chains.	World Bank
PAPSTA	Knowledge Management, Agricultural Statistical Systems and M&E	2012-13	716	Indirect Extremely Low	Sustainable Use	Support the Government of Rwanda by implementing its strategy to effect a gradual shift from prevailing subsistence agriculture to market-based farming.	IFAD
Project: National Sericulture Center	Development of Priority Value Chains: Export Crops	2011-15	1,058	Indirect High	Sustainable Use	Sericulture has been identified as one of the promising agricultural enterprises suitable for rural development. Besides generating income and employment opportunities, sericulture improves on-farm biodiversity through mulberry cultivation as a component of agro-forestry important in erosion control and soil fertility.	IFAD

GLWM: Gishwati Land and Water Management
PAIGELAC: Projet d'Appuie a l'Amenagement integer et la Gestion des Laces Interiurs
LWH: Land Husbandry, Hill side Irrigation and Water Harvesting
RSSP: Rural Sector Support Project
PAPSTA: Support Project for the Strategic Transformation of Agriculture

Figure 36 reflects the total and biodiversity budget by program. As can be seen, biodiversity has historically only accounted for a small proportion of the MINAGRI budget, across all programs, from 0.6 billion RWF in 2016/17 to 4.2 billion RWF in in 2014/15[43].

Figure 36 MINAGRI total and biodiversity budget by program, 2011/12 - 2016/17

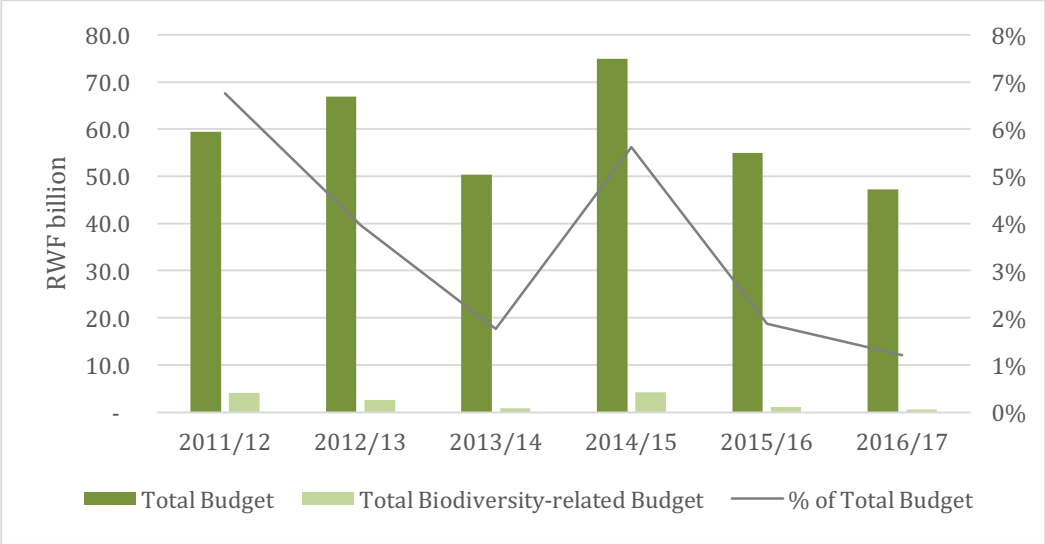


As reflected in Figure 37, MINAGRI's biodiversity-related budget represented only 1.2 percent (0.6 billion RWF) of the total MINAGRI budget in 2016/17[44]. The biodiversity-related budget as a proportion of total budget has varied from 6.3 percent in 2011/12 to 1.2 percent 2016/17, reflecting an overall decline in biodiversity-related activities over the time period assessed. In fact, the 2016/17 fiscal year accounted for the smallest absolute biodiversity budget and proportion of total budget.

[43] The data supporting Figure 36 can be found in Table E.7.

[44] The data supporting Figure 37 can be found in Table E.8.

Figure 37 MINAGRI Total budget, Biodiversity Budget, and Proportion of Total Budget, 2011/12 – 2016/17



5.6 Rwanda Agriculture Board (RAB)

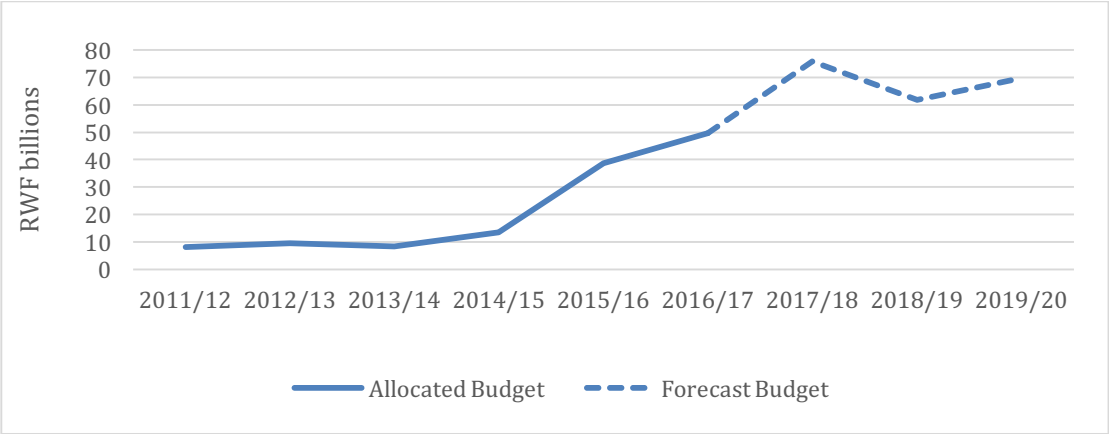
The Rwanda Agriculture Board's (RAB) mission is to "*develop agriculture and animal husbandry through their reform, and use modern methods in crop an animal production, research, agricultural extension, education and training of farmers in new technologies*".

RAB is an autonomous body under the Ministry of Agriculture established in 2010 whose responsibilities include, *inter alia*: implementing the national agriculture policy, establishing and enforcing rules and regulations, providing research and technology provision to improve the sector, preventing and controlling plant and animal diseases, managing the import and export of agricultural products, and providing agricultural extension services.

RAB's budget allocations have been, since 2014/15, rapidly increasing, from approximately 10 billion RWF to nearly 40 billion RWF in 2015/16[45]. The budget recently approved for the 2017/18 fiscal year allocated 75 billion RWF to RAB, nearly doubling the budget in two years.

[45] The data supporting Figure 38 can be found in Table F.1

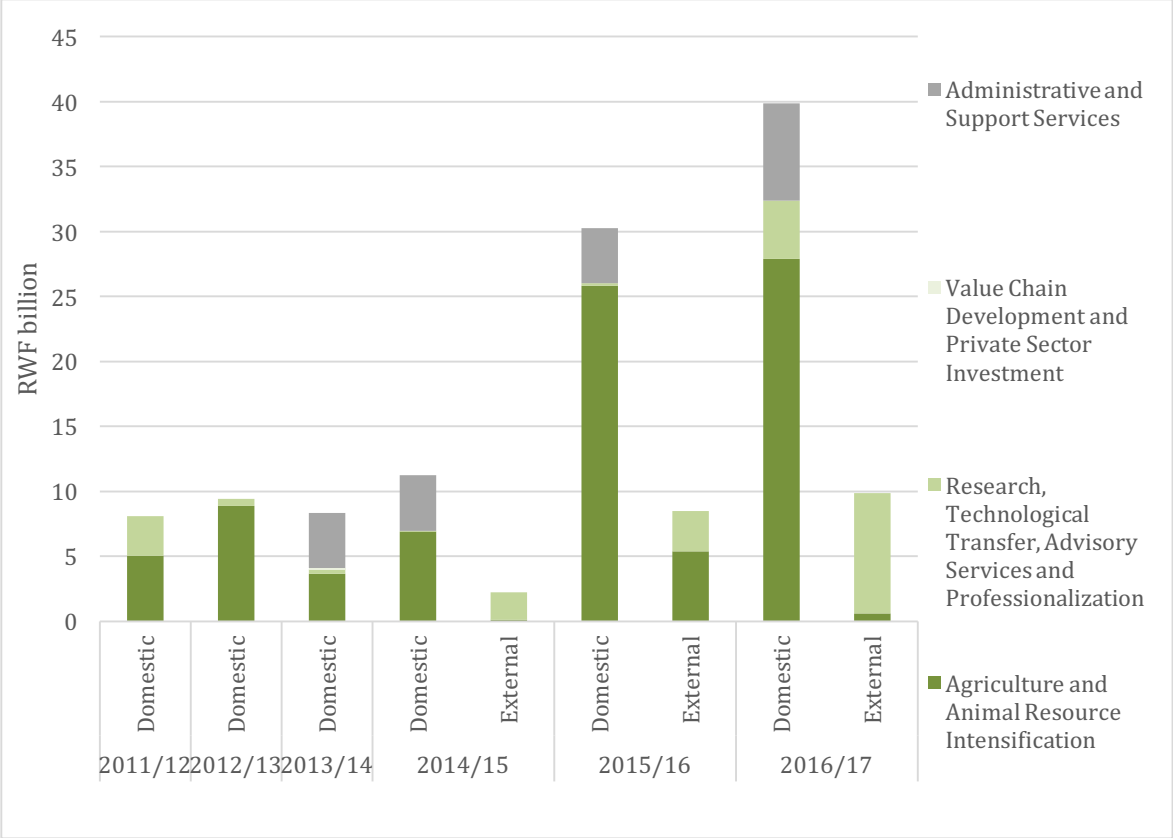
Figure 38 RAB annual budget allocations and forecasted budget, 2011/12 – 2019/20



A further look at budget allocations according to program reveals that the sharp increase in budget is accounted for in RAB's Agriculture and Animal Resource Intensification Program, whose budget increased from 5 billion RWF in 2011/12 to over 25 billion RWF by 2015/16[46]. In addition, prior to the 2014/15 fiscal year, RAB's budget was comprised solely of agency budget allocations. External grants from a large variety of donors including the International Fertilizer Development Centre (IFDC), Alliance for Green Revolution in Africa (AGRA), the World Food Programme (WFP), Bill and Melinda Gates Foundation, Bayer, and others began in 2014/15 and provide external financing under both the Agriculture and Animal Resource Intensification Program as well as the Research, Technology, and Advisory Services Program. Still, external grants have only accounted for 15-20 percent of the total RAB budget in recent years.

[46] The data supporting Figure 39 can be found in Table F.4.

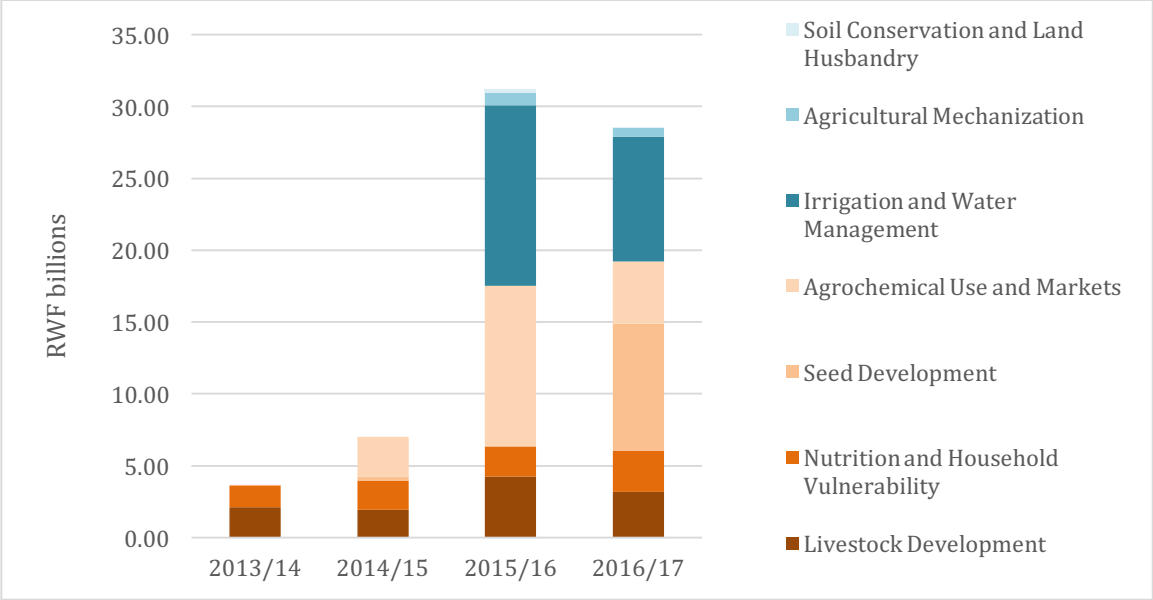
Figure 39 RAB budget by program and funding source, 2011/12 – 2016/17



The Agriculture and Animal Resource Intensification Program, amounting to 80 percent of RAB's budget in 2016/17 (historically between 40 percent and 95 percent), contains seven sub-programs including Soil Conservation and Land Husbandry. However, a closer look at these sub-programs under PSTA III (2013-2017) reveals that soil conservation and land husbandry activities only account for a small proportion of the program budget (<1 percent) in the 2015/16 fiscal year. No activities under this sub-program were implemented in other years[47].

[47] The data supporting Figure 40 can be found in Table F.5.

Figure 40 RAB's Agriculture and Animal Resource Intensification program budget by sub-program, 2011/12 – 2016/17



All activities under RAB's Programs and Sub-Programs were screened for biodiversity-relevance, following Approach 2 in the methodology section. The list of activities included as biodiversity relevant are listed below under each program. Sufficient details on activities both within recurrent and development budgets allow for a combined assessment of programs. Similar to the assessment of MINAGRI projects, a list of biodiversity-relevant activities was identified in consultation with RAB to appropriately screen projects and activities for biodiversity-relevance, which include:

- Pest disease control
- Soil conservation/soil health
- Improve land pasture management/pasture carrying capacity research
- Promotion of fodder preservation techniques
- Indigenous tree species testing
- Watershed rehabilitation
- Support to well-managed fisheries and fish stock recovery
- Promotion of feed resource conservation
- Beehive/beekeeping support/research
- Gene bank
- Promotion of agroforestry systems
- Improved efficiency of fertilizers
- Crop variety development
- Climate smart crops

Agriculture and Animal Resource Intensification (Intensification and Development of Sustainable Production Systems under PSTA-II). Activities considered relevant to biodiversity conservation and sustainable use include soil conservation infrastructure (e.g. terracing) and training on soil conservation techniques, tree planting under the soil conservation and land husbandry sub-program. Activities including agro-meteorology infrastructure, fertilizer technique testing, and information dissemination on optimal planting times are excluded. Under the other sub-programs, only activities targeting disease control, sustainable land management and resource conservation, and the promotion of indigenous crop and livestock species are considered biodiversity relevant. In addition, all activities to support the management and conservation of crops at the national gene bank are also included.

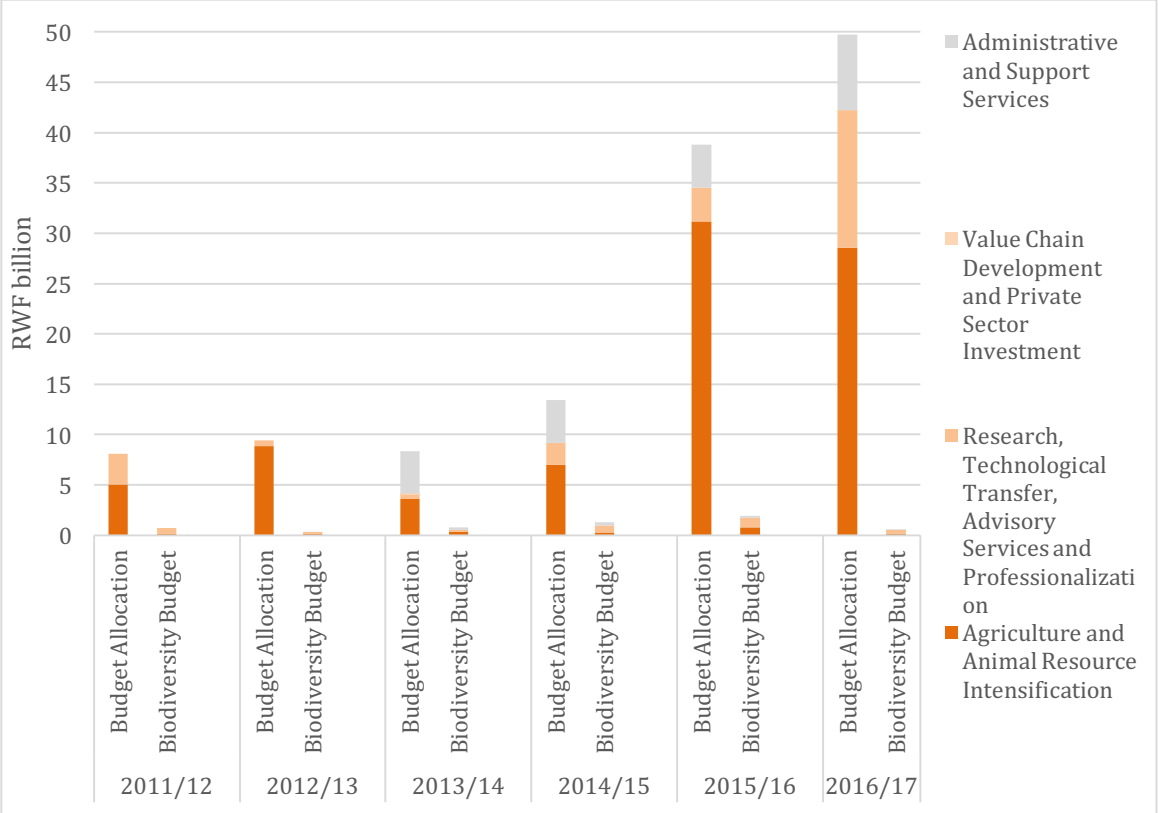
Research, Technological Transfer, Advisory Services and Professionalization (Professionalization of Producers and Other Economic Agents under PSTA-II). Activities considered biodiversity relevant carried out under this program include extension services on soil erosion control, ensuring watersheds and natural resources are properly managed, the development of environmentally-friendly techniques for crop disease control, disease surveillance, and support to non-timber forest products (e.g. beekeeping). Specific research activities on genetic diversity, soil erosion, and integrated soil fertility management are also included.

Value Chain Development and Private Sector Investment (Promotion of commodity chains and agribusiness development under PSTA-II). No activities under this program are considered biodiversity relevant.

Figure 41 below reflects the biodiversity budget by program[48]. Combined, biodiversity relevant activities account for between 1 and 10 percent of RAB's total budget. Administrative and support services were included following the methodology in Table 2. The biodiversity budget is estimated to be 691 million RWF in 2011/12 (9 percent of the total budget), increasing to 1,948 million RWF in 2015/16 (5 percent of the total budget). The increased biodiversity budget in 2015/16 is largely accounted for by the *Gishwati Land and Water Management Project,* a three-year project funded by the GoR to rehabilitate the Gishwati Forest Ecosystem.

[48] The data supporting Figure 41 can be found in Table F.6.

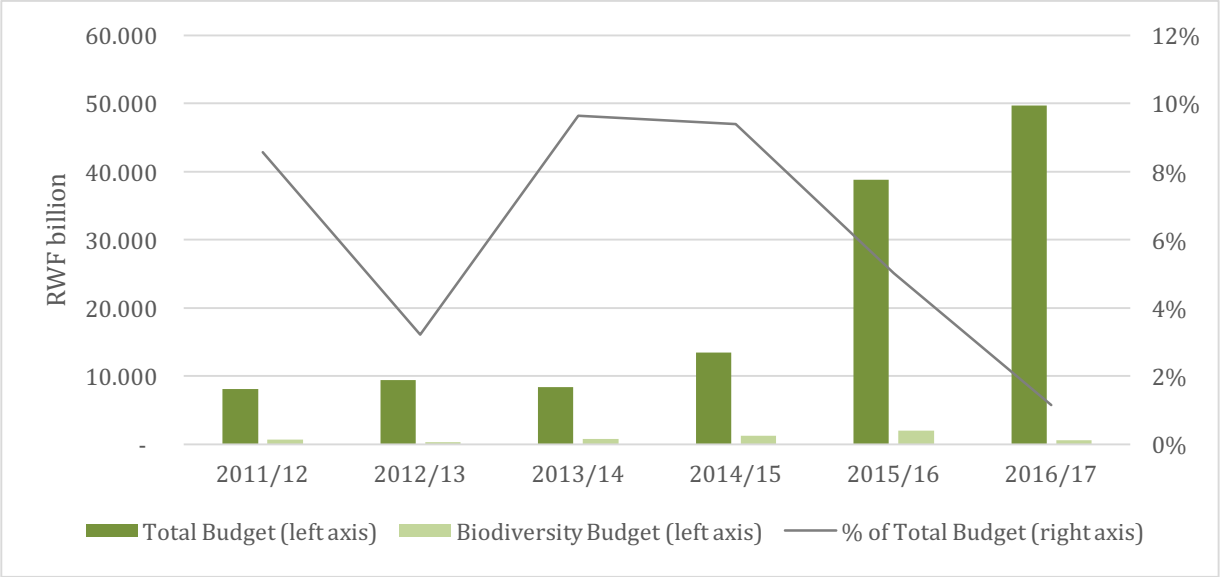
Figure 41 RAB annual budget by program and biodiversity budget, 2011/12 – 2016/17



As can be seen, the RAB budget is rapidly increasing with additional resources dedicated to the intensification of crop and livestock production. In 2016/17, 4 billion RWF were allocated to the provision of inorganic fertilizers, with potentially harmful effects on biodiversity. At the same time, biodiversity-related activities have only accounted for less than 10 percent of the budget since 2011/12. The figure below reflects RAB's total annual budget and biodiversity-related budget by year, along with the proportion of biodiversity-related activities[49].

[49] The data supporting Figure 42 can be found in Table F.7.

Figure 42 RAB total budget and proportion of biodiversity expenditures, 2011/12 – 2016/17



In 2016/17, only 1 percent of RAB's activities were found to have biodiversity objectives. Although agriculture can be an engine for economic growth and food security, protecting biodiversity and ecosystems is equally important to ensure development is occurring in sustainable ways that protects natural resources from overexploitation. The biodiversity activities and budgets assessed here demonstrate a need for greater mainstreaming of biodiversity into the agricultural sector both within MINAGRI and RAB.

5.7 Other Agencies

A thorough review of the above budget agencies allowed for a quantification and comparison of biodiversity-related budgets over time, compared across all programs and projects. This level of in-depth analysis was not possible for other budget agencies due to time and resource constraints, and therefore key programs and projects with biodiversity-relevant expenditures have been identified and incorporated into the final estimates of biodiversity-related activities based on direct consultation with the agencies. It is not anticipated that this level of analysis would substantially alter the results as a majority of expenditures within these budget agencies are not considered biodiversity relevant.

5.7.1 National Industrial Research and Development Agency (NIRDA)

The National Industrial Research and Development Agency (NIRDA), has initiated research on biodiesel production since 2006, with an objective of promoting its production and use in Rwanda. The use of biodiesel produced domestically reduces

import costs, improves people's health by reducing pollution, and boosts Rwanda's economy. The research undertaken at NIRDA resulted in the production of biodiesel from a variety of vegetable oils including jatropha, palm, moringa, avocado, passion fruit, soybean, and sunflower. A biodiesel was procured from Sweden and a pilot plant was erected in Kigali to support production. The total expenditure for the biodiesel project amounted to 452.5 million RWF in 2014/15, and is considered sustainable use under the BIOFIN classifications.

The effects of biofuels on biodiversity, however, are unclear, particularly when taking into consideration land-use changes for biofuel crop production and the management practices of the biofuel crop fields. If land is converted from natural forests for biofuel production, or if management practices include chemical inputs and monoculture crops, the effects on biodiversity could be harmful. If heterogeneity is increased within the fields, native crop species are used, and conversion displaces monoculture row-crop fields, then the effects on biodiversity could be beneficial. Therefore, although the expenditures on the biodiesel project are included in this review as biodiversity-relevant, caution should be exercised when inferring the benefits of biodiesel production on biodiversity.

5.7.2 University of Rwanda

The University of Rwanda houses the Centre of Excellence in Biodiversity and Natural Resource Management (CoEB), established in 2007 to coordinate biodiversity and natural resource management efforts in Rwanda by collaborating, networking, and supporting institutions active in biodiversity conservation and sustainable use.

The CoEB has received nominal funding from the Ministry of Education and the National Geographic Society East Africa Fund to support committee meetings and trainings, in the amount of 3 million RWF in 2016/17.

5.8 Total Government of Rwanda Expenditure Summary

Combining the baseline biodiversity expenditures from the individual budget agencies provides an overview of GoR biodiversity spending levels from 2011/12 through 2016/17. Figure 43 presents the estimates of biodiversity expenditures by the eight budget agencies reviewed here. As can be seen, there was a large increase in estimated biodiversity expenditures in 2014/15, largely accounted for a few large projects, namely GLWM (MINAGRI), PGREF (RNRA), and FONERWA (MINIRENA). This increase in biodiversity expenditures, however, is not sustained in the following year, reflecting a dip from 16 billion RWF to 10 billion RWF. Of note is that biodiversity expenditures are spread across budget agencies. On average, over 50 percent of biodiversity expenditures are accounted for by MINIRENA, REMA, and RNRA, 30 percent are accounted for by MINAGRI and RAB, and 17 percent accounted for by RDB.

Figure 43 Nominal GoR Biodiversity Expenditures, 2011-12 – 2016/17

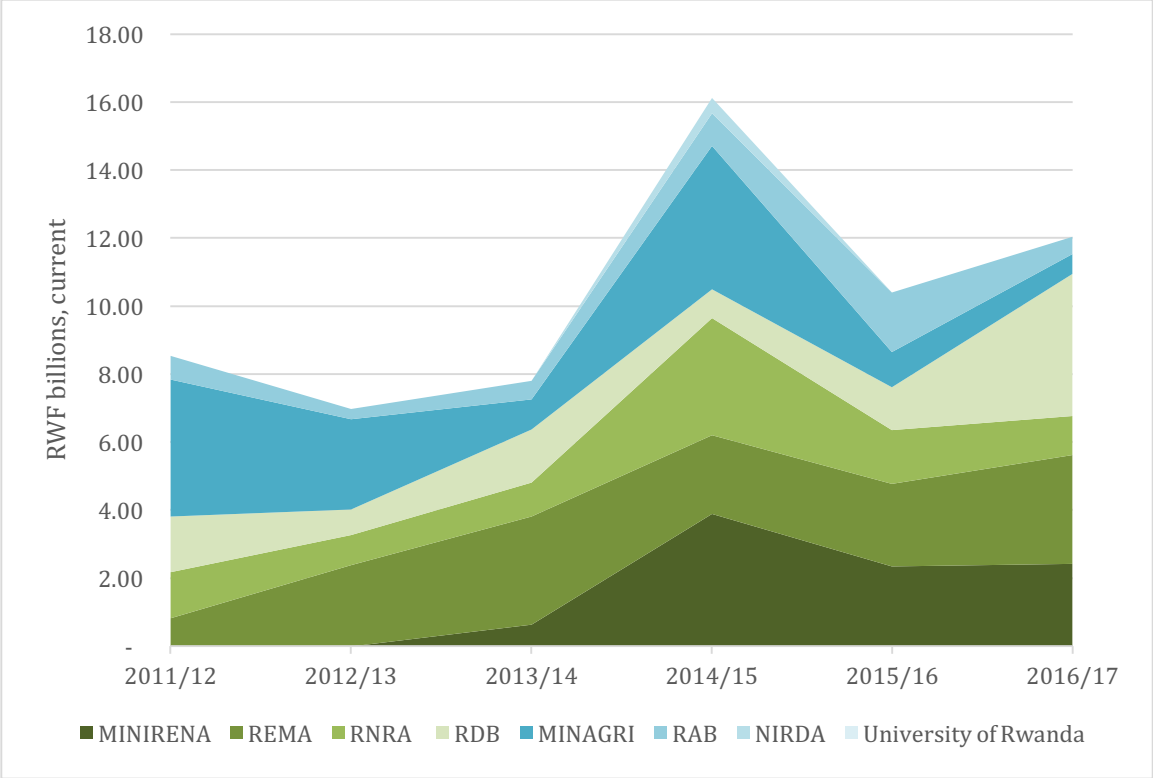
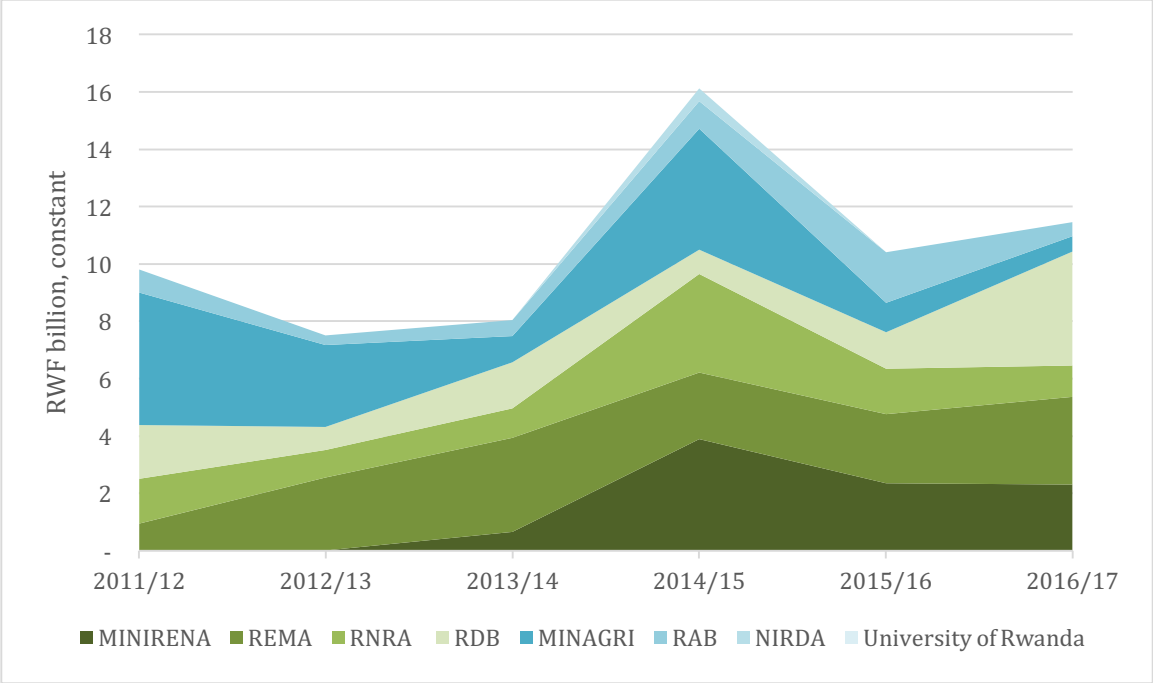


Figure 43 represent nominal values however, and do not factor in inflation, which reflects the average rate at which the prices of goods and services are rising over time. Therefore, in order to more adequately compare the relative spending of biodiversity over time, these expenditures need to be reflected in real terms, using constant prices. The average rate of inflation between 2011 and 2016 in Rwanda is estimated to be 3.7 percent[50]. Using constant 2014 prices, the real GoR Biodiversity Expenditures are calculated and reflected in Figure 44 below.

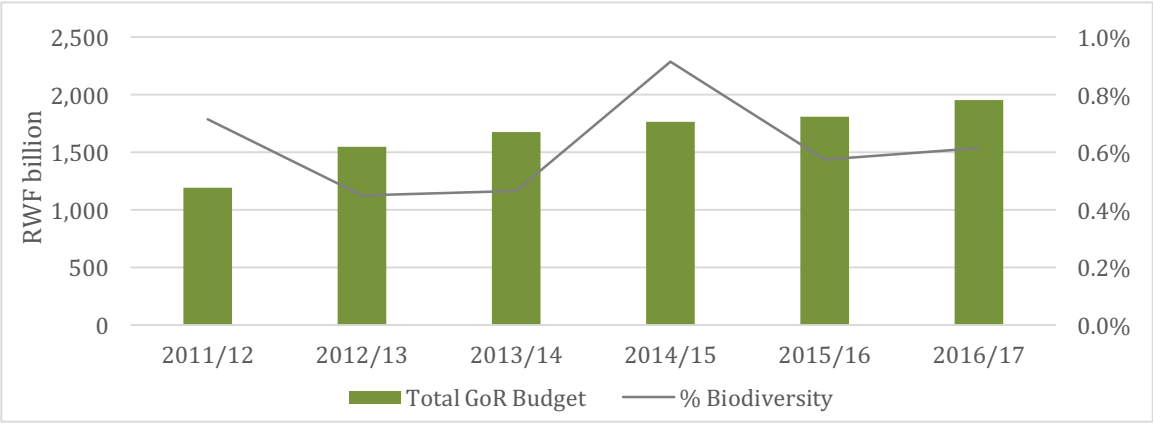
[50] NISR GDP National Accounts 2016

Figure 44 Real GoR Biodiversity Expenditures, 2011/12 – 2016/17 (2014 prices)



To put biodiversity spending into the larger government spending perspective, the figure below presents the total GoR budget and proportion of biodiversity expenditures over time. The GoR's national budget has steadily grown from 1,194 billion RWF in 2011/12 to 1,954 billion RWF in 2016/17. The proportion allocated to biodiversity-related activities has accounted for a low of 0.4 percent to a high of 0.9 percent of the total annual government budget. Overall, there is no clear trend in the proportion of the national budgets that are allocated to biodiversity, creating uncertainty in how biodiversity-related activities will be prioritized in government spending in the future.

Figure 45 GoR budget and percent biodiversity expenditures, 2011/12 – 2016/17



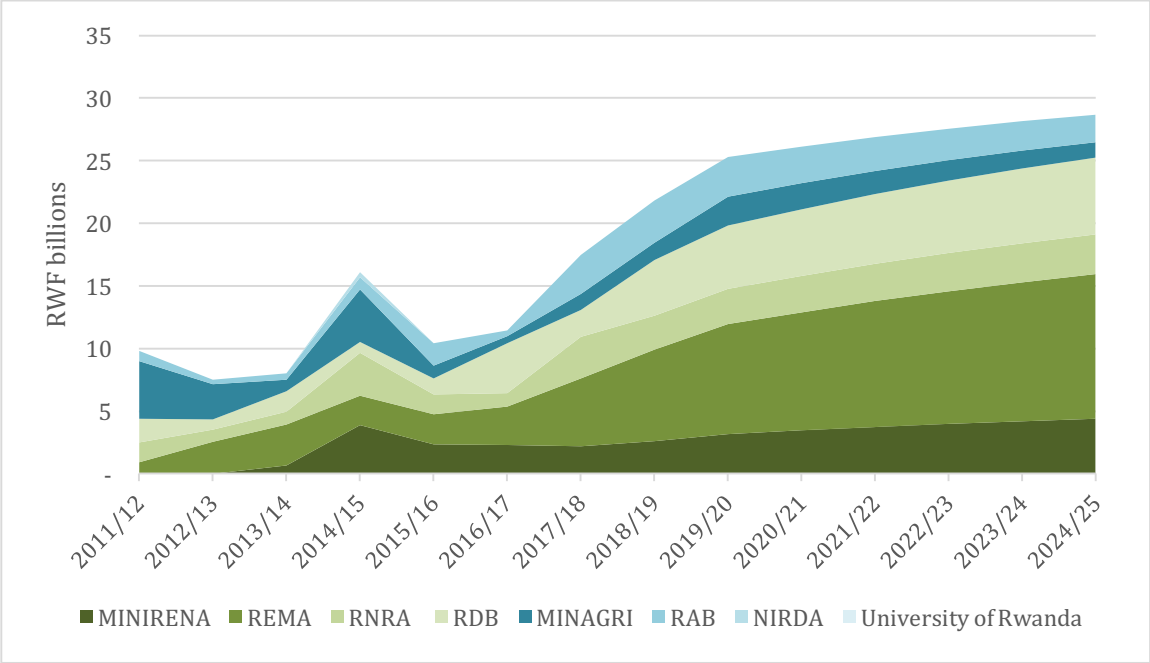
6. Future Biodiversity Expenditure Projections for the Government of Rwanda

The analysis in the preceding chapters was based on past government budgets in order to establish a baseline of biodiversity spending across government budget agencies. As became apparent in the assessment of both budget allocations and estimated biodiversity spending, trends are not readily identified in the spending patterns for many budget agencies, as allocations and biodiversity expenditure estimates have varied significantly year over year.

Nevertheless, in an effort to better understand how biodiversity expenditures may vary into the future, the starting point used here was the budget projections from the 2017/18 Organic Finance Laws, which provide approved budget allocations for the 2017/18 fiscal year and projected budgets for the two subsequent fiscal years as part of its medium-term expenditure framework[51]. Biodiversity budgets can then be scaled for these years for each budget agency by applying the proportion of the budget that was relevant to biodiversity in previous years. A weighted average of the proportion of the biodiversity budget for the years 2011/12 through 2016/17 was applied to estimate the biodiversity budget for the 2017/18 through 2019/20 budgets, as provided in the 2017/18 Original Finance Law. The weighting allowed for more significance to be placed on more recent years, with the assumption that these more accurately predict biodiversity budgets in the future. The weights assigned for 2011/12 through 2016/17 were 5 percent, 10 percent, 10 percent, 20 percent, 25 percent, and 30 percent, respectively. For forecasted budgets through 2024/25, biodiversity budgets are then estimated by taking a linear trend of the estimated biodiversity expenditures and projections from 2011/12 through 2019/20. Using this approach, biodiversity expenditures are anticipated to reach 28.7 billion RWF by 2024/25 (in 2014 prices).

[51] Although for all other budget agencies the 2017/18 finance law were used to scale biodiversity expenditures for the 2017/18 through 2019/20 time periods, this approach was not used for MINAGRI and RAB, as the 2017/18 original budgets varied substantially from the projected expenditures in the 2016/17 revised budgets. For instance, MINAGRI's annual budget allocations varied from 59 billion RWF in 2011/12 to 45 billion RWF in 2016/17. The MTEF presented in the 2016/17 budgets allocated 51 billion RWF in 2017/18. In the approved 2017/18 budget, however, MINAGRI's budget amounted to 8 billion RWF. Therefore, applying a linear trend to MINAGRI using budget allocations from the 2017/18 approved budget would result in negative expenditures by the year 2019/20. In contrast, the 2017/18 budget for RAB in the 2016/17 MTEF was projected at 67 billion RWF, but in the approved 2017/18 budget, RAB's budget allocations amounted to 75 billion RWF. It appears that perhaps program budgets may have been reallocated across budget agencies. Therefore, in order to estimate future projections based on historic linear trends, the MTEF from the 2016/17 revised budgets were used.

Figure 46 Real biodiversity expenditures and projections, 2011/12 – 2024/25, future budget projections and linear trend

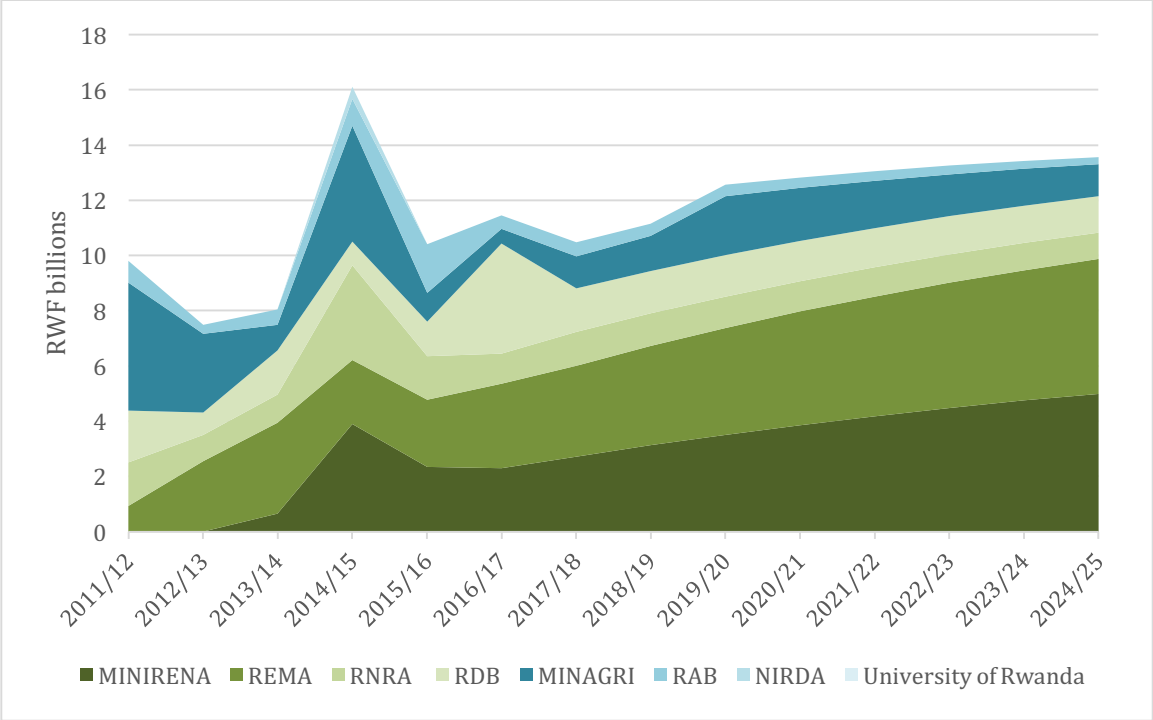


Based on a more medium-term projection, the above biodiversity expenditure projections for 2017/18 through 2019/20 (using the 2017/18 finance law) are based on the weighted-average of biodiversity spending for the years 2011/12 through 2016/17. These projections reveal a dramatic increase in biodiversity spending, from 11.5 billion RWF in 2016/17 to 17.5 billion RWF in 2017/18, and 25.3 billion RWF by 2019/20.

Caution must be used in interpreting these projections however, as some budget agencies received dramatic budget increases in 2017/18 versus previous years, which results in a substantial increase in biodiversity spending if based on the proportion of their budgets. REMA's budget, for instance, increased from an average of 5.2 billion RWF in 2012/13 through 2016/17, to 8 billion RWF in 2017/18, increasing to 14 billion RWF by 2019/20, reflecting a 54 percent budget increase in 2017/18, and further 41 percent in 2018/19, versus an average of 14 percent growth in budget for the years 2011/12 through 2016/17. Therefore, these projected biodiversity expenditures are considered to be a high, or optimistic, scenario that is based on the assumption that budget increases will continue along this steep trend into the future.

Taking a more conservative approach, future biodiversity expenditures were also projected by applying a simple linear trend from the baseline years 2011/12 to 2016/17. Following this approach, biodiversity expenditures are anticipated to increase more modestly, from 10.5 billion RWF in 2017/18 to 13.6 billion RWF by 2024/25. These projections can therefore be considered the low, or conservative, scenario, not taking into account large future increases in budgets.

Figure 47 Real biodiversity expenditures and projections, 2011/12 – 2024/25 applying linear trend only



7. Biodiversity Spending: Non-Government of Rwanda

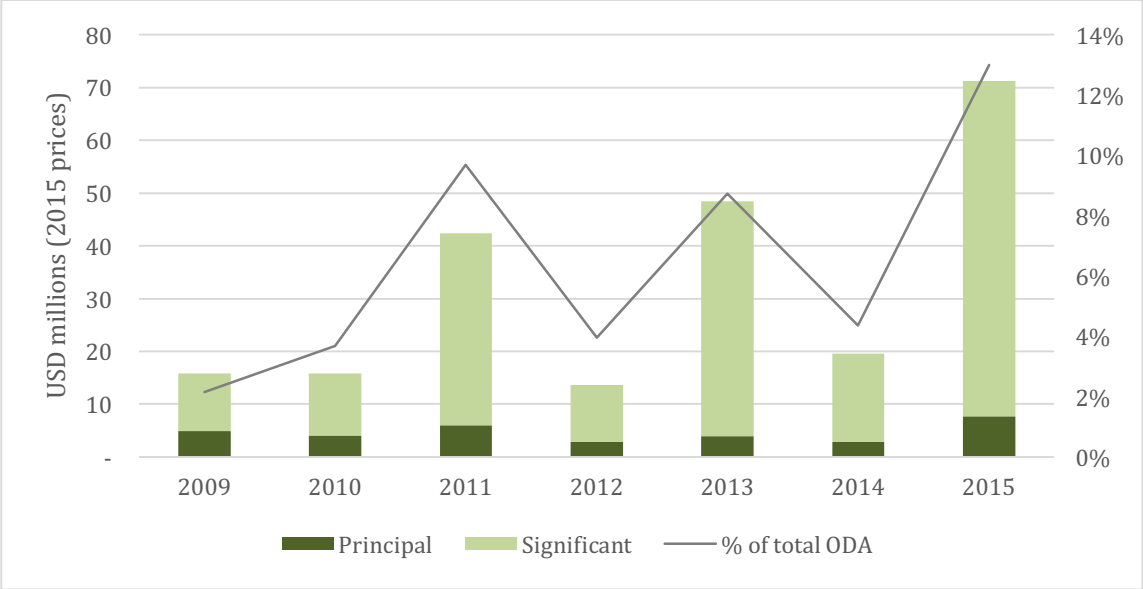
This expenditure review has been conducted, where possible, by applying the "execution" principle, where biodiversity spending is estimated at the level of the executing or implementing agency. In Rwanda, implementing entities of donor-funded projects are often government ministries and are therefore captured in the above review of the national budgets, which include both domestic resources and external grants and loans. The below review includes biodiversity expenditures by non-government of Rwanda (non-GoR) implementing entities, including not-for-profit organizations, development consulting agencies, and private enterprises. Where possible, extra-budgetary expenditures for projects implemented by government agencies (but not accounted for within the national budgets), are also included here, relying on project documents and the government's DAD database for project fund disbursement. Data are often provided in calendar years for non-GoR data and, for simplicity, is applied to the following fiscal year to align with GoR spending (e.g. 2007 expenditures will be considered 2007/08 fiscal year expenditures). In addition, data on external funds are often provided in US dollars or Euros. These figures are converted to Rwandan Francs using the average monthly exchange rate for that year.

7.1 Bilateral ODA

Biodiversity-related ODA is tracked through the Creditor Reporting System, a database of aid activities managed by the OECD. Development Assistance Committee members screen all aid activities to identify which activities are aimed at meeting the objectives of the three Rio conventions[52]. As can be seen from the graph below, there is no clear trend in bilateral biodiversity-related ODA year-to-year, although overall biodiversity budgets seem to be increasing, representing 3 percent of total bilateral ODA in 2009, and over 12 percent in 2015.

[52] UN Convention on Biological Diversity (CBD), UN Framework Convention on Climate Change (FCCC), and the UN Convention to Combat Desertification (CCD)

Figure 48 Bilateral Biodiversity-related ODA, Annual and Share of Total Bilateral ODA 2009 – 2015



Assessing the OECD Rio marker data allowed for the identification of the top biodiversity donors in Rwanda. Because a majority of these aid activities are marked with the 'Significant' Rio marker, it would be an overestimation to attribute 100 percent of these aid activities to biodiversity. Therefore, this database is used simply to identify top donors, and then these donors were contacted directly regarding their biodiversity-related development activities in Rwanda during this time frame. The key donors consulted to identify and quantify biodiversity-related expenditures were United Kingdom, United States, Sweden, Belgium, and Netherlands. An additional source of donor funded projects was the Development Assistance Database, managed by MINECOFIN. The database was queried by sector (including natural resources and agriculture) for the time period assessed here (2011-2017).

7.1.1 United Kingdom

The United Kingdom, through its Department for International Development (DFID) has primarily supported the natural resource and agriculture in Rwanda through two funding mechanisms. Since 2011/12, the UK has provided over 36 million in sector budget support to agriculture. Sector budget support becomes incorporated into national budgets and is reflected as agency budget allocations in the State Finance Laws. Therefore, the UK support to agriculture is already captured in the national budgets for MINAGRI and RAB assessed in the previous section.

In addition, DFID has provided, through its International Climate Fund, over USD 22 million in capitalization funds to establish and operationalize FONERWA, Other development partners -- including The German Development Bank (KfW), the Global Green Growth Institute (GGGI), the Development Bank of Rwanda (BRD) and others -- have also provided contributions. These expenditures are assessed in the MINIRENA

budgets above according to the portfolio of projects funded through FONERWA since its inception in 2013.

7.1.2 Sweden

Sweden's support to biodiversity conservation in Rwanda is reflected in the SIDA-supported Natural Resources and Environment Program (NREP). The objectives of this project were twofold: 1) land reform and land tenure regularization, and 2) environment and climate change. The objective of the environment and climate change component was to strengthen the capacity of MINIRENA and REMA to secure effective environment pollution control for sustainable development, mainstreaming environment in different sectors, strategies, programs, and policies, and to address climate change issues.

This component of the project is reflected in the REMA budgets as an external grant in the amount of 1.3 billion RWF from 2011/12 to 2012/13. According to the DAD database, however, 2.5 billion RWF were distributed between 2013 and 2014. Therefore, the remainder 1.2 billion RWF is assumed to be extra-budgetary activities not accounted for in the REMA budgets, and this incremental budget is added to the total biodiversity budget for this timeframe. As this project was assessed as low biodiversity relevance, only 25 percent of this incremental budget is accounted for.

7.1.3 Belgium and Netherlands

Belgium and the Netherlands have historically been large donors to Rwanda's forestry sector. Since 2008, both Belgium (BTC) and the Netherlands have supported reforestation efforts under RNRA's PAREF project, implemented in two phases from 2008 through 2016. The primary objective of this project is to increase forest surface cover and biomass energy productivity, and to test participatory management schemes in pilot areas. Although biodiversity conservation is not a primary objective of this project, certain activities under PAREF indirectly contributed to biodiversity, including the establishment of buffer zones around Gishwati and Nyungwe forests, important ecological areas for biodiversity protection. Therefore, this project was attributed with an 'indirect low' relevance to biodiversity, and 25 percent of the project budget is considered biodiversity-relevant.

Total activities accounted for in the RNRA budgets equaled 5.82 billion RWF (1.578 billion RWF in Phase-I, and 4.242 billion RWF in Phase-II). According to project documents and the DAD database, the combined contributions from Belgium and the Netherlands in Phase-II of PAREF (2013-2016) was 9.7 billion RWF. It is assumed that the remainder of this project budget was spent through extra-budgetary expenditures, or activities implemented by RNRA, but the resources were not channeled through RNRA budgets. Therefore, the incremental project expenditures of 5.459 billion RWF are included under Belgium and Netherlands contributions. As the project was assigned an 'indirect low' biodiversity relevance, only 25 percent of these incremental project expenditures are allocated to biodiversity.

7.1.4 United States of America

The U.S. Government has funded a few projects directly related to biodiversity in Rwanda during the time period assessed. Two projects funded by the U.S. Agency for International Development (USAID) have supported biodiversity conservation and sustainable ecotourism in and around Nyungwe National Park. In addition, the U.S. Department of Interior funded, through the U.S. Fish and Wildlife Service, a number of great ape and avian conservation activities through conservation NGOs. The below projects have been identified as biodiversity relevant.

The *Strengthening Sustainable Ecotourism in and around Nyungwe National Park (SSENNP*), also known as the Nyungwe Nziza Project, was funded by USAID that ran from 2010 through 2015, implemented by DAI International, an international development company. Nyungwe National Park is one of the last remaining expanses of montane forest in the Albertine Rift landscape, and is home to many rare and endangered species. The objective of this project was to support RDB's efforts to transform Nyungwe National Park into a viable ecotourism destination that can generate sustainable and equitable income for local communities and as many other stakeholders as possible including private investors. By creating employment, economic incentives will encourage local communities to conserve the rich biodiversity of the Park.

Results of this project included the improved capacity to sustainably manage ecosystems, the increased value of ecosystem services, and the improved policy environment for environmental management. Project activities included:

- Nyungwe tourism products developed through increased private sector participation
- Improved marketing and promotion of Nyungwe National Park
- Improved integration between communities and ecotourism value chain
- Improved policy and enabling environment for ecotourism
- Improved RDB, private sector, and community capacity for ecotourism planning and management.

The total cost of this project incurred from the 2011/12 fiscal year to the 2016/17 fiscal year is USD 8.8 million. Although this project was primarily targeted at boosting eco-tourism in and around the park, the objective was to support the conservation and sustainable use of Nyungwe National Parks' rich biological resources and is therefore considered a biodiversity-related expenditure.

Another USAID-funded project, *Sustaining Biodiversity Conservation in and around Nyungwe National Park*, was implemented by the Wildlife Conservation Society, with the objective of creating market instruments to safeguard water availability in Nyungwe National Park. Nyungwe provides key hydrological services to surrounding communities such as water cycle regulation, maintaining improved water quality,

controlling sediment loads, and improving aquifer recharge. The project aimed to design and develop a payment for ecosystem service scheme as a means to protect and enhance the services and values, particularly watershed services, provided by the Park while securing benefits to the adjacent communities. The project cost is estimated at USD 3.8 million, and is included in the biodiversity expenditures for WCS in the following section.

The US Department of Interior's Fish and Wildlife Service (US FWS) has also financed great ape conservation through a number of NGOs including the Dian Fossey Gorilla Fund, the International Gorilla Conservation Programme, and the Wildlife Conservation Society, to support chimpanzee and mountain gorilla conservation efforts. These expenditures will also be included with the participating NGOs below.

One final project funded through the US FWS is the project: *Combating the Illegal Trade and Recovering the Population of Endangered Grey Crowned Cranes* in Rwanda, implemented by the Rwanda Wildlife Conservation Association, who received USD 25 thousand in 2015 to double the population of grey crowned cranes in Rwanda through reducing illegal trade and the pressures to poach along with the rehabilitation and reintroduction of captive grey crowned cranes back into the wild.

7.1.5 Germany

Through the Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMUB)'s International Climate Initiative (IKI), Germany supported the creation of an agroforestry transition zone around Nyungwe National Park, implemented through the University of Koblenz-Landau. The project, entitled *Preserving Biodiversity in the Nyungwe Forest*, aimed to conserve biodiversity and the ecological functions of Nyungwe National Park, which provides important carbon sequestration water storage services. To protect the forest, the project established an agroforestry belt around the Park, which serves as a buffer zone in the transition from cloud forest to sustainable agriculture and forestry in the surrounding area. Some 6,500 hectares were reforested; over 10,000 farmers were trained in sustainable farming and agroforestry methods; and environmental education programs were established in schools. The project ran from 2010 through 2014, with disbursements of USD 1.4 million. As the annual budgets for these projects are not known, the project expenditures are evenly divided among the project years.

More recently, BMUB began supporting, through the IKI, another project to protect the biodiversity and geoecological functions of Cyamudongo forest, an isolated forest patch annexed to Nyungwe National Park. The Cyamudongo forest is another important landscape for carbon sequestration and water storage, but is under increased pressure from surrounding agricultural and other activities. The project aims to expand and restore a buffer zone by converting 6,000 ha of agricultural land into sustainable agroforestry systems using native species of trees. In addition, the project will enhance the protection of biodiversity within the park through the training of park staff, nature conservation agencies and students, and through monitoring anthropogenic disturbances

to reduce the further degradation of the forest. The project began implementation in September of 2016 with a duration of five years and budget of USD 2.5 million. Here again the annual budget for this project is assumed to be evenly divided among the project years.

7.2 Multilateral ODA

7.2.1 GEF

The Global Environment Facility (GEF) was established in 1992 during the Rio Earth Summit to catalyze investments in the environment, including climate change, desertification, and biodiversity. The GEF serves as the finance mechanism for a number of international environmental conventions, including the United Nations Convention on Biological Diversity.

As of 2017, forty-one projects have been financed through the GEF in Rwanda, totaling USD 153 million. These projects cover areas such as biodiversity, land degradation, climate change, and persistent organic pollutants. This GEF financing has leveraged an additional USD 750 million in co-financing. Each of these projects that have been implemented during this expenditure review period (2009 through 2017) have been reviewed for biodiversity relevance. These GEF-funded projects are all implemented through Government agencies, and therefore a proportion of the project costs is reflected in the national budgets and accounted for in the previous section by budget agency. There may be project costs, however, that are extra-budgetary and not accounted for in the national budgets. The amount of GEF financing reflected here is the total amount for each project, but only the proportion of the project cost not already reflected in the national budgets is added to the biodiversity spending total.

National Biosafety Framework Implementation (2010-2014)

Support to the implementation of Rwanda's Biosafety Framework, implemented by UNEP and executed by REMA, assisted in strengthening biosafety capacity at a national level for decision making and management or potential risks associated with the application of modern biotechnology, in conformity with the Cartagena Protocol on Biosafety. Project outcomes included a stock-take on the status of biosafety, the establishment of a national administrative and institutional framework to handle issues on biosafety, the building and integration of institutional and human resource capacity into national policy and budgetary processes, public participation in decision-making and access to biosafety information, and the development of a monitoring and evaluation system.

Financing for this project totaled USD 1.61 million, with GEF financing of USD 645 thousand and co-financing of USD 969 thousand coming from the Government of Rwanda. Only USD 245 thousand for this project is reflected in the REMA budgets as external grants, therefore, it is assumed that USD 400 thousand were extra-budgetary project expenditures.

Reducing Vulnerability to Climate Change by Establishing Early Warning and Disaster Preparedness System and Support for Integrated Watershed Management in Flood Prone Areas (2010-2013)

The overall objective of this GEF project, implemented by UNEP and executed by MINIRENA, was to reduce the vulnerability of the Gishwati ecosystems and its associated Nile-Congo crest watershed, and the people that derive their livelihoods from it, to increased floods and droughts due to climate change. This objective was achieved by promoting and demonstrating adaptation adjustments to integrated watershed management practices and, by increasing the capacity to detect climate patterns and develop responses that minimize the risk of adverse impacts. The for components and outcomes of the project were:

1. Climate Risk Assessment and Forecasting: Increased institutional capacity for climate change early warning systems
2. Climate change adaptation planning and response strategies: Increased institutional and community capacity for responding to climate change risks through preventative planning
3. Demonstrations of adaptation practices in the Nile-Congo crest watersheds and Gishwati ecosystem: Reduction in floods and drought and their adverse impacts through increased environmental resilience against climate shocks in the Nile-Congo crest watersheds
4. Knowledge Management, Public Awareness and dissemination of lessons learned and best practices: Increased knowledge of good practices to reduce vulnerability to climate change (sustainability and replicability)

Although this project, valued at USD 7 million, was directly targeted at achieving climate change adaptation objectives, secondary objectives of biodiversity and ecosystem conservation are achieved through landscape restoration and watershed management. Therefore, it is deemed that 25 percent of the project costs are attributable to biodiversity. It is assumed that the co-financing was primarily made through the Government of Rwanda and accounted for in national budgets. Only USD 1.194 million is accounted for as external loans in the REMA national budgets; therefore, it is assumed that USD 2.446 million was spent on the project through extra-budgetary expenditures, 25 percent of which is considered biodiversity spending.

Table 16 GEF contributions and co-financing

Financier	Amount of financing (USD)	Biodiversity Relevance	BIOFIN Category
GEF-LDCF	3,641,000	Low	Biodiversity awareness and knowledge
Co-financing	3,400,000		
Total	7,041,000		

Management of PCBs stockpiles and equipment containing PCBs (2012-2015)

The objective of this project was to reduce the environmental and human health risks from PCBs released through the development of economically efficient and environmentally effective management of PCB oils, equipment and wastes held by electric utilities in the country. The project components included the completion of a PCB inventory, legislative support to operative a sound PCB management system, and sensitization of stakeholders to ensure handlers are well informed.

The GEF-project grant, implemented by UNDP, was in the amount of USD 886,700, with co-financing of USD 1,081,870. All of these project costs are accounted for in REMA's national budgets, and therefore it is assumed that there were no extra-budgetary expenditures for this project.

Landscape Approach to Forest Restoration and Conservation (2015-2020)

Funded by GEF through the World Bank, the objective of the Landscape Approach to Forest Restoration and Conservation Project (LAFREC) is to support the upgrading and sustainable management of the Gishwati and Mukura Forest Reserves, restore the Gishwati-Mukura landscape, build resilient livelihoods and develop flood forecasting and preparedness. The GEF project grant was approved for USD 9.532 million in 2012, with co-financing of USD 53.53 million, anticipated to run between 2015 and 2020. Co-financing is primarily in the form of in-kind contributions and soft loans through other World Bank projects (e.g. LWH and LVEMP), and therefore it is assumed that the co-financing is reflected in the national budgets already. Of the USD 9.5 million GEF-grant, USD 2.6 million is reflected as external grants in the REMA budgets for 2015/16 and 2016/17. Since this project is on-going however, it is not known what expenditures are extra-budgetary. Therefore, it is assumed that the remainder of the project costs will be reflected in REMA budgets and included in future projections.

Building Resilience of Communities Living in Degraded Forests, Savannahs and Wetlands of Rwanda through an Ecosystem Management Approach (2017-2021)

This project, funded by GEF through UNEP, aims to increase the capacity of Rwandan authorities and local communities to adapt to climate change by implementing Ecosystem-based Adaptation (EbA) interventions in forests, savannas and wetlands. The GEF project grant amounts to USD 5.5 million, with USD 9.2 million in project co-financing. The project will include the following interventions: strengthening the technical capacity of Rwanda to plan and implement EBA, strengthening the policy and strategy framework in Rwanda to promote ecosystem restoration and management, restoring ecosystems to increase their resilience to the effects of climate change, and promoting sustainable and climate-resilient livelihoods.

This project is considered directly relevant to biodiversity, and 100 percent of the project can be attributed to biodiversity. As this project was not yet accounted for in the

national budget periods reviewed here (2009/10 through 2016/17), the project grant of USD 5.5 million is included as a budget projection here for the period of 2017/18 through 2020/21.

Forest Landscape Restoration in the Mayaga Region

One final GEF-funded project is the Forest Landscape Restoration in the Mayaga Region, whose concept note was approved in May, 2017. The objective of this project is to secure biodiversity and carbon benefits while simultaneously strengthening the resilience of livelihoods, through forest landscape restoration and upscaling clean technologies in selected Districts of Southern Province. The project has three components:

1. Develop decision support tools for planning forest landscape restoration
2. Build the skills and capacity for the implementation of forest landscape restoration plans
3. Generate incentives for adopting energy efficient technologies to reduce pressure on forest resources while simultaneously securing household access to energy and reducing emissions.

It is anticipated that this project will commence in 2018 with a duration of 5-years. The anticipated USD 6.2 million GEF-grant however has not yet been committed and therefore is not included in this expenditure review.

7.3 Non-Governmental Organizations

Information on biodiversity-related expenditures from conservation NGOs was collected directly from the organization. The international, regional, and national NGOs identified in the PIR (e.g. WCS, DFGFI, MGVP, IGCP, ARCOS, FHA, ACNR, ARECO, RECOR) were requested to provide information on their biodiversity conservation programs from the period of 2011 through 2017. A survey instrument was developed in order to explain the objectives of the BIOFIN program, and request four levels of information: 1) project description, 2) project cost, 3) source of funds, and 4) classification of project according to the BIOFIN methodology[53].

Five organizations responded to the expenditure review request, including the Albertine Rift Conservation Society (ARCOS), the Dian Fossey Gorilla Fund (DFGFI), the Wildlife Conservation Society (WCS), the Mountain Gorilla Veterinary Project (MGVP) and the BIOCOOP, a nascent social enterprise committed to, inter alia, integrating biodiversity conservation and ecotourism into sustainable development initiatives in Rwanda.

ARCOS has implemented four projects over this time period, with an average annual expenditure of USD 300,000. The projects are:

[53] The NGO survey instrument can be found in Annex H.

- Stakeholders Engagement for Informed Decision-Making, Threats, Mitigation and Sustainable Freshwater Services Management in the Great Lakes Region of East and Central Africa (2013-2015)
- Albertine Rift Biodiversity Portal – Making biodiversity data contribute to biodiversity conservation in the Albertine Rift region (2013-2015)
- Civil Society Alliance for enhanced implementation of EIAs in Key Biodiversity Areas of the Albertine Rift region (2014-17)
- Using Water-Energy-Food Security Nexus to Promote Climate Resilient Decisions and Model Actions in Selected Landscapes along Akagera Basin (2015-2018)
- Sustainable Mountain Development for Global Change – Africa Programme

DFGFI has implemented eight programs over this time period, with average annual expenditures of USD 900,000. The projects are:

- Long-term data study on gorilla behavioral ecology
- Long-term monitoring of biodiversity changes in Volcanoes National Park
- Conservation education in primary schools located around Volcanoes National Park
- Environmental education in secondary schools located around the Volcanoes National Park
- Scientific capacity building programs for undergraduate students fro higher learning institutions in Rwanda
- Gorilla monitoring and protection
- Anti-poaching patrols
- Support Bisoke clinic to prevent cross-transmission of diseases between humans and park animals

WCS has primarily supported Nyungwe National Park and the surrounding landscape through the below activities, with annual expenditures averaging USD 995,000:

- Research and monitoring
- Transboundary collaboration
- Promoting sustainable natural resource management
- Education and outreach

MGVP supports three programs to protect mountain gorilla in Volcanos National Park, through the activities below averaging USD 450,000 per year:

- Wildlife health scientific capacity building for undergraduate university students and for veterinary professionals
- Mountain gorilla and sympatric wildlife health monitoring and protection, pathogen surveillance, pathology, and confiscated gorilla care
- Employee park health program

BIOCOOP Rwanda is a social enterprise implementing a project on integrating biodiversity conservation and community development, with annual expenditures averaging USD 15,000.

Table 17 Annual NGO biodiversity expenditures, 2009 – 2016 (USD)

NGO	2009	2010	2011	2012	2013	2014	2015	2016
ARCOS					300,000	300,000	300,000	300,000
DFGFI	911,200	904,051	813,371	974,243	849,735	928,945	838,729	956,484
WCS	720,012	891,039	899,840	955,117	1,318,060	1,087,141	1,151,942	941,885
MGVP	316,000	376,000	347,000	385,000	465,000	485,000	511,000	580,000
BIOCOOP				5,000	30,000	15,000	10,000	15,000
TOTAL	**1,947,212**	**2,171,090**	**2,060,211**	**2,319,360**	**2,962,795**	**2,816,086**	**2,811,671**	**2,793,369**

7.4 Private Sector

Collecting biodiversity expenditures from the private sector is a common challenge faced in many expenditure reviews. In some countries, statistical departments collect expenditure data from private specialized producers of environmental protection services as well as businesses on environmental protection. This information is classified according to standard environmental protection activities (e.g. wastewater management, waste management, protection of biodiversity and landscapes)[54]. In Rwanda, the private sector does not report on their environmental protection expenditures; consequently, there is not a central repository of private sector environmental expenditures to review. As a result, two efforts were made in an attempt to identify and collect expenditures from the private sector. First, the Akagera Management Company, a public-private partnership currently managing Akagera National Park, one of Rwanda's four National Parks, was requested to provide their expenditure details for the purposes of this study. Second, an attempt to collect additional private sector expenditures was made using a brief questionnaire distributed to the Private Sector Federations' Chambers of Agriculture and Tourism, two sectors directly reliant on biodiversity[55]. The questionnaire asked Chamber members to answer three questions: a) their awareness of the business impacts and dependencies, b) whether they make business decisions to reduce negative impacts or create positive impacts on biodiversity, and c) the amount and description of financial investments

[54] Eurostat, the statistical office of the European Union, for example, collects environmental protection expenditures from specialized producers of environmental protection services, the business sector, the general government sector, and the household sector according to the Classification of Environmental Protection Activities (CEPA 2000) through an annual OECD/Eurostat Joint Questionnaire on Environmental Protection Expenditures and Revenues.

[55] The questionnaire distributed to the PSF Chamber members can be found in Annex I, along with AMC expenditure tables.

made to improve biodiversity or reduce the negative impacts their business operations have on biodiversity. Unfortunately, no completed questionnaires were returned.

7.4.1 Akagera Management Company

Today there are four national parks in Rwanda: Volcanoes National Park, Nyungwe Forest National Park, Gishwati-Mukura National Park (officially gazetted in 2016), and Akagera National Park. The former three are all managed by RBD. The last, Akagera National Park, is currently managed by the Akagera Management Company (AMC). The Akagera Management Company is a public-private partnership (PPP) comprised of two shareholders: the African Parks Network (APN, 51 percent shares) and the Rwanda Development Board (RDB, 49 percent shares). The joint agreement was made in 2010 and will remain in place for 20 years. The board of directors is made up of three appointees from government including the chairman, and four appointees by ANP. The park retains all revenues generated from park activities. A majority of the investments and funding comes from APN, with the exception of a USD 250 thousand contribution by RDB annually.

The table below reflects expenditure data that were collected directly from the Akagera Management Company covering the time period assessed in this review (2011/12 through 2016/17). Calendar years were converted to fiscal years to align with government budgets (e.g. 2011 expenditures are considered 2011/12 expenditures).

Table 18 Total expenditures by Akagera Management Company,2011-2016 (RWF million)

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Net Revenue	207.96	305.41	560.54	683.63	881.11	1,068.81
Revenue Sharing Distributions	66.94	73.10	84.35	96.76	108.59	152.25
Operating and Capital Expenditures	815.84	1,316.86	1,610.33	1,715.70	1,926.99	1,950.49
Special Project Expenditures	-	-	-	-	197.73	518.96
Total Expenditures	**882.78**	**1,389.96**	**1,694.68**	**1,812.46**	**2,233.31**	**2,621.70**

Note: Average annual exchange rates were used to convert USD to Rwandan Francs.

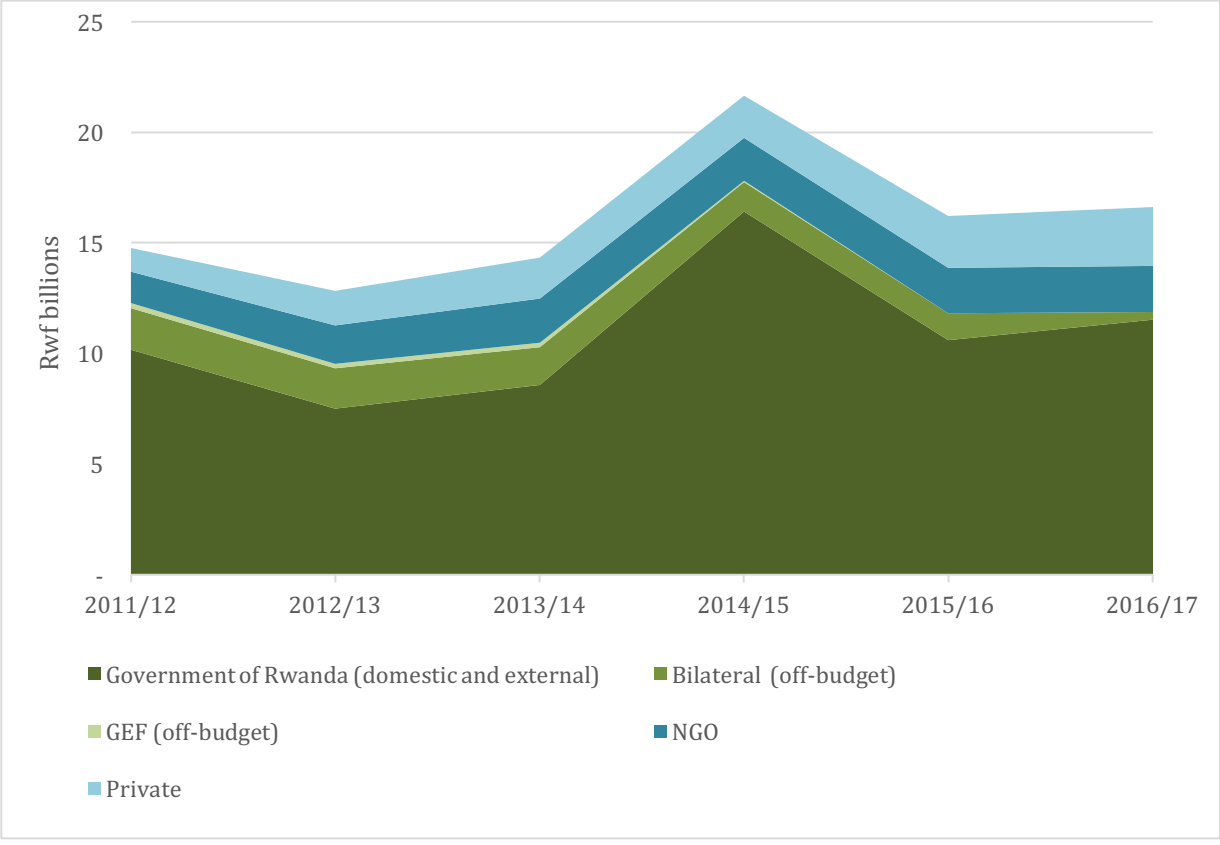
8. Total Biodiversity Expenditure

This section summarizes the total biodiversity expenditures estimated above from GoR and non-GoR implementing entities.

8.1 Summary of Total Biodiversity Expenditures

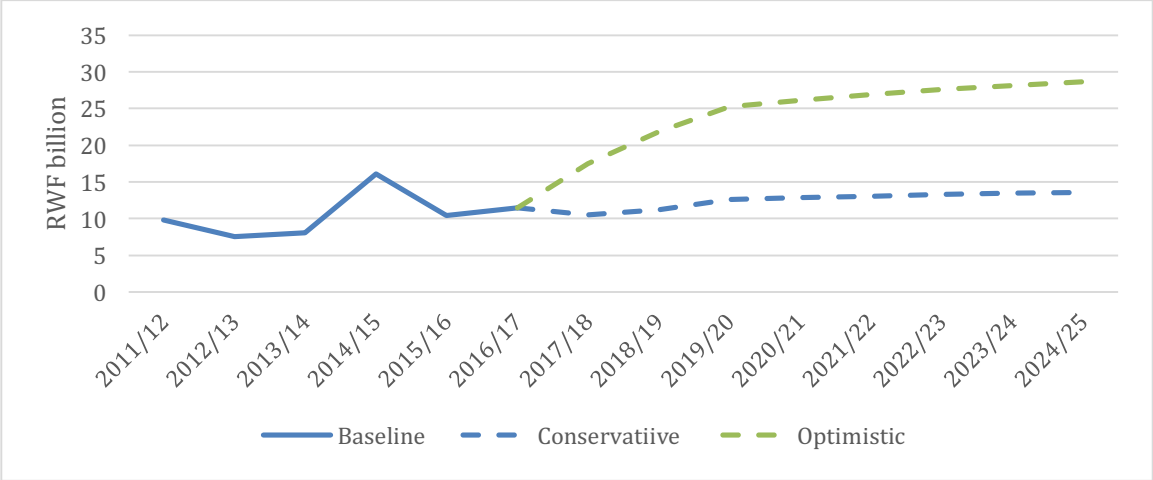
Combining biodiversity expenditures from non-GoR implementing entities with the estimated biodiversity expenditures from GoR budget agencies provides an overview of the total baseline biodiversity expenditures in Rwanda from the period 2011/12 to 2016/17. Total biodiversity expenditures amounted to 14.4 billion RWF (2014 prices) in 2011/12, to a peak of 21.7 billion RWF in 2014/15, before falling to 16.6 billion RWF in 2016/17. The large peak in 2014/15 is explained by GoR expenditures. To further clarify, expenditures accounted for in the GoR activities include both domestic resource allocations as well as external grants and loans. Therefore, the GEF and bilateral donor expenditures reflected below are either those expenditures that were considered extra-budgetary (i.e. not accounted for in the national budgets) or implemented by non GoR institutions, such as NGOs.

Figure 49 Total real biodiversity expenditures, 2011/12 – 2016/17



As explained earlier, future biodiversity expenditures are estimated for GoR using two approaches. The first approach applied a weighted-average of the proportion of biodiversity expenditures to project the 2017/18 – 19/20 fiscal years, and then extrapolated to future years through 2024/25 by applying a linear trend from the years 2011/12 through 2019/20. This approach, considered high or optimistic, estimates future biodiversity expenditures to reach 28.7 billion RWF by 2024/25. The second approach simply applied a linear trend of biodiversity expenditures from 2011/16 to project future biodiversity expenditures from 2017/18 through 2024/25. This low, or conservative approach, estimates a more modest growth in biodiversity expenditures, reaching 13.6 billion RWF by 2024/25, an increase from 11.5 billion RWF in 2016/17.

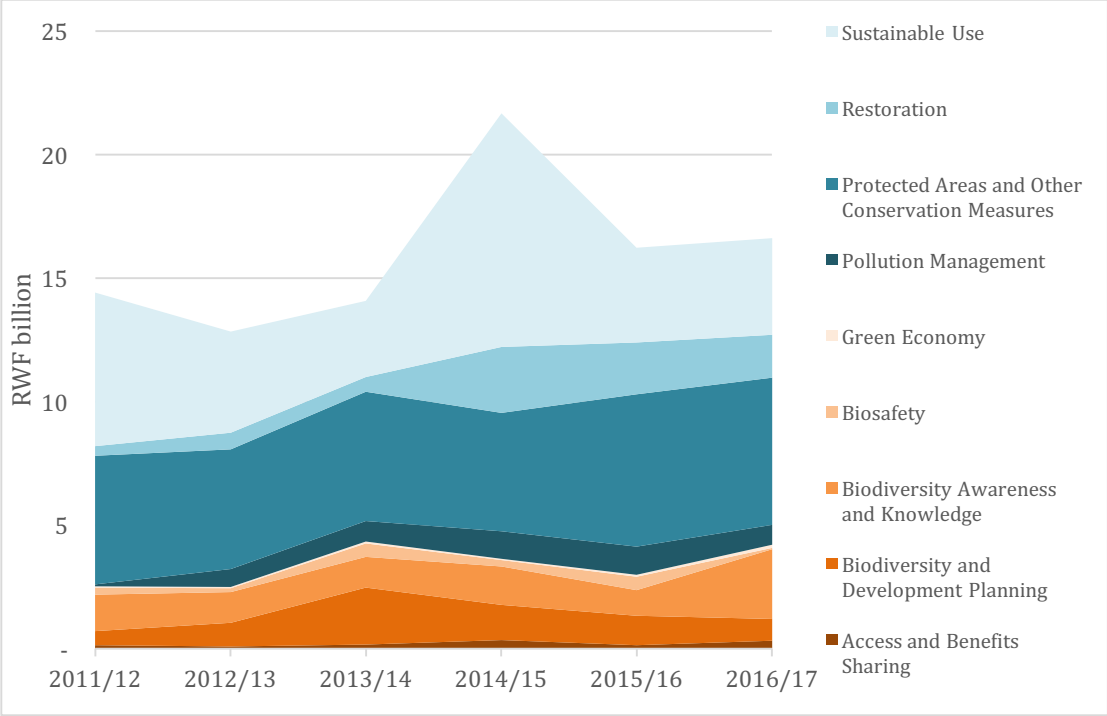
Figure 50 Estimated and projected real (2014 prices) GoR biodiversity expenditures, optimistic and conservative scenarios, 2011/12 – 2024/25



8.2 Summary of Biodiversity Expenditures by BIOFIN Category

Section 4.2 defined the nine categories of biodiversity expenditures as defined in the BIOFIN workbook. Each biodiversity activity and project in GoR and non-GoR budgets were classified into each of these nine categories, presented in Figure 51 below.

Figure 51 Total real biodiversity expenditures by BIOFIN category, 2011/12 – 2016/17



Based on these classifications, protected areas and other conservation measures accounts for the majority of biodiversity expenditures in Rwanda, with on average 35 percent of the total expenditures. Sustainable use also accounts for a large proportion of the expenditures, at 31 percent on average. Very few expenditures were identified that aligned with green economy, biosafety, and access and benefits sharing. Undoubtedly Rwanda spends substantially more on activities contributing to the green economy (e.g. sustainability certifications in the private sector such as Rainforest Alliance), but limited data availability from the private sector prohibited the collection of such biodiversity-related expenditures.

These estimates are only intended to provide indicative findings in relation to where biodiversity resources are being allocated. Classifications were made based on limited activity or project information as obtained in budget documents, and many activities aligned with multiple categories. Activities and projects were assigned to the BIOFIN category according to the most apparent objective of the activity.

9. Conclusions

This report has provided an in-depth review of the biodiversity expenditures in Rwanda over the period from 2011 through 2017. The table below summarizes biodiversity expenditures in the context of total national budgets and GDP. Real biodiversity expenditures have been variable over the time period; ranging from 14.3 billion RWF in 2011/12, to a high of 21.7 billion RWF in 2014/15, then declining to 16.6 billion RWF in 2016/17. As can be seen from the biodiversity expenditure growth rate, year-to-year expenditures have been extremely variable, with rates ranging from a 51 percent increase in 2014/15 to a 25 percent decrease in 2015/16.

Table 19 Summary of Total Biodiversity Expenditures as percent Budget and percent GDP, 2014 prices (RWF billion)

	11/12	12/13	13/14	14/15	15/16	16/17	Annual Average
GDP	**4,459**	**4,852**	**5,079**	**5,466**	**5,951**	**6,304**	**5,352**
GDP Growth Rate		**9 %**	**5 %**	**8 %**	**9 %**	**6 %**	***7.2 %***
GoR Budget	1,372	1,667	1,705	1,762	1,809	1,861	**1,696**
GoR Budget (as percent GDP)	30.8 %	34.3 %	33.6 %	32.2 %	30.4 %	29.5%	**32 %**
GoR Budget Growth Rate		***21 %***	***2 %***	***3 %***	***3 %***	***3 %***	***6.3 %***
GoR Biodiversity Budget	10.17	7.50	8.56	16.42	10.60	11.53	**10.8**
GoR Biodiversity Budget (as percent Budget)	0.74 %	0.45 %	0.50 %	0.93 %	0.59 %	0.62 %	**0.64 %**
GoR Biodiversity Budget Growth Rate		***-26 %***	***14 %***	***92 %***	***-35 %***	***9 %***	***2.5 %***
Non-GoR Biodiversity Budget	4.61	5.33	5.76	5.24	5.62	5.07	**5.3**
Non-GoR Biodiversity Budget Growth Rate		16 %	8 %	-9 %	7 %	-10 %	**2.4 %**
Total Rwanda Biodiversity Expenditures	14.78	12.82	14.33	21.66	16.22	16.60	**16.1**
Total Biodiversity Expenditure Growth Rate		***-13 %***	***12 %***	***51 %***	***-25 %***	***2 %***	**2.4 %**
Total Biodiversity Expenditure (as percent GDP)	0.32 %	0.26 %	0.28 %	0.40 %	0.27 %	0.26 %	**0.30 %**

Note: To align with national budgets, GDP for 2011 is considered 2011/12, etc. Average growth rates are based on cumulative annual growth from 2011/12 to 2016/17.

The high year-over-year variability of biodiversity expenditures, particularly within GoR budget agencies, makes anticipating future biodiversity expenditures a challenge, as identified in the variability of biodiversity projections based on the methodological approaches. This reflects a need to further mainstream biodiversity considerations across all environment and natural resource sectors to ensure consistent funding for biodiversity conservation and sustainable use.

Rwanda continues to be heavily reliant on foreign aid, with external grants and loans accounting for between 40-60 percent of development budgets depending on the year. This is no exception for biodiversity budgets, where external grants and loans account for 39-72 percent of the total government biodiversity expenditures (average 56%). The combined aid dependency, fluctuations in biodiversity expenditures, and low biodiversity mainstreaming in the natural resource sector create high uncertainty in future biodiversity finance and management. Future projections using high and low scenario estimates indicated that, by 2024/25, government expenditures on biodiversity could reach between 13.6 and 28.7 billion RWF, reflecting the large uncertainty in future projections. As 56 percent, on average, of government spending on biodiversity is through the development (project) budget, future spending is almost entirely dependent on government policy and program choices unless changes are made to increase sustainable financing sources for biodiversity management.

In order for Rwanda to achieve the targets set forth in its National Biodiversity Strategy and Action Plan, further action needs to be taken to mobilize domestic and international resources and ensure that these resources are secure into the future. Although it is important to ensure biodiversity conservation objectives are more effectively integrated into the development agenda, it is equally important to embed biodiversity conservation into recurrent government programs to ensure a sustainable flow of resources into the future despite fluctuating donor contributions.

Better tracking of biodiversity expenditures, particularly in national budgets, would enable the Government of Rwanda to assess trends in biodiversity spending over time to ensure they are on track to meet their national biodiversity targets. Through a tagging system, budgeted activities could be screened and assessed by budget agencies for biodiversity-relevance. A more sophisticated tagging system would enable all expenditures to be screened and tracked for biodiversity relevance.

List of Annexes

The list of below annexes refers to the spreadsheets containing the underlying data and tables to the figures in this report, along with survey instruments used to collect information from NGOs and the private sector.

Annex A: MINIRENA Budget Tables
Annex B: REMA Budget Tables
Annex C: RNRA Budget Tables
Annex D: RDB Budget Tables
Annex E: MINAGRI Budget Tables
Annex F: RAB Budget Tables
Annex G: University of Rwanda CoEB Expenditure Tables
Annex H: NGO Expenditure Tables and Survey
Annex I: Private Sector Expenditure Tables and Survey
Annex J: Total Biodiversity Budget Tables

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