



### Policy Brief number 1 February 2018

## Policy and Institutional Review for biodiversity conservation in Zambia

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### Key points and recommendations

- a) The policy and institutional landscape in Zambia is diverse and relatively adequate to finance and manage national biodiversity subject to various policy and implementation adjustments.
- b) The economic and financial drivers of biodiversity change are driven by economic and financial interaction between society and biological resources that positively or negatively impacts biodiversity.
- c) Economic valuations of biodiversity have indicated potential revenues from the natural assets base ranging from a low of \$51-\$135 million (2002-2007) from fisheries resources, \$396m/annum from wood production, \$6/ton of Carbon, to \$17 billion/annum by 2017 from mineral resources.
- d) Biodiversity dependent revenues are primarily through penalties, licensing, environmental impact assessments, fees and charges.
- e) Key biodiversity conservation departments and statutory bodies are spread over eleven ministries. To avoid fragmented coordination and implementation of biodiversity and environmental programmes, there is need to revisit the setup of the biodiversity conservation departments and institutions and ensure that departments with similar mandates fall under one Ministry.
- f) There is inadequate holistic policy and legal framework to involve the private sector and civil society in the direct implementation of the activities in the National Biodiversity Strategy and Action Plan.
- g) There is need for legislative change that will ensure that the revenue generated from biodiversity sectors is spent on conservation; increased budgetary allocations and timely releases of funds for planned activities in the biodiversity sectors.

### 1.0 Introduction

Zambia's rich biodiversity is scattered in customary or traditionally managed areas, protected areas, in-situ conservation areas and agricultural landscapes. As one of the 198 signatories to the Convention on Biological Diversity (CBD), Zambia has developed and revised the National Biodiversity Strategy and Action Plan (NBSAP-2) derived from the global conservation goals, the Aichi targets (GRZ, 2015a). The NBSAP-2 defines key conservation objectives and institutions mandated to lead the implementation of its 100 activities. The NBSAP-2 is in line with the Country's Vision 2030 and the National Development Plans. There are at least 12,505 species of organisms in Zambia: 242 are mammal species, 757 bird species, 6,135 species of

invertebrates, 156 reptile species with 45 considered to be rare, 490 fish species and 74 amphibian species. There are 3,543 species of wild flowering plants, 107 cultivated plant species, 567 wild crop relatives and 16 species of domesticated animals (GRZ, 2015b). The value of biodiversity can be classified into anthropocentric (economic or utilitarian values) and intrinsic or ethical values. The anthropocentric value has direct and indirect economic benefits to society (Mwitwa, 2017).

Biodiversity has an intrinsic value as it performs various ecosystem services through inherent ecological processes in the conservation of species, genetic resources and ecosystems. Biodiversity provides the anthropocentric values comprised of

goods and ecosystem services that include timber, medicines, foods (wild vegetables, mushrooms, tubers, bulbs, and animals), fibre, non-medical industrial products (chemicals and resins) and energy sources (fuelwood and charcoal). With such goods, making up the consumptive and productive values of biodiversity, a direct economic cost and value can be assigned that contributes to both the household and the national economy (Mwitwa, 2017). The continuous availability of goods and services depends on how well managed biodiversity is. One fundamental factor contributing to the effectiveness of governance and management infrastructure is biodiversity financing. Zambia finances biodiversity management mainly through government revenue and donor support.

This policy brief summarises the key findings related to the policy and institutional review (PIR) for biodiversity financing in Zambia. The specific objectives of the PIR were to:

- a) Describe how the management of biodiversity and ecosystem services supports national sustainable development goals and visions;
- b) Assess the economic and fiscal drivers of biodiversity change
- c) Identify sources of biodiversity revenues
- d) Identify barriers to improved or expanded biodiversity finance solutions including legal, policy, institutional and operational aspects
- e) Make policy recommendations to initiate, improve and scale up effective implementation of biodiversity conservation.

## 2.0 Data and Methods

The Biodiversity Finance Initiative (BIOFIN) methodology guided the theoretical framework of this research (UNDP, 2016). The preparatory phase of the PIR involved a preliminary understanding of the landscape of policies and institutions mandated to conserve biodiversity which were categorised into key biodiversity and related sectors.

A purposive analysis was carried out and included (i) limited and selective face to face interviews which were conducted with selected key informants from institutions identified as lead implementing entities in the NBSAP-2. (ii) an in-depth review of publications, policies, legislation, strategies, national development plans and annual reports from biodiversity and related institutions in

forestry, water, fisheries, wildlife, environment, natural resource and land, agriculture, livestock and energy sectors, civil society, cooperating partners, financial organisations, insurance entities, mining companies, revenue collection and administration and (iii) a stakeholder analysis to examine the roles and responsibilities of each implementing entity.

## 3.0 Key Findings

### 3.1 Institutional and policy framework

The institutions, policies, legislation, financing and incentive structures were reviewed to get an understanding of what is required to provide an enabling environment for biodiversity management in Zambia. The review also looked at the roles and institutional capacity building for biodiversity and related institutions. Institutions are defined as formal rules (laws or constitutions) or informal norms of behaviour that shape political, social and economic incentives in human exchange, (Colding *et al.*, 2003). They are also defined as established code of conduct that guide human interactions (Leach *et al.*, 1999; and Dewees *et al.*, 2010).

The institutional responsibilities to manage biodiversity in Zambia is placed with specific government ministries, departments or statutory bodies (Kalaba *et al.*, 2010). These entities are formed through Acts of Parliament and their mandates to ensure sustainable management of biodiversity within their sectors is stipulated in the different Acts that established them. In addition, each Act has a policy that prescribes the guidelines on how biodiversity will be governed and managed. Policies render roles and responsibilities for institutions and define their mode of operation through management plans and interventions (Mwitwa, 2017).

Some of the weaknesses across the biodiversity sectors include inadequate monitoring and evaluation of the biodiversity sectors in Zambia; weak financial and administrative systems for protected area management entities; inadequate funding to implement planned activities; inadequate human resources and the fragmentation of institutions or departments across eleven (11) Ministries. In addition, the biodiversity sector has weak private sector and civil

society involvement in the implementation of the biodiversity targets which are outlined in the NBSAP-2.

Civil society in Zambia includes national and international not-for profit organisations, foundations and trusts. The key civil society organisations that work in biodiversity conservation in Zambia are World Wide Fund for Nature (WWF), The Nature Conservancy (TNC), Centre for International Forestry Research (CIFOR), Zambia Climate Change Network (ZCCN), World Agroforestry Centre (ICRAF), Zambia Land Alliance (ZLA), Conservation Farming Unit (CFU), Worldfish, Zambia Honey Council, Community Markets for Conservation (COMACO), BioCarbon Partners, Green Living Movement (GLM), Conservation Lower Zambezi (CLZ), South Luangwa Conservation Society (SLCS), Frankfort Zoological Society (FSZ) and Kasanka Trust Limited. Civil society's role in biodiversity conservation includes capacity building, policy advocacy as well as information generation and dissemination (Ozor *et al*, 2016). The private sector can be engaged in biodiversity conservation directly as well as a source of funding for the set targets in the NBSAP-2. However, there is inadequate holistic enabling policy and legal framework to involve the private and civil society in the implementation of the NBSAP-2.

### **3.2 National Development Plans, green growth and ecosystem services**

Zambia's development vision is stipulated in the Vision 2030 whose vision statement is "A prosperous middle-income nation by 2030" (GRZ, 2017). Other key policy documents are the National Development Plans (NDPs). Currently, Zambia is implementing the Seventh National Development Plan (2017-2021) that aims at contributing to the achievement of green growth objectives set out in the Vision 2030. The green growth is taken to be "inclusive development that makes sustainable and equitable use of Zambia's natural resources within ecological limits" (Banda and Bass, 2014:35). The NDPs are supported by the biodiversity sector policies that include the National Policy on Environment (2007), National Forestry Policy (2014), National Agriculture Policy (2012), National Tourism Policy (2015), National Energy Policy (2007), Minerals Development Policy (2013), Fisheries Policy (2011), National Water Policy

(1994), and National Parks and Wildlife Policy (1998). However, there are some key policies that do not exist. The Land Policy has been in draft form from the early 2000s and the Wetlands Policy is equally in draft form pending formal comments by at least twenty (20) ministries and cabinet approval (GRZ, 2015).

### **3.3 Biodiversity economic valuation evidence**

The contribution of the biodiversity sector to the Gross Domestic Product (GDP) have varied over the years. Agriculture, fisheries, forestry and hunting recorded growth rates over the 2001 to 2014 period, with the sector's contributing 24% to GDP in 2000 declining to 9% in 2014. There was a slight increase in growth in this sector between 2014 and 2016, averaging 9.3% contribution to GDP. Agriculture and industry have been upstaged by the growth in the services sector as the primary lead to real economic growth at an estimated 60.8% share of GDP in 2015, while the industrial sector contributed an estimated 29.9% to GDP in 2015.

Economic valuation of biodiversity have indicated the following values for each natural asset: Fisheries: \$51-\$135 million (2002-2007); Forests: Wood production: \$396m/a; Non-wood forest products: \$135.8m/a; Carbon: \$15m/a (\$6/ton); Saving in soil erosion: \$247m/a; Pollination services: \$74m/a; Forest-based tourism: \$110-\$179m/a; GDP 4.7% or \$957.5m (2010); Mineral resources: \$17 billion/a by 2017; Tourism: Nature tourism (2005): \$194m (3.1% of direct GDP); Wildlife, tourism, wetland resources & Protected Areas (Zambezi wetland): Livestock: \$3.3m; Per cropped ha: \$117/a; Fish: \$4m (\$3.6/ha); Wildlife: \$10.97 (gross home value); Wild plants: \$473,499 (gross home value); Tourism: \$12m (gross use value) and the total direct consumptive use value of Barotse wetland is estimated at \$9.5m (0.15% of GDP).

### **3.4 Drivers of biodiversity change**

The threats to Zambia's biodiversity include uncontrolled wild fires, unsustainable utilisation/illegal offtake, pollution, charcoal production, poor governance and agricultural practices, mining operations, invasive species, inadequate baseline updates/ resource monitoring and encroachment. The sector specific drivers of biodiversity loss are outlined in *table 1*.

Table 1: Drivers of biodiversity loss in Zambia

Sectors	Economic	Financial
<b>Agriculture</b>	Subsidy -Farmer Input Support Programme has potential to affect biodiversity negatively promotion of “high yielding and profitable crops and crop varieties; pollution; conversion of small holder/subsistence/traditional farming systems to	Currency fluctuation
<b>Fisheries</b>	Lack of incentive for aquaculture development; Unsustainable utilisation/illegal offtake during the fish ban period & in fish breeding areas; population increase; Climate Change and variability; invasive species; pollution; lack to inadequate resource	Inadequate finances (budgetary allocation is about 29% of requirements)
<b>Forestry</b>	Unsustainable consumption forestry products; Agriculture expansion; land use change; Unsustainable utilisation/illegal offtake; mining & infrastructure development; agriculture expansion; encroachment; wildfires; poor governance. The Integrated Land Use Assessments phase two (ILUA II) estimated that Zambia is losing between 79,000 to 276,000 ha of forests annually with a weighted average of 0.6% of total land per annum (FAO and GRZ, 2016).  Lack of incentives for private sector or farm forest plantations	Inadequate finances (budgetary allocation ≈30% of requirements)  Inadequate retention of revenue for biodiversity conservation
<b>Water</b>	Illegal abstraction of water; unintegrated management of water catchments	Inadequate finances
<b>Wildlife</b>	Unsustainable utilization/illegal offtake; encroachment; habitat fragmentation; agriculture expansion.	Inadequate finances (budgetary allocation ≈30% of requirements)
<b>Mining</b>	Inadequate investment in value addition	Inadequate finances

Source: Mwitwa (2017)

More detailed analysis of these drivers can be referenced in Policy brief number 3 in the BIOFIN Zambia policy brief series titled “*Drivers of biodiversity loss in Zambia*”.

### 3.5 Sources of biodiversity dependent revenues

Biodiversity sector departments and statutory bodies such as environment (Zambia Environmental Management Agency - ZEMA), fisheries (Department of Fisheries), forestry (Forestry Department), heritage (National Heritage Conservation Commission – NHCC), livestock (Department of Livestock), tourism (Tourism Board), wildlife and tourism (Department of National Parks and Wildlife – DNPW) and water (Water Resources Management Authority- WARMA) generate significant amounts of revenue each year. The National Biosafety Authority (NBA)

is also likely to generate revenues in application, import and research permits. However, only an average of 30% revenue from these institutions are directed to biodiversity Management. The revenues are not retained at source as these constitute part of government revenue generation to finance the annual budget.

The policy for the remittance of most of the biodiversity dependent revenues to the consolidated account at the Central Bank raises the possibility for spending such revenues on activities that may not be biodiversity related. *Table 2* outlines sector specific biodiversity dependant revenues generated in Zambia between 2010-2017.

Table 2: Biodiversity Revenue (2010-2017)

Revenue sources	Grand Total
Mineral Royalty Tax	15,065,027,674
Excise Duty-Carbon	146,216,612
Mining Licences	112,640,386
National parks and Trophy Hunting	112,362,746
ZEMA Collections	74,626,571
Forestry Revenue	60,993,748
Water Board Fees	25,423,603
Excise Duty- Timber	18,993,121
Fish Licences	8,137,917
Import & Export Permit- Fisheries	2,751,299
Import & Export Permit- Agriculture	2,456,539
Proceeds from Sale of Fish	32,129
<b>Grand Total</b>	<b>15,629,662,345</b>

Source: Computed by the Authors from Government annual reports

Below is a brief analysis of sector specific revenues

### 3.5.1 Livestock Sector

The sources of revenue in the livestock sector include council fees, veterinary permit, police form, stock movement, police anti-theft stock clearance report.

### 3.5.2 Wildlife Sector

Revenue sources are fixed and variable lease fees, park entry fees, hunting quotas, tourism enterprise license, fees, court fines, Game Management Area land-user-rights fees and penalties

### 3.5.3 Water Sector

The main source of revenue generated in the water sector is from raw water user charges.

### 3.5.4 Environment Sector

The Environment sector generates revenue from the Environmental Impact Assessment fees and charges for new developmental projects. There is also the discharge of effluents fees and charges.

### 3.5.5 Forestry Sector

The biodiversity based revenues generated in the forestry sector come from timber and charcoal licenses, fees and levies.

### 3.5.6 Forestry Sector

Revenue sources in fisheries include importation of fishing gear, fish export permit, fishing license, special fishing license, registration of boats, aquaculture license, fines on interference with aquaculture facility, use of chemicals in aquaculture and general offences.

## 3.6 Gap analysis of legal framework for biodiversity financing

### 3.6.1 Financial Control and Management Act

There is no provision for moneys generated from forfeited assets to be channeled to the sectors from which the forfeited product originated. This is exacerbated by the fact that all revenues are centralized, therefore, retention of the money to be used on biodiversity conservation and management is not guaranteed.

### 3.6.2 Fisheries Act

One of the sources of revenue in fisheries are levies. The Fisheries Act does not provide for the collection of levies from cross border trading in the regulations. The cross border trading levy can be a potential source of revenue for the fisheries sector. The Act also does not specify the percentage share of revenue in co-management arrangements.

### 3.6.3 Environmental Management Act

The Act does not provide for regulations to ring fence the money from Carbon tax. It is difficult to track the money collected for Carbon taxes, currently collected by the Road Transport and Safety Agency as inland tax revenue and by the Zambia Revenue Authority that collects it at importation or entry point. The money goes into the consolidated account and some of it may be used for non-carbon sequestration activities. Fiscal revenue that are derived from environmental or biodiversity fiscal measures should have a separate account earmarked to fund environmental or biodiversity conservation projects only. Alternatively, tax revenue raised from environmental or biodiversity fiscal measures could be used to finance the National Biodiversity Conservation Fund which is proposed as one of the possible financing solutions for Zambia.

### 3.6.4 Forests Act

The Forest Act provides for a number of ways to generate financing. However, the percentage share

of revenue in co-management where government partners with communities and private sector is not specified.

### 3.6.5 Water Act

There is no definition of biodiversity management in the water sector activities. This makes it difficult to plan, budget or mobilise funds for biodiversity conservation, as a result, it weakens the sector from participating in biodiversity management.

### 3.6.6 Wildlife Act

There is no robust and specific incentive system designed for wildlife and tourism sectors including preferential “taxation” systems to give Zambia a competitive advantage over other countries. The sector loses potential sources of money that could be generated by attracting more tourists with well managed and improved biodiversity in tourist attractions across the country. The definition of “resources” and responsible organisation for resource exploitation in wildlife policy and legislation is weak. This creates a challenge to track the revenue that is generated by entities that are not formally recognised by the Wildlife sector.

### 3.6.7 Mines and Minerals Act

The Act does not provide for the mining companies to fund biodiversity conservation. There are no guidelines in the corporate social responsibility stipulating that the mining companies should finance biodiversity conservation activities. Most of the mining companies involved in biodiversity conservation base their funding on their own company’s greening initiatives or to stabilise the surface that has potential to affect the underground mining activities.

## 4.0 Conclusion and Recommendations

### 4.1 Conclusion

Zambia has an estimated 12, 505 biological species. The mandate to manage these biological resources is placed with different government departments and statutory bodies funded from the national budget or cooperating partners. The different institutions have the capacity to generate revenue up to 24% of the GDP. However, the legal and policy framework does not provide for a conducive environment for implementation of planned activities due to limited financing that is released by

the central Government to these institutions. In addition, the spread of biodiversity institutions over eleven ministries presents resource mobilisation and coordination challenges. There is need to realign the utilisation of some of the revenue generated by ring fencing biodiversity related revenue to fund activities in the sector and release budgeted amounts to ensure effective implementation of biodiversity activities. Government should also involve other stakeholders such as civil society, academia, research institutes and the private sector in resource mobilisation and implementation of the NBSAP-2.

### 4.2 Recommendations

The following are the general recommendations for all biodiversity related institutions:

#### 4.2.1 Strengthening Coordination

The Ministry of Lands & Natural Resources needs to improve its coordination of the implementation of the NBSAP-2 by tracking all the activities across the 11 ministries involved in the implementation of the plan. This should include a robust monitoring and evaluation system with key biodiversity conservation performance indicators that can track investment worthiness, effective spending and achievement of set biodiversity targets.

To avoid fragmented coordination and implementation of biodiversity and environmental programmes, there is need to revisit the setup of the biodiversity departments and institutions and ensure that departments with similar mandates fall under one Ministry. The new ministry can be called the “Ministry of Lands, Natural Resources and Environmental Protection” whose mandates should be to coordinate all natural resources management and environmental protection programmes in the country. Consequently, some of the key biodiversity conservation departments that are currently under other Ministries may be designated as departments under the proposed Ministry. These include Department of National Parks and Wildlife Protection currently under Ministry of Tourism and Arts, Department of Environment, Water Resources Management Authority (WARMA) and Zambia Environmental Management Agency (ZEMA) currently under the Ministry of Water Development, Sanitation and Environmental Protection, and the National

Biosafety Authority currently under the Ministry of Higher Education.

The current arrangements fragment the NBSAP-2 coordination and implementation as well as the effective use of financial and human resources.

#### 4.2.2 Financial & administrative autonomy

There is need to strengthen the financial and administrative autonomy of specialised protected area management agencies to enable them return a portion of the money they generate that can be invested in the implementation of the management plans for the protected areas. The utilisation of carbon tax should be realigned to ensure that the resources are used for carbon sequestration activities.

#### 4.2.3 Enabling environment for private sector and civil society engagement

There is need to create an enabling environment and space for private sector and civil society (including traditional leaders and community based organisations) to directly implement activities with the responsible government ministries, departments or statutory bodies. The model proposed under the Reclassification Project of Community Conservation Areas (CCA) which has a Private Public Partnership concept can be revised to include guaranteed tenure or proprietary rights and utilised in biodiversity conservation in all sectors.

#### 4.2.4 Sector specific recommendations

The sector specific recommendations are highlighted below;

##### (i) Agriculture

Measures to compel the agriculture sector to collaborate with other biodiversity sectors such as forestry and wildlife should be put in place to reduce the impact of agriculture expansion on biodiversity loss. Extensive use of wood in tobacco curing in Eastern Province require collaborative engagements between tobacco producers and the forestry sector over sustainable utilisation of wood.

##### (ii) Environment

Establish a biodiversity levy for every developer whose operations lead to biodiversity loss and degradation of the environment.

##### (iii) Fisheries

Develop a law to authorize the department of fisheries to apportion at least forty percent (40%) of the collected revenue into a local account upon receipt and for use at local level. There is also room to revise fisheries licence fees which averages \$15 per fisherman or woman per annum.

##### (iv) Forestry

Develop legislation to facilitate the retention of revenue generated from forfeited assets at the source of where the forfeited assets originated.

##### (v) Water

Budgetary allocation meant for water management should also carry a theme of biodiversity management as the two are interdependent.

##### (vi) Wildlife

The wildlife sector has several proposed recommendations. These include the re-introduction of Value Added Tax on tourist packages; retention of court fines; fees for culling of animals in support of registered traditional and cultural ceremonies; introduction of wildlife product permits and export/import permits from private ranches, farms, and zoos.

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