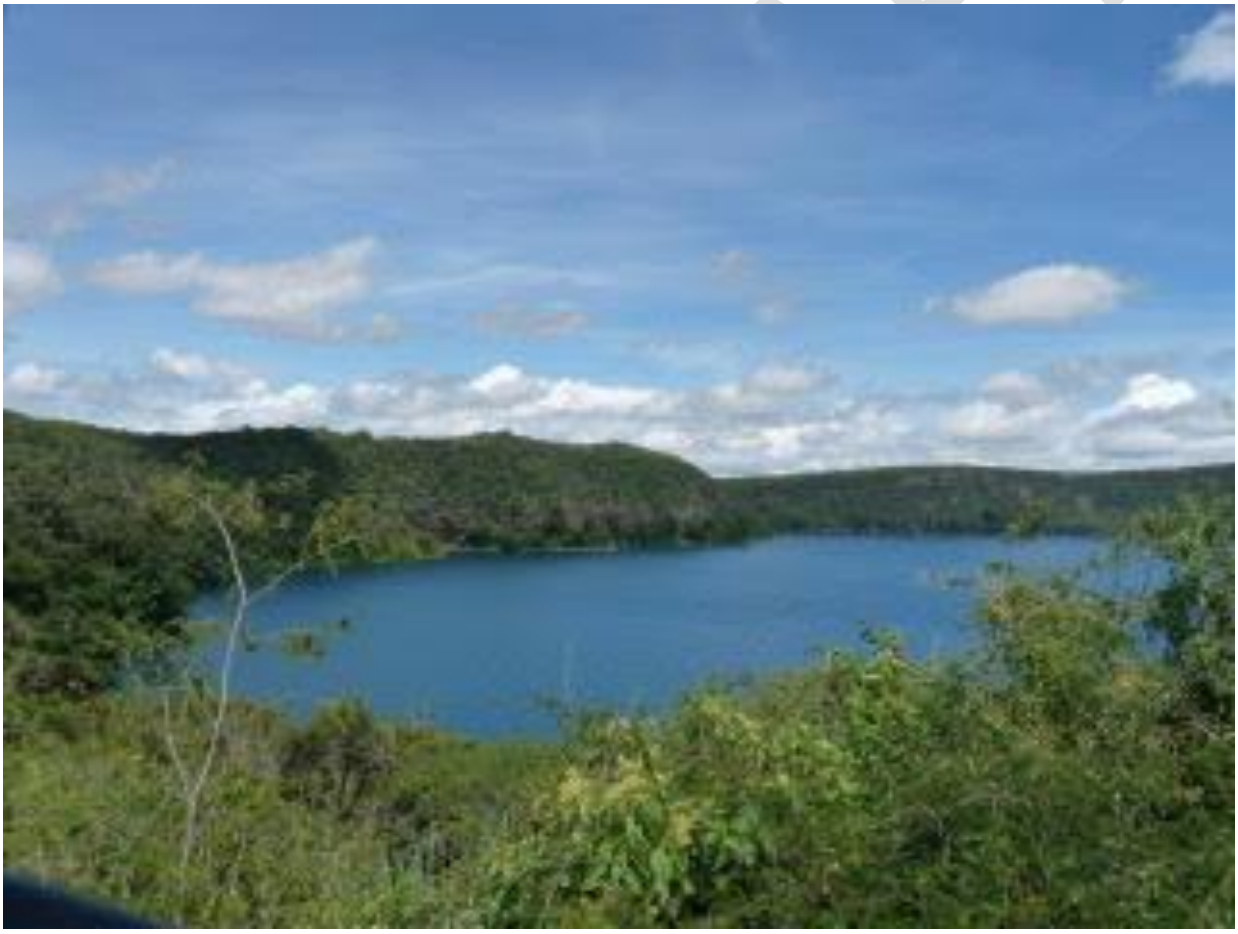
EAST AFRICAN COMMUNITY

EAC Regional Biodiversity Strategy and Action Plan (2021-2031)



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Foreword

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Abbreviations and Acronyms

ABS	Access and Benefit Sharing
ABT	Aichi Biodiversity Target
AFR100	African Forest Landscape Restoration Initiative
BIOFIN	Biodiversity Finance Initiative
BMP	Biodiversity Management Program
BTF	Biodiversity Task Force
CBD	Convention on Biological Diversity
CEPA	Capacity-building, Education, Participation and Awareness
CHM	Clearing House Mechanism
CoM	Council of Ministers
EAC	East African Community
EAC-RIASIS	EAC Regional Invasive Alien Species Information System
GEF	Global Environment Facility
GISP	Global Invasive Species Programme
GoK	Government of Kenya
GoR	Government of Rwanda
GoR	Government of Rwanda
GRSS	Government of South Sudan
GSPC	Global Strategy for Plant Conservation
IGAD	Intergovernmental Authority on Development
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature and Natural Resources
KALRO	Kenya Agricultural and Livestock Research Institute
KEPHIS	Kenya Plant Inspectorate Service
KFS	Kenya Forest Service
KMFRI	Kenya marine and Fisheries Research Institute
KWS	Kenya Wildlife Service
LVEMP	Lake Victoria Environmental Management Programme
MEAs	Multilateral Environmental Agreements
MoALF	Ministry of Agriculture Livestock and Fisheries
MoE	Ministry of Environment
MoEF	Ministry of Environment and Forestry
MWCT	Ministry of Wildlife Conservation and Tourism
MWENR	Ministry of Water, Energy, and Natural Resources
NBSAP	National Biodiversity Strategy and Action Plan
NCAs	Natural Capital Accounts
NDC	Nationally Determined Contribution
NEMA	National Environment Management Authority
NEMC	National Environment Management Council
NEPAD	New Partnership for Africa's Development
NMK	National Museums of Kenya

OBPE	*Office Burundais pour la Protection de l'Environnement*
OCFSA	*Organisation pour la conservation de la faune sauvage en Afrique*.
PA	Protected Area
RBIF	Regional Biodiversity Information Framework and Facility
RBS	Regional Biodiversity Strategy
RBSAP	Regional Biodiversity Strategy and Action Plan
RCMRD	Regional Centre for Mapping of Resources for Development
RECs	Regional Economic Communities
REMA	Rwanda Environmental Management Authority
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SO	Strategic Objective
ST	Strategic Target
STEs	Shared Transboundary Ecosystems
STI	Science, Technology and Innovation
TAWIRI	Tanzania Wildlife Research Institute
TCBC	Technical Committee on Biodiversity Conservation
TFS	Tanzania Forest Service
TRS	Tourism Revenue Sharing
UWA	Uganda Wildlife Authority
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
URT	United Republic of Tanzania
UDSM-IRA	University of Dar es Salaam Institute of Resource Assessment
WAVES	Wealth Accounting and Valuation of Ecosystems Services
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WWF	World Wildlife Fund

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EXECUTIVE SUMMARY

East Africa encompasses five of the eight global biodiversity hotspots that are present in Africa, hosting a quarter of the world's mammal species and the highest large mammal concentrations. The physiographic profile shaped the evolution of a wide variety of terrestrial, marine and aquatic ecosystems. These include a large number of Shared Transboundary Ecosystems (STEs), critical for regionally migratory species, or hotspots for illegal wildlife trade. The values of biodiversity in the EAC are realised as drivers for local livelihoods, national and regional economies. The actual monetary value of biological capital is however yet to be calculated in most countries. Despite the apparent great value, huge losses are being experienced which is attributed to a wide range of causes and with far-reaching consequences.

All the partner states have prepared NBSAPs from which key lessons can be learnt. The main challenges encountered by countries in the implementation of the strategies result from limited financial resources and difficulties in integrating biodiversity into diverse economic sectors. At the regional level, there are few good examples of experience with biodiversity strategies. Valuable lessons can however be drawn from the regional strategy for the Southern African Development Community (SADC) - notably that operationalization of focal areas is heavily dependent on the availability of both internal and external funding.

The EAC RBSAP is guided by principles associated with the EAC Treaty on Co-operation in the Management of Natural Resources, provisions of the EAC Protocol on Environment and Natural Resources Management, and EAC vision 2050. Its main goals and priorities are geared towards cementing the key achievements of country-level NBSAPs and addressing gaps in the implementation.

The RBSAP articulates the three Strategic Goals and fifteen (15) Strategic Targets outlined below:

Goal 1: Reduce direct pressures on trans-boundary biodiversity in the EAC region.

Strategic target 1: By 2030, ensure regional collaboration in the management of shared transboundary ecosystems (STEs).

Strategic target 2: By 2030, establish a regional protocol and effective capacity for cross-border surveillance, prevention and control of alien invasive species.

Goal 2: Safeguard ecosystems, species and genetic diversity.

Strategic target 3: By 2030, establish an EAC red listing framework for key taxa and joint protection of red-list species.

Strategic target 4: By 2030, develop measures to halt trade in products from endangered animal and plant species and their products.

Strategic target 5: By 2030, restore 10% of national AFR100 targets in degraded shared transboundary ecosystems through joint effort.

Strategic target 6: Locations that support wildlife concentrations outside protected areas, migrations and habitat connectivity identified and mapped for development of measures to implement corridors across the EAC.

Strategic target 7: Critical wildlife populations that are in need of restoration identified and mapped across the EAC landscapes and an implementation plan developed to prioritize them for restoration by 2030.

Strategic target 8: A protocol for the best practices for conservation and management of critical wildlife and ecosystems developed by 2030.

Strategic target 9: A framework and plan developed and implemented with best practices for integrating biodiversity into agricultural and forest plantations.

Strategic target 10: By 2030, a regional programme established for involving the local communities in biodiversity-related livelihood improvement.

<u>Goal 3</u>: Strengthen regional biodiversity management capacity and cooperation.

Strategic target 11: By 2030, initiate a regional program for regular monitoring of the state of shared transboundary ecosystems (STEs).

Strategic target 12: By 2030 establish and operate a Regional Biodiversity Information Facility (RBIF) in an appropriate EAC hub.

Strategic target 13: By 2030 establish a regional capacity building programme with collaborating institutions of higher learning.

Strategic target 14: An EAC regional framework for Access and Benefit Sharing (ABS) under Nagoya Protocol for genetic resources from shared ecosystems in implemented by 2030.

Strategic target 15: Data sharing plan for the region to support biodiversity conservation and planning by 2030.

CHAPTER I – INTRODUCTION

1.1 Background

The East African Community (EAC) is a regional intergovernmental organization of 6 Partner States in East Africa: the Republics of Burundi, Kenya, Rwanda, South Sudan, the United Republic of Tanzania, and the Republic of Uganda, with its headquarters in Arusha, Tanzania. It covers a region located approximately $5^{o}0'0''$N-$11^{o}0'0''$S; $30^{o}0'0''$E-$42^{o}0'0''$E with an area of 1.82 million square kilometres, a combined Gross Domestic Product of US$ 146 billion, and is home to 150 million citizens. East Africa is characterized by five of the eight global biodiversity hotspots that are present in Africa, namely a) the Coastal Forests of Eastern Africa (Kenya & Tanzania), b) Eastern Afromontane Region (Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda), c) Tropical Rainforest (Burundi, Kenya, Rwanda, South Sudan, Tanzania, and Uganda), d) the Horn of Africa Region (Kenya, South Sudan, and Uganda), and e) the Indian Ocean Islands (Kenya, and Tanzania). According to IPBES (2018), Africa hosts a quarter of the world's mammal species with the rangelands of eastern Africa hosting the highest diversity of large mammals in the entire world.

The physiographic profile of East Africa has enabled the evolution of a wide variety of terrestrial, marine and aquatic ecosystems in the region. This has resulted in a spectacular diversity of ecosystems which is strongly shaped by the landscape characteristics. These have a strong influence on altitudinal and climatic patterns as well as the geology and soils all which affect the distribution of flora and fauna. The five key physiographic zones in East Africa include the coastal belt along the Indian Ocean, extensive plains and plateaus, highlands (e.g. Kilimanjaro, Mt. Kenya, the Ruwenzoris), the Lake Victoria basin and the Great Rift Valley (including the eastern and western arms, the latter of which includes the Albertine Rift).

The marine and aquatic ecosystems are associated with the Indian Ocean as well as riverine, lacustrine and wetland systems further inland. The coastal and marine ecosystems are part of the Western Indian Ocean (WIO) region which contains a wide range of ecological associations including mangrove forests, coral reefs, sea grass beds, offshore continental shelf and deep sea pelagic ecosystems. The riverine ecosystems are dominated by four clusters of rivers, namely, the eastern axis associated with the rivers flowing into the Indian Ocean (e.g. Rufiji, Ruvuma, Tana); western axis consisting of rivers flowing into the Albertine rift lakes (e.g. Semliki); northern axis for those flowing into the Mediterranean Sea through Lake Victoria (e.g. Nile); and the Eastern Rift Valley axis for those flowing into Lakes Natron, Manyara and Eyasi in northern Tanzania.

The terrestrial ecosystems are dominated by forests, woodlands and rangelands. The rangelands occupy over 80% of East Africa in form of savannas, semi-arid and arid lands and, desert such as the Chalbi in northern Kenya. The forests are diverse (coastal forests e.g Arabuko-Sokoke, Pemba, Mafia and Ruvu; lowland forests such as the Eastern Arc; mid-elevation and high altitude forests e.g. Mt. Kilimanjaro, Mt. Kenya, Mt. Elgon, and Ruwenzori). The Miombo woodlands occupy a central plateau (800 to 1500m in elevation) in western and southern Tanzania which tends to hot and dry, with rainfall from 500 to 760 cm, with considerable daily and seasonal temperature variations.

A unique feature of terrestrial ecosystems is the Eastern Arc forests in Kenya and Tanzania, a chain of isolated mountains running northeast to southwest through eastern Tanzania and into the Taita Hills in Kenya. They are delimited on the southwest by the Makombako gap between Mount Rungwe at the junction of the eastern and western arms of the East African rift valley and the Udzungwa mountain range in south-central Tanzania. Similarly unique is the Albertine Rift which contains more vertebrate species than any other region on the continent, and more endemic vertebrate species than anywhere else on mainland Africa (Plumptree *et al*., 2003).

The region has a high diversity of lacustrine ecosystems including a large number in the Great Rift Valley. These range from open basin exhorheic lakes which include Lake Victoria (the second largest freshwater lake in the world and Lake Tanganyika (the second deepest lake in the world). There are closed basin brackish or saline endorheic lakes, some of which are commonly associated with the flamingoes (e.g. Bogoria, Nakuru, Elementaita, Magadi, Natron, Manyara, Turkana, Katwe, Edward) and sub-surface drainage lakes (e.g. Lake Naivasha and Lake Baringo). There is also a large number of volcanic crater lakes (e.g. Challa, Sonachi, Simbi Nyaima), high altitude glacial lakes (such as Alice, Michaelson, Rutundu in Mt Kenya) and floodplain oxbow lakes (e.g. Lake Kenyatta, Kanyaboli in Kenya and many others in the Lake Victoria basin). Wetlands (shallow waterlogged area with depths not exceeding 6m) of different types are extensive, including riverine wetlands (e.g. Yala, Saiwa, Kafufu and Tarangire swamps), lacustrine wetlands (e.g. North swamp, Wembere swamps), palustrine wetlands (e.g. Ondiri swamp) and deltaic wetlands (e.g. Tana delta).

The above endowment includes a large number of Shared Transboundary Ecosystems (STEs), mainly in the form of mountains or hills (e.g. Mt. Kilimanjaro, Mt. Elgon, Loima, Ruwenzoris, and Virunga); forests (Sango bay/Minziro, Eastern Arc, Nyungwe/Kibira, Agoro-Agu); rivers (e.g. Kagera, Mara, Sio- Malaba-Malakisi, lakes (e.g. Victoria, Tanganyika, Malawi, Jipe, and Challa), savannas (Mara-Serengeti, Tsavo-Mkomazi) as highlighted in **Table 1**.

Table 1- 1: Shared transboundary ecosystems (STEs) in the EAC region

Type of ecosystem	Name	Sharing countries
Forests	Sango bay/Minziro swamp forests	Uganda-Tanzania
	Eastern Arc	Kenya-Tanzania
	Nyungwe/Kibira forests	Rwanda-Burundi
	Agoro-Agu	Uganda-South Sudan
Savanna wildlife landscapes & corridors	Serengeti-Mara	Kenya & Tanzania
	Amboseli-Kilimanjaro West-Lake Natron	Kenya & Tanzania
	Tsavo-Mkomazi	Kenya & Tanzania
	Kidepo landscape	Uganda- South Sudan
	Imatong Massif Peace Landscape	Uganda-South Sudan
	Otzi-Nimule Landscape	Uganda-South Sudan
	Mt. Kei-Aloma Plateau Landscape	Uganda-South Sudan

	Akagera national park	Rwanda-Tanzania
	Volcanoes national parks	Rwanda- Uganda
Mountains and hills	Mount Elgon	Kenya & Uganda
	Loima-Moroto hills	Kenya & Uganda
	Virunga mountains	Uganda-Rwanda
Coastal and marine ecosystems	Kisite Mpunguti-Kiura island coral ecosystems	Kenya & Tanzania
	Vanga-Tanga mangrove ecosystems	Kenya & Tanzania
Rivers	Mara	Kenya & Tanzania
	Uaso Nyiro	Kenya-Tanzania
	Umba	Kenya & Tanzania
	Sio-Malaba-Malakisi	Kenya & Uganda
	Kagera	Uganda-Rwanda-Burundi
Lakes	Lake Victoria	Kenya, Uganda & Tanzania
	Lake Tanganyika	Tanzania-Burundi
	Lake Jipe	Kenya & Tanzania
	Lake Challa	Kenya & Tanzania
Wetlands	Sio-Siteko	Kenya Uganda
	Sango Bay-Minziro	Uganda-Tanzania

All the six countries are state parties to the Convention on Biological Diversity (CBD). Article 6 of the CBD obligates Parties to develop NBSAPs as instruments to guide the implementation of the requirements of the convention at national level. One of the decisions of the 10th CoP to the CBD in 2010 urged regional organizations, like the EAC, to consider the development of regional biodiversity strategies and action plans (RBSAPs), including regional targets, as a means of complementing and supporting national actions and of contributing to the implementation of the Strategic Plan for Biodiversity 2011-2020 especially for the flora and fauna in the STEs including regional migratory species. The EAC RBSAP is required to integrate the goals and mission of the Post-2020 Global Biodiversity Framework. A regional approach in the EAC is warranted based on several characteristics unique to the region, including the numerous important trans-boundary areas that contain important biological assets, the critical ecosystems that are common across the landscape, and the opportunity to share best practices and mobilize the best minds to think about and develop approaches to protect biodiversity in the region.

1.2 Values of Biodiversity in the EAC

East Africa is richly endowed with biodiversity resources which underpin the delivery of services and benefits critical to economic growth and human wellbeing. The services and benefits generated by biodiversity and ecosystems include provisioning, regulating, supporting and cultural services. Biodiversity serves as a key driver for local livelihoods, national and regional economies and development.

Although the actual monetary value of biological capital is yet to be calculated in most of the EAC countries, it is evident that most economic sectors rely heavily on it. For example, the total direct contribution to GDP of nature-based tourism to Kenya and Tanzania is estimated to be over US $1.2 billion.

In order to improve the management of biodiversity, economic valuation of ecosystems and biodiversity has become an important tool. Emerton and Muramira (1999) estimated the total value of Uganda's biodiversity to be Ushs 1,112 billion a year as part of the process of developing Uganda's first NBSAP. Recent studies in the framework of the Economics of Ecosystems and Biodiversity (TEEB) estimated the value of wetland ecosystem services in the Semliki delta in Uganda and the Democratic Republic of the Congo at Ushs 90.8 billion in 2019 (Muramira, 2019). The aggregate gross economic value of the Sio-Siteko wetland system on the Kenya and Uganda border was US$ 28,763,082 in 2019 (Otieno, 2019). The total economic value of the Sudd wetland in South Sudan was US$ 3.3. billion per year, for the year 2015 with biodiversity services accounting for US$1.2 billion of that value in the same year(NBI, 2020). The Machar Marshes in the same country generated up to US$7.3 million in biodiversity ecosystem services per year (Dawit et al, 2019).

Similar studies in Kenya estimated the annual value of watershed services for various forests around the country including Mount Kenya ($20.4 million), Aberdares ($7.4 million), Mount Elgon ($3.7 million), Cherangani ($0.4 million) and Loita Hills ($2.1million) respectively. Kipkoech *et al.* (2011) estimated a total annual value of $238 million for three blocks in the Mau forest complex. At the same time, the yearly contributions of the Mau Forests Complex alone to agriculture, tourism, water supply, electricity production, urban and industrial use, erosion control and carbon sequestration, among others, are estimated at KES 110 000 million (US$ 1 400 million) (UNEP 2012, GoK 2015). Navrud and Mungatana (1994), for instance, estimated the value of Lake Nakuru at between $13.7 and 15.1 million. The TEEB studies across the region noted that the value of biodiversity was declining rapidly but could be halted or even reversed if conservation interventions packaged through management plans were designed and implemented. This regional Biodiversity Strategy and Action Plan addresses this important recommendation.

Biodiversity would also be a central component of an EAC regional bioeconomy strategy. the development of such an innovation-driven strategy is ongoing, being spearheaded by EASTECO, and can be a key driver of future green growth in the region. This can be used to guide the production of crops tolerant to drought or pests, or that have specific characteristics like improved nutritional value or desirable qualities for industry. Other potential contributions of such a strategy include supporting countries in the region to shift towards a low-carbon future, promoting the production and use of new biobased materials and achieving enhancements in public health.

1.3 Causes and consequences of biodiversity loss

Despite the high importance associated with biodiversity in the EAC region, most countries are experiencing huge losses in biological capital which is attributed to a wide range of causes. The

Kenya NBSAP (2019-2030) and the 2015 National Biodiversity Atlas have associated this with various primary causes including rapid human population growth, widespread poverty, rapid expansion of human settlements and agriculture, biodiversity over-exploitation, habitat loss and fragmentation, environmental degradation and pollution, invasive species, climate change, institutional and policy obstacles (GoK 2015, 2020). The loss is closely related to the secondary consequences of activities within various economic sectors, such as urban development, transportation, energy, water supply, forestry, tourism, fisheries, mining, and agriculture. However, the Kenya NBSAP (2019-2030) indicates a significant reduction in the rate of loss of biodiversity (GoK 2020). In Tanzania, it is estimated that the country has lost at least one-third of its important ecosystems and biodiversity hosted within from forests and wooded areas over the past few decades due to agriculture expansion and urban growth (URT 2015). Similarly, more than half of inland water ecosystems (rivers, lakes and dams) have been degraded and 90% of the wetlands are under increasing pressure losing many of their important functions. The rate of loss of wetland habitats in Uganda is 3.74 percent per annum as reported in the National State of the Environment Report for Uganda 2017. Forests are also being rapidly degraded. From 2001 to 2020 selected areas in Uganda lost 918,000 hectares of tree cover equivalent to 12 percent decrease in tree cover since 2000 (NEMA, 2017). In South Sudan, the problem of biodiversity loss has been associated with habitat loss and fragmentation, over-exploitation, invasive alien species, pollution and climate change (Ministry of Environment and Forestry 2018).

1.4 Policy, legal and institutional framework

The Treaty Establishing the East African Community is the main policy and legal framework overarching the EAC Regional Biodiversity Strategy and Action Plan (RBSAP). The Treaty in Chapter 19, Article 111 commits Partner States to take concerted measures to foster co-operation in the joint and efficient management and sustainable utilization of natural resources including biodiversity within the community for the mutual benefit of the people of East Africa. The other relevant policy frameworks at the regional level include the EAC Protocol on Environment and Natural Resources Management, the Protocol on the Sustainable Development of the Lake Victoria Basin (LVB), the regional EIA guidelines for shared Ecosystems, the EAC Common Market Protocol, various EAC Development Strategies, the EAC Climate Change Policy, Strategy and Master Plan and the EAC Social Development Policy Framework and the EAC Vision 2050 which contains natural resource and environment management as one of the pillars integral to the idea of long-term transformation, value addition and growth. The EAC Treaty explicitly recognizes partner state constitutions in all the community's deliberations. Although the Treaty was ratified by the three initial members at the end of 1999, the roots of the drive for unity extend much earlier. The treaty requires each partner state to designate a ministry with which the Secretary General may communicate in connection with any matter arising out of the implementation.

The RBSAP is specifically guided by Chapter 19, Articles 111-116 on Cooperation in Environment and Natural Resources Management. Article 112, 1 (e) advocates for the integration of environmental management and conservation measures in all developmental activities such as trade, transport, agriculture, industrial development, mining, and tourism while Article 116

(Wildlife Management) on co-operation in tourism and wildlife management advocates for collaborative approach in the conservation and sustainable utilization of wildlife. The EAC Protocol on Environment and Natural Resources Management in Article 9(1a) on Cooperation in the Management of Transboundary Resources specifically advocates for the development of mechanisms that will ensure sustainable utilization of shared trans-boundary ecosystems. The EAC Transboundary Ecosystems Management Act (2012) provides a legal mechanism for addressing management and conservation issues that affect shared ecosystems.

A number of international conventions and agreements are very important guiding documents for the implementation of the EAC Regional Biodiversity Strategy and Action Plan. The key conventions and agreements include the Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral treaty with three main goals including: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. The convention provides a basis for countries and regions to develop strategies for the conservation and sustainable use of biological diversity.

The *Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971)* is an international treaty for the conservation and sustainable use of wetlands that was signed in 1971. The convention has international organization partners that it works closely with. These are: (i) Birdlife International, (ii) The International Union for Conservation of Nature (IUCN), (iii) International Water Management Institute (IWMI), (iv) Wetlands International, (v) WWF International (vi) Wildfowl & Wetlands Trust (WWT). These organizations support the Ramsar convention by providing expert technical advice, helping implement field studies, and providing financial support. The other relevant conventions include the Convention to Combat Desertification (UNCCD), the Convention on Migratory Species (CMS), the World Heritage Convention (WHC), and the Convention on International Trade in Endangered Species (CITES). The activities and programs of the conventions are coordinated by various UN agencies including UN Environment Program, UNDP, UNESCO and the UN Economic Commission for Africa, and specific programs such as UNESCO's Man and the Biosphere (MAB) program.

1.5 Lessons learnt from the NBSAPs and RBSAPs in other RECs

1.4.1 Burundi

Burundi completed its first NBSAP in 2000, later revised and adopted in 2013 for the period 2013-2020 (*Ministère de l'Eau et de l'Environnement*, 2013). National targets were formulated on the basis of established plans for biodiversity. The Aichi Biodiversity Targets are referred to in setting national objectives. However, the country has encountered challenges in implementation as a result of limited financial resources and complications to integrate biodiversity issues into political sectors that are not traditionally dealing with the environment.

Biodiversity issues have been taken into account in Burundi's policy documents such as the Constitution of the Republic of Burundi, the Burundi Vision 2025, the Burundi National

Development Plan 2018-2027, the Burundi National Forest Policy, and strategies and action plans.

Sectoral plans for integrating biodiversity in different ministries (ministries in charge of home affairs, trade, agriculture and livestock, energy and mines, transport) were drawn up in 2014. A payment strategy for ecosystem services in Kibira and Ruvubu National Parks was developed in 2016.

1.4.2 Kenya

The vision of the Kenya NBSAP 2019-2030 is to reduce biodiversity loss, promote the value of biodiversity and improve community livelihoods. Its mission is "to enhance and foster partnerships for conservation and sustainable utilization of biodiversity for continued provision of ecosystem goods and services for human wellbeing through mainstreaming into all sectors of the economy" (GoK 2020). The NBSAP is aligned with the Kenya Vision 2030 and globally with Agenda 2030 (SDGs). The NBSAP indicates that despite the establishment of various biodiversity related institutions to manage the country's biodiversity right from the first NBSAP (developed in 2000), it is still declining. Recent national biodiversity stocktaking has showed that the first NBSAP targets to halt biodiversity loss had not been fully achieved and will be considered in the current NBSAP. The report indicates that speedy realization of the Aichi targets in Kenya is affected by the country's inadequate capacity with respect to its financial, human, scientific, technical and technological capability as well as inadequate mainstreaming of the targets in sectoral strategic plans both at county and national levels.

1.4.3 Rwanda

The first NBSAP for Rwanda was prepared in 2003 and revised in 2016. This preparation involved different stakeholders, from both governmental and non-governmental, as well as private and non-private sectors. Three national workshops were organized to prepare this document and involved 70 stakeholders who are either directly or indirectly involved in conservation. According to the latest national report to the CBD, among the 19 conservation targets that were set in the NBSAP, one is already on track to be exceeded, 12 on track to be achieved, and six are on track to be achieved but at a low rate (Government of Rwanda, 2020) . Below are the key achievements of the NBSAP:

1. Gishwati-Mukura landscape restoration.
2. Increased forest cover from 24.5% in 2012 to 30.4% in 2020.
3. The success in restoring the Grey Crowned Cranes species by bringing back more than 166 individuals from the captivity.
4. The establishment of new laws and policies that tackle many issues including the protection of our environment, climate change mitigation, and improved agro-biodiversity.
5. The establishment of the green city map and toolkit, reducing biomass energy use from 95% to 50% (GoR, 2020).
6. The review of the biodiversity finance policy by Biodiversity Finance Initiative (BIOFIN).

1.4.4 South Sudan

South Sudan developed its first NBSAP (2018-2027) in 2018. The vision of the NBSAP is to establish a strong framework for biodiversity conservation that contributes to economic prosperity and enhanced quality of life. The main goal of South Sudan's NBSAP is to develop and maintain an operational framework for biodiversity conservation, sustainable use, and fair and equitable benefit sharing. The priority areas for South Sudan's NBSAP include;

a) Developing a stakeholder coordination framework for national and sub-national biodiversity management.
b) Strengthening policy, legislative and institutional capacity for biodiversity conservation and management.
c) Reducing negative impacts and enhancing positive biodiversity impacts.
d) Strengthening capacity for and conducting resource assessments, spatial, ecological and land use planning and benchmarking of the value of biodiversity to support sustainable use and management.
e) Restoring degraded ecosystems and promoting access and benefit sharing of biodiversity and ecosystem services both within protected and non-protected areas.
f) Developing and implementing a resource mobilisation strategy for biodiversity conservation and management.
g) Establishing knowledge and information management systems for biodiversity conservation.

1.4.5 Tanzania

The vision of the Tanzania NBSAP is to ensure that "By 2025, biodiversity and ecosystems are well protected, restored and used sustainably, ecosystem functioning maintained, so that they perpetually deliver sustainable intrinsic benefits for socio-economic development." The report on lessons learnt from the 2001 NBSAP indicated that 28.6% of the priority actions in the NBSAP (2015-2020) have been fully achieved, 23.8% substantially achieved, 42.9% achieved to a limited extent, and are yet to be 4.7% not achieved. The NBSAP indicates that the country has lost at least one-third of its important ecosystems in the last few decades which has undermined the livelihoods of local several communities (URT, 2015). The country is also experiencing overall declining trends in the populations of a significant number of species. The main threats to biodiversity in Tanzania include habitat loss and degradation, overexploitation of plant and animal species, pollution, introduction of invasive alien species, exploration and extraction of oil and gas, climate change and genetic erosion.

1.4.6 Uganda

Uganda developed her first NBSAP (2002-2012) in 2002 with the main goal of integrating the conservation and sustainable use of biodiversity into sectoral and cross-sectoral activities. The NBSAP was intended as a roadmap to achieve the goals of the CBD, which Uganda had ratified on 8th September 1993. Uganda developed a second NBSAP (2015-2025) in 2014. The second NBSAP is based on the theme of "Supporting Transition to a Middle Income Status and Delivery of the Sustainable Development Goals" and guided by the goal "to enhance biodiversity conservation, management and sustainable utilization and fair sharing of its benefits by 2025".

The planned actions in the NBSAP will contribute to achieving the goals of "Uganda Vision 2040", the National Development Plan, the 2030 Agenda for Sustainable Development, the Strategic Plan for the Cartagena Protocol on Biosafety and the CBD Gender Plan of Action. The implementation of the NBSAP II is harmonized with the implementation of the two sister Rio Conventions and other multilateral environmental agreements and has also benefited from a CBD Secretariat led Voluntary Peer Review mechanism/methodology that assesses and reviews the level of implementation of NBSAPs, examines country commitments to biodiversity conservation, builds national capacity in NBSAP VPR and shares experiences and lessons learnt from other countries.

1.4.7 RBSAPs in other RECs

A good example of experience from other regions is the Southern African Development Community (SADC). With 16 Member States including the United Republic of Tanzania, the region has developed a Regional Biodiversity Strategy (RBS) which is aimed at providing a framework for cooperation on biodiversity issues that transcend national boundaries (SADC 2007). Other regional bodies have also developed biodiversity strategies, although some of these do not fully equate to RBSAP in the sense of the CBD. These include the *Plan Stratégique Intérimaire (2019-2022)*, elaborated by *Organisation pour la conservation de la faune sauvage en Afrique* (OCFSA).

The SADC RBS is premised on the fact that the state of the environment, including biodiversity, is a major determinant of the growth and development of the region and impacts on the lives of its citizens. It highlights priority actions required to unleash the wealth locked up in the region's biological resources through value addition and "bio-trade", on a sustained basis. It also articulates ways to ensure that people in the SADC region and the world at large mutually benefit from the region's biological heritage through appropriate access and benefit sharing arrangements (SADC 2007).

The document was developed through a participatory process that involved extensive stakeholder consultations within SADC Member States, Government agencies and other relevant stakeholders. It is built around values of biodiversity and constraints to biodiversity conservation and its sustainable use in the region based on the country level issues as articulated in national planning frameworks such including NBSAPs. The objectives of the RBS are to: a) provide guidelines that build the region's capacity to implement provisions of the CBD; b) provide a framework for obtaining regional consensus on key biodiversity issues; c) act as a vehicle for forming partnerships with development partners on trans-boundary biodiversity issues; and, d) provide a framework for cooperation between Member States and with relevant multilateral environmental agreements.

The SADC RBS is centered around fifty focal areas that address eight regional constraints which cut across the traditional biodiversity sectors of forestry, wildlife, aquatic life and agriculture and focus on species and habits of economic importance. In addition, they address the poverty-environment governance challenges articulated in the Regional Indicative Strategic Development Plan, the New Partnership for Africa's Development (NEPAD). The RBSAP was

approved by the SADC Ministers responsible for Environment in 2007. The operationalization of focal areas of the Regional Biodiversity Strategy is dependent on the availability of both internal and external funding.

The Inter-Governmental Authority on Development (IGAD) under the auspices of the IGAD Biodiversity Management Program (BMP) recently developed a regional Biodiversity Protocol and related strategies. The goal of the protocol is to promote regional cooperation and integration of the conservation and sustainable use of biodiversity in the environment sectors in the region. In addition to a regional policy, IGAD also developed a number of relevant strategies to enhance biodiversity conservation in the region. The strategies included one to control and manage invasive species, conservation of trans-boundary wildlife and sharing of biodiversity benefits and a strategy on domesticating regional, continental and global instruments.

CHAPTER 2 - BIODIVERSITY STRATEGY: PRINCIPLES, PRIORITIES AND TARGETS

2.1 Situational Analysis

The six EAC member states are well endowed with spectacular biodiversity and ecosystems as highlighted below, many of them located at transboundary sites, critical for regionally migratory species, or hotspots for illegal wildlife trade. Such attributes make a regional biodiversity strategy and action plan particularly valuable. Protected areas are the cornerstone of biodiversity conservation, and a recent study by Ayebare et al. (2018) showed that the protected area coverage in the Albertine Rift ecoregion is reasonably well located to accommodate future climate change and conservation of endemic species.

2.1.1 Burundi

Burundi's ecosystems cover a total area of 27,834 km^2 and encompasses more than 4,555 known species. They can be split into 3 main groups: natural (forests, savannas, steppes, wetlands), afforested (4.6% of the country's area) and agricultural lands (50% of the country's area). Cultivated marshes cover 2.9%, with the area continuously increasing at the expense of humid ecosystems which are among the country's most vulnerable ecosystems. Burundi has 14 protected areas which cover 5.6% of the total national territory with 31% of this comprised of natural ecosystems. The country also has several community and private protected areas as well as a sacred forest and two arboretums. In general, ecosystems which are not included in protected areas networks are highly threatened, particularly aquatic ecosystems (only 10% of them are protected). The vegetation in the country's protected areas contain 55% of all species naturally found in the country.

The vascular flora comprises 2,909 species with a high endemism rate for species found at higher altitudes. Burundi's fauna includes 716 bird, 215 fish, 163 mammal, 56 amphibian and 52 reptile species. There are currently 4 rare, 21 vulnerable and 22 endangered species, in Burundi's flora. Similarly, there are 101 species of mammals, birds and reptiles which are threatened with extinction, 45 endangered species and 56 vulnerable species.

Notably, Lake Tanganyika, the second oldest and second deepest lake on earth and an ecosystem of global interest, is not protected. Lake Tanganyika is shared by four countries Tanzania, the Democratic Republic of the Congo, Burundi, and Zambia, and contains the most continuous, continental climate record from the mid-Miocene (10 Ma) to the present of the entire tropics (Russell et al., 2020). The lake is surrounded by Miombo woodlands, a component of the largest dry tropical biome on Earth. The lake has incredibly diverse endemic biota and a virtually unexplored deep microbial ecosystem. Unfortunately, a recent study showed that Lake Tanganyika is at high risk of environmental pollution from effluent discharge (Kapepula *et al*., 2020). Furthermore, the lake level has been rising over the past year and staying high (Latawama, 2021).

2.1.2 Kenya

With over 35,000 known species, Kenya is considered as one of the mega biodiversity nations in Africa (GoK, 2015, 2020). These include over 7,000 plants (including 577 endemic species), 25,000 invertebrates (21,575 of which are insects), 1,133 birds, 315 mammals, 191 reptiles, 180 freshwater fish, 692 marine and brackish fish, 88 amphibians and about 2,000 species of fungi and bacteria (NEMA 2011). Kenya is ranked third in Africa in terms of mammalian species' richness with 14 endemic species (IGAD 2007). According to the Kenya Biodiversity Atlas, the country has one of the richest avifauna diversities in Africa, with around 1,100 bird species recorded (GoK 2015), Of these, 800 species are year-round residents, 60 species are afro-tropical migrants moving within the continent and 170 are Palearctic migrants that journey from the Eurasian region each winter. By 2013, the country had the third largest population of rhinos in the world at 1,041 (GoK, 2018). Similarly, Kenya's elephant population of approximately 35,000 is the fourth largest in Africa after Botswana, Zimbabwe and Tanzania (GoK, 2018).

The biodiversity in Kenya is distributed within a diverse range of terrestrial (72%) and aquatic (28%) ecosystems which stretch across its seven eco-climatic zones (Zones I-VII) from below sea level at the coast to the snow-capped peaks of Mt. Kenya, reaching over 5000m above sea level. Most distinctive ecosystems in the country include forests, woodlands, shrublands, grasslands, deserts, mountains, afro-alpine zones, wetlands, rivers, lakes and the marine areas (GoK 2015). The country is endowed with inland lake and wetland habitats covering about 2.5% of the total area (GoK 2020). Presently, Kenya has 24 terrestrial National Parks which occupy an area of 29,504Km2 that is approximately 5.08% of the total area of Kenya. There are 31 terrestrial National Reserves in Kenya occupying 17,358.8km^2 which is 3% of the country's total area (GoK 2021). At the same time, Kenya has 257 sites categorized as natural forests which harbor a variety of wildlife species and are also water towers or water catchment areas. These natural forests fall under 4 key management regimes namely; community forests (52 sites covering 180, 245 ha), forest reserves (201 sites covering 2,045, 406 ha), national monuments (3 sites covering 401 ha) and trust land (1 site covering 188,2017ha) with a total area of 24,142.59km^2 which is 4.2% of Kenya's total area (GoK,2021). The country has over 160 conservancies covering over 63,600Km2 representing 11% of the country's area. The conservation areas in Kenya includes international conservation areas with 6 Ramsar Sites, six Biosphere Reserves, seven World Heritage Sites (4 Cultural and 3 Natural) and 17 proposed heritage sites (GoK 2021).

Biodiversity in Kenya is negatively affected by a wide range of factors including rapid population growth (2.3% in 2019), poverty, rising demand for a wide range of extractive goods including bioproducts, impacts of agricultural expansion and human settlements, unsustainable land-use practices, environmental pollution, illegal activities including wildlife poaching, unreported and unregulated (IUU) fishing as well as the negative impacts of climate change (GoK 2021). Consequently, a total of 356 vascular plant taxa (species, subspecies and varieties) found in the country have so far been classified as Threatened or Near Threatened (GoK 2015). Of these, 24 taxa (21 species) are Critically Endangered, 111 are Endangered (83 species), 167 are Vulnerable (128 species) and 67 are Near Threatened (56 species). The

national biodiversity atlas shows that wildlife trends have indicated significant losses in the last 30 years (e.g. Grevy's zebra (74%), Kongoni (68%), Topi (65%), Eland (62%), and Oryx (49%), Burchell's zebra (43%), Hunter's hartebeest (41%), Giraffe (39%) and Impala (38%). Thus, while Kenya was home to 20 000 black and white rhinos in the early 1970s, the number now stands at about 900. Elephant numbers also recorded an 85% decline over a 15- year period although the recent trend is showing a gradual recovery (GoK 2020a). Some of the key endangered animals species in Kenya are the African elephant, African lion, black rhino, Grevy's zebra, buffalo, mangabey, cheetah, leopard, hirola antelope, green sea turtle, hawksbill turtle, Tana River red colobus, Sokoke scops owl, roan antelope and Gigasiphon, a genus of plants in the family Fabaceae known from several localities in the moist coastal forests (GoK 2020b).

2.1.3 Rwanda

Rwanda is a small mountainous country with an impressive breadth of ecosystem and species diversity including a number of Albertine Rift endemics, along with some of the highest human population densities on the continent, with more than 500 people/km^2 in some parts of the country. There are volcanic mountains in the northwest of the country, grasslands and woodland savanna in the east, montane tropical forest in the west and south of the country, and large expanses of tropical wetlands, as well as many lakes and river systems. There are about 2,288 species of plants, 151 mammal species, 670 bird species and 97 species of reptiles (Earth Trends 2003). Rwanda has 15 primate species, including two great ape species (the mountain gorilla and the chimpanzee), as well as several species of forest monkeys, grey cheeked mangabeys, black and white colobus, baboons, and nocturnal primates.

Rwanda is home to numerous endemic and threatened species. A 2015 study of threatened ecosystems and species in Rwanda identified 17 threatened ecosystems and 38 plants species, 49 bird species, 42 mammals species, and four reptile and amphibian species that are threatened (REMA, 2015). Protected areas currently cover 9.11% of the country's total area. Rwanda currently has eight protected areas, among which are four national parks (Akagera National Park, Volcanoes National Park, Nyungwe National Park, as well as the newly established Gishwati-Mukura National Park), which was also designated as a biosphere reserve by the UNESCO in October 2020. Volcanoes National Park is also a biosphere reserve while Akagera, Nyungwe, and Volcanoes are transboundary parks. In addition to these four national parks there are three major wetland ecosystem complexes that are under some protection but not yet classified by IUCN (Rugezi-Burera-Ruhondo, Akanyaru wetlands, Rugezi Marsh, Nyabarongo river wetland) (EarthTrends, 2003). Rugezi is a Ramsar site. Most of the wildlife in Rwanda is found in these isolated national parks and protected wetlands. There are also several small forest fragments and remnant riparian forests in the country.

The main threats to biodiversity in the country include poaching, habitat encroachment and deforestation, fires, illegal mining, illegal grazing, human-wildlife conflict leading to retaliatory killing, damming of rivers, commercial fishing, lack of proper regulations, infrastructure development, water extraction, plant extraction, drainage of wetlands outside parks for

agriculture, and alien invasive species. Other indirect threats include lack of habitat connectivity and climate change. A recent study showed that ongoing forest losses and increasing isolation of natural forests pose significant threats to biodiversity and continued provisioning of ecosystem services in Western Rwanda (Arakwiye et al. 2021), and a similar trend is likely across the country.

Rwanda has made strides in strengthening protected area management and expanding protected areas. Rwanda has recently successfully reintroduced African lions and Black rhino into Akagera National Park, a big step in restoring biodiversity in the country and enhancing its protected areas.

The conservation sector in Rwanda comprises various stakeholders from both private and public sectors, including local communities, the government, academia and research centers, and NGOs. Rwandans benefit from the biodiversity through various activities including ecosystem services and economic growth due to nature-based tourism (Nature Rwanda, 2019), and the involvement of various stakeholders ensure that conservation objectives are in line with the country's socio-economic, and local people development goals.

2.1.4 South Sudan

The biodiversity of South Sudan is characterized by a wide range of ecosystems with rich flora and fauna including over 350 species of plants in the Sudd region alone (GRSS 2018). The country has a wide range of mammalian fauna including one of the largest antelope migrations in the world (the white eared kob, tiang and Mongalla gazelle), reptiles and amphibians. South Sudan has a rich birdlife with close to 800 species with over 470 of these in the Sudd region alone (GRSS 2018). The terrestrial ecosystems in the country are dominated by grassland and woodland savanna, lowland and montane forests (especially on the Imatong Mountains, Jebel Gumbiri, Dongotona and the Acholis in the south-eastern parts of the country and in Eastern Equatoria state) while the aquatic ecosystems include perennial rivers (e.g. Bahr el-Ghazal, Bahr el Jebel and River Sobat), lakes (e.g. Lakes Pooltocha and Rubkona) and wetlands including the expansive Sudd along the Bahr el Jebel which covers approximately 57,000 km^2 (GRSS 2018). The Eastern Equatoria state in the extreme south eastern part of the country is characterized by semi-desert ecosystems.

The biodiversity in South Sudan is conserved through a network of 17 protected areas comprising six national parks (including Badingilo, Boma, Nimule and Southern National Parks) and 13 game reserves (including Bangangai, Bire Kpatous, Fanyikang, Kidepo, Mushra, Numatina and Zeraf Game Reserves with a total area of about 87,030 km^2 which is equivalent to about 13% of the land surface (GRSS 2015). This is higher than the African average estimated at 9 percent (UNDP, 2009).

The main direct threats facing biodiversity in South Sudan include wildlife poaching and trafficking, deforestation through charcoal production and illegal logging of hardwood, expansion of livestock, agricultural and extractive sectors which have contributed to widespread habitat fragmentation. In addition, adverse climate change has escalated negative

biodiversity impacts of impacts including human-wildlife conflicts especially within the protected areas (GRSS 2015). The country has a number of important species including the threatened hippopotamus (*Hippotamus amphibius*) and white pelican (*Pelecanus onocrotalus*), the near-threatened sitatunga (*Tragelaphus spekki*), the endemic Nile lechwe (*Kobus megaceros*), and globally endangered species such as the elephant (*Loxodonta africana*) and leopard (*Panthera pardus*).

2.1.5 Tanzania

Tanzania is one of the twelve mega-diverse countries of the world endowed with different natural ecosystems that harbour a massive wealth of biodiversity (URT, 2015). It is one of the top five African mega-diverse countries, hosting more than one-third of the total plant species on the continent and about 20% of the large mammal population. The country hosts 6 out of the 25 world renowned biodiversity hotspots hosting more than one-third of the total plant species on the continent and about 20% of the large mammal population (URT, 2015). The country is custodian of a number of World Heritage Sites, namely; Selous Game Reserve, Ngorongoro Conservation Area, Serengeti National Park, Kilimanjaro National Park and three Biosphere Reserves, namely, East Usambara, Lake Manyara, and the Ngorongoro – Serengeti (URT, 2014a, b).

The biodiversity in the United Republic of Tanzania is distributed within a range of ecosystems in seven agro-climatic zones. Forests are predominant, distributed over approximately 55% of the total land area with woodlands being most common occupying about 93% of the forested area. The remaining 7% is composed of lowland forests, humid montane forest, mangrove forests and plantations. Coastal and marine ecosystems occupy about 20% of total land including coastal forests, mangroves, coral reefs, seagrass beds, sandy beaches, rocky shores and numerous islets. Inland aquatic ecosystems include lakes, rivers, springs, natural ponds, underground sources, wetlands as well as man- made reservoirs. Biodiversity in Tanzania is protected within a national network of protected areas which include 16 National Parks, 3 Biosphere Reserves, 4 World Heritage Sites, 28 Game Reserves, 42 Game Controlled Areas, 38 Wildlife Management Areas, 109 Forests, 4 Marine Parks, 17 marine reserves and 4 Ramsar Sites.

Tanzania, like other countries, has suffered from biodiversity degradation and loss. Tanzania NBSAP 2015-2020 indicates that the country has lost at least one-third of its important ecosystems and biodiversity hosted within from forests and wooded areas over the past few decades due to agriculture expansion and urban growth (URT, 2015). Almost 38% of Tanzania's forest cover is being lost at the rate of about 400,000 ha annually and should this continue, the country would deplete its forest cover in the next 50-80 years. Along the coast, 18% of the mangrove forest cover has been lost over a period of 25 years (1980 – 2005). Similarly, more than half of inland water ecosystems (rivers, lakes and dams) have been degraded and 90% of the wetlands are under increasing pressure losing many of their important functions (URT 2015).

The country is among 15 globally registering the highest number of threatened species, with at least 900 threatened species under the IUCN Red List, 2013. This high level of threatened species may be attributed to over-exploitation, increased ecosystem-wide deterioration, habitat fragmentation and degradation, as well as climate change. The number of threatened species in the country indicates a dramatic increase of almost 3-fold compared to those recorded in the year 2000 (URT 2015). Some of the endangered species in Tanzania include: terrestrial animal species such as, black rhino, wild dog, chimpanzee, African elephant, cheetah, wattled crane; and Kihansi spray toad. Other species which are at risk include plants such as *Pterocarpus angolensis* (Mninga), *Dalbergia melanoxylon* (Mpingo), *Uvariodendron gorgonis*, *Erythrina schliebenii* and *Karomia gigas* and marine species such as coelacanth, dugongs and sea turtles (URT, 2014b). The country like the rest of East Africa is grappling with the problem of invasive species. Several IASs that are trees and shrubs exist in forest ecosystems of Tanzania such as *Maesopsis eminii, Cedrella odorata* and *Senna spectabilis* (URT, 2015). Other IAPs include *Parthenium hysterophorus*, *Lantana camara, Prosopis juliflora, Psidium guajava, Senna spectabilis, Acacia farnesiana, Acacia mearnsii, Acacia polyacantha* and *Chromolaena odorata.* The Nile Perch (*Lates niloticus*) in Lake Victoria is believed to have led to the disappearance of several indigenous haplochromine species (LVEMP, 2005).

2.1.6 Uganda

Uganda ranks among the most bio-diverse countries in the world, with approximately 18,783 species of fauna and flora (NEMA, 2009). The country is home to 53.9% of world's population of mountain gorillas; 11% (1,063 species) of world's bird species (and approximately 50% of Africa's bird species); 7.8% (345 species) of the global mammal diversity (39% of Africa's mammal species); 19% (98 species) of Africa's Amphibian species and richness; 14 % (142 species) of Africa's reptile species richness; 1,249 species of butterflies; 600 species of fish; and more than 5,406 species of plants which includes 30 plant species endemic to Uganda (MPS, 2013/2014; NEMA, 2016). The species listing is however confined to the more known taxa such as birds, mammals, butterflies, higher plants, reptiles, amphibians and fish. This is because of their relative conspicuousness and economic importance. Little is known about the less conspicuous ones including important forms such as belowground biodiversity. Completing the listing of the biodiversity makes Uganda an even more bio-diverse country.

2.2 Regional overview

2.2.1 Biodiversity Governance

Sustainable and effective governance is imperative for successful biodiversity conservation interventions. This is the responsibility of partner states and only requires coordination at the regional level. The EAC has an effective and well entrenched Sectoral Council that would ensure continuity while EAC ministerial focal points would provide the linkage at national levels. The establishment or empowerment of a Biodiversity Task Force (BTF) comprising experts nominated by partner states would be critical for providing the required technical support.

2.2.2 Socio-economic Concerns

The benefits of biodiversity and the beneficiaries themselves are key factors in the success of any conservation efforts. Partner states conduct decadal censuses and annual economic

surveys, out of which the resulting data are available at different levels of government, including smaller administrative units in each country. The demographic, sociopolitical, cultural, and human development indicators contained in the reports of census and economic surveys will be essential for planning. Most importantly, biodiversity loss and the degradation of ecosystems affects communities differently depending on socio-demographic attributes. Gender and age determine the different roles and responsibilities, a key factor in the success of interventions.

2.2.3 Environmental Concerns

Safeguarding the environment and strengthening its protection against all forms of degradation so as to promote the rational exploitation of natural resources is essential to human survival. This extends to the fight against climate change, pollution, and other forces that impact the people's living conditions. National biodiversity priorities are articulated in respective NBSAPs and strong provisions exist in legislations as well as climate change mitigation and adaptation plans.

2.2.4 Legal Concerns

Governments in the each of the six partner states, and their respective agencies, deal with various aspects of natural resources management according to their own laws and individual mandates. Whereas legislative provisions in different countries differ in their support for integration or region-wide planning and management, they present a valuable starting point. Moreover, biodiversity is anchored in policy and legislation of the various regional bodies.

2.2.5 Trade and Industry

Trade and industry are key enablers of social and economic development, and play a key role in an increasingly interconnected and interdependent world. However, the illegal trade in animal and plant species is a major contributor to overharvesting and a main cause of biodiversity loss throughout the region. This can take several forms, ranging from poaching to overgrazing, tree cutting, extraction of wetland plants, and fuel wood and charcoal production.

2.2.6 Climate Change Impact

Climate change is emerging as one of the leading causes of ecological transformation, a challenge to species in particular, and biodiversity in general. The full unraveling of climate change is expected to dramatically alter rainfall patterns over much of eastern Africa. Most projections indicate a likely rise of average annual temperature by 1–4°C by the end of the century. Any new conservation must therefore acknowledge the impending shift in livelihood strategies and threats to biodiversity.

2.2.7 Financing for Biodiversity

A common feature of the region is that conservation tends to be accorded low budgetary priority compared with other sectors. Shortage of funds and investment financing affects the performance of the sector in making a contribution to development and economic goals. It also undermines physical and human resources, the critical enablers for success of the priority

interventions. Leveraging on appropriate budgetary support is a continuing imperative, while the promotion of innovative conservation financing represents an area of steady growth.

2.3 Long-term vision of the EAC RBSAP

The RBSAP is aligned with the CBD 2050 Vision in the Post-2020 Global Biodiversity Framework : to achieve living in harmony with nature where biodiversity is valued and conserved, restored and wisely used, sustaining a healthy planet and delivering benefits essential for all people.

2.4 Governing principles

The RBSAP is guided by principles associated with a) EAC Article 114(b) of the EAC Treaty on co-operation in the management of their natural resources for the conservation of the ecosystems and the arrest of environmental degradation; and 114(c) on the protection of shared aquatic and terrestrial resources, b) principles of environment and natural resources management as provided in Article 4 the EAC Protocol on Environment and Natural Resources Management, c) the EAC vision 2050 for the realization of SDGs 14 & 15, guiding principles in the country-level NBSAPs, as well as best management practice.

The guiding principles are:-

1. Co-operation in the management of environment and natural resources including shared transboundary ecosystems (STEs).
2. Notification and public participation in cases of activities with a potential for transboundary impacts.
3. Sustainable development – addressing the needs of the present without compromising the ability of future generations as reflected in the principle of inter generation and intra generation equity including the principles of access and benefit sharing as reflected in the Nagoya protocol.
4. Precautionary principle - Where there is significant risk of biodiversity loss, lack of complete scientific certainty should not be used as a reason for postponing cost-effective measures to avoid or minimize such a threat.
5. Preventive action: Conservation of biodiversity will be better achieved by preventing environmental harm than by endeavoring to remedy or compensate such harm.
6. Polluter pays - those who cause damage to biodiversity should bear the costs of preventing it, removing it or reducing it.
7. Sectoral integration: Biodiversity conservation and sustainable use concerns are taken into account in relevant decision-making at sectoral or cross-sectoral levels.
8. Ecosystem management approach: - Ensuring ecosystem integrity, resilience and sustainability through integration of social-ecological systems, ecosystem connectivity, positive cross-ecosystem impacts.
9. Identify concerns, approaches and best practices that can be harmonized across the region
10. Use a participatory approach that includes non-conservation or non-environmental groups and sectors to ensure effectiveness (e.g., agriculture, health) as well as government, private sector, communities, etc.

2.5 Main goals and priorities

The key achievements and gaps in the implementation of country-level NBSAPs are outlined below.

2.5.1 Burundi

The analysis of the progress made in the implementation of the NBSAP concerns the interventions carried out for the implementation of the objectives of the CDB and for capacity building. Burundi revised the previous NBSAP 2000 and adopted its current NBSAP (2013-2020)., Relevant documents for its implementation have been developed, including the document of reference indicators for monitoring and evaluation. Other notable documentation relevant to the context include the 6th report on biodiversity, the National Development Plan, the constitution of Burundi, Vision 2025, National Forestry Policy.

The key achievements with regard to the NBSAP include the following:

- Strategic plan for development and capacity building in the field of biodiversity developed between 2014-2015.
- Communication, education and public awareness strategy on biodiversity developed in 2014.
- Investment and fund mobilization plan for the implementation of the NBSAP for 2013-2020 was developed.
- Biodiversity integration plans within five ministries have been developed in 2014 (Ministry of the Interior, Ministry of Trade, Ministry of Agriculture and Livestock, Ministry of Energy and Mines, Ministry of Transport).
- Indicators have been identified for the monitoring and evaluation of the implementation of the NBSAP of 2013-2020.

In terms of gaps, after the adoption of the NBSAP in 2000, Burundi did not put in place the necessary tools to begin implementing these strategies. Four strategic tools were essential to start the interventions:

- a program with indicators to operationalize the strategies and measure the progress made;
- a communication, education and public awareness strategy to ensure awareness of all stakeholders;
- sectorial plans for integrating biodiversity issues into other sectorial policies;
- a financing plan for the implementation of the strategies.

The current NBSAP 2013-2020 has taken the above gaps into account despite a number pending challenges. Burundi has made efforts to safeguard a representative set of ecosystems, species and the country's genetic resources through the creation of a network of 14 protected areas and sites outside protected areas, but faces problems related to the low capacity of all actors involved in the management, restoration, conservation and sustainable use of the resources they contain.

2.5.2 Kenya

One of the key achievements in Kenya is the successful implementation of the devolved system of government which saw the establishment of 47 County Governments with the relevant enabling laws in place and the transfer of devolved functions to county governments including biodiversity management and conservation (GoK 2020a). There have been efforts in mapping wildlife migratory corridors including a report on Wildlife Corridors and Dispersal Areas (GoK 2017) with an effort to safeguard them ensuring their continued existence. The Sixth National Report to the CBD by the Government of Kenya (GoK 2020a) has identified some of the major gaps with regard to the realization of the ABTS in Kenya include:

- Gaps in plant species collection as the earlier field explorations were based on accessibility and mostly on ecosystems of economic or ecological interest.
- Specimen databases are incomplete, and only 20 to 30% complete (GSPC Target 1).
- Species mapping and conservation status profiling is still a challenge (GSPC Target 1).
- Gaps still exist in terms of species exploration and description of species population trends (GSPC Target 3).
- Protection and restoration of wildlife corridors (ABT 14).

Kenya has developed the draft NBSAP 2019-2030 as a review of the 2000 NBSAP. It aims at guiding Kenya to take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2030 ecosystems are resilient and continue to provide essential services, thereby securing Kenya's variety of life, and contributing to human well-being, and poverty eradication. The 2019-2030 NBSAP shifts from the traditional focus on cure to prevention. It also shifts away from concentration on wildlife preservation towards concern for the wider pressures affecting biodiversity and ecosystems in the country. The NBSAP aims at the integration of climate change mitigation and adaptation in biodiversity management action plans.

2.5.3 Rwanda

Rwanda achieved one of its Vision 2020 targets of increasing forest cover to 30% of its total land area. The Government made a pledge under the Bonn Challenge to restore 2million ha of degraded land by the year 2030, for which 35% of the target has been achieved. The current forest cover according to a 2019 forest cover mapping report is 724, 695 ha, (30.4%). There has been a continued increase in the population of Mountain Gorilla in Rwanda, with Rwanda now hosting half of the existing global population (estimated at 1,004 individuals by Hickey *et al*. 2018). Rwanda also achieved an historic re-introduction of 23 black rhinos in 2017 & 2019 into Akagera National Park, and 11 lions into the same park after a 10-year absence. There has been an increase in populations of other species such as the Grey Crowned Cranes due to a major effort to remove cranes from captivity, rehabilitate them and reintroduce them into the wild, and to protect their habitats in the country.

Rwanda has seen continued growth of nature-based tourism and in 2019 alone, a total of 400 million USD was realized due to tourism. Rwanda joined the Wealth Accounting and Valuation of Ecosystems Services (WAVES) initiative, led by the World Bank whose goal is to enhance the

mainstreaming of natural capital into development planning and national economic accounting systems. Natural capital accounts (NCAs) for Rwanda have been developed for land, water and mining and they are being integrated into planning processes. In addition, ecosystem accounts were tracked over a 25-year period. The Government of Rwanda has committed to continue developing and mainstreaming NCA into development activities in the Strategic Plan for the Environment and Natural Resources Sector (2018–2024). Rwanda has been running a Tourism Revenue Sharing (TRS) initiative which has positively impacted the local communities living adjacent to protected areas since its inception in 2005. The cumulative amount shared by 2018 was $5.3 million with 690 community development projects funded under the TRS programme resulting into a significant boost in education, health and provision of water and other social infrastructure to these communities. Rwanda was the first country in Africa to submit its revised Nationally Determined Contribution (NDC) on the Paris Agreement in 2020, which includes biodiversity contributions.

According to the latest national report to the CBD, among the 19 conservation targets that were set in 2015, one is already on track to be exceeded, 12 on track to be achieved, and six are on track to be achieved but at a low rate (GoR, 2020). Numerous activities have been carried out in the line with these targets, such as:

1. Gishwati-Mukura landscape restoration and increasing the forest cover from 24.5% in 2012 to 30.4% in 2020.
2. The continuation of "*kwita izina*", a baby gorilla naming annual event that plays a huge role in community awareness of conservation issues.
3. The success in restoring the Grey Crowned Cranes species by bringing back more than 166 individuals from the captivity.
4. The establishment of new laws and policies that tackle many issues including the protection of our environment, climate change mitigation, and improved agrobiodiversity.
5. The establishment of the green city map and toolkit, reducing biomass energy use from 95% to 50% (Government of Rwanda, 2020).
6. Financial efforts such as the reviewing the biodiversity finance policy by Biodiversity Finance Initiative (BIOFIN) and orienting more efforts of the Rwandan Green Fund (FONERWA) on biodiversity conservation (Ministry of Environment, 2019).
7. The revision of the first National Biodiversity Strategies and Action Plans (NBSAPs) in 2016 (Nature Rwanda, 2019).

Despite these significant efforts in the conservation sector, some challenges are met within some subsectors and some areas still contain gaps (Ministry of Environment, 2019). The main threats include forest loss and therefore reduced ecosystem services due to anthropogenic activities (Arakwiye, Rogan, & Eastman, 2021), reduced soil fertility and loss of native agrobiodiversity due to newly introduced fertilizers and subsidies, agricultural and industrial practices and poor waste management still leads to pollution, limited involvement of traditional knowledge in conservation, as well as the conservation and restoration of degraded ecosystems

outside protected areas, which is still low, affecting a lot of wetlands, rivers, and lakes in Rwanda (Government of Rwanda, 2020).

In order to tackle these issues and achieve conservation objectives aligned with development and community socioeconomic wellbeing, new approaches and activities should be implemented by different stakeholders in the sector. Strategies that can contribute to this include increasing community participation in conservation projects, improving the waste management approaches, work with traditional healers to plant medicinal plants on their private lands and restoring the remaining wetlands (GoR, 2020).

Gaps also include persistent pollution, both point and non-point which affects the freshwater aquatic systems in the country, the agricultural intensification which is escalating wetlands degradation, and the high human population densities especially around national parks with concomitant poverty and reliance on fuelwood for cooking. Climate change in the country has led to heavy rainfall events in steep, erodible parts of the country which have led to loss of top soil and habitat destruction, as well as loss of life and infrastructure, and sedimentation of aquatic ecosystems. Data availability is another gap, but a national Biodiversity Information System is being developed. More emphasis is needed to develop national capacity for managing biodiversity collections and taxonomic expertise in country.

2.5.4 South Sudan

The Protected Area (PA) system of South Sudan covers about 10.4 percent of the terrestrial area of the country, which is higher than the African average estimated at 9% (UNDP 2009) and surpasses Aichi target 11 on the extent of the Protected Area network of a country. This is in spite of the fact that South Sudan is one of the latest state parties to the Convention on Biological Diversity. The Sixth National Report by South Sudan to the CBD notes that in line with the key priorities of the NBSAP, the country has established a stakeholder coordination framework for national and sub-national biodiversity management with a view to improving the management of biodiversity in the country. The country is also going through parliamentary processes to approve policy, legislative and institutional changes to improve the conservation and management of biodiversity at the national and state levels of government. A biodiversity information management system and clearing house mechanism have also been established to improve knowledge and information management and to create awareness of biodiversity conservation.

The major gaps in the management of biodiversity include:

- Lack of the requisite technical capacity and human resource in important biodiversity disciplines including taxonomy and germ-plasm research.
- Lack of financial resources to establish the necessary institutional networks for biodiversity research and management.
- Inadequate mainstreaming of biodiversity issues in sectors and Local Government plans and budgets (ABT 2).

2.5.5 Tanzania

Tanzania is implementing the NBSAP 2015-2020 after the review of the 2001 version. The NBSAP is aligned with the Global Strategic Plan for Biodiversity 2011-2020 including the twenty biodiversity targets known as the Aichi targets. The NBSAP is in line with the national vision 2025 articulation on the importance of biodiversity, i.e. to build a society that values all the Biodiversity richness, using it sustainably and equitably, while taking the responsibility for actions that meet both the competing requirements of the present and the legitimate claims of the future generations.

The current NBSAP highlights the challenges which faced the implementation of the earlier NBSAP 2001 which included the following:

a) Inadequate mainstreaming of biodiversity issues n sectors and Local Government plans and budgets,
b) Low level of awareness of the public on the socio-economic importance of biodiversity,
c) Inadequate involvement and participation of communities in biodiversity management,
d) Inadequate resources to fully implement all the priority actions identified for each biodiversity component,
e) Insufficient data about biodiversity, inadequate capacity for research and dissemination, and insufficient collaboration between institutions that manage data, and
f) Inadequate capacity for coordination and collation of impact of outcomes and outputs of the various interventions.

The Tanzania NBSAP (2015-2020) indicates that the country has registered significant progress in protecting some ecosystems and biodiversity at levels that surpass the 2020 Aichi Targets (URT 2015). This is demonstrated by the significant protection of about 40% of the total land area (6.5% aquatic and 33.5% terrestrial ecosystems). The key gaps with regard to the realization of the ABTs include:-

- Low level of awareness of the public on the socio-economic importance of biodiversity (ABT 1).
- Inadequate mainstreaming of biodiversity issues in sectors and Local Government plans and budgets (ABT 2).
- Insufficient data about biodiversity, inadequate capacity for research and dissemination, and insufficient collaboration between institutions that manage data (ABT 19).

2.5.6 Uganda

Following the development of NBSAP-I and its eventual revision to NBSAP II 2015, Uganda has made several improvements in its management of biodiversity. The key achievements include the following:

a) Improved coordination among various agencies through the formation of a Technical Committee on Biodiversity Conservation (TCBC).
b) Improved collaboration between the CBD and other international conventions at national level.
c) Addressing a number of Articles of the Convention such as the CBD Programme of work on protected areas (PAs), formulation of regulations on access to genetic

resources and benefit sharing, establishment of a biodiversity information sharing mechanism, preparation of a national invasive species strategy and action plan, promotion of public awareness on biodiversity as well as support to relevant areas of biotechnology and biosafety.

d) Implementation of the Convention's thematic programmes of work and cross-cutting issues such as inland waters biodiversity, agro-biodiversity, identification, monitoring and assessment, development of biodiversity indicators and the expanded programme of work on forest biological diversity.
e) Establishment of the Clearing House Mechanism (CHM), to improve information exchange and coordination.

The key limitations to the implementation of both the first and second NBSAPs were:

a) Inadequate financial resources for implementation of planned activities.
b) Inadequate awareness of the NBSAP process among implementing partners and the general public.
c) Inadequate human and infrastructure capacity in relevant fields of biodiversity conservation such as taxonomy and capacity to carry out conservation and characterization of germ-plasm in the National Gene Bank.
d) Lack of a central node to facilitate information sharing among institutions involved in biodiversity conservation.
e) Limited information on indigenous farm plant and animal genetic resources.
f) Inadequate managerial and technical capacity at the District and lower local Government levels for implementation of the NBSAP.
g) Inadequate mainstreaming of biodiversity into sectoral plans, programmes and strategies.

CHAPTER 3. REGIONAL BIODIVERSITY STRATEGY

3.1 The Need for an RBSAP

The CBD through decision X/2 of CoP 10 urged regional organizations to consider the development or updating of regional biodiversity strategies, as appropriate, including agreeing on regional targets, as a means of complementing and supporting national actions and of contributing to the implementation of the Strategic Plan for Biodiversity 2011-2020. The Post-2020 Global Biodiversity Framework and the associated 2050 Vision for Biodiversity re-affirms this position and proposes that Aichi Biodiversity Target 17 not only focuses on NBSAPs, but also on Regional plans (RBSAPs). The EAC Biodiversity Strategy and Action Plan integrates the post 2020 Global Biodiversity discourse and focuses on strengthening conservation measures and promoting the sustainable use of biodiversity in the natural resources sectors of forestry, wildlife, livestock, fisheries, wetlands and agriculture; establishing and implementing measures to prevent potential adverse impacts of biotechnology on biodiversity; raising awareness and promoting community participation in the conservation and sustainable use of biodiversity; promoting alternative ways of mobilizing resources for the implementation of the strategy while taking into account national circumstances.

3.2 Overarching Goal

The overarching goal of the RBSAP is to support the "halting of biodiversity loss by improving the integrity and sustainability of ecosystems ensuring increased resilience for continued provision of essential services for human well-being and socio-economic development in the EAC region".

3.3 Strategic Objectives

The Strategic Goals for the RBSAP are based on the consolidation and cross-fertilization of national goals in the country-level NBSAPs.

<u>Strategic objective 1</u>: Reduce direct pressures on trans-boundary biodiversity in the EAC region

Almost all the Six EAC Member states have suffered from the shared problem of biodiversity loss through the degradation of both terrestrial and aquatic ecosystems. The causes for this problem are almost the same throughout the region. They include rapid population growth and high population densities in some areas, poverty and rising demand for a wide range of extractive biodiversity goods such as charcoal and firewood; negative impacts of agricultural expansion and human settlements including urbanization; unsustainable land-use practices including deforestation, unsustainable mining operations, and overgrazing leading to land degradation and environmental pollution; illegal activities including wildlife poaching, trafficking and retaliatory killing, unreported and unregulated (IUU) fishing; the problem of alien invasive species and negative impacts of climate change. Continued deterioration of biodiversity including species and ecosystems in East Africa is likely to affect livelihoods and economic development targets both of which rely heavily on its goods and services. Agenda 2063 strategic framework of the African Union (The Africa We Want), has clearly demonstrated

that by developing Africa's biodiversity economy, the region will in effect be implementing the necessary actions towards achieving the first aspiration of Agenda 2063.

Some of the biodiversity in the EAC region exists within shared transboundary ecosystems (STEs) in form of hills and mountains, (e.g. Mt. Kilimanjaro, Mt. Elgon, Loima, Ruwenzoris, and Virunga), forests (e.g. Sango/Minziro, Eastern Arc Forests, Nyungwe/Kibira, Agoro-Agu), rivers (e.g. Kagera, Mara, Sio-Malakisi, Umba and Uaso Ngiro), lakes (e.g. Victoria, Tanganyika, Malawi, Jipe, Challa, Rweru-Mugesera), wetlands (e.g. Sio-Siteko, Sango Bay-Minziro), rich wildlife landscapes (Mara-Serengeti, Tsavo-Mkomazi, Amboseli-Kilimanjaro West-Lake Natron, Kidepo, Imatong Massif, Mt. Kei-Aloma Plateau, Akagera and Volcanoes national parks). These areas require regional collaboration in order to address the shared transboundary challenges and ensure equitable benefit sharing. At the same time, the aim by the EAC to increase trade in the region by unlocking economic potential through increased physical access to cross-border markets which is likely to also increase biological risks such as pest, disease and invasive species. This goal will address the regional biodiversity management gap. It is aligned with the CBD post 2020 biodiversity target of reducing threats to biodiversity as reflected in the Post-2020 Global Biodiversity Framework.

<u>Strategic objective 2</u>: Safeguard ecosystems, species and genetic diversity to improve the capacity of biodiversity to provide benefits including goods, services and support livelihoods for people in the EAC

Most of the EAC member states are suffering a common challenge of rapid decline in ecosystems, species and genetic diversity through accelerated degradation, over-utilization, illegal use including illicit trade in endangered or endemic species some of which have a transboundary distribution. Although member states are making good efforts towards the identification and conservation of red list species at country level, the vulnerability of migratory species especially within the STEs is a regional challenge. This is escalated by differences in policy and legal frameworks as well as application of independent species-specific management strategies. This goal will support the regional implementation of UN Decade on Ecosystem Restoration 2021-2030 which was recently declared in order to prevent, halt and reverse the degradation of ecosystems which will complement AFR100 (the African Forest Landscape Restoration Initiative) which is a country-led effort to bring 100 million hectares of land in Africa into restoration by 2030. The implementation of these in the STEs of East Africa will require regional collaboration and partnerships. This goal is in line with the CBD 2030 biodiversity mission of putting biodiversity on a path to recovery for the benefit of planet and people.

<u>Strategic objective 3</u>: Strengthen regional biodiversity management capacity and cooperation including biodiversity monitoring, information, knowledge storage and participatory planning

Biodiversity management in the EAC can benefit substantially from regional capacity building not only because of the shared transboundary ecosystems and migratory species but also because institutional and personnel capacities are not the same. In this way, well established

institutions and highly skilled personnel in some countries can support those in other countries. Such cooperation is critical in biodiversity monitoring and information sharing. Although this is already happening between some countries (e.g. the conducting of transboundary aerial wildlife counts by Kenya and Tanzania), a proper regional framework does not exist although some well-established regional agencies such as the Regional Centre for Mapping of Resources for Development (RCMRD) are in existence. Similarly, a Regional Biodiversity Information Framework and Facility (RBIF) does not exist although the region has a large number of migratory species (e.g. elephants, wildebeest, flamingoes, dolphins, whales, marine turtles etc.). This goal is aimed at addressing this regional biodiversity management gap. It is aligned to the CBD 2030 biodiversity targets of ensuring:- a) knowledge generation, management and sharing and b) technical and scientific cooperation, technology transfer and innovation.

3.4 Regional Strategic Biodiversity Targets

The RBSAP targets are largely informed by those targets in the country level NBSAPs for EAC member States which have transboundary and regional orientation. However, some additional targets were generated based on best practices including the lessons from RBSAPs in other RECs such as the SADC RBS.

Strategic objective 1: Reduce direct pressures on trans-boundary biodiversity in the EAC region

Strategic target 1: Create a regional collaboration framework for the management of shared transboundary ecosystems (STEs) including terrestrial landscapes and ecosystems, rivers, coastal and marine areas and transboundary lakes including rift valley lakes.

Strategic target 2: Establish a regional guidelines and effective capacity for cross-border surveillance, prevention and control of alien invasive species at the One-Stop Border Points by 2026.

Strategic objective 2: Safeguard ecosystems, species and genetic diversity to improve the capacity of biodiversity to provide benefits including goods, services and support livelihoods for people in the EAC

Strategic target 3: An EAC red listing framework established for key taxa and a regional strategy for joint protection of red-list species.

Strategic target 4: Measures in place to halt trade in products from endangered animal and plant species and their products in East Africa including pangolins, rhino horns and elephant tusks by 2030.

Strategic target 5: Restore 10% of national AFR100 targets in degraded shared ecosystems through joint effort by EAC member states also as part of the UN Decade for Ecosystem Restoration (2021-2030).

Strategic target 6: Locations that support wildlife concentrations outside protected areas, migrations and habitat connectivity identified and mapped for development of measures to implement corridors across the EAC.

Strategic target 7: Critical wildlife populations that are in need of restoration identified and mapped across the EAC landscapes and an implementation plan developed to prioritize them for restoration by 2030.

Strategic target 8: A protocol for the best practices for conservation and management of critical wildlife and ecosystems developed by 2030.

Strategic target 9: A framework and plan developed and implemented with best practices for integrating biodiversity into agricultural and forest plantations.

Strategic objective 3: Strengthen regional biodiversity management capacity and cooperation including biodiversity monitoring, information, knowledge storage and participatory planning

Strategic target 10: By 2030, a regional programme established for involving the local communities in biodiversity-related livelihood improvement.

Strategic target 11: Initiate a regional program for regular monitoring of the state of shared transboundary ecosystems (STEs) through established regional institutions and identify and prioritise specific topics for capacity building and at least 4 programmes run by 2024.

Strategic target 12: Establish and operate a Regional Biodiversity Information Facility (RBIF) in an appropriate EAC hub for robust biodiversity information management and sharing.

Strategic target 13: Establish a regional capacity building programme established with collaborating institutions of higher learning in the EAC.

Strategic target 14: An EAC regional framework for Access and Benefit Sharing (ABS) under Nagoya Protocol for genetic resources from shared ecosystems in implemented by 2030.

Strategic target 15: Data sharing plan for the region to support biodiversity conservation and planning , including for trans-boundary, threatened and endangered migratory species implemented by 2030.

Table 3- 1: Regional Action Plan 2021-2031

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
SO 1: Reduce the direct pressures on cross-border biodiversity and enhance its capacity to provide benefits including goods, services and support livelihoods of the people in the EAC	**ST 1**: Ensure regional collaboration in the management of shared trans-boundary ecosystems (STEs) including terrestrial landscapes and ecosystems, wetlands, rivers, coastal and marine areas and trans-boundary lakes including rift valley lakes	Develop integrated collaborative management plans for STEs and undertake collaborative conservation projects including transboundary exchange visits	EAC Secretariat Burundi: OBPE Kenya – MoEF Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2022-2026	300,000
		Eliminating the subsidies that are most harmful for biodiversity and introducing public and private sector incentives that are either positive or neutral to biodiversity change	Burundi: OBPE Kenya – MoEF Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2022-2030	200,000
		Implement measures in Member Countries to prevent potential cross-border adverse impacts of biotechnology on biodiversity in line with Article 19 of the CBD and the principles of the Cartagena protocol	Burundi: OBPE Kenya – MoEF Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and	2022-2030	250,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			Environment		
		Reduce the threats of cross-border urban pollution on the integrity of the coastal and marine ecosystems in line with the Nairobi Convention and the 2010 Strategic Action Programme for the Protection of the Coastal and Marine Environment in the Western Indian Ocean	Kenya – MoEF, KEMFRI Tanzania – Vice-President's Office	2022-2030	500,000
		Develop an EAC framework for identification and nomination of regional Ramsar Sites, joint World Heritage Sites and cross-border Biosphere Reserves	Burundi: OBPE Kenya – MoEF Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2022-2030	500,000
	ST 2: Establish a regional guidelines and effective capacity for cross-border surveillance, prevention and control of alien invasive species at the One-Stop Border Points by 2026.	Establish an EAC regional unit for strategic cooperation in cross-border management of IAS to ensure at least 20% reduction in the rate of new introductions	EAC Secretariat Burundi: OBPE Kenya – MoEF, NEMA, KEPHIS Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-	2022-2025	300,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			President's Office, NEMC Uganda: Ministry of Water and Environment Others - IUCN, GISP		
		Conduct a regional inventory of IAS and introduction pathways	Burundi: OBPE Kenya – MoEF, KEPHIS Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment Others - IUCN, GISP	2025-2030	350,000
		Develop regional protocols for cross-border IAS surveillance, prevention, rapid response and control	Burundi: OBPE Kenya – MoEF, KEPHIS Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2025-2030	200,000
		Develop an EAC Regional Invasive Alien Species Information System (EAC-RIASIS)	Burundi: OBPE Kenya – MoEF, KEPHIS Rwanda: Ministry of Environment S Sudan: MWCT	2025-2030	200,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment Others - IUCN, GISP		
		Undertake mapping of regional IAS hotspots and develop control action plans	Burundi: OBPE Kenya – MoEF, KEPHIS Rwanda: Ministry of Environment Tanzania – Vice-President's Office, NEMC S Sudan: MWCT Uganda: Ministry of Water and Environment Others - IUCN, GISP	2025-2030	250,000
SO 2: Safeguard ecosystems, species and genetic diversity including to improve the status of biodiversity in East Africa	**ST 3**: Establish an EAC red listing framework for key taxa and a regional strategy for joint protection of regional red list species	Establish a focal point to prepare and disseminate an EAC regional red list species based on classification systems developed and adopted by Member States	Burundi: OBPE Kenya - ME&F, NEMA, KWS, NMK Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and Environment Others - IUCN	2022-2023	450,000
		Prepare EAC	Burundi: OBPE	2022-2023	350,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
		conservation guidelines and action plans for improving the status of regional red list species including migratory species in line with Articles 2.1 and 5 of the CMS	Kenya - ME&F, NEMA, KWS, NMK Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and Environment Others - IUCN		
		Capacity building to establish regional red lists	Burundi: OBPE Kenya - ME&F, NEMA, KWS, NMK Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and Environment Others – IUCN	2022-2023	450,000
		Create gene banks for red list species	Burundi: OBPE Kenya – ME&F, KWS KMFRI, NEMA Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-	2020-2030	600,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			President's Office, NEMC, Marine parks&Reserves Uganda: Ministry of Water and Environment Others – Nairobi Convention, UNEP		
	ST 4: Develop measures to halt trade on products from endangered animal and plant species in East Africa including rhino horns and elephant tusks	Develop and adopt an EAC collaborative CITES enforcement plan through the Lusaka Agreement Task Force (LATF) and Burundi in line with Articles 3, 6 and 13 of CITES)	Burundi: OBPE Kenya - KWS NEMA, ME&F NMK Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and Environment	2022-2025	250,000
	ST 5: Restore 10% of national AFR100 targets in degraded shared transboundary ecosystems through joint effort by EAC member states also as part of the UN Decade for Ecosystem Restoration (2021-2030)	Establish an EAC AFR100 focal point to identify flagship transboundary landscapes for joint restoration projects	Burundi: OBPE Kenya – ME&F, MoALF, KFS, NEMA Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and	2022-2030	450,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			Environment		
		Identify flagship trans-boundary landscapes for joint restoration projects.	Burundi: OBPE Kenya – ME&F, MoALF, KFS, NEMA Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC Uganda: Ministry of Water and Environment	2022-2030	250,000
		Undertake a joint cross-border restoration of wetlands, buffer zones, coral reefs and mangroves for aquatic and as part of joint coastal and marine transboundary Conservation (TBC) to retain and restore at least 20% of the ecosystems	Burundi: OBPE Kenya – ME&F, KWS, KFS, KALRO, KMFRI, NEMA Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office, NEMC, Marine parks & Reserves Uganda: Ministry of Water and Environment Others – Nairobi Convention, UNEP	2025-2030	400,000
	ST 6: Locations that support wildlife concentrations outside protected areas,	Study of unique wildlife concentrations, migrations and habitats	Burundi: OBPE/University of Burundi	2023-2027	300,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
	migrations and habitat connectivity identified and mapped for development of measures to implement corridors across the EAC.	outside protected areas and mapping of key corridors.	Kenya: KWS Rwanda: Min of Environment S Sudan: MWCT Tanzania: TAWIRI Uganda: UWA		
	ST 7: Critical wildlife populations that are in need of restoration identified and mapped across the EAC landscapes and an implementation plan developed to prioritize them for restoration by 2030.	Study to identify and map critical wildlife populations across the EAC and design an implementation plan for prioritizing their restoration.	Burundi: University of Burundi Kenya: University of Nairobi Rwanda: University of Rwanda S Sudan: University of Juba Tanzania: UDSM-IRA Uganda: Makerere University	2023-2027	600,000
	ST 8: A protocol for the best practices in the conservation and management of critical wildlife and ecosystems developed by 2030.	Negotiate, agree and sign a protocol for the best practices.	Partner state focal ministries	2022-2025	200,000
	ST 9: A framework and plan developed and implemented with best practices for integrating biodiversity into agricultural and forest plantations.	Design a framework and plan for implementation of best practices.	EAC Secretariat Burundi: OBPE Kenya – ME&F Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and	2023-2028	200,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
			Environment		
	ST 10: By 2030, a regional programme established for involving the local communities in biodiversity-related livelihood improvement	Design and pilot a regional programme for local community involvement	Burundi: OBPE Kenya – ME&F Rwanda: Ministry of Environment S Sudan: MWCT Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2022-2030	6,000,000
SO 3: Strengthen regional biodiversity management capacity and cooperation including biodiversity monitoring, information, knowledge storage and participatory planning	**ST 11**: Initiate a regional program for regular monitoring of the state of shared transboundary ecosystems (STEs) through the Regional Centre for Mapping of Resources for Development (RCMRD) in Nairobi	Establish national EAC focal points from each member state and build capacity for monitoring the state of STEs	Burundi: OBPE Kenya – ME&F Rwanda: Ministry of Environment Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment Others-EASTECO, IUEA	2022-2030	450,000
		Document the State of Environment in the EAC STEs on regular basis	Burundi: OBPE Kenya – ME&F Rwanda: Ministry of Environment Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment	2022-2030	200,000
	ST 12: Establish and operate a Regional Biodiversity	Identify a suitable focal point for an EAC RBIF	Burundi: OBPE Kenya – ME&F, NMK	2022-2030	200,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
	Information Facility (RBIF) in an appropriate EAC hub for robust biodiversity information management and sharing	and support their initial collaboration	Rwanda: Ministry of Environment Tanzania – Vice-President's Office Uganda: Ministry of Water and Environment		
	ST 13: Establish a regional capacity building programme with collaborating institutions of higher learning in the EAC.	Set up a Centre of Excellence at one of the region's leading universities with mandate of building collaboration to enhance knowledge, skills and attitudes for effective biodiversity conservation, management and wise use.	National CEPA focal point, NMK, University of Nairobi, University of Rwanda-Centre of Excellence in Biodiversity and Natural Resource Management	2022-2025	350,000
	ST 14: An EAC regional framework for Access and Benefit Sharing (ABS) under Nagoya Protocol for genetic resources from shared ecosystems in implemented by 2030.	Design and establish an EAC regional framework for ABS at partner-state level.	EAC Secretariat Partner state focal and line ministries.	2022-2027	250,000
	ST 15: Data sharing plan for the region to support biodiversity conservation and planning, including for trans-boundary, threatened and endangered migratory	Formulate a data sharing plan for the region in collaboration with partner states.	EAC Secretariat Partner state focal and line ministries.	2022-2027	200,000

Strategic objectives (SO)	Regional targets (ST)	Action(s)	Lead agencies	Timeframe	Costs in USD
	species implemented by 2030.				
Total					**15,200,000**

CHAPTER 4 - IMPLEMENTATION COORDINATION, RESOURCE MOBILIZATION, MONITORING AND EVALUATION

4.1 RBSAP implementation coordination structures

The EAC and its Member State does not have a clear underlying policy framework on biodiversity issues. The RBSAP will therefore be implemented under the auspices of NBSAPs and other relevant national planning frameworks in the Member States. Institutionally, the RBSAP will operate within the framework of existing EAC structures and organs). At the regional level, it will be coordinated under the umbrella of the EAC Council of Ministers (CoM) which has a Sectoral Committee on Environment and Natural Resources and a Working Group on Aquatic and Terrestrial Ecosystems and serve as the coordinating focal point for the RBSAP. In addition, the EAC Trans-boundary Ecosystems Management Act (2012) has provisions for the formation of an East African Transboundary Ecosystems Management Commission which could also serve as the coordinating focal point. It will be responsible for providing the necessary guidance while and line-ministries responsible for the environment and natural resources and agencies charged with biodiversity in the partner states will be responsible at the national level. The coordination will also entail collaborating with international and regional organisations working in the realm of critical biological resources such as wildlife, forests fisheries, and water, especially those active in trans-frontier ecosystems. These include, but not limited to, the International Union for Conservation of Nature and Natural Resources (IUCN) World Wildlife Fund (WWF) and, the Wildlife Conservation Society (WCS). Line-ministries in partner states will provide the necessary country-specific data and periodic reports on the implementation of their NBSAPs and the CBD at large, for use in assessing progress in the implementation of the RBSAP and achievement of targets.

At national level, linkages will be established between the RBSAP and relevant ministries and biodiversity agencies (e.g. forestry, wildlife, water resources, agriculture etc). These establishments and their partners will be responsible for implementing projects that emanate from the RBSAP. Given that the RBSAP is derived from constraints contained in country-level NBSAPs, such an arrangement will complement rather than compete with related national initiatives. Furthermore, the use of existing national and regional institutional arrangements will ensure the speedy implementation of the resultant projects. Notwithstanding, some of these institutions might need some strengthening, depending on the project and the implementing sector. The involvement of regional agencies in the EAC such as Regional Centre for Mapping of Resources for Development (RCMRD), Lake Victoria Basin Commission, and Inter-University Council for East Africa (IUCEA), Nairobi Convention Secretariat, among others will greatly support the implementation of the RBSAP.

Regarding the implementation of approved and funded projects generated from the RBSAP, the EAC will engage Executing Agencies. The Agencies will be responsible for the day-to-day operational management and supervision of the project through the relevant implementing sector at national level. Essential characteristics of an Executing Agent include: in-depth technical know-how in the particular area; demonstrated programme management capabilities; and general acceptability by Member States, cooperating partners and other key stakeholders.

4.1.1 RBSAP implementation capacity development plan

The RBSAP will be implemented within existing EAC institutional arrangement and governance structures with a view to ensuring effectiveness. The strategy contains clear implementation arrangements for guiding the EAC Secretariat and partner states within the established structure, using the organs and specialized institutions already in place. These will work together in the implementation of collaborative measures and addressing challenges facing biodiversity conservation and management in the region. Institutional weaknesses identified prior to or during the implementation will be addressed on an on-going basis.

The Productive Sectors Directorate at EAC Secretariat shall provide leadership, stewardship and oversight. Relevant line-ministries and agencies will mirror this at the national level, through existing focal points or nomination of new ones as may me applicable. To this end, the Sectoral Council on Environment and Natural Resources shall provide overall policy guidance and ensure coherence with country programmes.

4.2 Communication and outreach

A multi-faceted approach to scaling-up the flow of information is in place at the EAC, which recognizes the role that Science, Technology and Innovation (STI) can play in transforming key sectors. This is aimed at engaging and involving specific stakeholders around its agenda and mission. Key focus will be on strengthening the capacity for engagement and rallying broad support around the regional biodiversity agenda. Collaboration with National Commissions and Councils for Science, Technology and Innovation of partner states will be central to this.

4.3 Resource mobilization

The implementation of the EAC RBSAP will require large capital investment and therefore there is a need to mobilize resources in various ways. The operationalization of the RBSAP activities will depend on the availability of both internal and external funding hence the interests of the funding sources will influence their sequencing. It is expected that the financing of most of the management interventions will be covered by the respective Member States through integration into respective national budgetary processes as part of their NBSAP operations. Other sources of funding will include bilateral donor funding (e.g. USAID), support by biodiversity related agencies (e.g. IUCN, WWF, AWF), and Public Private Partnerships (PPPs).

The RBSAP was prepared alongside a project document presenting an integrated set of activities aimed at improving co-operation and building capacity both within and between partner states. This will form the basis for leveraging funding in support of the RBSAP. To ensure speedy implementation of the RBSAP, the project integrated previous work on Conservation Investment Plans and respective MoUs developed across the region as modalities for partner state cooperation and implementation of Shared Trans-boundary Ecosystem conservation and management activities. CIPs were developed for Nyungwe-Kibira, Sango Bay-Minziro, Mara-Serengeti and other shared trans-boundary ecosystems and this will be scaled up to cover other trans-boundary ecosystems identified through various studies in the EAC including the EAC-Lake Victoria Basin Ecosystem Profile Assessment study of 2016.

The project is also aimed at making biodiversity an integral part of the overall economic growth strategy in the EAC region, creating an enabling environment for the creation of new and innovative conservation funding mechanisms. This is in recognition of the need to mobilize additional resources for successful implementation of the RBSAP from the private sector, multilateral development partners, international non-governmental conservation organizations, and funding windows under the various Multilateral Environmental Agreements (MEAs) among others. The project document may be adapted and further developed into a full-fledged proposal directly tailored to the guidelines of major donors like the Global Environment Facility (GEF) and bilateral development partners with a track record of supporting biodiversity at the regional level.

Chapter 5 Monitoring and Evaluation

5.1 Regional coordination structures

The EAC Secretariat will be overall responsible for coordinating M&E in collaboration with its semi-autonomous institutions which implement its mandate within the realm of biodiversity. At the regional level, the relevant Sectoral Council will be responsible for providing the necessary guidance while and line-ministries responsible for the environment and natural resources and agencies charged with biodiversity in the partner states will be responsible at the national level. National ministries coordinating the EAC Affairs will provide the important link to the Secretariat.

The coordination will also entail collaborating with international and regional organisations working in the realm of critical biological resources such as wildlife, forests fisheries, and water, especially those active in trans-frontier ecosystems. These include, but not limited to, the International Union for Conservation of Nature and Natural Resources (IUCN) World Wildlife Fund (WWF) and, the Wildlife Conservation Society (WCS). Line-ministries in partner states will provide the necessary country-specific data and periodic reports on the implementation of their NBSAPs and the CBD at large, for use in assessing progress in the implementation of the RBSAP and achievement of targets.

5.2 Monitoring and Evaluation strategy

Implementation of the RBSAP will monitored annually and evaluated periodically at predetermined intervals. The Secretariat will develop a robust framework for monitoring and evaluation of the RBSAP containing clear milestones and indicators. It will also ensure appropriate and effective documentation, reporting and dissemination of information among partner states and other key stakeholders. Preparation of annual progress reports on the implementation of the RBSAP will constitute an important plank in this regard. A theory of change that reflects the underlying process and pathways through which improved biodiversity intervention is expected to occur shall be incorporated in the M&E framework. To facilitate the process, it is recommended to establish a biodiversity baseline based on existing scientific literature, national and project reports covering the region.

Participating institutions and stakeholders will be required to adhere to a comprehensive M&E plan, essential for ensuring timely and effective collection of data for use in measuring progress of implementation and facilitating timely decision-making. The plan will describe the types of interventions that bring about the results hoped for, which will have to be consistent with the results framework.

5.3 Clearing house mechanisms

The EAC will establish a regional RBSAP Clearing-House Mechanism (CHM) under Sectoral Committee on Environment and Natural Resources in the Council of Ministers (CoM) which will work closely with the NBSAP CHMs. The Clearing-House Mechanism (CHM) promotes and facilitates technical and scientific cooperation within and between countries. It was established by the CBD to ensure greater access to the information and technologies needed for work on biodiversity. Implementation A central CHM will facilitate the implementation of the RBSAP.

The building of a biodiversity knowledge network for scientific and technical cooperation will be a key component of this, ensuring compatibility with different levels of national capacity.

The specific roles of the RBSAP CHM will be to:-

a) Strengthening coordination and collaboration among the Member States;
b) Increase public awareness on the regional status of biodiversity and RBSAP
c) implementation;
d) The RBSAP could be uploaded to the CHM website with means of measuring the progress of implementation of the national action plans; and
e) Provision of reliable and accurate biodiversity information relevant to sound decision-making on the sustainable utilization of biodiversity in the EAC region.

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Oryx in northern Kenya

Cheetahs in the Tsavo-Mkomazi ecosystem