

BIODIVERSITY OUTLOOK

FOR EASTERN & SOUTHERN AFRICA



RCMRD



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DEDICATION

To the custodians of our natural heritage; the communities, researchers, and changemakers across Eastern and Southern Africa who work tirelessly to protect our forests, biodiversity, and seas.

We dedicate this publication to those who understand that the health of our planet is inseparable from the wellbeing of our people. Your resilience, your knowledge, and your unwavering commitment continue to light the path toward a more sustainable and connected future.

And to the next generation, may you inherit not only the beauty of our ecosystems, but also the courage and the responsibility to safeguard them.

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This product was developed within the framework of the biodiversity component of the Africa Regional Centres of Excellence (ArcX) programme, under which the Regional Centre for Mapping of Resources for Development (RCMRD) hosts the Regional Centre of Excellence for Forests, Biodiversity and Seascape Ecosystems Management in Eastern and Southern Africa (RCoE-ESA). ArcX is a continental initiative that contributes to the AU–EU Innovation Agenda and aligns with the EU Global Gateway Strategy. It supports research and innovation across five interconnected thematic areas; water, biodiversity, agroecology, oceans, and climate change, strengthening science-based solutions for sustainable development across Africa. RCoE-ESA is funded by the European Union and co-implemented by the RCMRD and Landscape Alliance (formerly CIFOR-ICRAF). The RCoE-ESA leverages Science, Technology and Innovation (STI) to promote the sustainable management of forests, biodiversity and seascape ecosystems, delivering timely, accurate

and comprehensive information to support evidence-based decision-making across 24 countries in Eastern and Southern Africa.

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We recognise with deep appreciation the vital role of RCMRD's 20 Contracting Member States, whose national institutions and experts provided the data, contextual knowledge and on-the-ground insights that form the empirical foundation of this regional assessment. Their continued commitment to evidence-based conservation is central to the value and relevance of this work.

Finally, RCMRD acknowledges its dedicated staff, consultants, and collaborators who coordinated the research, spatial analysis, mapping and knowledge synthesis processes that underpin this publication. This publication stands as a testament to the power of regional partnership and a collective resolve to strengthen the management, effectiveness and resilience of protected and conserved areas across Eastern and Southern Africa.

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ACRONYMS AND ABBREVIATIONS

BOESA - Biodiversity Outlook for Eastern and Southern Africa

CBD - Convention on Biological Diversity

COP - Conference of the Parties to the Convention on Biological Diversity

E&S Africa - Eastern and Southern Africa

ESRI - Environmental Systems Research Institute

EU - European Union

GBF - Kunming—Montreal Global Biodiversity Framework

GBIF - Global Biodiversity Information Facility

GIS - Geographic Information System

ICCAs - Indigenous and Community Conserved Areas

IMET - Integrated Management Effectiveness Tool

IPBES - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPLC - Indigenous Peoples and Local Communities

IUCN - International Union for Conservation of Nature

KBA - Key Biodiversity Area

MAB - Man and the Biosphere Programme

MPA - Marine Protected Area

NBSAP - National Biodiversity Strategy and Action Plan

OECD - Other Effective Area-Based Conservation Measure

PA - Protected Area

PAME - Protected Area Management Effectiveness

PCA - Protected and Conserved Area

RCMRD - Regional Centre for Mapping of Resources for Development

SBSTTA - Subsidiary Body on Scientific, Technical and Technological Advice

SOPACA - State of Protected and Conserved Areas

TFCA - Transfrontier Conservation Area

ToT - Training of Trainers

UNEP - United Nations Environment Programme

UNEP-WCMC - United Nations Environment Programme – World Conservation Monitoring Centre

UNESCO - United Nations Educational, Scientific and Cultural Organization

WDPA - World Database on Protected Areas

WWF - World Wide Fund for Nature

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FOREWORD

Eastern and Southern Africa stand at a critical juncture in the global effort to conserve biodiversity and sustain the ecosystems upon which our societies and economies depend. As a region endowed with extraordinary natural wealth, we also face mounting pressures that threaten the integrity and resilience of these ecosystems.

It is with great pride that the Regional Centre for Mapping of Resources for Development, through the Regional Centre of Excellence for Biodiversity, Forests, and Seascape Ecosystems Management, presents the *Biodiversity Outlook for Eastern and Southern Africa (BOESA) 2026*.

This publication reflects our collective commitment to advancing evidence-based decision-making and strengthening regional cooperation in biodiversity conservation. It brings together the latest spatial data, policy insights, and field experiences to provide a comprehensive assessment of conservation progress, challenges, and opportunities.

Aligned with the Kunming–Montreal Global Biodiversity Framework, BOESA 2026 underscores the urgency of translating global commitments into tangible action at regional and national levels. It highlights the importance of robust data systems, innovative technologies, and inclusive governance approaches in achieving these goals.

At RCMRD, we recognize that geospatial data and mapping are powerful tools for understanding and managing our natural resources. Through this publication, we demonstrate how data-driven insights can support planning, monitoring, and adaptive management across terrestrial and marine ecosystems.

We are deeply grateful to our partners, including governments, development partners, research institutions, and local communities, whose contributions have made this work possible. Their collaboration exemplifies the shared responsibility required to safeguard biodiversity for present and future generations.

As we look ahead, BOESA 2026 serves not only as a reflection of where we are, but as a call to action. It challenges us to strengthen partnerships, invest in knowledge systems, and accelerate implementation of conservation priorities.

Together, we can build a future where biodiversity is conserved, ecosystems are resilient, and sustainable development is realized across Eastern and Southern Africa.

Dr. Emmanuel Nkurunziza
Director General, Regional Centre for
Mapping of Resources for Development



EXECUTIVE SUMMARY

Eastern and Southern Africa is home to exceptional biodiversity and a rich diversity of ecosystems, including savannas, forests, wetlands, montane ecosystems, and marine seascapes. These natural assets support livelihoods, food security, climate resilience, economic development, and cultural identity. However, they face increasing pressures from habitat conversion, land degradation, unsustainable exploitation of natural resources, invasive alien species, pollution, and climate change. Growing populations and competing demands for land and water further intensify these pressures.

Against this backdrop, the Biodiversity Outlook for Eastern and Southern Africa (BOESA) 2026 presents a regional assessment of biodiversity conservation status, trends, challenges, and priorities across 24 countries in Eastern and Southern Africa. Developed by the Regional Centre for Mapping of Resources for Development (RCMRD) through the Regional Centre of Excellence for Biodiversity, Forests, and Seascape Ecosystems Management in Eastern and Southern Africa (RCoE-ESA), the publication provides a strategic knowledge resource to support policy, planning, and action in alignment with the Kunming-Montreal Global Biodiversity Framework (KM-GBF).

BOESA is structured across seven thematic parts covering institutional frameworks, ecosystem status, conservation effectiveness, governance systems, geospatial data, innovation, and regional actions. It examines trends in terrestrial and marine protected and conserved areas across all 24 countries; biodiversity status and ecosystem services through country and sub-regional profiles; conservation effectiveness through updated PAME assessments and insights from IMET training; and emerging threats and strategic opportunities for conservation at landscape and seascape scales. It also examines policy and governance frameworks, including instruments involving Indigenous Peoples and Local Communities (IP-LCs), advances in geospatial data, mapping, and decision-support tools aligned with KM-GBF reporting needs, and capacity-building initiatives and regional programmes linked to the KM-GBF's 23 targets.

Across the region, more than 5,544 protected and conserved areas, covering approximately 2.62 million km², have been established. BOESA reports this as equivalent to 17.24% of the terrestrial area, demonstrating significant progress while highlighting the substantial gap that remains towards KM-GBF Target 3, which calls for at least 30% of terrestrial, inland water, coastal, and marine areas to be effectively conserved by 2030.

Progress varies considerably across sub-regions. The East African Community (EAC) has a substantial network of protected and conserved ar-

eas, but marine protection remains critically low. The Intergovernmental Authority on Development (IGAD) countries also face significant terrestrial and marine coverage gaps. In contrast, Indian Ocean Commission (IOC) countries have surpassed the 30% threshold for marine protection, while the Southern African Development Community (SADC) records the highest terrestrial and marine coverage among the sub-regions assessed. These differences demonstrate the need for approaches that respond to national and sub-regional circumstances.

BOESA goes beyond measuring the extent of protected and conserved areas. By bringing together spatial data, mapping, policy analysis, biodiversity trends, conservation effectiveness, governance, and capacity development, the publication identifies conservation gaps, priorities, and opportunities while translating complex information into accessible and actionable insights for decision-makers.

A central message of the assessment is that achieving the region's 2030 biodiversity ambitions requires more than expanding conservation areas. Progress must be accompanied by effective management, strong governance, reliable monitoring, accessible biodiversity data, technical capacity, recognition of Indigenous Peoples and Local Communities, adequate financing, and stronger regional cooperation. Countries are strengthening their National Biodiversity Strategies and Action Plans, reporting systems, and monitoring frameworks, increasing the need for reliable spatial data, harmonised methodologies, and sustained technical collaboration.

The publication highlights the growing role of geospatial technology, mapping, and decision-support tools in strengthening biodiversity planning, monitoring, and reporting. It also underscores the importance of partnerships among governments, regional institutions, communities, researchers, development partners, and international organisations. Such collaboration is essential because ecosystems, species, and many conservation challenges transcend national boundaries.

Ultimately, BOESA 2026 provides both a snapshot of where the region stands and a foundation for where it needs to go next. It demonstrates important conservation progress while highlighting persistent gaps in coverage, management effectiveness, data, capacity, financing, and coordination. Addressing these gaps will require stronger institutions, better evidence, meaningful community participation, sustained investment, and coordinated regional action.

"The future of biodiversity in Eastern and Southern Africa will be shaped by what we choose to protect today, the knowledge we share, and the partnerships we build for tomorrow."





CHAPTER ONE

Regional Biodiversity Context



1.1 BACKGROUND AND INSTITUTIONAL CONTEXT

Eastern and Southern Africa is home to some of the world's most exceptional biodiversity. From the montane forests of the Albertine Rift and the miombo woodlands of southern Africa to the coral reefs of the Western Indian Ocean and the vast savannah ecosystems of the Serengeti–Mara landscape, the region supports an extraordinary diversity of species and ecosystems that underpin livelihoods, food security, climate resilience, economic development, and cultural identity. These natural assets provide essential ecosystem services, including freshwater supply, carbon storage, pollination, disaster risk reduction, and nature-based tourism, making biodiversity conservation central to sustainable development across the region.

Yet this biodiversity is under unprecedented pressure. Habitat conversion, land degradation, unsustainable exploitation of natural resources, invasive alien species, pollution, and climate change continue to drive biodiversity loss at an alarming rate. Growing populations, competing demands for land and water, and expanding infrastructure further intensify these pressures, threatening both ecological integrity and the millions of people whose wellbeing depends directly on healthy ecosystems.

Recognising the urgency of reversing these trends, Parties to the Convention on Biological Diversity (CBD) adopted the Kunming-Montreal Global Biodiversity Framework (KM-GBF) in December 2022. The Framework provides a shared global roadmap for halting and reversing biodiversity loss by 2030 while setting a longer-term vision of living in harmony with nature by 2050. More than a global agreement, the KM-GBF provides countries with a practical framework for integrating biodiversity into national development planning, strengthening conservation efforts, restoring degraded ecosystems, mobilising finance, and improving monitoring and reporting.

For countries in Eastern and Southern Africa, implementing the KM-GBF presents both significant opportunities and considerable challenges. The region possesses globally important biodiversity resources and decades of conservation experience, yet many countries continue to face limitations in technical capacity, biodiversity information systems, institutional coordination, financing,

and long-term monitoring. Achieving the Framework's ambitious targets will therefore require more than expanding conservation areas; it will depend on strengthening governance, improving the quality and accessibility of biodiversity data, embracing geospatial technologies, recognising Indigenous Peoples and Local Communities as key conservation partners, and fostering greater regional cooperation.

Implementation is also occurring within a rapidly evolving policy landscape. Countries are revising their National Biodiversity Strategies and Action Plans (NBSAPs), preparing National Reports to the Convention on Biological Diversity, identifying nationally appropriate targets, and developing monitoring systems capable of demonstrating measurable progress. These processes require access to reliable spatial data, harmonised methodologies, technical expertise, and sustained scientific collaboration to ensure that conservation actions are evidence-based and effectively reported.

Regional institutions have an increasingly important role to play in supporting these national efforts. By facilitating technical cooperation, building institutional capacity, strengthening biodiversity information systems, and promoting knowledge exchange, they help countries translate global commitments into practical action on the ground. This collaborative approach recognises that many of the region's ecosystems, species, and conservation challenges transcend national boundaries and therefore require coordinated regional responses.

This chapter examines how Eastern and Southern Africa is implementing the Kunming-Montreal Global Biodiversity Framework, with particular emphasis on opportunities to accelerate progress towards Target 3, the global commitment to conserve at least 30 per cent of terrestrial, inland water, marine, and coastal areas by 2030. It explores the mechanisms available to countries for achieving this target, including protected areas, Other Effective Area-based Conservation Measures (OECMs), and Indigenous Peoples' and Community Conserved Territories and Areas (ICCAs), while highlighting the importance of effective governance, monitoring, and reporting. The chapter further examines the role of the Regional Centre for Mapping of Resources for Development (RCMRD), through its mandate as a Technical and Scientific Cooperation (TSC) Support

Centre under the Convention on Biological Diversity, in strengthening the technical, scientific, and institutional foundations needed to support successful implementation of the KM-GBF across Eastern and Southern Africa.

1.2 UNDERSTANDING THE KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK

The Kunming-Montreal Global Biodiversity Framework (KM-GBF) is the international blueprint for halting and reversing biodiversity loss by 2030 while advancing the long-term vision of living in harmony with nature by 2050. Adopted by Parties to the Convention on Biological Diversity (CBD) at the fifteenth meeting of the Conference of the Parties (COP15) in December 2022, the Framework succeeds the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets, providing a more comprehensive, measurable, and implementation-oriented agenda for global biodiversity conservation.

The Framework was developed in response to growing scientific evidence that biodiversity loss is accelerating at an unprecedented rate. Global assessments have shown that nature is declining faster than at any point in human history, with approximately one million species now threatened with extinction. Habitat destruction, unsustainable exploitation of natural resources, pollution, invasive alien species, and climate change continue to erode ecosystems that support food production, freshwater supplies, livelihoods, and climate regulation.

Unlike its predecessor, the Framework places greater emphasis on implementation, accountability, monitoring, and measurable outcomes. It recognises that achieving meaningful conservation outcomes requires coordinated action across governments, the private sector, Indigenous Peoples and Local Communities (IPLCs), civil society, academia, and development partners. Biodiversity conservation is therefore no longer viewed solely as an environmental issue but as a cross-sectoral development priority that must be integrated into national planning, economic decision-making, and sustainable development strategies.

The KM-GBF is built around four long-term goals to be achieved by 2050 and 23 action-oriented targets for implementation by 2030.

Together, these provide a comprehensive framework for addressing both the direct and indirect drivers of biodiversity loss while strengthening the enabling conditions needed for effective implementation.

The Four 2050 Goals

The KM-GBF's long-term ambition which is '**a world living in harmony with nature by 2050**', rests on four overarching goals:

Goal A - Protect and Restore: Maintain, enhance, or restore the integrity, connectivity, and resilience of all ecosystems; halt human-induced extinction and reduce extinction risk tenfold; safeguard genetic diversity.

Goal B - Prosper with Nature: Ensure biodiversity is sustainably used and managed, with nature's contributions to people valued, maintained, and restored where in decline.

Goal C - Share Benefits Fairly: Ensure fair and equitable sharing of monetary and non-monetary benefits from genetic resources, digital sequence information, and associated traditional knowledge.

Goal D - Invest and Collaborate: Secure adequate financing, capacity-building, technology transfer, and scientific co-operation to close the \$700 billion annual biodiversity finance gap.

The Architecture of the 23 Targets

The 23 KM-GBF targets translate these long-term goals into action-oriented commitments for 2030. They are clustered into three broad pillars:

1. Reducing threats to biodiversity (Targets 1–8)
2. Meeting people's needs through sustainable use and benefit-sharing (Targets 9–13)
3. Tools and solutions for implementation and mainstreaming (Targets 14–23)

Pillar 1**Reducing Threats to Biodiversity**

- **Target 1:** Bring the loss of areas of high biodiversity importance close to zero through participatory, biodiversity-inclusive spatial planning and management.
- **Target 2:** Restore at least 30% of degraded terrestrial, inland water, and marine ecosystems.
- **Target 3:** Conserve at least 30% of land, inland waters, and marine and coastal areas through equitably governed protected areas and OECMs (the '30x30' target).
- **Target 4:** Halt human-induced species extinction, support species recovery, maintain genetic diversity, and manage human-wildlife conflict.
- **Target 5:** Ensure the use, harvesting, and trade of wild species is sustainable, safe, and legal.
- **Target 6:** Reduce the introduction and impact of invasive alien species by at least 50%.
- **Target 7:** Reduce pollution risks — including excess nutrients, pesticides, and plastics — to levels not harmful to biodiversity.
- **Target 8:** Minimise the impacts of climate change and ocean acidification on biodiversity and build ecosystem resilience.

**THE BIODIVERSITY PLAN****Pillar 2****Meeting People's Needs Through Sustainable Use and Benefit-Sharing**

- **Target 9:** Ensure sustainable management and use of wild species to benefit people, especially vulnerable and biodiversity-dependent communities.
- **Target 10:** Manage agriculture, aquaculture, fisheries, and forestry sustainably, increasing biodiversity-friendly practices.
- **Target 11:** Restore, maintain, and enhance nature's contributions to people, including ecosystem services like air and water regulation and disaster protection.
- **Target 12:** Significantly increase green and blue spaces and biodiversity-inclusive planning in urban areas.
- **Target 13:** Ensure fair and equitable sharing of benefits from genetic resources, digital sequence information, and associated traditional knowledge.

Pillar 3**Tools and Solutions for Implementation and Mainstreaming**

- **Target 14:** Fully integrate biodiversity values into policies, planning, and national accounting across all levels of government and sectors.
- **Target 15:** Require businesses, especially large and transnational companies, to assess, disclose, and reduce their biodiversity-related risks and impacts.
- **Target 16:** Enable sustainable consumption choices and substantially reduce global food waste and overconsumption.
- **Target 17:** Strengthen biosafety measures and ensure equitable distribution of biotechnology benefits.
- **Target 18:** Reduce harmful subsidies and incentives by at least \$500 billion per year by 2030, while scaling up positive incentives for biodiversity.
- **Target 19:** Mobilise at least \$200 billion per year for biodiversity from all sources, including \$30 billion annually through international finance to developing countries.
- **Target 20:** Strengthen capacity-building, technology transfer, and scientific and technical cooperation for biodiversity.
- **Target 21:** Ensure the best available data, information, and knowledge are accessible to guide biodiversity decision-making.
- **Target 22:** Ensure full and equitable participation in biodiversity decision-making and access to justice for Indigenous Peoples and Local Communities, women, youth, and persons with disabilities.
- **Target 23:** Ensure gender equality and a gender-responsive approach throughout the Framework's implementation.

1.3 A FRAMEWORK FOR NATIONAL IMPLEMENTATION

Although the KM-GBF establishes globally agreed ambitions, implementation occurs primarily at the national level. Parties are expected to translate the Framework into national priorities through revised NBSAPs, national targets, policies, legislation, investment strategies, and monitoring systems that reflect their unique ecological, economic, and social circumstances.

This flexibility allows countries to pursue different pathways towards achieving the Framework's objectives while remaining aligned with the shared global vision. Progress is measured through an agreed monitoring framework comprising headline, component, and complementary indicators, enabling countries to assess implementation, report achievements, and identify areas requiring additional investment or technical support.

For Eastern and Southern Africa, successful implementation depends not only on national commitment but also on strengthened regional cooperation. Many of the region's ecosystems, protected area networks, migratory species, and conservation challenges extend across national borders, making collaborative approaches essential. Regional institutions, scientific networks, and technical cooperation mechanisms therefore play a critical role in supporting countries with biodiversity information, geospatial technologies, capacity development, monitoring systems, and knowledge exchange.

Among the Framework's 23 targets, Target 3, the commitment to effectively conserve and manage at least 30 per cent of terrestrial, inland water, marine, and coastal areas by 2030, has emerged as one of the most ambitious and widely recognised global biodiversity commitments. Because of its importance for conserving ecosystems, addressing climate change, and safeguarding nature's contributions to people, it has become a central focus of biodiversity policy and investment worldwide. The remainder of this chapter examines Target 3 in greater detail, considers the region's current legislative readiness to act on it, and outlines the opportunities available to countries for achieving this landmark commitment.

The State of KM-GBF Implementation in Eastern and Southern Africa

Since the adoption of the KM-GBF in December 2022, countries across Eastern and Southern Africa have made significant progress in translating global commitments into national action. Governments are revising NBSAPs, aligning national biodiversity targets with the Framework, strengthening biodiversity monitoring systems, and preparing the Seventh National Reports to the CBD. Together, these processes form the foundation for implementing the KM-GBF at the national level.

The pace of implementation, however, has varied considerably across the region. While some countries have advanced rapidly in updating their NBSAPs and strengthening institutional arrangements for implementation, others continue to face challenges related to limited financial resources, technical capacity, biodiversity data, and institutional coordination. These differences reflect the diverse ecological, economic, and governance contexts that characterise Eastern and Southern Africa, highlighting the need for flexible implementation pathways supported by strong regional cooperation.

Implementation of the KM-GBF extends well beyond expanding protected areas. It requires countries to mainstream biodiversity across sectors such as agriculture, fisheries, forestry, tourism, mining, infrastructure, and urban development, and demands stronger biodiversity information systems capable of generating reliable evidence for planning, monitoring, and reporting. In many countries, this means improving access to geospatial data, strengthening biodiversity inventories, enhancing ecosystem mapping, developing national monitoring frameworks, and increasing the use of Earth observation technologies to support evidence-based decision-making.

The Framework also introduces significantly higher expectations for accountability than previous global biodiversity agreements. Countries are expected not only to implement conservation actions but also to demonstrate measurable progress through agreed indicators under the KM-GBF Monitoring Framework. Reliable reporting therefore depends on robust national data systems, harmonised methodologies, and regular monitoring of biodiversity trends,

ecosystem condition, management effectiveness, and governance outcomes.

These reporting obligations present both a challenge and an opportunity for Eastern and Southern Africa. Historically, biodiversity reporting has often been constrained by fragmented datasets, inconsistent monitoring approaches, limited technical capacity, and insufficient coordination among institutions responsible for biodiversity management, meaning national reports have sometimes focused more on describing conservation activities than demonstrating measurable conservation outcomes. Addressing these gaps is essential if countries are to provide credible evidence of progress towards the Framework's goals and targets.

At the same time, the region possesses considerable strengths upon which implementation can build. Eastern and Southern Africa contains some of the world's largest transboundary conservation landscapes, internationally recognised protected area networks, extensive community conservation initiatives, and globally significant biodiversity monitoring programmes, alongside substantial expertise in conservation science, protected area management, geospatial analysis, and ecosystem monitoring. Increasing collaboration among governments, regional organisations, research institutions, civil society, IPLCs, and development partners provides a strong foundation for accelerating implementation of the KM-GBF.

Learning from the Past to Strengthen Future Implementation

The experience of implementing the Aichi Biodiversity Targets offers valuable lessons for the KM-GBF. Aichi Target 11 (2011–2020) aimed to protect 17% of land and 10% of marine areas globally, considerably less ambitious than the 30% now sought under KM-GBF Target 3, but nonetheless a useful test of how well the region tracks and reports its own progress. A review of the Sixth National Reports submitted to the CBD found that a majority of a sample of 24 Eastern and Southern African countries had not reported on all elements of Aichi Target 11, and that where information was provided, it tended to be descriptive rather than measured against clear data or indicators.

This does not necessarily mean the underlying conservation work was not happening. It does mean, however, that the evidence base

was too thin to confirm whether growth in protected area coverage on paper was matched by genuine, on-the-ground conservation outcomes, the risk commonly referred to as 'paper parks', where an area is protected in name and on a map but not in practice. Without stronger monitoring, the region risks repeating this pattern under Target 3, reaching 2030 without a reliable answer as to whether the ambition set out in the KM-GBF has actually been met.

The KM-GBF responds directly to these shortcomings by placing greater emphasis on measurable outcomes, evidence-based reporting, and management effectiveness. Countries are encouraged not only to increase conservation coverage but also to ensure that protected and conserved areas remain connected, adequately financed, effectively managed, and supported by inclusive governance arrangements. Avoiding the creation of further paper parks will therefore require sustained investment in biodiversity science, monitoring systems, geospatial technologies, institutional capacity, and long-term partnerships.

1.4 WHY TARGET 3 MATTERS FOR EASTERN AND SOUTHERN AFRICA

Among the 23 action-oriented targets of the KM-GBF, Target 3 has emerged as one of the most ambitious and widely recognised global biodiversity commitments. Commonly referred to as the '30x30' target, it calls for the effective conservation and management of at least 30 per cent of terrestrial, inland water, marine, and coastal areas by 2030 through well-connected, ecologically representative, and equitably governed systems of protected areas and OECMs. In full, Target 3 states:

“Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories where applicable, and integrated into wider landscapes,

seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.” (Convention on Biological Diversity, 2022a) ”

Compared with its predecessor, Aichi Target 11, which focused on conserving 17% of land and 10% of marine areas by 2020, KM-GBF Target 3 raises the bar substantially: to 30% of both land and inland waters, and of oceans, by 2030. Every Party to the CBD is required to develop strategies and action plans to conserve 30% of its land, inland waters, and sea by 2030.

Target 3 has attracted global attention because it recognises that conserving nature is fundamental to achieving sustainable development, climate resilience, and human wellbeing. Healthy ecosystems regulate water supplies, store carbon, protect coastlines, support agriculture and fisheries, sustain tourism, and provide countless cultural, spiritual, and economic benefits; conserving these ecosystems is therefore not simply an environmental objective but an investment in national development and long-term prosperity.

For Eastern and Southern Africa, the importance of Target 3 is particularly pronounced. The region contains globally significant biodiversity hotspots, extensive transboundary ecosystems, internationally recognised protected areas, and some of the world’s largest populations of iconic wildlife species. These ecosystems underpin key economic sectors, including tourism, agriculture, forestry, fisheries, and renewable natural resource management, while supporting the livelihoods of millions of people. Yet the region’s biodiversity continues to face mounting pressures: agricultural expansion, infrastructure development, unsustainable resource extraction, land degradation, invasive alien species, pollution, and climate change are fragmenting habitats and reducing ecosystem resilience. Unless these pressures are addressed, biodiversity loss will increasingly undermine food security, water availability, disaster resilience, and economic growth.

Target 3 offers an opportunity to reverse these trends by promoting integrated landscape and seascape conservation. Rather than

focusing solely on increasing the number or size of protected areas, the target emphasises the quality of conservation: protected and conserved areas must be effectively managed, ecologically representative, connected across landscapes and seascapes, and governed in ways that are fair, inclusive, and respectful of the rights of IPLCs. These principles reflect a significant evolution in global conservation thinking, recognising that successful conservation depends as much on governance and management effectiveness as it does on area coverage.

The target also acknowledges that protected areas alone cannot achieve global conservation ambitions. It explicitly recognises OECMs alongside protected areas, providing countries with greater flexibility to recognise and support areas that already deliver positive biodiversity outcomes under a variety of governance arrangements, broadening the conservation estate while acknowledging the important contributions made by private landowners, local communities, Indigenous Peoples, and other stakeholders.

Importantly, Target 3 should not be viewed in isolation. Its ambitions are deliberately woven into several other targets across the wider Framework: inclusive spatial planning that gives conservation a place within broader land-use decisions (Target 1), the restoration of degraded ecosystems (Target 2), the recovery of threatened species (Target 4), control of invasive alien species (Target 6), the shared agenda of tackling biodiversity loss and climate change together (Target 8), the delivery of ecosystem services (Targets 9 to 12), evidence-based and effective management practice (Target 21), and the meaningful involvement of communities in decision-making (Target 22). Progress on Target 3 therefore has knock-on benefits across much of the Framework, which is part of why it has attracted such sustained attention since the KM-GBF’s adoption.

Progress towards Target 3 also supports countries in delivering commitments under other international agreements. Conserved ecosystems contribute to climate change mitigation and adaptation under the Paris Agreement, including through countries’ Nationally Determined Contributions (NDCs), support the achievement of several Sustainable Development Goals, strengthen resilience to droughts and floods, and help secure ecosystem services essential for sustainable economic development.

Since every country's circumstances and priorities differ, Target 3 is deliberately framed as a shared global ambition rather than a uniform national prescription. Countries translate it into their own national targets through their NBSAPs and report on progress through National Reports to the CBD. This flexibility is a strength, but it also means the target's real-world importance depends heavily on the quality and consistency of what gets reported, which is precisely where the region's track record under Aichi Target 11 gives cause for concern, and where sustained investment in monitoring and evidence will matter most over the remainder of this decade.

Achieving the 30x30 Target: Pathways for Countries

Target 3 sets an ambitious but achievable objective. Importantly, it is not intended as a uniform prescription requiring every country to adopt identical approaches; rather, it provides a flexible framework through which countries can build upon existing conservation systems while recognising new opportunities to safeguard biodiversity. Three complementary pathways are available to countries seeking to achieve this target: expanding and strengthening protected areas, recognising Other Effective Area-based Conservation Measures, and recognising Indigenous and traditional territories.

Protected Areas

A protected area is defined by the IUCN as a clearly defined geographical space, recognised, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature, along with its associated ecosystem services and cultural values (Dudley, 2008). The Convention on Biological Diversity, meanwhile, defines a protected area as a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

A country can achieve Target 3 by designating additional protected areas, thereby expanding its national protected area network. Countries that have already met the coverage target can go further by expanding coverage and/or enhancing the management, governance, and representativeness of their protected areas. However, implementation of Target 3 requires countries to move beyond measuring success solely by the size of their protected area estate:

the KM-GBF places equal emphasis on management effectiveness, ecological representation, connectivity, and equitable governance. Simply designating new protected areas without ensuring adequate management capacity, financing, community support, and long-term monitoring risks creating protected areas that exist in law but deliver limited conservation outcomes.

Countries therefore have two complementary opportunities: expanding protected area networks where important biodiversity remains inadequately represented, and strengthening the effectiveness of existing protected areas through improved planning, management, governance, ecological restoration, and performance assessment. Both approaches contribute directly to achieving Target 3.

Other Effective Area-Based Conservation Measures (OECMs)

One of the most significant innovations introduced under the KM-GBF is the formal recognition of OECMs: an OECM is a geographically defined area, other than a protected area, that is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, along with associated ecosystem functions and services and, where applicable, cultural, spiritual, socio-economic, and other locally relevant values. Unlike protected areas, OECMs are not established primarily for conservation; instead, they are areas that achieve sustained, long-term biodiversity conservation while being managed for a variety of purposes, including cultural heritage, sustainable resource management, watershed protection, defence, or community livelihoods.

Although the concept was implicitly recognised earlier, under Aichi Target 11 of the CBD's 2011–2020 Strategic Plan, OECMs were not formally defined until 2018, at the 14th Conference of the Parties to the CBD, held in Sharm El-Sheikh, Egypt. The official definition, adopted at that meeting, is:

“A geographically defined area other than a protected area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and

where applicable, cultural, spiritual, socio-economic, and other locally relevant values.” (Convention on Biological Diversity, 2018, Decision 14/8, Annex III)

OECMs represent a distinct approach to conservation, separate from protected areas: while a protected area is expected to have conservation as a primary management objective, an OECM achieves effective long-term in-situ conservation of biodiversity regardless of what its primary management objective actually is. At COP15, in adopting the KM-GBF, Parties went further still, agreeing the more ambitious 30% area-based conservation target set out in Target 3, a target protected area and OECMs are expected to meet together, as complementary parts of a single, well-connected conservation network.

Depending on the extent to which biodiversity conservation is an intended outcome of an area’s management, OECMs can be grouped into three categories:

- Ancillary conservation - areas that deliver in-situ conservation as an incidental by-product of management undertaken for another purpose entirely, with biodiversity conservation not itself an objective. Examples include certain military training areas and sacred natural sites.
- Secondary conservation - areas that achieve conservation through deliberate, active management, where biodiversity conservation is a secondary rather than primary objective. Examples include conservation corridors and watershed protection areas.
- Primary conservation - areas that meet the technical definition of a protected area but have not been formally designated or reported as one, for instance certain ICCAs, or privately governed areas whose primary objective is conservation.

This recognition substantially expands the opportunities available to countries for achieving the 30x30 target. Many landscapes across Eastern and Southern Africa already deliver important biodiversity outcomes despite not being formally designated as protected areas: conservancies, sacred forests, community-managed grazing lands, watershed protection areas, privately managed conservation estates, military training areas with limited human disturbance,

and sustainably managed production landscapes may all qualify as OECMs where they demonstrably conserve biodiversity over the long term.

The IUCN World Commission on Protected Areas (IUCN-WCPA) has produced technical guidance setting out both the OECM definition and how it can be applied within national conservation strategies, together with a complementary site-level methodology for identifying candidate OECMs in practice. Because OECMs are built on management arrangements that are already delivering effective biodiversity outcomes, sites are recognised as OECMs rather than designated as such, and each assessment against the OECM criteria is carried out on a case-by-case basis. Identifying and mapping OECMs is essential if they are to be factored into national decision-making and tracked consistently alongside conservation targets; countries can submit OECM data to the World Database on OECMs (WD-OECM) to support this.

As of the most recent reporting, 344 OECMs across four African countries had been submitted to the WD-OECM, the overwhelming majority of them terrestrial (332 sites, or 96.5%), with a much smaller number of marine OECMs (12 sites, or 3.5%). In some countries, OECMs already account for a far greater share of conserved land than formally designated protected areas.

Recognising OECMs enables governments to acknowledge conservation achievements that have often remained invisible within official reporting systems. Rather than creating entirely new conservation areas, countries can identify, assess, and report existing areas that already contribute meaningfully to biodiversity conservation. For many countries in the region, systematically identifying and reporting OECMs represents one of the most cost-effective opportunities for accelerating progress towards the 30x30 target while strengthening collaboration among government agencies, local communities, private landowners, and civil society. Looking ahead, this points to a broader shift needed in conservation science and policy: towards defining protection by the biodiversity outcomes an area actually delivers, rather than by whether it carries a formal conservation designation.

Indigenous and Traditional Territories

Indigenous Peoples and Local Communities have managed and conserved biodiversity across Eastern and Southern Africa for generations through customary governance systems, traditional ecological knowledge, and sustainable natural resource management practices. Many landscapes under community stewardship support exceptional biodiversity while simultaneously sustaining livelihoods, cultural identity, and local economies. The KM-GBF explicitly recognises that achieving global biodiversity targets requires respecting the rights, knowledge, governance systems, and contributions of IPLCs; their participation is therefore not simply a social consideration but an essential component of effective biodiversity conservation.

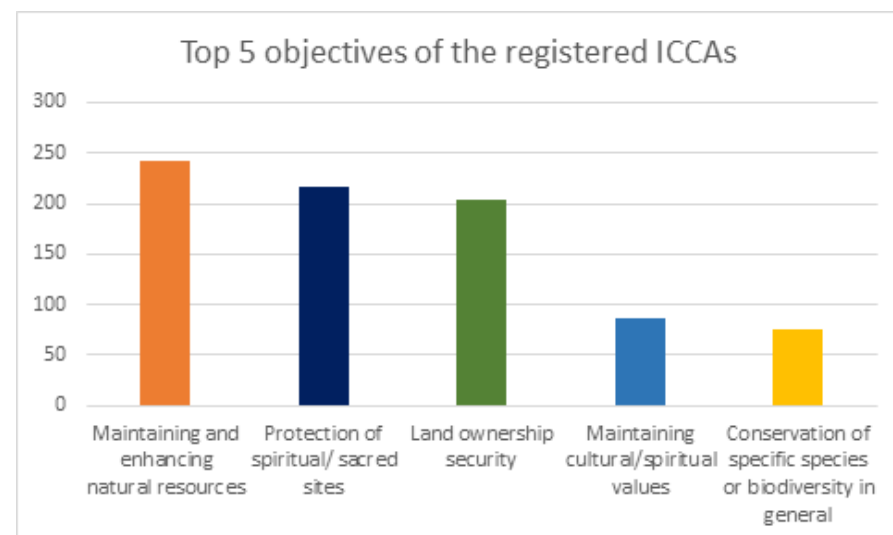
Areas owned, occupied, or managed by Indigenous Peoples and Local Communities are commonly referred to as ICCAs (Indigenous Peoples' and Community Conserved Territories and Areas) and are reported to the ICCA Registry. ICCAs may or may not meet the definition of a protected area or an OECM: a growing number that do meet these definitions are being listed in the World Database on Protected Areas (WDPA), while those that do not meet the IUCN's definition of a protected area or the CBD's definition of an OECM are not recorded in the WDPA but are instead registered in the ICCA Registry. The ICCA Registry is an information platform for territories and areas conserved by Indigenous Peoples and Local Communities, where communities themselves provide data, case studies, maps, photos, and stories, informing useful statistics and analyses on featured ICCAs, or 'territories of life', around the world.

Any decisions regarding these areas must recognise and respect the rights of Indigenous Peoples and Local Communities over them, including obtaining their free, prior, and informed consent. Depending on their characteristics and governance arrangements, some ICCAs may qualify as protected areas or OECMs, while others continue to deliver important conservation outcomes outside formal reporting frameworks. Recognising and supporting these areas provides countries with an opportunity to strengthen conservation while promoting equity, social inclusion, and respect for customary rights. Evidence from around the world demonstrates that biodiversity outcomes are often strongest where local commu-

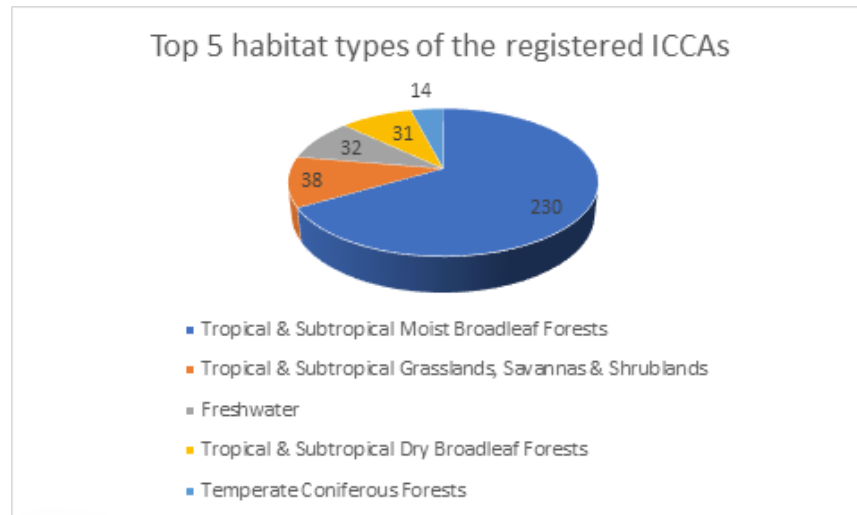
nities participate meaningfully in decision-making, benefit-sharing, monitoring, and resource management; strengthening community governance therefore delivers both conservation and development benefits.

ICCA custodians manage their territories with diverse motivations. While all contribute to nature conservation, this may not be their foremost goal: custodian communities report a wide range of objectives, from preserving traditional livelihoods to enhancing natural resources, highlighting the deep connection between culture, livelihoods, governance, rights, and conservation for Indigenous Peoples and Local Communities. A total of 13 objectives for managing ICCAs have been reported to the ICCA Registry, and the top five reported globally illustrate just how varied the motivations of IPLCs are, even as all contribute to the shared goal of conserving nature and culture.

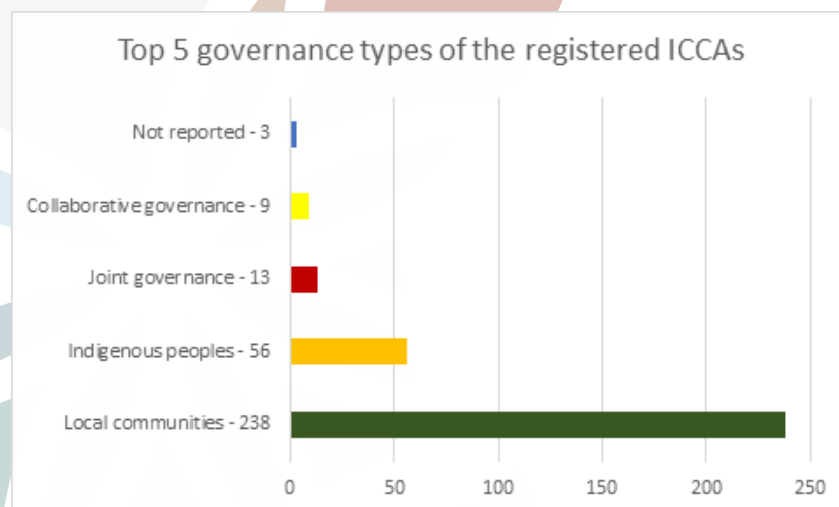
Figure 1.1 Main objectives of the reported ICCAs



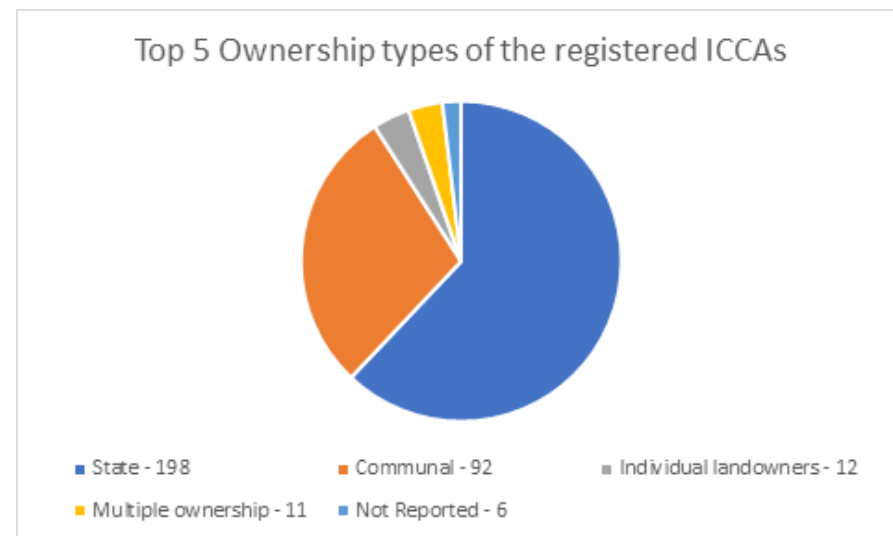
The graph above shows the top five (of 13) objectives reported across ICCAs globally. This diversity of motivation illustrates just how varied Indigenous peoples and local communities are — yet, regardless of their differing motivations for safeguarding their areas, all are contributing to the global conservation of nature and culture.

Figure 1.2 Habitat types conserved by ICCAs

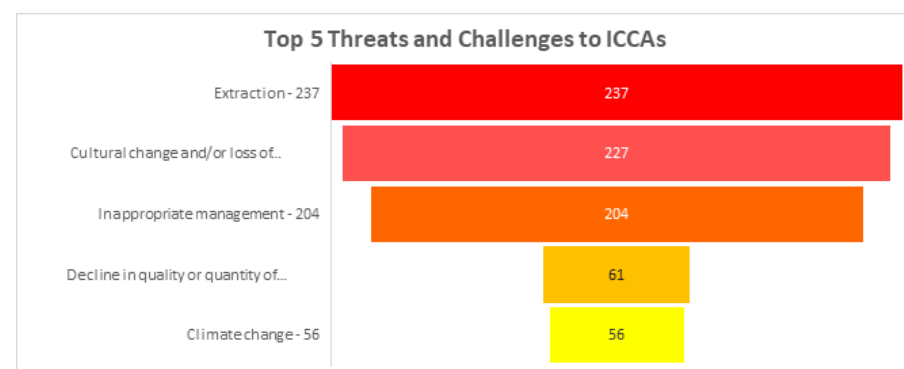
The chart above shows the top five (of 18) habitat types recorded across reported ICCAs globally. ICCAs safeguard diverse ecosystems that host a wide range of species and provide essential ecological functions. Indigenous peoples and local communities, as custodians, have historically played a vital role in conservation through their governance of nature, and through their values, knowledge, and practices — a role they continue to play today. Proper acknowledgement and support for ICCAs can help safeguard these ecosystems and species for the future.

Figure 1.3 Governance of the reported ICCAs

One of the defining characteristics of ICCAs is governance type. ICCAs are usually governed by Indigenous peoples and local communities, sometimes through shared governance arrangements. This means IPLCs hold the authority and responsibility for decision-making over their areas and territories, underscoring the need to support them if the world is to continue benefiting from the services and functions these areas provide.

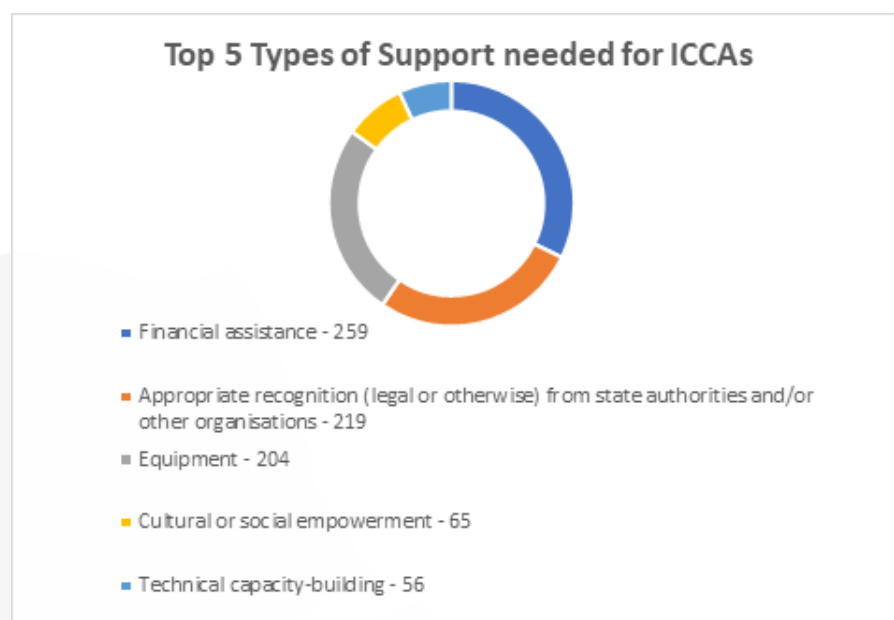
Figure 1.4 Ownership of ICCAs

Although the majority of reported ICCAs are governed by IPLCs, they are usually not owned by them. This means that governance and management of ICCAs are often independent of ownership. The majority of reported ICCAs are owned by government.

Figure 1.5 Threats and challenges to ICCAs

ICCAs face a myriad of challenges; understanding these can help inform conservation actors on how best to address and support them. The top five (of 19) reported threats and challenges facing ICCAs are extraction, cultural change and/or loss of knowledge, inappropriate management, decline in the quality and quantity of biodiversity, and climate change.

Figure 1.6 Support needed for ICCAs



ICCAs require a range of support to meet their varied needs. The top five reported types of support needed are: financial assistance; appropriate recognition by state authorities and/or other organisations; equipment; cultural or social empowerment; and technical capacity-building.

Monitoring Progress Towards the 30x30 Target

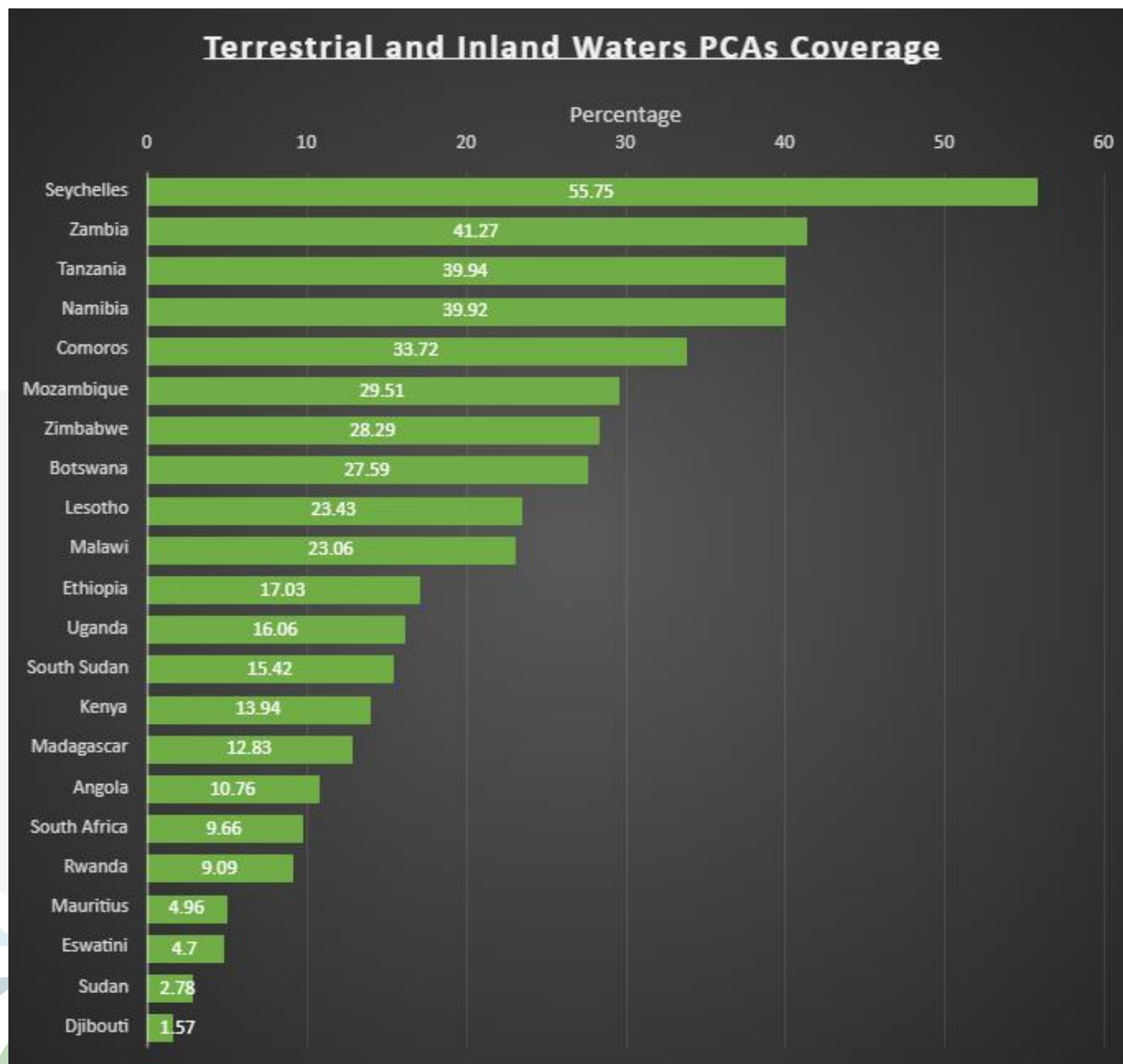
Achieving Target 3 requires more than conserving additional land and sea; countries must also demonstrate that conserved areas are effectively managed and delivering measurable biodiversity outcomes. Target 3 is tracked through a single mandatory headline indicator, the overall coverage of protected areas and OECMs, supported by a wider set of 8 component indicators and 16 complementary indicators covering aspects such as management effectiveness, ecological representativeness, connectivity, and equitable

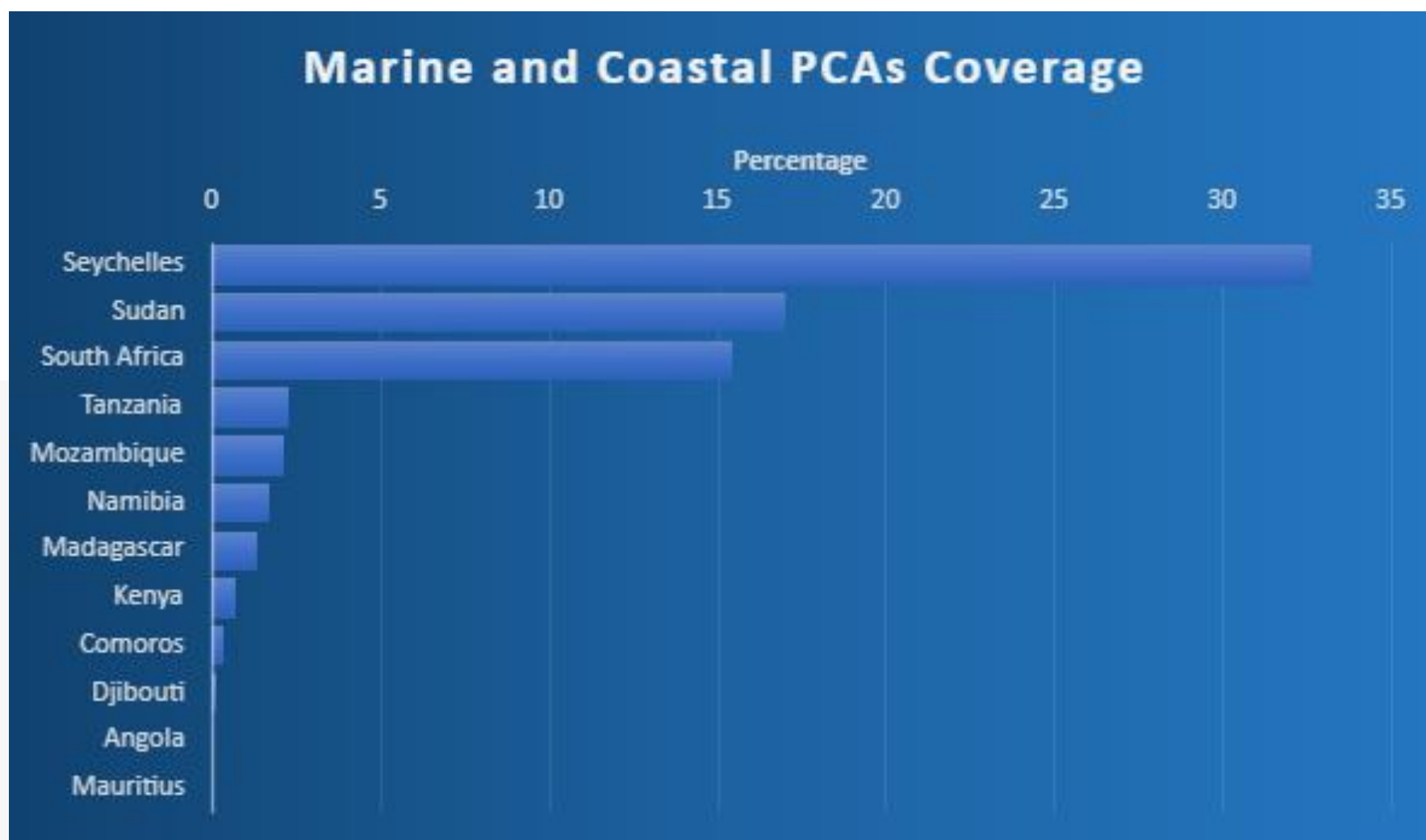
governance. Reporting against these additional indicators is optional rather than required, which means countries can technically satisfy their reporting obligations while leaving significant gaps in what is actually known about how well their protected and conserved areas are performing.

Table 1.1

Percentage Coverage of Protected and Conserved Areas

Country	Terrestrial %	Marine %
Angola	10.76	0
Botswana	29.15	0
Comoros	33.72	0.38
Djibouti	1.57	0.17
Eritrea	0	0
Eswatini	4.23	0
Ethiopia	17.03	0
Kenya	13.97	0.59
Lesotho	23.43	0
Madagascar	12.74	1.32
Malawi	23.11	0
Mozambique	29.49	2.16
Mauritius	4.96	0
Namibia	39.92	1.69
Rwanda	9.09	0
Seychelles	68.12	32.61
Somalia	0	0
South Africa	9.53	15.43
South Sudan	15.42	0
Sudan	2.27	17.01
Tanzania	39.95	2.31
Uganda	16.06	0
Zambia	41.27	0
Zimbabwe	28.26	0





Please note that Eritrea and Somalia have been excluded from the graphs, as all their reported protected and conserved areas are classified as proposed. Consequently, these areas were excluded from the calculation of protected and conserved area coverage statistics.

Tracking Changes in the Coverage of Protected and Conserved Areas from the January 2020 to January 2026

Country / Realm	2020		2021		2022		2023		2024		2025		2026	
	Terrestrial	Marine	Terrestrial	Marine	Terrestrial	Marine	Terrestrial	Marine	Terrestrial	Marine	Terrestrial	Marine	Terrestrial	Marine
Angola	10.75	0	10.75	0	10.75	0	10.75	0	10.76	0	10.76	0	10.76	0
Botswana	29.15	N/A	29.15	N/A	29.15	N/A	29.15	N/A	29.15	N/A	27.59	N/A	27.59	N/A
Comoros	34.43	0.37	34.43	0.37	34.43	0.37	34.43	0.37	33.72	0.38	33.72	0.38	33.72	0.38
Djibouti	1.17	0.17	1.17	0.17	1.17	0.17	1.17	0.17	1.57	0.17	1.57	0.17	1.57	0.17
Eritrea	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eswatini	4.7	N/A	4.7	N/A	4.7	N/A	4.7	N/A	4.7	N/A	4.7	N/A	4.7	N/A
Ethiopia	17	N/A	17	N/A	17	N/A	17	N/A	17.03	N/A	17.03	N/A	17.03	N/A
Kenya	12.2	0.61	12.2	0.61	12.2	0.61	12.2	0.61	13.94	0.69	13.94	0.69	13.94	0.69
Lesotho	21.17	N/A	21.17	N/A	21.17	N/A	21.17	N/A	23.43	N/A	23.43	N/A	23.43	N/A
Madagascar	7.49	0.92	7.49	0.92	7.49	0.92	7.49	0.92	12.71	1.32	12.83	1.35	12.83	1.35
Malawi	22.81	N/A	22.81	N/A	22.81	N/A	22.81	N/A	23.11	N/A	23.06	N/A	23.06	N/A
Mozambique	29.52	2.07	29.52	2.07	29.52	2.07	29.52	2.07	29.51	2.15	29.51	2.15	29.51	2.15
Mauritius	4.97	0	4.97	0	4.97	0	4.97	0	4.96	0	4.96	0	4.96	0
Namibia	39.74	1.69	39.74	1.69	39.92	1.69	39.92	1.69	39.92	1.69	39.92	1.69	39.92	1.69
Rwanda	9.07	N/A	9.07	N/A	9.07	N/A	9.07	N/A	9.09	N/A	9.09	N/A	9.09	N/A
Seychelles	53.35	32.61	53.35	32.61	53.35	32.61	53.35	32.61	55.75	32.61	55.75	32.61	55.75	32.61
Somalia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Africa	9.28	15.43	9.28	15.43	9.28	15.43	9.28	15.43	9.52	15.43	9.66	15.43	9.66	15.43
South Sudan	15.42	N/A	15.42	N/A	15.42	N/A	15.42	N/A	15.42	N/A	15.42	N/A	15.42	N/A
Sudan	2.28	16.97	2.28	16.97	2.28	16.97	2.28	16.97	2.27	17.02	2.78	17.02	2.78	17.02
Tanzania	39.98	2.94	39.98	2.94	39.98	2.94	39.98	2.94	39.85	2.71	39.94	2.31	39.94	2.31
Uganda	15.98	N/A	15.98	N/A	15.98	N/A	15.98	N/A	16.06	N/A	16.06	N/A	16.06	N/A
Zambia	41.27	N/A	41.27	N/A	41.27	N/A	41.27	N/A	41.27	N/A	41.27	N/A	41.27	N/A
Zimbabwe	28.26	N/A	28.26	N/A	28.26	N/A	28.26	N/A	28.26	N/A	28.29	N/A	28.29	N/A

1.5 EMERGING ISSUES TO IMPLEMENTING THE KM-GBF IN EASTERN AND SOUTHERN AFRICA

The KM-GBF provides an ambitious yet practical roadmap for reversing biodiversity loss by 2030. While countries across Eastern and Southern Africa have demonstrated strong commitment to its implementation, translating global aspirations into measurable national outcomes remains a complex undertaking. The region's extraordinary biological diversity is matched by equally diverse ecological, institutional, socio-economic, and governance contexts, meaning that implementation challenges vary considerably from one country to another. Nevertheless, several common constraints continue to influence the pace and effectiveness of implementation across the region.

Strengthening Biodiversity Data and Information Systems

Effective biodiversity conservation depends on reliable, accessible, and up-to-date information, yet biodiversity data remain frag-

mented across numerous institutions, projects, and sectors. National protected area agencies, research institutions, universities, non-governmental organisations, museums, and community-based organisations often collect valuable biodiversity information using different methodologies, standards, and data management systems. As a result, many countries face difficulties in consolidating biodiversity information into coherent national databases capable of supporting planning, monitoring, and reporting. Gaps in species inventories, habitat mapping, ecosystem assessments, and long-term ecological monitoring further limit the ability to measure biodiversity trends and demonstrate progress towards KM-GBF targets, a challenge directly linked to Target 20 (capacity-building and scientific cooperation) and Target 21 (accessible data and knowledge for decision-making). Improving data interoperability, promoting open access where appropriate, and strengthening national biodiversity information systems are therefore essential for evidence-based decision-making and effective implementation.

Enhancing Technical and Institutional Capacity

Successful implementation of the KM-GBF requires a diverse range of technical skills, including biodiversity assessment, ecosystem mapping, geospatial analysis, protected area management, spatial planning, ecological restoration, environmental modelling, and biodiversity monitoring. While significant expertise exists across the region, many institutions continue to operate with limited human and technical resources. Capacity constraints are often most pronounced at sub-national and site levels, where protected area managers, local authorities, and community organisations are responsible for implementing conservation actions on the ground. Continued investment in professional development, institutional strengthening, and regional knowledge exchange will therefore remain central to achieving the Framework's objectives.

Mobilising Sustainable Financing

Delivering the ambitions of the KM-GBF requires sustained financial investment. Protected area management, ecosystem restoration, biodiversity monitoring, research, community engagement, and capacity development all require long-term and predictable funding. Although many countries have increased domestic investment in biodiversity conservation, financial resources often remain insufficient to meet growing conservation needs, and many protected and conserved areas continue to face funding shortfalls that affect staffing, infrastructure, monitoring programmes, law enforcement, and ecological management. At the same time, the Framework presents opportunities to diversify biodiversity finance through innovative mechanisms, international partnerships, private sector engagement, nature-based solutions, and payment for ecosystem services. Strengthening financial sustainability will be essential to maintaining conservation gains beyond 2030.

Improving Monitoring, Evaluation, and Reporting

One of the defining features of the KM-GBF is its emphasis on measurable outcomes. Developing comprehensive monitoring systems remains challenging in many parts of the region: collecting consistent, high-quality data across large and often remote landscapes requires substantial investment in field surveys, Earth observation technologies, biodiversity databases, digital infrastructure, and an-

alytical capacity. Equally important is the harmonisation of monitoring methodologies across institutions and sectors, since consistent approaches improve data quality, facilitate regional comparisons, and strengthen confidence in national reporting submitted to the CBD.

Balancing Conservation and Development

Eastern and Southern Africa is experiencing rapid population growth, urbanisation, infrastructure expansion, agricultural development, and increasing demand for land, water, minerals, and energy. These development priorities are vital for improving livelihoods and economic growth but can also increase pressure on biodiversity if not carefully planned. The KM-GBF recognises that biodiversity conservation and sustainable development are mutually reinforcing rather than competing objectives; achieving this balance requires integrated spatial planning that considers biodiversity alongside economic, social, and infrastructure priorities, enabling countries to minimise environmental impacts while supporting inclusive development. Mainstreaming biodiversity across sectors therefore remains one of the region's most important implementation priorities.

Strengthening Inclusive Governance

Effective biodiversity conservation depends upon the participation of a wide range of stakeholders, including governments, IPLCs, women, youth, private landowners, civil society organisations, research institutions, and the private sector. Although considerable progress has been made in promoting participatory conservation, governance arrangements continue to vary across countries and conservation landscapes. Strengthening mechanisms for collaboration, equitable benefit-sharing, conflict resolution, and recognition of customary governance systems will be critical for ensuring that conservation initiatives are socially inclusive and locally supported. Tenure insecurity, unequal access, and uneven benefit distribution remain persistent challenges across the region, underlining the continued need to strengthen legal frameworks that secure the rights of IPLCs, consistent with Target 13 and related provisions of the Framework.

Responding to Climate Change

Climate change is increasingly recognised as a cross-cutting driver that compounds biodiversity loss across Eastern and Southern Africa. Rising temperatures, changing rainfall patterns, prolonged droughts, floods, wildfires, sea-level rise, and shifting species distributions are altering ecosystem dynamics and increasing pressure on protected and conserved areas. While the KM-GBF acknowledges climate impacts across multiple targets, integrated climate-biodiversity responses remain largely absent from national strategies; without explicit alignment to KM-GBF priorities, sectoral climate adaptation plans risk overlooking key biodiversity considerations. Nature-based solutions, ecosystem restoration, and resilient protected area networks will become increasingly important as countries seek to achieve both biodiversity and climate objectives.

A Shared Regional Opportunity

While these challenges are substantial, they also highlight the importance of strengthened regional cooperation. Many implementation constraints, including technical capacity, biodiversity information management, monitoring methodologies, and scientific expertise, can be addressed more effectively through collaborative approaches than through isolated national efforts. Recognising this, the Convention on Biological Diversity has established mechanisms to strengthen technical and scientific cooperation among Parties, facilitating knowledge exchange, capacity development, technology transfer, and regional partnerships that enable countries to learn from one another while building the institutional foundations required for successful implementation of the KM-GBF. In Eastern and Southern Africa, RCMRD has assumed a central role in this collaborative effort through its designation as a Technical and Scientific Cooperation Support Centre, discussed in detail later in this chapter.

1.6 CHECKLIST FOR POLICY-MAKERS: NBSAP AUDIT

As member states in the region revise their National Biodiversity Strategy and Action Plans (NBSAPs) to align with the KM-GBF, policymakers must audit their frameworks using the following technical checklist. An NBSAP that fails to address these four pillars will ultimately struggle to halt ecological decline.

1. Dynamic Scheduling (Target 4): Do your national wildlife laws automatically trigger legally binding recovery plans and emergency funding when a domestic species is uplisted on the IUCN Red List? Static wildlife schedules from the 1990s are obsolete. Legislation must be adaptive, automatically granting maximum legal protection to a species the moment scientific consensus declares it threatened, bypassing bureaucratic delays.

2. OECD Recognition (Target 3): Does your national legislation legally allow for community-owned, privately-owned, or indigenous land to be counted toward the 30x30 target without state expropriation or takeover? Governments cannot buy or fence 30% of their land. NBSAPs must provide clear, secure legal frameworks (like biodiversity stewardship agreements) that incentivize private and communal landholders to maintain ecosystem integrity.

3. Penalty Parity (Target 5): Are the financial penalties and prison sentences for poaching rare flora (e.g., cycads, African rosewood) and lesser fauna (e.g., queen ants, pangolins) legally equivalent to those for poaching iconic megafauna?

As criminal syndicates pivot to biopiracy and illegal plant trade, judicial systems must recognize that stealing a 500-year-old cycad or 2,000 foundational insect queens constitutes an act of ecological terrorism equivalent to poaching a rhino.

4. Nature-Positive Finance Plan (Target 19): Does your NBSAP explicitly include an economic strategy that identifies and operationalizes nature-positive revenue streams?

Conservation without capital is merely conversation. NBSAPs must outline mechanisms for debt-for-nature swaps, biodiversity offsets, blue carbon credits, and the elimination of subsidies that harm biodiversity.

1.7 STRENGTHENING NATIONAL CAPACITY FOR THE IMPLEMENTATION OF THE KM-GBF

Successful implementation of the KM-GBF depends not only on political commitment but also on the scientific, technical, and institutional capacity available to translate global targets into effective action. Countries require access to reliable biodiversity data, geospatial technologies, monitoring tools, scientific expertise, financing, and opportunities for knowledge exchange. While many of these resources exist within Eastern and Southern Africa, they are often unevenly distributed across institutions and countries, making the strengthening of technical and scientific cooperation essential for ensuring that all Parties have the capacity to implement the Framework effectively.

Recognising this need, Parties to the CBD adopted Decision 15/8 at COP15, establishing an enhanced Technical and Scientific Cooperation (TSC) mechanism to support implementation of the KM-GBF. The mechanism seeks to strengthen implementation by connecting countries with centres of expertise capable of providing technical assistance, facilitating capacity development, promoting technology transfer, and supporting the exchange of scientific knowledge and best practice. Rather than creating new institutions, it builds on existing regional organisations with established technical expertise and trusted relationships with national governments, contributing to the implementation of Articles 16, 17, and 18 of the Convention, which promote access to technology, information exchange, and scientific and technical cooperation among Parties.

The KM-GBF introduces more ambitious conservation targets and a more comprehensive monitoring framework than any previous global biodiversity agreement. Meeting these expectations requires specialised technical expertise that extends beyond traditional conservation practice, increasingly relying on geospatial technologies, Earth observation, remote sensing, geographic information systems (GIS), ecosystem modelling, biodiversity databases, and digital decision-support tools. Technical cooperation enables countries to benefit from these advances without duplicating effort, sharing methodologies, exchanging lessons learned, harmonising monitoring approaches, and strengthening institutional capacity more efficiently than working independently, while also facilitating

coordinated management of transboundary ecosystems, migratory species, shared river basins, and marine environments.

RCMRD'S Role as a Subregional Technical and Scientific Cooperation (TSC) Support Centre

Translating these global commitments into national action, however, requires more than policy alignment; it demands technical capacity, reliable data and sustained institutional support, particularly in a region where resources and expertise are often stretched thin.

Established in 1975, RCMRD is an intergovernmental organisation mandated to promote the sustainable management of natural resources through the application of geospatial technologies, Earth observation, and capacity development. Over five decades, the Centre has built extensive expertise in environmental monitoring, land management, climate services, disaster risk reduction, and natural resource assessment, working closely with governments, regional economic communities, development partners, research institutions, and local stakeholders across Africa.

Recognising this expertise, the Convention on Biological Diversity designated RCMRD as a Subregional Technical and Scientific Cooperation (TSC) Support Centre for Eastern and Southern Africa. The Centre officially launched this mandate on 27 January 2026, strengthening its role as a regional hub for scientific collaboration, technical assistance, and institutional capacity development in support of the KM-GBF. The designation builds upon a host agreement signed on 18 July 2025 during the Twentieth Ordinary Session of the African Ministerial Conference on the Environment (AMCEN), and reflects international recognition of RCMRD's longstanding contribution to environmental management and geospatial innovation across the continent.



RCMRD works alongside its 20 Contracting Member States more broadly, while its specific TSC Support Centre mandate currently covers 12 countries in Eastern and Southern Africa: Comoros, Eswatini, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Somalia, South Sudan, Uganda, the United Republic of Tanzania, and Zambia.



RCMRD's support extends across the entire biodiversity implementation cycle, from planning and baseline assessments to monitoring, reporting, and adaptive management. Rather than focusing on individual projects in isolation, the Centre works with countries to strengthen the systems, institutions, and technical capacities needed for long-term implementation of the KM-GBF.

A key area of support is the integration of geospatial technologies into biodiversity planning and decision-making. Satellite imagery, GIS, remote sensing, drone technologies, and spatial modelling provide countries with timely and reliable information on ecosystem condition, land-use change, habitat fragmentation, protected area coverage, ecological connectivity, and restoration opportunities. The Centre also supports countries in strengthening biodiversity information management, working with national institutions to improve biodiversity databases, strengthen spatial data infrastructure, develop monitoring tools, and promote the use of internationally recognised standards for biodiversity information.

As countries accelerate implementation of the KM-GBF, the role of regional institutions becomes increasingly important. Biodiversity conservation is a long-term endeavour requiring sustained investment in science, technology, partnerships, and institutional capacity. Through its mandate as a Technical and Scientific Cooperation



Support Centre, RCMRD provides a platform through which countries can access these resources while contributing to a stronger regional community of practice. Beyond supporting compliance with international reporting obligations, the Centre is helping countries build the technical foundations for evidence-based conservation, improved environmental governance, and resilient ecosystems, strengthening the region's collective ability to safeguard its exceptional biodiversity while advancing sustainable development and the wellbeing of present and future generations.

RCMRD in Action: Advancing KM-GBF Implementation

The implementation of the KM-GBF is ultimately measured not by policies adopted, but by tangible improvements in biodiversity conservation on the ground. In practice, RCMRD's support has taken tangible shape across the region in several ways.

Strengthening Protected Area Management Effectiveness

Well-managed protected and conserved areas are fundamental to achieving Target 3. Recognising that conservation success depends on effective management as much as legal designation, RCMRD supports countries in assessing and improving the performance of protected areas through the Integrated Management Effectiveness Tool (IMET), which provides protected area managers with a structured framework for evaluating governance arrangements, management planning, ecological integrity, operational effectiveness, stakeholder engagement, and conservation outcomes. RCMRD has facilitated IMET assessments in protected and conserved areas across the region, including Lusaka National Park in Zambia and the Naibunga Upper Community Conservancy in Kenya, strengthening site-level decision-making while contributing to national reporting on Protected Area Management Effectiveness (PAME), an important component of the KM-GBF monitoring framework.

Enhancing Geospatial Capacity for Biodiversity Monitoring

RCMRD plays a pivotal role in strengthening geospatial capacity for biodiversity monitoring across Eastern and Southern Africa. The Centre supports governments, research institutions, conservation organisations, and regional bodies in harnessing Earth observation technologies, geographic information systems (GIS), and

geospatial data for sustainable natural resource management and biodiversity conservation.

A key contribution lies in building technical capacity through training, knowledge transfer, and institutional strengthening. RCMRD regularly conducts specialised training in biodiversity conservation applications of remote sensing, GIS, spatial data analysis, and cloud computing, among other tools. These initiatives equip practitioners with the skills needed to monitor ecosystems, map habitats, assess species distributions, and detect land use and land cover changes that affect biodiversity (see Chapter 8 for further detail).

The Centre also facilitates access to high-quality geospatial data and Earth observation products. Through partnerships with agencies and providers including NASA, Planet Labs, the European Space Agency (ESA), Vantor (formerly Maxar Intelligence), and Star Vision Ltd, RCMRD provides satellite imagery, digital elevation models, climate datasets, and land cover products that support evidence-based biodiversity assessments. These datasets enable timely monitoring of protected areas, forests, wetlands, rangelands, and other critical ecosystems, while supporting national and regional reporting obligations under the Convention on Biological Diversity (CBD) and the Kunming–Montreal Global Biodiversity Framework (KM-GBF).

Through the Regional Centre of Excellence (RCoE), RCMRD further promotes the adoption of innovative geospatial technologies for biodiversity monitoring. The integration of artificial intelligence, machine learning, unmanned aerial systems (UAS), cloud computing, and spatial decision-support systems enhances the efficiency and accuracy of ecological monitoring, enabling near real-time detection of environmental change, habitat degradation, invasive species spread, and ecosystem restoration progress.

Regional collaboration is another cornerstone of RCMRD's work. By fostering partnerships among Member States, universities, conservation organisations, and development partners, the Centre encourages the sharing of geospatial knowledge, methodologies, and best practice. This collaborative approach strengthens transboundary biodiversity monitoring and supports coordinated conservation across shared ecosystems, including protected and conserved areas, forests, river basins, and wildlife corridors.

RCMRD also supports policy formulation and informed decision-making by translating geospatial information into actionable insight. Through maps, dashboards, environmental indicators, and analytical reports, the Centre enables policymakers and resource managers to prioritise conservation interventions, monitor environmental trends, and evaluate the effectiveness of biodiversity management strategies.

Through the Biodiversity Outlook for Eastern and Southern Africa (BOESA), RCMRD brings together regional biodiversity assessments, geospatial analyses, maps, case studies, and indicators within an accessible knowledge platform, offering policymakers, researchers, practitioners, and development partners a valuable evidence base for conservation planning and implementation.

In sum, RCMRD serves as a regional leader in advancing geospatial capacity for biodiversity monitoring, combining technical training, geospatial data access, technological innovation, regional cooperation, and decision support. Its continued efforts are critical in enabling countries across Eastern and Southern Africa to strengthen biodiversity conservation, improve environmental governance, and achieve national, regional, and global sustainable development and biodiversity targets.

Key Objectives of RCMRD's TSC role:

The Centre is committed to achieving the following objectives:

- Facilitating partnerships among governments, research institutions, communities, and other stakeholders to address shared biodiversity challenges.
- Building technical capacity by providing training, mentorship, and resources to enhance conservation expertise across the region.
- Developing and sharing tools and technologies for monitoring, managing, and protecting biodiversity and ecosystems.
- Supporting national biodiversity strategies by assisting countries in aligning their policies with international frameworks, particularly the KM-GBF and Decision 15/8.

- Promoting knowledge exchange through platforms that enable data-sharing, research collaboration, and the dissemination of best practices.

As Eastern and Southern Africa moves towards key milestones, including subsequent National Reporting cycles under the KM-GBF and the region's contributions to global biodiversity stocktaking, the role of institutions like RCMRD will only grow in importance. Strengthening national capacity is not a one-time intervention but an ongoing partnership, requiring sustained investment in people, data systems, and cross-border collaboration.

Other Technical and Scientific Cooperation / Subregional TSC Support Centres

RCMRD is one of 18 Subregional TSC Support Centres established globally under the CBD's TSC mechanism. The full network is set out below, by region.

Africa:

- **Central African Forest Commission (COMIFAC):** Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, and São Tomé and Príncipe
- **Ecological Monitoring Centre (CSE):** Benin, Burkina Faso, Côte d'Ivoire, The Gambia (The), Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo
- **Sahara and Sahel Observatory (OSS):** Djibouti, Egypt, Eritrea, Libya, Mauritania, Morocco, Sudan and Tunisia
- **South African National Biodiversity Institute (SANBI):** Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Seychelles, South Africa, and Zimbabwe

Americas:

- **Alexander von Humboldt Biological Resources Research Institute:** Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela (Bolivarian Republic of)
- **Caribbean Community (CARICOM):** Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Guyana, Haiti, Jamai-

ca, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago

- **Central American Commission on Environment and Development (CCAD/ SICA):** Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, and Panama

Asia:

- **ASEAN Centre for Biodiversity (ACB):** Brunei Darussalam, India, Indonesia, Lao PDR, Malaysia, Mongolia, Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam
- **International Union for Conservation of Nature Asia Regional Office (IUCN Asia):** Bangladesh, Bhutan, Japan, Maldives, Republic of Korea, and Sri Lanka
- **International Union for Conservation of Nature Regional Office for West Asia (IUCN ROWA):** Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, State of Palestine, Syrian Arab Republic, United Arab Emirates, and Yemen
- **Nanjing Institute of Environmental Sciences (NIES):** China, Cambodia, Nepal, and Pakistan

Europe:

- **European Commission Joint Research Centre (JRC)** through the EC Knowledge Centre for Biodiversity (KCBD), in partnership with the **International Union for Conservation of Nature Centre for Mediterranean Cooperation (IUCN Med)** and the **Royal Belgian Institute for Natural Sciences (RBINS):** Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye, Ukraine, and the United Kingdom of Great Britain and Northern Ireland
- **International Union for Conservation of Nature Regional Office for Eastern Europe and Central Asia (IUCN ECARO)** in partnership with the **Regional Environmental Centre for Central Asia (CAREC):** Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, and Uzbekistan

Oceania:

- **Secretariat of the Pacific Regional Environment Programme (SPREP):** Cook Islands, Fiji, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu

1.8 LOOKING AHEAD: DELIVERING THE KM-GBF BY 2030

The adoption of the KM-GBF marked a defining moment in global efforts to halt and reverse biodiversity loss. However, the success of the Framework will ultimately be determined not by the ambition of its targets but by the effectiveness of their implementation. With 2030 fast approaching, countries across Eastern and Southern Africa are entering a decisive period during which planning must increasingly give way to action, investment, monitoring, and measurable results.

The region is uniquely positioned to demonstrate global leadership in biodiversity conservation. Home to some of the world's richest terrestrial, freshwater, and marine ecosystems, Eastern and Southern Africa has a long history of conservation innovation, community stewardship, and regional collaboration. Its extensive network of protected areas, transboundary conservation landscapes, ICCAs, and emerging OECMs provides a strong foundation upon which to build implementation of the KM-GBF. At the same time, the scale of the challenge should not be underestimated, as biodiversity loss continues to accelerate under mounting pressure from land-use change, habitat fragmentation, climate change, pollution, invasive alien species, and unsustainable resource use.

Achieving the Framework's goals will require countries to move beyond measuring conservation success solely through the expansion of protected areas. Equal attention must be given to improving management effectiveness, strengthening ecological connectivity, restoring degraded ecosystems, recognising diverse governance models, and ensuring that conservation delivers tangible benefits for people as well as nature. The quality of conservation will increasingly matter as much as its extent.

A central priority over the coming years will be strengthening biodiversity information systems. Reliable, accessible, and interoperable

data are essential for evidence-based decision-making, adaptive management, and credible reporting against the KM-GBF Monitoring Framework. Equally important is continued investment in people and institutions: implementing the KM-GBF requires skilled professionals, strong institutions, effective governance systems, and sustained collaboration among governments, research organisations, IPLCs, civil society, the private sector, and development partners.

Regional cooperation will remain a defining feature of successful implementation. Many of Eastern and Southern Africa's most important ecosystems and conservation landscapes extend across national boundaries, making collaboration essential for effective planning, monitoring, and management. Within this regional architecture, RCMRD is well positioned to continue supporting countries as they advance implementation of the Framework, working with governments and partners to improve biodiversity information systems, strengthen national capacities, promote regional knowledge exchange, and support evidence-based decision-making.

Looking ahead, several priorities will be critical to accelerating progress across the region. Countries will need to complete the implementation of revised NBSAPs, strengthen biodiversity monitoring systems, improve the quality and consistency of national reporting, recognise and report qualifying OECMs, support IPLCs as key conservation partners, and secure sustainable financing for long-term conservation action. Continued investment in science, innovation, and digital technologies will also be essential to improving conservation planning and measuring progress towards the Framework's targets.

Ultimately, the implementation of the KM-GBF represents more than an international reporting obligation. It is an opportunity to reshape the relationship between people and nature by recognising biodiversity as the foundation of resilient economies, healthy societies, and sustainable development. The choices made over the remainder of this decade will determine whether Eastern and Southern Africa can halt biodiversity loss, restore degraded ecosystems, and secure the natural resources upon which future generations depend.



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CHAPTER TWO

REGIONAL BIODIVERSITY STATUS AND ECOSYSTEMS

2.1 COUNTRY AND REGIONAL PROFILES

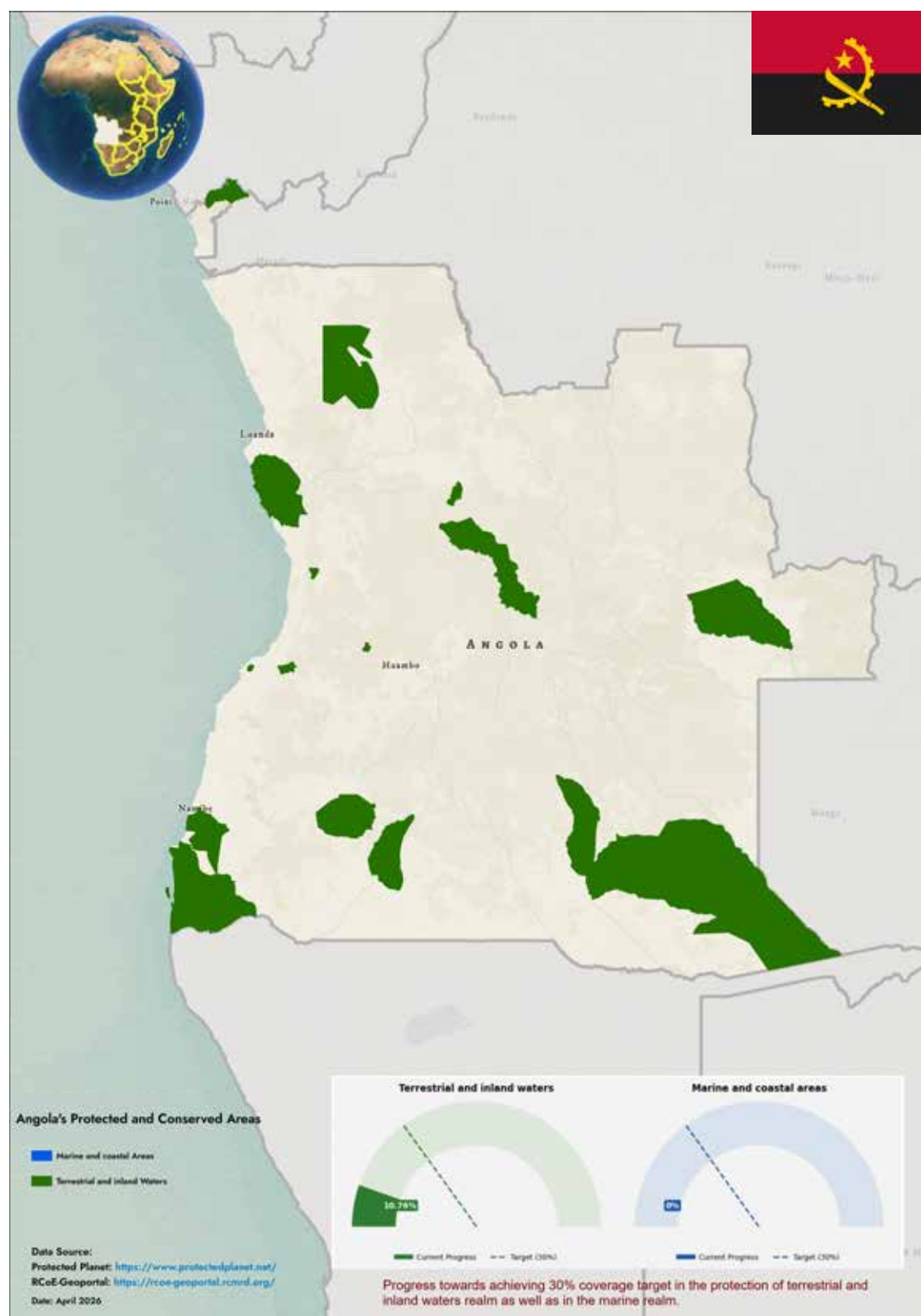
Angola's Protected and Conserved Areas

This map provides an overview of Angola's conservation status and progress toward Target 3 of the Kunming-Montreal Global Biodiversity Framework (KMGBF). It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Angola. Terrestrial and inland water protected areas are widely distributed across the country, with notable concentrations in the southern, eastern, and coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Angola has achieved 10.76% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of protected and conserved areas, particularly in ecologically important and underrepresented landscapes.

Marine and coastal protected area coverage remains at 0%, indicating that significant efforts are still required to establish and expand marine conservation measures. This suggests that marine conservation efforts require substantial investment, policy support, and institutional action to establish effective marine protected areas and improve the protection of coastal ecosystems.



existing protected and conserved areas across Botswana. Terrestrial and inland PCAs are predominantly concentrated in the northern and central regions, with comparatively fewer PCAs in the eastern and western regions. Botswana currently has 22 terrestrial and 10 inland water PCAs, indicating that individual PCAs are generally extensive in size.

Botswana has achieved 27.59% coverage of terrestrial and inland water protected areas, reflecting substantial progress toward Target 3. As a landlocked country, Botswana has no marine or coastal ecosystems and therefore no marine protected areas.

The map illustrates the spatial distribution of existing protected and conserved areas (PCAs) across Botswana. Terrestrial and inland water PCAs are predominantly concentrated in the northern and central regions, with comparatively fewer PCAs in the eastern and western regions. Botswana currently has 22 terrestrial and inland water PCAs, indicating that individual sites are generally extensive in size.



Comoros' Protected and Conserved Areas

This map provides an overview of Comoros' conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across the Comoros archipelago. Terrestrial and inland water protected areas are present on all three islands, with notable concentrations in the interior highlands of the larger islands and a smaller protected area on the third. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience across the islands. Comoros has achieved 33.72% coverage of terrestrial and inland water protected areas, meaning the country has already surpassed the 30% conservation target established under the KMGBF. This represents strong national progress toward Target 3 and positions Comoros as a regional example of terrestrial protected area coverage, though continued monitoring and management effectiveness remain important to sustain these gains.

Marine and coastal protected area coverage remains at just 0.38%, despite visible marine protected zones along parts of the coastline and offshore islets. This wide gap between terrestrial achievement and marine coverage shows that, unlike the terrestrial realm, marine conservation efforts remain far below target. Substantial investment, policy support, and institutional action are still required to expand marine protected areas and strengthen the protection of Comoros' coastal and marine ecosystems.



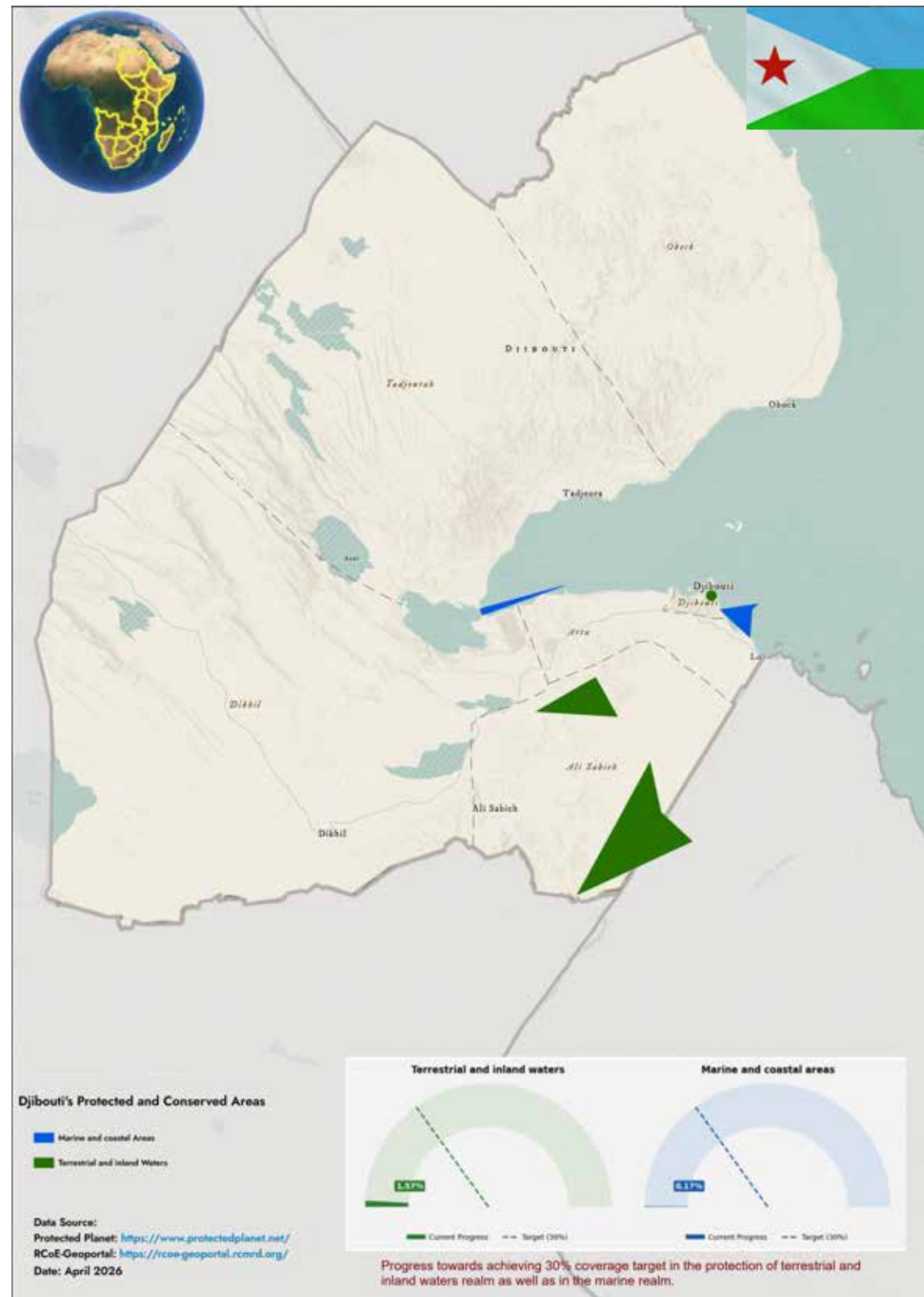
Djibouti's Protected and Conserved Areas

This map provides an overview of Djibouti's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Djibouti. Terrestrial and inland water protected areas are concentrated in the south-eastern part of the country, with two notable protected zones inland of the coast, while marine and coastal protected areas appear as small pockets near the capital and along the gulf coastline. These areas contribute to biodiversity conservation, ecosystem protection, and climate resilience, though overall coverage remains limited.

Djibouti has achieved only 1.57% coverage of terrestrial and inland water protected areas, placing the country well below the 30% conservation target established under the KMGBF. This highlights a substantial gap and underscores the need for significant expansion and strengthening of protected and conserved areas, particularly in ecologically important and currently underrepresented landscapes.

Marine and coastal protected area coverage stands at just 0.17%, similarly far short of the 30% target. This suggests that marine conservation efforts remain minimal and require substantial investment, policy support, and institutional action to establish and expand effective marine protected areas and strengthen the protection of Djibouti's coastal and marine ecosystems.

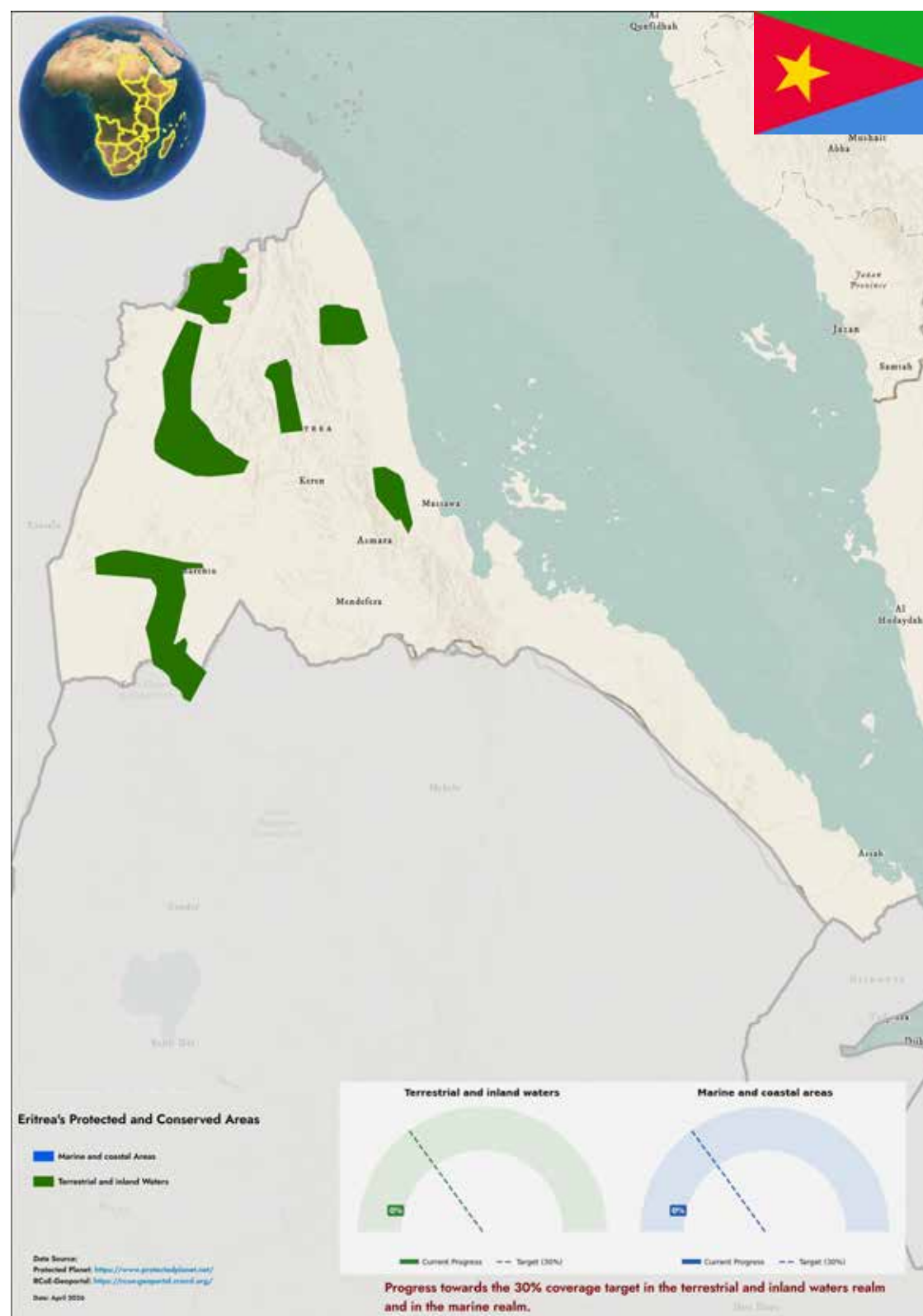


Eritrea's Protected and Conserved Areas

This map provides an overview of Eritrea's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Eritrea. Terrestrial and inland water protected areas are concentrated in the north-western and western parts of the country, with several distinct protected zones clustered inland of the coast, while the eastern coastal strip and Red Sea coastline show the largest concentration of protected and conserved areas at the centre of the coastline. These inland protected areas contribute to biodiversity conservation, ecosystem protection, and climate resilience where they exist.

Although Eritrea has made significant efforts toward establishing and managing protected areas, its reported protected and conserved area coverage stands at 0%. This is because all of the country's protected areas, both terrestrial and marine, are currently at proposed stage; under the methodology used to calculate coverage, proposed areas are not included — only formally designated or recognised areas count toward the total. This highlights a significant gap and underscores the need to formally recognise and designate the proposed protected and conserved areas, alongside substantial expansion and formal strengthening of coverage, particularly in ecologically important and currently underrepresented landscapes.

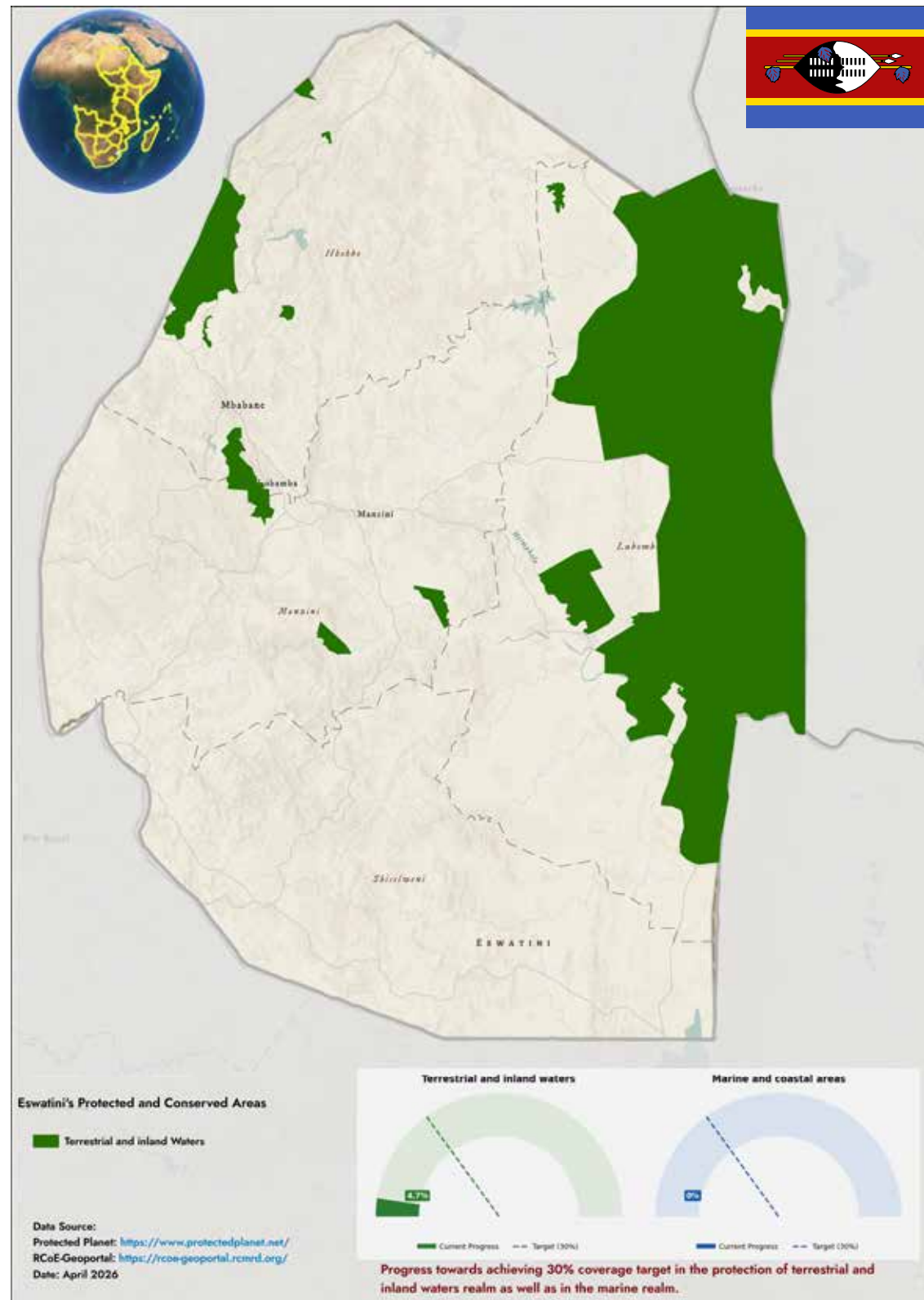


Eswatini's Protected and Conserved Areas

This map provides an overview of Eswatini's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets. The map illustrates the spatial distribution of existing protected and conserved areas across Eswatini. Terrestrial and inland water protected areas are heavily concentrated in the eastern part of the country, with one large, extensive protected zone dominating the Lubombo region along the eastern border. Several smaller, scattered protected areas are also found in the northern and central parts of the country, including near the capital. These areas contribute to biodiversity conservation, ecosystem protection, and climate resilience, though their distribution remains uneven.

Eswatini has achieved approximately 4.7% coverage of terrestrial and inland water protected areas, placing the country well below the 30% conservation target established under the KMGBF. Despite the presence of one substantial protected area in the east, overall national coverage remains limited, highlighting the need for continued expansion and strengthening of protected and conserved areas elsewhere in the country.

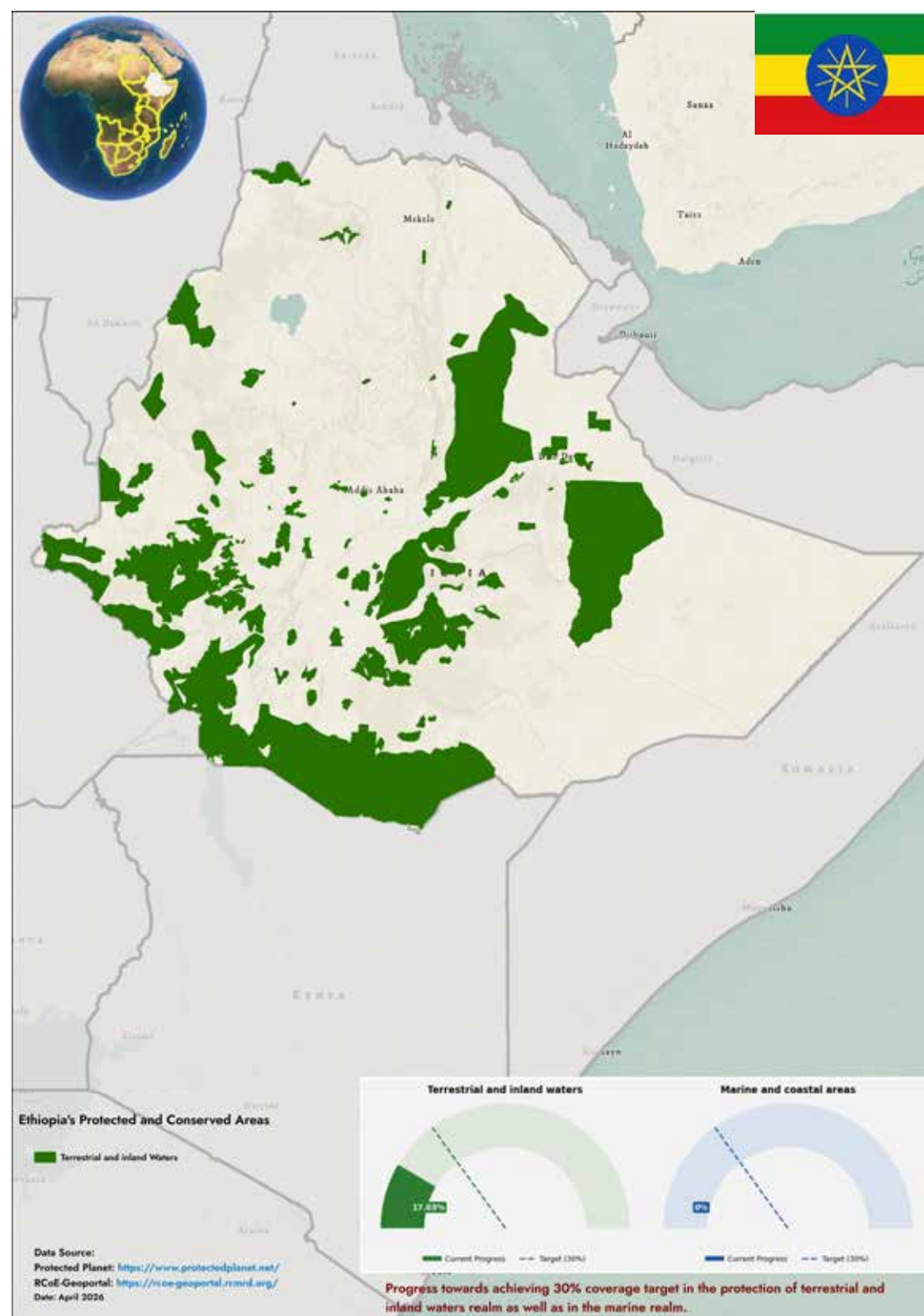
As a landlocked country, Eswatini has no marine or coastal territory and therefore no marine conservation target. Conservation efforts are accordingly focused entirely on terrestrial and inland water ecosystems, which remain the priority for continued investment, policy support, and institutional action toward the 2030 biodiversity targets.



Ethiopia's Protected and Conserved Areas

This map provides an overview of Ethiopia's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets. The map illustrates the extensive and widespread distribution of protected and conserved areas across Ethiopia. Terrestrial and inland water protected areas cover large portions of the country, with major concentrations in the south-western lowlands, a broad band along the southern border, and substantial protected zones in the north-east and east extending toward the Somali border. Numerous smaller protected areas are also scattered throughout the central highlands and around Addis Ababa. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience across diverse landscapes. Ethiopia has achieved approximately 17.03% coverage of terrestrial and inland water protected areas. While this represents meaningful progress toward Target 3 and reflects one of the more extensive protected area networks in the region, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and under-represented landscapes.

As a landlocked country, Ethiopia has no marine or coastal territory and therefore no marine conservation target. Conservation efforts are accordingly focused entirely on terrestrial and inland water ecosystems, including lakes, wetlands, and river systems, which remain the priority for continued investment, policy support, and institutional action toward the 2030 biodiversity targets.

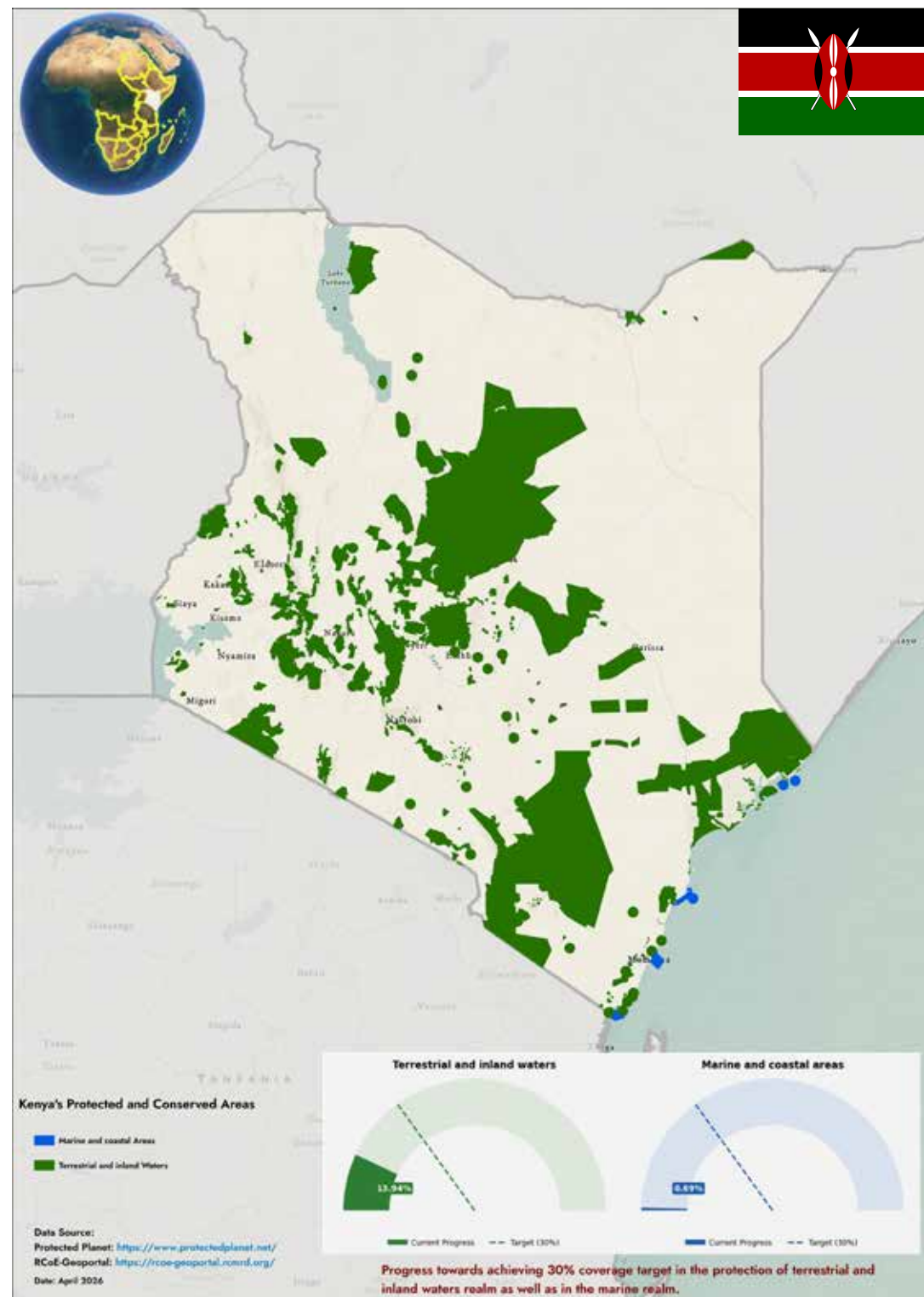


Kenya's Protected and Conserved Areas

This map provides an overview of Kenya's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets. The map illustrates the extensive and widespread distribution of protected and conserved areas across Kenya. Terrestrial and inland water protected areas are found throughout the country, with dense concentrations in the central and Rift Valley regions, a large protected zone in the north-central area, and substantial coastal and near-coastal protected land along the south-eastern coast. Numerous smaller protected areas are scattered across the western highlands and southern regions. Marine and coastal protected areas appear as smaller pockets along the coastline near the major coastal urban centres. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Kenya has achieved approximately 13.94% coverage of terrestrial and inland water protected areas. While this demonstrates meaningful progress toward Target 3 and reflects one of the more developed protected area networks in the region, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes.

Marine and coastal protected area coverage stands at just 0.69%, well below the 30% target despite Kenya's significant coastline along the Indian Ocean. This suggests that marine conservation efforts remain comparatively limited and require substantial investment, policy support, and institutional action to establish and expand effective marine protected areas and strengthen protection of Kenya's coastal and marine ecosystems.



This map provides an overview of Lesotho's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets. The map illustrates the spatial distribution of existing protected and conserved areas across Lesotho. Terrestrial and inland water protected areas are widely distributed across the country, with notable concentrations in the northern and eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Lesotho has achieved approximately 23.43% coverage of terrestrial and inland water protected areas, demonstrating important progress toward Target 3, with only 6.57% remaining to reach the 30% target. There remains a need for continued expansion and strengthening of protected and conserved areas, particularly in ecologically important and underrepresented landscapes. As a landlocked country, Lesotho has no marine or coastal ecosystems and therefore no marine protected areas.



Madagascar's Protected and Conserved Areas

This map provides an overview of Madagascar's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Madagascar. Terrestrial and inland water protected areas are widely distributed across the country, with notable concentrations in the southern, eastern, and coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Madagascar has achieved approximately 12.83% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes. Marine and coastal protected area coverage remains at 1.35%, indicating that significant efforts are still required to establish and expand marine protected and conserved areas. This suggests that marine conservation efforts require substantial investment, policy support, and institutional action to establish effective marine protected areas and improve the protection of coastal ecosystems.

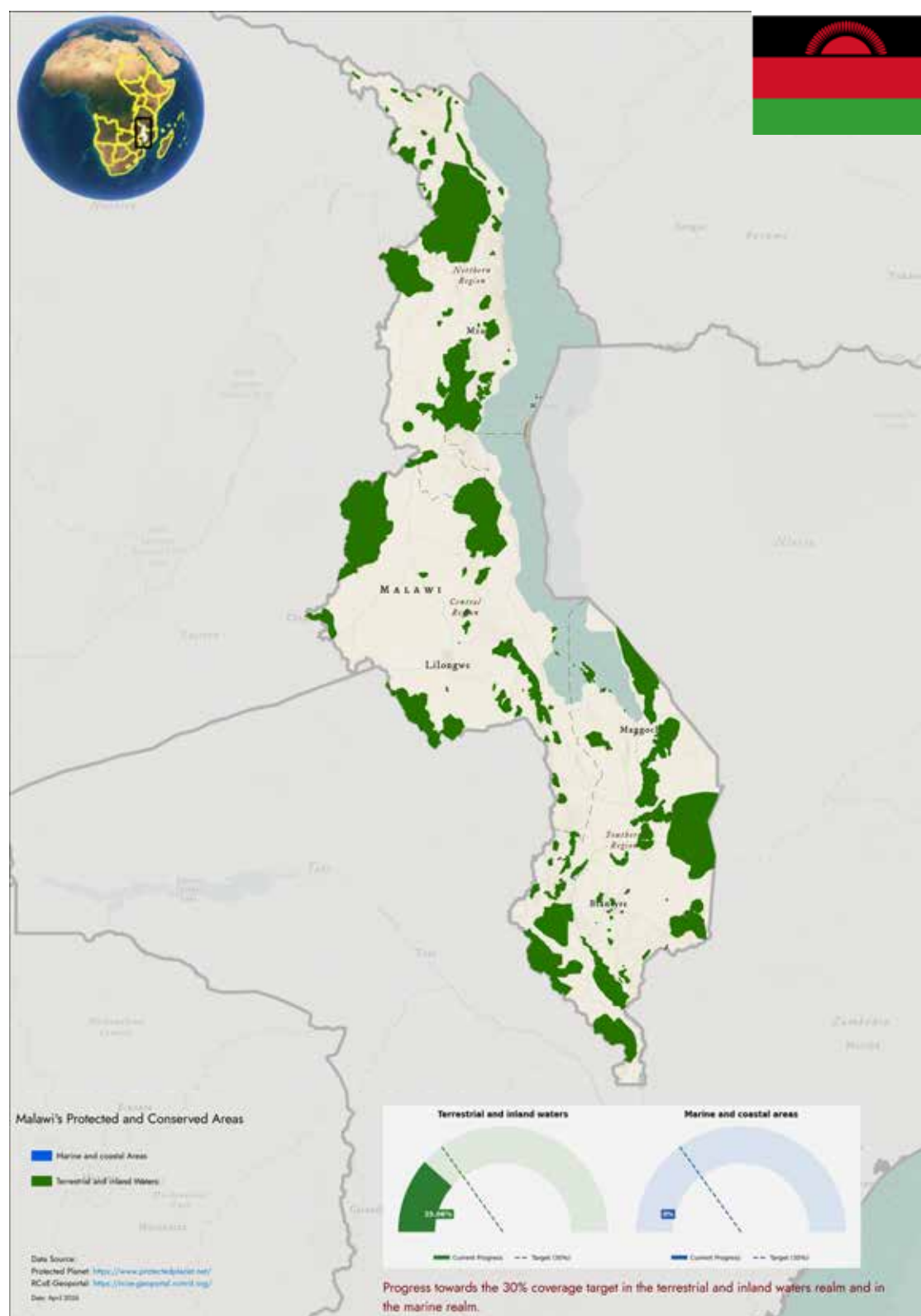


Malawi's Protected and Conserved Areas

This map provides an overview of Malawi's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Malawi. Terrestrial and inland water protected areas are evenly distributed across the country. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience. Malawi has achieved approximately 23.06% coverage of terrestrial and inland water protected areas, demonstrating important progress toward Target 3, with only 6.94% remaining to reach the 30% target. Nevertheless, there remains a need for continued expansion and strengthening of protected and conserved areas, particularly in ecologically important and underrepresented landscapes.

As a landlocked country, Malawi has no marine or coastal ecosystems and therefore no marine conservation target.



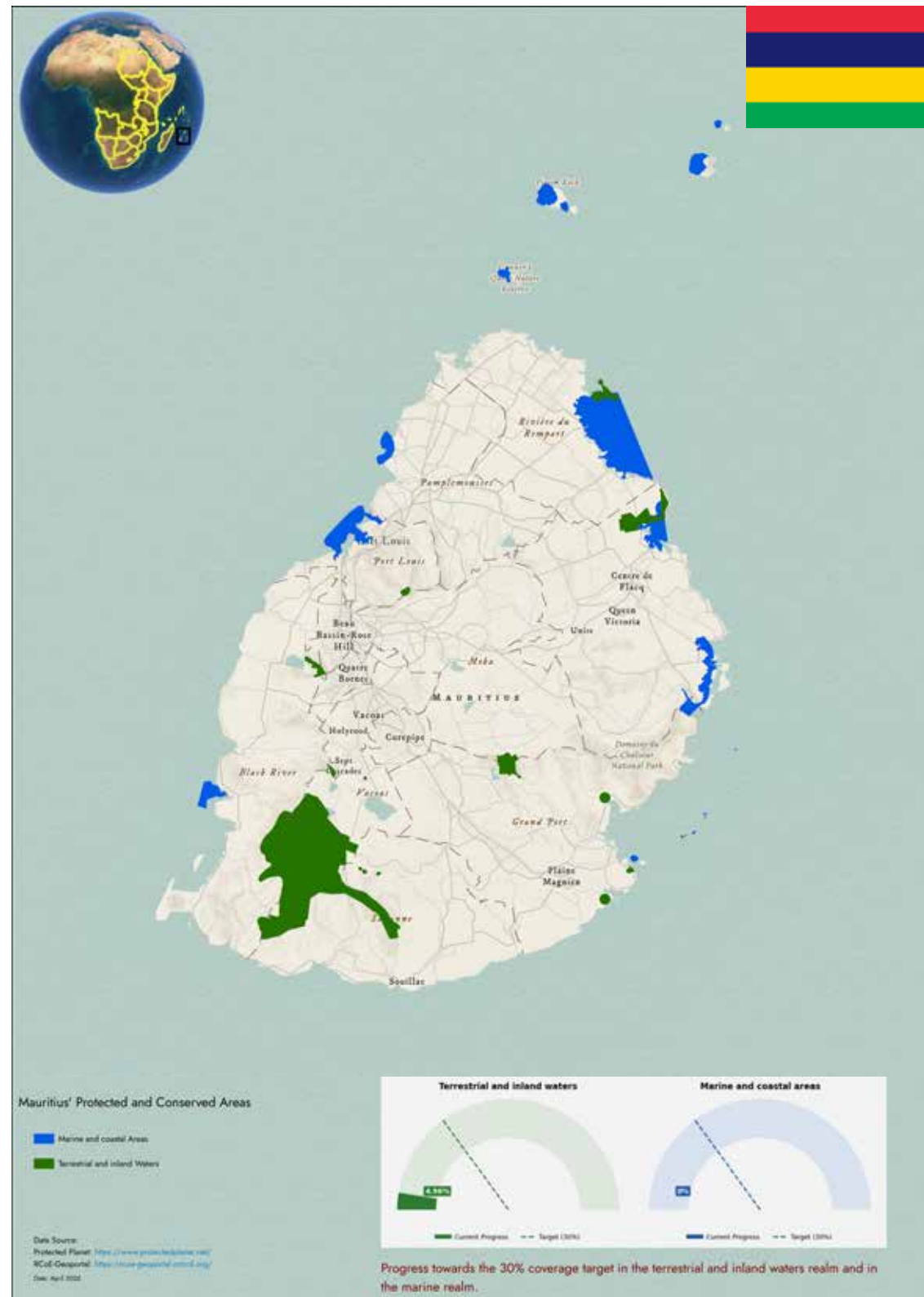
Mauritius's Protected and Conserved Areas

This map provides an overview of Mauritius's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Mauritius. Terrestrial and inland water protected areas are distributed across the southern parts of the country, with a notable concentration in the northern and eastern coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

As an island nation, Mauritius has achieved approximately 4.96% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and under-represented landscapes.

Marine and coastal protected area coverage remains at 0%, indicating that significant efforts are still required to establish and expand marine conservation measures. This suggests that marine conservation efforts require substantial investment, policy support, and institutional action to establish effective marine protected areas and improve the protection of coastal ecosystems.



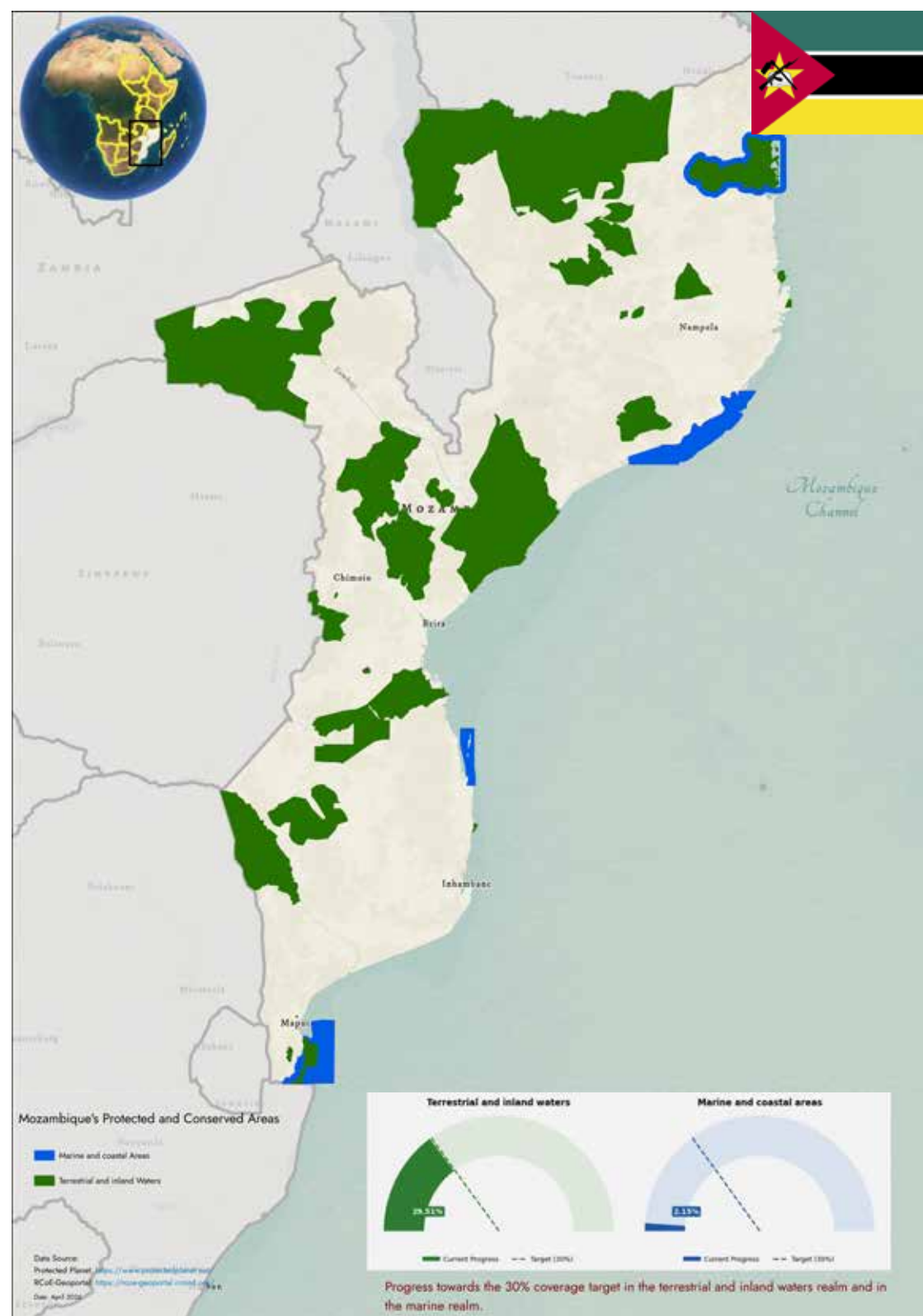
Mozambique's Protected and Conserved Areas

This map provides an overview of Mozambique's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Mozambique. Terrestrial and inland water protected areas are evenly distributed across the country. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Mozambique has achieved approximately 29.51% coverage of terrestrial and inland water protected areas, demonstrating important progress towards Target 3, with only 0.49% remaining to reach the 30% target established under the KMGBF. There remains a need for continued expansion and strengthening of protected and conserved areas, particularly in ecologically important and under-represented landscapes.

Marine and coastal protected area coverage remains at 2.15%, indicating that significant efforts are still required to establish and expand marine protected and conserved areas. Marine conservation efforts require substantial investment, policy support, and institutional action to establish effective marine protected areas and improve the protection of coastal ecosystems.



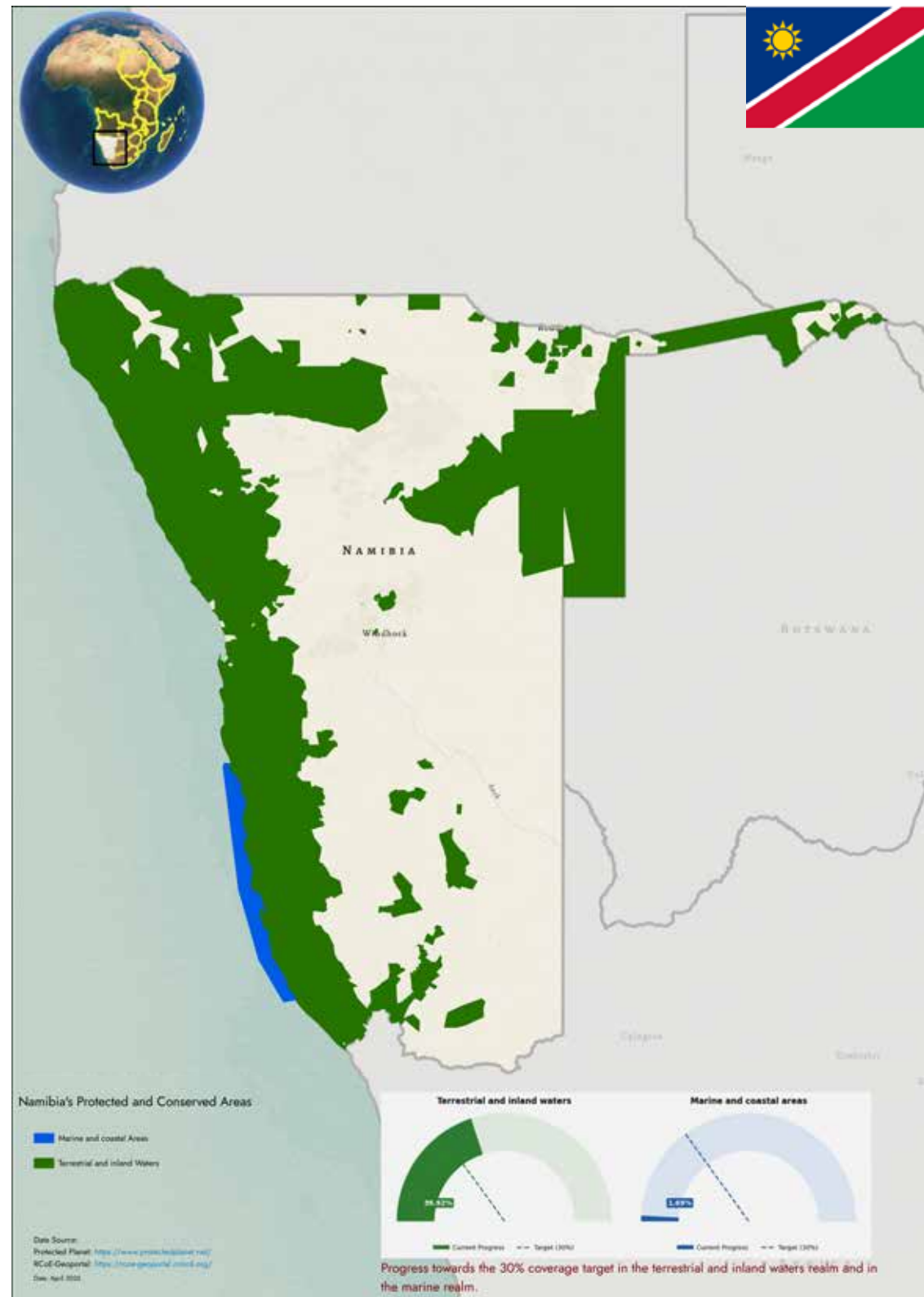
Namibia's Protected and Conserved Areas

This map provides an overview of Namibia's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Namibia. Terrestrial and inland water protected areas are widely distributed across the country, with notable concentrations in the western and north-eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Namibia has achieved approximately 39.92% coverage of terrestrial and inland water protected areas, meaning the country has already surpassed the 30% conservation target established under the KMGBF. This represents solid progress toward Target 3 and positions Namibia as a regional example of terrestrial and inland water coverage; continued monitoring and management effectiveness remain important to sustain these gains.

Marine and coastal protected area coverage remains at 1.69%, indicating that significant efforts are still required to establish and expand marine conservation measures. This suggests that marine conservation efforts require substantial investment, policy support, and institutional action to establish effective marine protected areas and improve the protection of coastal ecosystems.

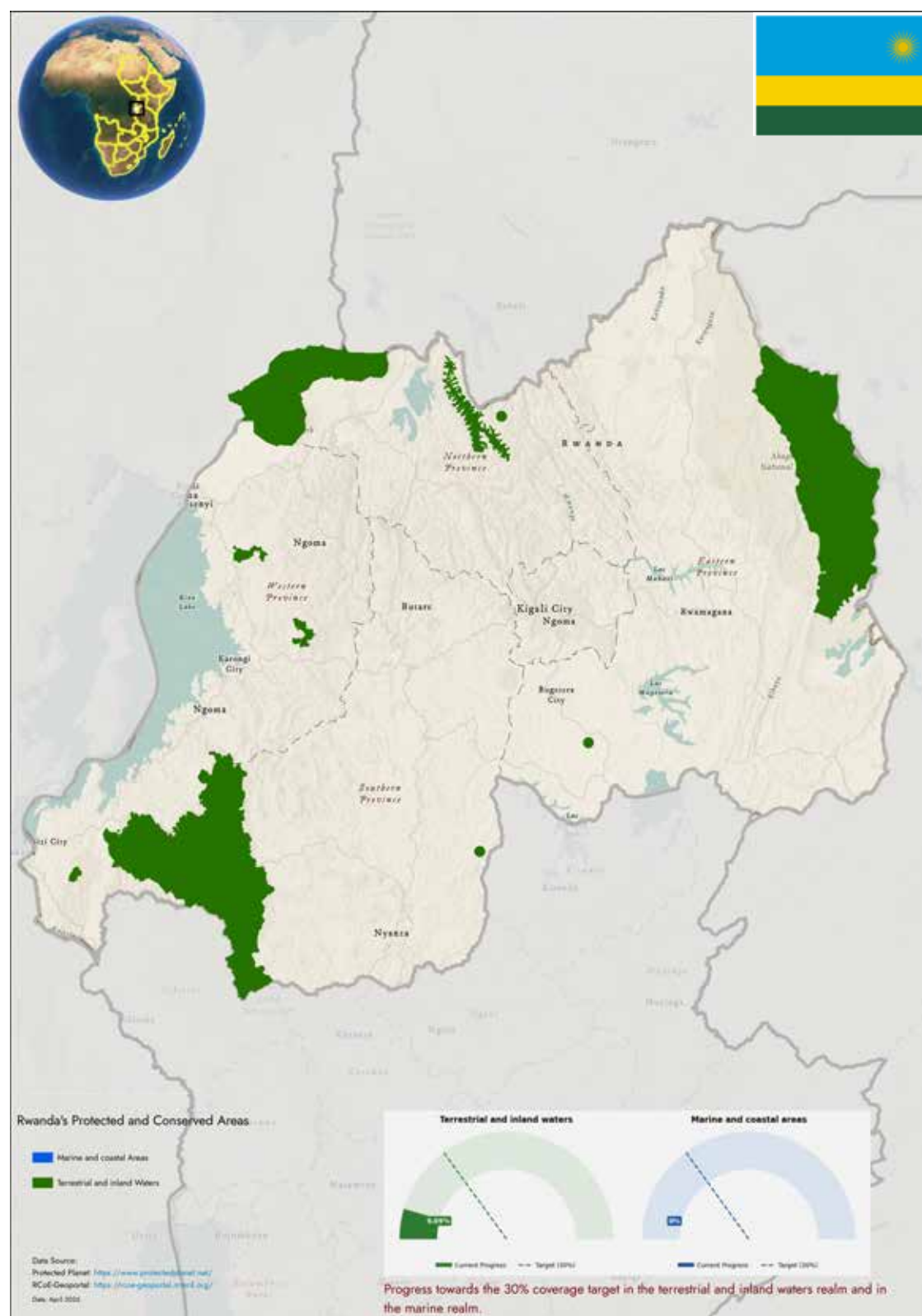


Rwanda's Protected and Conserved Areas

This map provides an overview of Rwanda's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Rwanda. Terrestrial and inland water protected areas are distributed across the country, with notable concentrations in the southern and eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Rwanda has achieved approximately 9.09% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below both the 11% national target and the 30% target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes. As a landlocked country, Rwanda has no marine or coastal ecosystems and therefore no marine protected areas.



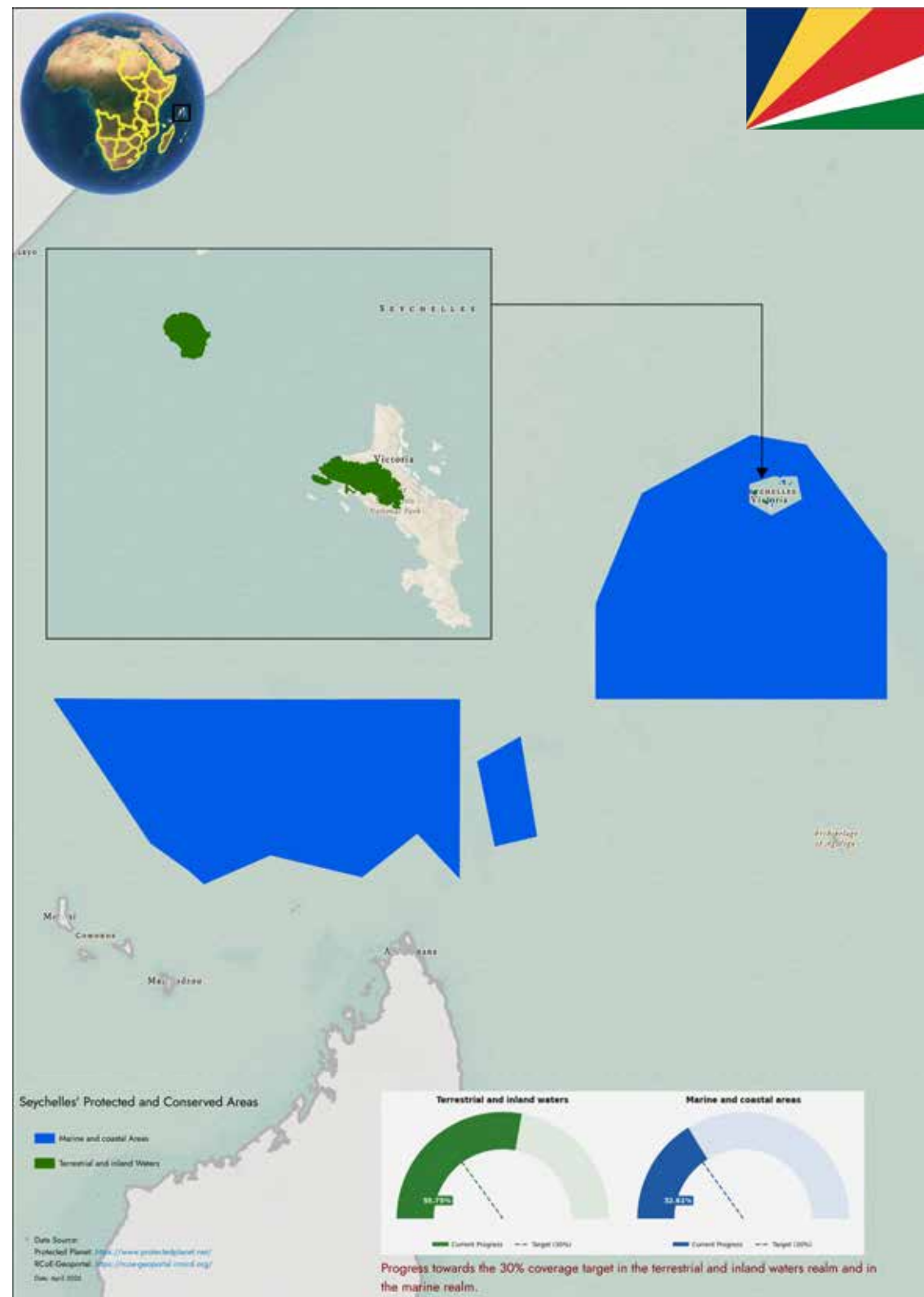
Seychelles' Protected and Conserved Areas

This map provides an overview of Seychelles' conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Seychelles. Terrestrial and inland water protected areas are widely distributed, with notable concentrations in the southern, eastern, and coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Seychelles has achieved approximately 55.75% coverage of terrestrial and inland water protected areas, well ahead of the 30% conservation target established under the KMGBF, though continued monitoring remains important to sustain and strengthen this coverage in ecologically important landscapes.

Marine and coastal protected area coverage stands at 32.61%, meaning the country has already achieved the marine conservation target under the KMGBF. Seychelles can now focus on implementing the other elements of the target, such as improving the management, governance, and equity of its protected and conserved areas.



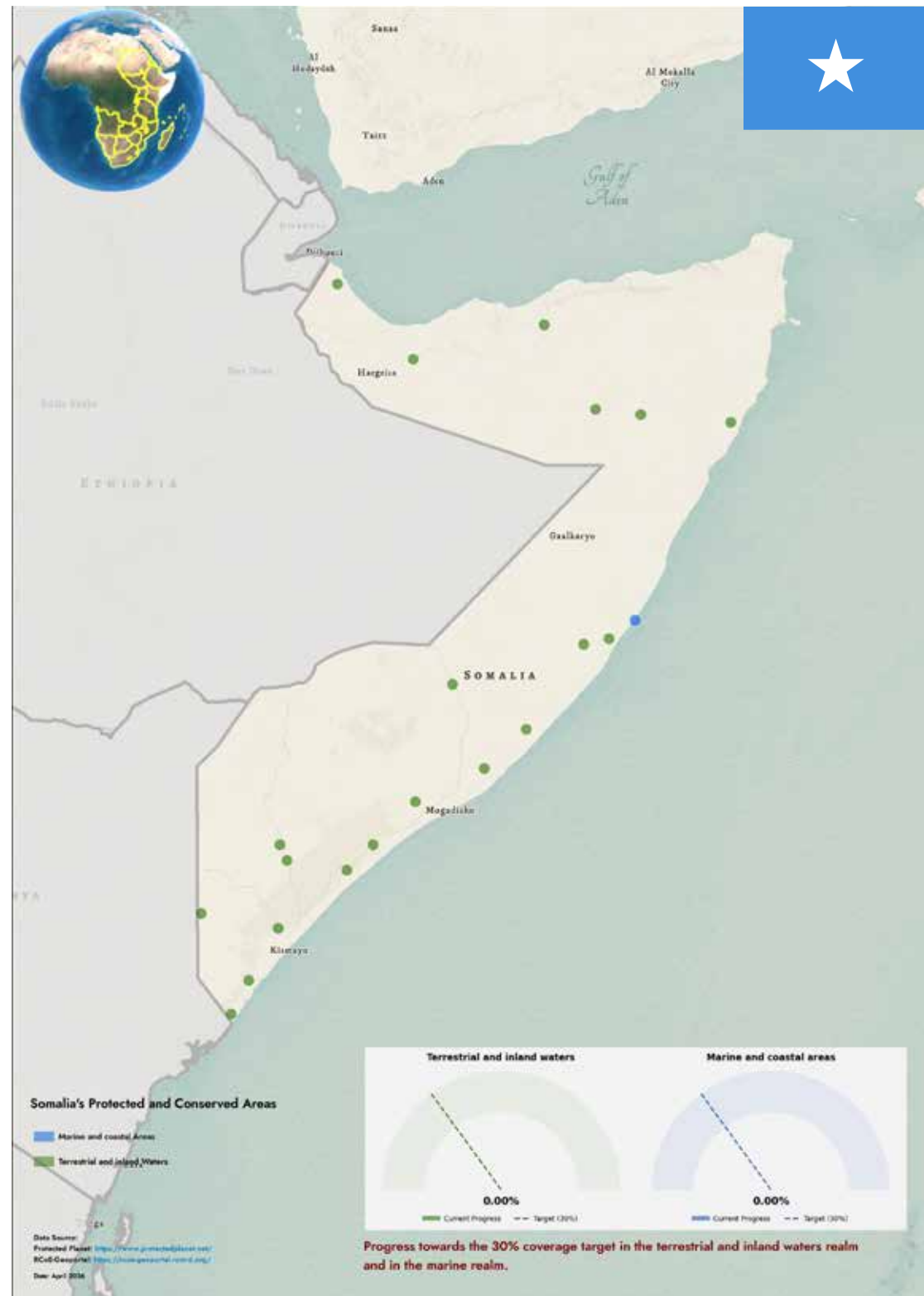
Somalia's Protected and Conserved Areas

This map provides an overview of Somalia's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved sites across Somalia. Terrestrial and inland water sites are scattered widely across the country, with points recorded along the northern coastline, throughout the central regions, and concentrated along the southern coast near the capital. A single marine and coastal site is recorded along the north-eastern coastline. These recorded sites, however, do not yet translate into meaningful protected area coverage at national scale.

Somalia has achieved approximately 0% coverage of terrestrial and inland water protected areas, placing the country far below the 30% conservation target established under the KMGBF. Despite the presence of identified conservation sites across the country, none is currently formally established or designated, highlighting a substantial gap and the need for significant investment in formally designating and strengthening protected and conserved areas nationwide.

Marine and coastal protected area coverage also stands at 0%, despite Somalia's extensive coastline along the Gulf of Aden and Indian Ocean. Both terrestrial and marine conservation efforts in Somalia remain at a very early stage, requiring substantial investment, policy support, and institutional action to establish effective protected areas and safeguard the country's terrestrial, coastal, and marine ecosystems.



South Africa's Protected and Conserved Areas

This map provides an overview of South Africa's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across South Africa. Terrestrial and inland water protected areas are widely distributed, with notable concentrations in the southern, eastern, and coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

South Africa has achieved approximately 9.66% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes.

Marine and coastal protected area coverage stands at 15.43%, indicating meaningful progress relative to other countries in the region, though further efforts are still required to reach the 30% marine target under the KMGBF. This will require substantial investment, policy support, and institutional action to establish effective marine protection and improve protection of coastal ecosystems.



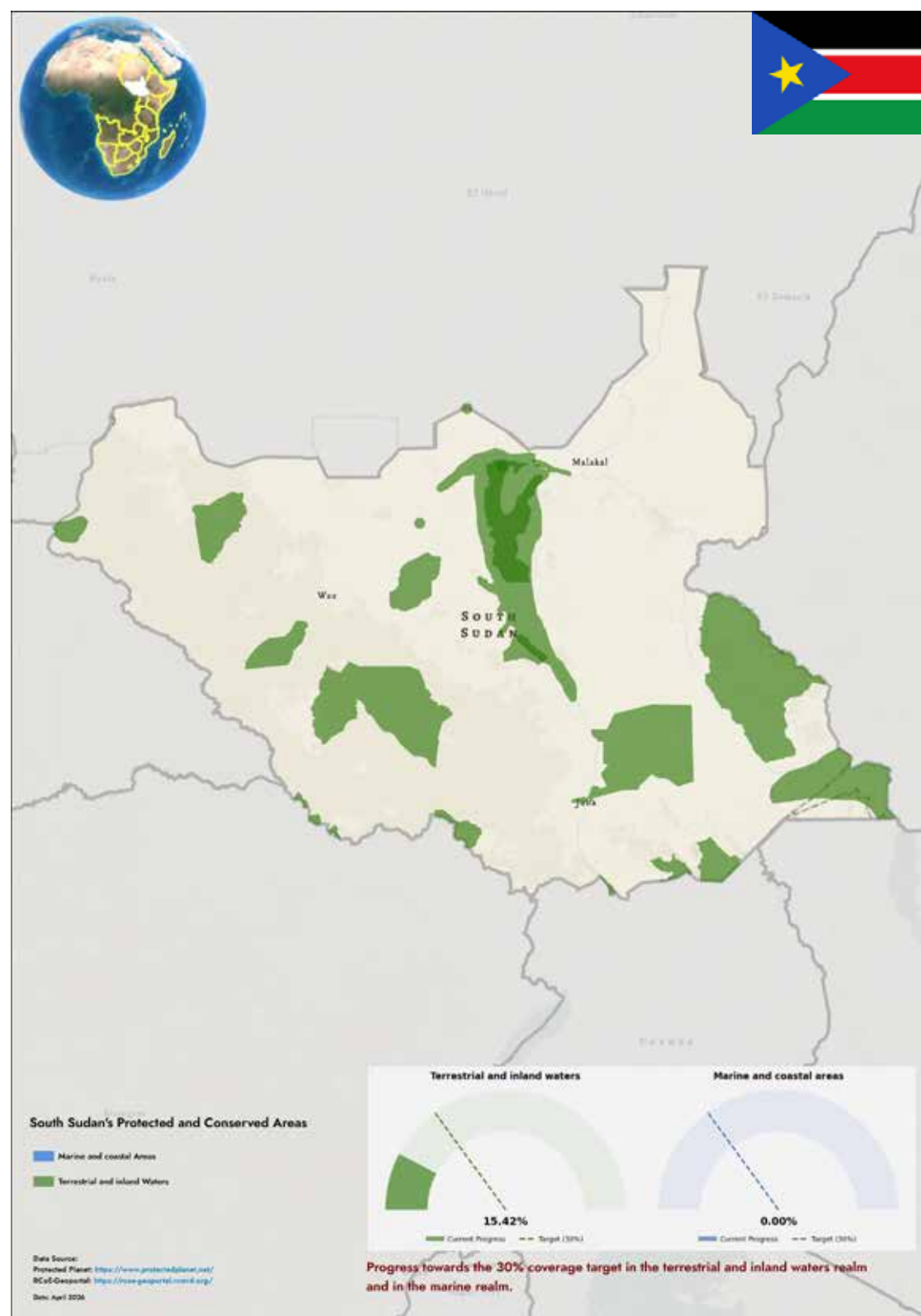
South Sudan's Protected and Conserved Areas

This map provides an overview of South Sudan's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across South Sudan. Terrestrial and inland water protected areas are widely distributed, with notable concentrations in the southern and eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

South Sudan has achieved approximately 15.42% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes.

As a landlocked country, South Sudan has no marine or coastal territory and therefore no marine conservation target.



Sudan's Protected and Conserved Areas

This map provides an overview of Sudan's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

Sudan has achieved approximately 2.78% coverage of terrestrial and inland water protected areas, placing the country far below the 30% conservation target established under the KMGBF. This indicates a substantial gap and the need for significant investment in formally designating and strengthening protected and conserved areas nationwide.

Marine and coastal protected area coverage stands at 17.02%, reflecting meaningful progress in the conservation of marine and coastal ecosystems. Nonetheless, both terrestrial and marine conservation efforts require substantial investment, policy support, and institutional action to establish effective protected and conserved areas and safeguard the country's terrestrial, coastal, and marine ecosystems.



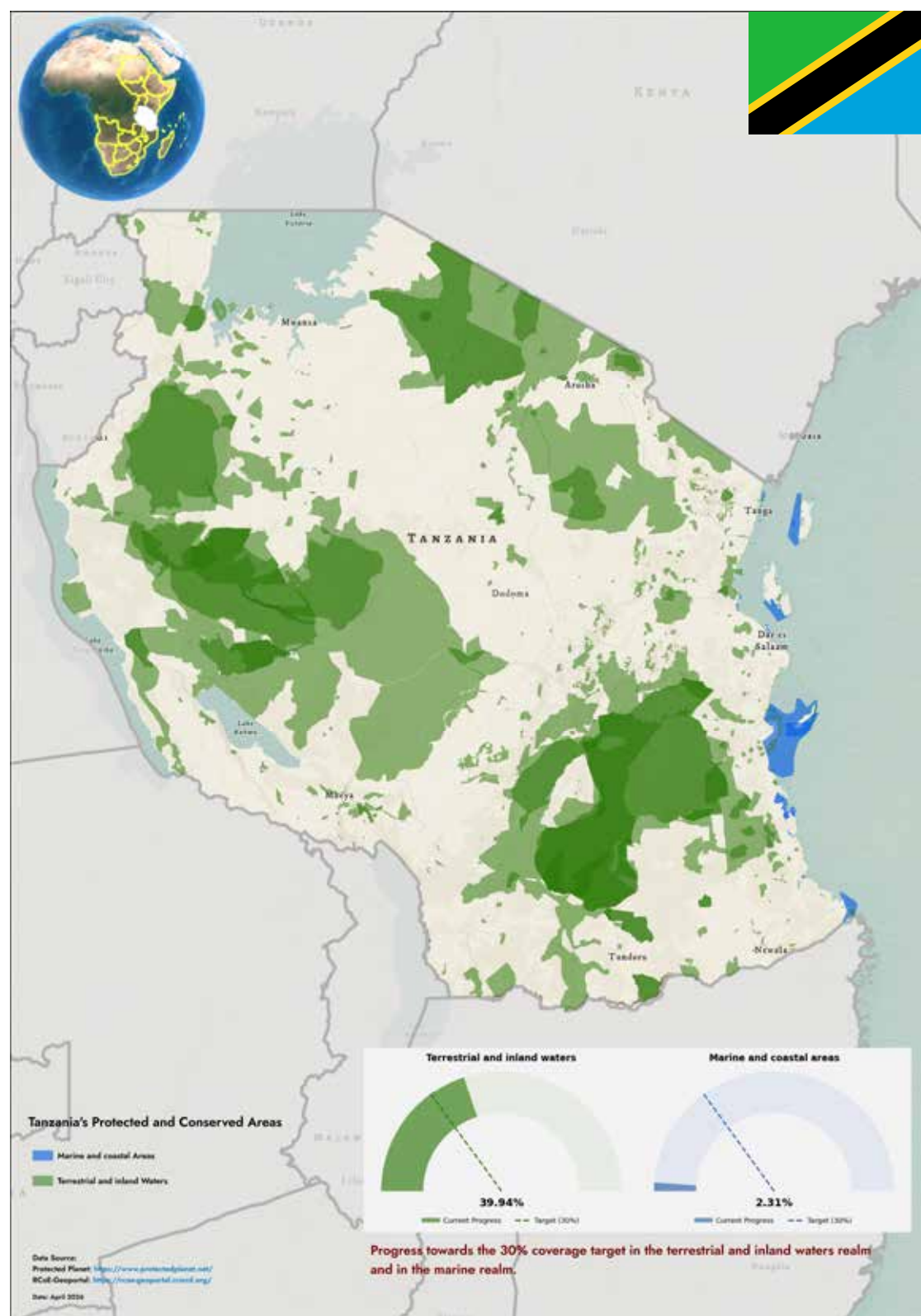
Tanzania's Protected and Conserved Areas

This map provides an overview of Tanzania's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial, inland water, marine, and coastal ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

The map illustrates the spatial distribution of existing protected and conserved areas across Tanzania. Terrestrial and inland water protected areas are widely distributed, with notable concentrations in the southern, eastern, and coastal regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Tanzania has achieved approximately 39.94% coverage of terrestrial and inland water protected areas, representing solid progress toward Target 3, as the country has already met the 30% conservation target established under the KMGBF. Tanzania can therefore prioritise enhancing the management, governance, and equity of its protected and conserved areas, and ensuring these areas are representative of the landscapes found within the country.

Marine and coastal protected area coverage remains at 2.31%, indicating that significant efforts are still required to establish and expand marine conservation measures. This suggests that marine conservation efforts remain limited and require substantial investment, policy support, and institutional action to establish effective marine protection and improve protection of coastal ecosystems.

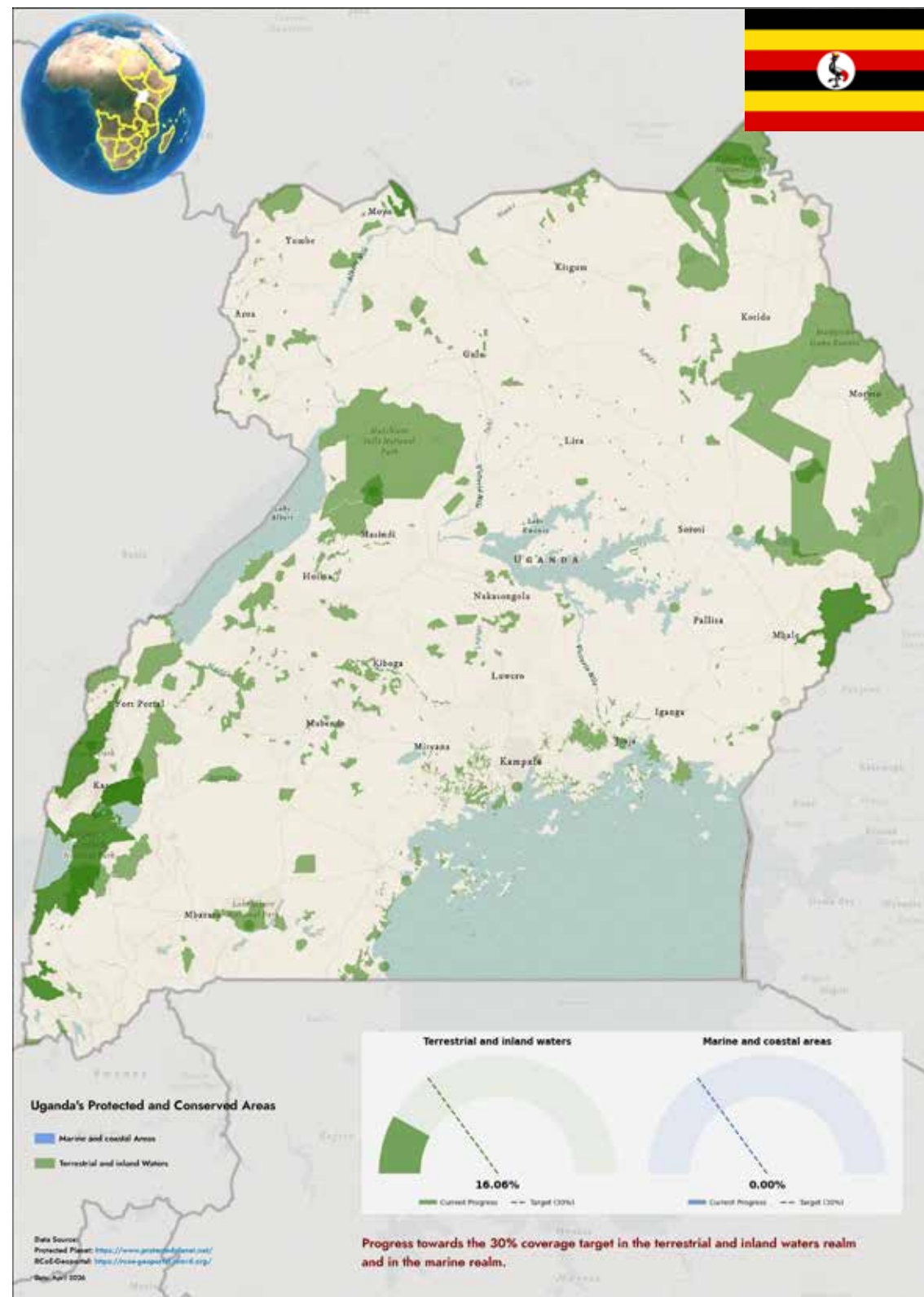


Uganda's Protected and Conserved Areas

This map provides an overview of Uganda's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

Uganda has achieved approximately 16.06% coverage of terrestrial and inland water protected areas. While this demonstrates important progress towards Target 3, the country remains below the 30% conservation target established under the KMGBF, highlighting the need for continued expansion and strengthening of coverage in ecologically important and underrepresented landscapes.

As a landlocked country, Uganda has no marine or coastal territory and therefore no marine conservation target.



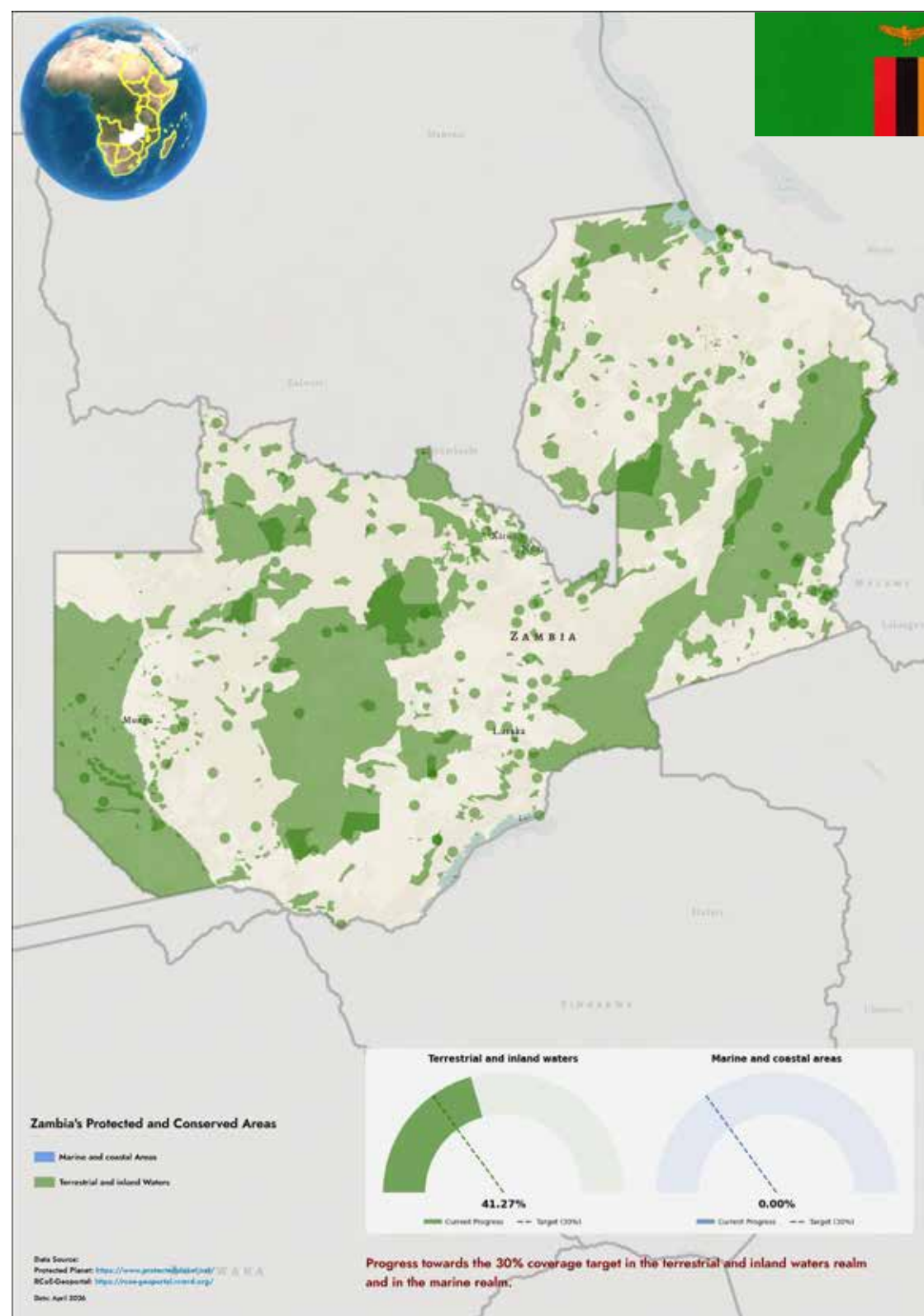
Zambia's Protected and Conserved Areas

This map provides an overview of Zambia's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

Terrestrial and inland water protected areas are widely distributed across Zambia, with notable concentrations in the southern and eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Zambia has achieved approximately 41.27% coverage of terrestrial and inland water protected areas, representing solid progress toward Target 3. The country can now focus on other elements of the target, including improving the management, governance, and equity of its protected and conserved areas.

Zambia has no coastline, and the target of conserving 30% of seascape by 2030 therefore does not apply.



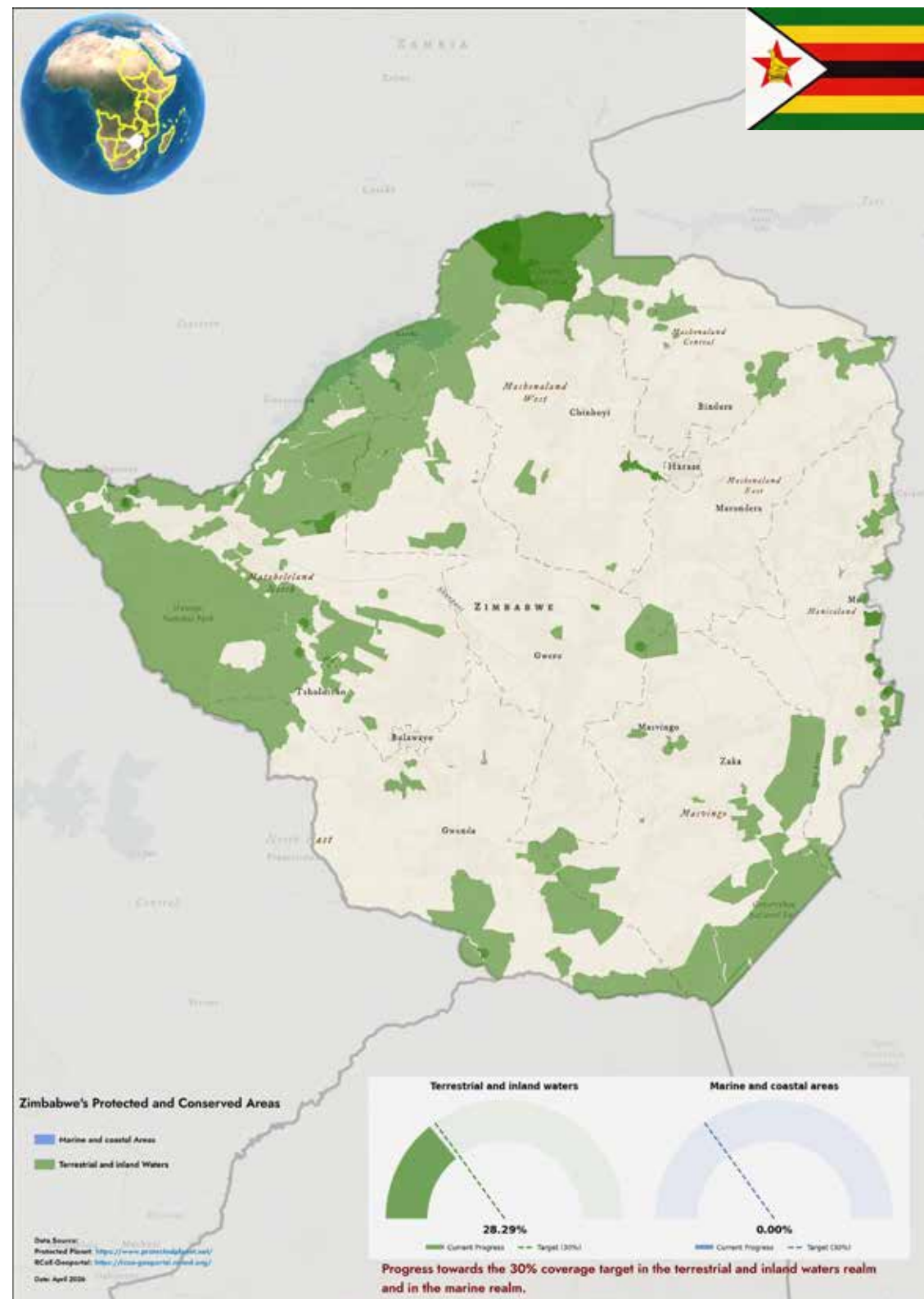
Zimbabwe's Protected and Conserved Areas

This map provides an overview of Zimbabwe's conservation status and progress toward Target 3 of the KMGBF. It highlights achievements in the conservation of terrestrial and inland water ecosystems, while identifying the gaps that remain to be addressed to meet the 2030 biodiversity targets.

Terrestrial and inland water protected areas are widely distributed across Zimbabwe, with notable concentrations in the southern and eastern regions. These areas contribute significantly to biodiversity conservation, ecosystem protection, and climate resilience.

Zimbabwe has achieved approximately 28.29% coverage of terrestrial and inland water protected areas, demonstrating important progress toward Target 3, with only 1.71% remaining to reach the 30% conservation target established under the KMGBF. There remains a need for continued expansion and strengthening of protected and conserved areas, particularly in ecologically important and underrepresented landscapes.

As a landlocked country, Zimbabwe has no marine or coastal territory and therefore no marine conservation target.



2.2 BIODIVERSITY ECOSYSTEM GOODS AND SERVICES

Biodiversity is the variety of life on Earth, encompassing genes, species, populations, communities and the ecosystems they form. It constitutes the biological infrastructure on which all human societies and economies ultimately depend. Within the ESA region, this relationship is particularly profound: the region harbours some of the planet's most exceptional biodiversity, from the montane forests of the Albertine Rift and the savannahs of the Serengeti-Mara ecosystem to the freshwater biodiversity of the Great Lakes and the coral reefs of the Western Indian Ocean, ecosystems that underpin the livelihoods of hundreds of millions of people.

Biodiversity sustains ecosystem functioning and delivers a wide range of goods and services, that support livelihoods, food security, climate regulation, cultural identity and resilience to environmental change.

According to the CBD, biodiversity contributes directly and indirectly to human welfare through essential ecosystem functions and natural resources. Similarly, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), frames biodiversity as the foundation of nature's contributions to people — spanning material, regulating, and non-material benefits.

Categories of Biodiversity Goods and Services

Biodiversity goods and services fall into four interrelated categories: provisioning, regulating, cultural and supporting. These are not mutually exclusive. They interact through complex ecological feedbacks and their delivery depends on the diversity of the ecosystems from which they flow.

1. Provisioning Services

Tangible products drawn directly from ecosystems and biodiversity resources, supporting livelihoods and economic activities: food products (crops, fish, livestock, fruits and wild foods), freshwater resources, timber, fuelwood and fibre, medicinal plants and genetic resources, and raw materials for industries and pharmaceuticals

In many African countries, biodiversity-based provisioning services are critical for rural livelihoods, subsistence economies, and national development sectors such as agriculture, forestry, fisheries, and tourism.

2. Regulating Services

Benefits arising from ecosystem processes that maintain environmental balance: climate regulation and carbon sequestration, flood control and water purification, soil formation and erosion control, pollination, pest and disease regulation, and coastal protection from mangroves and coral reefs. These services are especially important in addressing climate change, disaster risk reduction, and ecosystem resilience.

3. Cultural Services

Non-material benefits contributing to social, spiritual, educational, and cultural well-being: recreation and ecotourism, spiritual and religious value, indigenous and traditional knowledge systems, education and scientific value, and aesthetic or heritage significance. Many Indigenous Peoples and Local Communities (IPLCs) maintain strong cultural and spiritual ties to biodiversity, relationships that play an important role in conservation and sustainable resource management.

4. Supporting Services

The underlying ecological processes that make all other services possible: nutrient cycling, photosynthesis, soil formation, habitat provision, primary productivity, and the maintenance of genetic diversity. These services sustain ecosystem functioning over time and underpin the continued delivery of every other service category.

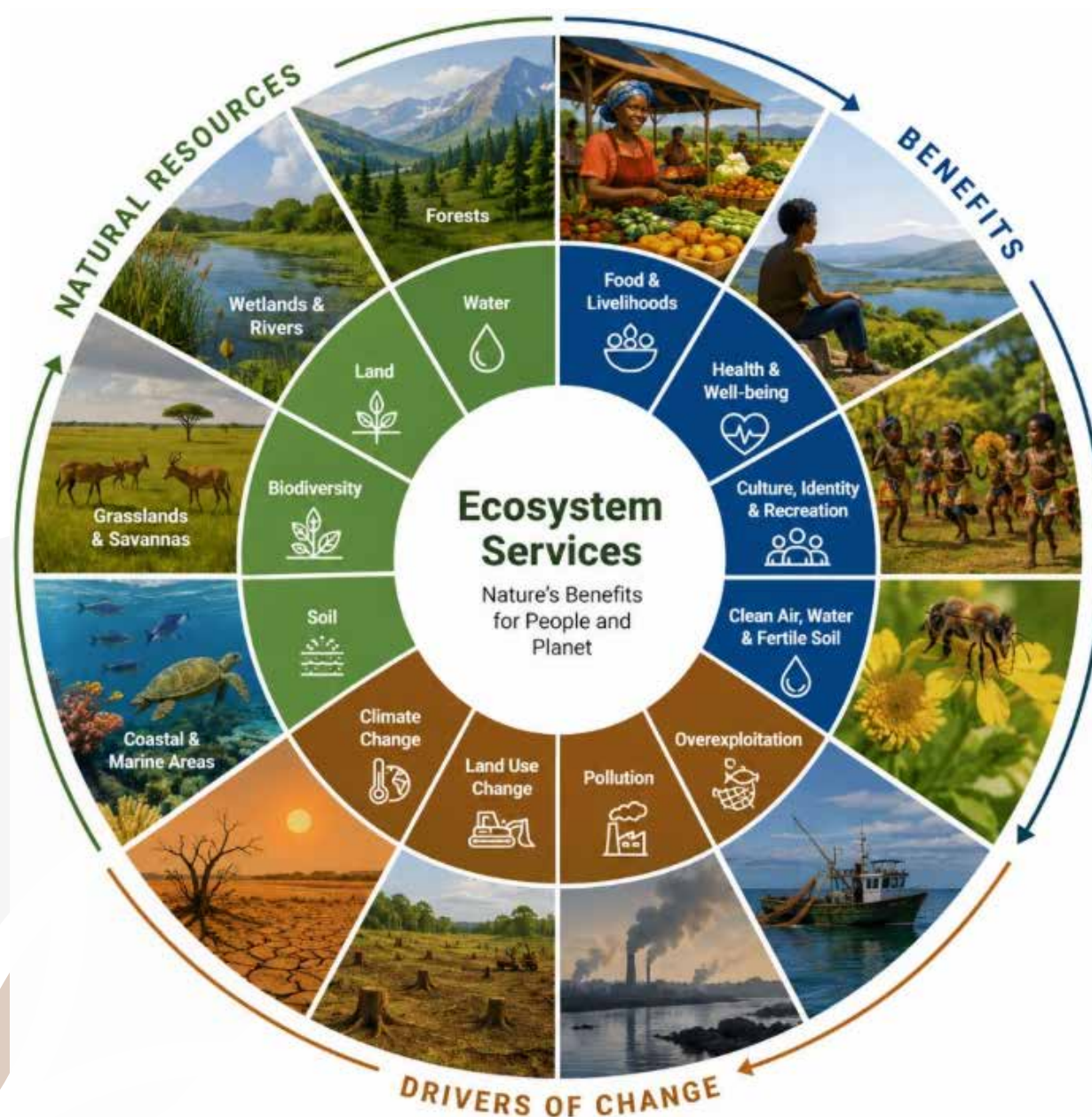


Figure 2.1: Infographic illustrating ecosystem services, the benefits, the natural resources providing them, and the drivers of change.
Source: United States Environmental Protection Agency (www.epa.gov/enviroatlas/ecosystem-services-enviroatlas)

Summary of Key Ecosystem Services Across ESA

Table 2.1 provides a synthesised overview of the principal ecosystem service categories, representative examples, and their specific significance in the Eastern and Southern African regional context.

Table 2.1: Summary of Biodiversity Goods and Ecosystem Services in Eastern and Southern Africa

Service Category	Sub-type / Example	Key Benefit	ESA Regional Relevance
Provisioning	Food (crops, fish, wild plants)	Nutrition & food security	Subsistence farming, artisanal fisheries in Great Lakes & Indian Ocean
Provisioning	Freshwater (rivers, lakes, wetlands)	Drinking water & irrigation	Lake Victoria, Zambezi, Nile basins serve millions
Provisioning	Timber & fuelwood	Energy & construction materials	Miombo woodlands supply >80% rural energy in Tanzania, Zambia, Mozambique
Provisioning	Medicinal plants & genetic resources	Primary healthcare & bioeconomy	Over 5,000 plant species used medicinally across ESA
Regulating	Carbon sequestration	Climate change mitigation	Congo Basin forests, Albertine Rift montane forests
Regulating	Water purification & flood regulation	Disaster risk reduction	Ethiopian highlands, Rwanda wetlands
Regulating	Pollination	Agricultural productivity	Critical for horticulture exports in Kenya, Ethiopia
Regulating	Coastal & marine protection	Erosion control & storm buffering	Mangroves, coral reefs along Kenya, Tanzania, Mozambique coasts
Cultural	Ecotourism & recreation	Revenue & livelihoods	Masai Mara, Serengeti, Victoria Falls — billion-dollar tourism economies
Cultural	Spiritual & indigenous values	Cultural identity & stewardship	Sacred forests, community conservancies across ESA
Supporting	Nutrient cycling & soil formation	Sustains all ecosystem productivity	Soil biodiversity underpins agricultural systems region-wide
Supporting	Primary productivity & habitat	Foundation for food webs	Savannah, forest, and wetland biomes of ESA

Source: Compiled from IPBES (2018, 2023), CBD (2020, 2022), MA (2005), and regional assessments.

Status, Trends, and the Consequences of Ecosystem Service Decline.

Despite the richness and significance of biodiversity goods and services across Eastern and Southern Africa, their status is deeply compromised by accelerating environmental pressures. The ESA region is experiencing biodiversity loss at rates that are collectively threatening the continued delivery of ecosystem services upon which hundreds of millions of people depend.

Direct Drivers of Ecosystem Service Degradation

Land use change: encompassing agricultural expansion, urban growth, infrastructure development, and the conversion of natural habitats, is the dominant direct driver of biodiversity loss and ecosystem service degradation across ESA. Forest cover loss continues at significant rates in the Eastern Arc Mountains, the Ethiopian Highlands, and coastal East Africa. The conversion of miombo woodlands, savannah grasslands, and wetlands to smallholder agriculture and commercial farming reduces biodiversity, disrupts hydrological cycles, diminishes carbon stores, and fragments the landscape connectivity upon which many species depend.

Climate change represents an increasingly dominant and cross-cutting threat, amplifying the impacts of other drivers and introducing new ecological stressors. Observed and projected changes in temperature, precipitation, and extreme weather events in ESA are already altering species distributions, disrupting seasonal ecological processes (including migration, flowering, and insect emergence), bleaching coral reefs, and intensifying droughts and floods that degrade ecosystem service delivery.

Overexploitation of biological resources including unsustainable harvesting of fish stocks, logging of commercial timber species, collection of medicinal plants, and illegal wildlife trade undermines the regenerative capacity of ecosystems and depletes the populations of keystone species whose functional roles are critical to service delivery. Illegal, unreported, and unregulated (IUU) fishing in the African Great Lakes and the Western Indian Ocean remains a significant challenge, threatening both fish biodiversity and the food security of coastal and lake-dependent communities.

Pollution from agricultural runoff (excess nutrients and pesticides), industrial effluents, solid waste, and plastic litter degrades freshwater, coastal, and marine ecosystems across ESA. Eutrophication of freshwater bodies, including parts of Lake Victoria, suppresses biodiversity, degrades water quality, and compromises provisioning services. Plastic pollution of the marine environment represents a growing threat to marine biodiversity along the ESA coastline.

Invasive alien species including water hyacinth (*Eichhornia crassipes*), Nile perch (following its historical introduction to Lake Victoria), *Prosopis juliflora*, *Parthenium hysterophorus*, and numerous others alter ecosystem structure and function, displace native biodiversity, and impair the delivery of ecosystem services. The management of invasive species is a priority challenge across the region.

Cascading Consequences of Ecosystem Degradation

The degradation of a single ecosystem service rarely occurs in isolation. Deforestation of highland catchments reduces water regulation, increases flood and drought frequency, diminishes agricultural productivity, elevates sedimentation in reservoirs and downstream waters, reduces fishery yields, and increases the costs of water treatment, all simultaneously. This systemic interconnectedness means that the true costs of ecosystem degradation substantially exceed what is captured by sector-specific analyses and underscores the necessity of integrated ecosystem management approaches.

Biodiversity Goods and Services in Policy and Governance

The Kunming–Montreal Global Biodiversity Framework (KMGBF) four overarching goals and 23 action targets collectively address the conservation, restoration, and sustainable use of biodiversity, the equitable sharing of benefits arising from genetic resources, and the mobilisation of finance for biodiversity. Targets directly relevant to ecosystem services include Target 2 (restoring 30% of degraded ecosystems by 2030), Target 3 (protecting 30% of land and ocean areas), and Target 11 (restoring and maintaining ecosystem services and functions). National Biodiversity Strategies and Action Plans (NBSAPs) provide the primary vehicle through which ESA countries are expected to operationalise GBF commitments at national scale.

The IPBES Global Assessment (2019) and subsequent regional and thematic assessments provide the scientific foundation for understanding biodiversity trends and ecosystem service trajectories at global and regional scales. IPBES assessments have underscored the severity of biodiversity loss, the high dependency of many



low-income countries on direct ecosystem service flows, and the inadequacy of current governance responses relative to the scale of the challenge.

At the regional level, the African Union's Africa Biodiversity Strategy, the East African Community (EAC) Protocol on Environment and Natural Resources Management, and the Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement provide frameworks for regional cooperation on biodiversity governance. The African Leaders Nairobi Declaration on Climate Change (2023) has also placed ecosystem-based approaches to climate adaptation and biodiversity conservation at the centre of continental climate strategy.

Governance Requirements for Sustaining Biodiversity Goods and Services

Realising the full potential of biodiversity goods and services to support sustainable development in Eastern and Southern Africa requires transformative improvements across multiple dimensions of governance.

- **Integrated Ecosystem Management:** Mainstreaming biodiversity and ecosystem service considerations into sectoral planning across agriculture, forestry, fisheries, water, energy, infrastructure and urban development, moving beyond siloed conservation approaches.
- **Strengthened Biodiversity Data Governance:** Investing in biodiversity monitoring infrastructure, data management systems, and scientific capacity to generalise the evidence base required for adaptive

management, policy evaluation, and international reporting.

- **Recognition and Empowerment of Indigenous Peoples and Local Communities:** Formally integrating IPLCs as rights-holders and stewards in biodiversity governance, protecting land and resource rights, and recognising the contribution of traditional ecological knowledge to conservation outcomes.

- **Cross-Sectoral and Transboundary Coordination:** Addressing biodiversity challenges that transcend administrative boundaries including migratory species, shared river basins, and regional ecosystem mosaics through strengthened transboundary governance mechanisms.

- **Ecosystem-Based Adaptation and Resilience Building:** Prioritising nature-based solutions for climate adaptation, disaster risk reduction, and food security as cost-effective investments in human well-being and ecological resilience.

- **Biodiversity Finance Mobilisation:** Scaling up domestic and international biodiversity finance through innovative instruments, subsidy reform, and alignment of public and private investment with biodiversity objectives.

- **Monitoring and Accountability:** Establishing robust national and regional monitoring frameworks aligned with the Kunming–Montreal GBF, the SDGs, and Paris Agreement goals, enabling adaptive management and transparent accountability for biodiversity commitments.

Conclusion

Biodiversity goods and ecosystem services are not peripheral concerns in the development agenda of Eastern and Southern Africa; they are at its core. The provisioning, regulating, cultural, and supporting services delivered by the region's biodiversity underpin food security, water supply, climate stability, human health, cultural identity, and economic growth for hundreds of millions of people. Their continued delivery depends on the health and integrity of ecosystems that are under accelerating pressure from land use change, climate change, overexploitation, pollution, and invasive species.

Meeting the ambitions of the KMGBF, the African Union's biodiversity strategies, and national sustainable development commitments requires a transformation in the way biodiversity and ecosystems are valued, governed, and financed across the region. This requires both the strongest scientific understanding of biodiversity trends and ecosystem service dynamics of the kind BOESA seeks to provide and a shift in governance systems to ensure that the services biodiversity provides are recognised, protected, and sustained for current and future generations.

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A large, gnarled baobab tree stands in a dry, yellowish landscape. The tree has a thick, textured trunk and a sparse, dark canopy. The ground is covered in dry grass and small shrubs. The sky is a clear, pale blue.

CHAPTER THREE

CONSERVATION EFFECTIVENESS AND TRENDS

3.1 PROTECTED AND CONSERVED AREAS EFFECTIVENESS

A Protected Area is a clearly defined geographical space (land or sea, or both) that is managed through legal or effective means to achieve the long-term conservation of nature, ecosystem services, and cultural values. The term conserved area on the other hand, is used to refer to the 'Other Effective area-based Conservation Measures (OECM). An OECM is a geographically defined area that is distinct from designated protected area but is also designated to achieve positive, long-term, and sustained in-situ biodiversity conservation.

Protected and Conserved Areas therefore form the foundation of biodiversity conservation and also play a vital role in supporting livelihoods, especially for local communities. They are central to efforts aimed at conserving nature and the essential ecosystem services it provides, including food, clean water, medicinal resources, and protection against natural disasters and the effects of climate change.

Effectively managed systems of protected and conserved areas have been recognized as critical instruments in achieving the objectives of the Convention on Biological Diversity and the Sustainable Development Goals (BIOPAMA, 2020). Protected Area Management Effectiveness (PAME) therefore was adopted under the Kunming Montreal Global Biodiversity Framework of the UN Convention on Biological Diversity as a component indicator of target 3.

Protected Area Management Effectiveness (PAME) is a measure of how well protected areas are being managed; largely focusing on the extent to which management is protecting values and achieving goals and objectives. A range of tools have been developed to assess PAME, including the Integrated Management Effectiveness Tool (IMET), IUCN Green List of Protected and Conserved Areas, Management Effectiveness Tracking Tool (METT), Rapid Assessment and Prioritization of Protected Area Management (RAPPAM), Enhancing our Heritage (EoH), World Heritage Outlook Assessments, and Important Bird and Biodiversity Areas Monitoring (IBA), among others. These tools vary in scope and application; some are specialized and designed to assess specific categories of protected and conserved areas against defined criteria, while others are more general and can be applied across a wide range of sites.

Integrated Management Effectiveness Tool (IMET)

Strengthening the management effectiveness and governance of protected and conserved areas was one of the core aims of the BIOPAMA programme, and its flagship contribution towards this aim was the creation of the Integrated Management Effectiveness Tool (IMET). IMET is a tool used to plan, monitor, and evaluate protected areas, in an effort to improve management practices and conservation outcomes. It is supported by a computer-based application that collects, organizes and analyses data to facilitate informed decision-making for protected area management, operations and planning.



Group photo of stakeholders during the IMET assessment of Lusaka National Park, held from 30 November to 5 December 2025 in Lusaka, Zambia.

Available in both online and offline versions, IMET allows for compilation of data from multiple sources including raw data, documents and personal knowledge, contributed by management teams, scientists and community members through a series of structured forms. It organizes this information around quantified target outcomes, and its built-in statistics module generates a score-based assessment of management level and quality, with visual graphics showing each indicator's relative contribution to overall management effectiveness.

IMET's functionality extends across terrestrial and marine protected and conserved areas, serving several distinct purposes:

- Evaluating how well individual protected areas are being managed.

- Supporting day-to-day operational planning, including efforts to combat poaching.
- Extending assessment beyond formally gazetted protected areas to cover OECMs and community-led conservation initiatives.
- Automating comparisons of management performance over time, whether for a single site or across an entire network of protected areas.

This range of functions serves multiple audiences — from site-level managers and national protected area authorities to donor institutions such as the EU (headquarters, delegations, and Member States) — all of whom can use the tool to track management performance and gauge the impact of their interventions. Availability in English, French, Spanish, and Portuguese has helped the tool reach a wide community of users across the continent, drawing on data contributed by management teams, scientists, and community members through structured assessment forms, whether working online or offline. This information feeds into quantified target outcomes, and IMET's built-in statistics module produces a score-based assessment of management level and quality, with visual graphics showing how each indicator contributes to overall management effectiveness.

According to the Global Database on Protected Area Management Effectiveness (GD-PAME), 2,842 protected areas across the region have used IMET at least once. This figure is almost certainly an undercount: GD-PAME is the most extensive repository of its kind, yet protected area authorities are under no obligation to submit their assessment results, so real uptake is likely higher.

Much of IMET's growing adoption can be traced to long-term investment in building local capacity. Beyond workshops, reference materials, webinars, and online courses, the tool's expansion has depended heavily on a corps of trained coaches. Since March 2024, this coaching community has been formally organised under RACEGAP (Réseau Africain des Coaches pour l'Efficacité de Gestion des Aires Protégées), a dedicated non-profit body.

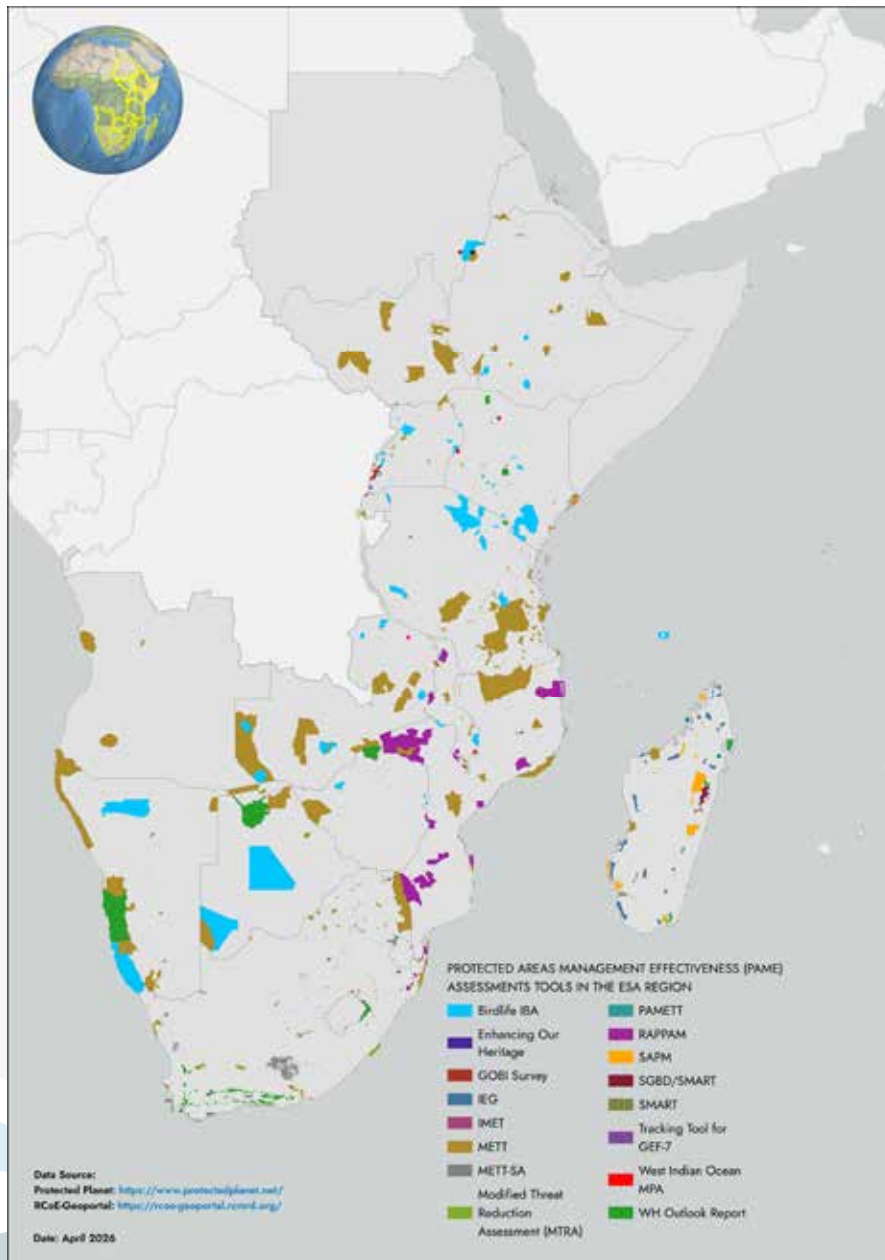
Across much of Africa, conservation practice is moving away from the older "fortress" model, in which people were often excluded from protected landscapes, towards approaches that are community-led and woven into working human landscapes. IMET has adapted accordingly: because it does not depend on formally fixed boundaries, a streamlined variant. IMET for conserved areas has

been developed specifically for this context. Rather than mirroring the standard protected-area assessment, this version places greater emphasis on mapping who the relevant stakeholders are and how their interests and activities affect particular ecosystem services. As a result, assessments of management effectiveness in OECMs, community forests, locally managed marine areas, and Indigenous and community conserved areas (ICCAs) are shaped around the social realities of the communities living there. A dedicated series of webinars, run in both English and French, has helped introduce users to this adapted version of the tool.

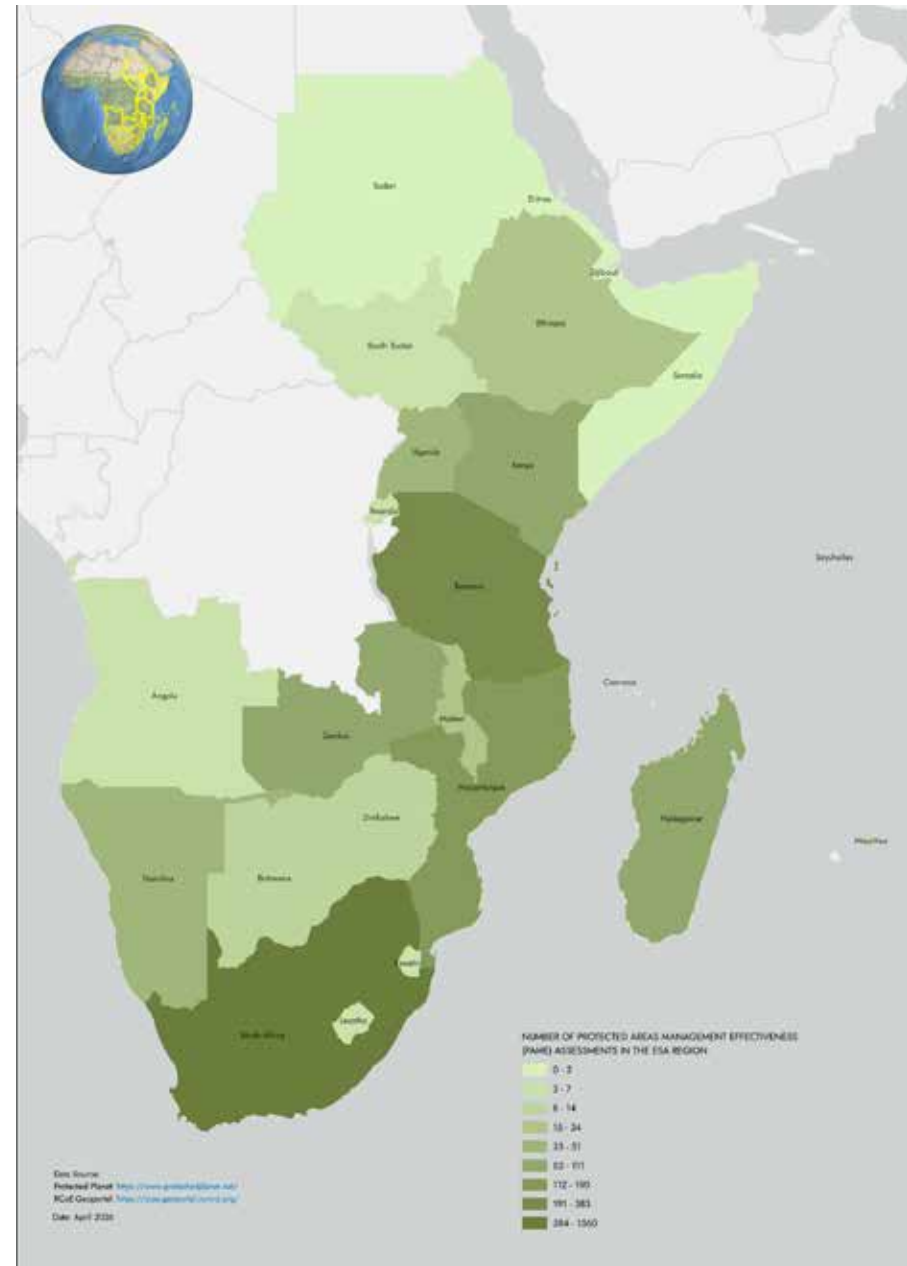
Management effectiveness assessment is not a new field, but the introduction of the IUCN Green List has changed its character by offering, for the first time, an independently verifiable global benchmark for what a well-run protected area looks like. Previously, authorities were largely left to interpret their own assessment results without an external reference point. A joint UNEP-WCMC/IUCN review examined how closely various assessment methods track Green List criteria and found IMET to be a strong match: it fully satisfies the Green List's requirements on sound design and planning and on achieving successful conservation outcomes, and meets five of the seven management effectiveness criteria in full. In practice, this means IMET users can benchmark themselves against the Green List Standard with relatively little additional work.

With both the technical capability and an established base of users, IMET is well positioned to help drive meaningful improvements in how Africa's protected areas are managed. The tool now also functions as a standard indicator across NaturAfrica, the EU's flagship programme for protected areas, biodiversity conservation, and green livelihoods on the continent, underscoring its broader contribution to safeguarding the long-term future of Africa's species and ecosystems.

Protected Area Management Effectiveness (PAME) Tools



Number of PAME Assessments Conducted per Country in Eastern and Southern Africa



Stretching from the Horn of Africa to the Cape, Eastern and Southern Africa hosts some of the world's most iconic landscapes. However, designating a protected area is only the beginning. Under Target 3 of the Kunming-Montreal Global Biodiversity Framework (KM-GBF), the focus shifts from simple designation to effective management. This map visualises progress on the ground by highlighting sites within the Global Database on Protected Area Management Effectiveness (GD-PAME) that have undergone formal PAME assessments.

Although GD-PAME is the world's most comprehensive database of management effectiveness assessments, it likely underestimates the true number, as protected area authorities are not obliged to share their assessments with the database.

Table 3.1 Number of PAME Assessments conducted using different tools in Eastern and Southern Africa

S/N	Methodology	No. of Assessments	Percentage (%)
1	Management Effectiveness Tracking Tool (METT)	1629	57.3
2	Birdlife Important Bird and Biodiversity Area Monitoring (Birdlife IBA)	126	4.4
3	World Heritage Outlook Report	22	0.8
4	IUCN World Heritage Outlook	76	2.7
5	West Indian Ocean Marine Protected Area Toolkit	7	0.2
6	Governance of Biodiversity Research Project (GOBI Survey)	6	0.2
7	Integrated Management Effectiveness Tool (IMET)	16	0.6
8	Site-level Assessment for Governance and Equity (SAGE)	1	0.0
9	Madagascar Protected Area System (SAPM) evaluation	22	0.8
10	Management Efficiency Index (IEG)	42	1.5
11	Spatial Monitoring and Reporting Tool (SMART)	2	0.1
12	Protected Areas Management Effectiveness Tracking Tool (PAMETT)	2	0.1
13	Système de Gestion de Bases de Données / Spatial Monitoring and Reporting Tool (SGBD/SMART)	1	0.0
14	Rapid Assessment and Prioritisation of Protected Area Management (RAPPAM)	92	3.2
15	Management Effectiveness Tracking Tool South Africa (METT-SA)	784	27.6
16	Biosphere Reserve Effectiveness of Management Index (BREMi)	1	0.0
17	Tracking Tool for GEF-7	3	0.1
18	Enhancing Our Heritage	6	0.2
19	Africa Rainforest Study	1	0.0
20	Modified Threat Reduction Assessment (MTRA)	3	0.1
	Total	2842	100.0

In the face of global biodiversity loss, it is no longer enough to simply declare an area “protected” on paper — safeguarding our natural heritage requires measuring how well these areas are actually being managed. This map illustrates the current landscape of PAME assessments across Eastern and Southern Africa. These are not merely data points; they represent rigorous evaluations using tools such as METT (Management Effectiveness Tracking Tool) and IMET (Integrated Management Effectiveness Tool), reflecting a commitment to identifying management strengths, addressing resource gaps, and improving local governance.

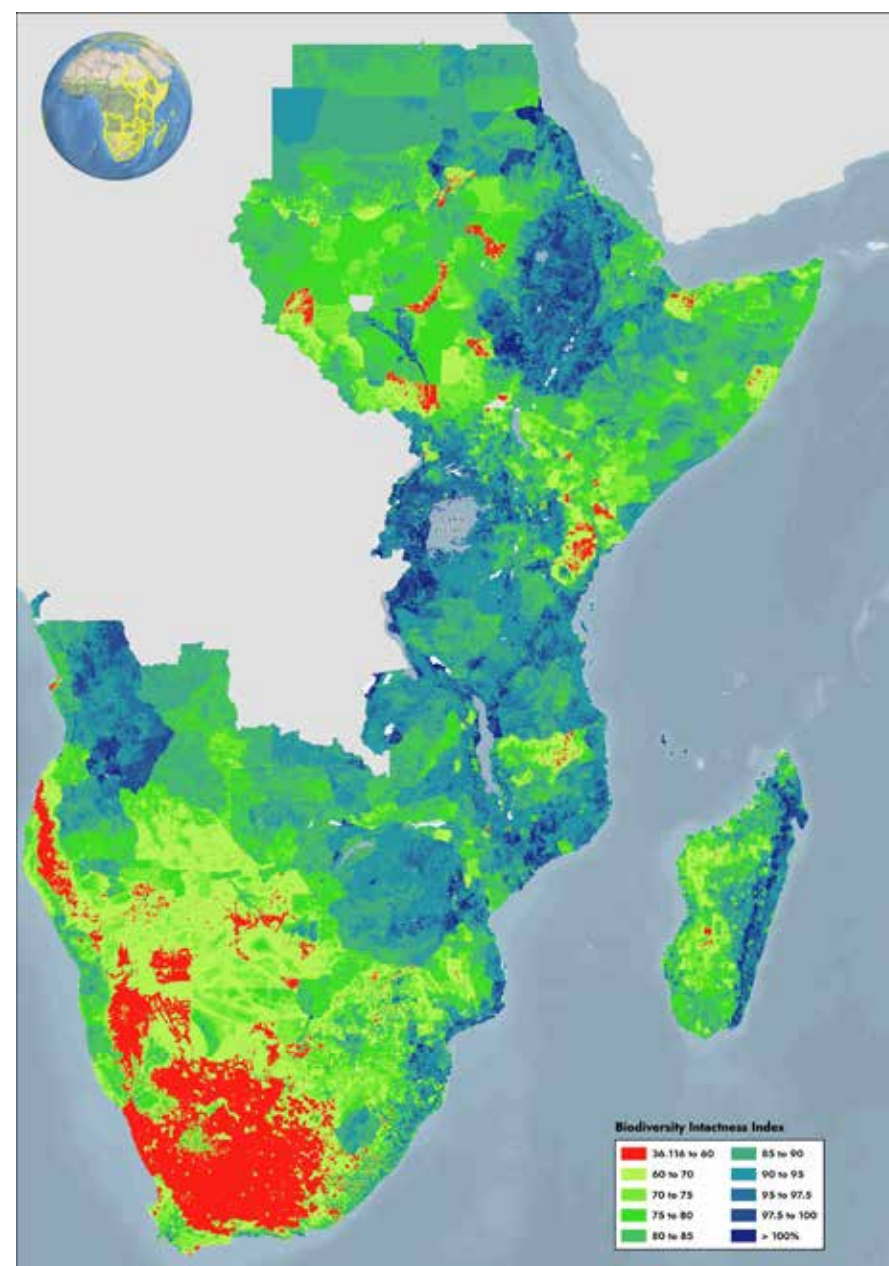
The darker the shade, the higher the number of completed PAME assessments in that country. Countries in Southern Africa, such as South Africa and Mozambique, show a deep green saturation, reflecting long-standing, robust monitoring frameworks. The varying shades across countries such as Kenya, Tanzania, and Rwanda highlight an evolving landscape in which conservation is becoming increasingly data-driven. A lighter shade does not necessarily indicate a lack of assessments, but may instead point to a need for increased investment in management capacity and reporting.

Biodiversity Intactness Index (BII)

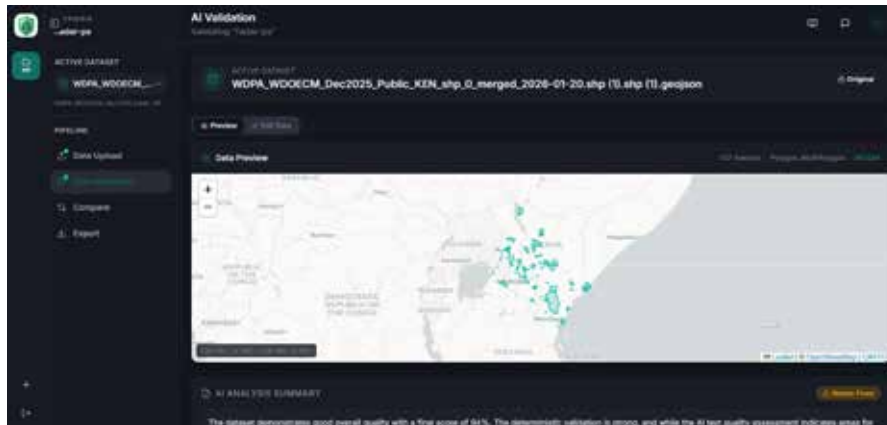
The Biodiversity Intactness Index (BII) map summarises how ecological communities are responding to climate change and human pressures. The BII is calculated as the estimated percentage change in species abundance between a 1970 baseline and projected future abundance in a given area, based on 2050 predictions of human pressure and climate change. The map uses a divergent colour scheme of blue, green, yellow, and red to represent this gradient of change.

When we examine the Biodiversity Intactness Index for Eastern and Southern Africa, we are looking at a landscape of global importance. This map does not merely show where species live; it shows where the ecological engine is still running at full strength, and where it is beginning to stall. Deep blue corridors highlight ecological strongholds, where little to no biodiversity loss has occurred, while red patches indicate critical pressure points, areas of intensive agriculture and rapid urbanisation where biodiversity

loss is most severe. In these locations, the BII often falls below 60%, suggesting that local ecosystems have been modified so heavily that they may no longer be able to support native biodiversity without significant restoration efforts.



3.2 THE WDPCA VALIDATOR: AN AI TOOL TO SIMPLIFY PROTECTED AREA REPORTING



Protected areas are the cornerstone of global biodiversity conservation. As countries work towards Target 3 of the Kunming-Montreal Global Biodiversity Framework (KMGBF) — which calls for conserving at least 30% of the world's land, inland waters, coastal areas, and oceans by 2030 — measuring progress is just as important as expanding conservation efforts. This depends on accurate, up-to-date, and standardised protected area data.

As a Regional Centre of Excellence, RCMRD supports countries across Eastern and Southern Africa in updating the World Database on Protected and Conserved Areas (WDPCA) through the Protected Planet platform, managed by UNEP-WCMC. Because these datasets feed into a global database, they must comply with rigorous technical and data quality standards before publication. Preparing and validating spatial datasets is often a complex and time-consuming process, requiring multiple rounds of review and revision between RCMRD and national data providers to resolve errors, improve data quality, and ensure compliance. This iterative process can place a significant burden on countries and delay the publication of updated protected and conserved area data.

The WDPCA Validator, developed by RCMRD, simplifies this process. The platform enables governments, conservation agencies, and environmental practitioners to automatically validate protected area datasets, identify errors and inconsistencies, compare submissions against existing records, and generate datasets ready for submission. By automating quality assurance, it reduces the time,

effort, and technical expertise required to prepare high-quality spatial data.

Across Eastern and Southern Africa, protected area datasets are often fragmented, use inconsistent mapping standards, or require significant technical effort to prepare for submission. The WDPCA Validator helps lower these barriers by making validation faster, more accessible, and more consistent. It is not intended to replace existing validation processes coordinated through the Regional Centres of Excellence; rather, it strengthens the workflow by improving the experience for both data contributors and validators, while supporting higher-quality submissions.

The impact extends far beyond reporting. Reliable protected area data enables countries to identify conservation gaps, strengthen protected area networks, guide investment decisions, and demonstrate progress towards the 30x30 target with confidence. Better spatial data also supports clearer protected area boundaries, more informed land-use planning, and stronger engagement with Indigenous Peoples and Local Communities. By improving the quality of the data underpinning conservation decisions, the WDPCA Validator helps countries build a stronger foundation for protecting biodiversity and achieving global conservation goals.



Scan QR Code <https://wdpavalidator.com/>

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CHAPTER FOUR

BIODIVERSITY TRENDS, THREATS AND EMERGING ISSUES



4.1 THE EASTERN AND SOUTHERN AFRICA BIODIVERSITY BASELINE

The Eastern and Southern Africa (ESA) region hosts some of the planet's most iconic and irreplaceable biodiversity, spanning the Afromontane forests of the Albertine Rift to the coral reefs of the Western Indian Ocean. This ecological wealth underpins the socio-economic survival of hundreds of millions of people.

As the 24 member states in the ESA region work toward the 2030 KM-GBF targets, an empirical review of species and ecosystem trends is essential for policy alignment. Recent geospatial and conservation data reveal a paradox: terrestrial protected area coverage across the region has reached 17.2%, a significant stride toward KM-GBF Target 3 (the 30x30 initiative), yet the region's Red List Index (RLI) continues to decline. This divergence signals a stark reality: habitat quantity and spatial coverage alone are not enough to halt extinction and reverse biodiversity loss.

Under the KM-GBF, the global conservation paradigm has shifted. Historically, the ESA region conservation efforts focused on preventing the extinction of keystone species. Today, Target 4 (halt human-induced extinction and promote species recovery) and Target 3 (conserve 30% of terrestrial and marine areas by 2030) demand a pivot from delaying extinction to actively driving ecosystem recovery and resilience (CBD, 2022).

This chapter reviews baseline data from the IUCN Red List of Threatened Species and the IUCN Red List of Ecosystems (RLE) (IUCN, 2022) to assess whether current protection strategies are delivering real conservation outcomes. The picture is fragmented: large mammals attract the bulk of conservation financing and legislative protection, while lesser-known flora, amphibians, invertebrates and marine habitats deteriorate rapidly. If member states are to meet their international obligations and safeguard the natural capital underpinning their blue and green economies, a holistic, data-driven recalibration of regional conservation priorities is urgently needed.

4.2 TRENDS IN PROTECTED SPECIES AND ECOSYSTEMS

The Silent Collapse: Amphibians and Wetlands

While global attention and donor funding disproportionately favour charismatic megafauna like the African elephant or black rhi-

noceros, a quieter collapse is underway in the region's wetlands. Amphibians in the ESA region are declining faster than both birds and mammals. As highly sensitive bioindicators, their porous skin and biphasic lifecycles make them acutely vulnerable to even small changes in water quality and microclimate.

The situation has reached a critical threshold in South Africa, with over 30% of endemic frog species are now listed as threatened on the IUCN Red List (SANBI, 2019), driven by agricultural drainage, wetland conversion for urban development, pollution, and climate-induced shifts in fire and hydrological regimes.

Yet the region also offers a blueprint for success, aligned with KM-GBF Target 2 (restore 30% of degraded ecosystems): the recovery of Pickersgill's Reed Frog (*Hyperolius pickersgilli*) (Raw, 1982). Endemic to a narrow, fragmented coastal strip in KwaZulu-Natal spanning just 9–12 km², the species was historically Critically Endangered. South African authorities, alongside the Endangered Wildlife Trust (EWT) and SANBI (Tarrant & Armstrong, 2013), implemented a Biodiversity Management Plan (Tarrant, 2017) that restored small wetland fragments, engaged private landowners, and established a backup population at Johannesburg Zoo. The result: the species was down-listed to Endangered, proof that restoring even small wetland fragments can be pivotal to halting amphibian decline.

The Cycad Crisis: Trade and Genetic Preservation

If amphibians represent a silent collapse of the region's fauna, cycads represent the systematic plundering of its botanical heritage. Cycads, ancient seed plants that predated dinosaurs, are now the world's most endangered group of living organisms. In Southern Africa, the *Encephalartos* genus has been decimated. Approximately 32% of South African cycad species are Critically Endangered, and three are already Extinct in the Wild (SANBI, 2019).

The Albany Cycad (*Encephalartos latifrons*), restricted to the Maputaland-Pondoland-Albany biodiversity hotspot, is a harrowing testament to this crisis (Swart, 2019). The species has suffered a decline of over 90% in the last century, with fewer than 100 mature individuals in the wild. This decline is not primarily driven by habitat loss, but by an insatiable, illicit global trade. Wealthy collectors and horticultural enthusiasts drive a high-profit, low-risk trafficking

network that strips plants directly from the wild. Because the Albany Cycad is slow-growing and its natural pollinators are presumed extinct, natural recruitment has ceased; the loss of even a single adult plant is a critical blow to survival.

Halting this botanical disaster requires rigorous enforcement of KM-GBF Target 5 (Ensure that use, harvesting, and trade of wild species is sustainable, safe, and legal). Furthermore, because wild populations like *E. latifrons* can no longer naturally reproduce, member states must strictly enforce Target 4's mandate for maintaining genetic diversity through the establishment of highly secure *ex-situ* assurance colonies (living gene banks) in botanical gardens.

The Shift to Lesser Fauna: Kenya's Ant Trade

The illicit trade networks exploiting cycads are rapidly diversifying to target lesser-known, unprotected fauna, a trend known as bi-piracy. In March 2026, Kenyan authorities at Jomo Kenyatta International Airport (JKIA) intercepted a smuggler attempting to move 2,238 live queen garden ants (*Messor cephalotes*), concealed in test tubes, destined for the exotic pet market where a single queen can fetch over \$200 (KWS, 2026). This incident signals a dangerous shift in wildlife trafficking, from tightly guarded megafauna to profitable, ecologically vital insects. The loss of thousands of queen ants directly threatens soil aeration, seed dispersal and nutrient cycling in East African savannas. This case underscores the urgent need in the region to expand anti-poaching protocols and Nagoya Protocol enforcement to include lesser fauna and flora in an effort to preserve holistic ecosystem integrity.

The Coral Warning: WIO Seascapes

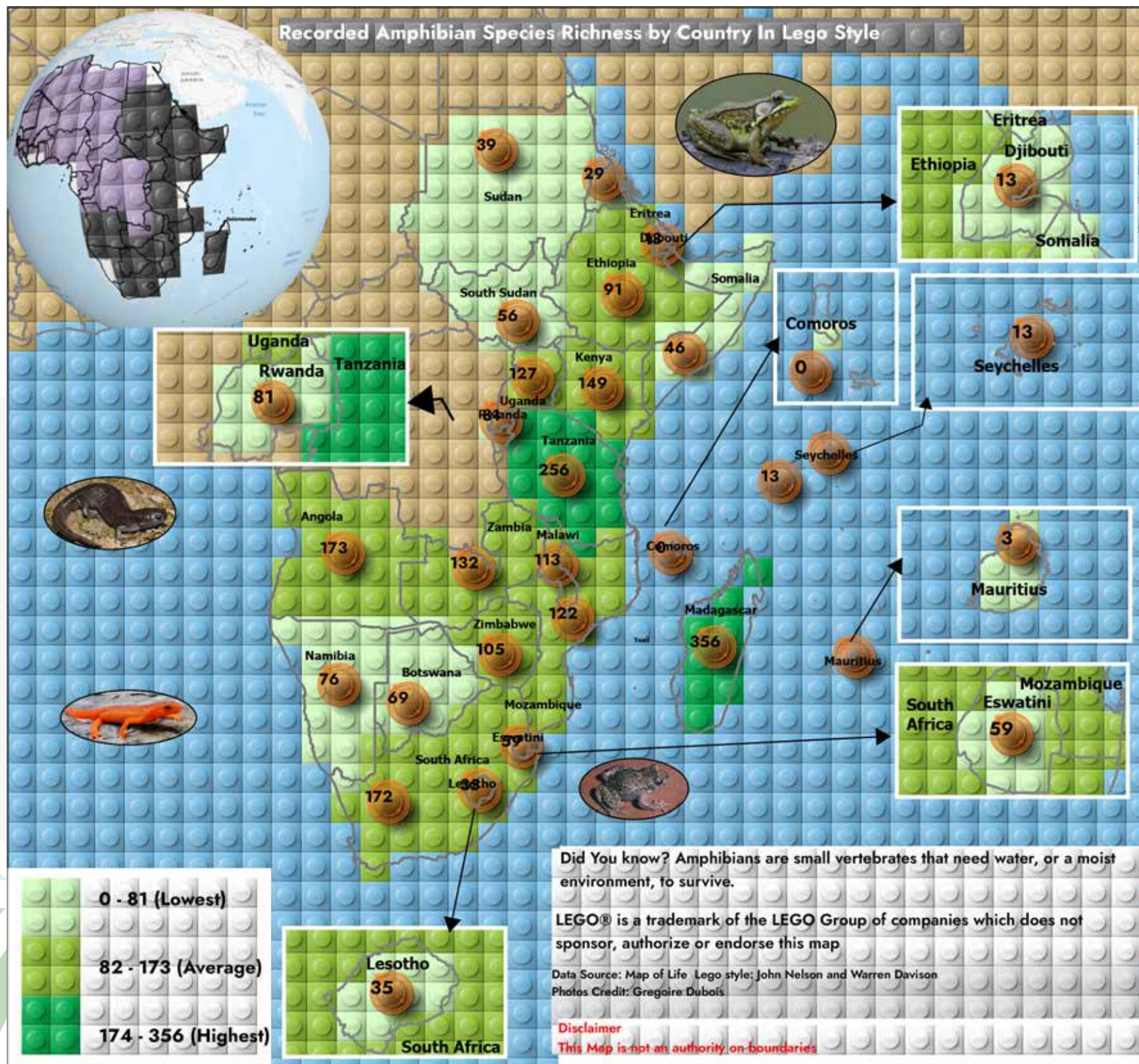
The coral reefs of the Western Indian Ocean (WIO), stretching from Somalia to South Africa and encompassing Seychelles and Mauritius, face an existential threat. A landmark assessment by CORDIO East Africa, applying IUCN Red List of Ecosystems (RLE) criteria, classified the entire WIO reef network as Vulnerable to collapse, with reefs in four sub-regions already Critically Endangered (Obura et al., 2021).

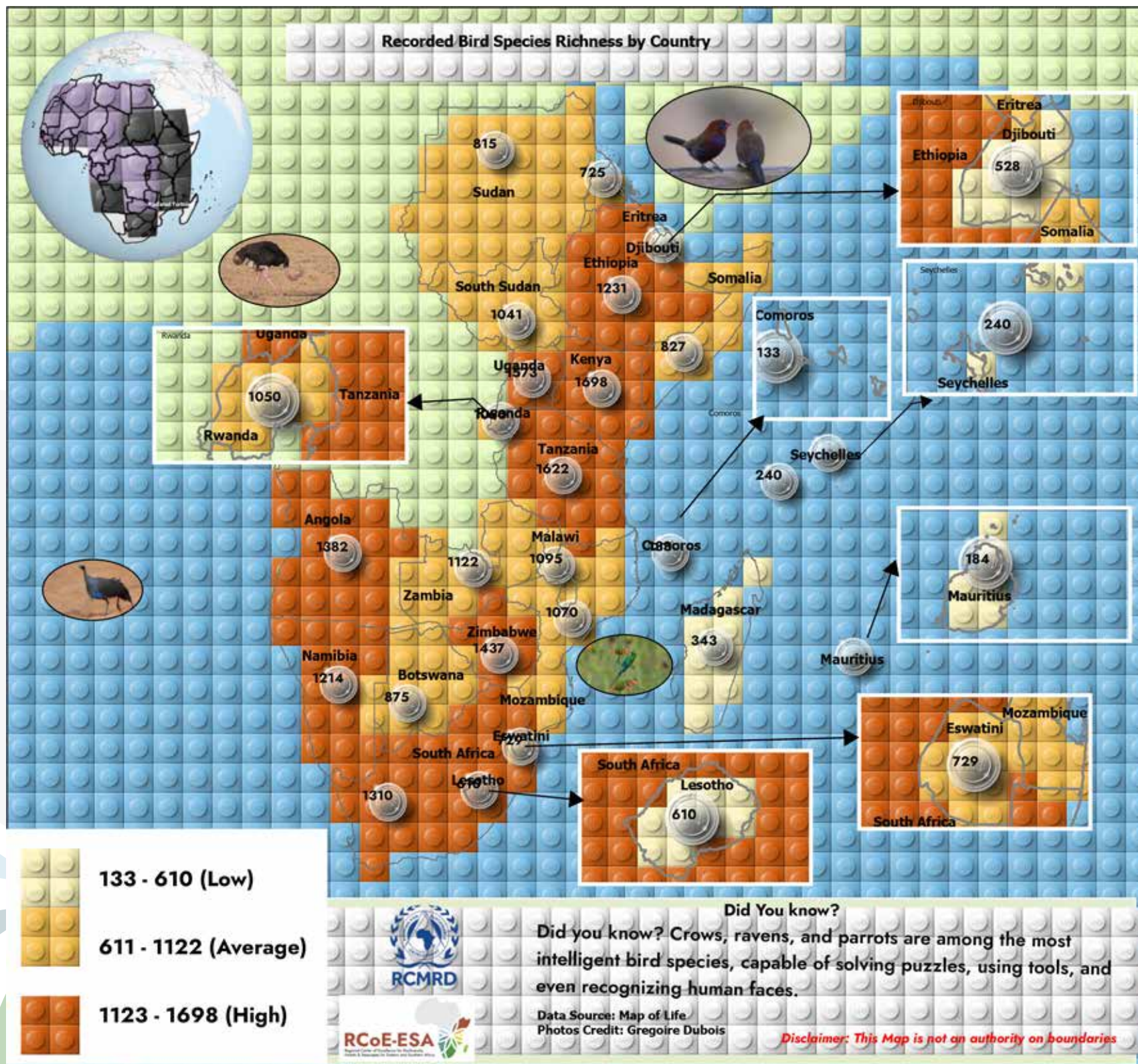
The mechanisms driving this collapse are twofold: chronic local stressors and acute global forcings. Overfishing of critical grazer species such as herbivorous reef fish, allows fleshy macroalgae to outcompete and smother slow-growing corals. Globally, climate-in-

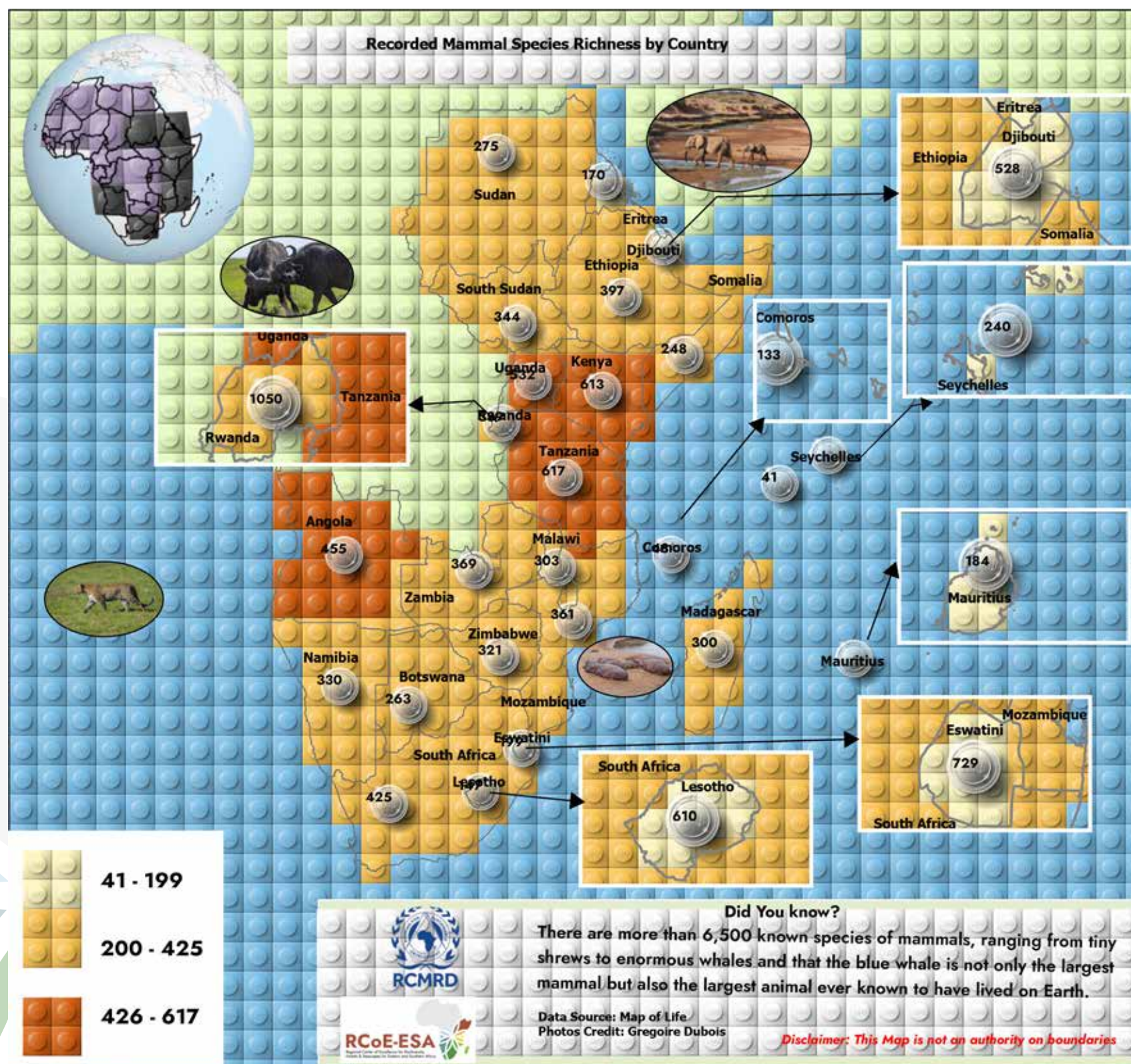
duced thermal anomalies are triggering unprecedented mass bleaching events.

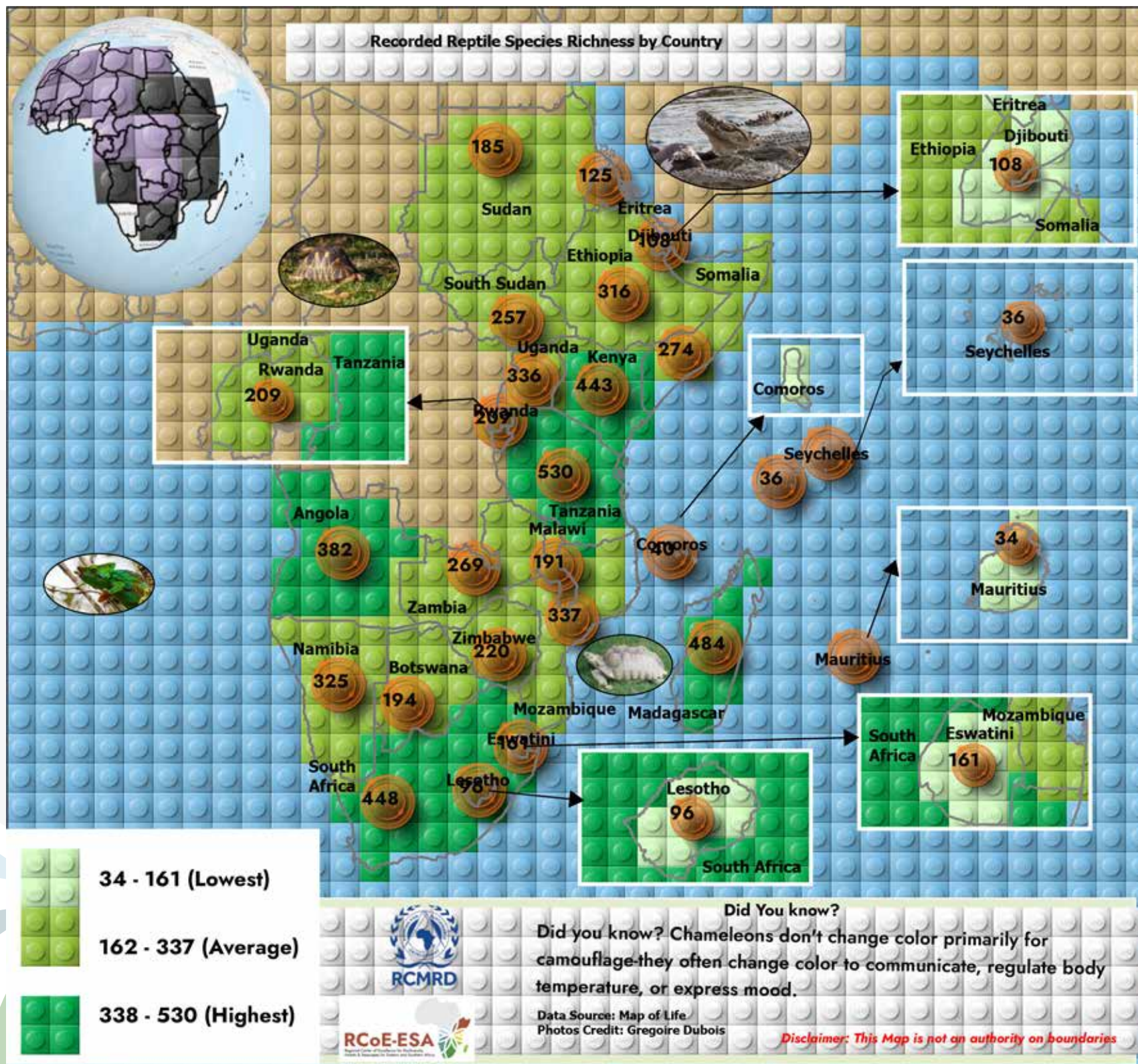
Reversing this trend requires operationalizing KM-GBF Target 8 (minimize climate change impacts on biodiversity and build resilience) by prioritizing the identification and strict protection of climate refugia, zones where localized upwelling or thermal shading buffers reefs from temperature shocks. Establishing No-Take Zones in these refugia, combined with co-management by local fisherfolk, would preserve the biological reservoirs needed to re-seed the broader WIO seascape after bleaching events.











4.3 EMERGING GOVERNANCE TRENDS IN THE ESA REGION

Since the adoption of KM-GBF, global and regional progress toward biodiversity targets has been closely tracked through a range of assessments, government reporting and civil society analyses. Targets 1 to 23 collectively aim to address the underlying drivers of biodiversity loss, equitable benefit-sharing and the expansion of conservation measures. Within this broader agenda, several trends and emerging issues are shaping implementation in the ESA region, with implications for policy coherence, resource mobilization and on-the-ground outcomes.

Rise of Co-Management and Community-Led Conservation

There is growing recognition that state-centric protected area models must be complemented by inclusive governance arrangements. Across parts of ESA, particularly in Namibia and Kenya, co-management agreements and community conservancies are gaining traction. These arrangements align with the KM-GBF's emphasis on equitable benefit-sharing and support the formal recognition of other effective area-based conservation measures (OECMs).

Mainstreaming Biodiversity into Sectoral Policies

National planning frameworks in the region are increasingly integrating biodiversity considerations into agriculture, forestry, infrastructure and climate policies is emerging across national planning frameworks. This reflects the global push under KM-GBF target 14, which calls for embedding biodiversity values into development planning and national accounting systems. Such mainstreaming is critical to addressing the indirect drivers of biodiversity loss, but progress remains uneven across ESA countries.

Strategic Responses and Policy Opportunities

To address these trends and emerging issues, the following are some of the strategic responses aligned to KM-GBF that can be employed:

- 1. Scale OECMs and recognize IPLC governance systems** as valid contributors toward Target 3 while ensuring equity and

rights-based approaches.

- 2. Invest in biodiversity monitoring infrastructure** and interoperable data systems to support reporting under Targets 19, 20, and 22.
- 3. Strengthen cross-sectoral policy integration**, aligning agricultural, infrastructure and climate policies with biodiversity targets (e.g. Targets 7, 8 and 14).
- 4. Expand sustainable finance mechanisms** including biodiversity funds, green bonds and climate-linked finance to support both conservation actions and community livelihoods under multiple KM-GBF goals.

4.4 GBF TARGETS SPATIAL NEEDS

While the 23 KM-GBF targets span a wide range of thematic areas, a significant number rely heavily on spatial data, mapping and geospatial analysis for their effective implementation, monitoring and reporting. From delineating protected areas and identifying priority ecosystems for restoration, to tracking land-use change, ecosystem integrity and pressures on biodiversity, GIS plays a foundational role in operationalizing these targets.

The table below shows that geospatial data is not confined to the framework's obviously "spatial" targets, but rather it is integral throughout, thus enabling countries to translate global commitments into measurable, location-specific actions within the ESA region.

The Spatial Needs Across the 23 Targets

Table 4.1 - Pillar 1: Reducing Biodiversity Threats (Targets 1-8)

Target	Theme	Key Spatial Need	Core Spatial Data	Primary Application
1	Spatial planning	Integrated land/sea-use planning systems	LULC, ecosystem maps, zoning layers	Avoid biodiversity loss from land-use change
2	Restoration	Degradation and restoration suitability mapping	Degraded land maps, soil, climate, vegetation data	Prioritize restoration areas
3	Protected areas (30x30)	Area-based conservation prioritization	Protected areas, OECMs, KBAs, corridors, marine zones	Expand and connect conservation areas
4	Species conservation	Species distribution and threat mapping	Species occurrence, habitats, threat layers	Prevent species extinction
5	Sustainable use of wild species	Harvest zone and pressure mapping	Wildlife ranges, harvest zones, population data	Regulate sustainable use
6	Invasive species	Spread modeling and surveillance	Invasive species distribution, pathways	Control and prevent invasions
7	Pollution	Pollution hotspot mapping	Industrial zones, water quality, waste sites	Reduce pollution impacts
8	Climate change and biodiversity	Climate risk and ecosystem resilience mapping	Climate projections, carbon stocks, ecosystem vulnerability	Support climate adaptation and mitigation

Table 4.2 - Pillar 2: Meeting People's Needs Through Sustainable Use and Benefit-Sharing (Targets 9-13)

Target	Theme	Key Spatial Need	Core Spatial Data	Primary Application
9	Sustainable management of wild species	Production landscape mapping	Agriculture, forestry, fisheries zones	Ensure sustainable production systems
10	Agriculture, aquaculture, and forestry	Intensification vs. sustainability mapping	Crop types, yields, land-use intensity	Optimize sustainable practices
11	Ecosystem services	Ecosystem service modeling	Watersheds, carbon stocks, pollination zones	Safeguard nature's contributions to people
12	Urban biodiversity	Urban spatial planning	Urban land use, green spaces, infrastructure	Enhance biodiversity in cities

13	Access and benefit-sharing	Resource origin and traceability mapping	Genetic resource locations, supply chains	Track benefit-sharing mechanisms
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Table 4.3 - Pillar 3: Tools and Solutions for Implementation and Mainstreaming (Targets 14-23)

Target	Theme	Key Spatial Need	Core Spatial Data	Primary Application
14	Policy integration	Cross-sector spatial overlays	Biodiversity vs. infrastructure, mining, agriculture layers	Mainstream biodiversity into planning
15	Business impacts	Corporate footprint mapping	Concessions, supply chains, operational sites	Assess and disclose biodiversity risk
16	Sustainable consumption	Consumption footprint geography	Trade flows, production–consumption links	Reduce global biodiversity footprint
17	Biosafety	Biotechnology risk mapping	GMO release sites, surrounding ecosystems	Manage biosafety risks
18	Harmful incentives	Subsidy spatial analysis	Agriculture and fisheries subsidy zones	Reform harmful incentives
19	Finance	Spatial allocation of biodiversity finance	Investment flows, conservation areas	Target funding effectively
20	Capacity-building	Institutional and capacity mapping	Agency locations, technical capacity distribution	Identify capacity gaps
21	Data and knowledge	National biodiversity data systems	Databases, geoportals, meta-data	Improve data access and sharing
22	Participation and rights	IPLC territory mapping	Customary lands, community boundaries	Ensure inclusive governance
23	Gender equality	Gendered spatial analysis	Gender-disaggregated resource-use data	Promote equitable participation

4.5 KEY THREATS AND STRATEGIC OPPORTUNITIES FOR PROTECTED AND CONSERVED AREAS IN THE REGION

Protected and Conserved Areas (PCAs) across Eastern and Southern Africa form the backbone of biodiversity conservation, climate resilience, and ecosystem service provision. However, despite their ecological and socio-economic significance, they face mounting pressures that undermine ecological integrity and long-term sustainability. At the same time, evolving policy frameworks, technological advancements, and regional cooperation mechanisms present strategic opportunities to strengthen governance, enhance resilience, and accelerate implementation of global biodiversity commitments.

Key Threats

Land-Use Change and Habitat Fragmentation

Agricultural expansion, settlement growth, and infrastructure development remain the most pervasive threats to PCAs in the region. Rapid population growth and increasing demand for arable land continue to drive encroachment into forested and savannah ecosystems. Linear infrastructure such as roads, railways, and energy corridors fragments habitats, disrupts wildlife movement, and increases human–wildlife conflict.

Illegal Resource Extraction

Illegal logging, charcoal production, poaching, and unregulated mining significantly degrade biodiversity within PCAs. In forested protected areas, timber extraction, which is often linked to informal or cross-border markets, reduces canopy cover and weakens ecosystem resilience. In several countries, extractive concessions overlap or border conservation landscapes, increasing pressure on enforcement systems.

Climate Change Impacts

Changing rainfall patterns, prolonged droughts, extreme weather events, and shifting temperature regimes are altering species distributions and ecosystem functioning. Forest ecosystems face increased fire risk and pest outbreaks, while coastal and marine

PCAs confront sea-level rise and coral bleaching. Climate change also exacerbates livelihood pressures on surrounding communities, intensifying reliance on natural resources.

Governance and Institutional Gaps

Many PCAs operate within fragmented institutional frameworks characterised by overlapping mandates, limited coordination between environment, forestry, land, and infrastructure authorities, and weak enforcement capacity. Chronic underfunding constrains staffing, monitoring, and management effectiveness. Additionally, inconsistencies between national land-use planning and conservation objectives often create implementation gaps.

Limited Community Integration and Benefit-Sharing

Although community-based conservation models are expanding, inequitable benefit-sharing arrangements and unclear tenure rights continue to undermine local support for conservation in some contexts. Where communities perceive limited socio-economic returns from PCAs, pressures such as encroachment and resource extraction may increase.

Strategic Opportunities

Strengthening Ecosystem-Based Governance

Integrating conservation objectives into broader land-use planning frameworks presents a major opportunity. Ecosystem-based approaches that align forestry, agriculture, water, and climate policies can reduce fragmentation and enhance landscape connectivity. Spatial planning tools and geospatial monitoring can support evidence-based decision-making and reduce policy incoherence.

Advancing Community-Led and Co-Management Models

Expanding inclusive governance models such as community conservancies, co-management arrangements, and recognition of Other Effective Area-Based Conservation Measures (OECMs) can strengthen local stewardship, enhance legitimacy, and improve conservation outcomes. Clear tenure arrangements and equitable benefit-sharing mechanisms are central to this transition.

Leveraging Climate and Biodiversity Finance

Emerging financing mechanisms, including REDD+, carbon markets, biodiversity offsets, and blended finance instruments, offer pathways to address chronic funding gaps. Aligning PCA management plans with climate adaptation and mitigation objectives can unlock additional funding streams while strengthening ecosystem resilience.

Enhancing Regional Cooperation

Transboundary conservation areas and regional knowledge platforms provide opportunities for coordinated enforcement, ecological connectivity, and shared monitoring systems. Regional collaboration can also harmonise reporting and implementation under global biodiversity frameworks, reducing duplication and strengthening collective impact.

Digital Monitoring and Data Governance

The expansion of remote sensing, GIS platforms, and biodiversity databases presents transformative opportunities for real-time monitoring, improved transparency, and evidence-based reporting. Strengthening national data governance systems and aligning them with global standards can improve accountability and policy responsiveness.

Way Forward

Addressing the threats facing PCAs in Eastern and Southern Africa requires moving beyond site-level management toward systemic governance reform. Strategic opportunities lie in integrating conservation within national development planning, strengthening institutional coordination, mobilising sustainable finance, and empowering local communities as central actors in conservation landscapes. By leveraging these opportunities, the region can enhance the resilience, effectiveness, and long-term sustainability of its protected and conserved areas while contributing meaningfully to global biodiversity and climate commitments.



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CHAPTER FIVE

GEOSPATIAL CONSERVATION DATA



5.1 KEY BIODIVERSITY AREAS (KBAs)

What Are Key Biodiversity Areas?

Key Biodiversity Areas (KBAs) are sites identified as making an outstanding contribution to the survival of biodiversity worldwide. A site may qualify as a KBA if it supports a significant population of one or more threatened or geographically restricted species, contains a meaningful share of a threatened or geographically restricted ecosystem, retains ecological communities that remain essentially intact, sustains critical biological processes such as migration or breeding, or is shown through quantitative analysis to be irreplaceable for meeting conservation targets.

A site qualifies as a KBA once it meets the threshold set for at least one of eleven criteria defined under the International Union for Conservation of Nature (IUCN) Global Standard for the Identification of Key Biodiversity Areas developed in partnership BirdLife International. The Standard was designed to sit above, and bring together, several long-standing approaches to identifying priority conservation sites, including Important Bird Areas (IBAs) and Alliance for Zero Extinction (AZE) sites. Because it builds directly on the IBA methodology, every IBA (a site recognised as globally important for bird conservation) is automatically also a KBA. AZE sites, individual locations holding an overwhelmingly significant share of the global population of an endangered or critically endangered species, form a further subset of KBAs.

A site has to meet at least one of the following grouped criteria for it to qualify as a Key Biodiversity Area:

- **Threatened biodiversity:** A site needs to host a significant population of species that are at risk of extinction based on the IUCN redlist of threatened species indicator e.g., critically endangered, endangered or vulnerable species.
- **Geographically restricted biodiversity:** A site need to contains species or ecosystems with very limited global distributions.

- **Ecological integrity:** A site needs to be an area with intact ecological processes and minimal human disturbance.
- **Biological processes:** A site needs to support important life-cycle events like breeding, migration, or feeding aggregations.
- **Irreplaceability through quantitative analysis:** A site needs to be essential for conservation targets.

How KBAs Are Identified

Although the IUCN has published detailed technical guidance for applying the KBA criteria, the identification process itself is carried out nationally, following a bottom-up, participatory approach that draws on locally available data rather than being determined centrally. In most countries, a National KBA Coordination Group brings together the relevant scientific, governmental, and civil society stakeholders to identify and put forward candidate sites. Boundaries are drawn using whichever combination of ecological, physical, administrative, or management features allows the area to be managed practically as a single unit.

Once a candidate site has been outlined, the next step is to determine which species or ecosystems present might justify KBA status against the Standard's criteria. Proposals then pass to regional focal points appointed by the KBA Partnership for review, and, provided no concerns are raised, the site can be formally nominated. Final validation and confirmation rests with the KBA Partnership's Secretariat, at which point the site is entered into the World Database of Key Biodiversity Areas.

KBAs in Africa

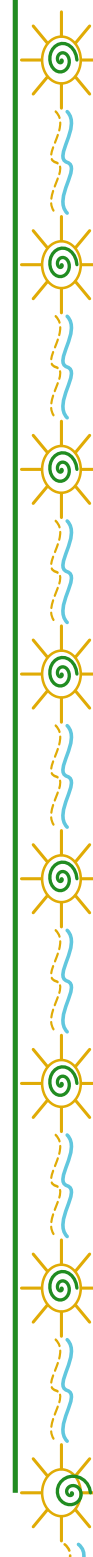
According to the World Database of Key Biodiversity Areas, Africa is currently home to 2,198 of the world's 16,601 recognised KBAs (277 in Northern Africa and 1,921 in Sub-Saharan Africa), making up roughly 13% of the global total. Just under half of these sites (48.5%) are terrestrial, with freshwater sites accounting for a further 24.5% and marine sites for 15.3%; the system type has not yet been recorded for the remaining sites (around 11.8%).

Being recognised as a KBA does not, in itself, place any legal obligation on a country to protect the site; there is no requirement, for example, to designate it as a protected area. In practice, however, KBAs have proved a valuable planning tool globally: they help governments and organisations prioritise conservation investment, inform land-use planning and environmental impact assessments, and support the delivery of global commitments such as the Kunming-Montreal Global Biodiversity Framework; including by helping identify where the expansion of protected area networks would do the most good for biodiversity. Because KBAs represent some of the most important sites for biodiversity anywhere on the planet, ensuring their effective conservation is widely regarded as essential to slowing species loss, yet despite considerable growth in protected and conserved area coverage over recent decades, nearly half of Africa's KBAs still have little or no formal protection.

Why Protected Area Coverage of KBAs Matters as an Indicator

Protected area coverage of Key Biodiversity Areas is a component indicator of the Kunming-Montreal Global Biodiversity Framework. It measures the proportion of a KBA's extent that falls within formally designated protected or conserved areas, usually expressed as a percentage, and shows whether the world's most important biodiversity sites are actually being safeguarded, rather than simply identified.

Coverage above 80% indicates strong formal protection status; coverage below 80% indicates low coverage and points to a conservation gap that should be prioritised for action. While a coverage figure of 0% means the KBA is entirely unprotected and therefore at high risk. Beyond the KM-GBF, this same measure functions as a formal indicator under UN Sustainable Development Goals 14 and 15, and was previously used to track progress under the CBD's Aichi Target 11, underlining its long-standing role as a practical yardstick for whether the sites that matter most for biodiversity are genuinely being conserved.

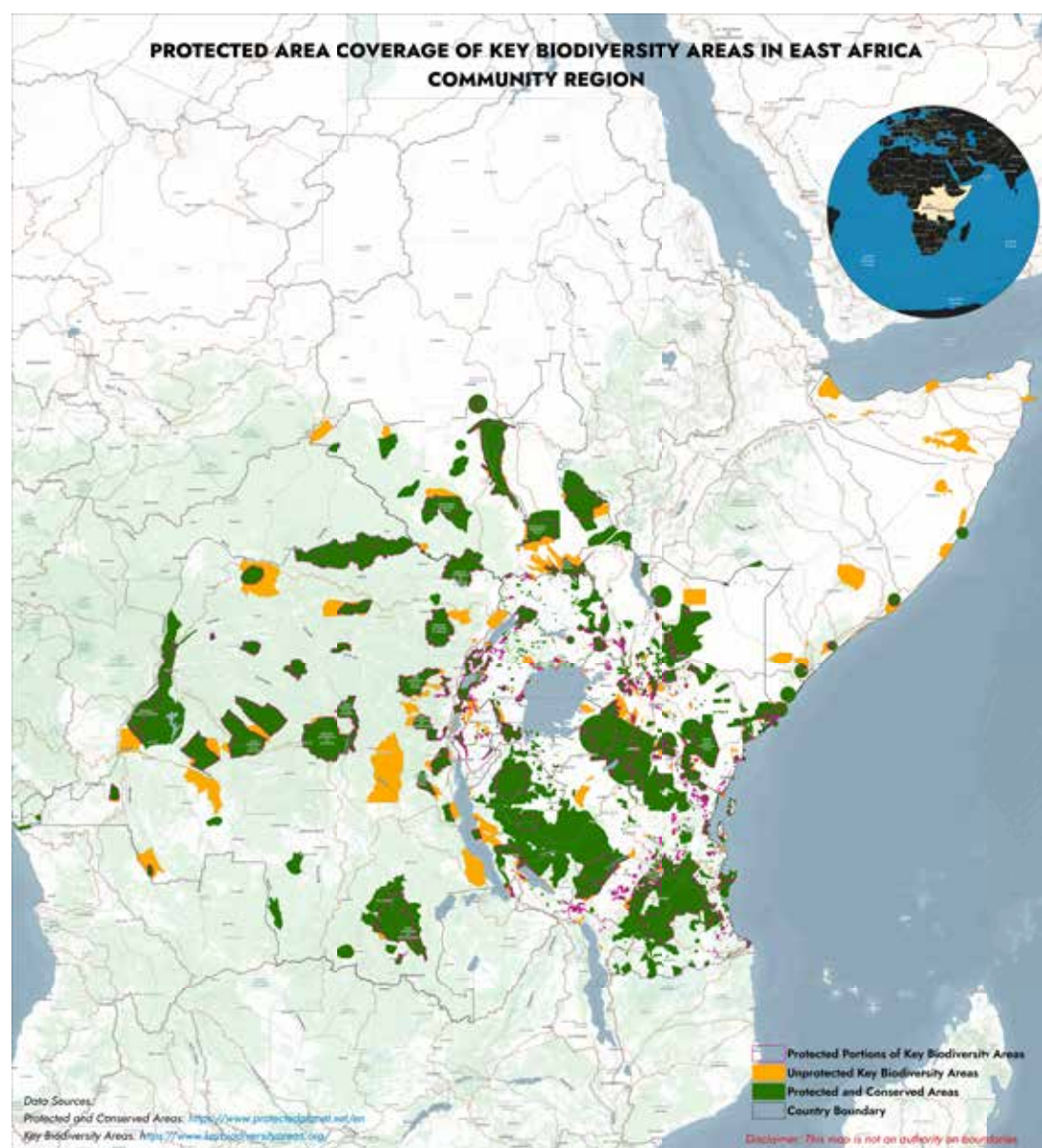


This map shows the protected area coverage of Key Biodiversity Areas (KBAs) across the Eastern and Southern Africa region. Comprising 24 countries, the region contains approximately 5,817 Protected and Conserved Areas (PCAs), covering a combined area of more than 3.3 million km². The region also has approximately 1,264 KBAs, together covering some 1.76 million km².

Analysis indicates that approximately 1.08 million km² of KBA extent overlaps with existing PCAs, meaning that 61.5% of the total KBA area is currently under some form of protection or conservation management, while the remaining 38.5% lies outside the PCA network.

This unprotected 38.5% carries significant conservation implications. These areas are likely to contain populations of threatened, endemic, and range-restricted species, as well as irreplaceable ecosystems, critical habitats, breeding and nesting sites, migratory corridors, and other areas of high ecological importance. Without effective conservation measures, these biodiversity-rich areas face increased risk from habitat degradation, land-use change, fragmentation, overexploitation, invasive species, pollution, and climate change. Continued loss or deterioration could result in irreversible biodiversity decline, disruption of ecosystem services, and, in some cases, the local or global extinction of species.

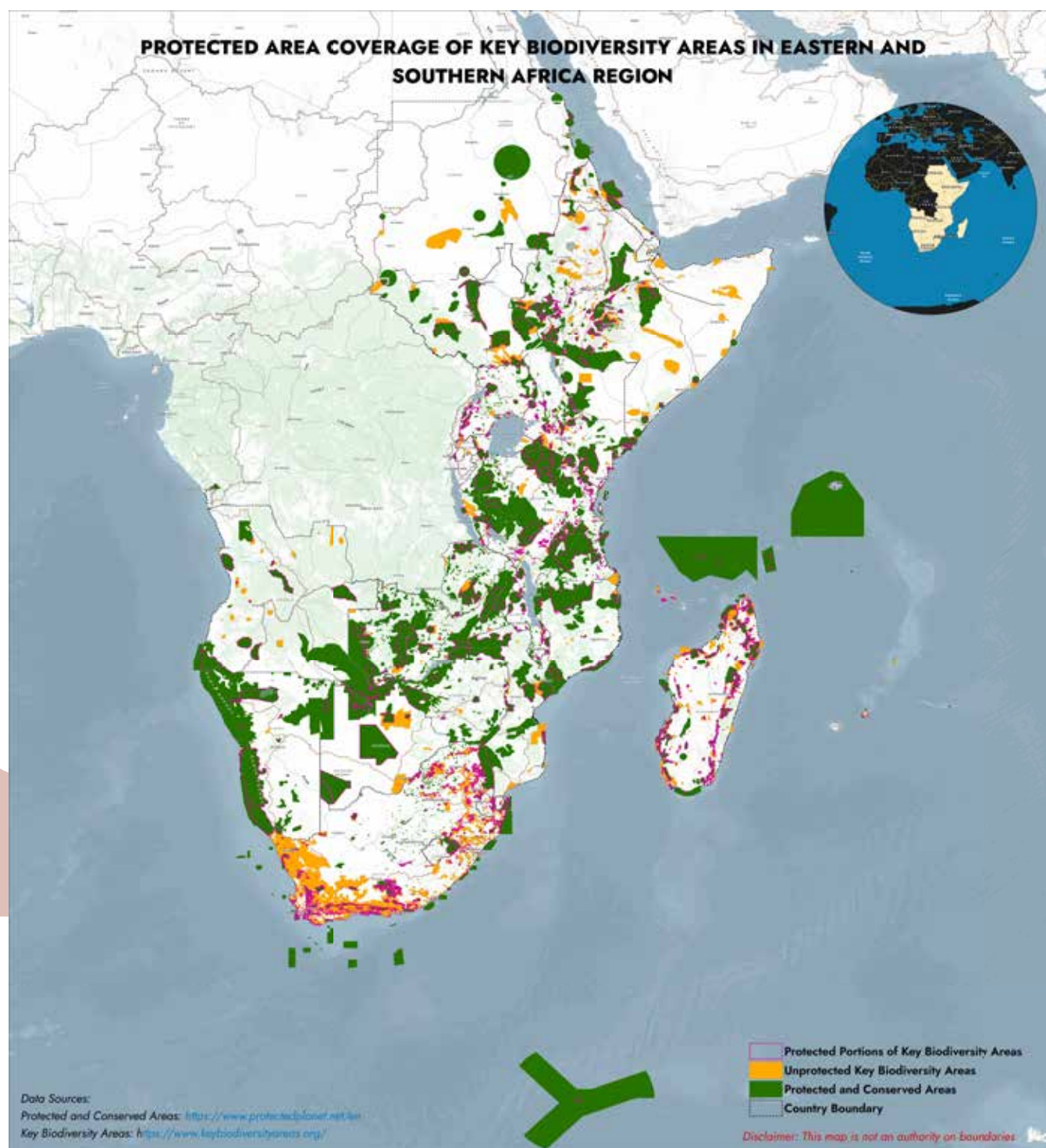
At the same time, the 38.5% of KBAs that remain outside the PCA network present a strategic opportunity for global, regional, national, and local conservation stakeholders to prioritise areas requiring urgent conservation action. As countries work toward conserving 30% of terrestrial and inland water ecosystems and 30% of coastal and marine ecosystems, these unprotected KBAs represent high-priority candidates for expanding the PCA network.



Incorporating these areas into national and regional conservation strategies would not only safeguard sites of exceptional biodiversity value but also enhance the coverage, ecological connectivity, representativeness, and resilience of conservation networks — improving their capacity to conserve biodiversity, maintain ecosystem functions, and support the long-term achievement of national, regional, and global biodiversity targets.

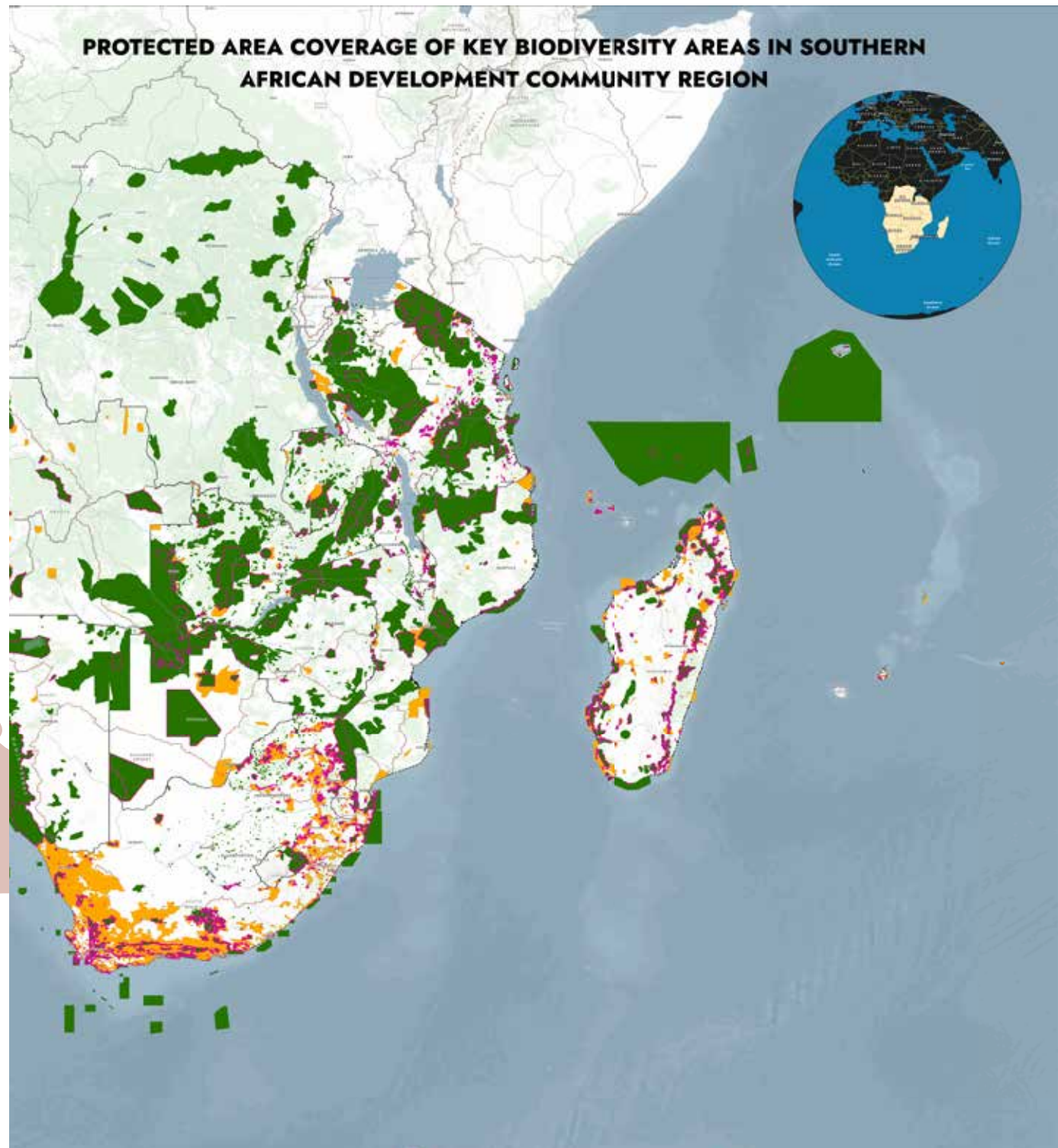
This map shows the protected area coverage of Key Biodiversity Areas across the East African Community (EAC) region. The EAC region contains approximately 2,153 protected and conserved areas, covering a total of about 1.06 million km². The region also has 338 KBAs, collectively spanning approximately 795,034 km². Of this area, only about 540,548 km² falls within protected and conserved areas — meaning approximately 68% of KBA extent is currently under some form of protection, while the remaining 32% lies outside protected and conserved areas, leaving these sites vulnerable to habitat loss, degradation, and other anthropogenic pressures.

These unprotected KBAs nonetheless represent a strategic opportunity for conservation action. Prioritising their protection, or their recognition through other effective area-based conservation measures (OECMs) where appropriate, would contribute significantly to achieving Target 3 of the Kunming–Montreal Global Biodiversity Framework (KMGBF), which calls for the effective conservation and management of at least 30% of terrestrial, inland water, coastal, and marine areas by 2030.



This map shows the protected area coverage of Key Biodiversity Areas across the Southern African Development Community (SADC) region. The SADC region contains approximately 4,212 protected and conserved areas, covering a total of about 3.03 million km². The region also has 972 KBAs, collectively spanning approximately 1.66 million km². Of this area, only about 1.1 million km² falls within protected and conserved areas — meaning approximately 66% of KBA extent is currently under some form of protection, while the remaining 34% lies outside protected and conserved areas, leaving these sites vulnerable to habitat loss, degradation, and other anthropogenic pressures.

These unprotected KBAs represent a significant opportunity for expanding conservation efforts across the region. Prioritising their protection, or their recognition through OECMs where appropriate, would make a substantial contribution to achieving Target 3 of the KMGBF, which calls for the effective conservation and management of at least 30% of terrestrial, inland water, coastal, and marine areas by 2030.



5.2 INTERNATIONAL DESIGNATIONS

An international designation is formal recognition, under a global convention, treaty, or programme, given to a protected area or site of outstanding value. Unlike national protected areas, established under a country's own laws, such as a National Park or Game Reserve, international designations add a layer of global recognition based on a site's outstanding ecological, cultural, or scientific significance. Sites recognised under frameworks such as the Ramsar Convention on Wetlands, UNESCO Biosphere Reserves designated under the UNESCO Man and the Biosphere (MAB) Programme and the World Heritage Convention represent some of the most exceptional places on Earth. They represent the 'gold standard' of biodiversity. The sites are so unique that their protection is considered a shared concern of the entire international community.

i. World Heritage Sites

The World Heritage Convention, adopted by UNESCO in 1972, promotes international cooperation to identify, protect, conserve and transmit to future generations the world's outstanding cultural and natural heritage. Through the UNESCO World Heritage List, the Convention recognises sites of Outstanding Universal Value (OUV), providing international recognition that strengthens long-term conservation efforts while supporting sustainable development.

This layer maps UNESCO World Heritage Sites across Eastern and Southern Africa, highlighting places recognised for their exceptional natural, cultural or mixed (both natural and cultural) values. Natural and Mixed World Heritage Sites are inscribed for their outstanding biodiversity, geological significance, ecological processes or exceptional natural beauty.

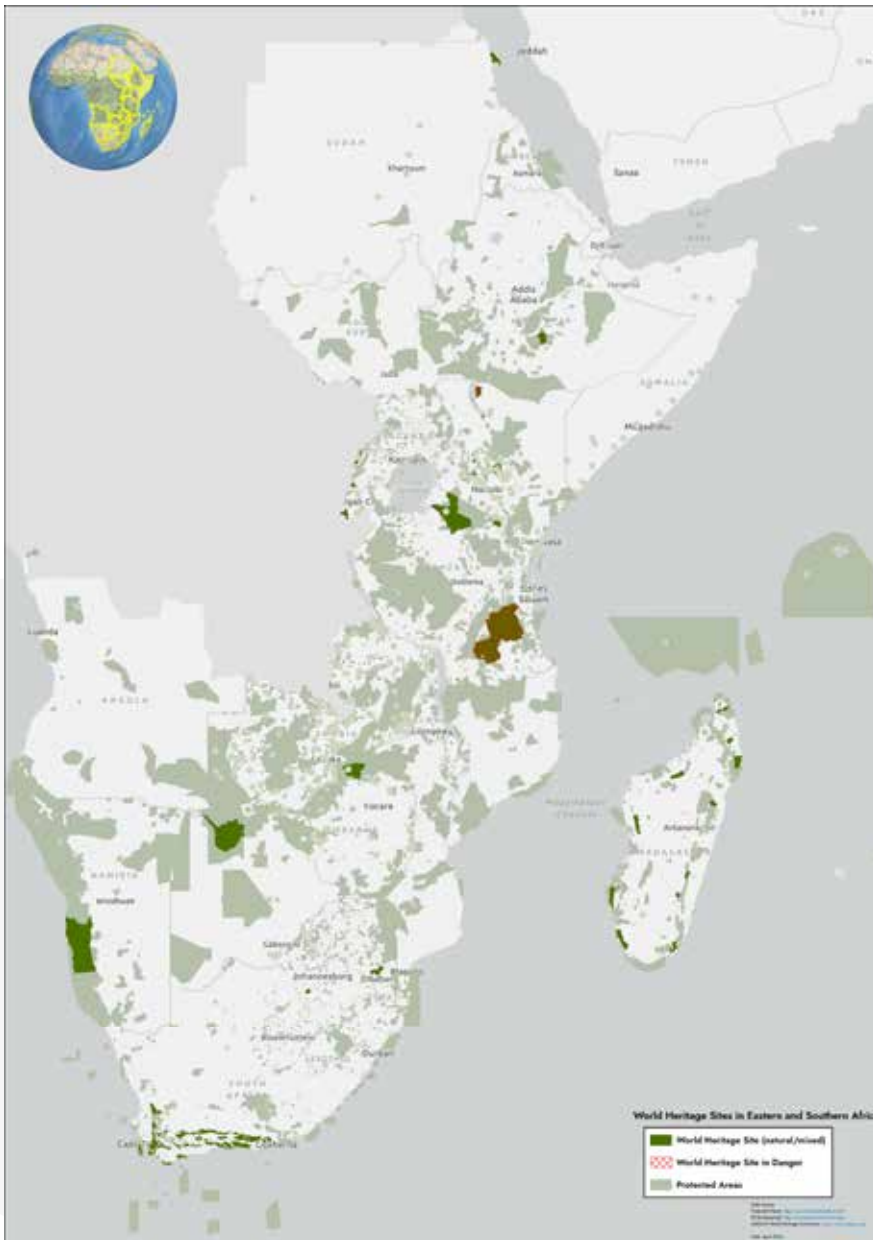
As of 2026, Africa is home to 191 World Heritage Sites across 38 States Parties, including cultural, natural and mixed properties. Of these, 69 sites are located in 18 countries across Eastern and Southern Africa, reflecting the region's exceptional biodiversity, landscapes and cultural heritage.

Despite their global significance, the conservation status of many natural World Heritage Sites remains a concern. The IUCN's World

Heritage Outlook 2020 assessment found that more than half of the African natural and mixed World Heritage Sites assessed (27 of 48) were classified as either Critical (12 sites) or of Significant Concern (15 sites). In addition, protection and management were assessed as being of some or serious concern at 34 sites, while only 14 sites were considered to have effective management. Hunting, uncontrolled fires, invasive alien species and unsustainable logging were identified among the leading threats affecting these globally important landscapes.

Under the World Heritage Convention, a site may also be placed on the List of World Heritage in Danger when it faces serious and specific threats that could affect its Outstanding Universal Value. The List serves to mobilise international attention and support for corrective conservation measures. As of 2026, the Eastern and Southern Africa region has two World Heritage Sites inscribed on the List of World Heritage in Danger: Lake Turkana National Parks (Kenya) and the Selous Game Reserve (United Republic of Tanzania).





ii. Ramsar Sites (Wetlands of International Importance)

Wetlands rank among the most biologically productive ecosystems on Earth, sustaining countless plant and animal species, yet they are also among the most threatened. Their international protection dates back to 1971, with the adoption of the Convention on Wetlands of International Importance, commonly known as the Ramsar Convention. The convention entered into force in 1975 with the aim

of halting wetland loss and degradation, and the resulting harm to both people and wildlife, particularly waterfowl. The Convention establishes a framework for national action and international co-operation on the conservation and wise use of wetlands and their resources.

As one of the oldest multilateral environmental agreements still in force, Ramsar marked a shift in international conservation thinking, away from a narrow focus on protecting individual species, and towards safeguarding entire ecosystems and sites; making it one of the first modern global treaties dedicated to natural resource conservation.

Under the Convention's broad definition, wetlands span a wide range of habitats, from lakes, rivers, and underground aquifers to swamps, marshes, peatlands, estuaries, mangroves, and coral reefs, as well as human-made features such as fish ponds, rice paddies, reservoirs, and salt pans. A site must satisfy at least one of nine criteria to be added to the Ramsar List of Wetlands of International Importance, formally recognising its value both to the country concerned and to the world at large; reflecting ecological, botanical, zoological, limnological, or hydrological significance.

There are over 2,500 Ramsar Sites on the territories of 172 Convention Contracting Parties across the world, covering almost 2.5 million square kilometres. As of 2026, Africa hosts 434 Ramsar Sites covering 116,575,049 ha across 51 countries.

A single wetland can carry more than one international designation at once; for instance, functioning simultaneously as a National Park, a Ramsar Site, and a World Heritage Site, where different frameworks recognise different aspects of its value. Such designations can also offer non-governmental protected areas, including those governed by local communities, Indigenous peoples, and private landholders, a pathway to greater formal recognition.

Notwithstanding the Convention's role, the global condition of wetlands has continued to decline over the five decades since Ramsar's establishment, and many sites still receive little or no protection under national law. This is particularly true in Africa, where nearly half of all Ramsar Sites (49%) have no management plan in place, a further 20% have one under preparation, and only 31% currently

operate under a completed plan. The principal pressures on African Ramsar Sites are the use of biological resources, modification of natural systems, agriculture and aquaculture, and pollution.



iii. UNESCO Biosphere Reserves

UNESCO Biosphere Reserves serve as living laboratories for testing interdisciplinary approaches to managing biodiversity and socio-ecological systems. They are places where science, culture, and inclusive governance come together, showing how biodiversity conservation and sustainable development can successfully go hand in hand. Unlike traditional national parks, these boundaries demonstrate how humans and nature can coexist sustainably. Rather than separating people from nature, biosphere reserves are founded on the principle that communities and ecosystems thrive together. Indigenous Peoples and local communities, including civil society and business organizations, are active partners in protecting and restoring ecosystems while building resilient, sustainable livelihoods.

The concept behind biosphere reserves originates in UNESCO's Man and the Biosphere (MAB) Programme, launched in 1971 to improve understanding of how people interact with their natural environment and to build a scientific foundation for the sustainable use of natural resources and ecosystem services. Biosphere reserves followed in 1976, becoming the Programme's principal practical tool. Although the concept has evolved considerably since then, biosphere reserves remain multi-use landscapes designed to explore, in practice, how biodiversity conservation and sustainable socio-economic development can be pursued together.

Unlike many other protected area categories, the central aim of a biosphere reserve is to achieve harmony between people and nature within its boundaries, rather than to exclude human activity altogether. This is pursued through three combined functions:

- Conservation of both biological and cultural diversity.
- Sustainable economic development that gives due weight to social, cultural, and environmental considerations, with local communities sharing responsibility for planning and managing the site.
- Logistical support for research, monitoring, education, and training.

These functions are delivered through a graduated system of spatial zoning:

- Core area(s): formally protected zones dedicated to conservation, where activity is restricted to research and other low-impact uses compatible with conservation goals.
- Buffer zone(s): surrounding areas used for activities compatible with conservation, including research, monitoring, training, and education.
- Transition area(s): outer, more flexible zones where communities work with other stakeholders to manage economic and human activity in ways that are both socio-culturally and ecologically sustainable.

Only the core area (or areas) of a biosphere reserve carries formal protected status; the surrounding buffer and transition zones typically have limited or no such protection. This graduated approach allows management to be tailored to the different pressures, vulnerabilities and ecosystem services present across each zone. However, it also means site managers must actively identify the services a landscape provides and work to sustain them over the long term. This matters particularly in Africa, where 62% of the rural population depends directly on ecosystem services for its survival.

Biosphere reserves are nominated by national governments and formally designated by UNESCO's MAB International Coordinating Council. Once designated, a site remains under the full jurisdiction of its home country while gaining international recognition as part of the World Network of Biosphere Reserves (WNBR). Individual reserves are also grouped into regional and thematic networks to strengthen cooperation between sites: biosphere reserves in Sub-Saharan Africa fall under the African Biosphere Reserves Network (AfriMAB), launched in 1996 and now covering 33 African states, while those in North Africa belong to the ArabMAB network, established in 1997 and spanning 18 Arab and Mediterranean countries. To maintain quality over time, every site in the WNBR undergoes a periodic review every ten years, assessing progress against the three core functions of conservation, development, and logistical support.

Africa is currently home to 114 biosphere reserves across 40 countries — including every AfriMAB country and seven of the 18

ArabMAB countries — representing 15% of all biosphere reserves worldwide. South Africa hosts the largest number of any African country (10), followed by Algeria (8), and Kenya and the United Republic of Tanzania (6 each).



5.3 TRANSBOUNDARY CONSERVATION AREAS IN EASTERN AND SOUTHERN AFRICA

Overview of Transboundary Conservation Areas

Ecosystems do not always follow the political boundaries that separate countries and territories, yet each country's authority and sovereignty extend only as far as its own borders. This mismatch creates the need for governance and management approaches that recognise ecological continuity and promote collaboration across borders on shared conservation efforts. Transboundary conservation areas, therefore, are areas of ecological importance that extend across the borders of two or more countries, where those countries work together to govern and manage shared natural resources, such as biodiversity and ecosystems.

The world's first transboundary protected area was established between Poland and Czechoslovakia in 1924, under the Kraków Protocol. Peacebuilding was not among its stated aims, yet by placing a disputed border region under joint management as a shared asset, the arrangement helped ease tensions left over from a border dispute dating back to the First World War.

In Africa, the origins of transboundary conservation trace back to 1925, when the Virunga Mountains were designated as the continent's first national park, then within the Belgian Congo. Following independence in 1960, the area became a de facto transboundary park, split between Rwanda and what was then Zaire (now the Democratic Republic of the Congo). It was not until 2005 that the national park authorities on both sides formally established the Central Albertine Rift Transfrontier Protected Area Network, now known as the Greater Virunga Landscape.

Africa currently has 27 recognised Transboundary Conservation Areas, together covering roughly 850,000 km² and incorporating more than 500 protected and conserved areas (counting sites that carry more than one designation). Analysis of ecological connectivity and geographical adjacency suggests a far larger potential: as many as 8,481 additional transboundary combinations could theoretically be formed from 2,326 individual protected areas across the continent.

A handful of large, well-connected combinations among these could offer real protection against future pressures such as climate change, by preserving the cross-border connectivity that species will need as their ranges shift. Most potential combinations, however, involve small, poorly connected sites that would require substantial investment before their connectivity value could be realised; through stronger collaboration, protected area expansion, and ecological restoration.

Geographical proximity alone is not sufficient to determine where transboundary conservation is likely to succeed. A complementary feasibility index helps identify which country pairings are best placed to support new transboundary initiatives; by combining the strength of governance in neighbouring countries, the degree of international collaboration between them and the level of human pressure along shared borders.

Characteristics of Transboundary Conservation Areas

Transboundary conservation areas share four defining characteristics:

- **Cross-border extent:** the area spans the borders of two or more countries and may include protected and conserved areas, shared water resources such as lakes and rivers, and community lands, among other features.
- **Shared governance:** participating countries establish formal agreements to coordinate management, policy, and law enforcement across the shared area.
- **Common conservation objectives:** countries involved must share a conservation goal, whether that be biodiversity conservation, the protection of ecosystem services, or the safeguarding of cultural values.
- **Inclusivity:** governments, local communities, Indigenous peoples, non-governmental actors, and the private sector, all of whom own or hold rights over the shared natural resources, are involved in governance and decision-making.



Importance of Transboundary Conservation Areas

Transboundary conservation areas matter because they foster cooperation between neighbouring countries. They help maintain ecological integrity by supporting species that migrate across borders, such as wildebeest and elephants; they promote tourism; and they help ensure conservation outcomes are achieved by aligning efforts across national boundaries.

Types of Transboundary Conservation Areas

Two main types of transboundary conservation area are commonly recognised:

- Transboundary Protected Areas (TBPAs): adjoining protected areas, such as national parks, game reserves, nature reserves, and forest reserves, that sit across a shared border.
- Transfrontier Conservation Areas (TFCAs): broader landscapes that encompass protected areas alongside adjoining community and private lands.

These areas are typically operationalised through instruments such as harmonised policies, joint management plans, coordinated anti-poaching strategies, and shared monitoring systems.

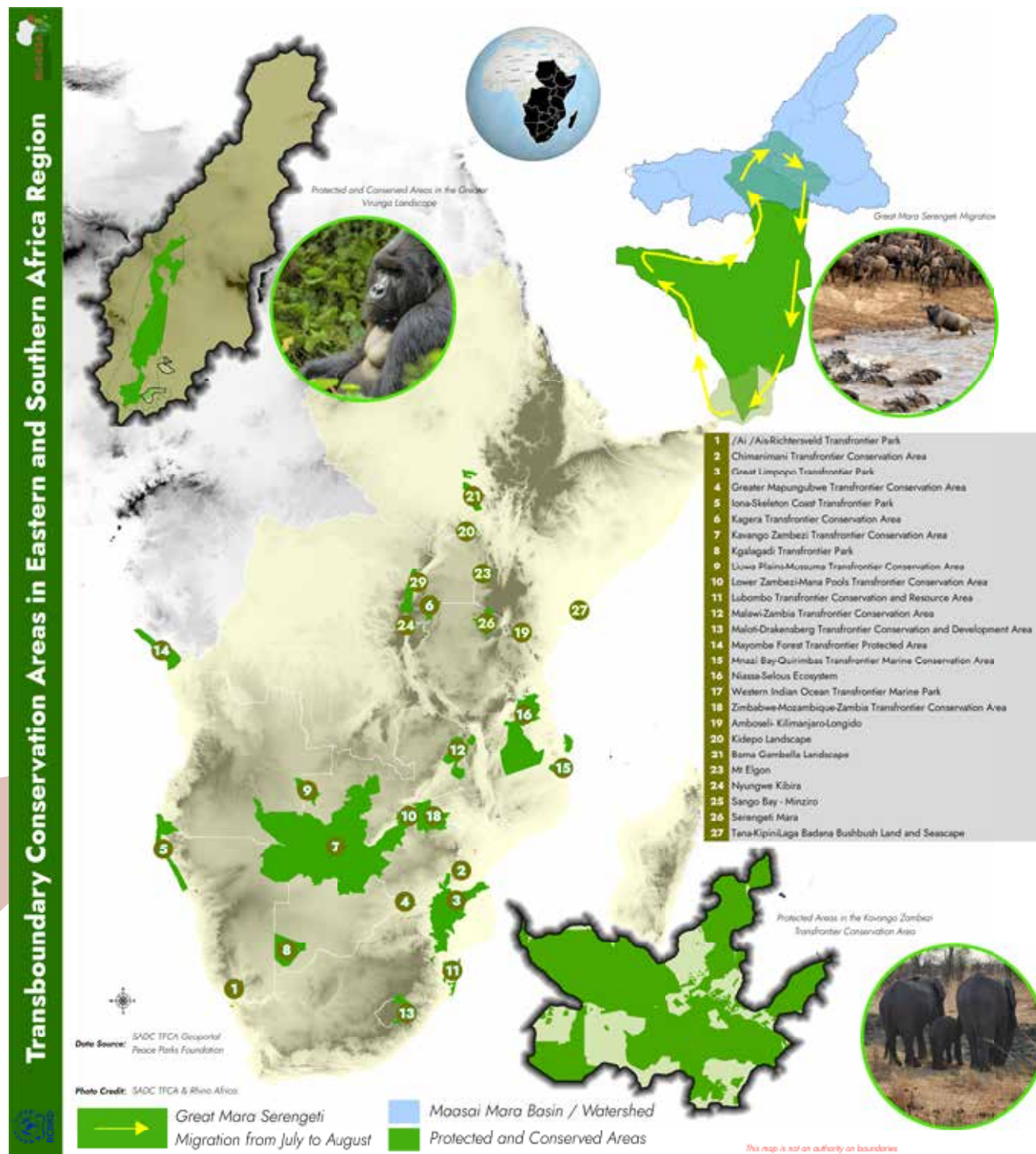


Table 5.1 Transboundary conservation areas in Eastern and Southern Africa

Name	Countries included	Area (km ²)	Status	Ecotype/biome	Protected Areas	Special features/significance
/Ai-/Ais-Richtersveld TFCA	Namibia, South Africa	5 920	Treaty signed	Desert; Riverine	Namibia: Ais-Ais Hot Spring Game Park South Africa: Richtersveld National Park	Fish River Canyon
Amboseli- Kili-manjaro-Longido	Kenya, Tanzania	N/A	Conceptual	Montane; Forest; Savannah	N/A	Montane endemics; carnivores; Very important elephant area
Boma-Gambella Landscape	South Sudan, Ethiopia	N/A	Conceptual	Savannah; Wetland	N/A	Major plains game migration
Chimanimani TFCA	Mozambique, Zimbabwe	4 091	Treaty signed	Mountains and miombo woodland	Zimbabwe: Chimanimani National Park Mozambique: Chimanimani Nature Reserve"	Forest, scenery, wildlife and culture
Great Limpopo Transfrontier Park & Conservation Area	Mozambique, South Africa, Zimbabwe	37 572	Treaty signed	Miombo woodlands	Mozambique: Limpopo National Park, South Africa: Kruger National Park Zimbabwe: Gonarezhou National Park	Riverine woodlands; regional endemism; important elephant dispersal areas
Greater Mapungubwe TFCA	Botswana, South Africa, Zimbabwe	5 909	MOU signed	Savannah	Botswana: Northern Tuli GR Zimbabwe: Tuli Circle Safari Area South Africa: Mapungubwe National Park and the Mapungubwe Cultural Landscape, WHS "	Cultural artefacts; unique geology; "distinctive fauna and flora"
Greater Virunga Landscape	Rwanda, Uganda, DRC	15 000	Treaty signed (ratification pending)	Albertine Rift mid-altitude and montane forest; East Sudanese savannah; Wetlands	DRC: Virunga World Heritage Site / National Park Rwanda: Volcans National Park Uganda: Mgahinga National Park Queen Elizabeth National Park Bwindi World Heritage Site / National Park Semuliki National Park Ruwenzori World Heritage Site / National Park Kibale National Park Kasyoha-Kitomi Forest Reserve Kalinzu-Maramgambo Forest Reserve Kayumbura Wetland Reserve"	Albertine Rift Ecoregion; 3 World Heritage Sites; entire Mountain Gorilla population and important chimpanzee populations; majority of Albertine endemics; exceptional tourism potential; protection of vital freshwater fish stocks; watershed protection
Iona Skeleton Coast TFCA	Angola, Namibia	47 698	MOU signed	Desert	Angola: Iona National Park Namibia: Skeleton Coast National Park	Kunene River and ecosystem Natural springs Endemic plant species
Kagera TFCA	Still to be	2500	MOU	Savanna;	Rwanda:	

Name	Countries included	Area (km ²)	Status	Ecotype/biome	Protected Areas	Special features/significance
Kavango- Zambezi TFCA	Angola, Botswana, Namibia, Zambia, Zimbabwe		Treaty signed	Miombo woodland; Zambezian flooded grassland; Savannah;	Angola: Luengue-Luiana National Park Mavinga National Park Botswana: Chobe National Park, Makgadikgadi National Park Nxai Pan National Park Moremi Game Reserve Namibia: Mamili National Park Mudumu National Park Bwabwata National Park Zambia: Kafue National Park, Mosi-oa-Tunya National Park Sioma Ngwezi National Park Zimbabwe: Hwange National Park Kazuma Pan National Park Matusadona National Park Zambezi National Park Victoria Falls National Park	Unique Okavango Delta Wetlands; wildlife migrations; large elephant population; other large mammals; Peace Park; exceptional tourism potential
Kidepo Landscape	Uganda, South Sudan	N/A	Partial MOU (for some forest reserves)	Savannah	N/A	Cheetah, African Wild Dog, Lesser Kudu, Karamoja Apalis
Kgalagadi Trans-frontier Park	Botswana, South Africa	35 551	Treaty signed	Desert	Botswana: Gemsbok National Park South Africa: Kalahari Gemsbok National Park	Unique Kalahari ecosystem; Black-maned lions; Gemsbok, etc.
Liuwa Plains- Mussuma TFCA	Angola, Zambia	14 464	Conceptual TFCA	Zambezian flooded grassland eco-region, the miombo woodland eco-region and the Zambezian cryptosepalum dry forest eco-region	Zambia: Liuwa Plains National Park Angola: Massuma National Park	Second largest wildebeest migration in Africa, significant portion of the catchment area of the Zambezi River, Africa's fourth largest river system:
Lower Awash-Lake Abbé Landscape	Djibouti, Ethiopia	N/A	Conceptual	Dryland	N/A	N/A
Lower Zambezi Mana Pools TFCA	Zambia, Zimbabwe	17 745	Conceptual TFCA	Miombo woodlands	Zimbabwe: Mana Pools National Park/ WHS Sapi and Chewore Safari Areas Lower Zambezi National Park +6 additional reserves	Zambezi River; floodplain; escarpment; large mammal populations

Name	Countries included	Area (km ²)	Status	Ecotype/biome	Protected Areas	Special features/significance
Lubombo TFCA	Eswatini, Mozambique, South Africa	10 029	Treaty signed	Coastal plain	Links 5 TFCA projects Eswatini: Hlana Royal National Park South Africa: Tembe Elephant Park Mozambique: Maputo Special Reserve + 12 state protected areas and other reserves, as well as private land	High biodiversity; 5 Ramsar sites; wetlands; woodlands
Malawi- Zambia TFCA	Malawi, Zambia	32 278	Treaty signed	Montane; Grassland; Wetland;	3 protected areas including Nyika National Park, Vwaza Marsh Wildlife Reserve	Montane grassland and flora; Wetlands; Restocking programme
Maloti Drakensberg TFCA (also a transboundary World Heritage site)	Lesotho, South Africa	14 740	MOU signed	Montane	Lesotho: Maloti Drakensberg Transboundary World Heritage Site, comprises Sehlabathebe National Park and South Africa: uKhahlamba Drakensberg Park	Southern mountains; Escarpments; Rich endemic flora; Wetlands; San culture
Mayombe Forest Transfrontier Protected Area	Angola, Democratic Republic of Congo, Republic of Congo	36 000	MOU signed	Tropical rainforest	Angola: Mayombe National Park DRC: Luki National Park Republic of Congo: Dimonika Biosphere Reserve, Conkouati-Douli National Park and Tchimpounga National Reserve	Basin rainforest; Chimpanzees and lowland gorilla
Mnazi Bay- Quirimbas TFCA	Mozambique, Tanzania	8 150	Conceptual TFCA	East African coastal forest and scrub biome	Mozambique: Quirimbas National Park Tanzania: Mnazi Bay-Ruvuma Estuary Marine Park	An important refuge for reef diversity to downstream areas in the north and south on mainland coastal areas
Mosi-oa-Tunya Victoria Falls Transboundary World Heritage Site	Zambia, Zimbabwe	69	Treaty signed	Riverine	Zambia: Mosi-oa-Tunya National Park Zimbabwe: Victoria Falls National Park	Victoria Falls; World Heritage site; exceptional geological and geomorphological features
Mt Elgon	Uganda, Kenya	N/A	MOU	Montane	Uganda: Mount Elgon National Park Kenya: Mt Elgon National Park Mount Elgon and Trans-Nzoia Forest Reserves Chepkitala National Reserve"	Extinct shield volcano
Niassa-Selous TFCA	Mozambique, Tanzania	154 000	MOU signed	Miombo woodland	Mozambique: Niassa NR Tanzania: Selous World Heritage Site/GR Mikumi National Park Udzungwa National Park Kilombero GCA + WMAs, conservancies, and hunting blocks	Migration corridor; very important elephant area; buffalo, hippo
Nyungwe- Kibira	Burundi, Rwanda	1 171	MOU signed	Mid-altitude montane forest	Rwanda: Nyungwe NP	Forest and endemics

Name	Countries included	Area (km ²)	Status	Ecotype/biome	Protected Areas	Special features/significance
Sango Bay-Minziro	Tanzania, Uganda	861	Conceptual	Wetlands and swamp forests	Tanzania: Minziro Forest Nature Reserve Uganda: Sango Bay—Musambwa Island—Kagera Wetland System	Baikiaea—Podocarpus forests, papyrus endemics
Serengeti- Mara	Tanzania, Kenya	25 000	Conceptual	Savanna	Serengeti National Park Masai Mara National Reserve	Annual migration of close to 2 million herbivores
Tana-Kipini- Laga Badana Bush-bush Land and Seascape	Kenya, Somalia	N/A	Conceptual	n/a	N/A	N/A
Tanga Marine Reserves System and Tanga Coelacanth Marine Park "(TZ) and (KE) Diani Chale MPA and Kisite-Mpunguti MPA"	Tanzania, Kenya	N/A	Conceptual	N/A	N/A	N/A
Western Indian Ocean Transfrontier Marine Park	Still to be finalized, but includes Madagascar, Mauritius, Mozambique, Seychelles, Tanzania	N/A	Conceptual	Marine	N/A	Third largest coral reef on the planet; home to five of the seven marine turtle species; dugong
ZIMOZA TFCA	Mozambique, Zambia, Zimbabwe	29 859	Conceptual	Grasslands, riverine woodlands and dry forests	No formally protected area in Mozambique Zambia: Lower Zambezi National Park and the entire Rufunsa Game Management Area Zimbabwe: Chewore and the Dande Safari Area	Many wildlife corridors; variety of species including elephant, hippopotamus, buffalo, lion, leopard, sable and roan

Southern African Development Community Transfrontier Conservation Areas (SADC TFCAs)

Transboundary conservation in Southern Africa gained formal momentum through the Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement, adopted in 1999, which set out a shared definition of a transfrontier conservation area as a large ecological region straddling two or more countries, encompassing both protected areas and areas used for multiple purposes. Under the Protocol, the goal of these

areas is to manage shared natural and cultural resources jointly across borders, delivering both improved biodiversity outcomes and socio-economic benefits.

SADC hosts one of the most advanced transboundary conservation frameworks in Africa, underpinned by an operational governance structure, a dedicated TFCA programme, and an active community of practice that meets regularly to discuss challenges, share experiences, and exchange lessons on the management and governance

of TFCAs.

The SADC region has 14 Transfrontier Conservation Areas spanning national borders, together covering approximately 1 million km², around 10% of the combined land area of 11 of SADC's 16 member states. The SADC TFCA programme, part of the organisation's wider regional integration agenda, aims to reconnect fragmented natural landscapes, strengthen transboundary conservation, support sustainable rural development, and build climate resilience across the region.

This work is supported by a community of practice known as the SADC TFCA Network, which brings together professionals working across TFCAs in a range of sectors that contribute to SADC's regional sustainable rural development agenda. Members share a recognition of the common challenges facing TFCAs and a commitment to SADC's broader TFCA vision. The Network was formed in September 2013 at a meeting in Johannesburg, South Africa, bringing together TFCA coordinators, representatives of international NGOs, and practitioners from across SADC's member states.



The Network's objectives are to strengthen TFCA governance through improved policy, legislation, and institutional frameworks; to develop sustainable financing mechanisms for TFCAs; and to demonstrate the value of TFCAs at local, national, and regional level by enhancing the benefits communities receive and supporting capacity development.

Some notable SADC TFCAs include:

- Great Limpopo TFCA: Mozambique, South Africa, Zimbabwe
- Kavango Zambezi TFCA: Angola, Botswana, Namibia, Zambia, Zimbabwe
- Lubombo TFCA: Mozambique, South Africa, Eswatini
- Maloti-Drakensberg TFCA: Lesotho, South Africa
- Lower Zambezi-Mana Pools TFCA: Zambia, Zimbabwe

These areas integrate ecological conservation with socio-economic development, demonstrating the SADC vision of a community-centered, regionally integrated network of world-class conservation areas. SADC TFCAs



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BEYOND THE MAP

The RCoE product portfolio brings together geospatial technology, data, storytelling, creativity, and community engagement to make biodiversity knowledge more accessible and actionable.



GEOSPATIAL
TECHNOLOGY



DATA



STORYTELLING



CREATIVITY



COMMUNITY
ENGAGEMENT



01. GEOPORTAL

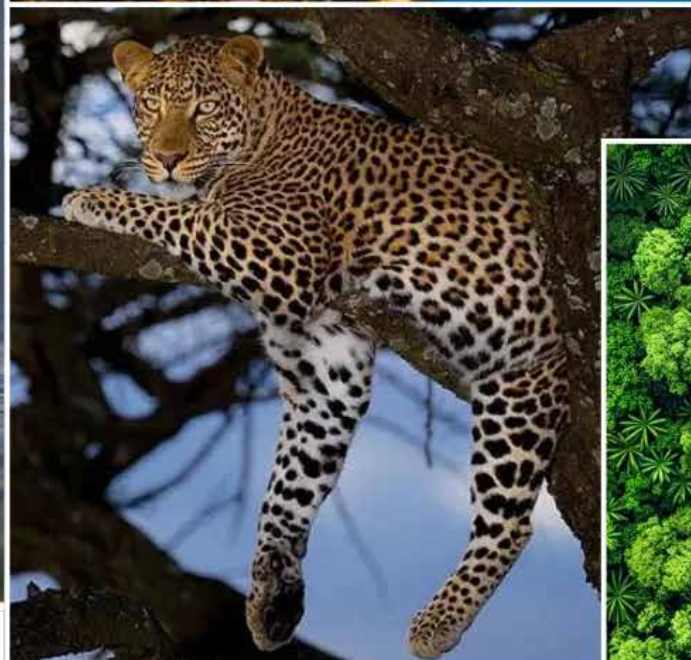
Explore. Discover. Decide.

The RCoE Data Geoportal is a centralised digital gateway to geospatial data, interactive maps, and analytical resources for biodiversity, forests, and seascapes. It makes critical environmental information easier to discover, explore, and use for evidence-based decision-making.

Why It Matters

The Geoportal connects users with data and information that can support conservation planning, monitoring, research, and policy. Since its launch in September 2024, it has recorded over one million hits.

Explore: <https://rcoe-geoportal.rcmrd.org>





02. MAP BOOK

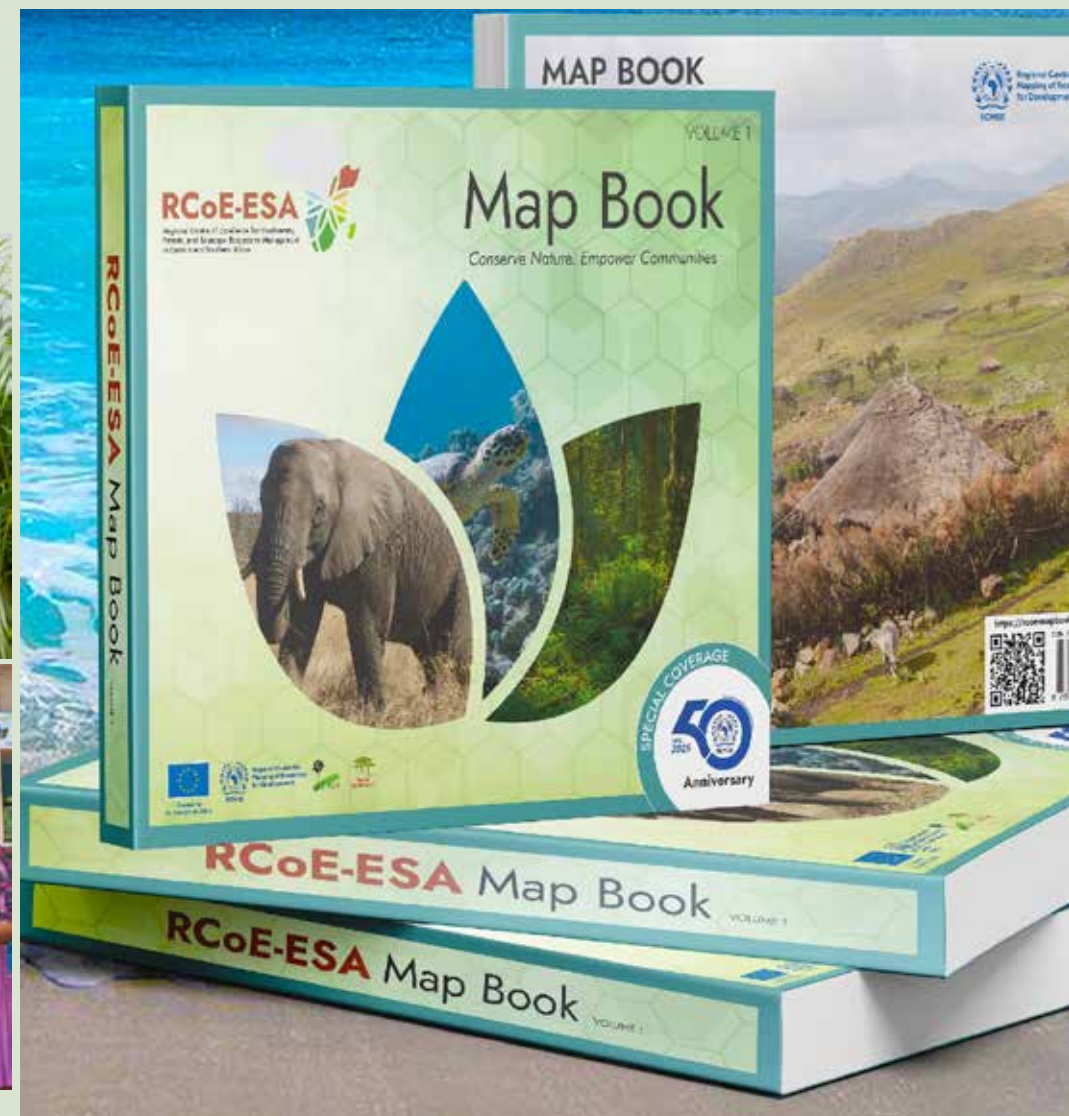
See the story in the data

The RCoE Map Book transforms complex environmental, social, and development data into accessible visual stories. Through thematic maps and indicators, it helps users see patterns, understand change, and explore the connections between people, places, and nature.

What It Brings Together

Designed to make geospatial evidence accessible beyond technical audiences, the Map Book turns data into insights that can inform conservation and development decisions.

Explore: <https://rcoe-mapbook.rcmr.org>





03. COMMUNITY

Connect. Share. Learn.

The RCoE Community creates a collaborative space for researchers, practitioners, conservation professionals, and community champions to connect, exchange knowledge, and share experience. It brings together people working across biodiversity and geospatial science, creating opportunities to learn from one another and amplify solutions that are making a difference on the ground.

The Power of Community

Conservation is not achieved by data alone. It is achieved by people working together.

JOIN THE COMMUNITY → <https://rcoe-community.rcmrd.org>





04. ARTS & MAPS

Where geography meets creativity

Arts & Maps explores the intersection of geography, art, and storytelling. It invites artists, students, communities, and young people to see maps differently — and to use creativity to communicate the value of nature and place. Maps become more than representations of geography; they become tools for education, awareness, expression, and connection.

Creativity & Innovation That Connects

Arts & Maps creates new ways to communicate conservation messages and inspire audiences beyond traditional scientific communication.

Explore: <https://rcoe-artsandmaps.rcmrd.org>



Beyond the Map



05. MULTIMEDIA

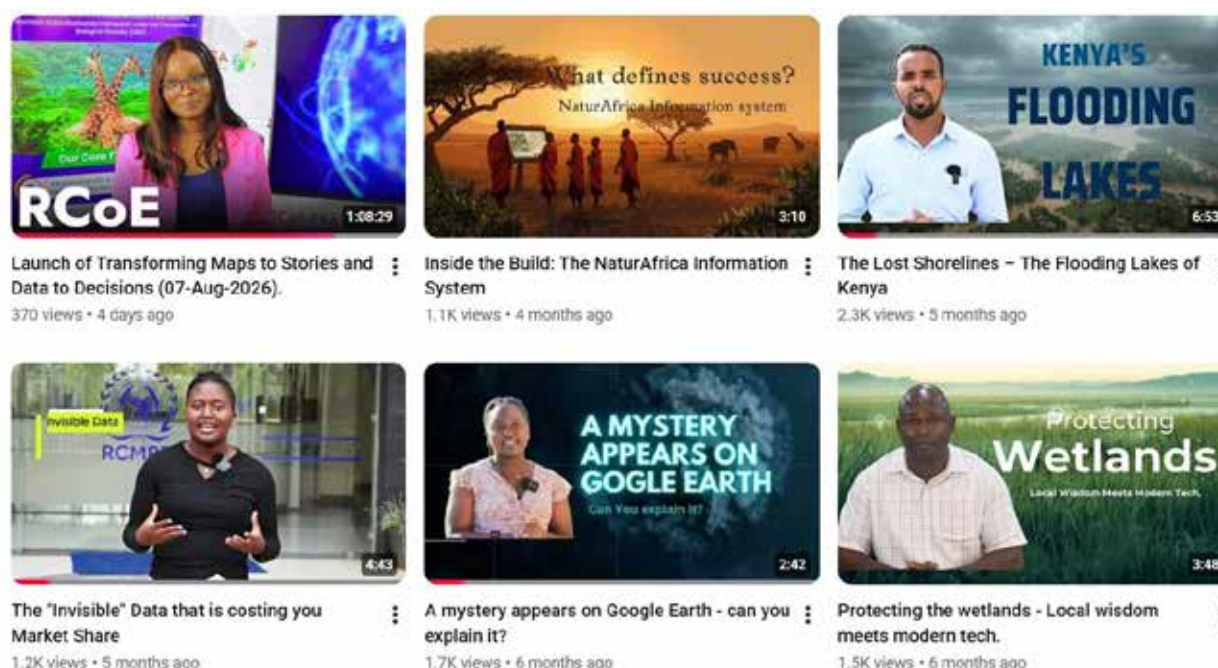
Science, brought to life

The RCoE Multimedia Hub transforms environmental knowledge into engaging digital content — from videos and infographics to interviews, explainers, and visual stories. It makes complex biodiversity and geospatial concepts easier to understand, share, and engage with across different audiences and platforms.

Telling Stories Through Video and Photography

Powerful evidence becomes more impactful when people can see it, understand it, and share it.

Watch & Explore: <https://www.youtube.com/@RCoE-ESA>





06. COMIC BOOK

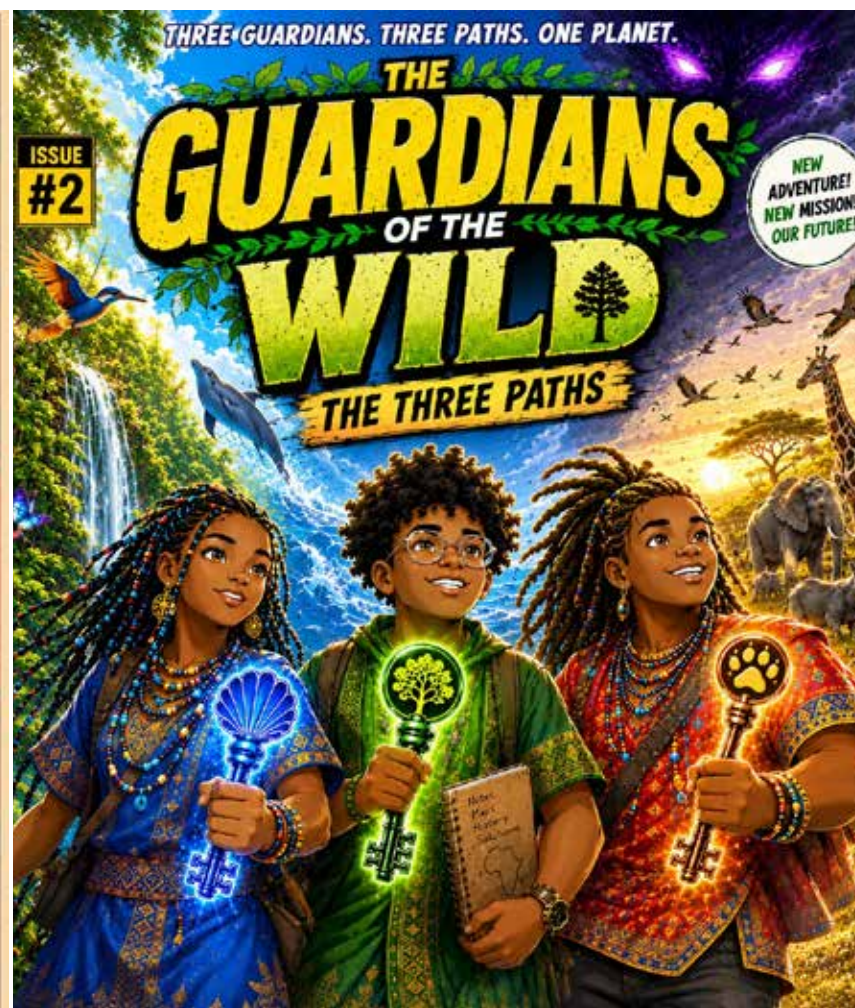
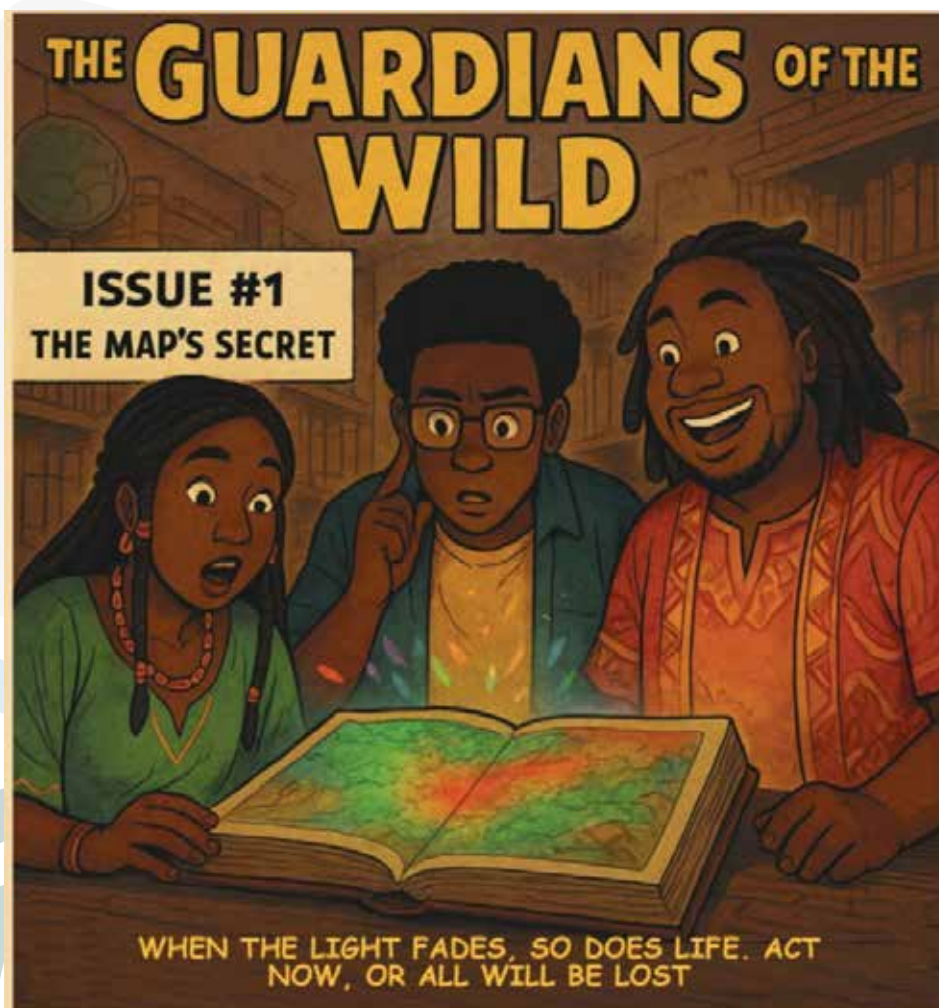
Complex ideas. Simple stories.

The RCoE Comic Book uses storytelling and illustration to make environmental and geospatial concepts accessible to young people, communities, and non-technical audiences. By turning complex issues into relatable stories and characters, the series creates an engaging pathway to learning about biodiversity, conservation, and the environment.

Learning Through Stories and Characters

A different way to communicate science. A powerful way to engage the next generation.

Read and enjoy: <https://rcoe-mapbook.rcmrd.org/pages/comic-story>





07. SPORTS

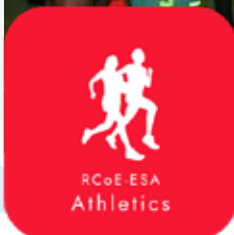
Play. Connect. Protect.

RCoE Sports brings environmental awareness into spaces where people connect, compete, and collaborate. Through sport, the initiative links health, education, youth empowerment, and environmental awareness, creating opportunities to communicate conservation messages in accessible and memorable ways.

More Than a Game

Protecting nature is a shared responsibility - and sometimes the best conversations begin away from the conference room.

Beyond the Map





08. TRAININGS

Build skills. Build capacity.

The RCoE Training Portfolio equips individuals, institutions, and communities with practical skills in geospatial technology, biodiversity, environmental management, and data-driven decision-making. Through online learning, workshops, and hands-on training, RCoE is building a growing community of people able to turn geospatial information into practical action.

From Learning to Action

Participants are not only trained to use technology — they are encouraged to create maps, analyse data, develop stories, communicate evidence, and apply what they learn to their own work.





RCOE-ESA
Geo Hex

09. GEOHEX

See biodiversity at a finer scale

GeoHex is a smart geospatial framework that uses hexagonal grids to organise, visualise, and analyse environmental information at high resolution. By transforming complex spatial datasets into comparable hexagonal units, GeoHex helps reveal patterns, hotspots, and changes that can support research, monitoring, planning, and policy.

Data → Hexagons → Patterns → Decisions

GeoHex demonstrates how innovative spatial technologies can create new ways of understanding environmental change.

Explore GeoHex: <https://rcoe-geoportal.rcm-rd.org/pages/geo-hex>



GEO HEX EXPLAINED

Smarter Mapping with Hexagons



WHAT IS GEO HEX?



Geo Hex is a global hexagonal grid system used for mapping, planning, and geospatial analysis.



WHY HEXAGONS?

- ✓ Smooth coverage
- ✓ Equal area
- ✓ Less distortion
- ✓ Clean data modelling



NOW BEING USED IN

Biodiversity Conservation

- Wildlife corridors
- Forest monitoring



10. POLICY BRIEFS

From evidence to action

The RCoE Policy Briefs translate scientific research, geospatial evidence, and field experience into concise, practical recommendations for policymakers and decision-makers. They bridge the gap between data and decisions, helping ensure that evidence generated through RCoE reaches the people and institutions shaping biodiversity and environmental policy.

Evidence → Insight → Recommendation → Action

Designed for decision-makers, each brief distils complex issues into accessible messages that drive governance and conservation.

Explore the briefs: <https://rcoe-geoportal.rcmr.org/pages/policy-briefs>





11. WDPKA VALIDATOR

Validate before you submit

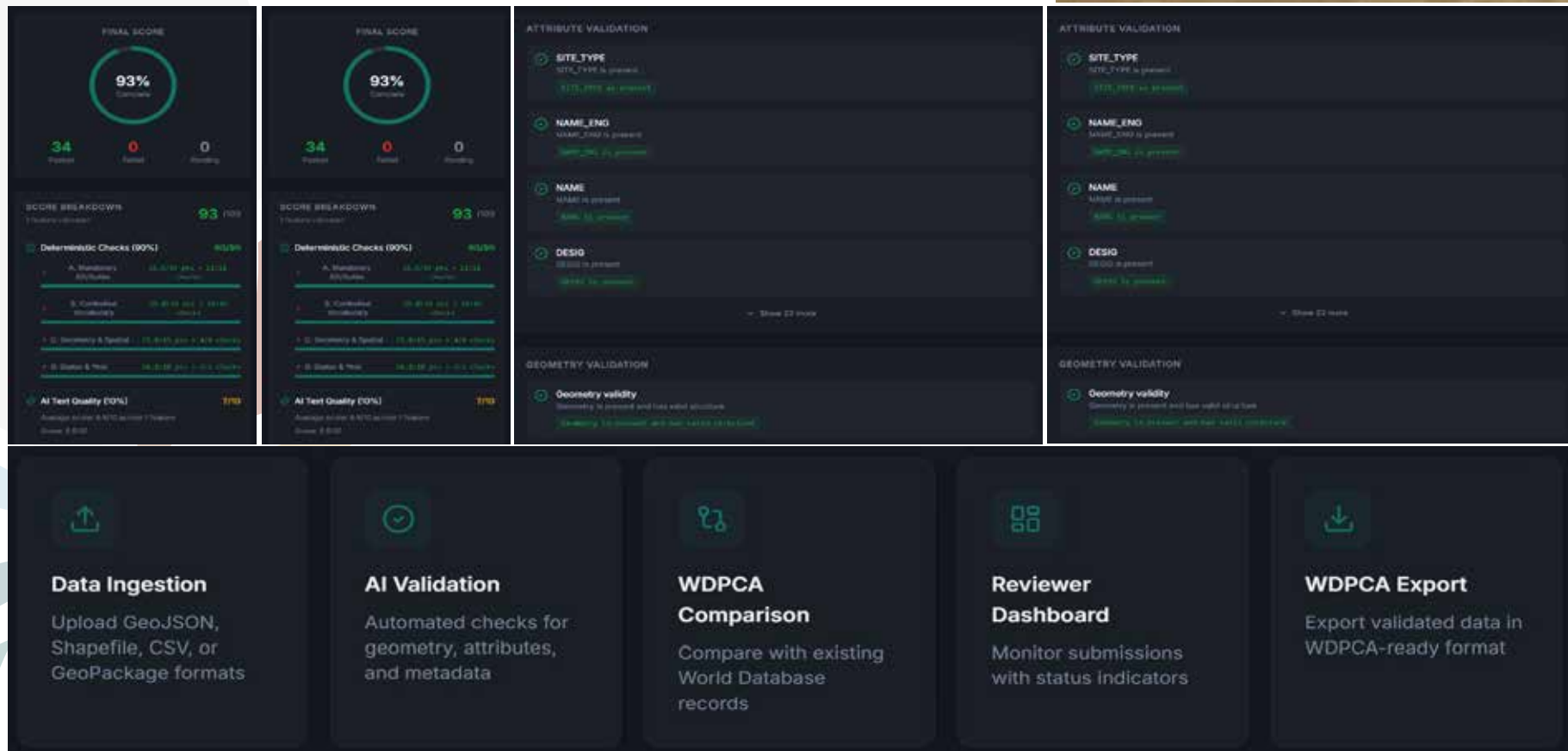
The RCoE World Database on Protected and Conserved Areas (WDPKA) Validator is an AI-enabled geospatial tool that automatically checks Protected and Conserved Areas data against WDPKA data standards, helping identify errors and inconsistencies before submission. It helps countries improve data quality, streamline the validation process, and strengthen biodiversity reporting.

Supporting GBF Target 3

The tool transforms data validation from a lengthy manual process into a more efficient, technology-enabled workflow.

Validate: <https://wdpavalidator.com>

Beyond the Map



Beyond the Map







CHAPTER SIX

POLICY, GOVERNANCE AND
LEGAL FRAMEWORKS



6.1 BIODIVERSITY POLICY AND GOVERNANCE

Introduction

Protected and conserved areas (PCAs) remain central to biodiversity conservation and ecosystem resilience in Eastern and Southern Africa (ESA). The region hosts globally significant biodiversity, including extensive savannah ecosystems, montane forests, wetlands, and marine habitats that support both ecological integrity and human livelihoods. Effective conservation of these landscapes depends not only on ecological management but also on robust policy frameworks and governance systems that guide decision-making, institutional coordination and stakeholder participation.

Over the past three decades, global environmental agreements and regional cooperation mechanisms have shaped national conservation policies across the region. Countries have expanded protected area networks, adopted biodiversity strategies, and strengthened legal frameworks to meet international commitments such as those under the Convention on Biological Diversity and the Kunming-Montreal Global Biodiversity Framework. At the same time, governance models have evolved to incorporate community participation, transboundary conservation and collaborative management approaches.

The IUCN recognises four governance types for protected areas, based on who formally holds decision-making authority and management responsibility: governance by government, shared governance, private governance, and governance by Indigenous peoples and local communities.

According to the World Database on Protected Areas, as of February 2024, governance type had been reported for 78.5% of protected areas in Africa. Of these, more than half (58.6%) were under state governance, 12.2% were privately governed, Indigenous peoples and local communities governed 3.6%, and governance was shared among multiple actors in a further 4.2% of cases. Just over one in five African protected areas (21.5%), however, still lacked reported governance data, an important knowledge gap that merits prioritisation.

This chapter examines the policy and governance landscape shaping protected and conserved areas in Eastern and Southern Africa, focusing on the influence of global and regional frameworks, na-

tional policy instruments, governance models and emerging challenges affecting implementation.

Policy Instruments Governing Protection of Biodiversity and Forests in ESA

This subsection provides an overview of the key policy instruments shaping biodiversity and forest protection across the region. These instruments include legally binding agreements, voluntary frameworks, regional protocols, and national policies that collectively influence how countries design and implement conservation strategies. They reflect evolving priorities from species protection and habitat conservation to integrated landscape management, climate change mitigation, and community-based approaches.

The accompanying infographic visually traces the evolution of major global and regional agreements, illustrating how policy responses have expanded over time to address emerging environmental challenges. In addition, the table presents a structured summary of these instruments, highlighting their scope, and relevance to ESA countries. Together, these materials provide a comprehensive foundation for understanding the policy landscape that underpins biodiversity and forest governance in the region.





Figure 6.1 Global Environmental Agreement

Table 6.1: Summary of Key Biodiversity Agreements and Policies within the ESA Region

	Title	Year of Enactment	Country/Region	Summary of Key Points
1.	Kunming-Montreal Global Biodiversity Framework	2022	Global	a. Sets targets to reverse and stop biodiversity loss by 2030. b. Promotes protecting 30% of terrestrial and marine areas. c. Focuses on reducing invasive species, minimizing pollution, and restoring degraded ecosystems
2.	United Nations Decade on Ecosystem Restoration (2021–2030)	2021	Global	a. Global initiative to restore degraded ecosystems, improve biodiversity, and combat climate change. b. Promotes reforestation, sustainable land management, and community involvement. c. Encourages funding and technical support for large-scale restoration projects.
3.	Nagoya Protocol (Access and Benefit Sharing)	2010	Global	a. Provides legal framework for fair and equitable sharing of benefits derived from genetic resources. b. Encourages indigenous communities to benefit from traditional knowledge associated with biodiversity. c. Supports sustainable development through biodiversity-related innovations
4.	African-Eurasian Migratory Waterbird Agreement (AEWA)	1995	Africa- Europe	a. Protects migratory waterbirds and their habitats, particularly in wetland ecosystems. b. Promotes international collaboration and action plans for species conservation. c. Focuses on sustainable use of waterbird populations and addresses threats like habitat loss.
5.	Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention)	1979	Global	a. Aims to conserve migratory species crossing national boundaries. b. Promotes habitat protection, research, and cooperation among countries. c. Encourages regional agreements such as the AEWA (African-Eurasian Migratory Waterbird Agreement).

#	Title	Year of Enactment	Country/Region	Summary of Key Points
6.	United Nations Framework Convention on Climate Change (UNFCCC)	1992	Global	a. Recognizes the impact of climate change on ecosystems, biodiversity, and human livelihoods. b. Introduces programs like REDD+ to reduce deforestation and degradation. c. Encourages countries to integrate biodiversity considerations into national climate action plans.
7.	Ramsar Convention on Wetlands	1971	Global	a. Promotes conservation and sustainable use of wetlands of international importance. b. Designates Ramsar sites for biodiversity protection, particularly for migratory birds and waterfowl. c. Encourages wetland restoration, sustainable fisheries, and combating climate change impacts
8.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1973	Global	a. Regulates international trade of endangered species to ensure sustainability. b. Lists species under three appendices with varying degrees of protection. c. Requires member states to create national laws to monitor and enforce trade regulations for flora and fauna.
9.	Convention on Biological Diversity (CBD)	1992	Global	a. A global agreement promoting the conservation of biodiversity, sustainable use of its components, and fair sharing of benefits arising from genetic resources. b. Countries develop and implement National Biodiversity Strategies and Action Plans (NBSAPs) to address biodiversity issues. c. Encourages protected area management, species conservation, and integration of biodiversity into national decision-making.
10	Benguela Current Convention	2013	Regional (Angola, Namibia, South Africa)	a. promotes a coordinated regional approach to the conservation and sustainable use of the Benguela Current Large Marine Ecosystem

#	Title	Year of Enactment	Country/Region	Summary of Key Points
11	National Biodiversity Strategy and Action Plan 2019-2025	2019	Angola	a. Aims to ensure the conservation and sustainable use of biodiversity components, emphasizing the fair and equitable sharing of benefits arising from the use of biological resources b. The NBSAP provides biodiversity action plans for each of Angola's provinces, as well as for non-governmental organizations, religious institutions, and international cooperation sectors, ensuring localized and collaborative conservation efforts. c. The NBSAP emphasizes the importance of monitoring biodiversity status and implementing measures to prevent ecosystem degradation and biodiversity loss.
12	Basic Law on the Environment, Law 5/98	1998	Angola	a. This Law defines the basic concepts and principles of protection, preservation and conservation of the environment, promotion of the quality of life and the rational use of natural resources, in accordance with the Constitution of the Republic of Angola
13	National Biodiversity Strategy and Action Plan (NBSAP)	2016	Botswana	a. Outlines Botswana's approach to biodiversity conservation, emphasizing sustainable development and integrated conservation. b. Its strategic objectives such as enhancing understanding of biodiversity, ensuring long-term conservation, and promoting sustainable utilization of resources.
14	Wildlife Policy	2013	Botswana	a. Aims to conserve wildlife and biological diversity, addressing the status of various species and the challenges they face. b. Provides a framework for the protection of wildlife habitats and the management of human–wildlife conflicts.
15	Community-Based Natural Resources Management (CBNRM) Policy	2007	Botswana	a. Focuses on achieving biodiversity conservation and rural development, particularly improving rural livelihoods. b. Encourages local communities to participate in tourism development and natural resource conservation, fostering a sense of ownership.

#	Title	Year of Enactment	Country/ Region	Summary of Key Points
16	Wildlife Conservation and National Parks Act	1992	Botswana	a. Serves as the foundation for Botswana's protective measures, enabling the establishment of protected areas that safeguard habitats critical to various species. b. Regulates trade in endangered fauna and flora, aligning with international agreements such as CITES.
17	National Biodiversity Strategy and Action Plan (NBSAP)	2016	Comoros	a. Outlines the country's strategic approach to conserving and sustainably managing its biodiversity. b. Includes objectives such as integrating biodiversity considerations into national policies and promoting the equitable sharing of benefits derived from genetic resources.
18	National Environment Policy	2001	Comoros	a. Safeguards and protects biological diversity and areas of great ecological and/or cultural interest. b. Promotes the conservation and restoration of forest heritage through rational management of forest resources.
19	National Strategy and Action Plan for Biological Diversity	2000	Comoros	Provides a comprehensive framework for biodiversity conservation in Comoros, detailing strategies and actions to protect and sustainably manage the country's biological resources.
20	National Biodiversity Strategy and Action Plan (NBSAP)	2016	Djibouti	Outlines Djibouti's commitment to biodiversity conservation, focusing on reducing pressures on biodiversity and unsustainable resource use.
21.	Framework Law on the Environment	2000	Djibouti	Provides a comprehensive legal framework for environmental protection and management in Djibouti, including provisions related to biodiversity conservation.
22.	Decree on Environmental Impact Assessment	2011	Djibouti	Adopted under the Framework Law, this decree establishes procedures for conducting Environmental Impact Assessments (EIAs), ensuring that development projects consider potential impacts on biodiversity.

#	Title	Year of Enactment	Country/Region	Summary of Key Points
23.	The Macro policy	1994	Eritrea	a. States the need for environmental impact assessments to determine the potential environmental consequences of major investment decisions. b. Recognises the negative impacts of some traditional farming practices on crop productivity, as well as progressive environmental degradation attributed to increasing demand for fuelwood and inadequate soil and water conservation measures. c. Sets out the government's commitment to allocate financial resources to promote the rehabilitation, conservation, development, and proper exploitation of natural resources.
24.	The National Environmental Management Plan (NEMP-E) for Eritrea	1994	Eritrea	a. A strategic instrument addressing environmental issues with a direct or indirect bearing on human health and well-being, natural resource management, and socio-economic, institutional, and international affairs and conflict management. b. Serves as a working document setting out environmental and developmental prospects for Eritrea.
25.	The Tourism Development Policy and Strategy	2020	Eritrea	a) Sets out the need to develop tourism in a manner that encourages conservation and enhancement of the natural environment, particularly the protection of scenic areas, watersheds, ecosystems, biodiversity, and the expansion of forests and wildlife populations. b) Encourages the involvement of local communities in conservation programmes linked to tourism development and management.
26.	Biodiversity and Ecosystems Conservation Framework	2021	Eswatini	Introduces Other Effective Conservation Measures (OECM) to enhance the protection of biodiversity and ecosystems, aligning with the principles of the UN Convention on Biological Diversity
27.	National Biodiversity Strategy and Action Plan (NBSAP) 2016–2022	2016	Eswatini	Building on the previous plan, places biodiversity at the centre of development efforts to achieve economic growth and alleviate poverty, especially in rural areas.

#	Title	Year of Enactment	Country/Region	Summary of Key Points
28.	National Climate Change Policy	2016	Eswatini	a) Addresses the challenges posed by climate change through adaptation and mitigation strategies. b) Outlines actions to enhance resilience to climate impacts and reduce greenhouse gas emissions, aligning with international climate agreements.
29.	National Policy on Biodiversity Conservation and Research	1998	Ethiopia	a) Emphasises the importance of biodiversity conservation as a condition for sustainable socio-economic development and environmental management. b) Underscores the need for conservation, proper management, and sustainable use of biodiversity, supported by policy, legislation, and capacity building.
30.	National Biodiversity Strategy and Action Plan (NBSAP) 2015–2020 (pending update to conform to KMGBF)	2015	Ethiopia	Building on the previous plan, aims to integrate biodiversity considerations into national development plans, strengthen the national biodiversity information system, and enhance the participation of local communities in biodiversity conservation and sustainable use.
31.	Access and Benefit Sharing Proclamation	2015	Ethiopia	Regulates access to genetic resources and traditional knowledge, ensuring that benefits arising from their use are shared equitably with the country and local communities.
32.	Environmental Policy	1997	Ethiopia	Focuses primarily on conservation of natural resources, pollution control, sustainable land use, forest management, and environmental impact assessment.
33.	Conservation Strategy of Ethiopia (CSE)	1997	Ethiopia	A national strategy to protect and manage Ethiopia's biodiversity by addressing threats to its ecosystems and wildlife, aiming to achieve sustainable conservation through community engagement, land-use planning, and integrated approaches to environmental management, while considering the needs of local communities and economic development.
34.	National Biodiversity Strategy and Action Plan (NBSAP) 2019–2030	2019	Kenya	Outlines Kenya's strategic approach to biodiversity conservation, aiming to integrate biodiversity considerations into national development plans and enhance the sustainable use of biological resources.
35.	National Wildlife Policy	2020	Kenya	Provides a framework for the conservation and sustainable management of wildlife resources in Kenya, emphasising community involvement and the establishment of conservancies.

#	Title	Year of Enactment	Country/Region	Summary of Key Points
36.	National Wildlife Strategy 2030	2018	Kenya	a) Serves as Kenya's comprehensive roadmap for transforming wildlife conservation. b) Aligned with Kenya's Vision 2030 and the Government's Big Four Agenda, it aims to address emerging challenges and enhance the sustainable management of wildlife resources.
37.	Environmental Management and Coordination Act (EMCA)	1999	Kenya	Provides a framework for the management of the environment, including the conservation of biodiversity, and establishes the National Environment Management Authority (NEMA) to oversee environmental matters.
38.	Wildlife Conservation and Management Act	2013	Kenya	Provides for the conservation and management of wildlife in Kenya, including the establishment of protected areas and the regulation of wildlife use.
39.	National Environment Policy	2013	Kenya	a) Aims to improve quality of life by sustainably managing the environment and natural resources. b) Includes measures to address climate change, promote research, and encourage community participation.
40.	National Environmental Policy	1998	Lesotho	Aims to protect and conserve the environment to achieve sustainable development, focusing on social and economic dimensions, management and conservation of natural resources, improvement of environmental quality, and promotion of community participation.
41.	Biosafety Policy	2005	Lesotho	Recognising the potential risks of biotechnology, this policy addresses environmental protection in the context of genetic resources, aligning with international agreements to ensure the safe use of biotechnology.
42.	Biodiversity Resources Management Bill	2022	Lesotho	a) Aims to conserve biodiversity, ensure sustainable use of biological resources, and promote fair sharing of benefits from genetic resources. b) Also addresses plant protection, seed, environment, energy, water, mining, range management, and science and technology policies.
43.	National Strategy on Lesotho's Biological Diversity	2000	Lesotho	a) Outlines the country's approach to conserving and sustainably using its biological resources. b) Includes measures such as identifying biodiversity components, establishing protected areas, promoting sustainable development in adjacent areas, and enhancing public education on the impacts of pollution.

#	Title	Year of Enactment	Country/ Region	Summary of Key Points
44.	National Environmental Policy (NEP)	2019	Madagascar	Sets the general framework for environmental protection and the sustainable management of natural resources, including biodiversity, emphasising an integrated approach to environmental challenges and sustainable development.
45.	National Biodiversity Strategy and Action Plan (NBSAP)	2015	Madagascar	a) Aligns with CBD strategies and addresses the impacts of climate change on biodiversity, outlining strategies for the restoration of degraded ecosystems. b) Protects ecosystems, including forests, wetlands, and marine areas. c) Promotes sustainable management of biodiversity resources and strengthens community participation and engagement in conservation efforts.
46.	Madagascar's Forest Code	2015	Madagascar	a) Governs the management, use, and protection of the country's forests, a critical part of its biodiversity. b) Promotes sustainable forest management and emphasises the conservation of forests and the restoration of degraded areas. c) Allows for the establishment of protected areas and forest reserves.
47.	National Biosafety and Biosecurity Policy and Guidelines	2022	Madagascar	a) Addresses the regulation of genetically modified organisms (GMOs) and biotechnology in relation to biodiversity. b) Supports Madagascar's efforts to integrate biodiversity conservation with emerging technologies and prevent potential risks.
48.	Protected Areas Policy	2017	Madagascar	Outlines the management framework for protected areas, including biodiversity conservation, sustainable tourism, and community involvement.
49.	Wildlife Conservation Policy	1990	Madagascar	Focuses on the protection and management of Madagascar's rich and endemic wildlife species, some of which are critically endangered, including provisions for regulating hunting, trade, and habitat protection.
50.	National Land Use Policy	2016	Madagascar	Aims to improve land management practices, reduce deforestation, and promote sustainable agriculture, encouraging practices that minimise land degradation and protect biodiversity.

#	Title	Year of Enactment	Country/ Region	Summary of Key Points
51.	National Biodiversity Strategy and Action Plan (NBSAP)	2015	Malawi	Aims to enhance knowledge, integrate biodiversity management, mitigate direct pressures on biodiversity, protect ecosystems and genetic diversity, enhance climate resilience, and implement biodiversity programmes.
52.	National Environment Policy	2004	Malawi	a) Aims to ensure sustainable environmental management and biodiversity conservation. b) Aims to strengthen institutional frameworks for environmental governance. c) Aims to promote community-based natural resource management.
53.	Wildlife Act	2017	Malawi	Aims to conserve endangered species and maintain ecological balance by ensuring protection of wildlife reserves and national parks and regulation of hunting and trading of wildlife.
54.	Access to Genetic Resources and Benefit Sharing (ABS) Framework	2015	Malawi	Aligned with the Nagoya Protocol under the CBD, this framework regulates access to genetic resources and ensures fair and equitable sharing of benefits arising from their use.
55.	National Biodiversity Strategy and Action Plan (NBSAP)	2016	Mauritius	Provides a framework for conserving biodiversity, promoting sustainable use of resources, and ensuring fair and equitable sharing of benefits arising from genetic resources, in line with the Aichi Biodiversity Targets.
56.	Mauritius National Climate Change Adaptation Policy	2012	Mauritius	Addresses the impacts of climate change on biodiversity and ecosystems, including strategies for enhancing the resilience of natural habitats and species to climate change.
57.	Second National Biodiversity Strategy and Action Plan (NBSAP2)	2026	Namibia	a) Building on the first plan, addresses the underlying causes of biodiversity loss by mainstreaming biodiversity into various sectors. b) Envisions Namibia's biodiversity as healthy and resilient to threats, with conservation and sustainable use as key drivers of poverty alleviation and equitable economic growth, particularly in rural areas.
58.	Environmental Management Act	2007	Namibia	Provides a framework for sustainable environmental management, including biodiversity conservation, emphasising the need for environmental assessments and the integration of environmental considerations into development planning.
59.	National Biodiversity Strategy and Action Plan (NBSAP)	2016	Rwanda	Outlines Rwanda's commitment to the conservation and sustainable use of biodiversity, aiming to integrate biodiversity into national development plans and address threats to biological resources.

#	Title	Year of Enactment	Country/Region	Summary of Key Points
60.	Rwanda Biodiversity Policy	2011	Rwanda	Provides a comprehensive framework for the conservation of biodiversity in Rwanda, aligning with the Convention on Biological Diversity, which Rwanda ratified in 1995.
61.	Law No. 48/2018 on Environment	2018	Rwanda	Revises and supplements the Organic Law on Environmental Protection and Management, strengthening provisions related to environmental governance, pollution control, waste management, and biodiversity conservation.
62.	National Biodiversity Strategy and Action Plan	2016	Seychelles	Outlines the government's strategy for biodiversity conservation, aiming to integrate biodiversity into climate change adaptation programmes.
63.	Seychelles' Protected Areas Policy	2013	Seychelles	Provides principles and rules to guide decisions and achieve rational outcomes in the management of protected areas, ensuring the conservation of the archipelago's biodiversity for the well-being of present and future generations.
64.	National Policy and Strategic Action Plan on Coral Reef Conservation and Management	2022	Seychelles	Developed through national stakeholder consultation, this policy supports the conservation and adaptive management of Seychelles' coral reefs and associated ecosystems.
65.	Seychelles' National Climate Change Policy	2020	Seychelles	Aims to facilitate a coordinated, coherent, proactive, and effective response to the local, regional, and global challenges and opportunities presented by climate change.
66	National Biodiversity Strategy and Action Plan (NBSAP)	2015	Somalia	a) Promotes the sustainable use of biodiversity services and products while ensuring equitable distribution of benefits and responsibilities among different segments of society. b) Encompasses a 2050 Vision highlighting how achieving desired outcomes can contribute to Somalia's socio-economic development.
67	Six Pillar Policy	2013	Somalia	Introduced by the President of Somalia, this policy outlines key strategies for stabilising and developing the nation, including the enactment of laws to preserve and protect the environment and the incorporation of environmental considerations into national development plans.
68	National Environmental Management: Biodiversity Act 10	2004	South Africa	Provides a framework for the management and conservation of South Africa's biodiversity, including the protection of species and ecosystems, sustainable use of indigenous biological resources, and the establishment of the South African National Biodiversity Institute.

#	Title	Year of Enactment	Country/ Region	Summary of Key Points
69	National Biodiversity Strategy and Action Plan (NBSAP)	2015	South Africa	a) Identifies priorities for biodiversity management in South Africa, aligning them with global targets and national development goals. b) Serves as a framework for integrating biodiversity considerations into various sectors.
70	National Biodiversity Framework (NBF)	2019	South Africa	a) Coordinates and aligns the efforts of various stakeholders in the conservation and management of South Africa's biodiversity, supporting sustainable development. b) Emphasises the need for an integrated, coordinated, and consistent approach to biodiversity management.
71	National Biodiversity Strategy and Action Plan (NBSAP)	2018	South Sudan	It provides a framework for biodiversity management & conservation, integrating biodiversity into the country's economic prosperity & social welfare goals under Vision 2040.
72	Fifth National Report to the Convention on Biological Diversity (CBD)	2018	South Sudan	Outlines South Sudan's progress in implementing the CBD, including the status of its NBSAP and the mainstreaming of biodiversity into national policies and programmes.
73.	National Biodiversity Strategy and Action Plan (NBSAP)	2015	Sudan	Aligns with Sudan's commitments under the CBD, emphasising multi-sectoral collaboration implemented over a five-year period.
74.	Law Regulating the Preservation of Pastures and Development of Fodder Resources	2015	Sudan	Focuses on conserving pasture lands and developing fodder resources, crucial for maintaining biodiversity and supporting sustainable livestock management.
75.	Environment Conservation Act	2001	Sudan	Provides a legal framework for environmental protection, addressing issues related to pollution control, natural resource management, and biodiversity conservation.
76.	National Biodiversity Strategy and Action Plan (NBSAP)	2025	Tanzania	Outlines strategies for biodiversity conservation, aiming to address challenges and foster sustainable socio-economic development.
77.	National Environmental Policy	2021	Tanzania	a) Addresses emerging environmental challenges and builds on the achievements of the 1997 policy. b) Aims to strengthen environmental management and promote sustainable use of natural resources.

#	Title	Year of Enactment	Country/ Region	Summary of Key Points
78.	Environmental Management Act	2004	Tanzania	a) Serves as a comprehensive legal and institutional framework guiding environmental management decisions in Tanzania. b) Introduces tools such as environmental impact assessments and strategic environmental assessments to promote sustainable practices.
79.	National Biodiversity Strategy and Action Plan	2025	Uganda	Addresses emerging biodiversity challenges, aligning with global biodiversity targets and emphasising the integration of biodiversity considerations into national development planning.
80.	National Guidelines for Biodiversity and Social Offsets	2022	Uganda	Provides a framework for implementing biodiversity offsets to compensate for unavoidable impacts of development projects, ensuring no net loss of biodiversity and promoting social benefits.
81.	National Biodiversity Strategy and Action Plan (NBSAP-2)	2025	Zambia	a) Aims to ensure that, by 2025, biodiversity is valued, conserved, restored, and wisely used. b) Emphasises maintaining ecosystem services, sustaining a healthy environment, and delivering essential benefits for all Zambians and the national economy.
82.	Environmental Management Act	2011	Zambia	a) The principal environmental legislation, introducing strict requirements for Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA) for large-scale development projects. b) Aims to enhance environmental protection and sustainable resource use.
83.	National Biodiversity Strategy and Action Plan (NBSAP)	2026	Zimbabwe	Aims to use traditional knowledge, research, technology, innovations, and best practice to protect the environment, conserve biodiversity, and ensure sustainable use of ecosystems for the benefit of present and future generations.
84.	National Environmental Policy and Strategies	2009	Zimbabwe	Aims to harmonise environmental management and promote the sustainable use of natural resources, addressing challenges such as deforestation, pollution, and biodiversity loss.

6.2 IPLC INSTRUMENTS GOVERNING BIODIVERSITY AND FORESTRY IN EASTERN AND SOUTHERN AFRICA

Indigenous Peoples and Local Communities (IPLCs) play a critical role in biodiversity conservation and sustainable forest management across Eastern and Southern Africa. Many biodiversity-rich landscapes including forests, wetlands, rangelands and coastal ecosystems, within the region are traditionally managed and protected by local and indigenous communities through customary governance systems and traditional ecological knowledge. As global biodiversity loss and environmental degradation continue to intensify, the recognition of IPLCs as key custodians of natural resources has increasingly shaped biodiversity and forestry governance frameworks at international, regional, and national levels.

Recognition of the contribution IPLCs make to effective conservation has grown substantially over recent decades. An approach to conservation that takes cultural diversity, traditional ecological knowledge, and the active engagement of local people seriously is now widely understood to deliver stronger social and ecological outcomes, and to underpin more durable long-term conservation strategies.

Protected areas remain the cornerstone of efforts to safeguard natural and cultural heritage, but positive outcomes for biodiversity cannot come at the expense of the Indigenous peoples and local communities who depend on the natural resources within and around these areas. One way to reconcile these goals is to give IPLCs a genuine role in the management and governance of protected areas themselves.

Areas governed, managed, and conserved by IPLCs are collectively known as 'territories of life', or Indigenous and Community Conserved Areas (ICCAs). ICCAs may or may not meet the strict technical definition of a protected area. The IUCN World Parks Congress has characterised them as:

"Natural and/or modified ecosystems containing significant biodiversity values and ecological services, voluntarily conserved by (sedentary and mobile) indigenous and local communities, through customary laws or other effective means." (IUCN World Parks Congress)

According to the World Database on Protected Areas, around 500

protected areas in Africa are formally governed by IPLCs, roughly a third of all such protected areas recorded worldwide. These are concentrated in a handful of countries, particularly in Eastern and Southern Africa in Kenya, Namibia, Madagascar and Tanzania. This figure, however, captures only protected areas where IPLC governance is formally recorded; it excludes cases where IPLC governance exists but goes unreported, or where it operates through informal structures outside the database altogether. As a result, a truly comprehensive picture of IPLCs' role in governing protected and conserved areas across Africa does not yet exist, and the contribution IPLCs make is very likely underestimated by current global reporting.

The Convention on Biological Diversity (CBD)

The CBD remains the foundational international instrument governing the relationship between biodiversity and communities. Its three objectives — the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources — created the normative framework within which subsequent IPLC-relevant instruments were constructed, with Article 8(j) as its cornerstone provision: it obligates contracting parties to respect, preserve, and maintain the knowledge, innovations, and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity, and to promote the broader application of such knowledge with the approval and involvement of the knowledge holders.

The Kunming-Montreal Global Biodiversity Framework (GBF), adopted in December 2022, significantly advances the CBD's IPLC agenda, referencing Indigenous peoples more extensively than any previous CBD framework. Several of its 23 targets address justice and equity in conservation directly:

- **Target 1** requires that efforts to halt the loss of high-biodiversity areas respect IPLC rights
- **Target 3** requires that 30x30 protected area and OECM networks be equitably governed, explicitly recognising indigenous and traditional territories

- **Target 5** requires that the use, harvesting, and trade of wild species protect IPLCs' customary sustainable use
- **Target 9** protects and encourages that same customary use while ensuring benefits reach people in vulnerable situations
- **Target 13** requires the fair and equitable sharing of benefits from genetic resources and associated traditional knowledge
- **Target 21** requires that IPLCs' traditional knowledge, innovations, and practices be accessed only with their free, prior, and informed consent
- **Target 22** (the most direct of all) calls for the full, equitable, inclusive, effective, and gender-responsive participation of IPLCs, as well as women, girls, and youth, in biodiversity decision-making at all levels, respecting IPLCs' rights over lands, territories, resources, and traditional knowledge, and ensuring access to justice and protection for environmental human rights defenders
- **Target 23** requires a gender-responsive approach across the Framework's implementation. Taken together, these targets call for human-rights-based approaches that underpin fair and effective IPLC participation in decisions over natural resources, moving well beyond the narrower, area-based framing of earlier biodiversity agreements.

The Nagoya Protocol on Access and Benefit-Sharing

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation, adopted in 2010 and entering into force in 2014, operationalises CBD Article 15 in ways that are directly consequential for IPLCs. The Protocol establishes two parallel tracks for access and benefit-sharing (ABS): one for genetic resources held by national governments, and one for genetic resources and associated traditional knowledge held by IPLCs.

For IPLC-held genetic resources and traditional knowledge, Articles 6(2) and 7 require that access be subject to the prior and informed consent of IPLCs and governed by mutually agreed terms, in accor-

dance with domestic legislation. South Africa's Biodiversity Act and its associated regulations provide one of the more developed national Access and Benefit-Sharing (ABS) frameworks in the region, specifically recognising community custodians of traditional knowledge. Ethiopia's access and benefit-sharing declarations go further, establishing community biocultural protocols as a recognised instrument of consent. Most other states in the region, however, have either not enacted national ABS legislation or have enacted frameworks that speak primarily to government-to-business relationships, leaving community entitlements vague or unenforced.

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

Adopted by the United Nations General Assembly in 2007, UNDRIP is not a legally binding treaty but occupies an authoritative normative position in international human rights law. Its provisions on land, territory, and resources are directly relevant to IPLC governance of forests and biodiversity in the region.

Article 26 declares that indigenous peoples have rights to the lands, territories, and resources they have traditionally owned, occupied, or used, and that states shall give legal recognition and protection to these lands, with due respect for the customs and traditions of the indigenous peoples concerned. Article 32 establishes the right of indigenous peoples to determine and develop priorities for the development or use of their lands, territories, and other resources, subject to the requirement of free, prior, and informed consent (FPIC) before approval of any project affecting those lands.

Table 6.2: Summary of Key IPLC Instruments Governing Biodiversity and Forestry in ESA

Tier	Instrument	Year	Type	Key IPLC provisions	Relevance to Eastern & Southern Africa
International	Convention on Biological Diversity (CBD)	1992	Biodiversity	Art. 8(j): respect & preserve IPLC traditional knowledge; Art. 10(c): protect customary use of biological resources	Ratified by all states in the region; foundation for national biodiversity law and TK protection
International	Nagoya Protocol on ABS	2010	Biodiversity	Arts 6–7: IPLC prior informed consent (PIC) and mutually agreed terms (MAT) for access to TK and genetic resources	South Africa and Ethiopia have the most developed national ABS frameworks; most states still lack IPLC-specific implementation
International	Kunming-Montreal Global Biodiversity Framework (GBF)	2022	Biodiversity	Target 22: full and effective IPLC participation in biodiversity decisions; Target 3 (30×30): recognises IPLC-governed territories	Opportunity for ICCAs and community conservancies to count towards 30×30; risk of state-led protected area expansion
International	UN Declaration on the Rights of Indigenous Peoples (UNDRIP)	2007	Indigenous rights	Art. 26: rights to traditionally owned lands; Art. 32: FPIC before project approval affecting IPLC territories	Cited in the Ogiek (Mau Forest) judgment by the African Court on Human and Peoples' Rights (2017)
Regional	African Charter on Human and Peoples' Rights (Banjul Charter)	1981	Regional / AU	Arts 21–22: peoples' rights to natural resources and development; Art. 24: right to a satisfactory environment	Endorois case (2010) established indigenous land and development rights; Ogiek case (2017) affirmed forest community tenure
Regional	SADC Protocol on Forestry	2002	Regional	Art. 5: participatory forest management with forest-dependent communities; Art. 6: recognition of customary rights and traditional practices	Supports CBNRM frameworks across Namibia, Botswana, Zimbabwe, and Tanzania
Regional	EAC Protocol on Environment and Natural Resources Management	2006	Regional	Cooperative management of shared ecosystems; community consultation mechanisms in transboundary landscapes	Relevant to the Virunga, Albertine Rift, and Serengeti-Mara landscapes, which host IPLC populations across borders

National	Tanzania Forest Act & CBFM Guidelines	2002	National	Village Land Forest Reserves (VLFRs) with statutory community management rights; joint management areas	One of the most advanced CBFM regimes in Africa, covering millions of hectares; concerns remain over the exclusion of hunter-gatherer minorities
National	Kenya Community Land Act & Forests Act	2016	National	Constitutional recognition of community land; community forest associations; participatory forest management agreements	Progressive constitutional framework; implementation slower than envisioned, with competing claims unresolved in many areas
National	Mozambique Land Act & Forest and Wildlife Law	1997–99	National	Community rights to natural resources on their land; 20% community revenue share from forestry concessions; prior consultation requirement	Revenue-sharing provision is a regional benchmark; enforcement of consultation and benefit transfer remains inconsistent
National	South Africa Biodiversity Act & ABS Regulations	2004–15	National	Explicit community bioprospecting benefit claims; consultation and consent required before bioprospecting on community land or involving community TK	Most comprehensive national ABS regime in the region; several benefit-sharing agreements concluded with San and Khoi communities
National	Ethiopia Biodiversity & ABS Proclamations	2006–12	National	TK protection provisions; community biocultural protocols recognised as consent instruments; Participatory Forest Management programme	Pioneer in community biocultural protocols and TK registration; a model for other states in the region
National	Kenya Constitution	2010	National	Art. 42: environmental rights; community land as a constitutional category; National Land Commission for historical injustices	Most progressive constitutional framework in the region for IPLC environmental and land rights

6.3 GOVERNANCE MODELS OF PROTECTED AND CONSERVED AREAS

Protected and conserved areas in Eastern and Southern Africa are governed through a diversity of institutional arrangements. Governance typologies commonly referenced by the International Union for Conservation of Nature (IUCN) identify several governance types: government-managed protected areas, administered by national authorities; co-managed areas, where governance responsibilities are shared between governments and local communities or other stakeholders; community-conserved areas, managed by local communities under customary or legal arrangements; and privately protected areas, established and managed by private landowners or conservation organisations.



Figure 6.2: Governance Typologies of PCAs

In recent years, there has been increasing recognition of Other Effective Area-Based Conservation Measures (OECMs), which contribute to biodiversity conservation outside formally designated protected areas. These governance arrangements reflect the growing importance of inclusive and participatory conservation approaches that integrate local knowledge, community stewardship, and collaborative management.

6.4 KENYA'S BLUEPRINT FOR INTEGRATED GOVERNANCE

Achieving the KM-GBF's 23 targets requires moving conservation beyond the isolated silo of environmental ministries. Kenya stands as the region's leading example of a Whole-of-Society and Whole-of-Government approach.

The Innovation: The National Biodiversity Coordination Mechanism (NBCM)

Historically, conservation in East Africa was viewed as a barrier to economic development. Kenya has actively dismantled this paradigm by institutionalizing the NBCM, an integrated governance structure that legally mandates the participation of the Ministries of Finance, Agriculture, and Physical Planning in conservation reporting. By doing this, Kenya is directly advancing KM-GBF Target 14, which calls for the inclusion of biodiversity values in national accounting systems and macroeconomic policies.

OECM Success and Community Conservancies

The true cornerstone of Kenya's KM-GBF readiness is the legal recognition of Community Conservancies under the Wildlife Conservation and Management Act of 2013. Supported by umbrella bodies like the Kenya Wildlife Conservancies Association (KWCA), this legislative framework allows indigenous communities and private landowners to retain land tenure while formally designating their land for wildlife management. This singular policy innovation has brought over 11% of Kenya's total landmass under formal conservation management outside of traditional National Parks. This directly fulfils the qualitative elements of KM-GBF Target 3, ensuring that conservation is equitably governed and connected to broader landscapes.

The Lesson for the Regional Center of Excellence (RCoE)

Kenya's model offers a vital lesson for the broader Eastern and Southern Africa region: to succeed, biodiversity must be reframed as a highly lucrative economic and social asset rather than a regulatory burden. Through carbon crediting, ecotourism revenue sharing, and sustainable grazing frameworks, community conservancies transform wildlife into the ultimate economic driver for rural populations.

6.5 RECOMMENDATIONS

1. **Harmonize Enforcement and Eradicate Biopiracy (Target 5):** The illegal wildlife trade operates across porous borders. The Southern African Development Community (SADC) and the East African Community (EAC) must harmonize their wildlife crime legislation. Discrepancies in penalties allow syndicates to exploit the weakest jurisdictions. Member states must establish specialized, cross-border environmental crime units trained to identify and intercept the trafficking of flora, timber, and lesser fauna (such as insects and amphibians), treating them with the same severity as ivory and horn trafficking.
2. **Invest in Data to Eliminate Data Deficient Status (Target 21):** You cannot save what you do not know exists. The IUCN Red List categorizes a significant portion of ESA's endemic amphibians, invertebrates, and deep-reef corals as Data Deficient. Regional bodies must heavily invest in and financially support the Regional Centre for Excellence (RCoE). Empowering local scientists to conduct baseline taxonomic surveys and long-term ecological monitoring is critical to ensuring that no species slips into extinction unrecorded.
3. **Prioritize Ecosystem Integrity Over Spatial Area (Goal A):** The most dangerous pitfall of the 30x30 target is the *paper park* phenomenon- designating vast tracts of degraded land or overfished oceans as protected simply to meet spatial quotas. Policy-makers must pivot from merely measuring *hectares* to measuring the *health and integrity* of ecosystems. For the WIO coral reefs, this means tracking coral cover, fish biomass, and structural complexity. For terrestrial forests, it means assessing genetic flow, canopy health, and the presence of apex predators. Funding and success metrics must be directly tied to biological recovery, not just gazetted boundaries.



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CHAPTER SEVEN

CASE STUDIES



Bridging the Gap: Integrating Community-Led Monitoring and Geospatial Mapping for Shoebill (*Balaeniceps rex*) Conservation in the Awoja-Agu Wetland Sub-catchment, Kyoga Basin, Uganda.

Target Ecosystem: Freshwater Wetland Ecosystems

Target Species: Shoebill (*Balaeniceps rex*)

Country: Uganda

Lead institution: Terra-NatureWild Conservation (<http://www.thenaturewild.org>)

Project Lead: Oreret Erasmus Tukei

Introduction

The Shoebill (*Balaeniceps rex*)- locally known as “Ekurududu” in Ateso language, a charismatic and evolutionarily distinct bird, serves as a vital indicator of the health of East Africa’s freshwater ecosystems. In Uganda, the Kyoga Basin, specifically the Awoja-Agu Wetland sub-catchment represents one of the most critical yet under-studied habitats for this species categorised as Vulnerable according to the IUCN Redlist. These wetlands in addition, are not only biodi-

versity hotspots but also essential life-support systems for local communities, providing water, fish, and climate regulation.

Terra-NatureWild Conservation, with support from the Rufford Foundation, has initiated a transformative project aimed at safeguarding the future of the Shoebill. By combining modern geospatial mapping with the deep-rooted knowledge of local communities, the project seeks to establish a sustainable model for wetland management that aligns with the goals of the Kunming-Montreal Global Biodiversity Framework of habitat restoration and species protection.

The Challenge

Despite its ecological importance, the Awoja-Agu Wetland faces escalating anthropo-

genic pressures. Rapid population growth in Eastern Uganda has led to extensive agricultural encroachment, where marshes are drained specifically for rice cultivation and livestock grazing. These activities lead to habitat fragmentation, destroying the dense papyrus stands and lungfish-rich pools that Shoebills require for nesting and foraging respectively.

Furthermore, the lack of baseline data on Shoebill population dynamics and precise habitat boundaries in the Kyoga Basin has historically hindered effective conservation planning. Without clear mapping of “critical” breeding and habitat zones, local governments and environmental agencies struggled to enforce adequate protection measures. Climate change has further exacerbated these issues, with erratic flooding patterns disrupting breeding cycles. Cou-



Conserve Nature, Empower Communities



Shoebills in distress. This network functions as a localized early-warning system for threatened, injured, displaced, or trafficked birds, ensuring a direct line of communication between wetland users and conservation authorities.

3. Community Sensitization and Education:

The team conducted extensive awareness workshops and school outreach programs. These sessions focused on sustainable wetland use and the economic potential of the Shoebill through eco-tourism and the essen-



1. Habitat Mapping and Baseline Surveys:

Using a combination of remote sensing data and ground-truthing, the project team identified critical foraging and nesting sites. Field surveys were conducted using canoes with a team of local citizen scientists and foot patrols to record Shoebill sightings, nest locations, and habitat characteristics.



pled with fires, occasional illegal trade and nest disturbance, the Shoebill population in this region faced a silent decline, necessitating urgent, evidence-based intervention.

2. The Citizen Science Model and Emergency Response:

A cornerstone of the project was the recruitment and training of local community members as Citizen Scientists. Residents from villages such as Kopege, Abatai-Orisai, Kokong and Atapar were equipped with binoculars and bird guides. Beyond data collection, these individuals were trained to identify



Our Intervention

Terra-NatureWild Conservation adopted a multi-disciplinary approach centered on three pillars: technical spatial mapping, community empowerment, and institutional policy integration.

tial ecosystem services provided by healthy wetlands, such as flood control and water purification.

4. Institutional Policy and Governance:

Recognizing that field-level success requires legal backing, the project engaged heavily with the Ngora District Local Government. This culminated in the signing of an official Memorandum of Understanding (MoU) to formalize conservation efforts and the collaborative drafting of a comprehensive 5-year Shoebill Conservation Action Plan (2026-2030).

Our Key Results so far

The project has achieved significant milestones that have shifted the conservation landscape of the Kyoga Basin:

- **Successful Rescue and Rehabilitation of one shoebill:** A definitive proof of the effectiveness of the citizen science network was the successful rescue of a Shoebill from Serere District. Following a report from the community, Terra-NatureWild Conservation coordinated the rescue and subsequent transfer of the bird to the Uganda Wildlife Conservation Education Centre (UWEC/Zoo) for professional care. This intervention highlights the capacity of the project to move beyond monitoring into active wildlife rescue and rehabilitation.
- **Identification of Critical Habitats:** For the first time, high-resolution maps of Shoebill “hotspots” within the Awoja-Agu sub-catchment have been pro-

duced. This data allows for targeted patrols and the protection of specific nesting sites that were previously vulnerable to disturbance of fire and egg/chick removal.

- **Empowered Local Stewardship:** The project successfully trained a network of 12 Citizen Scientists who now lead daily monitoring efforts. This has resulted in a measurable decrease in nest disturbances and has fostered a sense of communal ownership over the species.
- **Policy Integration and Sustainability:** The signing of the MoU with Ngora District Local Government represents a landmark achievement in institutionalizing Shoebill conservation. This agreement ensures that wetland protection is integrated into district-level planning and budgeting.
- **The 5-Year Action Plan:** The development of the 5-year Shoebill Conservation Action Plan provides a strate-

gic roadmap for the region. It outlines clear objectives for habitat restoration, eco-tourism development, and continued monitoring, ensuring that the project’s impact extends far beyond its initial funding cycle.

In Conclusion

The work of Terra-NatureWild Conservation in the Awoja-Agu Wetland demonstrates that the survival of flagship species like the Shoebill is inextricably linked to the empowerment of the people who share their landscape. By merging geospatial technology with community-led science and government policy, this initiative provides a scalable blueprint for wetland conservation across the Kyoga Basin and the wider Eastern African region. As we move forward under the 5-year Action Plan, the focus remains on transforming these “critical habitats” into resilient sanctuaries where both biodiversity and human livelihoods can thrive in harmony.



Conserve Nature, Empower Communities

Resource Portal: Strengthening Evidence-Based Conservation Planning

Target Ecosystem: Terrestrial and freshwater ecosystems within Key Biodiversity Areas

Country: Malawi

Authors: Walison Fixon, Billy Kachingwe, Fred Munyekenye Barasa, Chikondi Chisenga, and Tiwonge I. Mzumara

Introduction

Global biodiversity loss continues to threaten ecosystem integrity and species persistence (IPBES, 2019). This undermines progress towards international conservation commitments, including the Convention on Biological Diversity (CBD), the Kunming–Montreal Global Biodiversity Framework (GBF), and Sustainable Development Goals (SDGs) (United Nations, 2015; Millette et al., 2022). Key Biodiversity Areas (KBAs), identified under the global KBA Standard, are critical sites for the global persistence of biodiversity and implementation of GBF Target 3 (IUCN, 2016). Effective conservation increasingly depends on accessible, up-to-date, and spatially explicit data (Stephenson & Stengel, 2020; Urbano et al., 2024; Güntsch et al., 2025). While biodiversity data portals and global platforms have im-

proved data availability (Lazard, 2020), they often lack the contextual detail and documentation required for country-level decision-making. Additionally, information in many developing countries remains fragmented and poorly integrated, limiting its use in conservation planning (Stephenson et al., 2017; Urbano et al., 2024).

In Malawi, the KBA network builds on legacy sites derived from Important Bird and Biodiversity Areas (IBAs), IUCN Freshwater Biodiversity Assessments, and other conservation initiatives, later incorporated into the World Database of Key Biodiversity Areas (WDKBA), pending reassessment using the global Standard (UNDP & SCBD, 2021). In 2024, Malawi initiated reassessment of existing KBAs and identification of new sites under the Spatial Biodiversity Assessments Prioritisation and Planning (SBAPP) project, led by the Malawi University of Science and Technology (MUST) and the Environmental Affairs Department (EAD) (Fixon et al., 2026). As of September 2025, 14 KBAs were reaffirmed and four new sites were identified. However, many legacy KBAs lacked adequate documentation, making reassessments difficult.

To address this challenge, the Malawi National KBA Resource Portal was developed as a centralised platform to manage and

disseminate KBA-related biodiversity information. Developed collaboratively with national stakeholders and MUST, with technical support from the Regional Centre for Mapping of Resources for Development (RCMRD), the portal integrates KBA-related biodiversity and spatial data within a single platform. While complementing the WDKBA, it captures potential biodiversity triggers and data gaps, supporting conservation planning, monitoring, and reporting towards national and global biodiversity commitments.

Problem statement

Malawi lacked a centralised, accessible, and secure system for managing biodiversity datasets related to KBA assessments. As a result, data remained fragmented across institutions and projects, limiting accessibility and constraining effective monitoring, reassessment, conservation planning, and reporting towards Target 3 of the GBF. In addition, many sites designated as early as 2001 have limited supporting documentation because assessments were largely conducted by external organisations and consultants with minimal involvement of local experts. Consequently, access to historical assessment datasets, methodological information, and institutional knowledge remained limited, hindering continuity and

transparency in KBA reassessments and decision-making.

Methodology

The Malawi National KBA Resource Portal was developed through consultations with the KBA National Coordination Group (NCG), a questionnaire administered to KBA practitioners, and a review of biodiversity informatics literature. Biodiversity datasets incorporated into the portal were generated through national KBA reassessments conducted under the SBAPP project. These included species occurrence records, ecosystem extent data, site boundary shapefiles, and assessment worksheets. Data were compiled, standardised, quality-checked, and linked to individual KBA sites before integration into the portal.

Stakeholder consultations and a questionnaire administered to KBA practitioners were used to identify information needs, priority datasets, and desired portal functionalities. Responses ($n = 28$) were analysed descriptively and thematically. Frequently requested datasets included trigger species and Red List information (32.1%), ecosystem maps (17.9%), spatial datasets (14.3%), and threat data (14.3%) (Figure 1), while integration with external biodiversity databases (26.9%), interactive GIS mapping, search and filtering tools, and data download functionality (19.2% each) were identified as priority features. Among respondents, 68% recommended updating the portal either as new data become available or at least every two years (Figure 2).

Consultations further revealed major gaps

in biodiversity data, particularly for invertebrates, amphibians, reptiles, fish, and site-level population and distribution data (Fixon et al., 2026). Limited access to historical assessment information was also identified as a key constraint on KBA reassessments, underscoring the need for a centralized platform to document biodiversity information, potential triggers, and gaps, and to support future reassessments and conservation planning.

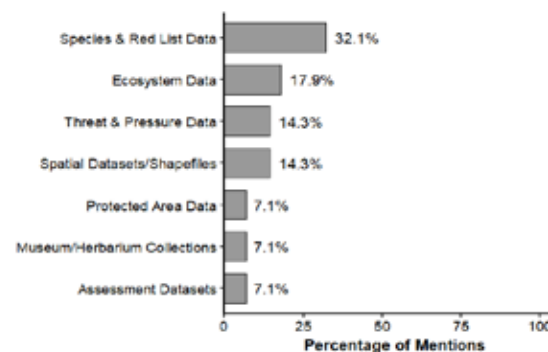


Figure 7.1: Datasets that respondents recommended for inclusion in the KBA portal ($n = 28$)

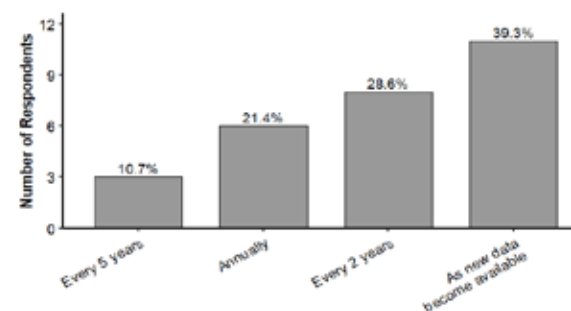


Figure 7.2: Respondents' recommendations on how frequently the KBA portal should be updated ($n = 28$).

Based on these findings, the portal was designed to support storage, integration, visualisation, and long-term management of both spatial and non-spatial biodiversity data. Key requirements included the ability to store site-level assessment datasets, visualise KBA boundaries and ecosystem extents, document trigger species and ecosystems, record data gaps and reassessment needs, and document stakeholder engagement. The portal, therefore, incorporated role-based authentication and access control, dataset upload and management, interactive GIS mapping and spatial visualisation, and tools for searching, filtering, and downloading datasets.

The portal was developed using ArcGIS Online and ArcGIS Hub provided through the RCMRD. Development involved site customisation, system configuration, and preparation and publication of biodiversity datasets. Spatial datasets such as KBA boundaries and ecosystem extents were uploaded as hosted feature layers, while associated biodiversity data were integrated as tabular datasets (Esri, 2024a). Interactive GIS functionality was implemented using ArcGIS Map Viewer and embedded web maps to visualise spatial information (Esri, 2024b). The search, filtering, layer toggling, and attribute-based exploration were enabled through metadata configuration and ArcGIS Experience Builder tools. Public datasets were configured for download in multiple formats to support accessibility and reuse, while sensitive information was protected through controlled access mechanisms.

Outcomes

The Malawi National KBA Resource Portal

A screenshot of a web browser window showing a website titled "Explore Datasets Supporting KBA Assessment Process". The website has a green header bar with the title. Below the header, there are six dataset categories arranged in two rows of three. Each category includes a representative image and a brief description. The categories are: Current assessment status (image of a lake), Biogeographic data gaps and recommendations (image of a magnifying glass over a database icon), Species occurrence patterns (image of a forest path), Taxonomic limits, gaps and recommendations (image of a turtle), KBA Target species (image of a car), and Next KBA assessment (image of a globe). At the bottom of the page, there are four icons representing different aspects of the KBA process: KBA Target species, Next KBA assessment, Ecosystem Integrity, and KBA Target Ecosystem. The browser's address bar shows the URL "http://www.kba.org/knowledge-centre/datasets-supporting-kba-assessment-process".

Unlike global repositories, the portal documents both confirmed and potential biodiversity triggers together with associated data gaps, assessment records, stakeholder consultations, and reassessment recommendations. This strengthens traceability, institutional memory, and continuity within the national KBA programme. By supporting prioritisation of research, targeted data collection, and iterative reassessments over the next 8–12 years, the portal serves not only as a biodiversity repository but also as a national decision-support system. Future updates will include dashboard-based summaries of KBA coverage, ecosystem extent, trigger biodiversity, data gaps, and reassessment priorities, as well as integration with external biodiversity databases

Overall, the portal strengthens biodiversity data management, supports evidence-based conservation planning, and enhances Malawi's capacity to meet national and global biodiversity commitments.

The authors acknowledge the RCMRD through the Regional Centre of Excellence for Biodiversity, Forests and Seascape

Ecosystems Management in Eastern and Southern Africa (RCoE-ESA), funded by the European Union and implemented in partnership with CIFOR-ICRAF for hosting the portal on its ArcGIS Hub; the SBAPP project, led by MUST and EAD for the financial and technical support; and the Malawi KBA NCG for leading the KBA assessments.

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Empowering the Nalubaaga Community in Wetland Assessment and Inventory Mapping: A Feminist Participatory Action Research Approach Using User-Friendly Digital Tools in Uganda

Target Ecosystem: The target ecosystem is Nalubaaga Wetland in Kiwatule, Kampala.

Country: Uganda

Lead Organization: Regional Centre for Mapping of Resources for Development (<https://www.rcmrd.org>)

Author: Jacquelyne Nnassuna, Gender and Indigenous Peoples Specialist

Introduction

Nalubaaga Wetland in Kiwatule, Kampala, Uganda was once a vital socio-ecological system, sustaining nearby communities with water, food, medicinal plants, papyrus, fish, and clay, alongside deep cultural and spiritual significance. Community members, particularly elders, recall it as a place of abundance, healing, joy and social connection, where people lived in close relationship with nature. Its stewardship relied on collective community practices like *Bulungi Bwansi* and cultural norms that protected springs, sacred sites and biodiversity.

Women were central to this ecosystem, as everyday users, caregivers, ecological knowledge holders, and custodians of the wetland. Through water collection, food preparation, herbal medicine and household care, they built deep knowledge of the wetland and its seasonal changes, making them key actors in community wellbeing and environmental stewardship.

Problem

Nalubaaga Wetland has degraded from a source of water, food, medicine and cultural value into a polluted drainage corridor. encroachment, poorly planned construction, disrupted drainage, sewage discharge, shallow pit latrines, charcoal dust, and unchecked dumping — worsened by the removal of public waste skips and the high cost of private collection.

This degradation is driven by encroachment, poorly planned construction, disrupted drainage, sewage discharge, shallow pit latrines, charcoal dust, and unchecked dumping of solid waste, worsened by the removal of public waste skips and the high cost of private collection. The result is blocked drains, flooding, contaminated springs, disease risk and biodiversity loss.

These impacts fall disproportionately on women and girls, who manage water collection, household sanitation, waste disposal, caregiving and cleaning polluted surroundings. They travel farther to reach unsafe or contaminated springs, face insecurity and sexual violence in poorly lit areas, and lose income when flooding and illness disrupt their small businesses. Female-headed households and poorer tenants are hit hardest by the cost of waste collection and lack



Image 7.1 Community map sketching



of safe water. Although women hold important ecological knowledge and show strong willingness to act, they remain excluded from male-dominated decision-making. The problem is therefore a gendered environmental governance crisis linking pollution, flooding, health risks, insecurity, livelihood loss unpaid care work, and exclusion from wetland management.

Approach/ Methodology

The project used a Feminist Participatory Action Research (FPAR) approach, centering community knowledge and women's lived experiences in understanding wetland degradation in Nalubaaga. Community members participated as active co-researchers through an inclusive and gender-responsive process.

The study began with participatory community engagement and the co-design of research tools with community members, ensuring the questions, mapping categories



Image 7.2 Indiscriminate solid waste dumping in a stream



Image 7.3 wetland backfilling

ries and priorities reflected local realities and concerns. This built trust, sharpened data relevance and accuracy, and enabled women, youth, and elders to meaningfully contribute to the research process.

Community research assistants were trained in qualitative and digital data collection. Focus group discussions, key informant interviews, storytelling, observation, and participatory dialogue documented experiences of flooding, dumping, water contamination, insecurity, biodiversity loss, and livelihood challenges.

Participatory mapping complemented the qualitative research. Community mapping assistants were trained by GIS experts to use ArcGIS Survey123, a smartphone-based digital tool for collecting quantitative and geospatial data. Community members mapped waste dumping sites, flooding hotspots, contaminated springs, drainage blockages, encroached areas, unsafe spaces and remaining community assets.

Conserve Nature, Empower Communities

Stratified purposive sampling ensured representation across the three study zones and inclusion of women, men, youth, elders, landlords and long-term residents. Data analysis combined thematic analysis of qualitative findings with spatial analysis of mapping data, applying a gender lens throughout the process.

The methodology, built community ownership of environmental information, strengthened local skills in mapping and environmental monitoring, and supported evidence-based advocacy and future wetland restoration planning.

Result / Outcomes

The project generated important environmental, social, methodological and gender-transformative outcomes for the



Image 7.4: poor drainage and flooding



Image 7.5 House construction in the wetland

Nalubaaga community. Through a FPAR approach, women, youth, and elders actively documented degradation's impacts, including flooding, dumping, contaminated water, poor sanitation, insecurity, and declining livelihoods.

The qualitative methods used generated rich, community-centered evidence and revealed the unequal burden of degradation on women and vulnerable groups. ArcGIS Survey123 complemented the qualitative findings with geospatial depth through mapping of dumping sites, flood hotspots, drainage blockages, contaminated springs, unsafe spaces and remaining assets.

The project strengthened local capacity in digital data collection, participatory mapping, and environmental monitoring while strengthening community ownership of environmental information. A key outcome was the increased visibility of women's ecological knowledge, confidence, and leadership

in wetland stewardship and environmental decision-making.

The study also deepened community awareness that wetland degradation is a gender, health, safety and livelihood issues, and not just an environmental one. Through a community action planning process, participants identified practical solutions including better waste management, restoration of springs and native vegetation, women-led eco-enterprises, inclusive environmental committees, improved sanitation and drainage, security lighting, and continued environmental monitoring initiatives.

Overall, the project laid a strong foundation for gender-responsive wetland restoration, participatory environmental governance, community-led monitoring, and sustainable livelihood development in Nalubaaga.



Image 7.6 sources of mosquito breeding



Image 7.7 Female data collecting wetland using ARC-GIS Survey 123

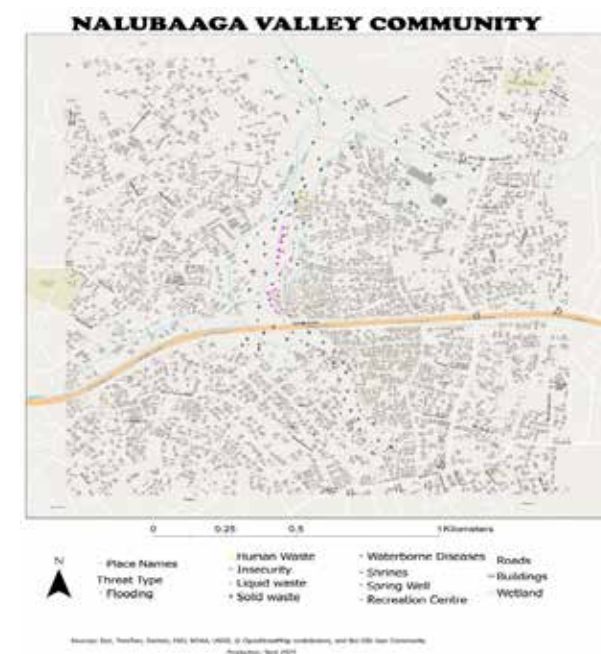


Image 7.8 Digital platform

Comparison of the Effectiveness of Management of State Governed Vs Community Governed Protected Areas: A case of Naibunga Upper Community Conservancy and Lusaka National Park

Target Ecosystem: Protected and Conserved Areas

Country: Kenya and Zambia

Lead institution: Regional Centre for Mapping of Resources for Development (<https://www.rcmrd.org>)

Authors: Erick Wabwile, Christopher Amudavi and Martin Nyoro

Introduction

The Regional Centre of Excellence (RCoE) for Biodiversity, Forests and Seascape Ecosystems Management in Eastern and Southern Africa project, funded by the European Union and implemented by RCMRD in partnership with Landscape Alliance, is conducting Protected Area Management Effectiveness (PAME) assessments across selected protected and conserved areas in the region, using Integrated Management Effectiveness Tool (IMET). The initiative under the 4-year project (2024-2028), aims to strengthen management of these areas and improve conservation outcomes, particularly the ecosystem services nature provides to people.

Assessments have covered both government-managed and community-managed sites. In 2025, the team conducted PAME assessment in Lusaka National Park in Zambia (national government-managed) and Naibunga Upper Community Conservancy in Kenya (community-managed).

This case study compares management effectiveness across the two governance models, aiming to identify strengths, challenges, and lessons to inform improved conservation practice in the region.

Naibunga Upper Community Conservancy

Established in 2018, Naibunga Upper Community Conservancy is a terrestrial, community-managed conservation area covering approximately 131.45 km² of savannah grassland. Classified under IUCN Category VI, it emphasizes sustainable use of natural ecosystems and forms part of a broader network of community conservation initiatives supporting ecological connectivity across Laikipia's rangelands.

The conservancy's vision centers on sustainable conservation that supports both livelihoods and peaceful coexistence between people and wildlife, with a mission to promote coexistence through community empowerment and resource conservation. Its core objectives include biodiversity conservation, rangeland management, tourism development, livelihood empowerment, and wildlife security and monitoring.

Lusaka National Park

Lusaka National Park in Zambia is a terrestrial national park under IUCN Category II, emphasizing ecosystem protection and recreation. Established in 2011 via Gazette Notice 5970, it aims to protect the Chalimbana catchment, restore Miombo vegetation, support urban tourism, and serve as a quarantine and wildlife restocking hub. Set within a Miombo biome, the park spans 6,500 hectares (65 km²), with well-defined boundaries and high legal and demarcation adequacy. Its mission is to protect the Chalimbana River headwaters and the park's diverse wildlife and ecosystems for economic, recreational, educational, and scientific purposes.

Overall Management Effectiveness

Lusaka National Park: Rated moderate overall. Its strengths include clear legal status and strong law enforcement; however, effectiveness is constrained by inadequate funding, staffing gaps and an outdated management plan.

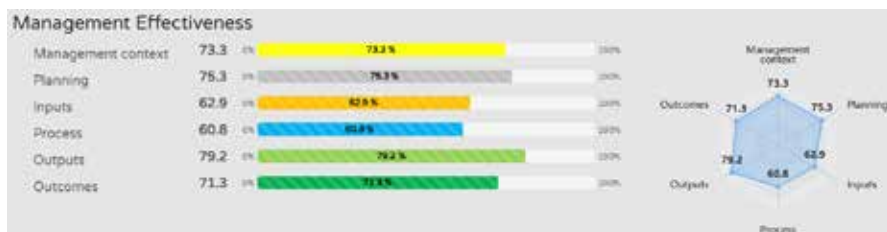


Figure 7.4: Diagram showing management effectiveness of the Lusaka National Park in Zambia

Naibunga Upper Community Conservancy: Rated “moderately effective but vulnerable.” The conservancy has functional basic management systems and strong ecological potential, but severe resource constraints and gaps in monitoring data puts it at risk.

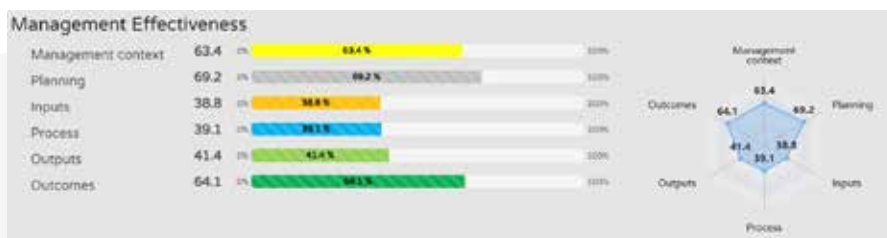


Figure 7.5: Diagram showing management effectiveness of the Naibunga Upper Community Conservancy in Kenya

Table 7.1 Differences between the two sites:

FEATURE	LUSAKA NATIONAL PARK (LNP)	NAIBUNGA UPPER COMMUNITY CONSERVANCY
Model	Government-managed by the Department of National Parks and Wildlife with NGO support (GRI).	Community-based governance model.

Community Role	Weak community integration (score: 1/3); low local involvement in boundary management.	Strong community support , active leadership and representation.
Rights/ Decision Making	Legal framework limits external involvement without formal agreements.	Community identity and employment prioritized (score: 3/3)

Human Resources (Adequacy and Competency)

Staffing Levels:

Lusaka National Park has employs 41 staff members (24 in law enforcement) against a required 81, leaving a significant gap. However, the competency of the employed staff members is high, resulting in a strong overall score.

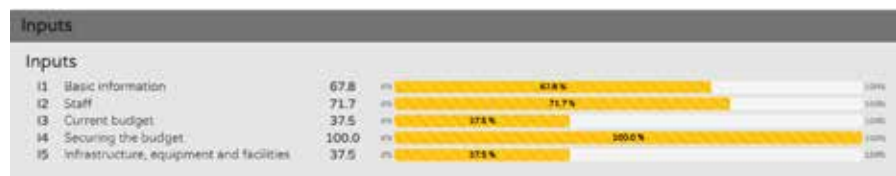


Figure 7.6: Diagram showing the adequacy and competency of the human resource of the Lusaka National Park in Zambia

On the other hand, Naibunga Upper Community Conservancy faces a more critical shortfall; just 12 rangers against a required 30.



Figure 7.7: Diagram showing the adequacy and competency of the human resource of the Naibunga Upper Community Conservancy in Kenya

Competency and Training:

At Lusaka National Park, staff training is insufficient and a capac-

ity development program is recommended; law enforcement is a strength, but gaps remain in tourism and research.

Figure 7.8a



At Naibunga Upper Community Conservancy, operational capacity is “critically constrained”. Key roles such as HR and Tourism officers are missing, and skills gaps persist in monitoring systems like SMART.

Figure 7.8b



Adequacy and Security of Funding

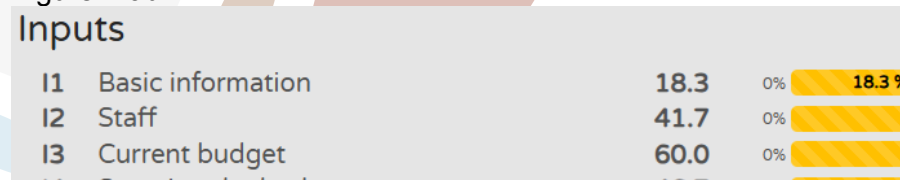
Budget Gaps:

Both sites are severely underfunded. Lusaka National Park’s budget of USD 66,200 falls well short of its estimated USD 165,000 operating cost. Naibunga requires a minimum of USD 148,392 and remains financially under-resourced.

Figure 7.9a



Figure 7.9b



Security:

Lusaka National Park has moderate budget security as a government-owned park backed by partners like Game Rangers International (GRI). Naibunga Upper Community Conservancy relies heavily on external partnerships (e.g., Northern Rangelands Trust) but lacks adequate funding for core infrastructure.

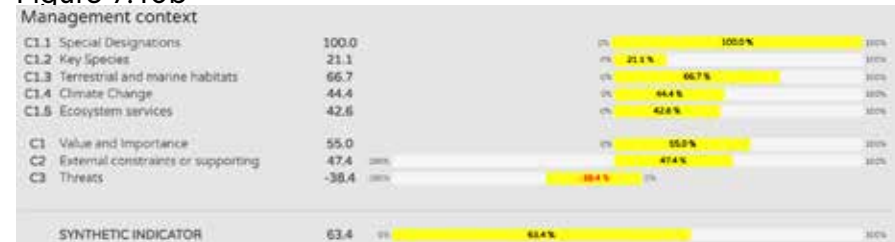
Monitoring of Key Elements

Lusaka National Park is strong in traditional monitoring methods such as annual ground counts and rhino feeding monitoring, maintaining high data reliability for species like white rhino and giraffe, though it lacks advanced technology. Naibunga Upper Community Conservancy’s monitoring is constrained by limited data and capacity; while SMART is used for patrols, significant gaps remain in research and technical capacity.

Figure 7.10a



Figure 7.10b



Policies and Achievement of Objectives

Policy Adequacy:

Lusaka National Park has strong legal status under Zambian law, but its General Management Plan (2012–2022) is outdated and needs urgent revision. Naibunga Upper Community Conservancy faces gaps in policy and lacks an approved management plan, which is identified as a top priority for improvement.

Figure 7.11a

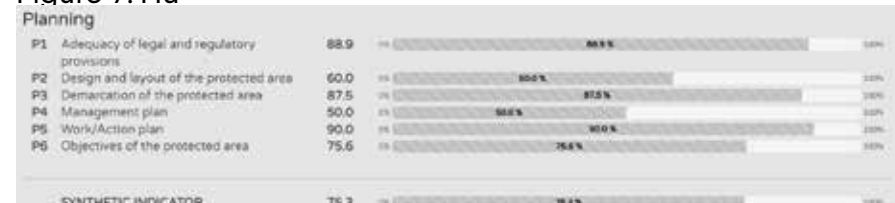
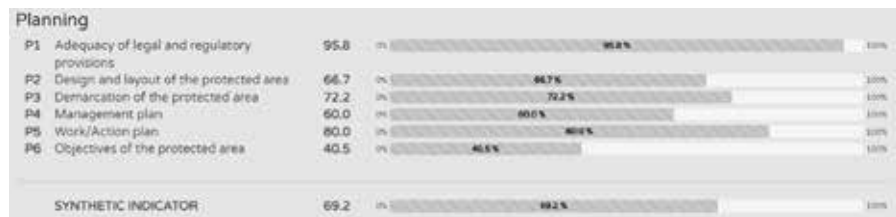


Figure 7.11b



Achievement of Objectives:

Lusaka National Park has been highly effective in protecting the Chalimbana catchment and maintaining positive population trends for key species, though it has fallen short of its targets as a wildlife restocking hub. Naibunga Upper Community Conservancy has performed strongly in delivering ecosystem services such as water and grazing management, but remains weak in tourism development and in establishing proactive, intelligence-led conservation.

Figure 7.12a



Figure 7.12b



Figure 12c

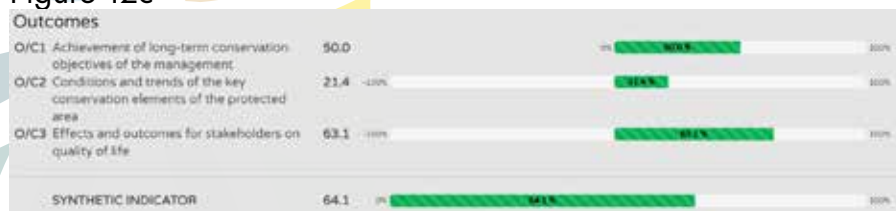


Figure 12d



Conclusion

The comparative PAME assessment of Lusaka National Park and Naibunga Upper Community Conservancy illustrates that management effectiveness is not simply a function of governance model, but of how well each model's inherent strengths are supported with adequate resources. Lusaka benefits from stronger legal standing, staff competency and monitoring reliability, yet is constrained by an outdated management plan and persistent funding shortfalls. Naibunga Upper Community Conservancy, by contrast, draws strength from deep community ownership and local leadership, but remains vulnerable due to critical staffing gaps, weak monitoring capacity and the absence of an approved management plan. Both cases point to a shared underlying challenge across the region: chronic underfunding and human resource gaps that limit the translation of strong intentions into effective, sustained conservation outcomes.

Strengthening financial security, investing in technical and monitoring capacity and formalizing management plans, whether government or community-led, will be essential to improving protected area effectiveness across Eastern and Southern Africa, and to ensuring that both models can deliver on their respective conservation and livelihood objectives.



Strengthening Geospatial Capacity and Institutional Coordination for 30x30 Conservation: A Case Study of Mapping Biodiversity Progress in Mozambique

Target Ecosystems: Coastal mangroves, coral reefs, savannah landscapes, protected terrestrial and marine ecosystems

Target Species: Broad biodiversity focus, including terrestrial wildlife, marine species, and ecosystem-dependent species

Country: Mozambique

Author: Julius Buyengo

Introduction

Mozambique is home to some of Africa's most ecologically significant ecosystems, spanning coastal, marine and terrestrial landscapes vital for biodiversity conservation, climate resilience and local livelihoods.

Global efforts to protect such ecosystems are anchored in the United Nations Convention on Biological Diversity, particularly through the Kunming-Montreal Global Biodiversity Framework (KM-GBF), which sets 23 targets for biodiversity conservation to be achieved by 2030.

Target 3 of the KM-GBF calls for conserving at least 30 per cent of land, inland waters and marine areas by 2030, hence the phrase '30x30' target.

To support national implementation of target 3 in Mozambique, RCMRD through the Regional Centre of Excellence for Eastern and Southern Africa (RCoE-ESA), convened a Policy Engagement Dialogue and Geospatial Training Workshop in Maputo (9–13 Feb-

ruary 2026), in collaboration with ReGeCom and other national partners. This initiative aimed to strengthen the use of geospatial data in biodiversity planning and decision-making.

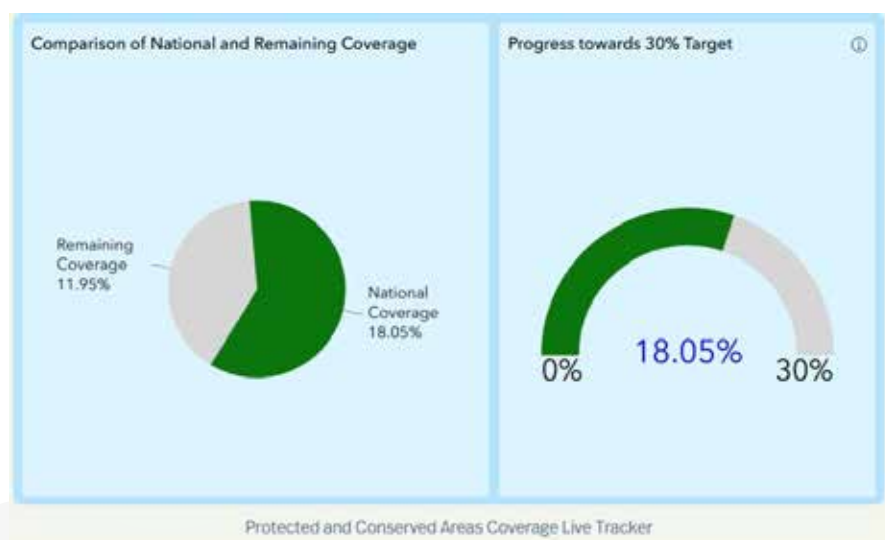
Problem Statement

Despite strong national commitment to biodiversity conservation, Mozambique faces several structural and technical challenges:

- **Fragmented data systems** - biodiversity datasets remain dispersed across multiple institutions, limiting integration and accessibility.
- **Inconsistent methodologies** - variation in spatial standards, indicators, and classification systems hinders harmonization and national reporting.
- **Limited geospatial capacity** - technical gaps affect data validation, analysis and updates, while existing datasets remain difficult for stakeholders to discover or access.
- **Coverage gaps** — national conservation coverage stands at 18.05%, well below the 30% target, leaving a gap of 11.95% to close (UNEP-WCMC & IUCN, 2023a).

These challenges reflect broader regional trends in biodiversity governance and data management (SoPACA, 2023).

Figure 7.13



Methodology

The initiative combined policy engagement, technical training and data assessment across five components:

- **Policy Engagement and Institutional Coordination:** A multi-stakeholder dialogue that brought together 35 participants from the Ministry of Land and Environment, National Directorate of Environment and Climate Change, National Directorate of Forestry and Wildlife, National Administration for Conservation Areas (ANAC), ReGeCom, and development partners, strengthening alignment between policymakers and technical experts.
- **Geospatial Data Review and Spatial Analysis:** Participants reviewed national protected area datasets against global standards, including the World Database on Protected Areas (WDPA), generating insights into coverage, ecosystem representation, and conservation gaps.
- **Capacity Building (GIS Training):** A five-day hands-on training for 35 participants which covered GIS applications for conservation, protected area database management, habitat monitoring and mapping as well as and GBF alignment and

reporting.

- **Data Governance Assessment:** This session addressed data-sharing protocols, institutional roles and coordination, methodological harmonization and system gaps and solutions.
- **Knowledge Integration for Policy Processes:** The initiative supported integration of geospatial data into updates of the National Biodiversity Strategy and Action Plan (NBSAP) and the Seventh National Report under the KM-GBF (NR-7).



Plenary Discussion at the Maputo Policy Engagement Dialogue and Geospatial Training Workshop, 9–13 February 2026.

Key Lessons Learned

- **Strong institutional coordination is critical for effective biodiversity reporting.** The Maputo workshop demonstrated that bringing policy actors and technical institutions together significantly improves alignment in biodiversity planning, reporting, and implementation, particularly for NR7. Collaborative platforms foster shared ownership, better communication, and more consistent conservation action across.
- **Geospatial capacity building enhances evidence-based**

decision-making. Equipping national officers with practical GIS and spatial analysis skills strengthens institutions' ability to collect, manage, interpret and apply biodiversity data. Thus, directly improving reporting accuracy, conservation planning, and progress tracking against GBF targets.

- **Effective biodiversity governance depends on harmonized, accessible data systems.** Fragmented datasets, inconsistent methodologies and limited accessibility remain major barriers to effective management. Centralized data repositories, standardized frameworks, and coordinated data-sharing mechanisms are essential to improving data quality, interoperability, and reporting efficiency.
- **Spatial intelligence is critical to achieving the 30x30 target.** Reliable geospatial evidence is key to identifying conservation gaps, assessing protected area coverage as well as guiding targeted interventions. Accurate, up-to-date spatial data allows countries to prioritize restoration and conservation actions strategically, accelerating progress toward GBF Target 3.

Outcomes and Results

- **Strengthened Institutional Coordination:** The workshop deepened collaboration between policy and technical institutions, improving alignment in biodiversity planning and reporting, particularly for NR7.
- **Enhanced Geospatial Capacity:** National officers gained practical GIS skills, improving their ability to manage, analyse and apply biodiversity data in reporting processes.
- **Improved Data Governance Framework:** The workshop helped identify key gaps in data sharing, standardization and accessibility, leading to development of actionable recommendations; a national biodiversity data-sharing framework, a centralized data repository and strengthened inter-agency coordination.
- **Evidence-Based Conservation Planning:** Spatial analysis identified 58 protected and conserved areas covering 244,201

km², 29.49% terrestrial and 2.16% marine coverage. These findings support targeted interventions to close the remaining gap towards achieving the 30x30 target.

- **Support to National Policy Processes:** The initiative strengthened integration of geospatial data into NBSAP updates and national biodiversity reporting (NR7).
- **Increased Awareness and Stakeholder Engagement:** The dialogue deepened understanding across institutions and partners of the role geospatial data plays in conservation decision-making.

Conclusion

This case study demonstrates the critical role of geospatial data, institutional coordination and capacity building in advancing biodiversity conservation. By bridging the policy and technical gap, Mozambique is strengthening its capacity to implement the KM-GBF, particularly Target 3. Achieving the 30x30 ambition requires more than expanding protected areas; it demands stronger data systems, governance structures and technical capacity. Continued investment in these areas will be essential to effective, inclusive and evidence-based biodiversity management.

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Community Conservancies and Decentralised Conservation Governance in Namibia

Target Ecosystem: Namibia's arid and semi-arid communal savanna and rangeland ecosystems, which support a mosaic of dry-land wildlife habitats across the country's north-west and southern regions.

Target Species: Flagship species associated with the conservancy network include elephants and black rhinoceros

Country: Namibia.

Author: Jacklin Karimi

Introduction

This case study examines Namibia's Community-Based Natural Resource Management (CBNRM) model, applied across the country's arid and semi-arid communal savanna and rangeland ecosystems in the north-west and south. Under CBNRM, local institutions, rather than the central state alone, hold conditional authority over wildlife and habitat management. Flagship species such as elephants and black rhinoceros have shown population recovery under community-led monitoring and anti-poaching efforts, alongside broader wildlife assemblages that sustain two key revenue streams: consumptive use through trophy-hunting quotas, and non-consumptive use through photographic tourism, tying the ecosystem's health directly to the governance model's economic viability.

Namibia hosts one of the most extensive and internationally recognised community-based conservation systems in Africa. Its community-governed Protected and Conserved Areas (PCAs) form a nearly continuous corridor across the north and west, linking con-

servancies such as Ondjou in the north-east and Khob Naub in the south with the broader protected area estate. Of the governance arrangements recorded, the large majority, about 143 sites, are governed directly by local communities, compared with 31 under central government or ministry authority, 2 under individual land-ownership, and 2 unreported, illustrating how far decentralisation has shifted de facto conservation authority towards community institutions.

This approach reflects a wider body of governance theory. Effective, socially just conservation depends on systems that recognise and support IPLC leadership over communal lands (Artelle et al., 2019). CBNRM puts this into practice by devolving land-use rights and management authority to local institutions, on the premise that communities closest to natural resources are best placed to manage them sustainably given secure rights and adequate incentives. Smith (2019) frames it as a democratic governance innovation; Ribot (2002) stresses that meaningful devolution requires real decision-making power, not just administrative responsibility; and Child (2019) identifies shared decision-making between governments and communities, rather than a one-directional handover as the defining feature of durable CBNRM arrangements.

Namibia's conservancy programme is widely cited as a clear application of this theory. Before independence, wildlife management was centralised under the state, with little formal benefit for communal-area residents. An arrangement that discouraged local stewardship and often cast wildlife as a liability rather than an asset. Reforms following independence in 1990, culminating in amendments to the Nature Conservation Ordinance of 1975, allowed rural communities to establish legally recognised conservancies with conditional rights to manage and benefit from wildlife. This

is a deliberate shift from centralised, state-controlled conservation towards a co-managed model linking conservation with rural development.

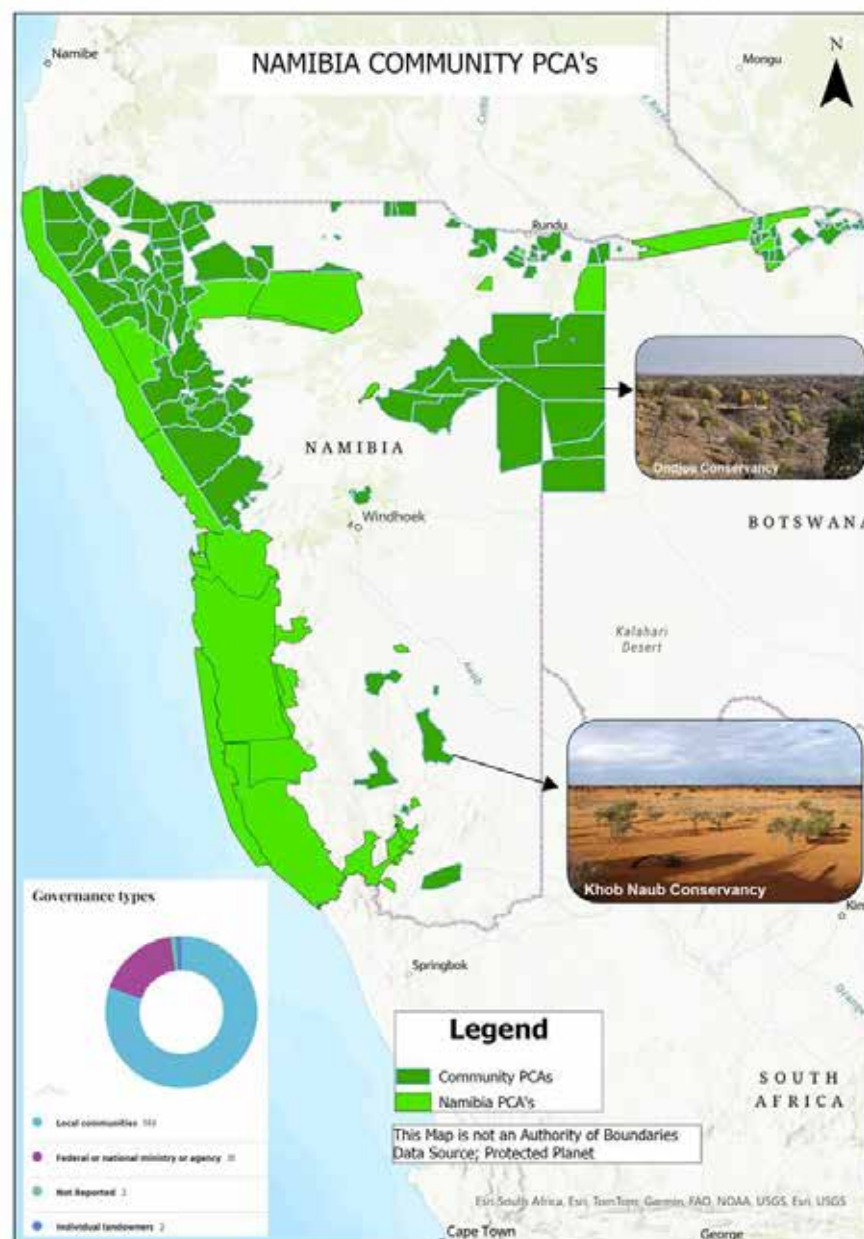


Figure 1: Namibia's Community Protected and Conserved Areas (PCAs), showing the spatial distribution of community-governed conservancies relative to state-managed PCAs, with the Ondjue and Khob Naub conservancies highlighted as illustrative sites.

Problem Statement

Devolving rights to communities does not, by itself, guarantee good conservation outcomes. A central tension in the CBNRM literature is that the generation of financial benefits from ecosystem services, such as hunting concessions and photographic tourism, does not automatically translate into improved conservation outcomes on the ground. Child and Barnes (2010) argue that financial returns alone are insufficient to ensure sustainable resource management by local communities; without functioning institutions to allocate, monitor, and reinvest those returns, revenue can just as easily entrench elite capture or short-term extraction as it can fund long-term stewardship. The authors instead point to the development of effective communal institutions, bodies capable of transparent decision-making, rule enforcement, and conflict resolution, as the necessary precondition for benefit flows to support, rather than undermine, conservation goals.

This institutional dependency creates several compounding governance risks. First, the distribution of benefits within a conservancy is rarely straightforward: revenue-sharing formulas must balance household-level payouts against community infrastructure investment, and inequitable sharing of revenue can quickly undermine community participation and buy-in, even where aggregate returns are strong. Second, because much of the revenue base is tied to tourism and hunting markets that are themselves exposed to global economic shocks, currency fluctuations, and, more recently, disruptions such as pandemics or travel restrictions, conservancy income is structurally volatile. A single bad season can strain institutions that are already thinly resourced. Third, as wildlife populations recover under improved protection, conservancies increasingly contend with human–wildlife conflict, including crop damage and livestock predation, which can erode local tolerance for the very species the model is designed to protect. Finally, many conservancy committees face capacity gaps in financial management, ecological monitoring, and governance skills that limit their ability to fully exercise the rights they have been granted.

In summary, the core governance and policy challenges identified are:

- Uneven benefit distribution within communities.

- Dependence on tourism and hunting revenues that are vulnerable to economic shocks.
- Human–wildlife conflict in areas with increasing wildlife populations.
- Capacity gaps in local governance institutions.

Approach

Namibia's response to these risks has been to build adaptive governance capacity directly into the conservancy model. Barnes and Child (2014) emphasise that adaptive management systems are central to keeping the model resilient over time, rather than treating conservancy registration as a one-off legal event. Specifically, the ones that allow communities to adjust rules, quotas, and benefit-sharing arrangements as ecological and socio-economic conditions change.

Institutionally, this is delivered through a co-management framework led by the Namibia Ministry of Environment, Forestry and Tourism, and reinforced by national legislation and collaborative governance structures that connect government, conservancy committees, and, in many cases, NGO and private-sector partners. Rather than an unconditional transfer of authority, the model is structured as a phased process: communities must first satisfy defined legal and institutional criteria in order to register a conservancy and unlock rights to wildlife use. Specifically, a community must demonstrate:

- Defined geographic boundaries, establishing a clear and legally recognised area of jurisdiction.
- A representative governance committee, ensuring accountable local decision-making.
- A constitution outlining benefit-sharing mechanisms, so that revenue distribution rules are agreed and transparent in advance.
- Demonstrated capacity for wildlife monitoring and management, ensuring the community can meet its conservation obligations.

Once registered, conservancies gain conditional, rather than ab-

solute, rights over wildlife use, including tourism partnerships, trophy-hunting quotas, and sustainable harvesting of natural resources. Government retains regulatory oversight, including setting quotas and monitoring compliance, while day-to-day governance of wildlife resources sits with the community. This co-management design is what allows the governance-type distribution seen in Figure 1 to function as a coherent national system, rather than a patchwork of independent arrangements. The overwhelming majority of PCAs governed by local communities, with a smaller share retained under central government or ministry authority.

Outcomes

Since the establishment of the first conservancies in the late 1990s, Namibia has registered over 80 communal conservancies, collectively covering more than 20% of the country's land area, a scale illustrated in Figure 1, where community PCAs form a near-continuous band across the north-west and extend into pockets of the south, including sites such as Ondjou and Khob Naub Conservancy. This network now forms a significant component of the national conservation estate and contributes materially to Namibia's progress towards global biodiversity commitments, including the Kunming-Montreal Global Biodiversity Framework, and in particular Target 3 (30x30), by expanding effectively conserved area well beyond what state-managed protected areas achieve alone.

The governance model has produced measurable outcomes across ecological, economic, and social dimensions:

- Expansion of conservation areas beyond state-managed protected areas, adding a large share of community-governed land to the national conservation footprint.
- Improved wildlife populations, including recovery of species such as elephants and black rhinoceros under community-led protection.
- Increased local economic benefits through tourism concessions and conservation enterprises, channelling revenue directly into conservancy institutions and households.
- Enhanced community participation in conservation decision-making, reflected in the governance-type data showing community authority over the large majority of registered PCAs.

At the same time, these gains remain contingent on continuously addressing the problems identified above: benefit-distribution equity, revenue volatility, human-wildlife conflict, and institutional capacity all require sustained policy attention, rather than one-off reform.

Lessons for the Eastern and Southern Africa Region

Namibia's experience offers transferable lessons for other countries in the region working towards area-based conservation targets:

- Legal recognition of community rights can incentivise local stewardship of biodiversity, converting wildlife from a perceived liability into a valued community asset.
- Decentralised governance structures can complement state-managed protected areas, extending conservation coverage without a proportional increase in state administrative capacity.
- Benefit-sharing mechanisms are critical for sustaining community support for conservation, and must be designed and agreed before, not after, revenue begins to flow.
- Partnerships with NGOs and the private sector can strengthen technical capacity and financial sustainability, helping close the institutional capacity gaps that communities cannot address alone.

Taken together, Namibia's conservancy model demonstrates how legal reform, adaptive co-management, and institution-building can combine to expand conservation coverage while supporting rural livelihoods — provided the underlying governance risks are actively managed rather than assumed away.

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CHAPTER EIGHT

CAPACITY BUILDING AND REGIONAL INTERVENTIONS

8.1 REGIONAL INTERVENTIONS & CAPACITY BUILDING

Introduction

The Capacity Building and Training component is a core element of the Regional Centre of Excellence (RCoE) for Biodiversity, Forests, and Seascape Ecosystems Management project. It is designed to strengthen the functional and technical capabilities of stakeholders across the 24 Eastern and Southern African countries, ensuring they can effectively manage their biodiversity and ecosystem commitments.

Strategic Approach to Capacity Development

RCMRD–RCoE adopts a multifaceted approach to capacity development, focused on sustainability and long-term engagement. This approach includes:

- **Stakeholder Needs Assessment:** Continuous assessment of capacity and data needs, conducted through initial engagements and ongoing surveys, to ensure interventions remain relevant to national and regional objectives.
- **Structured Training Programmes:** Delivery of in-person training sessions, online learning, and field demonstrations tailored to identified stakeholder priorities.
- **Workshops & Knowledge Exchange:** Organising regional conferences and interactive sessions to facilitate learning and the sharing of best practice.
- **Mentorship:** Establishing a Community of Practice through which young conservationists learn from experienced professionals.

Key Regional Interventions and Capacity Building Activities

The RCoE project has undertaken several significant training and capacity-building initiatives.

Regional Workshops:

i) Data & Information Engagement Workshop for Protected and Conserved Areas

Theme: "Leveraging Data Insights for Impactful and Sustainable Ecosystems"

The workshop was held in person at RCMRD's premises in Nairobi, Kenya (September 2024), and was led by the Regional Centre of Excellence (RCoE) for Biodiversity, Forestry and Seascape Ecosystems Management. Participants were drawn from 24 countries, including Angola, Botswana, Comoros, Djibouti, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Somalia, South Africa, South Sudan, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

The objectives of the workshop were:

- To raise awareness of the RCoE and strengthen relationships between the RCoE and national institutions, particularly those managing data on protected and conserved areas.
- To demonstrate and discuss the importance of data, information, and knowledge products in decisions relating to the effectiveness and governance of protected and conserved areas.
- To demonstrate the RCoE's information management process — from data collection and processing through to the publication of information and knowledge products — so that countries can engage actively.
- To demonstrate and discuss the role the RCoE can play in reporting processes, helping countries monitor and track progress against Global Biodiversity Framework targets linked to the Convention on Biological Diversity (CBD).
- To understand the interests and needs of users and potential users in participating countries, enabling the RCoE team to improve its services and products, and to build understanding of RCMRD's upcoming role as a Technical Support Centre of the CBD.
- To learn from various actors in the conservation sector how they access and use data for decision-making, and to understand how they contribute protected area solutions to global development challenges.

ii) Regional Outreach and Data Engagement Workshop

This workshop was held in Dar es Salaam, Tanzania, in December 2024. It brought together representatives from Eastern and Southern African countries to address pressing challenges in marine seascape ecosystem management, aiming to enhance regional collaboration and improve the

accessibility and application of marine ecosystem data in support of sustainable development and conservation.

Participants included government officials, researchers, NGOs, and community representatives, creating a vibrant platform for dialogue and knowledge exchange. The workshop featured hands-on sessions on data management tools and techniques, alongside discussions on aligning scientific data with policy frameworks. Case studies from various countries highlighted both challenges and successes, fostering mutual learning and encouraging innovative solutions.

The event achieved several key outcomes, including enhanced technical capacity for data collection and analysis among participants, the development of a draft regional action plan for collaborative data-sharing initiatives, and strengthened stakeholder engagement. By emphasising the integration of data into decision-making processes, the workshop underscored the importance of regional cooperation in addressing climate change, biodiversity loss, and sustainable resource use.

Overall, the workshop laid a solid foundation for transformative action in marine seascape management across the region, demonstrating the value of data-driven approaches and inclusive collaboration.

iii) Integrated Management Effectiveness Tool (IMET) Sensitisation Workshop, Nairobi, Kenya

The IMET training workshop was held in June 2025, with the overarching goal of strengthening the capacity of protected and conserved area practitioners to assess and improve management effectiveness. It equipped participants with the knowledge and practical skills needed to present IMET within their organisations and to support decisions on its institutionalisation and implementation across protected area networks.

The workshop brought together conservation practitioners, protected area managers, government representatives, development partners, scientists, and representatives of local conservancies from 24 countries across Eastern and Southern Africa, including Angola, Botswana, Comoros, Djibouti, Eritrea, Eswatini, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Somalia, South Africa, South Sudan, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. This diverse regional participation fostered knowledge exchange, collaboration, and the sharing of best practice in protected area management.

The training introduced participants to IMET and its application as a comprehensive Protected Area Management Effectiveness (PAME) assess-

ment tool. It covered the assessment of management effectiveness across key elements — context, planning, inputs, processes, outputs, outcomes, and impacts. Participants also gained practical knowledge of monitoring, planning, and evidence-based decision-making for protected area management, while exploring the use of IMET at protected area, landscape, and national levels.

Table 8.1 Summary of Trainings undertaken under RCoE

#	Course Names	Delivery Mode	Dates Offered
1	Transforming Maps into Stories & Data into Decisions	Online	10 th to 21 st Aug 2026
2	Capacity Needs Assessment and Training on biodiversity-inclusive spatial planning	Physical	8 th to 17 th , June, 2026
3	Regional Geospatial Forum for Inclusive Biodiversity Action	Physical	9 th to 12 th June 2026
4	Capacity Needs Assessment and Training on GIS, Remote Sensing, and Invasive Species Monitoring in Madagascar	Physical	27 th Apr - May 9 th , 2026
5	Policy Engagement Dialogue and Geospatial Training Workshop in Mozambique	Physical	9 th to 13 th Feb 2026
6	Spatial Tools for Planning and Managing Areas to Reduce Biodiversity Loss	Online	14 th – 28 th Nov, 2025
7	Application of GIS in Conservation Mapping	Online	11 th to 29 th August 2025
8	Integrated Management Effectiveness Tool Training - Protected and Conserved Area Effectiveness (PAME)	Physical	16 th to 20 th June 2025
9	Data & Information Engagement Workshop for Protected and Conserved Areas	Physical	30 th Sept - 4 th Oct 2024
10	Capacity Building for ‘Strengthening the Network of the New Protected Areas’ (S2NPA) in Madagascar project team	Physical	29 th July † 9 th Aug 2024

iv) Regional Geospatial Forum for Inclusive Biodiversity Action

Convened in June 2026 at RCMRD, Nairobi, the Regional Geospatial Forum for Inclusive Biodiversity Action was a strategic initiative that fostered collaboration and advanced the application of geospatial technologies for biodiversity conservation across Eastern and Southern Africa. It sought to support the implementation of Targets 21 (knowledge availability), 22 (participation in decision-making), and 23 (gender equality and responsiveness) of the Kunming–Montreal Global Biodiversity Framework, by strengthening inclusive, gender-responsive, and community-led biodiversity action. It promoted meaningful participation by women, youth, and Indigenous Peoples and Local Communities (IPLCs) in conservation planning and decision-making, while enhancing their capacity to use geospatial data and tools for monitoring, reporting, and evidence-based policy engagement.

Recognising that biodiversity loss transcends national boundaries, the forum provided a multi-stakeholder platform where women, youth, and IPLCs convened to address shared conservation challenges. By promoting inclusivity, the forum enabled participants from both English- and Portuguese-speaking countries in the region to engage in biodiversity conservation discussions, strengthening regional conservation capacity and cross-border collaboration.



The forum focused on integrating geospatial technologies into national and regional biodiversity policy and planning frameworks. Participants explored the application of geospatial tools for ecosystem monitoring, protected area management, and tracking progress toward the Kunming–Montreal Global Biodiversity Framework (KM-GBF). Through practical training sessions, participants enhanced their skills in biodiversity conservation storytelling, learning to translate local data into evidence-based reports that support informed conservation planning and decision-making.

Overall, the forum strengthened the capacity of Eastern and Southern African countries to sustainably manage biodiversity resources through enhanced technical skills, policy engagement, and regional collaboration. The knowledge generated informed the development of a policy brief and recommendations to support biodiversity data governance, institutional capacity development, and the implementation of the KM-GBF across the region.

Structured Training Programmes:

v) Capacity Building for 'Strengthening the Network of the New Protected Areas' (S2NPA) Project Team — Madagascar

Under this initiative, ten participants — conservationists, environmental scientists, and GIS professionals — from Madagascar's Strengthening the Network of New Protected Areas (S2NPA) proj-



ect undertook a two-week training (July–August 2024) covering:

- Mapping and monitoring protected and conserved areas using QGIS and Google Earth Engine, including the production of land use and land cover maps.
- Effective use of the World Database on Protected Areas (WDPA).

The overall objective of the S2NPA project was to establish an effective network of new protected areas representing terrestrial, marine/coastal, and freshwater ecosystems, aimed at both the sustainable conservation of biodiversity and improving local livelihoods through the sustainable use of these resources.

vi) Application of GIS in Conservation Mapping — Online Course

This training was delivered in response to requests from stakeholders across the region, including the South Sudanese Youth Biodiversity Network (SSYBN) and the Kenya Youth Biodiversity Network (KYBN), in March 2025. The SSYBN specifically requested collaboration with RCMRD to conduct online training for stakeholders and beneficiaries from South Sudan's Ministry of Environment and Forestry, the Ministry of Wildlife Conservation and Tourism, National Parks staff, the South Sudan Parliamentary Committee on Environment, and the National Bureau of Statistics. Training content included:

- Introduction to wildlife conservation and protection.

- Introduction to GIS for tracking illegal wildlife trade and logging.
- Community engagement in wildlife protection.
- Wildlife hazard management.

The online course, delivered in August 2025, achieved several important capacity-building outcomes for participants. It provided a deeper understanding of the Global Biodiversity Framework and highlighted the significance of Target 3 in advancing global conservation efforts. Participants gained practical skills in using GIS tools to map, analyse, and monitor protected areas and biodiversity hotspots, and learned how to apply GIS in assessing land-use change, identifying threats to biodiversity, and evaluating the effectiveness of conservation measures. The course also enhanced participants' ability to use remote sensing data for ecosystem monitoring and to identify priority areas for conservation, and equipped them to develop and present GIS-based maps and reports contributing to Target 3. The training further strengthened participants' confidence and accuracy in updating protected and conserved area databases, and enabled them to produce high-level conservation maps for decision-making and reporting.

vii) Policy Engagement Dialogue and Geospatial Training Workshop, Maputo, Mozambique

The workshop was held in Maputo, Mozambique, in February 2026, under the RCMRD Regional Centre of Excellence (RCoE-ESA) project, in collaboration with Rede para Gestão Comunitária de Recursos Naturais (the Network for Community Management of Natural Resources of Mozambique, ReGeCom). It strengthened the use of geospatial technologies in biodiversity policy, planning, and monitoring, while addressing the language barriers that had previously limited participation by Portuguese-speaking countries, through bilingual (Portuguese–English) delivery.

The workshop combined policy dialogue with hands-on GIS training under the theme "Towards the Achievement of Target 3 of the Global Biodiversity Framework." Government agencies, conservation institutions, and technical experts discussed biodiversity data governance, National Biodiversity Strategy and Action Plan (NBSAP) implementation, and opportunities for improved institutional collaboration and data sharing. Participants also received practical training in protected area database management, habitat loss monitoring, and GIS applications for biodiversity conservation.

A total of 35 participants (13 women and 22 men) successfully completed the training and were certified. The workshop strengthened collaboration between policy and technical institutions, enhanced national capacity to apply geospatial tools for biodiversity monitoring, and identified key priorities for improving biodiversity data governance. Outcomes will inform RCMRD policy briefs and support implementation of the KM-GBF across the Eastern and Southern Africa region.

viii) Spatial Tools for Planning and Managing Areas to Reduce Biodiversity Loss — Online Course

This intensive online training programme was designed to equip conservation professionals with advanced GIS methodologies to support the achievement of Target 1 of the KM-GBF.

The course attracted a diverse group of participants, including government planners, conservation managers, GIS analysts, researchers, and early-career professionals. Delivered through a combination of live interactive sessions and hands-on practical exercises, the training successfully bridged the gap between technical GIS competencies and national biodiversity planning and reporting requirements.

The curriculum equipped participants with practical skills for planning and managing ecosystems effectively, ensuring conservation initiatives aligned with key headline indicators, including the Red List of Ecosystems, the extent of natural ecosystems, and the proportion of land and marine areas covered by biodiversity-inclusive spatial plans.

Throughout the programme, participants gained hands-on experience with the ArcGIS suite of tools, including ArcGIS Online, Dashboards, StoryMaps, ArcGIS Hub, and Instant Apps. This practical, technology-driven approach enabled participants to create, analyse, and visualise spatial data, transforming geospatial information into actionable, science-based products for conservation planning. Through practical exercises and real-world case studies, participants developed skills in mapping natural ecosystems, identifying spatial planning gaps, building interactive dashboards, and creating collaborative conservation websites to support evidence-based decision-making and stakeholder engagement.

Upon successful completion, participants were awarded certificates and emerged with enhanced capacity to design and implement biodiversity-inclusive spatial plans, contributing to reduced biodiversity loss and to the implementation of the KM-GBF.

ix) Uganda Protected Area Reporting and Geospatial Data Pipeline Training Workshop



line Training Workshop

The Uganda Protected Area Reporting and Geospatial Data Pipeline workshop, held in December 2025 at RCMRD in Nairobi, served as a critical technical engagement to address Uganda's biodiversity monitoring and reporting requirements. Initiated at the request of Uganda's CBD focal person to ensure the validity of data for the country's seventh National Report (NR7), the workshop brought together experts from key conservation institutions, including the Uganda National Environment Management Authority (NEMA), the Uganda Wildlife Authority (UWA), the National Forestry Authority (NFA), and the Ministry of Water and Environment.

The objectives were to synchronise Uganda's national protected area data with the World Database on Protected Areas (WDPA); to provide technical staff with advanced GIS analysis training, specifically using the Geo-Hex methodology; and to develop a national data pipeline blueprint to streamline future environmental reporting, including NBSAP and NR7 targets.

By fostering inter-agency collaboration, the workshop aimed to dismantle the "silo working" mentality that has historically impeded the accuracy and regularity of biodiversity data submissions, ensuring national datasets more accurately reflect changes in ecosystem and wetland coverage.

Beyond immediate data submission tasks, the workshop established a strategic roadmap for enhancing Uganda's technical infrastructure. Partic-

ipants assessed critical needs for drone operations, artificial intelligence for rapid ecosystem change detection, and secure data management protocols to prevent the misuse of information.

The workshop concluded with a commitment to formalise institutional collaboration through proposed Memoranda of Understanding (MOUs) with RCMRD, and to develop thematic dashboards to better support policy-making. These foundational steps, supported by planned implementation programmes throughout 2026, set a clear trajectory for sustainable, data-driven decision-making in Uganda's biodiversity conservation efforts.



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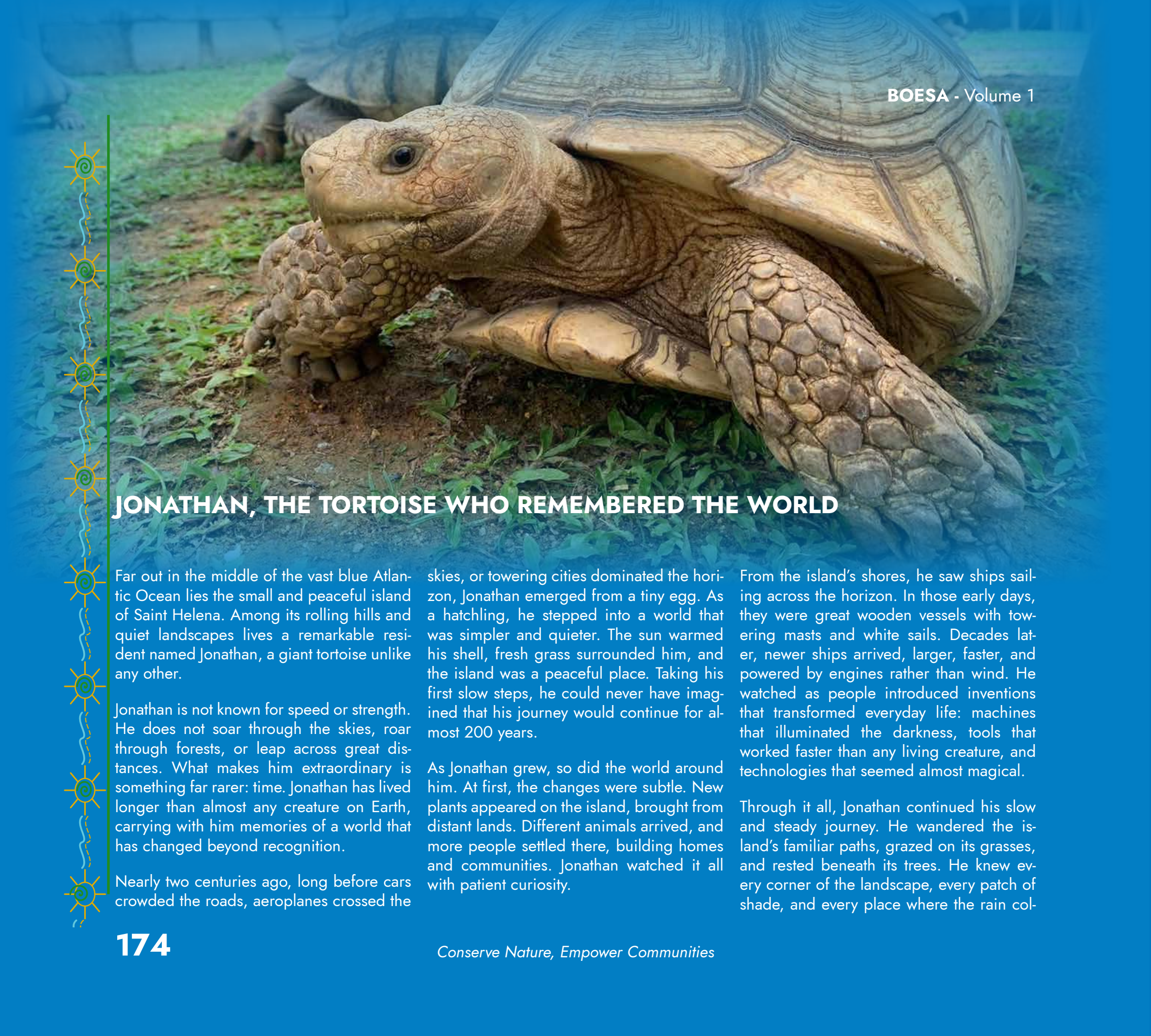
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CHAPTER NINE

OUTREACH, EDUCATION AND ENGAGEMENT

A large tortoise, Jonathan, is shown in profile, walking towards the left. Its head is extended, and its front legs are visible. The tortoise has a large, patterned shell and thick, wrinkled skin. It is walking on a patch of green grass and brown soil. In the background, another tortoise is partially visible, also walking. The entire image is overlaid with a semi-transparent blue filter.

JONATHAN, THE TORTOISE WHO REMEMBERED THE WORLD

Far out in the middle of the vast blue Atlantic Ocean lies the small and peaceful island of Saint Helena. Among its rolling hills and quiet landscapes lives a remarkable resident named Jonathan, a giant tortoise unlike any other.

Jonathan is not known for speed or strength. He does not soar through the skies, roar through forests, or leap across great distances. What makes him extraordinary is something far rarer: time. Jonathan has lived longer than almost any creature on Earth, carrying with him memories of a world that has changed beyond recognition.

Nearly two centuries ago, long before cars crowded the roads, aeroplanes crossed the

skies, or towering cities dominated the horizon, Jonathan emerged from a tiny egg. As a hatchling, he stepped into a world that was simpler and quieter. The sun warmed his shell, fresh grass surrounded him, and the island was a peaceful place. Taking his first slow steps, he could never have imagined that his journey would continue for almost 200 years.

As Jonathan grew, so did the world around him. At first, the changes were subtle. New plants appeared on the island, brought from distant lands. Different animals arrived, and more people settled there, building homes and communities. Jonathan watched it all with patient curiosity.

From the island's shores, he saw ships sailing across the horizon. In those early days, they were great wooden vessels with towering masts and white sails. Decades later, newer ships arrived, larger, faster, and powered by engines rather than wind. He watched as people introduced inventions that transformed everyday life: machines that illuminated the darkness, tools that worked faster than any living creature, and technologies that seemed almost magical.

Through it all, Jonathan continued his slow and steady journey. He wandered the island's familiar paths, grazed on its grasses, and rested beneath its trees. He knew every corner of the landscape, every patch of shade, and every place where the rain col-

lected after a storm.

Yet as the years passed, Jonathan noticed changes that went beyond new inventions and growing settlements. Some of the trees that had once stood tall disappeared. Certain animals that had once been common became harder to find. The seasons seemed less predictable, and the air felt different somehow. Though he could not fully understand the reasons, Jonathan sensed that the natural world was changing more rapidly than ever before.

By now, Jonathan had become incredibly old. His shell, worn smooth by decades of sun and rain, bore the marks of a long life.

His movements had become slower, and his eyesight was no longer as sharp as it once had been. Yet he remained resilient, a living connection to the past.

People from around the world began travelling to Saint Helena to meet him. Visitors often asked in amazement, "Is he really the oldest?"

The answer was always the same: yes. Jonathan had witnessed more history than almost any living creature on Earth. He had lived through generations of change, quietly observing as the world transformed around him.

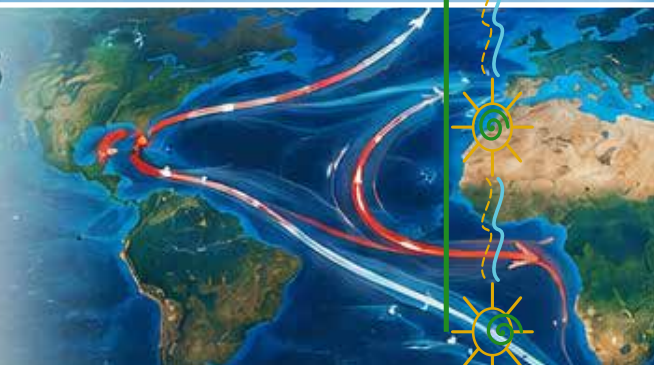
Children, especially, are fascinated by Jon-

athan. They sit beside him, watching as he slowly chews his food or stretches his neck towards the warmth of the sun. To them, he is more than just a tortoise. He is a living storybook, a gentle reminder of the passage of time, and a witness to the remarkable story of our changing world.

Jonathan's life teaches us something important. While the world often moves quickly, there is value in patience, observation, and endurance. Through nearly two centuries of change, he has remained a quiet observer of history, a symbol of resilience, and a reminder of the deep connection between all living things and the world they share.

OCEAN CURRENTS

are very important, they're responsible for distributing the sun's heat and maintaining a climate favourable for life on Earth.



HUMPHREY THE LOST WHALE

Humphrey was no ordinary humpback whale. He loved splashing through the waves, leaping high into the sky, and singing songs that echoed across the ocean. Every morning, he would greet the sunrise with a joyful spout of water.

But one day, Humphrey got a little too curious. Instead of staying in the wide-open ocean, he swam past San Francisco and into a sparkling river that twisted and turned inland.

"This doesn't feel right," Humphrey thought, glancing at the water that was growing shallower. The riverbanks were lined with strange things; boats that honked, people pointing, and even bridges towering above him.

On the shore, people gasped. "A whale in the river!" they shouted. "He could get stuck!"

Scientists quickly gathered in boats. They weren't sure what to do at first, but then someone had a clever idea.

"What if we speak his language?" said Dr Thompson. They placed underwater speakers and played whale songs — long, beautiful melodies that echoed through the water.

Humphrey perked up his fins. Strange sounds swirled around him. He tilted his head. Could this be... a message? Slowly, he began to follow the music.

The journey was not easy. He bumped into shallow spots, startled at passing boats, and had to rest along the way. But every time he heard the comforting whale songs, he kept swimming forward.

Finally, after a long, careful journey, Humphrey felt the deep, open water beneath him again. The ocean! He flapped his tail and leapt high, sending a massive spout into the sky.

People on the shore cheered. Humphrey sang a happy song, and the ocean sparkled in response. He had learned that curiosity is wonderful, but sometimes, the safest path is guided by friends who care.



TEMBO'S SECRET WATER PATH

Across the vast savanna near Tsavo National Park lived a young elephant named Tembo. Like all elephants, Tembo loved exploring the grasslands, wandering beneath acacia trees, and travelling with his family across the open plains. Life in the savanna followed a familiar rhythm, guided by the changing seasons and the availability of water.

One year, however, the dry season was harsher than anyone could remember.

Day after day, the sun blazed overhead. Small streams dried up, muddy pools disappeared, and rivers that had once flowed across the landscape shrank into narrow trickles. The grass turned brown, and dust swirled through the air with every gust of wind.

The animals grew worried.

"We need water," said the zebras as they searched the horizon.

"But where can we find it?" asked the antelope.

Everywhere they looked, the land seemed dry and empty.

Tembo listened quietly. Although he was young, he remembered stories his grandmother had told him while they travelled together across the savanna. She often spoke about the wisdom carried from one generation of elephants to the next.

"Elephants never forget the old paths," she would say. "Long after rivers disappear and seasons change, the land remembers where water can be found."

Those words stayed with Tembo.

Determined to help, he set off across the plains in search of water. He did not have a map or a guide. Instead, he relied on something that elephants have used for generations: memory, instinct, and careful observation.

As he travelled, Tembo paid close attention to the world around him. He noticed patches of green trees standing out against the dry landscape. He watched flocks of birds flying steadily in a particular direction. He even felt cool currents of air drifting across the land during the hottest part of the day.

Each clue seemed to point the same way.

Step by step, Tembo followed the signs.

The journey was long, and at times he wondered whether he was heading in the right direction. Yet he trusted the lessons of his ancestors and continued onward.

Then, after many miles, he saw something remarkable.

Hidden among clusters of trees was a waterhole.

Its clear water sparkled in the sunlight. Green plants grew around its edges, and signs of wildlife could be seen everywhere. It was a place untouched by the worst effects of the drought.

Tembo trumpeted with excitement.

Without delay, he returned to the other animals and led them along the route he had discovered. Zebras, antelope, buffalo, and many others followed him across the savan-

na.

When they finally reached the waterhole, relief spread through the thirsty herd. The animals drank deeply, rested in the shade, and found fresh vegetation nearby. Before long, the area was full of life once again.

The drought eventually ended, but Tembo's journey was not forgotten.

Many years later, scientists began studying wildlife movements across the region. Using satellite imagery and digital maps, they tracked the routes that elephants regularly travelled. As they analysed the data, they made an exciting discovery.

The path Tembo had followed to reach the hidden waterhole matched one of the routes identified by the researchers.

They called it an elephant migration corri-

dor, a natural pathway used by generations of elephants to move between important habitats and water sources.

The discovery revealed something powerful. Long before satellites, computers, and modern maps existed, elephants had already learned how to navigate the landscape. Their knowledge, passed down through generations, helped them survive droughts and changing conditions.

Tembo's story reminds us that nature holds its own wisdom. Animals often understand their environment in ways that humans are only beginning to discover. By observing and protecting these natural pathways, we can learn valuable lessons about conservation, resilience, and living in harmony with the land.

Sometimes, the best maps are the ones nature has been following all along.

AN ELEPHANT'S

trunk is packed with over 40,000 individual muscles, whereas the entire human body only has around 650.

This gives the trunk enough raw strength to effortlessly rip branches off trees, yet enough delicate precision to pick up a single blade of grass.



SAMI AND THE SECRET MANGROVE FOREST

Along the sun-drenched coast near the ancient island of Lamu, where the Indian Ocean laps lazily against shores of fine white sand, lived a boy named Sami. More than anything else in the world, Sami loved to explore. He spent his days tracking the shifting tides, counting the white-sailed dhows on the horizon, and following the footprints of shorebirds pressed into the wet earth.

One bright morning, a flash of brilliant sapphire caught his eye. It was a tide-pool crab, its shell gleaming like a polished jewel. Laughing, Sami gave chase. The clever creature scurried sideways, darting nimbly across the sandbar and leading him away from his usual paths, straight towards a dense, mysterious wall of greenery where the land met the sea.

Sami slowed his pace, the crab forgotten, as he stepped into a twilight world of water and wood. He had wandered into a thick, tangled forest of twisted trees that grew right out of the salty ocean water. Their trunks arched like the legs of giant spiders, and their long, arching roots formed an intricate, wooden labyrinth beneath the surface.

"What a strange place!" Sami whispered to himself, his voice echoing softly in the quiet shade.

To his astonishment, the leaves above him seemed to rustle, though there was no breeze. A voice, as soft and rhythmic as the gentle rise and fall of the tide, replied, "We are the mangroves, young traveller. We protect this land."

Sami looked around, his amber eyes wide with wonder. As his vision adjusted to the speckled shadows, he saw that the forest was teeming with secret life. Tiny, shimmering fish darted like silver arrows between the submerged roots, finding safe harbour from the deep-sea predators. High above, elegant sea birds nested in the leafy canopy, their songs filling the air, while the water around his ankles remained perfectly calm and crystal clear.

"How do you protect the land?" Sami asked, reaching out to touch the smooth, salt-crusted bark of the nearest tree.

"We stand together to stop the strong waves from battering the shore," the mangroves explained, their voices blending into a comforting hum. "Our tangled roots catch the

CROCODILES

grow over 3K teeth in their life time.

On average it takes about 20 months for a full mouth of teeth to be replaced, if you do the maths that means that a 75-year-old crocodile may have had 45 sets of teeth!



earth, keeping the precious soil from washing away into the deep ocean. We are the nursery of the sea, a safe home to countless creatures who need us to survive.”

Sami smiled, enchanted by the magic of the flooded forest. But as he walked deeper into the grove, the beauty began to fade. The light grew harsh. He stumbled into a clearing where the ancient silence had been broken, not by song, but by axes. A wide swath of the forest lay empty. Several great trees had been cut down to stumps, leaving raw gaps in the canopy.

Without the protective embrace of the roots, the magic here was broken. The water in this clearing was thick and muddy, choked with loose soil that drifted aimlessly. Sami looked down into the murk, but there were no silver fish to be seen. The birds had fled, leaving the branches bare and lonely. A heavy sadness pressed on his chest.

Realising what was at stake, Sami turned and

ran. He raced out of the shadows, across the blinding white sandbars, and straight back to his village. Breathless and determined, he gathered the elders, the fishermen, and the children beneath the shade of the great village baobab tree. With wild gestures and a fierce passion in his voice, he told them everything he had seen and learned from the whispering trees.

The fishermen listened intently, realising why their daily catches had been dwindling. The elders nodded, recognising the wisdom in the boy's words.

Change did not happen overnight, but a spark had been lit. Soon, the entire village rallied together to save their coastal guardians. The axes were put away, and a new community law was passed to ban the cutting of the forest. Together, led by Sami, the villagers spent their weekends wading into the mud, carefully planting fragile new mangrove seedlings into the spaces that had been cleared.

Months passed, turning into seasons. Under the warm African sun, the small seedlings took root, stretching their wooden fingers down into the earth and up towards the sky. Slowly, the water in the clearing cleared, turning from a muddy brown back to a brilliant, transparent turquoise.

One evening, Sami walked back to the edge of the grove. The air was once again alive with the calls of nesting birds. As he looked down into the water, a school of tiny fish brushed past his feet, seeking shelter among the newly grown roots. The shoreline felt solid, anchored, and strong against the evening tide.

Standing at the edge of the thriving green kingdom, Sami smiled. He understood the secret of the coast now, a truth as old as the tides: when we protect nature, nature protects us back.

A GIRAFFE'S

tongue can grow up to 50 centimetres long and is a deep bluish-black colour.

This dark pigmentation is an evolutionary defence mechanism that prevents the tongue from getting sunburned while the giraffe strips leaves from high trees all day.



FUN LEARNING

Nature Scavenger Hunt

Find different leaves, birds, and insects in your backyard or park. Identify how they help the environment.

LEAVES – Find and Collect

Find different shapes, sizes and colors.

BIRDS – Observe and Identify

Look for birds around you. What do they look like? What are they doing?

INSECTS – Spot and Find

Search for insects. Look closely but be gentle!

HOW THEY HELP THE ENVIRONMENT

Leaves
Make food for plants, provide shade, and clean the air.

Birds
Spread seeds, control insects, and keep ecosystems balanced.

Insects
Help pollinate flowers, decompose organic matter, and are food for other animals.

NATURE EXPLORER TIPS

- Look closely and quietly.
- Do not harm plants or animals.
- Take photos or draw what you find.
- Respect nature and leave no litter behind.

YOU DID IT!

You're a Nature Explorer!

My Observations

- What was the most interesting thing you found?
- How can we protect these living things?

REDUCE, REUSE, RECYCLE CHALLENGE!

Small actions today, a better planet tomorrow.

REDUCE

Use less. Avoid waste.

REUSE

Use items again. Be creative!

RECYCLE

Sort and recycle. Live it new life.

WEEKLY WASTE TRACKER

Track your waste for 7 days. Can you reduce it each day?

DAY	WHAT I DID TO REDUCE WASTE	ITEMS I REUSED OR REPAIRED	WHAT I RECYCLED	WASTE REDUCED? (YES/NO)
DAY 1				
DAY 2				
DAY 3				
DAY 4				
DAY 5				
DAY 6				
DAY 7				

ART CHALLENGE!

Create an artwork using only recycled materials. Be imaginative. Be proud. Be a Changemaker!

THINK ABOUT!

- What materials did you use?
- What does your artwork show?
- How does it help our planet?

WILDLIFE WATCHING JOURNAL

Observe. Appreciate. Protect.

Take your time, look closely and see the amazing life all around you!

1. WHAT DID YOU SEE?

DATE: _____ TIME: _____ LOCATION: _____

Name or type of creature: _____

2. COLOURS

What colours did you see?

3. SIZE

How big was it?

☐ Small ☐ Medium ☐ Large

_____ cm (if you know)

4. WHAT WAS IT DOING?

Describe its behaviour.

☐ Flying ☐ Perching ☐ Feeding ☐ Resting ☐ Moving ☐ Building / Nesting ☐ Other: _____

5. WHERE DID YOU SEE IT?

Describe its habitat.

☐ Tree ☐ Near water ☐ Garden ☐ Bush / Shrub ☐ Grass ☐ Other: _____

6. NOTES & INTERESTING FACTS

Anything else you noticed or learned?

7. SKETCH IT!

Make a detailed sketch of what you saw.

DID YOU KNOW?

Every creature plays an important role in nature. By watching and learning about them, we can help protect their homes and keep our planet healthy!

Be a nature explorer. Be a nature protector.

ACTIVITIES

Match the Animal to Its Habitat

Draw a line from each animal to the place where it lives.

Every animal has a home. Let's match them!

ANIMALS



Dolphin



Gorilla



Penguin



Camel



Tree Frog



Lion

HABITATS



Tropical Forest



Polar Region



Ocean



Savanna



Desert



Freshwater Pond

Animals depend on their habitats. Let's protect their homes! ♥

ECO-HERO QUIZ

WHAT TYPE OF CONSERVATIONIST ARE YOU?

Take a fun quiz to find out if you're a WILDLIFE WARRIOR, OCEAN DEFENDER, or FOREST GUARDIAN!

CHOOSE THE ANSWER THAT MATCHES YOU BEST!

1	2	3	4	5
What is your favourite place to spend time?	What animal do you feel most connected to?	What would you do on a perfect day?	Which superpower would you choose?	What is your favourite way to help?
A In the jungle or on a safari!	A Elephant	A Protect animals and their homes	A Talk to animals	A Stop poaching and protect wildlife
B At the beach or in the ocean	B Dolphin	B Clean the beach and save sea life	B Breathe underwater	B Reduce plastic and save the oceans
C In the forest or mountains	C Owl	C Plant trees and explore nature	C Grow trees instantly	C Recycle, reuse and save trees

COUNT YOUR ANSWERS!

MOSTLY A's? WILDLIFE WARRIOR	MOSTLY B's? OCEAN DEFENDER	MOSTLY C's? FOREST GUARDIAN
You have a big heart for animals! You love wildlife and want to protect animals and their habitats from harm.	You care deeply about our planet! You want to keep the oceans clean and protect amazing marine life.	You love trees and nature! You want to keep forests green, clean and full of life for everyone.
You protect the wild. You are a true Wildlife Warrior!	You defend the oceans. You are a true Ocean Defender!	You guard the forests. You are a true Forest Guardian!
PERFECT! RECYCLE! SAVE!	SCORE! PERFECT! INSPIRE!	PLANT! PERFECT! PRESERVE!

Be a hero today for a better tomorrow!

ACT CARE INSPIRE

EVERY ACTION COUNTS!

STORYTELLING CHALLENGE

Write or draw your own NATURE ADVENTURE and share how you would help the planet.

Your story can inspire a better tomorrow!

Every story has the power to change the world!





FUN LEARNING

NATURE YOGA & MOVEMENT

Learn fun poses inspired by animals like the butterfly, tree, and turtle.

BUTTERFLY POSE

Spread your wings and fly!

Opens hips
Helps you feel happy & calm

TREE POSE

Stand tall like a strong tree!

Improves balance
Builds focus & strength

TURTLE POSE

Slow down, go within your shell and breathe.

Calm your mind
Helps you relax

MORE ANIMAL INSPIRED POSES!

CAT POSE

Stretch your back like a cat.

ELEPHANT POSE

Reach up high and swing your trunk, tutu!

FROG POSE

Hop into a squat and be strong!

LION POSE

Roar like a lion and let your bravery shine!

SNAKE POSE

Slither up and look around.

MOVE LIKE NATURE, GROW LIKE YOU!

CONNECT with nature
CARE for your body
SHARE kindness

Breathe in nature, move with joy, and be your best you!

ALPHABET WORDPLAY RIDDLES

Can you guess the letter?

1 Which letter in the alphabet is an insect?

B (Bee)

2 Which letter in the alphabet is a water body?

C (Sea)

3 Which letter in the alphabet is a bird?

J (Jay)

4 Which letter in the alphabet is a vegetable?

P (Pea)

5 Which letter in the alphabet is a drink?

T (Tea)

6 Which letter in the alphabet is a question?

Y (Why?)

7 Which letter in the alphabet is a line?

L (A line shaped like an "L")

8 Which letter in the alphabet is a body part?

I (Eye)

ANSWERS

1	2	3	4	5	6	7	8
B	C	J	P	T	Y	L	I
(Bee)	(Sea)	(Jay)	(Pea)	(Tea)	(Why?)	(A line shaped like an "L")	(Eye)

PLANETS/ FUN FACTS

YOU ONLY BREATHE THROUGH ONE NOSTRIL AT A TIME!

Your nose is amazing!

Surprising but true!
At any given moment, your body favours **one nostril** over the other.

THE NASAL CYCLE
is a natural cycle that automatically switches every few hours.

LEFT NOSTRIL IS MORE ACTIVE

RIGHT NOSTRIL IS MORE ACTIVE

It switches every few hours without you even noticing!

Your Heartbeat is Uniquely Yours!

1 EVERY PERSON HAS A UNIQUE HEARTBEAT.
Every person has a distinct heartbeat rhythm, known as a "heartbeat signature."

Your heart works hard for you every second of every day!

2 JUST LIKE FINGERPRINTS, NO TWO ARE EXACTLY ALIKE!
Even identical twins with the same DNA have different rhythms.

Sunlight is a Glimpse into the Past!

1 SUNLIGHT TAKES TIME!
It takes about **8 minutes and 20 seconds** for light from the Sun to reach Earth. So, when you look at the Sun (never directly, though!), you're actually seeing it as it was over 8 minutes ago.

8 minutes 20 seconds

A YEAR ISN'T EXACTLY 365 DAYS!

Earth takes about **365 days, 5 hours, 48 minutes, and 45 seconds** to orbit the Sun.

We round it down to **365 days** for simplicity.

Earth is always on the move!

SO... HOW DO WE MAKE UP THE MISSING TIME?

To make up for the missing time, we add an **extra day**—

LEAP YEAR!

WHY LEAP YEARS?
Those extra 5 hours.

WOOD: EARTH'S RAREST TREASURE IN THE UNIVERSE!

Unique. Natural. Incredibly **RARE!**

Space has many wonders... but wood is one of a kind!

SPACE HAS PLENTY OF AMAZING STUFF!

Scientists have found that many things we value on Earth exist in space—sometimes in huge amounts!

DIAMONDS	GOLD	SILVER	WATER
Found in space	Found in space	Found in space	Found in space

BUT WOOD?

Unique to Earth—at least as far as we know!

WHY IS WOOD SO UNIQUE?

Wood is the result of **BIOLOGICAL LIFE**. Trees grow, breathe, and photosynthesize using sunlight. They create complex organic material that becomes wood.

THE DIFFERENCE:

Metals and rocks are formed through **PHYSICS**. But wood is formed through **LIFE** itself!

WOOD FORMATION PROCESS:

GROWS → PHOTOSYNTHESIZES → FORMS WOOD

NEPTUNE EXPERIENCES ALL FOUR SEASONS! JUST LIKE EARTH!

NEPTUNE: The windiest planet in our Solar System!

Neptune takes about **165 EARTH YEARS** to complete one orbit around the Sun.

That means **EACH SEASON LASTS ABOUT 40 EARTH YEARS!**

GLOSSARY OF TERMS

30x30 Target (KM-GBF Target 3): The global commitment, adopted under the CBD, to effectively conserve and manage at least 30% of the world's terrestrial, inland water, coastal, and marine areas by 2030.

The Aichi Biodiversity Targets: They were a set of 20 global targets established under the Convention on Biological Diversity (CBD) as part of the Strategic Plan for Biodiversity 2011–2020. They were designed to address and reduce biodiversity loss by guiding global action on the conservation and sustainable use of biodiversity.

Biodiversity: The variability among living organisms from all ecosystems, including terrestrial, marine, and aquatic environments, and the ecological complexes of which they are part.

Biodiversity Intactness: An indicator reflecting the degree to which an ecosystem retains its original species composition and ecological functions relative to undisturbed conditions.

BIOPAMA programme: The Biodiversity and Protected Areas Management (BIOPAMA) Programme is a significant initiative aimed at improving the long-term conservation and sustainable use of natural resources in African, Caribbean, and Pacific (ACP) countries. It is financed by the European Union's 11th European Development Fund and is jointly implemented by the International Union for Conservation of Nature (IUCN) and the Joint Research Centre of the European Commission (JRC).

Blue Economy: The sustainable use and development of ocean and coastal resources to drive economic growth, improve livelihoods, and preserve marine ecosystem health — particularly critical in the WIO region.

Conserved Area

A geographically defined area that is governed and managed in ways that achieve positive and sustained long-term outcomes for biodiversity conservation, including OECMs.

Ecosystem Restoration

The process of assisting the recovery of degraded, damaged, or destroyed ecosystems to enhance biodiversity, ecosystem functions, and resilience.

Ecosystem Services

The benefits people obtain from ecosystems, including provisioning, regulating, cultural, and supporting services.

Geospatial Data

Data referenced to a specific geographic location, enabling spatial analysis, mapping, and decision support.

Global Biodiversity Framework (GBF)

The global policy framework adopted under the CBD to guide biodiversity conservation, sustainable use, and equitable benefit-sharing actions through 2030 and beyond.

Hexagon Map (Mural)

A spatial visualization approach using hexagonal grid cells to present aggregated data, support regional comparison, and enhance interpretability of spatial patterns.

Indigenous Peoples and Local Communities (IPLCs)

Groups with distinct cultural identities and long-standing relationships with land and natural resources, playing a key role in biodiversity conservation and stewardship.

Key Biodiversity Area (KBA)

A site contributing significantly to the global persistence of biodiversity, identified using standardized scientific criteria.

Marine Protected Area (MPA)

A clearly defined marine or coastal area managed to achieve long-term conservation of biodiversity, ecosystem services, and associated cultural values.

Nagoya Protocol: A supplementary agreement to the CBD ensuring fair and equitable sharing of benefits from genetic resource use, designed to combat biopiracy.

Other Effective Area-Based Conservation Measures (OECMs)

A geographically defined area, other than a protected area, that is governed and managed to deliver effective and sustained in-situ biodiversity conservation outcomes (e.g., community conservancies, sacred forests, private reserves).

Protected Area (PA)

A clearly defined geographical space, recognized and managed through legal or other effective means to achieve long-term conservation of nature.

Protected and Conserved Areas (PCAs)

A collective term encompassing protected areas and OECMs contributing to biodiversity conservation objectives.

Protected Area Management Effectiveness (PAME)

The assessment of how well protected and conserved areas are being managed to achieve stated conservation goals.

Red List of Ecosystems (RLE): An IUCN global standard for assessing ecosystem status and identifying those at high risk of collapse.

Red List Index (RLI): An indicator measuring changes in aggregate extinction risk across species groups over time — a key barometer of global conservation effectiveness.

Seascape

A large-scale marine area comprising multiple ecosystems and uses, managed to balance biodiversity conservation and sustainable use.

Transboundary Conservation Area (TBCA)

A designated geographic region that spans one or more boundaries between states, sub-national units, or areas beyond national jurisdiction and involves the cooperative management of shared ecosystems, uniting protected areas and multiple-use zones to achieve long-term conservation and sustainable development goals.

Transfrontier Conservation Area (TFCA)

A large ecological region spanning two or more countries, integrating protected and multiple-use areas, collaboratively managed to conserve biodiversity, enhance ecological connectivity, and promote socio-economic development, as recognized under the SADC Protocol (1999).

Wetlands

Areas of marsh, fen, peatland, or water—natural or artificial, permanent or temporary—that support high levels of biodiversity and ecosystem services.

World Heritage Site

A cultural or natural site recognized by UNESCO as having Outstanding Universal Value.

Whole-of-Government / Whole-of-Society Approach: A governance strategy integrating biodiversity considerations into the mandates and operations of all government ministries and engaging all sectors of society, including indigenous communities and the private sector.





One Brand. Three Expressions.

The RCoE identity comes to life in three unique ways.
Together, they represent who we are and what we stand for.



Mascot
Our Brand Ambassador

- Represents RCoE with personality, energy and heart.
- Leads our stories, activities and community engagement.
- Inspires learning, collaboration and positive change.



Avatar
Our Digital Identity

- A simple, friendly face that represents RCoE online.
- Used across digital platforms, profiles and communications.
- Keeps us recognizable, consistent and connected.



Emoji
Our Shared Emotion

- Expresses love for nature, our planet and all life.
- A universal symbol for care, conservation and sustainability.
- Brings people together around a common purpose.

**Three expressions.
One purpose.**
Co-create. Innovate. Inspire.

♥ Together for a better world.

#RCoE #Biodiversity #Innovation #Collaboration #Sustainability



Biodiversity
Outlook
— for —
Eastern and
Southern Africa



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