



HARMONISED REGIONAL BIODIVERSITY FRAMEWORK AND JOINT ACTION PLAN FOR CONSERVATION OF AQUATIC BIODIVERSITY AND ENVIRONMENTAL PROTECTION IN TRANSBOUNDARY MARINE ECOSYSTEMS



Citation: AU-IBAR, 2023. HARMONISED REGIONAL BIODIVERSITY FRAMEWORK AND JOINT ACTION PLAN FOR CONSERVATION OF AQUATIC BIODIVERSITY AND ENVIRONMENTAL PROTECTION IN TRANSBOUNDARY MARINE ECOSYSTEMS

Disclaimer: The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official Policy or position of the African Union – Inter African Bureau for Animal Resources.

All rights reserved. Reproduction and Dissemination of material in this information product for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission of the copyright holders.

Requests for such permission should be addressed to:

The Director
African Union – Inter African Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park, Museum Hill, Westlands Road
P.O. Box 30786-00100, Nairobi, KENYA
Or by e-mail to: ibar.office@au-ibar.org

Published by AU-IBAR, Nairobi, Kenya

Copyright: © 2023 African Union – Inter African Bureau for Animal Resources (AU-IBAR)

Acknowledgements: The Director of AU-IBAR wishes to acknowledge the consultancy services by Dr. Hashali Hamukuaya, who prepared the report on harmonised regional biodiversity framework and joint action plan for conservation of aquatic biodiversity and environmental protection in transboundary marine ecosystems. The Director also extends appreciation to stakeholders (AU member states, REC, specialized regional institutions, Centres of Excellence, partners, NSAs and experts who contributed immensely to improving the quality of this report during the continental stakeholders' validation workshop.

Special thanks go to the Swedish International Development cooperation Agency (SIDA) for the ongoing cooperation and the team at AU-IBAR for the editorial work. This work was done with financial support by the Government of Sweden, through the Embassy of Sweden to the African Union.

Table of Contents

Acronyms	iv
1. Introduction and background	1
1.1 <i>An overview of prioritized issues of concern to biological diversity in African LMEs</i>	1
1.2 <i>Status of African marine biological diversity</i>	2
1.3 <i>Justification for a harmonized Regional framework</i>	6
1.4 <i>Methodology</i>	7
2. The Regional marine and coastal biodiversity framework	8
2.1 <i>The purpose</i>	8
2.2 <i>Vision and mission</i>	8
2.3 <i>Principles</i>	8
2.4 <i>Theory of change</i>	9
2.5 <i>Strategic goals and targets</i>	10
3. Joint Action Plan	13
4. Implementation of the framework and monitoring and evaluation	22
5. References	23

ACRONYMS

ABES	Africa Blue Economy Strategy
AfDB	African Development Bank
ASCLME	Agulhas and Somali Coastal Current Large Marine Ecosystem
AU	African Union
AU-IBAR	African Union Inter African Bureau for Animal Resources
BCLME	Benguela Current Large Marine Ecosystem
BES	Blue Economy Strategy
CAFF	Arctic Programme for the Conservation of Flora and Fauna
CBD	Convention on Biological Diversity
CCLME	Canary Current Large Marine Ecosystem
FAO	Food and Agriculture Organisation of the United Nations
GCLME	Guinea Current Large Marine Ecosystem
IAS	Invasive Alien Species
ICZM	Integrated Coastal Zone Management
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature
IUU	Illegal Unreported and Unregulated Fishing
LME	Large Marine Ecosystem
MEA	Multilateral Environmental Arrangements
MoU	Memorandum of Understanding
MedLME	Mediterranean Large Marine Ecosystem
MS	Member State
NBSAP	National Biodiversity Strategic Action Plan
NGO	Non-Governmental Organisation
PFRS	The Policy Framework and Reform Strategy for fisheries and aquaculture in Africa
REC	Regional Economic Community
SIDA	Swedish International Development Cooperation Agency
SADC	Southern Africa Development Community
SDGs	Sustainable Development Goals
TDA	Transboundary Diagnostic Analysis
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WIO	Western Indian Ocean

I. Introduction and background

I.1 An overview of prioritized issues of concern to biological diversity in African LMEs

Major issues of concern to marine biological diversity within the African LMEs include: unsustainable use of living marine resources (including IUU fishing), climate change, habitat loss and destruction, pollution, invasive alien species, poorly planned or unplanned development, the impact of extractive activities, population pressure, coastal erosion, weak governance, paucity of biological diversity data, inadequate capacity and lack of awareness of the value of biological diversity (deduced from Countries National reports to the CBD; AU-IBAR, 2023). These are summarised hereunder.

All seven African large marine ecosystems (Figure 1) are richly endowed with living marine resources, including fishery resources. Unsustainable use of marine biological diversity is evident, ranging from the use of non-selective and damaging fishing methods (Banks and Macfadyen, 2011; Hall, 1996) to overexploitation of fishery resources (Lewison *et al.* 2014, Zollett and Swimmer 2019) and sharks (Gareth *et al.*, 2020) and mammals (Wilson and Mittermeier, 2014).

Climate change has tremendous impacts on marine biodiversity, such as fish stock abundance, composition, distribution, and availability, in ways that are not yet fully understood and could result in significant ecosystem changes, biodiversity loss or the collapse of major fish stocks. Warmer temperatures are expected to lead to a drop of 21% in the annual landed value of fish in West Africa and a fall of nearly 50% in fisheries-related employment by 2050. Ocean acidification will increase with increasing CO₂ in the Ocean, coupled with increased temperature, which will have profound impacts, especially on



Figure 1. Location of African LMEs: Mediterranean (26), Canary Current (27), Guinea Current (28), Benguela Current (29), Agulhas Current (30), Somali Coastal Current (31) and Red Sea (33). The circled number is as assigned in the World Map of Large Marine Ecosystems (Sherman and Hamukuaya, 2016; Satia, 2016).

corals biodiversity in the Eastern Region, causing bleaching (Hoegh-Guldberg *et al.*, 2007) and the de-calcification of shells of molluscs (Parker *et al.*, 2013).

Habitat destruction and alteration pose severe threats to marine biodiversity, through, among others, seabed extraction activities, poorly planned coastal urban infrastructural development, destructive fishing methods such as bottom trawling (Lee *et al.*, 2011; AfDB 2022), population pressure, agricultural development and a changing climate conversion to land for other uses including aquaculture, tourism and salt production, cutting of the trees for fuelwood and poles for housing construction and firewood and charcoal, canalization, discharge of sewage and other pollutants, siltation, sand mining, erosion, construction of embankments, increased sedimentation (IPBES 2018/2019). Coastal erosion is evident in many parts of Africa, in particular GCLME and CCLME, driven by anthropogenic activities such as dredging, sand mining, uncontrolled construction and excessive cutting of mangroves, which lead to

loss of biodiversity (CCLME TDA 2014; GCLME TDA 2006).

Marine pollution can severely impact the ecosystem and marine biodiversity, damaging spawning, nursery and feeding grounds (AfDB 2022), and has been reported in all African LMEs. Nutrient enrichment from agricultural run-off (Islam and Tanaka, 2004) and atmospheric deposition of nitrogen from fossil fuel combustion are significant causes of coastal eutrophication and so-called dead zones (Diaz and Rosenberg, 2008) with adverse effects on coastal ecosystems like salt marshes (Deegan *et al.*, 2012) and coral reefs (Altieri *et al.*, 2017). Oil pollution, sewage outfalls, heavy metals from industrial processes and biological waste cause deterioration in coastal water quality (AfDB 2022), reduce species richness and abundance across marine ecosystems (Johnston & Roberts, 2009) with particular impacts on coral reefs (McKinley and Johnston, 2010) and Seabird species (Croxall *et al.*, 2012) and mortality from ingestion has been reported in some species (Baulch & Perry, 2014; Wilcox *et al.*, 2015). The compound impacts of pollution and climate change on coral reefs result in devastating consequences with far-reaching implications for fisheries, food security, tourism and overall marine biodiversity. Coral reefs, in particular, seem very vulnerable to plastic debris, with one study estimating that contact with plastic results in a 4–89% increase in the likelihood of coral disease (Lamb *et al.*, 2018).

Alien invasive species have been identified as one of the significant threats to the maintenance of biodiversity and ecosystem functioning in marine systems (Branch and Steffan, 2004) and the conservation of biodiversity and ecosystem services in Africa (IPBES 2018). They occur in all major taxonomic groups, including viruses, fungi, algae, plants, fish, amphibians, reptiles, birds and mammals (Tassin *et al.*, 2007). A large number of introductions of IAS can be attributed to intensified

Global trade and shipping (Hulme *et al.* 2008). The primary vector of introducing IAS is shipping through the ballast water, followed by aquaculture and canal construction. Ports are IAS hotspots due to the ballast water.

Weak governance at all levels, often characterized by overlapping jurisdictions, institutional failures, and lack of transparency undermines biodiversity conservation and sustainable use (Biggs *et al.* 2018). The paucity of data is a severe constraint in assessments, protection and conservation of biodiversity (AU BES 2020). Population growth directly contributes to biodiversity loss through unsustainable use of natural resources, habitat degradation, and poverty (IPBES 2018; FAO SOFIA 2022; Arthurton *et al.*, 2006; Diop *et al.*, 2011). The population growth in Africa is at the rate of 2.5% per annum or more than three times the Global average of 0.8 per cent per year (UN DESA, 2022). The African population is expected to reach 1.7 billion in 2030 (AfDB 2022) and 2.5 billion in 2050, putting severe pressure on the Continent's biodiversity and the ability to provide nature's contribution to people (IPBES 2018).

1.2 Status of African marine biological diversity

Biodiversity is fundamental to human well-being and a healthy planet as it underpins peoples' dependency on it for food, medicine, energy, clean air and water, security from natural disasters, recreation and cultural inspiration, and it supports all systems of life on earth. The African Continent is encompassed by some highly productive large marine ecosystems endowed with rich and abundant biodiversity and unrivalled natural beauty (AU BES 2020, AUC, NPCA 2014, IPBES 2018). This immense biodiversity could significantly contribute to achieving the SDGs and can be sustainably and equitably used to reduce inequality and poverty on the Continent

(IPBES 2018). However, these ecosystems are under immense threat from anthropogenic stressors and natural perturbations. The decline and loss of biodiversity are reducing nature’s contributions to people in Africa, affecting daily lives and hampering the sustainable social and economic development targeted by African Countries (IPBES 2019).

Marine species diversity and average body size for many crucial commercial fishery species have markedly declined over the past few decades. Several reviews indicate that many artisanal and commercial fish stocks are now considered to be overexploited (Ajayi, 1994; GCLME TDA 2006). These threats are compounded by the challenge of managing shared stocks across a culturally, politically and geographically diverse landscape. The status of the most important fisheries in the CCLME, GCLME and MedLME are considered overexploited (Figure 2; Nguyen, 2012). Substantial pressures threaten Africa’s marine fisheries, and these include pollution, habitat destruction, unsustainable and destructive fishing practices (AfDB 2022), Illegal, Unreported and Unregulated (IUU) fishing (which was recently estimated at \$10 billion annually (AU-IBAR, 2019; AU-IBAR 2016), and negatively impacts the well-being and food security of people in coastal communities (FAO SOFIA 2022).

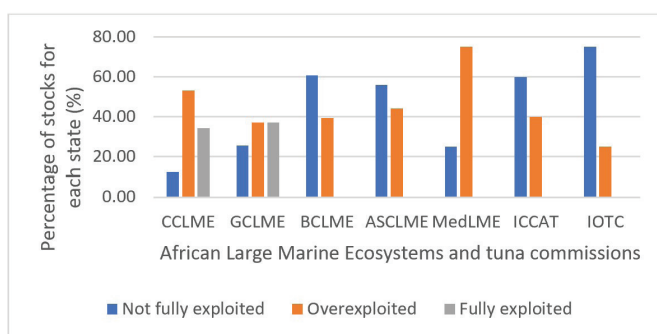


Figure 2. Status of the African marine fisheries (Source: FAO; AfDB 2022).

There are 18 species of true mangroves found around Africa (Failler *et al.*, 2017). Still, they face unsustainable use as they are cut down for fuelwood and poles for housing construction and firewood and charcoal, particularly in CCLME, GCLME and ASCLME. Results obtained during the pilot phase Gulf of Guinea LME project showed that in Ghana, 55% of the mangroves and significant wetlands around the greater Accra area had been decimated through pollution and overcutting. In Benin, the figure is 45% in the Lake Nokoué area and 33% in the Niger Delta of Nigeria. In Cameroon, 28% of the Wouri Estuary has been destroyed; in Côte d’Ivoire, more than 95% of the mangroves in the Bay of Cocody have been cut (GCLME TDA, 2006). Climate change is projected to impact mangrove and wetland ecosystems significantly, with changes in temperatures, as well as coastal Sea level rise and saline intrusion dynamics (Niang *et al.*, 2014), compounded by other stressors, including unsustainable utilization, urbanization, pollution, increases in extractive industries, wood, charcoal and poles (Mallon *et al.*, 2015). In the east, Kenya, Tanzania, and Mozambique have lost significant portions of their mangrove shorelines (Obura *et al.*, 2017).

There are 16 species of Seagrass found around Africa (Failler *et al.*, 2017), out of the 50 Globally described species (Tregarot *et al.*, 2020). The ASCLME has the highest abundance of Seagrasses coverage, at 10,008km² (Agulhas Current LME 9,714 km² + Somali Coastal Current LME 160 km²+ African Islands of the Indian Ocean 134 km²) (Tregarot *et al.*, 2020). The Mascarene Plateau area is rich in Seagrass. Overall, the risk of Global extinction to these marine plants remains low in the WIO, with only two species of Seagrasses listed as Vulnerable (Bullock *et al.*, 2021).

The ASCLME is also rich in corals with a total coverage of approximately 11,600 km² (Agulhas

Current LME 6,442 and Somali Coastal Current LME 2,844 km²+ African Islands of the Indian Ocean 2,285 km²) Tregarot *et al.*, 2020), with the highest diversity being reported from the Northern Mozambique channel (as cited in Failler *et al.*, 2017). All species of corals are listed on the IUCN Red List. Coral reefs in Kenya, Tanzania, and Mozambique have declined due to major bleaching events (Obura *et al.*, 2017).

All seven African large marine ecosystems are significant for both resident and migratory bird species, where they are breeding, nesting and feeding. The main threats to the survival of both endemic and migrant birds include habitat loss, pollution, and incidental catch in the fisheries (CEPF, 2015). On land, they are often attacked by predatory species and faced with human disturbance (Crawford *et al.*, as quoted in BCLMETDA, 2022). Direct exploitation remains a problem for some species (Croxall *et al.*, 2012), as well as unavailability of prey (Crawford *et al.*, as quoted in BCLME TDA 2022) and unsustainable natural predation at certain localities (e.g. Makhado *et al.*, as quoted in BCLMETDA 2022).

Various species of marine mammals represented by cetaceans (whales, dolphins and dugongs) are found throughout African Large Marine Ecosystems. The most prominent whales in CCLME and GCLME include humpback whale (*Megaptera novaeangliae*), a rough-toothed dolphin (*Steno bredanensis*) and a killer whale (*Orcinus orca*), a striped dolphin (*Stenella coeruleoalba*). There are also various species of delphinidae, balaenopterids, including Bryde's whales (*Balaenoptera edeni*) and sei whales (*B. borealis*), common bottlenose dolphin (*Tursiops truncatus*), the short-finned pilot whale (*Globicephala macrorhynchus*), the Atlantic spotted dolphin (*Stenella frontalis*), the pan-tropical spotted dolphin (*S. attenuata*) and the rough-toothed dolphin (*S. bredanensis*). The heavyside's dolphin (*Cephalorhynchus heavisidii* Data Deficient'), found

in west Africa, is of conservation concern in this region as an endemic species (Reeves *et al.*, 2013).

Thirty-seven cetacean species have been reported in east Africa (ASCLME region), that include 'Endangered' species such as the baleen whales, sei whale (*Balaenoptera borealis*), blue whale (*B. musculus*), fin whale (*B. physalus*), the minke whale (*B. bonaerensis*) and brydes whale (*B. edeni*). The Indo-pacific beaked whale (*Indopacetus pacificus* Near-threatened'), while three species classified as 'Vulnerable' including the Sperm Whale (*Physeter macrocephalus*), armoux's beaked whale (*Berardius arnuxii*), and dusky dolphin (*Lagenorhynchus obscurus*). Similar species are sighted in the Red Sea and are threatened, too (AU-IBAR, 2023).

The Mediterranean monk Seal (*Monachus monachus*) is of conservation concern because it is Critically Endangered, with a total population not exceeding 500 specimens (AU-IBAR, 2023).

The most prominent sirenian in African waters is the African manatee (*T. senegalensis*, Vulnerable) found in West Africa from Senegal to Angola, with the largest population in Guinea-Bissau. This species was hunted in the CCLME Countries for meat, hide, oil and bones and is now also targeted deliberately by fishers because it is perceived to be a threat, especially when damaging fishing nets. The common hippopotamus (*Hippopotamus amphibius*), typically found near large rivers and estuarine habitats, has the largest populations in Guinea, Guinea-Bissau and Senegal, with a total number of individuals in a few thousand (Lewison and Oliver, 2008). The primary threats to the hippopotamus are IUU hunting for meat and ivory (found in the canine teeth) and habitat loss (AU-IBAR, 2023).

Several of the larger whales visiting the BCLME are cosmopolitan in their distribution, while some smaller species, e.g. Killer Whale and Risso's

Dolphin, also are wide-ranging. The BCLME is home to two Seal (pinnipeds) species: Cape Fur Seal *Arctocephalus pusillus* and *A. tropicalis*. Cape fur Seal (*Arctocephalus pusillus pusillus*) is found on the mainland or small rocky islands, from Southern Angola to Port Elizabeth in South Africa, and more than 60% of the population is located along the Namibian coast. Sealing stopped in South Africa in 1990 while harvesting continues in Namibia (BCLME TDA 2022).

In the ASCLME, dugong (*Dugong dugong*, Marsh and Sobotzick, 2015) are usually found in shallow tropical coastal waters near Seagrass beds, between East Africa and the Pacific within the latitudes of 27° north and south of Equator. Dugong populations have dwindled around Africa. The only recent sightings in the WIO have been from Madagascar, Seychelles, Comoros and Mozambique, and the population in the Bazaruto Archipelago in Mozambique is believed to be the largest remaining viable population in the WIO Region. Regional assessments classified dugong populations in the WIO as 'Endangered' and RSGA as 'Data deficient'. They are classified as 'Vulnerable' on the IUCN Red List and listed on Appendix I of CITES (Failler *et al.*, 2017).

Generally, mammals in African Large Marine Ecosystems are at risk including habitat loss or disturbance, pollution, climate change, boat strikes, incidentally caught by fishing trawls and shark nets, hunting, loss of prey species due to fisheries, disorientating effects of marine noise from shipping and bathymetric surveys, and seismic surveys (by the oil and gas industry) (CCLMETDA 2015, Wilson and Mittermeier, 2014).

Five of the seven Sea turtles are known to forage and nest around Africa. They are: the hawksbill turtle (*Eretmochelys imbricata*), green turtle (*Chelonia mydas*), olive ridley (*Lepidochelys olivacea*), leatherback (*Dermochelys coriacea*) and

loggerhead turtle (*Caretta caretta*) Al-Mansi *et al.*, 2003). They are listed as threatened on the IUCN Red List and in CITES Appendix. The Gabonese waters are hotspots for foraging and nesting marine turtles. Guinea-Bissau hosts the largest green turtle (*Chelonia mydas*) breeding population in Africa. The Cape Verde Islands harbours the 2nd largest breeding population in the Atlantic and the 3rd largest population in the world after that of the United States of loggerhead turtle (*Caretta caretta*). In general, turtles around Africa face threats that include traditional consumption of meat and eggs, ornamental products, accidental mortality in fishing operations, habitat degradation or modification (WWF)¹, marine litter (notably plastics ingestion and entanglement and coastal development.

Pelagic shark populations are vulnerable to overfishing due to their slow growth rate, low fecundity, late maturity and longevity (Gilmman *et al.*, 2008). They are incidentally caught in the fisheries but also targeted for their fins.

The African waters are rich in invertebrate species, many of which have well-developed commercial fisheries, notably for shrimps, squids, cuttlefish and octopus. Invertebrates are also important for fish and Seabirds' food chains. Important crustaceans include crab species, lobster species, perlemoen abalone, and sedentary bivalve species such as black mussels (*Choromytilus meridionalis*) and brown mussels (*Perna perna*) are harvested for food and bait. Overexploitation (e.g., lobster in Namibia) IUU fishing (e.g., abalone in South Africa), pollution and climate change are the greatest threats to invertebrates species within the African Large Marine Ecosystems (AU-IBAR, 2023).

¹https://wwf.panda.org/discover/knowledge_hub/where_we_work/west_africa_marine/project/turtles/

1.3 Justification for a harmonized Regional framework

In addition to climate change, several human-induced factors are negatively impacting African Marine Ecosystems and posing serious threats to biodiversity and extensive damage to key ecosystems, and these include unsustainable exploitation of living marine resources, pollution (land-based and Seas-based sources), habitat degradation/modification, water quality deterioration, alien invasive species, depletion of natural resources due to the rising population pressure, expansion in human activities and uncontrolled expansion of urbanization and ineffective governance (AU-IBAR, 2023; IPBES 2018; AUC, NPCA 2014; UNEP, 2016; Diop *et al.*, 2011). These threats, if not arrested, may have significant and lasting negative ecological, environmental, and social-economic impacts and result in a loss of natural capital and related ecosystem services, which will ultimately lead to increasing poverty, especially in local communities, tension over scarce resources, instability, insecurity and migration and economic crisis (IPBES 2018).

The African Blue Economy Strategy (ABES) was endorsed by AU Heads of States and Summit with a Vision of the Africa Blue Economy Strategy is an inclusive and sustainable blue economy that significantly contributes to Africa's transformation and growth.

The Africa Blue Economy Strategy is consolidated based on the following five detailed thematic technical reports that are annexes to this Strategy:

1. Fisheries, aquaculture, conservation and sustainable aquatic ecosystems
2. Shipping/transportation, trade, ports, maritime security, safety and enforcement
3. Coastal and maritime tourism, climate change, resilience, environment, infrastructure

4. Sustainable energy and mineral resources and innovative industries
5. Policies, institutional and governance, employment, job creation and poverty eradication, innovative financing

The Policy Framework and Reform Strategy for fisheries and aquaculture in Africa (PFRS) also identified conservation of sustainable use for aquatic living resources as major policy arena.

This harmonized Regional framework for aquatic biodiversity conservation and environmental management is Africa's response to support the implementation of the Convention on Biological Diversity as well as operationalizing the key recommendation of Summit of African Heads of States and Governments, in 2020, to roll-out the African Blue Economy Strategy (ABES). The framework is in line with, among others, the Lomé Charter (2016, Articles 25-28) that enshrines the protection and conservation of the marine environment and ecosystems and biodiversity and the ABES. It is also in line with SDGs (particularly Goal 13 - climate action, and Goal 14 – life below water). The framework seeks to strengthen and build on the existing initiatives and seeks to effectively mainstream biodiversity into all relevant socio-economic sectors, and increases public participation in, and awareness and acceptance of, conservation interests.

All 38 African coastal states have developed their National biodiversity strategies and action plans in conformity with the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets to conserve Africa's natural heritage, but despite these efforts by the Governments, NGOs, private sector and individuals, the biological diversity within species, between species and of ecosystems continues to deteriorate at rates unprecedented in human history (IPBES reports). The results of the

analyses of the implementation of the SDG (Goals 13 and 14) and Aichi Targets show the African States' dismal performance due to various constraints such as finance and capacity (IPBES 2018).

There is a need for a coherent Regional framework to mobilize all existing initiatives towards the one goal of conserving marine biological diversity throughout Africa. Conserving Africa's natural heritage is a basic necessity and a shared responsibility for securing sustainable development. The decline in Africa's natural environment has been caused by economic and social action, and thus the integration of conservation considerations into socio-economic Policy is a prerequisite for restoring and maintaining marine biological diversity. Unless Africa takes urgent and transformative joint actions to reduce the intensity of the drivers of biodiversity loss, there will be a further acceleration in the rate of species extinction. Therefore, this Regional framework would contribute to such a noble endeavour. The framework serves as an Instrument for Regional cooperation on biodiversity issues that transcend the National maritime boundaries of African coastal States.

1.4 Methodology

The formulation of this framework involved desk research studies in assessing the status and the threats to marine and coastal biodiversity in 38 coastal African States. All coastal States have completed their National Biodiversity Strategy and Action Plans (NBSAPs) as part of their fulfilment of the obligations under the CBD. All NBSAPs of 38 African coastal states were reviewed and informed of the drafting. Regional frameworks on African marine biodiversity are unavailable except for the SADC Regional Biological Strategy. Similar frameworks (CBD Global Biodiversity Framework, 2022; UNEP, 2021; Pan-European Biological and Landscape Diversity Strategy, 1995; OSPAR Strategy

2010-2020; CAFF, 1991; CARICOM, 2018) and best practices elsewhere were reviewed and contextualized where applicable. The consultant visited two selected coastal States, one in the Eastern African Region and the other in Southern Africa. The purpose of the visit was to meet experts, managers, NGOs and other stakeholders and assemble lessons and best practices on pertinent marine biodiversity issues. The draft framework was shared with resource persons at AU-IBAR, and their comments were incorporated. A stakeholders' consultative workshop attended by representatives from coastal States, AU technical institutions, RECs representatives, experts and AU-IBAR senior officials was held on 28th February, 2023, where further inputs and comments on the Regional biodiversity framework were received and incorporated. The workshop validated the framework.

2. The Regional marine and coastal biodiversity framework

The Regional marine biodiversity framework is developed as part of SIDA's financed AU project on Conserving Aquatic Biodiversity in African Blue Economy, whose overall objective includes supporting coastal States and the RECs' institutional capacities to utilize and conserve aquatic biodiversity and ecosystems sustainably. It presents an innovative and proactive approach to halt and reverse the degradation of marine and coastal biological diversity in Africa. In general, the framework is Africa's response to support the Convention on Biological Diversity implementation and builds on other initiatives such as the African Blue Economy Strategy.

2.1 The purpose

The framework aims to catalyze and galvanize urgent and transformative interventions/actions by African coastal states and all stakeholders to conserve, protect, enhance and restore key marine ecosystems and their living marine resources so that the trend of biodiversity loss is halted and where feasible, reversed. Specifically, it is to:

- Provide a framework for Regional cooperation in biodiversity issues that transcend National boundaries and stimulate the combined and synergistic efforts by the 38 African coastal States in biodiversity conservation and its sustainable use;
- Seek to mainstream marine biological diversity conservation and sustainable use into all sectors managing or affecting diversity;
- Improve information sharing on and awareness of marine and coastal biological diversity issues;
- Increase public participation in actions to conserve and enhance marine biological diversity;
- Support and guide African Union Member States and Regional institutions for the coherent for-

mulation of their National and Regional biodiversity frameworks / strategies in transboundary marine ecosystems

- Provide a framework for obtaining Regional consensus on key biodiversity issues and enable coastal States to articulate unified positions at International fora (such as CBD, UNFCCC, Ramsar Convention on Wetlands and CITES), and;
- Contributes to the achievement of Agenda 2063 and the SDGs.

2.2 Vision and mission

The Vision of the Regional framework is to achieve conservation and sustainable use of marine biological diversity in maritime boundaries of the 38 African coastal states by 2030 and specifically to seek to ensure that the threats to Africa's marine biological diversity are reduced substantially, the resilience is increased, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, and full public involvement in the conservation of marine biological diversity is assured.

The mission is to take urgent action to halt and reverse biodiversity loss for the benefit of current and future generations through conserving, protecting and sustainably using biodiversity while balancing socio-economic needs.

2.3 Principles

The Regional framework is underpinned by the following principles that are key to its success in achieving the conservation, protection and sustainable use of marine diversity:

- Inclusive and integrative:** The Regional framework must be developed and implemented through a participatory, transparent process that ensures all relevant interests are heard and addressed. The principles call for inclusiveness in

the management and decision-making process to avoid adverse impacts and protect and restore biodiversity habitats and ecosystems. Rightly, the process should include representatives from all Governmental sectors managing or affecting diversity, blue economy sectors, local communities, the scientific community, civil society organizations, NGOs, research and academic institutions and other stakeholders. The Regional framework should establish cross-sectoral and cross-administrative coordination mechanisms that bring together all relevant stakeholders (National, Regional, sub-Regional, RECs and AU levels);

- b. Knowledge-based:** The process will be based on the best available science and evidence from relevant knowledge systems, including the natural and social sciences, local, traditional and indigenous knowledge, as well as on the best practices and lessons learned. All activities that are likely to have significant adverse effects on marine diversity should be preceded by an environmental impact assessment (EIA) to protect human health and the natural environment from the foreseeable, harmful effects of planned activity (e.g. blue economy activity/facility, the introduction of exotic and or alien species, the release of genetically modified organisms). Environmental assessments help to gain wider acceptance for the project in question;
- c. Ecosystem-based approach:** The Regional framework is grounded on the concept of ecosystem-based management in which the management of natural resources focuses on the healthy, productive, functional and resilient ecosystem, recognizing the full array of interactions within an ecosystem (integrated management), including with people and the need to be protected from unsustainable use. It also integrates the needs of communities that rely on ecosystem services. The ecosystem approach

should be undertaken at the appropriate spatial and temporal scales;

- d. Restoration and (re)creation:** Using nature-based solutions and backup by reference studies and the best available scientific information, restore, recreate and rehabilitate the degraded or modified habitat to its original state and take measures and reintroduction threatened species into their habitat under appropriate conditions;
- e. Precautionary approach:** The action to introduce appropriate conservation and management measures or procedures to avoid or minimize the potential adverse impact of activities on marine diversity ought not to be postponed if the causal link between those activities and the impact has not yet been fully confirmed; and,
- f. Polluter pays principle:** costs of pollution prevention, control and reduction measures to marine biological diversity shall be borne by the polluter.

2.4 Theory of change

The architecture of this Regional marine biodiversity framework is built around a theory of change as encapsulated in CBD Global Biodiversity Framework GBF² (Figure 3) that can be tailor-made and adopted for this Regional biodiversity framework. It recognizes that urgent policy action Globally, Regionally and Nationally is required to transform economic, social and financial models so that the trends that have exacerbated biodiversity loss will stabilize by 2030 and allow for the recovery of natural ecosystems, with net improvements by 2050 to achieve the CBD's 2050 vision – “Living in harmony with nature”. It assumes that transformative actions are taken to:

- Address the drivers of biodiversity loss and their underlying causes;

² <https://www.cbd.int/doc/clabb5/591f/2e46096d3f0330b08ce87a45/wg2020-03-03-en.pdf>

- Put in place tools and solutions for implementation and mainstreaming;
- Reduce the threats to biodiversity; and,
- Ensure that biodiversity is used sustainably for the joint benefit of people and the Continent and that the necessary enabling conditions support these actions, and adequate means of implementation, including financial resources, capacity-building, scientific cooperation, technology transfer, knowledge, and effective responsibility and transparency mechanisms, including for planning, reporting and review of progress to ensure that, by 2030, Africa is on a path to attain the 2030 SDGs, reach CBD Vision 2050 and AU Agenda 2063 (particularly Aspiration I (goals 6 and 7).

Consistent with the CBD Global Biodiversity Framework, the theory of change for this framework acknowledges the need for appropriate recognition of gender equality, women’s empowerment, youth, gender-responsive approaches and the full and effective participation of indigenous peoples and local communities in the implementation of this framework. Further, it is built upon the recognition that its implementation will be done in partnership among Global, National and local Organisations to leverage ways to build momentum for success. The framework complements and supports the Agenda 2030 on Sustainable Development. It also considers the long-term strategies and targets of Multilateral Environment Agreements to ensure synergistic delivery of benefits from all the Agreements.

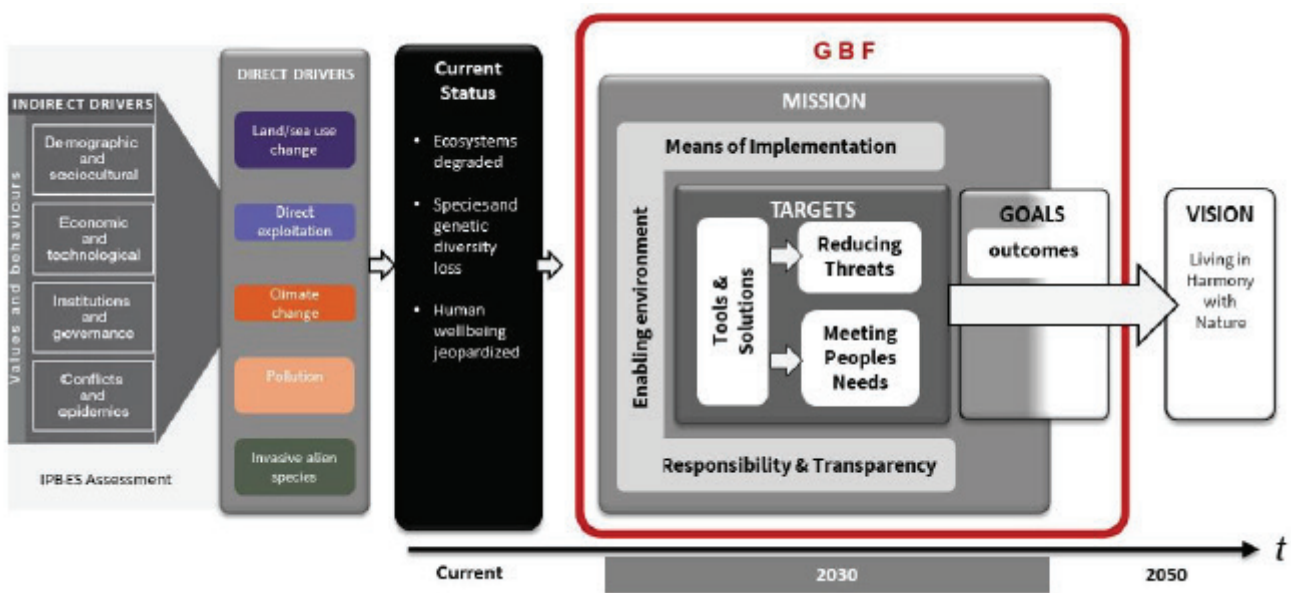


Figure 3. Theory of change of the framework [source: CBD Global Biodiversity Framework, 2022].

Africa can move towards achieving its development aspirations while at the same time improving the conservation of its valuable natural assets and meetings its biodiversity commitments and targets through multi-stakeholder and multilevel adaptive governance, as well as improved integration of indigenous and local knowledge through recognition of traditional institutions (IPBES 2019).

2.5 Strategic goals and targets

Given the severe threats facing biological diversity in African Large Marine Ecosystems, the following strategic goals (ambitions) and targets (aims) are prioritized as needing urgent and transformative actions to halt or reverse biodiversity loss. These strategic goals and targets emanate from the Purpose (section 3.1) and Vision and Mission (section 3.2) above. They respond to the issues identified as

priority concerns of the ecosystems and species from National reports to the CBD (see section 1.1; AU-IBAR 2023).

The following three strategic goals are established, and 14 targets accompany them.

Strategic Goal 1 Ecosystems' integrity is enhanced, the rate of extinctions reduced, the risk of species extinctions is halved, and the genetic diversity of marine species is safeguarded, degraded habitats are restored and used at levels commensurate with their biological productivity.

Target 1. Ensure that all coastal areas are under integrated biodiversity-inclusive spatial planning, and areas of particular importance, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures.

Target 2. Reduce the rate of habitat loss and degradation to the lowest level and where feasible bring it close to zero.

Target 3. Minimise direct and indirect anthropogenic threats to the integrity and productivity of coastal and marine ecosystems.

Target 4. Ensure that at least 20% of degraded coastal areas are under restoration, ensuring connectivity among them and focusing on priority ecosystems.

Target 5. Ensure and promote sustainable use of living marine resources and facilitate Regional collaboration on transboundary species.

Target 6. Improve the conservation status of threatened species and protect vulnerable and keystone species and their habitats including transboundary species.

Target 7. Ensure active management actions to enable the recovery and conservation of species and the genetic diversity of marine species, including through ex-situ conservation.

Target 8. Manage pathways for introducing invasive alien species (IAS), preventing or reducing their rate of introduction and establishment by at least 50%, and control or eradicate invasive alien species to eliminate or minimize their impacts, focusing on priority species and priority sites.

Target 9. Reduce marine pollution from all sources including nutrient enrichment by at least half and pesticides by at least two-thirds, eliminating plastic waste discharge.

Target 10. Minimize the impact of climate change on biodiversity, contribute to mitigation and adaptation through ecosystem-based approaches, and ensure that all mitigation and adaptation efforts avoid negative impacts on biodiversity.

Strategic Goal 2: Ecosystem goods and services are valued, maintained or enhanced through conservation and sustainable use, biodiversity is mainstreamed into sectoral policies and programs, and public awareness about the value of the ecosystems is improved.

Target 11. Blue economy sectors report on their impacts on biodiversity and progressively reduce negative impacts, by at least half and moving towards the full sustainability of extraction and production practices, sourcing and supply chains, and use and disposal.

Target 12. Fully integrate biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies, accounts, and assessments of environmental impacts at all levels of Government and across all sectors of the

economy.

Target 13. Establish, strengthen capacity for, and implement measures to prevent, manage or control potential adverse impacts of biotechnology on biodiversity and human health, reducing the risk of these impacts on marine biodiversity.

Target 14. Ensure that relevant knowledge, including the traditional knowledge, innovations and practices of indigenous peoples and local communities, form part of decision-making for the effective management of biodiversity, enabling monitoring and promoting awareness, education and research.

Target 15. Ensure equitable and effective participation in decision-making related to biodiversity by indigenous peoples and local communities, and respect their traditional rights over resources, as well as by women and girls and youth.

Strategic objective 3: The benefits from utilizing genetic resources are shared fairly and equitably, with a substantial increase in monetary and non-monetary benefits, including for the conservation and sustainable use of biodiversity.

Target 16. Ensure benefits, including nutrition, food security, medicines, and livelihoods for people, especially the most vulnerable, through sustainable management of marine species and protecting customary sustainable use by indigenous peoples and local communities.

Target 17. Implement measures in all Countries to facilitate access to genetic resources and to ensure the fair and equitable sharing of benefits arising from the use of genetic resources and as relevant, of associated traditional knowledge, including through mutually agreed terms and prior and informed consent.

3. Joint Action Plan

The Joint Action Plan (Table) contains a series of remedial actions intended to address the most urgent and pressing issues threatening species and habitats and is designed to protect, conserve, restore and enhance biological systems. It promotes Regional collaboration on marine biological diversity and supports the integration of biodiversity issues into National Policy and initiatives that Governments are

currently implementing, including the requirements under the Convention on Biological Diversity. The Plan will be implemented in ten years, from 2023 to 2033. At the end of this period, there will be a review and an update, leading to the initiation of a new Joint Action Plan for a further ten-year period. Each strategic goal has several targets, and each target has several activities, a timeframe and indicators.

Table 1: Joint Action Plan (2023-2033).

Strategic Goal 1	Ecosystems' integrity is enhanced, the rate of extinctions reduced, the risk of species extinctions is halved, and the genetic diversity of marine species is safeguarded, degraded habitats are restored and used at levels commensurate with their biological productivity.			
Objective	<i>Objective 1: Enhance efforts to identify biological diversity, paying particular attention to species populations, habitats, and ecosystems which are of the greatest ecological, cultural, social, economic or scientific value and those which are vulnerable and require urgent and effective conservation, protection and restorative measures.</i>			
Target	Actions	Indicators	Lead agency	Collaborating agency
Target 1. Ensure that all coastal areas are under integrated biodiversity-inclusive spatial planning, and areas of particular importance, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures.	Institutionalize Marine Spatial Planning (MSP).	By 2027, integrated management of blue economy activities in place, and MSP institutionalized.	MS	AU-IBAR, RECs, Partners
	Identify the EBSAs and routinely assess the status of the biodiversity, and complete biodiversity mapping and prioritization of sites for active management.	By 2027, EBSAs and other prioritised areas adopted under active management.	MS	AU-IBAR, RECs, Partners
	Establish MPAs or marine conservation areas where they contribute to conservation, habitats and species.	By 2033, MPAs will be declared and managed, covering 15% of the EEZs.	MS	AU-IBAR, RECs, Partners
	Develop an integrated coastal zone management (ICZM).	By 2029, ICZM in place and supported by the legislation.	MS	AU-IBAR, RECs, Partners
	Develop and implement conservation measures to halt or slow down the rate of extinction.	By 2033, the risk of extinction is reduced by at least 50%.	MS	AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
Target 2. Reduce the rate of habitat loss and degradation to the lowest level and where feasible bring it close to zero.	Manage unplanned coastal zone development through legislation and law enforcement.	By 2033, ICZM policies in place and enforced.	MS	AU-IBAR, RECs, Partners
	Protect, rehabilitate and restore vulnerable ecosystems including through legislation and law enforcement.	By 2030, the risk of extinction of habitat-dependent species is reduced by half.	MS	AU-IBAR, RECs, Partners
		By 2030, at least 25% of degraded ecosystems are restored.	MS	AU-IBAR, RECs, Partners
Target 3. Minimise direct and indirect anthropogenic threats to the integrity and productivity of coastal and marine ecosystems.	Reduce threats to coastal and marine ecosystems from land-based sources and activities.	Human population in the river basin and coastal zone (total and population density).	MS	AU-IBAR, RECs, Partners
	Restore and maintain essential natural hydrologic processes and linkages between river basins and coastal areas that are essential for the optimal functioning of coastal habitats (estuaries, wetlands, mangroves, etc.).	Sediment load in rivers as a proportion of natural levels; change in sediment load over time.	MS	AU-IBAR, RECs, Partners
		By 2030, the turbidity of coastal waters at normal levels.	MS	AU-IBAR, RECs, Partners
Target 4. Ensure that at least 20% of degraded coastal areas are under restoration, ensuring connectivity among them and focusing on priority ecosystems.	Assess the status of degraded coastal areas, and through knowledge-based, demarcate areas with the most significant potential for habitation and recreation.	By 2033, the net gain in the area, connectivity and integrity of natural systems of at least 5%.	MS	AU-IBAR, RECs, Partners
		By 2033, at least 20% of degraded areas restored (2023 baseline).	MS	AU-IBAR, RECs, Partners
	Establish priority conservation areas as key reproductive habitats for threatened marine fishes, marine mammals, marine turtles, Seabirds, sharks and rays and invertebrates.	By 2033 conservation areas for marine mammals, marine turtles, Seabirds, sharks and rays and, invertebrates in place and protected against threats arising from anthropogenic activities.	MS	AU-IBAR, RECs, Partners
	Restore degraded mangrove forests, kelp forests and Seagrass.	Annually, restore at least 5% of the original size of the mangrove forests, kelp forests and Seagrass meadows – and protected against threats arising from anthropogenic activities.	MS	AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
Target 5. Ensure and promote sustainable use of living marine resources and facilitate Regional collaboration on transboundary species.	Utilise fish stocks within their biological sustainable levels and reduce the adverse impact of fishing on threatened species and the vulnerable.	By 2030, all harvested fish stocks including shared fish stocks are assessed and their utilization is based on the best available scientific information and knowledge.	MS	AU-IBAR, RECs, Partners
	Ensure that fishing capacity and fishing efforts are at levels required for MSY and restoration of depleted stocks to within safe biological limits.	By 2030, at least 50% of the stocks restored/ within biologically sustainable levels.	MS	AU-IBAR, RECs, Partners
	Ensure that vulnerable species and habitats are protected and rehabilitated.	By 2030, 15% of the area under protection from fishing (MPAs, EBSAs, Marine Conservation Areas, fish refugia, etc).	MS	AU-IBAR, RECs, Partners
		Quantity and % reduction of bycatch/ vessel/year (post-harvest losses).	MS	AU-IBAR, RECs, Partners
	Develop a Regional (or bilateral, if only 2 States share the stock) strategy for the management of overcapacity and fishing effort for shared stocks.	By 2030, a Regional strategy developed and endorsed by States concerned	MS	AU-IBAR, RECs, Partners
	Develop Regional species action plans for all species and their genetic diversity being threatened.	By 2030, management plans in place and implemented.	MS	AU-IBAR, RECs, Partners
	Establish a Regional list of threatened and protected species.	By 2030 lists and action plans in place.	MS	AU-IBAR, RECs, Partners
	Conduct Regional cooperative research related to the monitoring and assessments of transboundary biological diversity.	Biennial biodiversity reports are produced and publicly accessible and used by the Governments, IPBES and other stakeholders.	MS	AU-IBAR, RECs, Partners
	Prevent, deter and eliminate IUU fishing.	By 2027, all coastal states have in place and are implementing the National Plan of Action to prevent, deter and eliminate IUU fishing.	MS	AU-IBAR, RECs, Partners
	Regulate (or/and ban where appropriate) unselective and damaging fishing gear.	By 2033, discards and bycatches from unselective fishing gear are reduced by 25%.	MS	AU-IBAR, RECs, Partners
Manage all major commercially exploited shared stocks cooperatively through harmonised management planning.	By 2030, at least 50% of transboundary stocks have adopted joint management plans.	MS	AU-IBAR, RECs, Partners	

Target	Actions	Indicators	Lead agency	Collaborating agency
		Multi-level (Regional - sub Regional- National) governance mechanisms/ arrangements established for joint management, surveillance and enforcement of shared LMR.	MS	AU-IBAR, RECs, Partners
	Develop a Regional strategy on monitoring, surveillance and enforcement for shared LMR and strengthen monitoring, surveillance and enforcement mechanisms.	By 2030, a harmonised Regional Vessel Monitoring System (VMS) operational	MS	AU-IBAR, RECs, Partners
		By 2030, all coastal states ratified Port State Measures Agreement (PSMA) and other int'l and Regional fisheries agreements and frameworks (binding and non-binding).	MS	AU-IBAR, RECs, Partners
Target 6. Improve the conservation status of threatened species and protect vulnerable and keystone species and their habitats including transboundary species.	Protect and restore populations of threatened and vulnerable species of marine flora and fauna.	By 2030, half of the threatened populations protected; Red List Index.	MS	AU-IBAR, RECs, Partners
		By 2030, half of the threatened and vulnerable species and their critical habitats under protection.	MS	AU-IBAR, RECs, Partners
		By 2030, half of the keystone species identified, protected and restored.	MS	AU-IBAR, RECs, Partners
Target 7. Ensure active management actions to enable the recovery and conservation of species and the genetic diversity of marine species, including through ex-situ conservation.	Implement rebuilding programs/ plans for overexploited, vulnerable and threatened species.	By 2033, all commercially exploited species are at their maximum sustainable yields.	MS	AU-IBAR, RECs, Partners
		By 2033, the increase in the extinction rate is halted or reversed.	MS	
		By 2033, the genetic diversity of marine species is safeguarded, with an increase in the proportion of species that have at least 90% of their genetic diversity maintained.	MS	
	Develop measures for ex-situ biological conservation.	By 2027, measures in place for ex-situ biological conservation.		AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
Target 8. Manage pathways for introducing invasive alien species (IAS), preventing or reducing their rate of introduction and establishment by at least 50%, and control or eradicate invasive alien species to eliminate or minimize their impacts, focusing on priority species and priority sites.	Build capacity for IAS identification and detection, and monitoring.	By 2030, IAS and their pathways are identified.	MS	AU-IBAR, RECs, Partners
	Manage IAS.	By 2030, IAS are prioritized and controlled or eradicated, and pathways are managed.	MS	AU-IBAR, RECs, Partners
	Develop Regional IAS Guidelines.	By 2033, Regional IAS guidelines are developed and used.	MS	AU-IBAR, RECs, Partners
Target 9. Reduce marine pollution from all sources including nutrient enrichment by at least half and pesticides by at least two-thirds, eliminating plastic waste discharge.	Legislate the banning of certain single-use plastics likely to end up in the ocean and impact biodiversity.	By 2027, all single-use plastics are banned.	MS	AU-IBAR, RECs, Partners
	Prevent and combat all kinds of pollution in coastal and maritime areas, aiming to achieve and maintain a healthy marine environment.	By 2033, all kinds of pollution entering the ocean are reduced by 50% (from the 2023 baseline).	MS	AU-IBAR, RECs, Partners
		By 2030, Regional National and Regional pollution monitoring and surveillance programs developed and adopted by States.	MS	AU-IBAR, RECs, Partners
	Minimise excessive inputs of fertilisers (phosphorus and nitrogen) to coastal areas from agriculture (crops and livestock) (non-point sources).	By 2030, have in place an Index of coastal eutrophication.	MS	AU-IBAR, RECs, Partners
		By 2030, 50% of water bodies have good ambient water quality; and coastal water quality indicators in place for Nutrient (N and P) concentration, Chlorophyll a, Turbidity, Dissolved oxygen, heavy metals, chemicals, and oil concentration in bottom waters.	MS	AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
	Minimise emission of untreated and poorly treated domestic wastewater (sewage) to water bodies (point sources).	By 2030, at least 100% of domestic wastewater flows safely treated.	MS	AU-IBAR, RECs, Partners
		By 2030, the concentration of faecal bacteria (<i>E. coli</i> , <i>Enterococcus</i>) in coastal waters is reduced to zero.	MS	AU-IBAR, RECs, Partners
	Prevent and mitigate chemical pollution of the marine environment including by oil through environmentally sound extraction and production practices and management of chemicals and wastes throughout their life cycle (SDG 12 on sustainable production and consumption; CBD Target 15).	By 2030, at least 30% of the blue industries use operational mechanisms for sustainable extraction/production and waste management.	MS	AU-IBAR, RECs, Partners
Target 10. Minimize the impact of climate change on biodiversity, contribute to mitigation and adaptation through ecosystem-based approaches, and ensure that all mitigation and adaptation efforts avoid negative impacts on biodiversity.	Implement mitigation and adaptation actions as reported in National reports to CDB.	Annually, progress is recorded on the implementation of the mitigations and adaptations contained in National reports to the CBD.	MS	AU-IBAR, RECs, Partners
Strategic Goal 2	Ecosystem goods and services are valued, maintained or enhanced through conservation and sustainable use, biodiversity mainstreamed into sectoral policies and programs, and public awareness about the value of the ecosystems improved.			
Objective	<i>Mainstream biodiversity in sectoral policies, conduct environmental impact assessments, value the ecosystems, develop and build capacity while recognizing and benefiting from traditional knowledge, sharing data and information and conducting public awareness and outreach activities.</i>			
Target	Actions	Indicators	Lead agency	Collaborating agency
Target 11. Blue economy sectors report on their impacts on biodiversity and progressively reduce negative impacts, by at least half and moving towards the full sustainability of extraction and production practices, sourcing and supply chains, and use and disposal.	Develop and adopt a Blue / Ocean Economy Strategy and ensure sectoral and cross-sectoral integration of marine biological diversity.	By 2027, the Blue / Ocean Economy Strategy adopted.	MS	AU-IBAR, RECs, Partners
		By 2027, marine biological biodiversity is mainstreamed in all sectoral Policies and programs.	MS	AU-IBAR, RECs, Partners
		By 2033, the long-term sustainability of all categories of marine biological diversity is ensured, with those currently in decline fully restored, contributing to each of the relevant Sustainable Development Goals and Agenda 2063.	MS	AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
Target 12. Fully integrate biodiversity values into Policies, regulations, planning, development processes, poverty reduction strategies, accounts, and assessments of environmental impacts at all levels of Government and across all sectors of the economy.	Enhance integration of biological diversity conservation and sustainable use objectives into sectoral and cross-sectoral plans and policies.	By 2030, all sectors impacting biodiversity are guided by sectoral biodiversity Policies.	MS	AU-IBAR, RECs, Partners
	Domesticate biodiversity-related MEAs.	By 2027, all coastal States have domesticated all the MEAs they have signed, ratified or acceded.	MS	AU-IBAR, RECs, Partners
	Conduct ecosystem valuations and accounting.	By 2030, all coastal States value the ecosystems and records in National accounts.	MS	AU-IBAR, RECs, Partners
	Enhance the use of Environmental Impact Assessment (EIA) to conserve biological diversity.	By 2030, coastal States employ EIA to assess the potential impacts of human activities on marine biodiversity.	MS	AU-IBAR, RECs, Partners
	Promote and facilitate public awareness of the value of coastal and marine biodiversity.	By 2027, nature and its contributions to people are fully accounted for and inform all relevant public and private decisions.	MS	AU-IBAR, RECs, Partners
	Strengthen Governance of biological diversity.	By 2027, citizens are well-informed about the value of marine biodiversity.	MS	AU-IBAR, RECs, Partners
By 2027, coastal States have addressed the issues of overlapping sectoral jurisdiction, institutional failures and inadequate transparency.		MS	AU-IBAR, RECs, Partners	
Target 13. Establish, strengthen capacity for, and implement measures to prevent, manage or control potential adverse impacts of biotechnology on biodiversity and human health, reducing the risk of these impacts on marine biodiversity.	Enhance capacity for improved biodiversity monitoring through Regional collaboration on the conservation and protection of transboundary species.	By 2027, bilateral and Regional MoUs on transboundary collaboration in place and annual reports produced.	MS	AU-IBAR, RECs, Partners
	Establish Regional Biodiversity Networks under each of the REC.	By 2027, a Regional Biodiversity Network under each of the REC in place and contribute to informing joint actions and management.	MS	AU-IBAR, RECs, Partners
	Develop and build capacity at the institutions of high learning and within the government departments in areas such as taxonomy, acoustics, EIAs.	By 2033, capacity is enhance by 25% from the 2023 baseline.	MS	AU-IBAR, RECs, Partners

Target	Actions	Indicators	Lead agency	Collaborating agency
Target 14. Ensure that relevant knowledge, including the traditional knowledge, innovations and practices of indigenous peoples and local communities, form part of decision-making for the effective management of biodiversity, enabling monitoring and promoting awareness, education and research.	Build and develop the capacity for biodiversity issues for disadvantaged coastal communities.	By 2033, all coastal communities are capacitated on biodiversity and such intervention is sustained.	MS	AU-IBAR, RECs, Partners
	Set up Regional bio-indicator monitoring programs to detect changes in biological diversity.	By 2030, a Regional Bio-Indicator Monitoring Programme in place.	MS	AU-IBAR, RECs, Partners
	Establish and maintain mechanisms to enhance sharing of data and information	By 2027, all the RECs have Regional portals for marine biodiversity.	MS, RECs	AU-IBAR, Partners
		By 2030, data and information on marine biodiversity is publicly accessible from data portals at the RECs.	MS	AU-IBAR, RECs, Partners
	Develop and improve public and school education and awareness programs that promote the conservation and sustainable use of coastal resources and biodiversity.	By 2030, sustained public and school education and awareness programs in place in all coastal states.	MS	AU-IBAR, RECs, Partners
Target 15. Ensure equitable and effective participation in decision-making related to biodiversity by indigenous peoples and local communities, and respect their traditional rights over resources, as well as by women and girls and youth.	Establish and support coastal community groups working to enhance biodiversity by providing advice, regular training, connections and funding.	By 2027, community working groups established.	MS	AU-IBAR, RECs, Partners
	Involve communities in the co-management of the resources.	By 2027, co-management of coastal biodiversity in place.	MS	AU-IBAR, RECs, Partners
	Mainstream gender into decision-making on biological diversity.	By 2025, women and youth are actively involved in decision-making processes related to biodiversity.	MS	AU-IBAR, RECs, Partners

Strategic Goal 3	The benefits from utilizing genetic resources are shared fairly and equitably, with a substantial increase in monetary and non-monetary benefits, including for the conservation and sustainable use of biodiversity.			
Objective	<i>Promote equity and benefit sharing from biodiversity resources.</i>			
Target	Actions	Indicators	Lead agency	Collaborating agency
Target 16. Ensure benefits, including nutrition, food security, medicines, and livelihoods for people, especially the most vulnerable, through sustainable management of marine species and protecting customary sustainable use by indigenous peoples and local communities.	Guarantee food and nutritional security and livelihoods arising from utilizing genetic resources to the coastal communities.	By 2027, food and nutritional security and livelihoods of the coastal communities guaranteed through sustainable management of marine species.	MS	AU-IBAR, RECs, Partners
	Develop a targeted programme aimed at conserving specific marine resources of the greatest value to the indigenous and local coastal communities.	By 2027, targeted programmes in place with communities as part of the management of the sites and resources.	MS	AU-IBAR, RECs, Partners
Target 17. Implement measures in all Countries to facilitate access to genetic resources and to ensure the fair and equitable sharing of benefits arising from the use of genetic resources and as relevant, of associated traditional knowledge, including through mutually agreed terms and prior and informed consent.	Develop criteria to be used in access to genetic resources and equitable sharing of benefits.	By 2025, the share of monetary benefits received by providers, including holders of traditional knowledge, has increased.	MS	AU-IBAR, RECs, Partners
		By 2025, non-monetary benefits, such as the participation of providers, including holders of traditional knowledge, in research and development, have increased.	MS	AU-IBAR, RECs, Partners

4. Implementation of the framework and monitoring and evaluation

The implementation will build on a renewed sense of urgency for International cooperation and solidarity on biological diversity. Strategic partnerships are needed to accelerate the implementation to ensure the delivery of the ambition of its goals and targets. The primary actors include National Ministries and Departments, AU-IBAR, RECs, research and academic communities, public and private sectors of the blue economy, NGOs (involved in nature conservation and environmental protection), CSOs and coastal and indigenous communities.

Collaborative management of transboundary biodiversity in African LMEs is imperative (UNEP, 2016; Okafor-Yarwood *et al.*, 2020; Adewumi, 2020 and 2021), as most of the marine biodiversity transcends National boundaries. Regional cooperation is therefore essential to effectively address the threats, maintain the integrity of ecosystems, and ensure that natural resources continue contributing to socio-economic development. The CBD focal Ministry will coordinate the implementation at the National level and report to the RECs and AU-IBAR. At the Continental level, the RECs are strategically positioned to facilitate and coordinate Regional biodiversity issues in each of the African large marine ecosystems and report to AU-IBAR. The AU-IBAR would report progress and challenges to the AU Summit through the Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment.

Implementation will be facilitated and enhanced through adequate financing from various sources. One of the most innovative solutions to finance marine biological diversity actions is through annual appropriations from the treasury in each coastal state. This is achievable once the marine

biological biodiversity is strategically mainstreamed into National sectors (e.g., environment, fisheries, shipping, coastal and marine tourism, marine energy/oil and gas) that manage or affect diversity. The National private sector will complement the effort. The support from and collaboration with the development partners, financial institutions, and MEAs (such as CBD and RAMSAR) cannot be underestimated.

The Action Plan transforms the framework into tangible results with targets that will be measured against indicators during the monitoring and evaluation process. Coastal states should adopt a consistent approach to monitor actual achievements, and the review process could be institutionally placed at the RECs and supported by AU-IBAR. The review process should be the occasion to examine progress or challenges, and review, amend and/or update the Joint Action Plan. The REC in conjunction with the AU-IBAR will conduct mid-term (by 2027) and terminal (by 2033) reviews to assess the extent to which targets are being met.

5. References

1. Adewumi I.J. 2021. Exploring the Nexus and Utilities Between Regional and Global Ocean Governance Architecture. *Front. Mar. Sci.* 8:645557.doi: 10.3389/fmars.2021.645557.
2. Adewumi, I.J. 2020. "African integrated maritime strategy 2050: challenges for implementation," in *Encyclopedia of Sustainable Management*, eds S. Idowu, R. Schmidpeter, N. Capaldi, L. Zu, M. Del Baldo, and R. Abreu (Cham: Springer), 1–14. doi: 10.1007/978-3-030-02006-4_1004-1
3. AfDB, 2022. *The Future of Marine Fisheries in the African Blue Economy*. African Natural Resources Centre (ANRC) - African Development Bank
4. Arthurton, R., Koranteng, K., Forbes, T., Snoussi, M., Kithaka, J., Robinson, J., & Monteiro, P. (2006). Coastal and marine environments. In UNEP (Ed.), *Africa environment outlook 2—our environment, our wealth* (pp. 155–195). Nairobi, Kenya: UNEP. Retrieved from <http://hdl.handle.net/20.500.11822/9626>.
5. Altieri, AH; Harrison, SB; Seemann, J; Collin, R; Diaz, R. J.; and Knowlton, N, Tropical dead zones and mass mortalities on coral reefs. 2017. *Proceedings of The National Academy Of Sciences Of The United States Of America*, 114(14), 3660-3665. 10.1073/pnas.1621517114
6. Ajayi T.O., 1994. The Status of Marine Fishery Resources of the Gulf of Guinea: In: Proc. 10th Session FAO.
7. AU BES. 2020. *Africa Blue Economy Strategy*. Nairobi, Kenya. October 2019
8. AU-IBAR 2023. *Assessment of Marine Biodiversity Report, 2023*.
9. AUC, NPCA 2014. *The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa*. AU-IBAR, Nairobi, p. 96.
10. AU-IBAR, 2016. *Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing (IUU) in Africa*. AU-IBAR Reports. AU-IBAR, Nairobi. Kenya. 194 pp.
11. Banks, R., and G. Macfadyen. 2011. *A Blueprint for moving toward sustainable tropical shrimp trawl fisheries*. WWF.
12. Baulch, S., and C. Perry. 2014. Evaluating the impacts of marine debris on cetaceans. *Marine Pollution Bulletin*, 80, 210–221.
13. BCLME TDA 2022. *Transboundary Diagnostic Analysis of the Benguela Current Large Marine Ecosystem*. The Secretariat of the Benguela Current Convention. Swakopmund. Namibia. www.benguela.org/
14. Biggs, R., Kizito, F., Adjonou, K., Ahmed, M. T., Blanchard, R., Coetzer, K., Handa, C. O., Dickens, C., Hamann, M., O'Farrell, P., Kellner, K., Reyers, B., Matose, F., Omar, K., Sonkoue, J-F, Terer, T, Vanhove, M., Sitas, N., Abrahams, B., Lazarova, T., and Pereira, L. Chapter 5: Current and future interactions between nature and society. In IPBES. 2018: *The IPBES Regional assessment report on biodiversity and ecosystem services for Africa*. Archer, E. Dziba, L., Mulongoy, K. J., Maela, M. A., and Walters, M. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany, pp. 297–352.
15. Branch, G.M., C. Nina Steffan. 2004. Can we predict the effects of alien species? A case history of the invasion of South Africa by *Mytilus galloprovincialis* (Lamarck). *Journal of Experimental Marine Biology and Ecology*. Volume 300, Issues 1–2, 31 March 2004, Pages 189-215.
16. Bullock, R., et al. 2021. The conservation status of marine biodiversity of the Western Indian Ocean. Switzerland, InterNational Union for Conservation of Nature. <https://portals.iucn.org/library/node/49295>
17. CAFF, 1991. *Arctic Programme for the Conservation of Arctic Flora and Fauna* CARICOM, 2018.
18. CARICOM 2018. *Caribbean Community*

- (CARICOM) Biodiversity Strategy.
19. CBD Global Biodiversity Framework. 2022.
 20. CCLME TDA 2015. Canary Current Large Marine Ecosystem (CCLME) Transboundary Diagnostic Analysis (TDA). FAO. Rome.
 21. CEPF. 2015. The biodiversity hotspots. Critical Ecosystem Partnership Fund. Retrieved from <http://www.cepf.net/resources/hotspots/Pages/default.aspxCritical>.
 22. Croxall, J.P. *et al.* 2012. Bird Conservation International (2012) 22:1–34. BirdLife International, 2012 doi:10.1017/S0959270912000020 Seabird conservation status, threats and priority actions: a Global assessment.
 23. Deegan, L., Johnson, D., Warren, R. *et al.* Coastal eutrophication as a driver of salt marsh loss. *Nature* 490, 388–392. 2012. <https://doi.org/10.1038/nature11533>.
 24. Diaz RJ, Rosenberg R. Spreading dead zones and consequences for marine ecosystems. *Science*. 2008 Aug 15;321(5891):926-9. doi: 10.1126/science.1156401. PMID: 18703733.
 25. Diop, S., Arthurton, R., Scheren, P., Kitheka, J., Koranteng, K., & Payet, R. 2011. The coastal and marine environment of Western and Eastern Africa: Challenges to sustainable management and socio-economic development. In E. Wolanski, & D. S. McLusky (Eds.), *Treatise on estuarine and coastal sciences* Waltham, USA: Academic Press. (pp. 315–335).
 26. Failler, P., R. Klaus and B. Mclean. 2017. Inputs for the design of an EU strategic approach to the coastal and marine biodiversity in Africa, Synthesis, B4Life Programme, European Commission, Brussels.
 27. FAO SOFIA 2022. FAO State of World Fisheries and Aquaculture. FAO Rome. Italy.
 28. Gareth L. Jordaan, Jorge Santos, Johan C. Groeneveld. 2020. Shark discards in selective and mixed-species pelagic longline fisheries. *Plos One*. <https://doi.org/10.1371/journal.pone.0238595>.
 29. GCLME TDA 2006. Transboundary Diagnostic Analysis for the Guinea Current Large Marine Ecosystem. www.i-wlearn.net.
 30. Gilman, E. *et al.*, 2008. Shark interactions in pelagic longline fisheries. *Marine policy* 2008. Vol 38. Pp 1-18.
 31. Hall, M.A. 1996. On bycatches. *Reviews in Fish Biology and Fisheries*, 6(3): 319–352.
 32. Hoegh-Guldberg, O., Mumby, P. J., Hooten, A. J., Steneck, R. S., Greenfield, P., Gomez, E., Harvell, C. D., Sale, P. F., Edwards, A. J., Calderia, K., Knowlton, N., Eakin, C. M., Iglesias-Prieto, R., Bradbury, R. H., Dubi, A., & Hatziolos, M. E. 2007. Coral reefs under rapid climate change and ocean acidification. *Science*, 318(5857), 1737–1742. <https://doi.org/10.1126/science.1152509>.
 33. Hulme, P.E. *et al.* 2008. Grasping at the routes of biological invasions: A framework for integrating pathways into Policy. *J Appl Ecol* 45, 403–414 (2008).
 34. IPBES 2019: Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages. <https://doi.org/10.5281/zenodo.3831673>
 35. IPBES 2018. The IPBES Regional assessment report on biodiversity and ecosystem services for Africa. Archer, E. Dziba, L., Mulongoy, K. J., Maoela, M.A., and Walters, M. (eds.). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 492 pages.
 36. Islam, M.S., & Tanaka, M. 2004. Impacts of pollution on coastal and marine ecosystems including coastal and marine fisheries and approach for management: a review and synthesis. *Marine pollution bulletin*, 48(7-8), 624-649.
 37. Johnson, E., and D.A. Roberts. 2009. Contaminants reduce the richness and evenness of marine

- communities: A review and meta-analysis. *Environmental Pollution*. Vol. 157, Issue 6. Pp. 1745-1752.
38. Lamb *et al.*, 2018. Plastic waste associated with disease on coral reefs Joleah B. Lamb, Bette L. Willis, Evan A. Fiorenza, Courtney S. Couch, Robert Howard, Douglas N. Rader, James D. True, Lisa A. Kelly, Awaludinnoer Ahmad, Jamaluddin Jompa, C. Drew Harvell. *Science* 359, 460–462
 39. Lewison *et al.*, 2014. Global patterns of marine mammals, Seabirds, and Sea turtle bycatch reveal taxa-specific and cumulative megafauna hotspots. <https://doi.org/10.1073/pnas.1318960111>.
 40. Mallon, D. P., Hoffmann, M., Grainger, M. J., Hibert, F., van Vliet, N., & McGowan, P. J. K. 2015. An IUCN situation analysis of terrestrial and freshwater fauna in West and Central Africa. Gland, Switzerland: IUCN. Retrieved from <https://portals.iucn.org/library/sites/library/files/documents/SSC-OP-054.pdf>.
 41. Marsh, H. and Sobtzick, S. 2015. Dugong dugon. The IUCN Red List of Threatened Species 2015: e.T6909A43792211. <http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T6909A43792211.en>.
 42. McKinley, A., and E.L. Johnston. 2010. Impacts of contaminant sources on marine fish abundance and species richness: a review and meta-analysis of evidence from the field. *MARINE ECOLOGY PROGRESS SERIES Mar Ecol Prog Ser* Vol. 420: 175–191, 2010 doi: 10.3354/meps08856.
 43. Niang, I., Ruppel, O. C., Abdrabo, M.A., Essel, A., Lennard, C., Padgham, J., & Urquhart, P. 2014. Africa. In V. R. Barros, C. B. Field, D. J. Dokken, M. D. Mastrandrea, K. J. Mach, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, & L. L. White (Eds.). *Climate change 2014: Impacts, adaptation and vulnerability*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (pp. 1199–1265). Cambridge, UK: Cambridge University Press. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap22_FINAL.pdf.
 44. Nguyen, K. T. 2012. What are the consequences of overfishing in West Africa and how can sustainable and flourishing fisheries be promoted? (Master's thesis). Retrieved from <http://hdl.handle.net/11250/135816>. (BE-501 2012).
 45. Obura, D., Smits, M., Chaudhry, T., McPhillips, J., Beal, D., & Astier, C. 2017. Reviving the Western Indian Ocean Economy: Actions for a Sustainable Future Switzerland: WWF International, Gland. pp. 64.
 46. Okafor-Yarwood, I. and M. Pigeon. 2020. Stable Seas. Gulf of Guinea.
 47. OSPAR Strategy 2010-2020. The Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010–2020.
 48. Pan-European Biological and Landscape Diversity Strategy (1995).
 49. Parker, L. M., Ross, P. M., O'Connor, Wright, J. M. 2013. Predicting the response of molluscs to the impact of ocean acidification. *Biology*, 2(2), 651–692. <https://doi.org/10.3390/biology2020651>.
 50. Reeves, R.R., Crespo, E.A., Dans, S., Jefferson, T.A., Karczmarski, L., Laidre, K., O'Corry-Crowe, G., Pedraza, S., Rojas-Bracho, L., Secchi, E.R., Sloten, E., Smith, B.D., Wang, J.Y. & Zhou, K. 2013. *Cephalorhynchus heavisidii*. The IUCN Red List of Threatened Species 2013: e.T4161A44203645. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T4161A44203645.en>
 51. SADC Regional Biological Strategy. SADC Secretariat, Gaborone, Botswana.
 52. Satia, P. B. An overview of the large marine ecosystem programs at work in Africa today. 2016. *Environmental Development*. Vol 17 (2016). pp 11-19.
 53. Sherman and Hamukuaya. 2016. Sustainable development of the world's Large Marine Ecosystems. *Environmental Development*. Vol 17

- (2016). pp. 1-6.
54. Tassin, J., Triolo, J., & Lavergne, C. 2007. Ornamental plant invasions in mountain forests of Reunion (Mascarene Archipelago): A status review and management directions. *African Journal of Ecology*, 45, 444–447. <https://doi.org/10.1111/j.1365-2028.2006.00748.x>
 55. Tregarot, E., Touron-Gardic, G., Cornet, C. C., & Failler, P. 2020. Valuation of coastal ecosystem services in the Large Marine Ecosystems of Africa. *Environmental Development*, 36, 100584.
 56. UN DESA 2022. United Nations Department of Economic and Social Affairs, Population Division (2022). *World Population Prospects 2022: Summary of Results*. UN DESA/POP/2022/TR/NO. 3.
 57. UNEP 2021. United Nations Environment Programme (2021). *Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework*. Nairobi.
 58. UNEP 2016. *Elaboration of options for enhancing synergies among biodiversity-related conventions*. United Nations Environment Programme (UNEP), Nairobi, Kenya.
 59. Wilcox, C., et al., 2015. Threat of plastic pollution to Seabirds is Global, pervasive, and increasing *PNAS*. 112 (38) 11899-11904. <https://doi.org/10.1073/pnas.1502108112>.
 60. Wilson, D.E. & Mittermeier, R.A. eds. 2014. *Handbook of the Mammals of the World. Vol. 4. Sea Mammals*. Lynx Edicions, Barcelona.
 61. Zollett, E.A and Y. Swimmer. 2019. Safe handling practices to increase post-capture survival of cetaceans, Sea turtles, Seabirds, sharks, and billfish in tuna fisheries. *Endangered Species Research*. Vol. 38: 115–125. <https://doi.org/10.3354/esr00940>.



African Union
Inter-African Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park
Museum Hill, Westlands Road
P.O. Box 30786
00100, Nairobi, KENYA
Telephone: +254 (20) 3674 000 / 201
Fax: +254 (20) 3674 341 / 342
Website: www.au.ibar.org
Email address: ibar.office@au-ibar.org