

Towards a Healthy Environment: Protecting Marine Ecosystems

Towards a Healthy Environment: Protecting Marine Ecosystems

Kariuki Muigua

Towards a Healthy Environment: Protecting Marine Ecosystems

Table of Contents

Abstract..... 3
1.0 Introduction..... 3
2.0 Marine Ecosystems: Benefits and Challenges..... 6
3.0 Protecting Marine Ecosystems..... 10
4.0 Conclusion 18
References 19

Towards a Healthy Environment: Protecting Marine Ecosystems

By: Kariuki Muigua*

Abstract

Healthy ecosystems are crucial in the Sustainable Development agenda. Healthy ecosystems and landscapes support industries like farming, fishing, forestry and tourism. They also foster climate action due to their ability to store greenhouse gases. However, the health of ecosystems is being threatened by factors such as invasive species, changes in land and sea use, climate change, pollution, and direct exploitation of natural resources. Protecting and restoring critical ecosystems such as forests, peatlands, wetlands, and marine ecosystems is therefore key for Sustainable Development This paper explores the need to protect marine ecosystems. It argues that protecting marine ecosystems is necessary in the quest towards Sustainable Development. The paper examines some of the key benefits provided by marine ecosystems. It also discusses the threats facing marine ecosystems. The paper further critically examines the efficacy of the measures adopted at the global, continental, and national levels towards protecting marine ecosystems. It also offers ideas towards strengthening the protection of marine ecosystems for a healthy environment.

1.0 Introduction

An ecosystem refers to a community of organisms and their physical environment interacting as an ecological unit¹. The *Convention on Biological Diversity*² defines an ecosystem as a dynamic complex of plant, animal and micro-organism communities and

* PhD in Law (Nrb), FCI Arb (Chartered Arbitrator), OGW, LL. B (Hons) Nrb, LL.M (Environmental Law) Nrb; Dip. In Law (KSL); FCPS (K); Dip. in Arbitration (UK); MKIM; Mediator; Consultant: Lead expert EIA/EA NEMA; BSI ISO/IEC 27001:2005 ISMS Lead Auditor/ Implementer; ESG Consultant; Advocate of the High Court of Kenya; Professor at the University of Nairobi, Faculty of Law; Member of the Permanent Court of Arbitration (PCA) [June, 2024].

¹ United Nations Environment Programme., 'Ecosystem.' Available at <https://leap.unep.org/en/knowledge/glossary/ecosystem> (Accessed on 13/06/2024)

² United Nations., 'Convention on Biological Diversity.' Available at <https://www.cbd.int/doc/legal/cbd-en.pdf> (Accessed on 13/06/2024)

Towards a Healthy Environment: Protecting Marine Ecosystems

their non-living environment interacting as a functional unit³. Ecosystems provide a range of services to economies and societies including: provisioning services, such as food production, water, wood and fuel⁴; supporting services, such as nutrient cycling, soil formation, primary production and habitat provision⁵; cultural services, such as provision of spiritual, aesthetic, educational and recreational needs⁶; and regulating services, such as climate and flood regulation, and water purification⁷.

Healthy ecosystems are vital for Sustainable Development⁸. It has been correctly noted that healthy ecosystems are the lifeblood of food security, especially in developing countries, where a majority of people are supported directly by the land, seas and oceans⁹. Further, healthy and productive inland vegetated wetlands and other water ecosystems help mitigate climate change due to their ability to store carbon, methane, nitrous oxide among other greenhouse gases¹⁰. Healthy ecosystems can also improve water quality by removing pollutants from surface water, in particular through sediment trapping and nutrient removal¹¹. In addition, it has been noted that healthy wetlands also serve as giant sponges, soaking up excess water and releasing it slowly, and therefore help prevent or mitigate severe flooding¹².

³ Ibid, article 2

⁴ United Nations Environment Programme., 'Healthy Ecosystems Key to Better Food Security' Available at <https://www.unep.org/news-and-stories/press-release/healthy-ecosystems-key-better-food-security> (Accessed on 13/06/2024)

⁵ Ibid

⁶ Ibid

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ United Nations Environment Programme., 'About Ecosystem Health' Available at <https://www.unep.org/topics/fresh-water/ecosystem-health/about-ecosystem-health#:~:text=UNEP%20supports%20action%20on%20climate,with%20countries%20and%20other%20partners.> (Accessed on 13/06/2024)

¹¹ Ibid

¹² Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

Healthy ecosystems are therefore key in the Sustainable Development agenda. Healthy ecosystems and landscapes support industries like farming, fishing, forestry and tourism¹³. They are also pivotal in the fight against climate change¹⁴. It has been pointed out that if ecosystems were protected and restored at scale, this could provide more than one-third of the annual emissions reductions the world needs by 2030 to strengthen the fight against climate change¹⁵.

Despite their importance, ecosystems are threatened by several factors. It has been noted that climate change, deforestation, and pollution have destroyed or damaged habitats, changed where species live and eliminated species at a speed and scale comparable to major extinction events of the past¹⁶. According to the United Nations Environment Programme (UNEP), ecosystems are being threatened by factors such as invasive species, changes in land and sea use, climate change, pollution, and direct exploitation of natural resources¹⁷. Protecting and restoring critical ecosystems such as forests, peatlands, wetlands, and marine ecosystems is therefore key for Sustainable Development¹⁸.

This paper explores the need to protect marine ecosystems. It argues that protecting marine ecosystems is necessary in the quest towards Sustainable Development. The paper examines some of the key benefits provided by marine ecosystems. It also discusses the threats facing marine ecosystems. The paper further critically examines the efficacy of the measures adopted at the global, continental, and national levels towards protecting

¹³ Anderson. W., 'Why Resilient Economies Rely on Healthy Ecosystems' Available at <https://climatechampions.unfccc.int/heres-why-the-economy-depends-on-ecosystem-restoration/> (Accessed on 13/06/2024)

¹⁴ Ibid

¹⁵ Ibid

¹⁶ Benton. T., & Wallace. J., 'Threats to Biodiversity' Available at <https://www.chathamhouse.org/2023/04/threats-biodiversity> (Accessed on 13/06/2024)

¹⁷ United Nations Environment Programme., 'Five Drivers of the Nature Crisis' Available at <https://www.unep.org/news-and-stories/story/five-drivers-nature-crisis> (Accessed on 13/06/2024)

¹⁸ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

marine ecosystems. It also offers ideas towards strengthening the protection of marine ecosystems for a healthy environment.

2.0 Marine Ecosystems: Benefits and Challenges

Marine ecosystems offer both humanity and nature with numerous benefits¹⁹. It has been noted that oceans and seas cover nearly 70% of the planet's surface²⁰. Healthy marine ecosystems are essential for life on Earth and play a key role in planetary wellbeing²¹. Marine ecosystems are one of the greatest sources of biodiversity and food, they regulate the climate, and are a major carbon sink²². In addition, marine ecosystems are associated with substantial health, social and economic benefits to coastal communities²³.

It has been noted that marine ecosystems provide humanity with endless natural resources, support wildlife, keep our climate stable and create employment opportunities for many people²⁴. Coastal habitats protect us from extreme weather phenomena, and various coastal activities are a source of livelihood to a large population²⁵. For example, marine ecosystems such as coral reefs, mangroves forests, and seagrass beds support an incredible diversity and abundance of ocean life including fishes, invertebrates, mammals, and seabirds²⁶. These in turn support lucrative fishing and tourism industries for the countries whose waters contain them²⁷.

¹⁹ European Commission., 'EU Action Plan: Protecting and Restoring Marine Ecosystems for Sustainable and Resilient Fisheries' Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52023DC0102> (Accessed on 14/06/2024)

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ European Commission., 'Marine Environment' Available at https://environment.ec.europa.eu/topics/marine-environment_en (Accessed on 14/06/2024)

²⁵ Ibid

²⁶ Coastal Marine Habitats., Available at <https://oneearthfuture.org/en/secure-fisheries/project-badweyn-coastal-marine-habitats#:~:text=Coral%20reefs%2C%20mangroves%2C%20and%20seagrasses,sediment%20and%20stabilizing%20the%20shoreline>. (Accessed on 14/06/2024)

²⁷ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

Oceans are a significant source of food and income for humans²⁸. It is estimated that fisheries and aquaculture provide employment opportunities to more than 200 million people and seafood is a major source of protein and nutrients for more than 3 billion people worldwide²⁹. Further, economic activities related to oceans, seas and coastal areas are rapidly growing³⁰. Oceans are the world's most important transport route with steadily increasing importance and also play a key role in the supply of raw materials and energy³¹. For example, nearly one third of oil and gas production today takes place in seas and coastal regions³². Marine ecosystems support economic sectors including tourism, ports and water projects, marine living resources and blue economy³³.

It has been noted that the value of marine ecosystems extends beyond economic activities such as fisheries and tourism to supporting the longevity of coastal communities³⁴. For example, marine ecosystems such as coral reefs, mangroves, and seagrasses are natural buffers against waves that would otherwise erode the shoreline³⁵. They therefore protect coastal communities from extreme weather events like storm surges and tidal waves.³⁶ Further, mangroves and seagrasses provide extra protection by binding sediment and stabilizing the shoreline³⁷.

²⁸ Bathmann. U., 'Protection and Sustainable Use of Marine Areas' Available at https://www.oceanfuturelab.de/app/uploads/2020/01/ResearchMissionProtection-and-Sustainable-use-of-Marine-Areas_20191204.pdf (Accessed on 14/06/2024)

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

³² Ibid

³³ Ibid

³⁴ Coastal Marine Habitats., Op Cit

³⁵ Ibid

³⁶ Ibid

³⁷ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

According to UNEP, humanity cannot survive without healthy marine ecosystems³⁸. It notes that marine ecosystems are vital for communities, jobs, the global economy, food security, and climate resilience³⁹. Marine ecosystems are vital for the attainment of all the Sustainable Development Goals (SDGs)⁴⁰. It has been noted that oceans are a major carbon and heat sink and absorb over 90% of excess heat and 30% of human-induced carbon dioxide emissions⁴¹. Oceans therefore play a crucial role in regulating the Earth's climate⁴². They absorb heat from the atmosphere, helping to stabilize temperatures and mitigate the effects of global warming⁴³. Further, oceans act as a massive carbon sink, absorbing and storing huge amounts of carbon dioxide⁴⁴. It has been noted that without healthy oceans, climate change would accelerate at an alarming rate, with devastating consequences for both humans and marine life⁴⁵.

Healthy marine ecosystems therefore offer numerous benefits for both humanity and nature. They offer numerous economic benefits including fisheries and tourism, enrich biodiversity, and enhance planet and societal resilience towards climate change and environmental hazards⁴⁶. However, marine ecosystems are also facing several dangers that threaten their sustainability.

Climate change is a major threat to marine ecosystems which leads to rising sea levels, ocean acidification, and the loss of critical habitats such as coral reefs⁴⁷. Pollution is also

³⁸ United Nations Environment Programme., 'Promoting Effective Marine Protected Areas' Available at <https://www.unep.org/explore-topics/oceans-seas/what-we-do/promoting-effective-marine-protected-areas> (Accessed on 14/06/2024)

³⁹ United Nations Environment Programme., 'Oceans, Seas and Coasts' Available at <https://www.unep.org/topics/ocean-seas-and-coasts> (Accessed on 14/06/2024)

⁴⁰ Ibid

⁴¹ Ibid

⁴² Gray Group International., 'Protect the Ocean: Safeguarding Our Vital Marine Ecosystems' Available at <https://www.graygroupintl.com/blog/protect-the-ocean> (Accessed on 14/06/2024)

⁴³ Ibid

⁴⁴ Ibid

⁴⁵ Ibid

⁴⁶ United Nations Environment Programme., 'Oceans, Seas and Coasts' Op Cit

⁴⁷ Gray Group International., 'Protect the Ocean: Safeguarding Our Vital Marine Ecosystems' Op Cit

Towards a Healthy Environment: Protecting Marine Ecosystems

a major issue, with plastic waste, chemical runoff, and oil spills contaminating marine ecosystems and endangering marine life⁴⁸. Overfishing and destructive fishing practices further deplete fish populations and disrupt delicate marine food chains⁴⁹. It has been observed that human activities such as overfishing, resource extraction, tourism, recreation, coastal development and pollution are damaging habitats and reducing populations of marine species at an alarming rate⁵⁰.

According to UNEP, rising temperatures and acidity make the seas inhospitable to many living organisms, disrupt ocean currents, and alter food webs on which humans, plants and animals rely⁵¹. It further points out that human activities from overfishing to deep-sea mining to coastal infrastructure development and the dumping of plastic waste in oceans is rapidly destroying these ocean ecosystems⁵².

Marine ecosystems are therefore facing several challenges that could potentially undermine their economic, environmental, and societal benefits. Climate change, biodiversity loss, and pollution are degrading marine ecosystems, harming marine life, undermining the livelihoods of coastal communities, and negatively impacting health and well-being⁵³. Further, the increasing demand on the sea for food, shipping as well for offshore renewable energy production puts a lot of pressure on marine ecosystems⁵⁴. This leads to pollution, biodiversity loss, seabed damage, overexploitation, spread of invasive species, marine litter, underwater noise, and ocean warming and acidification⁵⁵.

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ United Nations Environment Programme., 'Promoting Effective Marine Protected Areas' Op Cit

⁵¹ United Nations Environment Programme., 'Why Protecting the Ocean and Wetlands Can help Fight the Climate Crisis' Available at <https://www.unep.org/news-and-stories/story/why-protecting-ocean-and-wetlands-can-help-fight-climate-crisis> (Accessed on 14/06/2024)

⁵² Ibid

⁵³ United Nations Environment Programme., 'Oceans, Seas and Coasts' Op Cit

⁵⁴ European Commission., 'Marine Environment' Op Cit

⁵⁵ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

Protecting marine ecosystems is therefore of utmost importance. Protecting marine ecosystems is essential in ensuring the health and vitality of oceans, which are vital to the survival of many species and the overall well-being of the planet⁵⁶. Protecting marine ecosystems is key in reducing human impacts on marine ecosystems, promoting sustainable use of marine resources, and protecting critical habitats and species⁵⁷. It is therefore necessary to strengthen efforts at the global, continental, and national levels towards protecting marine ecosystems for a clean and healthy environment.

3.0 Protecting Marine Ecosystems

The United Nations *2030 Agenda for Sustainable Development*⁵⁸ sets out global targets towards protecting marine ecosystems. SDG 14 under the Agenda seeks to conserve and sustainably use the oceans, seas and marine resources for Sustainable Development⁵⁹. It sets out several targets towards protecting marine ecosystems. These include preventing and significantly reducing marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution⁶⁰; sustainably managing and protecting marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and taking action for their restoration in order to achieve healthy and productive oceans⁶¹; Minimizing and addressing the impacts of ocean acidification, including through enhanced scientific cooperation at all levels⁶²; effectively regulating harvesting and ending overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implementing science-based

⁵⁶ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Available at <https://www.transformationholdings.com/environment/marine-conservation-strategies-aimed-toward-healthy-oceans/> (Accessed on 14/06/2024)

⁵⁷ Ibid

⁵⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 14/06/2024)

⁵⁹ Ibid

⁶⁰ Ibid, SDG 14.1

⁶¹ Ibid, SDG 14.2

⁶² Ibid, SDG 14.3

Towards a Healthy Environment: Protecting Marine Ecosystems

management plans, in order to restore fish stocks in the shortest time feasible⁶³; conserving at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information⁶⁴; increasing scientific knowledge, developing research capacity and transfer of marine technology to developing countries⁶⁵; and enhancing the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention of the Law of the Seas (UNCLOS), which provides the legal framework for the conservation and sustainable use of oceans and their resources⁶⁶.

SDG 14 therefore recognizes the importance of oceans, seas, and other marine ecosystems to human well-being and social and economic development worldwide⁶⁷. According to the United Nations, the conservation and sustainable use of marine ecosystems is central to achieving the 2030 Agenda, especially for small island developing states⁶⁸. It is therefore vital to implement the targets of SDG 14 in order to effectively protect marine ecosystems for a healthy environment.

At a continental level, Africa Union's *Agenda 2063*⁶⁹ captures the need to protect marine ecosystems in Africa. Agenda 2063 notes that Africa is endowed with abundant flora and fauna and marine ecosystems including diverse fish and other aquatic life, coral reefs which are sources of livelihoods to many Africans including water, food, power generation and transportation⁷⁰. It further notes that marine ecosystems are not only

⁶³ Ibid, SDG 14.4

⁶⁴ Ibid, SDG 14.5

⁶⁵ Ibid, SDG 14.a

⁶⁶ Ibid, SDG 14.c

⁶⁷ United Nations., 'Goal 14' Available at <https://unstats.un.org/sdgs/report/2016/goal-14/> (Accessed on 14/06/2024)

⁶⁸ Ibid

⁶⁹ African Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf (Accessed on 14/06/2024)

⁷⁰ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

major tourist attractions in Africa but also serve as important sources of minerals, including oil and gas⁷¹. Africa's ocean and coastal resources include a total length of over 26,000 nautical miles of coastline across the Atlantic and Indian Oceans, and the Mediterranean and Red Seas⁷². However, human activities including the dumping of toxic waste, illegal trafficking, oil spills, degradation of the marine environment, transnational organized crimes, among others, are seriously threatening Africa's oceans, and seas⁷³. Further, Agenda 2063 notes that these problems are compounded by the aggravated effects of climate change, most notably the rising ocean temperatures and ocean acidification that is leading to the weakening of the capacity of the ocean carbon sink and loss of fishery resources, and also reduction in the size of water bodies⁷⁴. Agenda 2063 seeks to ensure that coastal and marine ecosystems are fully conserved and used sustainably⁷⁵. It sets out key strategies towards protecting marine ecosystems in Africa including beneficiation of sectors that have immediate potential for growth and job creation, such as aquaculture in marine and fresh waters; enhanced science, technology and innovations for sustainable management of marine ecosystems, and collaborative management of shared water resources and conservation⁷⁶. Actualizing these targets is vital in protecting marine ecosystems in Africa.

In addition, the *Africa Blue Economy Strategy*⁷⁷ seeks to enhance the protection of marine ecosystems in Africa. According to the Strategy, the African continent is endowed with massive aquatic and marine resources including oceans, seas, rivers and lakes with potential for blue economy growth⁷⁸. It notes that Africa has 38 coastal states and a

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Africa Blue Economy Strategy., Available at https://www.au-ibar.org/sites/default/files/2020-10/sd_20200313_africa_blue_economy_strategy_en.pdf (Accessed on 14/06/2024)

⁷⁸ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

number of island states such as Cape Verde, Sao Tomé and Príncipe, Mauritius, Seychelles, Madagascar and the Comoros⁷⁹. According to the Strategy, marine ecosystems are of strategic importance to the continent and provide opportunities for fisheries, aquaculture, shipping, coastal tourism, offshore oil and gas energy mobilization and other blue economy related activities⁸⁰. It also recognizes that marine ecosystems in Africa are facing several challenges including illegal fishing, pollution through dumping of toxic wastes, climate change, institutional and governance challenges in member states⁸¹. The Strategy notes that these challenges are preventing African countries from realizing the full benefits from the various sectors of the blue economy⁸². It seeks to enhance the protection of marine ecosystems in Africa through measures such as strengthening governance of the blue economy in Africa, optimising conservation and sustainable fisheries and aquaculture resources use, creating conducive regulatory environment for the development and application of sustainable blue energy, and developing an integrated and sustainable tourism in Africa⁸³. Implementing the Africa Blue Economy Strategy is therefore key in protecting marine ecosystems in Africa.

At a national level, Kenya's *Blue Economy Strategic Plan*⁸⁴ seeks to foster the protection of marine ecosystems in the country. The Strategic Plan notes that Kenya is endowed with rich coastal and maritime resources, which have a huge potential for wealth and employment creation as well as contributing to food and nutrition security⁸⁵. It however notes that marine ecosystems in the country are threatened by factors such as climate change, overfishing, illegal, unreported and unregulated fishing, and environmental

⁷⁹ Ibid

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ Ibid

⁸⁴ Republic of Kenya., Ministry of Mining, Blue Economy, and Maritime Affairs., 'Strategic Plan 2023-2027' Available at [https://mibema.go.ke/sites/default/files/17.5.2023%20REVISED%20DRAFT%20STRATEGIC%20%20%20PLAN%20SDBE%26F%20\(2023-2027\).pdf](https://mibema.go.ke/sites/default/files/17.5.2023%20REVISED%20DRAFT%20STRATEGIC%20%20%20PLAN%20SDBE%26F%20(2023-2027).pdf) (Accessed on 14/06/2024)

⁸⁵ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

degradation⁸⁶. The Strategic identifies key legal, policy, institutional, and scientific interventions towards protecting marine ecosystems in Kenya. There is need to actualize the Blue Economy Strategic Plan in order to protect marine ecosystems in Kenya.

Protecting marine ecosystems is therefore a key agenda at the global, continental, and national levels. In order to actualize this agenda, there is need to promote sustainable fishing practices in marine ecosystems⁸⁷. Overfishing and illegal fishing have been identified as key threats to marine ecosystems⁸⁸. Overfishing and destructive fishing practices deplete fish populations, destroy marine habitats and disrupt delicate marine food chains⁸⁹. This not only threatens the livelihoods of millions of people who depend on fishing but also disrupts the delicate balance of marine biodiversity⁹⁰. It is therefore necessary to optimize conservation and sustainable fisheries and aquaculture resources use while minimizing conflicts in order to achieve full wealth-generating potential for fisheries and aquaculture sector⁹¹. This will enhance the sustainability of the fisheries and aquaculture sector while enabling all countries reap from the benefits of marine ecosystems⁹².

It is also necessary to establish marine protected areas⁹³. Marine protected areas are designated areas in the ocean where human activities, such as fishing and oil and gas extraction, are restricted or prohibited⁹⁴. This protects critical habitats such as coral reefs or kelp forests for marine species such as sea turtles or whales to thrive⁹⁵. UNEP notes

⁸⁶ Ibid

⁸⁷ Gray Group International., 'Protect the Ocean: Safeguarding Our Vital Marine Ecosystems' Op Cit

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Muigua. K., 'Fostering the Blue Economy for Sustainability' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Fostering-the-Blue-Economy-for-Sustainability-1.pdf> (Accessed on 14/06/2024)

⁹² Ibid

⁹³ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

⁹⁴ Ibid

⁹⁵ Ibid

Towards a Healthy Environment: Protecting Marine Ecosystems

that marine protected areas offer one of the best options to maintain our oceans' health and avoid further degradation⁹⁶. Marine protected areas provide several benefits including ecological benefits that come from protecting species, habitats and ecosystem functions⁹⁷; social benefits which come from engaging stakeholders in the planning and fair sharing of benefits⁹⁸; and economic benefits that come from ensuring the long-term sustainable use of natural resources and tourism incomes⁹⁹. It has been noted that these benefits combined could help deliver several of the SDGs, including reducing poverty, improving food security and tackling climate change¹⁰⁰.

In addition, there is need to curb marine pollution¹⁰¹. Marine pollution is a key global environmental challenge. For example, it is estimated that every year, 11 million metric tons of plastics enter into oceans on top of the estimated 200 million metric tons that currently circulate in marine environments¹⁰². Controlling pollution is therefore crucial for maintaining healthy oceans¹⁰³. Pollution from sources such as oil spills, plastic waste, chemical waste, and nutrient runoff from agriculture harms ocean life and degrades marine ecosystems¹⁰⁴. It is therefore necessary for countries to implement policies and regulations to reduce marine pollution and foster public awareness and individual actions to reduce waste¹⁰⁵. UNEP further notes that protecting oceans from pollution requires both land and sea-based actions¹⁰⁶. These actions include reducing the direct human impacts on the ocean, cleaning up polluted rivers, restoring wetlands and

⁹⁶ United Nations Environment Programme., 'Promoting Effective Marine Protected Areas' OpCit

⁹⁷ Ibid

⁹⁸ Ibid

⁹⁹ Ibid

¹⁰⁰ Ibid

¹⁰¹ Ocean Conservancy., 'Fighting for Trash Free Seas' Available at <https://oceanconservancy.org/trashfree-seas/plastics-in-the-ocean/> (Accessed on 14/06/2024)

¹⁰² Ibid

¹⁰³ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹⁰⁴ Ibid

¹⁰⁵ Ibid

¹⁰⁶ United Nations Environment Programme., 'Why Protecting the Ocean and Wetlands Can help Fight the Climate Crisis' Op Cit

Towards a Healthy Environment: Protecting Marine Ecosystems

developing a circular economy where potential pollutants remain in the economy for as long as possible and at life's end are properly disposed of in order to avoid winding up in oceans¹⁰⁷.

Further, it is imperative to restore and rehabilitate damaged and degraded marine ecosystems¹⁰⁸. Restoring oceans and coasts means reducing the pressure on those ecosystems so they can recover, both naturally and by re-seeding or transplanting key species¹⁰⁹. This can be achieved by restoring degraded habitats, such as coral reefs and mangroves, and rehabilitating injured or sick marine animals¹¹⁰. Restoring marine ecosystems is a key strategy for mitigating climate change, bolstering biodiversity, and sustaining blue economies¹¹¹. It can protect and enhance marine life and environments by removing debris and planting new coral reefs¹¹². It can also improve the overall ocean health, improve water quality and enhance fishing opportunities¹¹³.

Finally, it is imperative to foster good governance of marine ecosystems and the blue economy¹¹⁴. Some of the key approaches towards this end include integrated coastal zone management which can enhance the protection of coastal and near shore resources while

¹⁰⁷ Ibid

¹⁰⁸ United Nations Decade on Ecosystem Restoration., 'Oceans and Coasts' Available at <https://www.decadeonrestoration.org/types-ecosystem-restoration/oceans-and-coasts#:~:text=Restoring%20oceans%20and%20coasts%20means,seeding%20or%20transplanting%20key%20species>. (Accessed on 14/06/2024)

¹⁰⁹ Ibid

¹¹⁰ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹¹¹ Fuchs. G., 'Marine and Coastal Ecosystem Restoration' Available at <https://www.ecologic.eu/sites/default/files/presentation/2023/Fuchs-23-Marine-and-coastal-ecosystem.pdf> (Accessed on 14/06/2024)

¹¹² Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹¹³ Ibid

¹¹⁴ Food and Agriculture Organization., 'Achieving Blue Growth through implementation of the Code of Conduct for Responsible Fisheries' Available at <https://www.fao.org/3/i4999e/i4999e.pdf> (Accessed on 14/06/2024)

Towards a Healthy Environment: Protecting Marine Ecosystems

increasing the efficiency of their uses¹¹⁵. Sound governance of marine ecosystems can also be realized through marine spatial planning¹¹⁶. This entails developing a comprehensive management plan for the sustainable use and protection of marine resources¹¹⁷. It involves identifying the different activities and services of the ocean, such as shipping lanes, fishing grounds, and conservation areas, and determining how they can coexist sustainably¹¹⁸. Public participation is also key in strengthening governance of marine ecosystems¹¹⁹. Effective governance of marine ecosystems requires the active participation of all societal groups, especially women, young people, local communities, indigenous peoples, and marginalized or underrepresented groups¹²⁰. Further, traditional knowledge and practices can also provide culturally appropriate approaches for supporting improved governance of marine ecosystems¹²¹. It is therefore vital to involve the public and local communities in protecting marine ecosystems. This can be realized through sharing traditional ecological knowledge, education and outreach programs, involvement in decision-making processes, co-management agreements, and community-based monitoring programs¹²².

¹¹⁵ World Bank Group., 'Growing the Blue Economy to Combat Poverty and Accelerate Prosperity' Available at <https://thedocs.worldbank.org/en/doc/446441473349079068-0010022016/original/AMCOECCBlueEconomyDevelopmentFramework.pdf> (Accessed on 14/06/2024)

¹¹⁶ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹¹⁷ Ibid

¹¹⁸ Ibid

¹¹⁹ United Nations Economic Commission for Africa., 'The Nairobi Statement of Intent on Advancing the Global Sustainable Blue Economy.' Available at <https://archive.uneca.org/sites/default/files/uploadeddocuments/SROs/EA/HIGH-LEVELSUSTAINABLE-BLUE-ECONOMY-CONFERENCE-2018/nairobistatement-of-intent-advancing-globalsustainable-blue-economy.pdf> (Accessed on 14/06/2024)

¹²⁰ World Bank Group., 'The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries' Available at <https://openknowledge.worldbank.org/server/api/core/bitstreams/cee24b6c-2e2f-5579-b1a4-457011419425/content> (Accessed on 14/06/2024)

¹²¹ Ibid

¹²² Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

Towards a Healthy Environment: Protecting Marine Ecosystems

The foregoing measures are necessary in protecting marine ecosystems towards a healthy environment.

4.0 Conclusion

Marine ecosystems offer numerous benefits to both humanity and nature. They provide economic benefits including fisheries and tourism, enrich biodiversity, and enhance planet and societal resilience towards climate change and environmental hazards¹²³. However, the sustainability of marine ecosystems is threatened by factors such as climate change, pollution, overfishing, resource extraction, and coastal development¹²⁴. These challenges are degrading marine ecosystems, harming marine life, undermining the livelihoods of coastal communities, and negatively impacting health and well-being¹²⁵. It is therefore necessary to protect marine ecosystems towards a health environment. Protecting marine ecosystems ensures their health and vitality therefore offering economic benefits including tourism and fishing, and protection of critical habitats and species¹²⁶. In order to protect marine ecosystems, it is imperative to: promote sustainable fishing practices¹²⁷; establish marine protected areas¹²⁸; curb marine pollution¹²⁹; restore and rehabilitate damaged and degraded marine ecosystems¹³⁰; and foster good governance of marine ecosystems and the blue economy¹³¹. Protecting marine ecosystems should be embraced as an important theme at the global, continental, regional, and national levels towards a healthy environment.

¹²³ United Nations Environment Programme., 'Oceans, Seas and Coasts' Op Cit

¹²⁴ United Nations Environment Programme., 'Promoting Effective Marine Protected Areas' Op Cit

¹²⁵ United Nations Environment Programme., 'Oceans, Seas and Coasts' Op Cit

¹²⁶ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹²⁷ Gray Group International., 'Protect the Ocean: Safeguarding Our Vital Marine Ecosystems' Op Cit

¹²⁸ Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Op Cit

¹²⁹ Ocean Conservancy., 'Fighting for Trash Free Seas' Op Cit

¹³⁰ United Nations Decade on Ecosystem Restoration., 'Oceans and Coasts' Op Cit

¹³¹ Food and Agriculture Organization., 'Achieving Blue Growth through implementation of the Code of Conduct for Responsible Fisheries' Op Cit

References

Africa Blue Economy Strategy., Available at https://www.aubiar.org/sites/default/files/2020-10/sd_20200313_africa_blue_economy_strategy_en.pdf

African Union., 'Agenda 2063: The Africa we Want' Available at https://au.int/sites/default/files/documents/33126-doc-framework_document_book.pdf

Anderson. W., 'Why Resilient Economies Rely on Healthy Ecosystems' Available at <https://climatechampions.unfccc.int/heres-why-the-economy-depends-on-ecosystem-restoration/>

Bathmann. U., 'Protection and Sustainable Use of Marine Areas' Available at https://www.oceanfuturelab.de/app/uploads/2020/01/ResearchMissionProtection-and-Sustainable-use-of-Marine-Areas_20191204.pdf

Benton. T., & Wallace. J., 'Threats to Biodiversity' Available at <https://www.chathamhouse.org/2023/04/threats-biodiversity>

Coastal Marine Habitats., Available at <https://oneearthfuture.org/en/secure-fisheries/project-badweyn-coastal-marine-habitats#:~:text=Coral%20reefs%2C%20mangroves%2C%20and%20seagrasses,sediment%20and%20stabilizing%20the%20shoreline>

Colson. D., 'Marine Conservation Strategies Aimed Toward Healthy Oceans' Available at <https://www.transformationholdings.com/environment/marine-conservation-strategies-aimed-toward-healthy-oceans/>

European Commission., 'EU Action Plan: Protecting and Restoring Marine Ecosystems for Sustainable and Resilient Fisheries' Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52023DC0102>

European Commission., 'Marine Environment' Available at https://environment.ec.europa.eu/topics/marine-environment_en

Food and Agriculture Organization., 'Achieving Blue Growth through implementation of the Code of Conduct for Responsible Fisheries' Available at <https://www.fao.org/3/i4999e/i4999e.pdf>

Fuchs. G., 'Marine and Coastal Ecosystem Restoration' Available at <https://www.ecologic.eu/sites/default/files/presentation/2023/Fuchs-23-Marine-and-coastal-ecosystem.pdf>

Towards a Healthy Environment: Protecting Marine Ecosystems

Gray Group International., 'Protect the Ocean: Safeguarding Our Vital Marine Ecosystems' Available at <https://www.graygroupintl.com/blog/protect-the-ocean>

Muigua. K., 'Fostering the Blue Economy for Sustainability' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Fostering-the-Blue-Economy-for-Sustainability-1.pdf>

Ocean Conservancy., 'Fighting for Trash Free Seas' Available at <https://oceanconservancy.org/trashfree-seas/plastics-in-the-ocean/>

Republic of Kenya., Ministry of Mining, Blue Economy, and Maritime Affairs., 'Strategic Plan 2023-2027' Available at [https://mibema.go.ke/sites/default/files/17.5.2023%20REVISED%20DRAFT%20STRATEGIC%20%20PLAN%20SDBE%26F%20\(2023-2027\).pdf](https://mibema.go.ke/sites/default/files/17.5.2023%20REVISED%20DRAFT%20STRATEGIC%20%20PLAN%20SDBE%26F%20(2023-2027).pdf)

United Nations Decade on Ecosystem Restoration., 'Oceans and Coasts' Available at <https://www.decadeonrestoration.org/types-ecosystem-restoration/oceans-and-coasts#:~:text=Restoring%20oceans%20and%20coasts%20means,seeding%20or%20transplanting%20key%20species>

United Nations Economic Commission for Africa., 'The Nairobi Statement of Intent on Advancing the Global Sustainable Blue Economy.' Available at <https://archive.uneca.org/sites/default/files/uploadeddocuments/SROs/EA/HIGH-LEVELSUSTAINABLE-BLUE-ECONOMY-CONFERENCE-2018/nairobistatement-of-intent-advancing-globalsustainable-blue-economy.pdf>

United Nations Environment Programme., 'About Ecosystem Health' Available at <https://www.unep.org/topics/fresh-water/ecosystem-health/about-ecosystem-health#:~:text=UNEP%20supports%20action%20on%20climate,with%20countries%20and%20other%20partners>

United Nations Environment Programme., 'Ecosystem.' Available at <https://leap.unep.org/en/knowledge/glossary/ecosystem>

United Nations Environment Programme., 'Five Drivers of the Nature Crisis' Available at <https://www.unep.org/news-and-stories/story/five-drivers-nature-crisis>

United Nations Environment Programme., 'Healthy Ecosystems Key to Better Food Security' Available at <https://www.unep.org/news-and-stories/press-release/healthy-ecosystems-key-better-food-security>

United Nations Environment Programme., 'Oceans, Seas and Coasts' Available at <https://www.unep.org/topics/ocean-seas-and-coasts>

Towards a Healthy Environment: Protecting Marine Ecosystems

United Nations Environment Programme., 'Promoting Effective Marine Protected Areas' Available at <https://www.unep.org/explore-topics/oceans-seas/what-we-do/promoting-effective-marine-protected-areas>

United Nations Environment Programme., 'Why Protecting the Ocean and Wetlands Can help Fight the Climate Crisis' Available at <https://www.unep.org/news-and-stories/story/why-protecting-ocean-and-wetlands-can-help-fight-climate-crisis>

United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

United Nations., 'Convention on Biological Diversity.' Available at <https://www.cbd.int/doc/legal/cbd-en.pdf>

United Nations., 'Goal 14' Available at <https://unstats.un.org/sdgs/report/2016/goal-14/>

World Bank Group., 'Growing the Blue Economy to Combat Poverty and Accelerate Prosperity' Available at <https://thedocs.worldbank.org/en/doc/446441473349079068-0010022016/original/AMCOECCBlueEconomyDevelopmentFramework.pdf>

World Bank Group., 'The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries' Available at <https://openknowledge.worldbank.org/server/api/core/bitstreams/cee24b6c-2e2f-5579-b1a4-457011419425/content>