

Community Climate Action: Restoring Wetlands for Biodiversity Conservation and Ecosystem Health in Africa

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Abstract

This paper discusses how wetlands can be effectively restored for biodiversity conservation and ecosystem health in Africa. The paper notes that wetlands play an important role in strengthening climate action and ensuring sound biodiversity conservation both globally and in Africa. In particular, the paper notes that Africa has some of the most rich and diverse wetlands on the planet. It argues that if sustainably utilised and conserved, Africa's wetlands can play an important role in fostering Sustainable Development. Despite their importance for people and planet, the paper notes that Africa's wetlands are some of the most threatened ecosystems on the planet. It discusses some of the dangers facing Africa's wetlands. In light these threats, the paper argues that protecting and restoring wetlands in Africa is crucial for people and planet in pursuit of Sustainable Development. Consequently, the paper examines viable approaches towards restoring wetlands for biodiversity conservation and ecosystem health in Africa.

1.0 Introduction

The *Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)*¹ defines wetlands as areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish, or salt, including areas of marine water the depth of which low tide does not exceed six metres. Wetlands have also been defined as areas where water covers the soil,

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¹ Convention on Wetlands of International Importance especially as Waterfowl Habitat., UNTS Vol. 996 (p 245), 2 February 1971

or is present either at or near the surface of the soil all year or for varying periods of time during the year². It has been observed that wetlands are ecosystems where water is the primary factor controlling the environment and the associated plant and animal life³. They occur where the water table is at or near the surface of the land, or where the land is covered by water⁴. Wetlands have been identified as distinct ecosystems which are characterized by being flooded or saturated with water; either permanently or periodically⁵.

Wetlands can be natural or artificial. Natural wetlands include marine/coastal wetlands such as coastal lagoons, rocky shores, seagrass beds and coral reefs⁶; estuarine wetlands including deltas, tidal marshes and mudflats, and mangrove swamps⁷; lacustrine which are wetlands associated with lakes⁸; riverine which are wetlands found along rivers and streams⁹; and marshy wetlands such as swamps¹⁰. On the other hand, artificial/human-made wetlands include fish ponds, rice paddies, depollution and stabilization ponds, and saltpans¹¹.

² United States Environmental Protection Agency., 'What is a Wetland?' Available at <https://www.epa.gov/wetlands/what-wetland> (Accessed on 23/02/2026)

³ Ramsar Information Paper No. 1., 'What are Wetlands' Available at <https://www.ramsar.org/sites/default/files/documents/library/info2007-01-e.pdf> (Accessed on 23/02/2026)

⁴ Ibid

⁵ Mureithi. S., 'Wetlands in Africa' Available at <https://storymaps.arcgis.com/stories/179b28e40d1d461c8d7d26981e9e9640> (Accessed on 23/02/2026)

⁶ Ramsar Convention Secretariat., 'An Introduction to the Ramsar Convention on Wetlands' Available at https://www.ramsar.org/sites/default/files/documents/library/handbook1_5ed_introductiontoconvention_final_e.pdf (Accessed on 23/02/2026)

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ Ibid

¹¹ United Nations Environment Programme., 'Wetlands and Biodiversity' is the theme for World Wetlands Day 2020' Available at <https://www.unep.org/news-and-stories/story/wetlands-and-biodiversity-theme-world-wetlands-day-2020#:~:text=According%20to%20The%20Ramsar%20Convention,metres.%E2%80%9D%20Fish%20ponds%2C%20rice> (Accessed on 23/02/2026)

Wetlands are important ecosystems which provide numerous benefits for people and planet. For instance, it has been observed that wetlands provide essential ecosystem services such as water regulation, flood control, water purification, biodiversity conservation, climate mitigation and pollution control¹². In addition, wetlands support human health, well-being and livelihoods including through providing food, job opportunities and reducing pollution¹³. However, despite their valuable benefits for people and planet, it has been observed that wetlands are being degraded globally¹⁴. The United Nations Environment Programme (UNEP) notes that wetlands all over the world are under threat with many polluted or degraded as a result of climate change and human development among other challenges¹⁵. It has been observed that the world has lost most of its wetlands with many others being polluted or degraded as a result of climate change, pollution and unsustainable human development¹⁶. Protecting and restoring wetlands is therefore key towards harnessing the benefits of these valuable ecosystems for Sustainable Development.

This paper discusses how wetlands can be effectively restored for biodiversity conservation and ecosystem health in Africa. The paper notes that wetlands play an important role in strengthening climate action and ensuring sound biodiversity conservation both globally and in Africa. In particular, the paper notes that Africa has some of the most rich and diverse wetlands on the planet. It argues that if sustainably utilised and conserved, Africa's wetlands can play an important role in fostering Sustainable Development. Despite their importance for people and planet, the paper notes that Africa's wetlands are some of the most threatened ecosystems on the planet. It

¹² Ibid

¹³ Ibid

¹⁴ United Nations Environment Programme., 'Drive to protect world's wetlands gains momentum' Available at <https://www.unep.org/news-and-stories/story/drive-protect-worlds-wetlands-gains-momentum#:~:text=Vegetated%20wetlands%2C%20such%20as%20swamps,insects%20to%20ducks%20to%20moose> (Accessed on 23/02/2026)

¹⁵ Ibid

¹⁶ Ibid

discusses some of the dangers facing Africa's wetlands. In light these threats, the paper argues that protecting and restoring wetlands in Africa is crucial for people and planet in pursuit of Sustainable Development. Consequently, the paper examines viable approaches towards restoring wetlands for biodiversity conservation and ecosystem health in Africa.

2.0 Wetlands in Africa

Africa is endowed with rich and diverse wetlands comprising of peatlands, mangroves, marshes, floodplains, rivers, lakes, and coral reefs among others¹⁷. It is estimated that wetland ecosystems in Africa cover over 131 million hectares¹⁸. Some of the major wetlands in Africa include the Sudd in South Sudan which is Africa's largest wetland. It has been observed that the Sudd represents one of the largest freshwater ecosystems in the world¹⁹. It is also a biodiversity hotspot being home to several endangered mammalian species, migratory birds and large fish populations²⁰. The Sudd also acts as a giant filter that controls and normalizes water quality thus playing a fundamental role in ensuring regional water security²¹. Further, it has been observed that the Sudd regulates flooding by acting as a giant sponge that absorbs excess water during periods of high water yield thus protecting people from adverse climatic events²².

The Okavango delta in Botswana is another important wetland in Africa²³. The Okavango delta is a biodiversity hotspot that supports large concentrations of mammals and birds²⁴. It is also a major source of water and food thus supporting the livelihoods of communities

¹⁷ Wetlands International., 'What are Wetlands' Available at <https://africa.wetlands.org/en/wetlands/what-are-wetlands/> (Accessed on 23/02/2026)

¹⁸ Ibid

¹⁹ United Nations Educational, Scientific and Cultural Organization., 'Sudd Wetland' Available at <https://whc.unesco.org/en/tentativelists/6276/> (Accessed on 23/02/2026)

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Mureithi. S., 'Wetlands in Africa' Op Cit

²⁴ Ibid

living in the region²⁵. The Okavango delta has been recognised as a world heritage site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) demonstrating its significance for people and planet²⁶. In addition, the Tana River delta wetland is Kenya's largest and most important wetland²⁷. The wetland is home to abundant animal and plant species while also supporting coastal communities through vital ecosystem services including food, water and flood regulation²⁸.

Africa therefore has some of the most unique and important wetlands on the planet. It has been observed that African wetlands are among the most productive ecosystems in the world, providing a wide range of services that contribute to human wellbeing²⁹. These services include the provision of water, food, dry season grazing, and fuel wood³⁰. Further, it has been observed that wetlands in Africa support biodiversity including unique plant and animal species³¹. African wetlands are also vital carbon sinks sequestering large amounts of carbon from the atmosphere, thus strengthening climate action in the continent³². For instance, it has been observed that the peat swamp forest of the Congo Basin stores around 29 billion tons of carbon which is approximately equivalent to three years' worth of global greenhouse gas emissions, while the Congo Basin as a whole absorbs nearly 1.5 billion tons of carbon dioxide a year³³. Peatlands are therefore an important solution to the climate crisis absorbing and storing huge quantities

²⁵ Ibid

²⁶ United Nations Educational, Scientific and Cultural Organization., 'Okavango Delta' Available at <https://whc.unesco.org/en/list/1432/> (Accessed on 23/02/2026)

²⁷ Mureithi. S., 'Wetlands in Africa' Op Cit

²⁸ United Nations Educational, Scientific and Cultural Organization., 'The Tana Delta and Forests Complex' Available at <https://whc.unesco.org/en/tentativelists/5514/> (Accessed on 23/02/2026)

²⁹ Garba. S.I et al., 'Wetland fragmentation associated with large populations across Africa' *Nature Communications.*, Volume 16, No. 5065 (2025)

³⁰ Ibid

³¹ Ibid

³² Ibid

³³ United Nations Environment Programme., 'Critical ecosystems: Congo Basin peatlands' Available at <https://www.unep.org/news-and-stories/story/critical-ecosystems-congo-basin-peatlands> (Accessed on 23/02/2026)

of carbon, while also hosting biodiversity and storing and improving water quality³⁴. Further, wetlands such as mangroves which occur in coastal areas in Africa are vital blue carbon ecosystems absorbing and storing huge quantities of carbon therefore aiding in climate mitigation³⁵.

Wetlands are therefore valuable ecosystems for both people and planet in Africa. They provide valuable ecosystem services including food, water supply and purification, climate and flood regulation, coastal protection, biodiversity conservation and recreational opportunities³⁶. Further, wetlands support livelihoods in key sectors including tourism and fisheries³⁷. However, despite providing numerous benefits for people and planet, wetlands in Africa are being degraded at an alarming rate. It has been observed that human activities including habitat destruction, pollution, infrastructure development and overharvesting of natural resources are driving the degradation of wetlands in Africa³⁸. Human activities including water and nutrient pollution, drainage, development, over-grazing, mining, deforestation, and agricultural expansion are the primary cause of destruction and degradation of wetlands in Africa³⁹. It has been observed that the destruction of wetlands in Africa fuels water scarcity, loss of biodiversity, disruption of wildlife breeding grounds, and loss of critical ecosystem services including food, water, and climate mitigation benefits⁴⁰.

The destruction of wetlands in Africa therefore has negative impacts on both people and planet. Consequently, it is imperative to restore wetlands in Africa in order to maximise

³⁴ Ibid

³⁵ Blue Africa., Available at <https://ascendclimate.org/blue-africa/#:~:text=Africa's%20coastal%20and%20marine%20ecosystems,%2C%20seagrass%2C%20and%20salt%20marshes.> (Accessed on 23/02/2026)

³⁶ Wetlands International., 'What are Wetlands' Op Cit

³⁷ Ibid

³⁸ Towards the Sustainable Use of African Wetlands., Available at <https://www.frontiersin.org/research-topics/9466/towards-the-sustainable-use-of-african-wetlands/magazine> (Accessed on 23/02/2026)

³⁹ Mureithi. S., 'Wetlands in Africa' Op Cit

⁴⁰ Ibid

human health and well-being, livelihoods, climate action and sound biodiversity conservation.

3.0 Restoring Wetlands for Biodiversity Conservation and Ecosystem Health in Africa

Wetlands are valuable ecosystems which provide many benefits for people and planet. For instance, wetlands are at the heart of biodiversity conservation. It has been observed that a huge share of the world's biodiversity is found in wetlands – from inland lakes, swamps and river floodplains to coastal mangroves, coral reefs, tidal mudflats and salt marshes⁴¹. Wetlands have been identified as biodiversity hotspots providing habitat for nearly 40 per cent of the planet's plant and animal species⁴². Wetlands also play a crucial role in climate action. It has been observed that wetlands are essential parts of the carbon cycle and are crucial to mitigating climate change⁴³. In particular, peatlands which only cover approximately 3 percent of the Earth's surface, store nearly twice the amount of carbon of all the world's forests' biomass combined making them an indispensable global resource in climate action⁴⁴. Further, coastal wetlands including seagrass meadows and mangrove forests are vital blue carbon ecosystems. These wetlands have been described as carbon removal powerhouses, storing up to 5 times more carbon per area than tropical forests and absorbing it from the atmosphere about 3 times as quickly as tropical forests⁴⁵.

Wetlands therefore play a crucial role in climate action and biodiversity conservation. However, despite their vital importance, wetlands all over the world are facing mounting threats leading to their disappearance and degradation. In particular, wetlands in Africa

⁴¹ Wetlands International., 'Biodiversity' Available at <https://www.wetlands.org/biodiversity/> (Accessed on 24/02/2026)

⁴² Ibid

⁴³ Wetlands International., 'Wetlands for Climate Action' Available at <https://www.wetlands.org/blog/world-water-week-wetlands-for-climate-action/> (Accessed on 24/02/2026)

⁴⁴ Ibid

⁴⁵ Wood. K., & Ashford. O., 'How Blue Carbon Can Tackle the Climate, Biodiversity and Development Crises' Available at <https://www.wri.org/insights/what-is-blue-carbon-benefits-for-people-planet> (Accessed on 24/02/2026)

are being degraded by human activities including pollution, drainage for agriculture and infrastructure development, deforestation, habitat destruction and over extraction of resources among others⁴⁶. In addition, climate change threatens wetlands in Africa including through drying due to warmer temperatures, biodiversity loss as a result of flooding and sea-level rise which damages coastal wetlands including mangroves⁴⁷. Consequently, restoring wetlands in Africa is key towards harnessing the benefits of these valuable ecosystems for people and planet.

The concept of ecosystem restoration involves assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact⁴⁸. Ecosystem restoration aims to recover the ecological functionality and enhance human well-being in deforested and degraded landscapes and ecosystems⁴⁹. It is an important process that not only returns landscapes and ecosystems to a healthy state, but also increases the amount of carbon sequestered, improves biodiversity and the quality of soil and water in the ecosystem, and provides economic benefits for communities that depend on such landscapes and ecosystems⁵⁰. According to UNEP, ecosystem restoration is one of the most important ways of delivering nature-based solutions to tackle global and regional challenges including food insecurity, climate change and biodiversity loss⁵¹.

⁴⁶ Mureithi. S., 'Wetlands in Africa' Op Cit

⁴⁷ Ibid

⁴⁸ United Nations Decade on Ecosystem Restoration., 'What is Ecosystem Restoration?' Available at <https://www.decadeonrestoration.org/what-ecosystem-restoration> (Accessed on 24/02/2026)

⁴⁹ Food and Agriculture Organization., 'The Key Role of Forest and Landscape Restoration in Climate Action' Available at <https://www.fao.org/documents/card/en/c/cc2510en> (Accessed on 24/02/2026)

⁵⁰ World Economic Forum., 'What are Natural Climate Solutions?' Available at <https://www.weforum.org/agenda/2021/09/what-are-natural-climate-solutions-ncsalliance/#:~:text=NCS%20are%20actions%20that%20avoid,forest%20conservation%2C%20restoration%20and%20management> (Accessed on 24/02/2026)

⁵¹ United Nations Environment Programme., 'New UN Decade on Ecosystem Restoration offers unparalleled opportunity for job creation, food security and addressing climate change' Available at <https://www.unep.org/news-and-stories/press-release/new-un-decade-ecosystem-restoration-offers-unparalleled-opportunity> (Accessed on 24/02/2026)

This ideal is envisaged under the *United Nations Decade on Ecosystem Restoration*⁵², a global agenda that aims to prevent, halt and reverse the degradation of ecosystems on every continent and in the ocean by 2030.

Restoring wetlands in Africa is therefore key towards recovering and improving their ecological functionality in order to enhance benefits such as climate action, biodiversity conservation and food security. Achieving this goal involves focusing on activities that promote a return of wetlands to previous conditions as well as activities that improve the functioning of wetlands⁵³. In particular, it has been observed that tackling pressures and stressors such as climate change, pollution, deforestation, habitat loss, over extraction of resources, agricultural expansion and infrastructure development is the best approach towards preventing further loss and degradation of wetlands⁵⁴. Further, where wetlands have been damaged and degraded, restoration involves activities such as planting native tree species, restoring water flow, enhancing habitats in order to encourage the return of animal species, and removing pollutants in order to improve water quality⁵⁵.

It is also vital to work with local communities for sound restoration efforts. It has been observed that local communities depend on wetlands and other ecosystems for their livelihoods and survival and have therefore developed unique knowledge systems and practices which have enable them to sustainably use and conserve ecosystems

⁵² United Nations Decade on Ecosystem Restoration (2021-2030)., Available at <https://www.decadeonrestoration.org/> (Accessed on 24/02/2026)

⁵³ Wetlands Restoration: unlocking the untapped potential of the Earth's most valuable ecosystem., Available at https://www.ramsar.org/sites/default/files/documents/library/factsheet_wetland_restoration_general_e_0.pdf (Accessed on 24/02/2026)

⁵⁴ Ibid

⁵⁵ United Nations Environment Programme., 'Reviving wetlands in the Western Indian Ocean: Efforts and Progress' Available at <https://www.unep.org/gef/news-and-stories/blogpost/reviving-wetlands-western-indian-ocean-efforts-and-progress#:~:text=From%20Chake%20Chake%2C%20Pemba%2C%20where,through%20constructed%20wetland%20technology%2C%20UNEP> (Accessed on 24/02/2026)

throughout time⁵⁶. Due to their knowledge on native plant species, seasonal changes, and threats to wetlands, working with local communities is key towards harnessing indigenous knowledge systems for effective wetland restoration efforts in Africa⁵⁷.

4.0 Conclusion

Wetlands are valuable ecosystems both globally and in Africa. However, in light of human-induced and climatic pressures, restoring wetlands is crucial for climate action, biodiversity conservation and ecosystem health. In order to achieve this goal, it is vital to combat threats such as climate change, pollution, deforestation, habitat loss, over extraction of resources, agricultural expansion and infrastructure development towards preventing further loss and degradation of wetlands⁵⁸. Further, restoration efforts including planting native species, removing threats in habitats, enhancing the flow of water and working with local communities are vital towards recovering and improving the ecological functionality of wetlands in Africa for people and planet⁵⁹. Restoring wetlands in Africa is therefore possible for climate action, biodiversity conservation and ecosystem health. It is imperative to fast-track this agenda for Sustainable Development.

⁵⁶ United States Environmental Protection Agency., 'Principles of Wetland Restoration' Available at <https://www.epa.gov/wetlands/principles-wetland-restoration> (Accessed on 24/02/2026)

⁵⁷ United Nations Environment Programme., 'Reviving wetlands in the Western Indian Ocean: Efforts and Progress' Op Cit

⁵⁸ Wetlands Restoration: unlocking the untapped potential of the Earth's most valuable ecosystem., Op Cit

⁵⁹ Ibid

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