

# South African Peatland Conservation: Synergies with International Obligations



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## Abstract

Sustainable natural resource management, in particular for water resources, aims to ensure that natural ecosystems remain intact, to stop land degradation and to curb impacts of climate change. It is mandated by various related pieces of legislation in South Africa as well as several Multilateral Environmental Agreements. Wetlands and peatlands (wetlands containing peat) are important, yet threatened ecosystems shaped by catchment-based processes, particularly in semi-arid regions. Land use change in catchments that alter the water quantity (high flow and low flow), water quality (nutrients, salts, toxins, and pathogens), habitat (aquatic and terrestrial) and biota (e.g. plants, birds and mammals), leads to degraded wetlands and peatlands (e.g. erosion, desiccation and possible peat fires). The sustainable use and rehabilitation of wetlands and peatlands allow for ecosystem resilience to combat climate change.

**Keywords:** Wetlands; Peatlands; Biodiversity; Climate Change; Catchments; Conservation; Management; Multilateral Environmental Agreements

**Abbreviations:** CARA: Conservation of Agricultural Resources Act; CBD: Convention on Biological Diversity; CSIR: Council for Scientific and Industrial Research; DAFF: Department of Agriculture, Forestry & Fisheries; DALRRD: Department of Agriculture, Land Reform and Rural Development; DFFE: Department of Forestry, Fisheries and the Environment; GBF: Global Biodiversity Framework; MEAs: Multilateral Environmental Agreements; NEMA: National Environmental Management Act; NWA: National Water Act; UNCCD: United Nations Convention on the Combatting of Desertification; UNFCCC: UN Framework Convention on Climate Change.

## Introduction

Sustainable natural resource management in South Africa is enshrined within Section 24 of its constitution aiming to “secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (Section 24 2.b.iii, Constitution of the Republic of South Africa, Act 108 of 1996) [1]. Therefore, the South African legal framework gives effect to the environmental right in the constitution. The NEMA (Act No. 107 of 1998) [2] and the NWA (Act No. 36 of 1998) [3] provide, amongst others, protection of our water resources, in support of older related legislation including the CARA [4]. The Constitution confirms that the State is the trustee of the environment on behalf of the inhabitants and through NEMA establishes the fundamental principles that avoid

negative impacts on the environment, and introduces a general duty of care to prevent, control and rehabilitate the environment against pollution and degradation. Not only is the South African legislation important but also its relevant MEAs (i.e. governed by international law in finding a solution to mitigate or prevent the environmental challenges (globally and regionally) through legally binding obligations and/or commitments).

Wetlands and peatlands (wetlands containing peat) are important natural resources that provide ecosystem services e.g. storage of water and carbon, biodiversity and harvestable vegetation amongst others [5]. With the changes in the hydrological regime in catchments, wetlands and peatlands are increasingly being impacted [6]. Creating resilience in peatland

functioning must form part of management strategies. The Global Peatland Assessment Report [7] highlights the need for action to conserve, restore and manage peatland systems in a sustainable manner; especially given their contribution to mitigation climate change impacts. The aim of this paper is to explore synergies and opportunities for joint activities to conserve peatlands considering the following MEAs:

### Convention on Wetlands (Ramsar Convention)

Wetlands comprise less than 3% of South Africa's land surface with 88% being threatened [8]. Wetlands are the most productive ecosystems, but also the most threatened [9]. The need for peatland conservation and restoration triggered discussions between the secretariats of Ramsar, UNCCD and CBD, and side-events at the Global Landscape Forum in Bonn, Ramsar COP13 and Climate COP24 [10]. At that time, the "*Restoration of degraded peatlands to mitigate and adapt to climate change and enhance biodiversity and disaster risk reduction*" was adopted by Ramsar (Resolution XIII.13). UNEP [11] adopted its Resolution on the "*Conservation and sustainable management of peatlands*" that refers to Ramsar Res. XIII.13. The Ramsar Convention Secretariat presented the Ramsar tools for peatlands, available for common use and synergetic implementation [10].

### United Nations Convention to Combat Desertification (UNCCD)

Desertification remains a threat in the central semi-arid regions of South Africa due to land use changes. Around 80% of South Africa's land is susceptible to desertification such as Northern Cape, the Western Cape, and fragments of the Eastern Cape Provinces [12]. Applicable Acts that address land degradation include CARA as well as the international obligations towards the UNCCD. The UNCCD was adopted at the Rio Convention in 1992 and aimed at developing strategies to combat desertification and drought. The term desertification is land degradation in arid, semi-arid and dry sub-humid areas. South Africa approved the UNCCD in 1997 [13].

### Convention on Biological Diversity (CBD)

South Africa's rich biodiversity heritage is evident in regions such as the Cape Floral Kingdom. A region less than 0.5% of the area of Africa, but home to 20% of its flora including endemic peatlands species such as *Prionium serratum* fens [14]. The United Nations Convention on Biological Diversity [15] is another forum for coordinated action to conserve the earth's biodiversity and sustainable use of biological resources. For example, CBD Decision 14/5 on "*Biodiversity and climate change*" [10]. This multilateral treaty has three main aims:

- i. The conservation of biological diversity.
- ii. The sustainable use of its components.

- iii. The fair and rightful sharing of benefits arising from genetic resources.

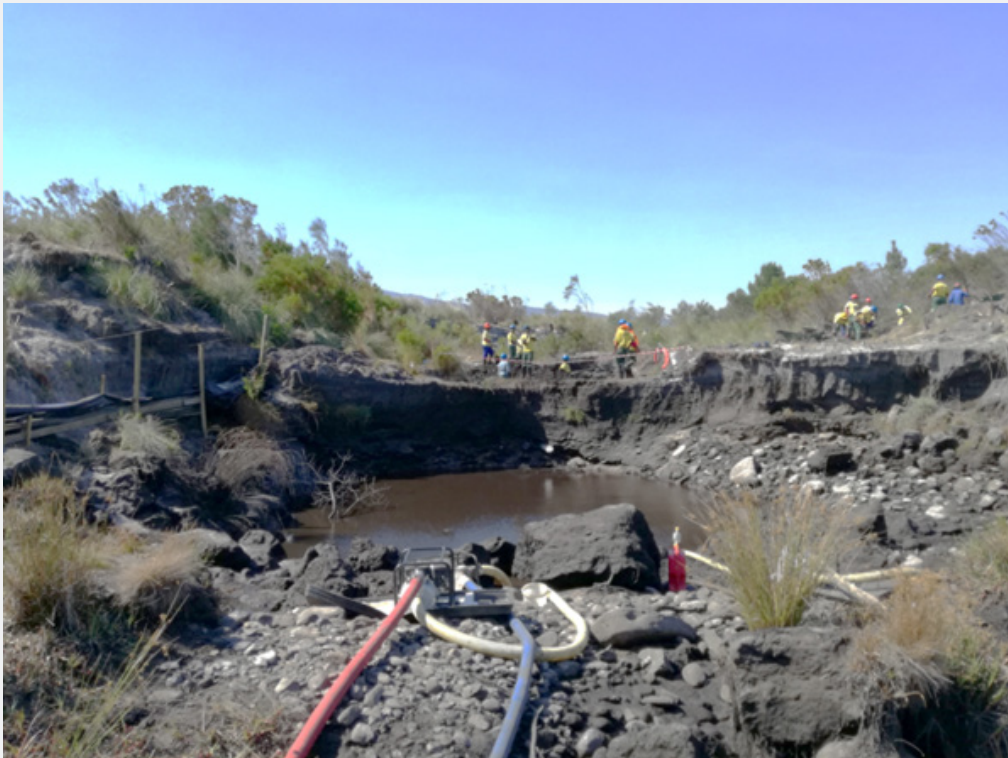
### Global Biodiversity Framework (GBF)

Under the Global Biodiversity Framework [16], South Africa as a member country of the Convention of Biological Diversity and needs to report changes in the extent (target 1) and ecological condition (informing target 2 of which 30% of the extent of degraded ecosystems need to be under restoration by 2030) and target 3 of which 30% of the areas (e.g. inland water areas) are effectively conserved.

### Discussion

Sustainable land management with the emphasis on ecosystem services and wetland functioning provides resilience in the landscape and ensures available water sources to buffer against environmental shocks (e.g., floods, heatwaves, droughts, storms, and veld fires) [17]. Loss of ecosystem services or functions (particularly water storage and carbon-related sequestration) [18,11] should be used to raise awareness about the risks associated with the loss of peatlands and contributing further to climate change [17]. An example of an integrated approach is controlling erosion of a groundwater fed peatland in a semi-arid region. This not only conserves biodiversity but is also establishing resilience to cope with climate change by storing water, rewetting peat, and sequestering carbon. The restoration of the Pietersielieskloof Peatland in the Cape Fold Mountains, Western Cape Province, South Africa demonstrates a restoration project, which rewetted degraded peat by through erosion control (Figure 1). The peatland was able to recover after the construction of an energy dissipating chute, which stopped the erosion and the draining of the peat (Figure 2). Intervention structures (smaller concrete chutes) were used to de-activated smaller erosion features, so as to restore water levels within the peatland (Figure 3). The Pietersielieskloof Peatland restoration project is an example where interventions can rehabilitate the wetlands, thereby addressing and adapting to climate change [19]. By controlling the erosion and desiccation risks, one can established resilience in the peatland and contribute significantly to disaster risk reduction in this semi-arid mountainous region. Furthermore, the biodiversity value of this wetland was enhanced as further loss of *Prionium serratum* habitat, an endemic peat forming wetland species was prevented [20].

The identified synergies in the fields of policies, information, and implementation, include enabling mechanisms in the amendment of existing legislation (e.g., CARA, NWA), improved development and strengthen of catchment management and Community Private Public Partnerships that will ensure monitoring data is consistently and accurately managed and distributed.



**Figure 1:** Severe erosion cutting into the Pietersielieskloof Peatland in the Cape Fold Mountains, Western Cape Province, South Africa: the site at the onset of construction.



**Figure 2:** The erosion has been deactivated with the construction of an energy dissipating chute; also preventing further draining of the peatland.



**Figure 3:** Smaller erosion features were de-activated and the water levels within the peat restored with smaller concrete chute interventions.

### Conservation and sustainable management of peatlands: Peat the golden fibre in multi-environmental agreements

The Fourth Session of the United Nations Environment Assembly of the United Nations Environment Programme, Nairobi, 11–15 March 2019 stated: “Recognizing the value of improving the management of peatlands to improve their carbon storage capacity on degraded sites, strengthen resilience and improve socio-economic livelihoods of population around peatlands and increase biodiversity, noting that such actions can contribute to the implementation of the Paris Agreement, the UN Framework Convention on Climate Change (UNFCCC), the Convention on Wetlands of International Importance Especially as Water Fowl Habitat, the Ramsar Convention the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets, the 2030 Agenda for Sustainable Development, and the Sendai Framework for Disaster Risk Reduction 2030, the Convention on Migratory Species and the convention on biological diversity...”.

### Conclusion

Natural resources constitute soil, water, and vegetation. Water is the limiting factor for sustainable development in terms of the spatial distribution of water (quantity and quality)

within a catchment, especially in semi-arid regions. The Ramsar Convention Resolutions contributes to the objectives of MEAs. South Africa could be able to meet its MEAs through good catchment management and well-functioning sustainable land use. Functional wetland systems have the ability to deliver sustainable natural resources such as water and so build resilience in the landscape, which facilitate nexus protection to curb the impacts of climate change.

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**Photo Credits:** Ms L du Toit

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