



Addressing Environmental Concerns arising from Oil and Gas Exploration and Production in Wetland Areas: Focus on the Sudd Wetland of South Sudan

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Abstract. Globally, wetlands are known for their ecological benefits given the role they play, ranging from providing buffers against storms to providing habitat for wildlife and aquatic organisms, as well as flood control and improvement of water quality. South Sudan is host to one of the world's largest wetlands, the Sudd Wetland, which stretches up to about 57,000 km². Unfortunately, this important ecosystem hotspot concomitantly plays host to significant oil and gas deposits, the exploitation of which causes enormous ecological damage, begging for adequate environmental protection. This paper examines the adequacy of the legal and regulatory regimes in addressing environmental concerns arising from oil and gas activities in South Sudan, emphasizing on the Sudd Wetland. Using a doctrinal research methodology, the paper analyses South Sudan's nascent and evolving legal and regulatory frameworks for the protection of wetlands, contrasting with more developed legal systems like Kenya and Uganda, which also demonstrate a higher level of environmental awareness and activism. The study's findings reveal significant gaps in legal and regulatory frameworks combined with weaknesses in enforcement mechanisms. Apart from the designation of Wetlands of International Importance, South Sudan has yet to implement one of its core responsibilities under the Ramsar Convention, which requires contracting parties to formulate and implement regulations to promote the conservation of the wetlands included in the List of wetlands designated under Article 2. As a result, the country ranks low in terms of legal and policy frameworks on wetland

protection. The absence of a specific wetland protection legal regime is exacerbated by other non-legal factors, including lack of adequate funding, insecurity and inaccessibility, limited capacity (technical experts), limited awareness, and lack of stakeholder involvement (civil society, local community, CBOs, NGOs, etc.). The paper argues that the adoption of more comprehensive and proactive measures encompassing legislative and regulatory frameworks, capacity building, inclusivity and stakeholder engagement, as well as strong institutional and judicial enforcement, is essential for achieving sustainable wetland protection in oil and gas exploration and production in South Sudan.

Keywords: Environment; Oil and Gas; Wetlands; South Sudan; Sudd Wetland

1. Introduction

Wetland ecosystems are increasingly experiencing multiple ecological impacts resulting from oil and gas development. While it is generally recognised that oil resources provide a major source of government revenue the world over, their side effects in terms of environmental damage should not be ignored. Generally, oil exploration, site preparation, site access, drilling, production, pipeline installation, spill control and clean-up, as well as final decommissioning, produce harmful environmental effects.¹ Given that wetlands are vital for protecting developed areas from storm surges, providing wildlife and fish habitat, and improving water quality,² this underscores the

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¹ See Jac-Young Ko, John Day, John Barras, Robert Morton, James Johnston, Gregory Steyer, G.

Paul Kemp, Ellis Clairain, and Russell Theriot Impacts of Oil and Gas Activities on Coastal Wetland

Loss in the Mississippi Delta

<https://www.hartherresearch.org/sites/default/files/inline-files/33.pdf> accessed

on 28-02-26.

² *Ibid.*

importance of sustainable use, management, and governance of wetlands as a key aspect of the environmental regulatory framework relating to oil and gas exploration and production. The Sudd wetland in South Sudan is considered one of the largest floodplains in Africa and one of the largest tropical wetlands in the world.³ It stretches from the White Nile, or *Bahr el Jebel River* system, which originates in the African Lakes Plateau. Derived from an Arabic word meaning obstacle or blockage of river channels, the Sudd is composed of a maze of wetland ecosystems and supports high levels of biodiversity.⁴ The Sudd Wetland encompasses many oil concession blocks, including part of Block 4, most of Block 5A, Block 5B, and territory south and east of them, in the concession of TotalFinaElf, Block 5.⁵ Generally, wetlands constitute an integral part of the ecosystems to which environmental protection laws are applicable. Consequently, the need to ensure an ecologically sustainable system of oil production in the Sudd Wetland becomes compelling. This article explores the mechanisms for addressing environmental concerns arising from oil and gas exploration and production within the Sudd Wetland under the nuances of international and domestic legal frameworks, as well as regulatory institutions.

2. Research Methodology

This study employed a doctrinal research methodology aimed at examining the adequacy of legal and regulatory frameworks in addressing environmental concerns from oil and gas activities in wetlands in South Sudan. To that end, the study analysed South Sudan's nascent and evolving domestic laws, including the Constitution, the Land Act, and the Petroleum Act, alongside international legal regimes such as the Ramsar Convention and the UN Convention on Biological Diversity. It further adopted a comparative approach, contrasting South Sudan's legal system with the more developed frameworks in Kenya and Uganda. This involved examining specialised wetland legal regimes and judicial precedents in the two East African countries to

identify potential pathways for legal reforms in South Sudan. The doctrinal analysis was equally guided by two primary conceptual foundations: Sustainable Development Theory, which emphasises resource preservation for future generations, and Public Trust Theory, which anchors on the government's fiduciary duty to manage natural resources in the public interest. Overall, this methodology enabled the research to identify legal and regulatory gaps and propose comprehensive measures, such as specialised wetland legislation in South Sudan and enhanced stakeholder engagement, to achieve sustainable wetland protection.

3. Geographical and Ecological Setting of the Sudd Wetlands of South Sudan

South Sudan attained independence in 2011 after voting in favour of secession from the Republic of Sudan, following decades of protracted struggle against perceived marginalisation. South Sudan is a country rich in petroleum resources located mainly in the Greater Upper Nile Region, including the Unity States.⁶ The United Nations Educational, Scientific and Cultural Organisation (UNESCO) considers the Sudd Wetland to be one of the largest freshwater ecosystems in the world, with an estimated area of approximately 57,000 km².⁷ The size, however, fluctuates. Wet seasons attract more water, where the size of the wetland increases up to 90,000 km² and gradually decreases to about 42,000 km².⁸ This makes the Sudd Africa's largest wetland and one of the largest tropical wetlands in the world.⁹ Wetlands are generally indispensable for the countless benefits, or "ecosystem services", that they provide to humanity, ranging from freshwater supply, food and building materials, and biodiversity, to flood control, groundwater recharge, and climate change mitigation.¹⁰

It is important to note that South Sudan is an oil-rich country. It is projected that oil reserves in the country stand at an estimated 3.5 billion barrels of crude oil, making it Sub-Saharan Africa's third-largest oil reserve after Nigeria and Angola.¹¹ The oil-producing

³ L-M. Rebelo or A. I. El-Moghraby "The Sudd (South Sudan)" https://link.springer.com/referenceworkentry/10.1007/978-94-007-6173-5_23-5 accessed on 21th July 2024.

⁴ Ibid.

⁵ Human Rights Watch "Neglect of the Environment" <https://www.hrw.org/reports/2003/sudan1103/22.htm> accessed on 23rd July 2024.

⁶ Matthew Bliss "Oil Production in South Sudan: Making it a Benefit for all Baseline Assessment of the Impact of Oil Production on Communities in Upper Nile and Unity States" (Cordaid, 2014) 6.

⁷ UNESCO World Heritage Convention "Sudd Wetland" <https://whc.unesco.org/en/tentativelists/6276/> visited on 28-02-26.

⁸ Ibid.

⁹ Ibid.

¹⁰ Ramsar Convention on Wetlands "The Importance of Wetlands" <https://www.ramsar.org/about/our-mission/importance-wetlands> visited on 28-02-6.

¹¹ Gyde Lund et al. Sudd "As Assessment of Wetland Ecosystem in South Sudan" United Nations Environmental Programme (2022) 16.

blocks span a section of the Sudd Wetlands, invariably raising significant environmental concerns.¹² Studies have pointed out that oil and gas activities play a major role in wetland loss, even though it is probably not possible to put a specific value on the extent to which these activities contribute to the problem.¹³ In the Sudd, one of the greatest threats to the wetland is from oil production and exploration, and this threat has endured for decades.¹⁴ In this vein, a critical question that this study would be interested in resolving is how adequate the legal and institutional frameworks of South Sudan are in addressing this ecological problem in order to balance it with the country's oil and gas development, which provides a lifeline for its future growth and prosperity. This question is best tackled within the rubric of international and domestic frameworks.

4. Theoretical Framework

To begin with, it should be noted that theories are crucial for any research work to give it direction and also to validate or disapprove a phenomenon.¹⁵ The theoretical framework provides the basic structure that holds a study and connects it to existing scholarly ideas, concepts, and thoughts. The study is guided by two important theories, which provide a conceptual foundation underpinning the legal regulation of the environment in the context of natural resource exploitation.

4.1 Sustainable Development Theory

As nations strive to meet their developmental goals through the exploitation of natural resources, it has become extremely imperative to ensure that, in meeting the present needs, the ability of future generations to meet their own needs is not compromised. Sustainable development is thus defined as the level of development that places a constraint on current consumption to ensure that future generations will have a resource base that is no less than the resource base of the previous generation.¹⁶ The Sustainable Development Theory underscores the importance of appropriate legislative and regulatory interventions to safeguard wetlands for the benefit of future generations. In the context of South Sudan, such interventions are particularly critical, as wetlands are

increasingly degraded and risk total loss with time as a consequence of oil and gas exploration and production activities.

4.2 Public Trust Theory

In South Sudan, just like most Sub-Saharan African countries, the ownership and management of key natural resources, including minerals, are vested in the government. It, therefore, behoves the government to manage these resources in the overall interest of its citizens. The public trust theory provides not only a legal justification but also an obligation of some sort on the government to hold the resources entrusted to it in trust for both the present and future generations. The English House of Lords case of *Gann v Free Fishers of Whitstable*¹⁷ provides a strong judicial foothold for the public trust theory, where it was held that the bed of all navigable rivers where the tide flows, and all estuaries or arms of the sea, is by law vested in the Crown. The House of Lords, however, emphasised that this ownership of the Crown is for the benefit of the subject and cannot be used in any manner to derogate from or interfere with the right of navigation, which belongs by law to the subject of the realm. This imposes a high fiduciary duty of care and responsibility upon the State, akin to that of a trustee, requiring it to manage and protect trust property prudently and in the best interests of both present and future beneficiaries. The public trust theory, thus, provides the legal justification for legislative, administrative, and policy interventions for wetland protection and conservation.

4.3 International Legal Framework

It is instructive to note that the Sudd Wetland area is officially designated by the United Nations as a wetland of international importance, thus bringing it within the purview of the international legal regimes on sustainable use, management, and governance of wetlands as part of the global agenda for climate change mitigation. The United Nations Convention on Biological Diversity, 1992, is foremost in providing a regulatory framework for the conservation of biological resources at the international level. South Sudan acceded to the Convention as the 194th Party

¹² *Ibid.*

¹³ Jae-Young Ko et al. (1).

¹⁴ Conflict and Environment Observatory "Is South Sudan's Sudd wetland at a fork in the road?" <https://ceobs.org/report-is-south-sudans-sudd-wetland-at-a-fork-in-the-road/> accessed on 17th July 2024.

¹⁵ PhD Assistance Research Lab 'Why is theoretical framework important in research?'

<https://www.phdassistance.com/blog/why-is-theoretical-framework-important-in-research/> visited on 07/07/26.

¹⁶ Ozili Peterson 'Theories of Sustainable Development' (2025) (5) Sustainable Development, Humanities, and Social Sciences for Society .

¹⁷ (1865) 11 H.

on 17 February 2014.¹⁸ A point to note is that oil and gas exploration and production pose significant threats to biodiversity resources, making it a major concern how to address the growing biodiversity management challenges associated with the sector.

The importance of wetlands as a cornerstone of the global ecosystem and their vulnerability to degradation are well acknowledged. This has steered the idea for a specialised regulatory regime governing wetlands under the rubric of the Convention on Wetlands of International Importance. The Convention was adopted in the Iranian city of Ramsar and therefore has come to be commonly referred to as the Ramsar Convention. South Sudan acceded to the Convention on 10 June, 2013.¹⁹ The accession has been heralded as a sign of the country's readiness to join the framework for international action and cooperation for the conservation and wise use of wetlands.²⁰ It is, however, important to note that accession to the Convention, though commendable, is not an end in itself but a means to an end. The true test has always lain in a member country's policy development and implementation for designated sites as a demonstration of willingness to participate in the Ramsar Convention and successful implementation of its pillars.²¹ Inclusion of land in the List of Wetlands of International Importance signifies the government's commitment to take the steps necessary to ensure that its ecological character is maintained.²² Better still, the important obligations under the Convention are as concerns land-use planning, designation of one or more wetlands for inclusion in the "List of Wetlands of International Importance," and, most fundamentally, the conservation and promotion of the protection of wetlands in general.²³

Whilst the Ramsar Convention generally does not specify a particular method for its implementation (with the partial exception of the obligation in Article

2(4), to designate at least one site to the List of Wetlands of International Importance), results are more important than means.²⁴ On the façade, South Sudan appears to demonstrate commitment to Article 2 (4) of the Convention by designating the Sudd as a Wetland of International Importance. How well the country has fared in promoting the protection of this wetland, however, remains an overarching concern. The implementation of the principles of the Ramsar Convention in South Sudan works at odds with the economic realities of the country; the fact that the Sudd contains South Sudan's largest oil reserves makes the continuous expansion of the oil industry into this ecologically sensitive area a major setback.²⁵ In parallel with the principles of the Convention, significant environmental degradation of the Sudd, particularly via crude oil contamination of the wetlands, remains noticeable.²⁶ This begs the question of the adequacy and effectiveness of the domestic legal and institutional frameworks in promoting the ideals of the Convention, which this study now turns to.

5. Addressing Environmental Concerns Arising from Oil and Gas in the Sudd Wetland area of South Sudan

It has already been pointed out that the Sudd contains South Sudan's largest oil reserves, making the continuous expansion of the oil industry into this ecological hotspot inescapable.²⁷ In environmental management, wetlands constitute an integral part of the ecosystem to which environmental protection laws are applicable. Therefore, the constitutional aspiration on the need to achieve ecologically sustainable development and use of natural resources whilst promoting rational economic and social development, and protection of genetic stability and biodiversity

¹⁸ OIISD "South Sudan Becomes 194th Party to CBD", <https://sdg.iisd.org/news/south-sudan-becomes-194th-party-to-cbd/#:~:text=The%20Secretariat%20of%20the%20UN,Sudan%20on%2018%20May%202014.> accessed on 17 May 2024.

¹⁹ UNESCO "South Sudan UNESCO Member since 2011: Conventions Ratified" https://www.unesco.org/en/countries/ss/conventions?utm_source=chatgpt.com visited on 01-03-26.

²⁰ Nile Basin Initiative "Sudd Wetlands Management Strategy 2022-2050".

²¹ Aziza Saud Al Adhoobi "Influences on the Successful Implementation of the Convention on Wetlands of International Importance (Ramsar) among Member Countries" (2016). LSU Master's Thesis 48.

²² Ramsar Convention on Wetland "Wetlands of International Importance" available at <https://www.ramsar.org/about/our-mission/wetlands-international-importance> accessed on 5th July 2024

²³ Veit Koester "The Ramsar Convention On the Conservation of Wetlands: A Legal Analysis of the Adoption and Implementation of the Convention in Denmark" (1989) No. 23 IUCN Environmental Policy and Law Paper 3.

²⁴ *Ibid.*

²⁵ UNESCO "Sudd Wetland" <https://whc.unesco.org/en/tentativelists/6276/#:~:text=The%20Sudd%20area%20covering%20about,its%20conservation%20and%20wise%20use.> accessed on 5th July 2024.

²⁶ *Ibid.*

²⁷ *Ibid.*

under the Constitution remains sacrosanct.²⁸ The same applies to the provisions of the Land Act, in particular section 5, which captures one of the fundamental principles of land law as: “promoting a land management system to protect and preserve the environment and ecology for the sustainable development of Southern Sudan.”²⁹ More specifically, the Petroleum Act mandates that petroleum activities be conducted in a manner as to ensure a high level of health, safety, and environmental compliance.³⁰

The above-mentioned legal instruments provide a generic framework for the protection of the environment. However, there is clearly no specific legal framework for the promotion of wetland protection in South Sudan. As a general obligation under the Ramsar Convention, contracting Parties are required to formulate and implement a system to promote the conservation of the wetlands included in the List of wetlands designated under Article 2 and, as far as possible, the wise use of wetlands in their territory.³¹ A study published by Louisiana State University in collaboration with the Agricultural and Mechanical College in 2016, using variables such as the number of years since the entry into force of the Ramsar Convention, the number of designated sites, and the number of available management plans, ranked South Sudan amongst the bottom five countries in terms of successful implementation of the Ramsar Convention and its pillars.³² This can largely be attributed to the absence of a specific legal or policy framework on wetland regulation, even though a modest step has been taken through the Sudd Wetland Management Strategy 2022-2050.

5.1 Policy Framework on the Sudd Wetland Protection

South Sudan has grappled with conservation programs and policies in promoting wetland conservation. The Sudd Wetland Management Strategy 2022-2050 is a key policy document for the protection of the Sudd. The Strategy hinges on the vision of “a sustainably managed Sudd wetland providing equitable opportunities and benefits for present and future generations of South Sudanese.”³³ Its objectives are fourfold:

- To promote the conservation of the Sudd wetland ecosystem.
- To build climate resilience and apply nature-based solutions to the sustainable management of the wetland, water, and environmental resources of the Sudd landscape.
- To support investments and water resources development to catalyse economic development through the application of green and blue economy approaches.
- To strengthen governance structures for the management of the Sudd wetland.

However, several challenges are weighing against the smooth implementation of the Sudd Wetland Management Strategy, including: lack of adequate funding, insecurity, inaccessibility due to the vast area size, and limited capacity (technical experts) to carry out complex work.³⁴ Other militating factors include: lack of political will, limited awareness, top-down approach, lack of stakeholder involvement, lack of proper coordination among all concerned stakeholders (civil society, local community, CBOs, NGOs, etc.), and lack of facilities and equipment for management and conservation activities.³⁵

Obviously, these challenges can be better addressed through broad-based legislation that establishes a comprehensive regulatory framework, prescribes funding options, promotes stakeholder involvement, builds institutional synergy, and generally regulates the use of wetlands and prescribes penalties for violations.

Unfortunately, the idea of developing a national wetlands policy, bill, or regulations for South Sudan has remained a pipe dream for a long time. In a National Report to the 13th Meeting of the Conference of the Contracting Parties to the Ramsar Convention held in Dubai, United Arab Emirates, in 2018, South Sudan stated, as one of the targets for implementation of the Ramsar Convention, plans to develop a national wetlands policy, bill, and regulations for the country.³⁶ This target has, however, not been achieved, even as the Report cited the government’s plans to “Hire consultants to develop a national wetlands policy, bill

²⁸ Transitional Constitution of the Republic of South Sudan, 2011, art 41 (3) (c)

²⁹ The Land Act 2009, S.5. This Act came into force after a peace deal with Sudan.

³⁰ Petroleum Act 2011, S,50(1).

³¹ Convention on Wetland Art 3

³² Aziza (n.21).

³³ Nile Basin Initiative “Sudd Wetlands Management Strategy 2022-2050” .9

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ See National Report on the Implementation of the Ramsar Convention on Wetland, submitted to the 13th Meeting of the Conference of the Contracting Parties, Dubai, United Arab Emirates, 2018 39.

and regulations.”³⁷ The procrastination has been attributed to insufficient government funding and resources to facilitate the operationalisation of planned wetland conservation and management activities.³⁸ This is exacerbated by the fact that since the Sudd wetland was designated as a Wetland of International Importance on 5th June 2006 under the Ramsar Convention, no assistance has been given for the implementation of the Ramsar Convention by the Secretariat. It requires the Ramsar Secretariat to provide financial, logistical, and technical assistance and expertise to support the Republic of South Sudan in drafting appropriate legislation on wetland protection.³⁹

On a comparative scale, the ecological and hydrological idiosyncrasies of wetlands have prompted certain countries to adopt specialised legislative and regulatory frameworks in order to ensure a focused and context-specific approach to wetland protection. Uganda and Kenya are two East African states that have adopted this model.

6. Comparative Wetland Legal Regimes in East Africa: Uganda and Kenya in Focus

As part of their commitment to ensure adequate protection of wetlands, Uganda and Kenya have adopted laws that specifically address ecological issues associated with wetlands. In Uganda, pursuant to section 107 of the National Environment Act,⁴⁰ the Minister for Water, Lands, and Environment promulgated the National Environment (Wetlands, Riverbanks, and Lake Shores Management) Regulations, No. 3/2000. The Regulations have as their core mandate: “to provide for the conservation and wise use of wetlands and their resources in Uganda; ensure that wetlands are protected as habitats for species of fauna and flora; provide for the regulated public use and enjoyment of wetlands, and minimise and control pollution, among others.”⁴¹

The major wetland management tool under the Regulations is the requirement of an environmental impact assessment for all activities in wetlands likely to harm the wetland.⁴² To ensure a participatory approach to wetland management, District Environment Committees are established with the

responsibility of coordinating, monitoring, and advising District Councils on all aspects of wetland resource management.⁴³ Under the Regulations, wetlands are designated into three categories based on the level of protection: (a) fully protected wetland; (b) partially protected wetland; and (c) wetland subject to conservation by the local community.⁴⁴ Wetland use is subject to a wetland resource use permit except where the use is for the following: harvesting of papyrus, medicinal plants, trees, and reeds, cultivation where the cultivated area is not more than 25% of the total area of the wetland, fishing using traps, spears and baskets or other method other than weirs, collection of water for domestic use, and hunting subject to the provisions of the Wildlife Act, Cap 315.⁴⁵ Oil exploration and production are among the regulated activities for which a permit is strongly required.

A permit is granted upon application to the Executive Director of the National Environmental Management Authority established under section 8 of the National Environment Act, 2019. A permit may be revoked by the Executive Director if he or she is satisfied that the conditions of the grant of the permit have not been complied with or that the continued use of the wetland is likely to be injurious to the community and the environment.⁴⁶

A person who desires to carry out a project that may have a significant impact on a wetland, river bank, or lake shore is mandated to conduct an environmental impact assessment in line with sections 19, 20, and 21 of the National Environment Act.⁴⁷ It is further required that annual audits and monitoring of activities on wetlands be conducted and a report submitted to the National Environmental Management Authority under sections 22 and 23 of the Act.⁴⁸

The Regulations are backed by criminal sanctions in the form of ranging from imprisonment terms of not less than 3 months or a fine of not less than 3 million. The penal regime for offences under the Regulations, however, appears infinitesimal and inconsequential compared to the enormity of environmental harms which oil and gas exploration and production activities may occasion. This calls for a review of this penal regime in order to introduce more deterrent measures.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ *Ibid.*

⁴⁰ Cap 181 Revised Laws of the Republic of Uganda, 2023.

⁴¹ Reg. 4 National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000

⁴² *Ibid* Reg. 5 (c).

⁴³ *Ibid* Reg. 7 (1).

⁴⁴ *Ibid* 8 (2) (a, b, c.)

⁴⁵ *Ibid* Reg. 11 (2).

⁴⁶ *Ibid.* Reg. 14.

⁴⁷ *Ibid.* Reg. 34 ((1).

⁴⁸ *Ibid.* Reg. 34 (2).

Kenya is a sister East African country that has adopted a wetland regulatory approach similar to that of Uganda. Although wetland management generally falls within the purview of general environmental law, it is specifically regulated under the Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management Regulations) 2009. The Regulations were made in exercise of the powers conferred by sections 42(3) and 147 of the Environmental Management and Co-ordination (EMC) Act⁴⁹ on the Minister for Environment and Mineral Resources. Wetland as per the Regulations means: “areas permanently or seasonally flooded by water where plants and animals have become adapted, and include swamps, areas of marsh, peatland, mountain bogs, banks of rivers, vegetation, areas of impeded drainage or brackish, salt or alkaline. It also includes areas of marine water the depth of which at low tide does not exceed 6 meters, as riparian and coastal zones adjacent to the wetlands.”⁵⁰

The main purpose of the Regulations is to provide for the conservation and sustainable use of wetlands and their resources in Kenya. Accordingly, the Regulations prohibit certain activities⁵¹ from being carried out on wetlands without a permit issued by the relevant lead agency, defined as “any Government ministry, department, state corporation or local authority in which any law vests functions of control or management of any element of the environment or natural resource.” As further required, an Environmental Impact Assessment and Environmental Audit under the EMC Act are mandatory for all activities likely to have an adverse impact on the management of wetlands.⁵²

The approaches adopted by Uganda and Kenya in regulating wetlands through specialised statutory instruments are quite illuminating and inspirational. It

is submitted that South Sudan should borrow a leaf from these jurisdictions to strengthen the existing legal framework on wetland conservation and management. This is greatly desirable considering the strategic importance of the Sudd Wetland and the concomitant damage from oil production, which greatly affects the wetland’s role in flood prevention, its moderation of the regional climate, and its role as a carbon source or sink.⁵³

7. Enforcement of Wetland Protection Legal Regimes

The existence of wetland protection legal regimes is an important step toward the conservation and sustainable use of wetlands. Environmental regulations and statutes are enforced through a blend of administrative and judicial processes.⁵⁴ This section traverses some key administrative and judicial enforcement mechanisms relating to wetland protection.

7.1 Administrative Enforcement

It is pertinent to note from the outset that administrative enforcement is a forefront approach in wetland protection and management, given that administrative orders and sanctions are among the common techniques in regulating the environment.⁵⁵ These are measures imposed by regulatory bodies against individuals or entities that violate environmental laws and regulations.⁵⁶

Section 58 (1) (a) of the Petroleum Act,⁵⁷ read in conjunction with section 81 (1) lays down a duty on oil operators (oil and gas companies) to: “take the measures necessary to ensure that petroleum activities are conducted in a manner that prevents waste of petroleum resources and promotes the safety and protection of the environment in compliance with

⁴⁹ Act No 8 1999.

⁵⁰ Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management Regulations) 2009

⁵¹ Regulation 11 provides for activities that are permitted to be carried out on wetland. They include; (a) subsistence harvesting of papyrus, medicinal plants, trees and reeds; (b) any cultivation where the cultivated area is not likely to adversely affect the wetland; (c) fishing, subject to the provisions of the Fisheries Act; (d) collection of water for domestic use; (e) hunting, subject to the provisions of the Wildlife (Conservation and Management) Act; (f) small-scale fish farming; and (g) grazing of livestock.

⁵² Environmental Management and Co-ordination (Wetlands, River Banks, Lake Shores and Sea Shore Management Regulations) 2009 Reg. 5 (1) (b) & Reg. 12.

⁵³ For South Sudan “Major new report: oil’s onslaught on the Sudd, largest wetland in Africa” <https://forsouthsudan.com/major-new-report-oils-onslaught-on-the-sudd-largest-wetland-in-africa> accessed on 21st July 2024

⁵⁴ Tim Swanson “Cost-Effective Attainment of Environmental Compliance: Governance Solutions for Environmental Objectives in The Peoples Republic Of China” (2012) 13 Research Paper the Graduate Institute Centre for International Environmental Studies 4.

⁵⁵ Vicent Bartholomew Mtavangu “The Efficacy of Administrative Orders and Sanctions in Regulating Corporate Environmental Crimes in Mining Areas in Tanzania” (2024) 20 (1) *Lead Journal* 35.

⁵⁶ *Ibid.*

⁵⁷ Section 58 (1) (a) & (b) Petroleum Act, 2012.

applicable environmental laws and standards.” There are several sections of the Petroleum Act that grant the Ministry of Petroleum regulatory powers to enforce compliance against licensees or contractors. These include section 89 (8), which allows the Government to revoke licences or terminate agreements when obligations are not fulfilled, such as where there is a postponement for a particularly long duration. Another important regulatory control finds expression under section 91 (1), which lays down the requirement of security for performance. This section requires a licensee or contractor to submit to the Ministry any performance bond or guarantee mandated by the Ministry. Such security is intended to ensure the fulfilment of the obligations assumed by the licensee or contractor and to cover any potential liabilities that may arise from petroleum activities conducted under a licence, petroleum agreement, or any other authorisation issued pursuant to the Act. The hallmark of the regulatory standards is as prescribed under section 12 (3) (c), which empowers the Minister of Petroleum to terminate petroleum contracts for non-compliance with existing laws and policies on the environment. The composite effect of these provisions is that it establishes a framework of administrative enforcement mechanisms, which, if implemented, may be sufficiently useful in protecting the Sudd wetland ecosystem tapestry.

Although it is the duty of oil companies to respect laws, regulations, directives, and best practices relating to the environment in the course of their operations, it is, however, illusional to assume the automatic functioning of the law in that regard. It is therefore the role of regulatory agencies to enforce environmental laws, monitor compliance, and set standards for the protection of the environment.⁵⁸ This role is critical in ensuring that businesses operate according to environmental standards, thereby promoting environmental protection and sustainability.⁵⁹ The special status of the Sudd as a Wetland of International Importance makes an even stronger case for greater scrutiny of oil and gas activities and strict regulatory compliance. In practice, the protective value of regulatory mechanisms and their effectiveness in ensuring environmental safety depend on the proper implementation of applicable laws.

The overall picture of environmental law compliance in South Sudan’s oil and gas industry appears to be far from desirable due to several mitigating factors. According to a UN Environmental Programme Report, South Sudan’s oil and gas exploration has several negative impacts, including deforestation and loss of habitat and biodiversity, and soil and water contamination, especially of critical wetlands due to oil spills.⁶⁰ One major challenge is with respect to regulatory compliance. The scope of regulatory compliance in South Sudan’s oil and gas industry encompasses initial compliance requirements (environmental impact assessment – EIA, environmental and social impact assessment – ESIA, and permits); continuing compliance monitoring (environmental auditing, environmental reporting, environmental management system – EMS); and a decommissioning plan. Throughout these stages, accurate and reliable information is critical in making informed decisions and taking strategic and decisive actions. Unfortunately, inadequate, unreliable, and incomplete data remains a major problem. As tersely observed, “the lack of baseline data and ecological studies/understanding of the oil-producing area(s) in South Sudan poses a challenge to unequivocally distinguish between ‘normal’ and impacted situations.”⁶¹

In terms of the institutional framework, the Ministry of Environment and Forestry is the lead agency for the environment, forestry, and climate change sectors, and the lead institution for the management of the Sudd and other wetlands in South Sudan. This Ministry must therefore intensify efforts aimed at ensuring the sustainable and wise use of the Sudd Wetland in line with international standards and relevant laws and regulations in force.

The Sudd Wetland Management Strategy 2022-2050 is a key policy document available to the Ministry of Environment for the protection of the Sudd. The Strategy hinges on the vision of “A sustainably managed Sudd wetland providing equitable opportunities and benefits for present and future

⁵⁸ Carlos Pereira da Cruz “Environmental Compliance – Why it Matters and How To Obtain It” accessed from <https://advisera.com/articles/environmental-compliance/#:~:text=Environmental%20compliance%20refers%20to%20adherence,regulations%20to%20mitigate%20environmental%20impact,> on 23/08/24. 3

⁵⁹ *Ibid.*

⁶⁰ United Nations Environment Programme ‘South Sudan First State of Environment and Outlook Report 2018’ 23.

⁶¹ Ikvpax Christi ‘Repairing the Oil Legacy: A Phased Approach to Realize the Social and Environmental Audit in South Sudan’s Oil Areas’ (2013) Working Document.

generations of South Sudanese.”⁶² Its objectives are fourfold:

1. To promote the conservation of the Sudd wetland ecosystem.
2. To build climate resilience and apply nature-based solutions to the sustainable management of the wetland, water, and environmental resources of the Sudd landscape.
3. To support investments and water resources development to catalyse economic development through the application of green and blue economy approaches.
4. To strengthen governance structures for the management of the Sudd wetland.⁶³

However, several challenges continue to militate against the smooth implementation of the Sudd Wetland Management Strategy. These include: lack of adequate funding, insecurity, inaccessibility due to the vast area size, limited capacity (technical experts) to carry out technical work, and lack of political will. Other challenges include limited awareness, a top-down approach, a lack of stakeholder involvement, a lack of proper coordination among all concerned stakeholders (civil society, local community, CBOs, NGOs, etc.), a lack of facilities and equipment for management and conservation activities, and a delay in policies and legal framework.⁶⁴ These challenges constitute not only a setback to the realization of the policy agenda underlying the Sudd Wetland Management Strategy, but they are also a countervailing force to the sustainable management of wetlands in South Sudan generally.

7.2 Judicial enforcement

The sustainable use of wetlands requires a multi-stakeholder approach, complemented by a conscious and progressive judicial attitude in the interpretation and application of environmental laws. In South Sudan, environmental litigation is still in its nascent stage, considering that only a few legal actions have been instituted in courts of law in defence of the environment. Among the few cases that have gone to court, none is identified as specifically addressing wetlands, but they can still be useful for legal commentaries due to the jurisprudence espoused. One such case is *Cholong v Attorney General of the Republic of South Sudan*.⁶⁵ The case concerned an application filed by one Elario Adam Cholong, who

described himself as a ‘public-spirited person’ before the East African Court of Justice against the Government of South Sudan, seeking to restrain others from plans to start dredging the River Nile with undue regard to East African Law and International Environmental and human rights law. Unfortunately, the Court dismissed the application as time-barred under Article 30(2) of the East African Community Treaty. The fact that the case was not determined on the merits means that its jurisprudential value is limited.

In contrast to South Sudan, where environmental litigation is still low, apparently due to the country’s developing legal system, other East African countries, especially Uganda and Kenya, have demonstrated a more developed environmental litigation culture that can provide sturdy pathways for South Sudanese Courts. In Uganda, cases such as *Nyakaana v National Environment Management Authority*⁶⁶ and *Nakityo v National Environment Management Authority*⁶⁷ are illustrative. In *Nyakaana v National Environment Management Authority*, the appellant was the registered proprietor of land comprised in Leasehold Register Volume 3148 Folio 2 Plot 8 Plantation Road, Bugolobi, Kampala. He obtained the lease from the then Kampala City Council for the purpose of constructing a residential house. He subsequently applied for and obtained the necessary approvals for the said construction and commenced work. In June 2004, environmental inspectors from the National Environment Management Authority carried out an inspection of Nakivubo Wetland located in Nakawa Division. According to the inspectors, the appellant’s house was in the wetland. A meeting of residents and the inspectors was arranged, whereby the residents were briefed about their properties being in the wetland. The appellant attended the meeting. The appellant refused to heed all calls to halt his construction. The 1st respondent then issued a restoration order and had it served on the appellant. The restoration order required the appellant to comply with certain conditions, including demolition of the house, within a period of 21 days. He failed or refused to do so; consequently, the 1st respondent demolished the building on 8th January 2005. The appellant filed his petition. One of the grounds of appeal was that the learned Justices of the Constitutional Court erred in law and fact when they proceeded to decide the matter on the premise that the appellant’s land was a wetland. The Supreme Court emphasised that gazettelement is a

⁶² Nile Basin Initiative “Sudd Wetlands Management” (n 33) 9.

⁶³ *Ibid.* 15.

⁶⁴ *Ibid.*

⁶⁵ (2024) EACJ.

⁶⁶ Constitutional Petition No. 03 of 2005.

⁶⁷ [2022] UGHCLD 174.

precondition for the protection of wetlands. According to the Court, NEMA's failure to comply with the express provisions of the law to gazette the land which is the subject matter of the appeal as a wetland was erroneous, and so was the Constitutional Court's decision to proceed with the appellant's petition on the premise that it was in a wetland. The significance of this decision lies in its demonstration of how wetlands are formally designated and how the failure to gazette a wetland may result in the violation of constitutional rights under the guise of environmental enforcement.

In *Nakityo v National Environment Management Authority*,⁶⁸ the court addressed the question of public participation in environmental decision-making relating to wetlands. Here, the petitioner challenged the National Environment Management Authority (NEMA)'s decision to issue an Environmental Impact Assessment certificate for a development project that allegedly affected a sensitive wetland ecosystem. The petitioner argued that the EIA process was flawed, non-transparent, and failed to adequately involve affected community members. The High Court of Masaka found that NEMA failed to adhere to the provisions of the National Environment Management Act's principles on participation in Environmental Impact Assessment, exposing a major procedural flaw.

Turning to Kenya, it should be noted that this is a jurisdiction that has leveraged its legal framework and the specialised environmental court system established under the Environment and Land Court Act to enforce legal regimes governing wetland conservation. The Kenyan experience, therefore, provides a judicial context for understanding how wetland protection can be enhanced in a country like South Sudan.

The case of *Muthaiga North Residents' Association & another v Countryside Villas Limited & 20 others*⁶⁹ serves as a landmark ruling regarding the preservation of public utility land and the protection of naturally existing wetlands against unauthorised urban development. The petitioners in this matter argued that the respondents' actions on Plot No. 36 constituted a direct destruction of a naturally existing wetland and an interference with the natural habitat of local flora and fauna. They contended that these actions violated their constitutional right to "a clean and healthy environment" under Article 42. The court observed that the respondents had erected a massive wall fence, which signalled an intention to develop multi-dwelling residential units on the last remaining open area in the estate. The court ruled in favour of the petitioners. In

the related case of *Muthaiga North Residents Association v Nyari House Limited*,⁷⁰ while addressing what the court termed a "glaring legal lacuna" in Kenya's framework for protecting ungazetted wetlands within public land, the court ordered the cancellation of the illegal titles and the removal of all structures on the property. The case established that any title issued for land within a protected wetland or riparian reserve without proper assessment is invalid and subject to nullification. This line of cases demonstrates a judicial trend in Kenya where courts have ruled that short-term economic interests cannot override the long-term ecological value of wetlands, which serve as essential flood buffers and biodiversity hotspots. By these authorities and many others, Kenya has positioned itself as a regional hub for "Green Justice," particularly relating to wetland protection, offering an opportunity for direct benchmarking by the judiciary of South Sudan.

8. Findings

Amongst the critical issues relating to oil and gas exploration and production in South Sudan are the problem of the associated ecological fallouts and the lack of an adequate regulatory framework, as well as weak enforcement mechanisms. South Sudan is a signatory to the Ramsar Convention, officially called "Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971." Unfortunately, the country ranks low in terms of policy development for the protection of designated sites. Consequently, oil and gas exploration and production continue to pose a significant threat to South Sudan's wetland ecosystems, especially the Sudd Wetland, which happens to be a designated site. Despite the Sudd Wetland Management Strategy 2022-2050 having been put in place to protect the Sudd, several challenges continue to weigh against the smooth implementation of the Strategy. These challenges include: lack of adequate funding, insecurity, which makes access to areas in the Sudd difficult, and inaccessibility due to the vast area size. Other challenges include: limited capacity (technical experts) to carry out technical work, and lack of political will, together with limited awareness, top-down approach, lack of stakeholder involvement, lack of proper coordination among all concerned stakeholders (civil society, local community, CBOs,

⁶⁸ *Ibid.*

⁶⁹ [2023] KEELC 21007 (KLR).

⁷⁰ (Environment & Land Petition No. 115 of 2015) [2022] KEELC 2578 (KLR).

NGOs, etc.), and lack of facilities and equipment for management and conservation activities.⁷¹

Delays in promulgating the relevant legal and policy frameworks constitute yet another significant challenge to effective conservation and management of wetlands in South Sudan. The lack of specific wetland regulations, as is the case in countries like Kenya and Uganda, combined with a low level of environmental litigation and the near absence of specific claims on wetland protection in South Sudan, is greatly concerning. This makes the country lag in effectively addressing the environmental concerns arising from oil and gas exploration in wetland regions.

9. Recommendations and Conclusion

South Sudan has a rich biodiversity with wetlands forming part of its major ecosystems. The most important wetland is the Sudd Wetland, which is one of the largest freshwater ecosystems in the world. Unfortunately, this precious ecosystem contains significant oil and gas deposits, the exploitation of which causes enormous ecological damage.

One would expect that the formal designation of the Sudd as a Wetland of International Importance under the Ramsar Convention entails automatic adequate protection. But the reality remains a far cry from the desirable, as oil production remains a serious threat to the Sudd's ecological value. This calls for more comprehensive and proactive measures encompassing legislative and regulatory enactments, capacity building, inclusivity and stakeholder engagement, as well as strong institutional and judicial enforcement in ensuring environmental protection of the Sudd Wetland. Borrowing from sister jurisdictions like Kenya and Uganda, it is important for South Sudan to adopt specific legislative and regulatory frameworks in order to ensure a focused and context-specific approach to wetland protection. The need for greater environmental consciousness and activism among civil society and local communities is equally important in strengthening wetland protection in South Sudan.

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⁷¹ UNESCO World Heritage Convention "Sudd Wetland" (n 29).

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