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ENVIRONMENTAL

EFFECTS OF OIL AND GAS EXPLOITATION ON THE INHABITANTS OF UNITY STATE AND THE RUWENG ADMINISTRATIVE AREA, SOUTH SUDAN

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ABSTRACT

Purpose of the study: This article examined the environmental, health, socioeconomic, and security effects of oil and gas exploitation on the inhabitants of Unity State and the Ruweng Administrative Area and situates these effects within the broader resource curse literature and South Sudan's petroleum governance architecture.

Statement of the problem: Unity State and the neighboring Ruweng Administrative Area lie above much of South Sudan's proven petroleum reserves. Despite more than two decades of near-continuous extraction, residents of these regions report deteriorating water and soil quality, rising rates of birth defects and livestock deaths, chronic underinvestment in basic services, and recurrent violent conflict linked to competition over oilfield infrastructure and revenue.

Methodology: The article draws on investigative reporting, advocacy documentation, government and donor reports, and academic literature to synthesize evidence on the environmental, health, socioeconomic, and security effects of oil and gas exploitation in the two areas.

Results of the study: The reviewed evidence indicates environmental contamination, reported health harms, limited local development benefits, and recurrent insecurity, while weak implementation of the Petroleum Act of 2012 and the Petroleum Revenue Management Act of 2013 has constrained accountability and effective benefit sharing.

Conclusion: In the absence of enforceable environmental regulation, transparent and timely revenue sharing, and genuine community consultation, oil wealth continues to function as a source of harm rather than a driver of development for populations living closest to extraction sites.

Recommendations: The study recommends stronger environmental oversight, transparent revenue transfers, genuine community consultation, and improved accountability by the Government of South Sudan, joint operating companies, and development partners.

Keywords: *Oil pollution, Unity State, Ruweng Administrative Area, South Sudan, resource curse, petroleum governance*

INTRODUCTION

Since commercial quantities of crude oil were first confirmed in the Bentiu basin in the late 1970s, the territory that now comprises Unity State and the Ruweng Administrative Area has functioned both as an economic engine and as one of the most heavily burdened landscapes in South Sudan (Patey, 2010). Oil revenue has financed much of the national budget both before and after South Sudan's independence in 2011, at various points accounting for more than ninety percent of government revenue (OilPrice.com, 2025). However, communities living around the wellheads, pipelines, and processing facilities that generate this wealth have borne the environmental, physical, and social costs of extraction while receiving comparatively few corresponding benefits. Reports compiled over the past decade by international non-governmental organizations, investigative journalists, and academic researchers converge on a recurring set of findings: contamination of drinking water and soil with heavy metals; unusually high rates of birth defects, miscarriages, and livestock deaths among communities living near oilfields and waste pits; a legally mandated share of oil revenue for producing states and communities that has gone largely undelivered; and recurrent intercommunal and cross-border violence centered on control of oil infrastructure.

This article brings together the available evidence on how these effects have been experienced by the inhabitants of Unity State and the Ruweng Administrative Area, two adjoining territories that together host the majority of South Sudan's producing oilfields, including Thar Jath, Toma South, Unity, and Heglig/Panthou. Following the introduction, the article provides geographic and historical background to oil development in the region and situates the analysis within the resource curse literature. Subsequent sections examine, in turn, the environmental, health, socioeconomic, and security effects of oil extraction. The article then reviews how affected communities and civil society have responded through litigation, advocacy, and mobilization, discusses the interconnections among these effects, presents recommendations, and concludes with the implications for affected communities and petroleum governance.

The purpose of this article is not to argue that oil extraction is inherently incompatible with community well-being. Rather, it documents, using the best publicly available evidence, how oil and gas have been extracted in Unity State and Ruweng under conditions of minimal environmental oversight, limited revenue transfers, and persistent insecurity. It further examines how these conditions have harmed local populations and identifies the governance and corporate-conduct changes required to reverse this trajectory.

BACKGROUND: UNITY STATE, RUWENG, AND THE POLITICAL ECONOMY OF OIL

Geography and Oil Endowment

Ruweng Administrative Area and Unity State previously existed as a single territorial entity. They were separated in February 2020 when the Government of South Sudan transitioned from a 32-state system back to the original 10-state structure, at which point Ruweng was officially established as a distinct administrative area.

Historical Trajectory of Oil Development

Chevron identified oil in the Bentiu basin in the late 1970s, but sustained civil conflict prevented large-scale extraction for two decades (Patey, 2010). During the second Sudanese civil war in the 1990s, the government in Khartoum used military force to clear civilian populations from oil-bearing areas of what is now Unity State and Ruweng to secure the territory for exploration and production. This legacy of forced displacement shaped the relationship between local communities and the oil industry from the outset (Goch, 2022). A pipeline connecting the Unity fields to Port Sudan was completed in 1999, and extraction intensified significantly after the 2005 Comprehensive Peace Agreement reduced large-scale fighting in the area (Rift Valley Institute, n.d.). Following South Sudan's independence in 2011, the state inherited existing production-sharing agreements and infrastructure but lacked the institutional capacity to regulate them. The government also signed new Exploration and Production Sharing Agreements with international contractors that same year (Dut, n.d.). Operations in Unity and Ruweng have since been run primarily by the Greater Pioneer Operating Company and the Sudd Petroleum Operating Company, both consortia in which the China National Petroleum Corporation holds a controlling stake alongside Malaysian, Indian, and South Sudanese state partners (Goch, 2022). Renewed civil war in South Sudan in December 2013 and further fighting in 2016 disrupted production and further weakened already limited environmental and safety oversight.

Since April 2023, renewed fighting in neighboring Sudan has also periodically severed the export pipeline route through Port Sudan, at one point taking oil blocks entirely offline for nearly ten months (Ecofin Agency, n.d.). National oil output, which reached roughly 245,000 barrels per day before the 2023 disruption, fell to well under 150,000 barrels per day in subsequent years. The government has since sought Chinese technical assistance to rehabilitate degraded infrastructure across Unity, Ruweng, and Upper Nile (Bramston & Associates, 2025; Ecofin Agency, n.d.). Throughout this history of forced displacement, war, fragile peace, renewed conflict, and repeated production shocks, inhabitants of the oil-bearing areas of Unity and Ruweng have remained largely unconsulted despite living on land that has generated most of the nation's income.

THEORETICAL FRAMEWORK: THE RESOURCE CURSE

The pattern of harm documented in this article is consistent with what economists and political scientists term the “resource curse”: the observation that countries and regions richly endowed with extractive natural resources frequently experience slower development, weaker governance, and more conflict than resource-poor counterparts (Modern Diplomacy, 2025). In the South Sudanese case, researchers identify several mechanisms through which this curse operates, including entrenched corruption among political and military elites who capture oil rents, uncompensated environmental degradation in producing areas, and protracted political conflict fueled by competition for access to petroleum revenue (Dut, n.d.). Comparative analysis situates South Sudan alongside Venezuela and Indonesia as a case in which resource abundance has coincided with persistent poverty rather than broad-based development, despite the country's status as one of the most oil-dependent economies in the world (Modern Diplomacy, 2025). Analysts writing before South Sudan's independence and examining the same oil-producing territories under Sudanese rule similarly concluded that political divisions and unresolved grievances among local communities in oil-bearing regions posed a more acute threat to peace and stability than interstate disputes (Patey, 2010). This finding has remained relevant in the decade and a half since South Sudan's independence.

A related but distinct concept, sometimes called “Dutch disease,” describes how a dominant extractive sector can crowd out investment in agriculture and manufacturing, leaving an economy dangerously exposed when that sector falters (Bramston & Associates, 2025). South Sudan exhibits this pattern acutely: oil has historically funded most government spending, including salaries and food and fuel imports, while the agricultural sector, on which most of the population, including the great majority of Unity and Ruweng's inhabitants, depends for subsistence, has remained undercapitalized and unable to absorb shocks when oil revenue falls (Bramston & Associates, 2025). This theoretical framework helps explain why, notwithstanding Ruweng's status as the source of roughly four-fifths of the nation's oil, its inhabitants remain among those least served by public infrastructure and social services in South Sudan.

ENVIRONMENTAL EFFECTS

Water and Soil Contamination

The most extensively documented environmental effect of oil extraction in Unity State is contamination of drinking-water sources by heavy metals associated with petroleum production. Beginning in the mid-2000s, the German humanitarian organization Sign of Hope conducted repeated hydrological testing around the Thar Jath oil processing plant near Bentiu. In 2016, it released toxicological results from hair samples collected from 96 volunteers living in the vicinity. The samples showed elevated concentrations of lead and barium, metals used in drilling and processing, and the organization concluded that roughly 180,000 people drew drinking water from sources affected by this contamination (Radio Tamazuj, 2016). Based on six years of accumulated hydrological data, the organization's researchers reported a direct link between the presence of the petroleum industry and the contamination measured in residents' bodies (Radio Tamazuj, 2016).

Produced Water and Waste Pits

A separate body of evidence concerns the management, and in some cases mismanagement, of “produced water,” the large volumes of saline, chemical-laden water brought to the surface alongside crude oil, as well as the open waste pits used to store drilling by-products. Environmental reports obtained by the Associated Press and corroborated by industry sources described South Sudan's oil-producing regions, including areas around Ruweng, as containing hundreds of unsecured waste pits filled with toxic chemicals and heavy metals, including mercury, manganese, arsenic, lead, and cadmium. Investigators found that these substances were seeping into surrounding water and soil (Associated Press, 2020; Refugee Research Network, 2024). A former GPOC engineer interviewed by the BBC described minimally treated produced water reaching community ponds, rivers, and boreholes (Jollof Mash, 2024). Community representatives and legal advocates in Ruweng have stated that GPOC has not conducted a comprehensive environmental impact assessment since exploration began in the area in 1998, despite the scale of its operations (VOA South Sudan in Focus, 2020).

Flooding and the Compounding of Pollution

Since around 2019–2020, Unity State has experienced severe and largely unprecedented flooding. This flooding has interacted with existing pollution in ways that have widened its reach. BBC reporting found that rising floodwaters have pushed toxic runoff from oil facilities into water supplies used for drinking and livestock across areas extending beyond the immediate vicinity of well sites, thereby worsening an already serious water-security and health situation (Ajak & Stafford, 2024). Local residents along the Bentiu–Unity road have reported large fish die-offs, predominantly involving tilapia, that coincide with flood events and that they attribute to the mixing of floodwater with contaminated soil and waste pits (Rift Valley Institute, n.d.). Despite more than a decade of community complaints, systematic government or independent data collection on the extent and health effects of this compounded pollution remains limited (Ajak & Stafford, 2024).

Impacts on Wetlands, Fisheries, and Livestock

Both Unity State and Ruweng lie within or adjacent to the Sudd wetland system. The interaction between oil contamination and this hydrologically connected floodplain means that pollutants introduced at a single well site or waste pit can travel considerable distances through seasonal flooding (Rift Valley Institute, n.d.). Pastoralist communities, for whom cattle represent both economic and cultural capital, have reported livestock illnesses, birth deformities in calves, and deaths among herds that drink from contaminated ponds and rivers (Jollof Mash, 2024). Youth advocacy groups from Ruweng and Unity State have documented cattle deaths at oil-spill sites as part of their case for closing GPOC operations, describing an ecological imbalance affecting land, animals, and air across the territory (PaanLuel Wël Media, 2024). For communities whose livelihoods depend on fishing, herding, and flood-recession farming, this environmental degradation represents not only a health hazard but also a direct threat to economic survival.

HEALTH EFFECTS ON INHABITANTS

Heavy Metal Exposure and Toxicology

The toxicological findings described under Water and Soil Contamination, namely elevated lead and barium levels in hair samples from residents near Thar Jath, provide the most direct biological evidence available linking oil-industry activity to human exposure (Radio Tamazuj, 2016). Documentation by independent researchers on conditions in Paloch, Ruweng, and Thar Jath identifies a wider range of heavy metals in unsecured waste pits, including mercury, manganese, arsenic, lead, and cadmium. It further notes that the health effects of exposure to and ingestion of these substances are well established in the toxicological literature and include cancer, impaired cognitive function, and circulatory and respiratory impairment (Refugee Research Network, 2024).

Birth Defects and Reproductive Health

Among the effects most consistently reported by residents of Unity State and Ruweng, and among the most disturbing in their specificity, are birth defects and adverse pregnancy outcomes. Associated Press reporting from Paloch documented a case in which an infant was born with six fingers on both hands, a stunted leg, a deformed foot, and kidney swelling. This was one of numerous similar cases described in environmental reports obtained from industry sources but never publicly released (Associated Press, 2020). In Ruweng, community members interviewed by researchers described infants born with intestines formed outside the body. In one case, a baby died en route to specialist care in Juba; in another, a baby was referred to Nairobi, where the mother's blood tests reportedly indicated years of exposure that a treating physician attributed to the water she had been drinking (Refugee Research Network, 2024). A 2016 study by a Johns Hopkins University researcher similarly found unconfirmed but marked increases in pregnancy complications, abortions, and stillbirths among communities near oil operations in Unity State, alongside stomach problems and skin rashes attributed to water contamination (InfoNile, n.d.).

Communicable and Waterborne Disease

Beyond the specific toxicological and reproductive effects associated with heavy-metal contamination, residents near oil-affected water sources report a broader burden of gastrointestinal and respiratory illness. Community members interviewed for BBC and related reporting described chronic abdominal pain, diarrhea, and respiratory symptoms after consuming local water. These findings are consistent with the World Health Organization's broader observation that South Sudan has experienced rising rates of environment-related diseases, including malaria, typhoid, and watery diarrheal illness, linked in part to surface-water contamination and inadequate sanitation infrastructure (Jollof Mash, 2024; World Health Organization Regional Office for the Eastern Mediterranean, n.d.). Residents have reported that boiling water, the primary mitigation measure available to most households, provides little relief from these symptoms, suggesting that the causative agents may not be limited to pathogens that boiling can effectively neutralize (Jollof Mash, 2024).

Barriers to Health Data and Government Response

A recurring theme across nearly every source examined for this article is the absence of systematic, government-led data collection on the health effects of oil pollution in Unity State and Ruweng, despite more than a decade of community complaints (Ajak & Stafford, 2024). Associated Press investigators seeking to verify the environmental reports they had obtained found that community leaders and legislators in oil-producing areas accused both the national government and the two dominant operating consortia of neglecting the issue and, in some instances, actively suppressing information about it (Associated Press, 2020).

An Associated Press reporter investigating the story was detained and questioned by government security personnel reportedly working on behalf of the oil companies (Associated Press, 2020). One former head of a European coalition monitoring the sector characterized South Sudan's oil operations as among the most poorly managed and environmentally unregulated major industrial operations in the world (Associated Press, 2020). This combination of inadequate data, weak oversight, and restrictions on independent reporting means that the true scale of the health burden documented anecdotally in this section is likely understated.

SOCIOECONOMIC EFFECTS

Oil Revenue and the Paradox of Poverty

South Sudan derives more than ninety percent of its government revenue and gross domestic product from oil exports. This level of dependence leaves the country acutely vulnerable to price shocks, production disruptions, and governance failures such as those documented by United Nations investigators, who in 2025 detailed a $2.2 billion corruption scheme within the sector (OilPrice.com, 2025). Despite this dependence and Ruweng's role as the source of roughly eighty percent of national oil production, the populations of both Ruweng and Unity State remain among the poorest in the country, with limited access to healthcare, education, clean water, and paved roads (Goch, 2022). This apparent paradox, in which extraordinary local wealth generation coincides with extreme local poverty, is the defining socioeconomic feature of the oil relationship in the region. This pattern reflects the resource curse dynamic described in the theoretical framework.

Displacement and Loss of Livelihoods

The socioeconomic harm caused by oil extraction in Unity and Ruweng is rooted in the displacement that accompanied the industry's establishment. In the 1990s, the Sudanese government forcibly evicted civilian populations from oil-bearing land to clear the way for exploration and production, a process that predates South Sudan's independence but shaped the enduring relationship between local communities and the industry (Goch, 2022). More recent, gradual displacement has occurred as contamination and flooding have rendered grazing land, fishing grounds, and farmland unusable, pushing pastoralist and agricultural communities to move to higher, less productive ground or to abandon customary livelihoods altogether (Rift Valley Institute, n.d.). Because cattle keeping, fishing, and flood-recession farming form the economic and cultural backbone of Nuer and Dinka communities across Unity and Ruweng, the loss of usable land and water represents a loss of livelihood and identity that cannot easily be expressed in monetary terms alone.

The Legal Framework for Community Benefit-Sharing and Its Non-Implementation

South Sudan's Petroleum Act of 2012 and Petroleum Revenue Management Act of 2013 were designed, at least on paper, to ensure that oil-producing states and communities receive a direct share of the wealth extracted from their land. The 2013 Act requires the national government to transfer two percent of net petroleum revenue to producing states and a further three percent directly to producing communities (U.S. Department of State, 2025). In practice, an independent analysis by the Sudd Institute, based on historical budget records and interviews with government officials, found that the three percent community share had not been properly allocated or transferred during the years examined (Sudd Institute, 2018).

The analysis further found that oil-producing communities were collectively owed an estimated $305 million in unpaid transfers, that the two percent state share had been improperly allocated, and that the subnational institutions legally required to manage and disburse these funds had barely been established (Sudd Institute, 2018). It also found that key information about these transfers was not disclosed to the public, contrary to the transparency provisions of the governing legislation (Sudd Institute, 2018). Nilepet, the state-owned petroleum corporation through which the government holds stakes in the joint operating companies, has similarly failed to make its finances public despite a legal requirement to do so, and its revenues and expenditures do not appear in the national budget (U.S. Department of State, 2025).

Corruption and the National-Level Resource Curse

The failure to deliver legally mandated community benefits has occurred alongside evidence of large-scale diversion of oil revenue at the national level. A 2025 United Nations investigation found systemic corruption among members of South Sudan's ruling elite connected to the oil sector, compounding existing security challenges and placing the broader oil-dependent economy at heightened risk. Analysts have drawn comparisons with resource-revenue scandals in Mozambique and the Democratic Republic of the Congo (OilPrice.com, 2025). For inhabitants of Unity and Ruweng, this national-level dynamic compounds the local failure of benefit sharing because revenue that might otherwise reach producing communities through legally mandated transfers is diverted before reaching the subnational level.

CONFLICT, INSECURITY, AND OIL IN RUWENG AND UNITY

Historical Militarization of Oilfields

Because oil infrastructure represents South Sudan's most valuable strategic and economic asset, control over the oilfields of Unity and Ruweng has been militarized since before the country's independence, beginning with the forced-displacement campaigns of the 1990s discussed under Displacement and Loss of Livelihoods (Goch, 2022). This militarization did not end with the 2005 Comprehensive Peace Agreement or independence in 2011. Instead, the presence of security forces protecting oil infrastructure has remained a persistent feature of daily life for residents of the region.

Contemporary Intercommunal Violence

The Ruweng Administrative Area has experienced recurrent intercommunal violence since its creation as a separate administrative unit. Much of this violence has been tied to disputes over land, seasonal grazing access, water resources, and local political leadership, and has frequently followed Dinka-Agar and Nuer community lines (Dawan Africa, 2026). In one attack reported in early 2026, at least 169 people were killed in Ruweng, dozens more were wounded, and entire villages were displaced in violence that local authorities linked to rival community militias. Humanitarian agencies, already strained by years of conflict, flooding, and economic hardship, warned that the episode would further worsen conditions for civilians in the area (Dawan Africa, 2026). Detailed political mapping conducted by the Small Arms Survey's Human Security Baseline Assessment project has traced the fragmentation of authority within Ruweng to unresolved rivalries among local power brokers dating to the second civil war. These disputes have periodically drawn in national-level political figures and armed factions, underscoring how the area's status as the source of much of the country's oil revenue raises the stakes of what might otherwise be more localized disputes (Small Arms Survey, 2021).

Cross-Border Dimensions

Ruweng's oilfields, particularly the Heglig/Panthou field, lie close to the contested border with Sudan and have periodically become entangled in the conflict between the Sudanese Armed Forces and the Rapid Support Forces that erupted in Sudan in April 2023. Reporting from late 2025 described the Sudanese army as retaining control of the Heglig military base near

Panakuach, a narrow strip of territory within Ruweng, while fighting between the two Sudanese factions forced the shutdown of nearby oil blocks and threatened the central processing infrastructure serving both Sudanese and South Sudanese crude (Darfur24, 2025). Consequently, residents of Ruweng are exposed not only to the security dynamics of South Sudan's unresolved political settlement but also to spillover from an active war in a neighboring state, with oil infrastructure serving as a persistent flashpoint on both sides of the border.

COMMUNITY RESPONSES AND ADVOCACY

Litigation and Compensation Claims

Facing limited government action, residents of Ruweng have turned to the courts. In early 2020, lawyers representing the Ruweng community filed a petition with South Sudan's Supreme Court seeking compensation for more than two decades of allegedly unaddressed pollution dating to 1999 and continuing damage caused by repeated pipeline ruptures. The claim was initially framed at $500 million, with the expectation that the figure would be revised upward (VOA South Sudan in Focus, 2020). A lawyer representing the community stated that GPOC had never conducted an environmental impact assessment since operations began in the area in 1998 and had failed to provide the social services promised under its agreements with local communities (VOA South Sudan in Focus, 2020). A local human rights advocate involved in the case characterized the oil consortium's conduct as a pattern of human rights violations arising from inadequately maintained pipeline infrastructure (VOA South Sudan in Focus, 2020).

Civil Society and Youth Mobilization

Community frustration has also been expressed through direct advocacy and mobilization. In April 2024, youth representatives from Ruweng Administrative Area and Unity State issued a joint statement demanding the immediate cessation of GPOC's operations. They cited mounting evidence of environmental devastation, rising birth defects, and government inaction and gave the company an ultimatum to halt operations within 72 hours or face direct community intervention (PaanLuel Wël Media, 2024). The statement described previously fertile land across both territories as degraded by what the group termed corporate negligence and framed the demand as a response to years of unaddressed environmental and health harm (PaanLuel Wël Media, 2024).

Role of International NGOs and Researchers

International organizations and independent researchers have played a significant role in documenting conditions that might otherwise have gone unrecorded. Sign of Hope's multi-year hydrological testing program provided toxicological evidence that underpins much of the public understanding of water contamination near Thar Jath (Radio Tamazuj, 2016). Investigative reporting by the Associated Press brought to light environmental assessments that industry and government sources had kept from public view (Associated Press, 2020). Researchers affiliated with the Sudd Institute and regional universities have provided empirical grounding for claims about the non-implementation of South Sudan's revenue-sharing legislation (Sudd Institute, 2018). Taken together, this independent documentation has been essential to building the evidentiary record on which community advocacy and litigation now rest. This role remains particularly important in the continued absence of comprehensive government-led environmental and health monitoring.

DISCUSSION: TOWARD A FRAMEWORK FOR REDRESS

The evidence reviewed in this article points to a mutually reinforcing set of harms rather than a series of isolated problems. Environmental contamination of water and soil contributes to the documented health effects. The same weak regulatory environment that permits unsecured waste pits and inadequately treated produced water also enables the diversion of legally mandated community revenue because both failures stem from inadequate oversight and public accountability. The resulting economic marginalization, in turn, intensifies competition over the relatively small pool of resources that reaches local communities, including land, grazing access, and limited development spending. This dynamic helps explain why intercommunal conflict in Ruweng often centers on the same oil-bearing territory that generates national wealth. Communities that might otherwise mobilize collectively to demand accountability from the government and operating companies are frequently divided by disputes over the local distribution of limited benefits, a dynamic well documented in the political mapping literature (Small Arms Survey, 2021).

This interconnection has an important policy implication: piecemeal interventions that address only one dimension of the problem are unlikely to break the cycle. For example, an environmental cleanup program that does not address revenue transparency, or a compensation payment that does not strengthen local governance institutions, is unlikely to produce lasting change. The Sudd Institute's finding that formal revenue-sharing institutions had barely been established more than a decade after the relevant legislation was passed suggests that the principal constraint is not the absence of legal provisions. Rather, it is the lack of political will to implement and enforce those provisions (Sudd Institute, 2018).

CONCLUSION

Unity State and the Ruweng Administrative Area occupy a distinctive position in South Sudan's political economy: together, they generate most of the country's export revenue, yet their inhabitants have experienced this wealth chiefly through displacement, contamination, disease, and conflict. The evidence reviewed in this article, ranging from toxicological testing near Thar Jath and independently documented birth defects in Ruweng to Sudd Institute audits showing hundreds of millions of dollars in unpaid community revenue and recurrent violence in Ruweng, illustrates a resource curse operating with unusual clarity at the subnational level. These harms are not inevitable consequences of oil extraction itself; comparable industries elsewhere operate under environmental and revenue-sharing regimes that, however imperfectly, deliver at least some benefits to producing communities. What distinguishes the South Sudanese case is the near-total absence of enforcement behind an otherwise reasonable legal framework and the corresponding absence of independent oversight capable of holding the government and operating companies accountable. Until this enforcement gap is closed, inhabitants of Unity State and the Ruweng Administrative Area are likely to continue experiencing their region's oil wealth primarily as a burden rather than a benefit.

RECOMMENDATIONS

Based on the evidence reviewed above, the following recommendations are directed to the principal actors positioned to address the effects documented in this article.

For the Government of South Sudan:

- Fully implement the revenue-transfer provisions of the Petroleum Revenue Management Act of 2013, including establishing the subnational institutions required to receive, manage, and disclose the two percent state share and the three percent community share of net petroleum revenue, and settle outstanding transfers identified by independent audits.

- Require and enforce independent environmental and health impact assessments for all active oil operations in Unity State and Ruweng, including retrospective assessments of legacy waste pits and spill sites that predate current operators.
- Mandate public disclosure of Nilepet's finances and its equity relationships with the joint operating companies, consistent with existing transparency requirements under the Petroleum Revenue Management Act.
- Support and protect independent researchers, journalists, and community advocates who investigate conditions in oil-producing areas rather than restricting their access.
- Invest a meaningful share of oil revenue in basic health-surveillance infrastructure in Unity and Ruweng to enable systematic tracking of birth outcomes, waterborne illnesses, and heavy-metal exposure over time.

For the Joint Operating Companies (GPOC, DPOC, and Their Partners):

- Commission and publish comprehensive environmental impact assessments for all legacy and active operations in Unity State and Ruweng, including remediation plans for identified waste pits and contaminated water sources.
- Upgrade produced-water treatment and waste-containment infrastructure to internationally recognized industry standards and subject these upgrades to independent verification.
- Fulfill outstanding community-development commitments made under existing agreements with local communities and engage transparently with pending compensation claims.

For the International Community and Development Partners:

- Support independent, community-accessible environmental and health monitoring in Unity and Ruweng, including technical and legal assistance for communities pursuing compensation claims.
- Apply appropriate due-diligence expectations to international and regional financial institutions and trading partners involved in South Sudanese crude exports, consistent with the findings of recent United Nations corruption investigations.

For Affected Communities and Civil Society Organizations:

- Continue building a documentary record of environmental and health conditions, in coordination with independent researchers, to strengthen the evidentiary basis for advocacy and litigation.
- Pursue avenues for cross-community dialogue that distinguish legitimate grievances against oil operators and the national government from intercommunal disputes over the limited resources reaching the local level. Such dialogue may help reduce the risk that resource competition is channeled into violence.

REFERENCES

Ajak, M., & Stafford, S. (2024). Polluted floodwaters and oil spills endanger South Sudan's water sources. Environmental Health News. https://www.ehn.org/south- sudans-water-flooding-2669871797.html

Associated Press. (2020). Officials ignore health problems from oil pollution. San Francisco Chronicle. https://www.pressreader.com/usa/san-francisco-chronicle-late-edition/20200214/281599537509358

Bramston & Associates. (2025). Economic turmoil in South Sudan's 2025 crisis: Oil, inflation, and regional fallout. https://bramston.associates/economic-turmoil-in- south-sudans-2025-crisis-oil-inflation-and-regional-fallout/

Darfur24. (2025). Oil sector in West Kordofan enters its most complex crisis since 2023 attacks. https://www.darfur24.com/en/2025/12/03/oil-sector-in-west-kordofan- enters-its-most-complex-crisis-since-2023-attacks/

Dawan Africa. (2026). Attack in South Sudan's Ruweng area kills at least 169, officials say, violence strains fragile peace. https://www.dawan.africa/news/attack-in-south- sudans-ruweng-area-kills-at-least-169-officials-say-violence-strains-fragile-peace

Dut, D. (n.d.). The reality of petroleum resource curse in South Sudan: Can this be avoided? The African Review. https://journals.udsm.ac.tz/index.php/ar/article/view/449

Ecofin Agency. (n.d.). South Sudan taps China to revive idle oil fields. https://www.ecofinagency.com/news-industry/1706-47301-south-sudan-taps-china-to-revive-idle-oil-fields

Goch, M. A. (2022). China, oil and the South Sudan resource curse. The Elephant. https://www.theelephant.info/analysis/2022/02/18/china-oil-and-the-south-sudan resource-curse/

InfoNile. (n.d.). The dark side of Sudan's oil. https://infonile.org/dark-side-of-sudan-oil/ Jollof Mash. (2024, November 11). Climate crisis and oil pollution: A deadly mix for South

Sudan. https://jollofmash.com.ng/climate-crisis-and-oil-pollution-a-deadly-mix-for- south-sudan/

Modern Diplomacy. (2025). 'Resource curse' in the oil-wealth countries: Lessons from South Sudan, Venezuela, and Indonesia. https://moderndiplomacy.eu/2025/03/12/resource-curse-in-the-oil-wealth-countries- lessons-from-south-sudan-venezuela-and-indonesia/

OilPrice.com. (2025). UN report exposes $2.2 billion oil corruption scheme in South Sudan. https://oilprice.com/Energy/Energy-General/UN-Report-Exposes-22- Billion-Oil-Corruption-Scheme-in-South-Sudan.html

PaanLuel Wël Media. (2024). Environmental crisis prompts Ruweng and Unity State youth urgent call for the closure of GPOC. https://paanluelwel.com/2024/04/25/environmental-crisis-prompts-ruweng-and-unity-state-youth-urgent-call-for-the-closure-of-gpoc/

Patey, L. (2010). Crude days ahead? Oil and the resource curse in Sudan. African Affairs, 109(437), 617–636. https://doi.org/10.1093/afraf/adq043

Radio Tamazuj. (2016). South Sudan oil pollution threatens thousands. https://www.radiotamazuj.org/en/news/article/south-sudan-oil-pollution-threatens thousands

Refugee Research Network. (2024). Pollution and suffering: Is the oil curse upon South Sudan communities? https://refugeeresearch.net/pollution-and-suffering-is-the-oil- curse-upon-south-sudan-communities/

Rift Valley Institute. (n.d.). Why South Sudan's Unity State is drowning in pollution. https://riftvalley.net/publication/why-south-sudans-unity-state-is-drowning-in-pollution/ Small Arms Survey. (2021, October 29). Mapping actors and alliances project in South Sudan: Update no. 8 – Ruweng Administrative Area. Human Security Baseline Assessment. https://www.smallarmssurvey.org/sites/default/files/2021-10/HSBA-MAAPSS-Update8- October2021-RAA.pdf

Sudd Institute. (2018). The petroleum revenue sharing arrangement in South Sudan. https://suddinstitute.org/publications/show/5b0f78d6b0536

U.S. Department of State. (2025). South Sudan: 2023 investment climate statements. https://www.state.gov/reports/2023-investment-climate-statements/south-sudan

VOA South Sudan in Focus. (2020). South Sudan's Ruweng community demands compensation for oil spills. https://www.voaafrica.com/a/africa_south-sudan-focus_south-sudans-ruweng-community-demands-compensation-oil-spills/6184930.html

Wikipedia contributors. (n.d.). Ruweng Administrative Area. In Wikipedia. https://en.wikipedia.org/wiki/Ruweng_Administrative_Area

World Health Organization Regional Office for the Eastern Mediterranean. (n.d.). Environmental health: South Sudan. https://www.emro.who.int/ssd/programmes/environmental- health.html