



## Nexus Between Oil Spillage and Environmental Justice in the Niger Delta

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### Abstract

The Niger Delta remains central to Nigeria's economic development due to its vast oil and gas reserves, contributing approximately 70–80% of national revenue. Despite this wealth, the region continues to experience widespread poverty, environmental degradation, and social inequality. This study examines the relationship between oil spillage and environmental justice in the Niger Delta, emphasizing the disproportionate burden of environmental harm on local communities. Adopting a qualitative approach based on secondary data, the study explores regulatory failures, corporate accountability, health implications, and socio-economic disruptions. The findings reveal persistent institutional weaknesses and inadequate environmental governance, resulting in limited access to justice and compensation for affected communities. The study concludes that achieving environmental justice requires strengthened regulatory enforcement, inclusive governance, and sustainable livelihood strategies.

**Keywords:** *Oil spillage, Environmental justice, Niger Delta, Livelihoods, Social inequality*

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## **Background to the Study**

The Niger Delta region of Nigeria is one of the most oil-rich areas in the world, yet it suffers from severe environmental degradation due to frequent oil spills, gas flaring, and other extractive activities (Omokaro, Adeyanju, Efeni, Obomejoro & Akpotu, 2025). These environmental harms have disrupted ecosystems, livelihoods, and health conditions of local communities (Nkem Devine, Ogaji, Topp & Wen Li, 2024). Despite Nigeria's environmental laws and international attention, the situation persists, raising questions of fairness, accountability, and justice (Tonghan-Ekpemupolo & Gasiokwu, 2024). Current estimates indicate that around 240,000 barrels of oil are spilled annually in the Niger Delta, primarily due to aging infrastructure, pipeline corrosion, sabotage, and operational failures (The Guardian, 2017). These spills degrade mangrove forests, impair fisheries, and contaminate soil and groundwater, heavily impacting ecosystem functions and local livelihoods (Anyanwu, Beggel, Sikoki, Okuku & Unyimadu, 2023).

A key health finding comes from a landmark study by Bruederle & Hodler (2019), which shows that infants conceived within 10 km of an oil spill site have nearly double the neonatal mortality rate compared to those farther away. The study estimated an increase of 38.3 neonatal deaths per 1,000 live births, demonstrating a stark public health burden attributable to environmental exposure (Bruederle et al., 2019). The experiences of Niger Delta communities can be understood through environmental justice frameworks. Yet Nigeria's regulations have traditionally centered on reaction rather than prevention (Anyanwu et al., 2023; Bruederle et al., 2019). Accordingly, Tonghan-Ekpemupolo & Gasiokwu, (2024) assertively posited that the Niger Delta Region of Nigeria faces profound challenges related to oil spillage, which has caused extensive environmental degradation and socio-economic disruptions. The legal framework governing oil spillage is plagued by significant weaknesses, resulting in insufficient protection for both the environment and the communities residing in the region (Tonghan-Ekpemupolo et al., 2024).

Host communities remain largely excluded from benefit-sharing and environmental decision-making. Although the Petroleum Industry Act of 2021 introduced frameworks such as Host Community Development Trusts, implementation has been constrained by vagueness around environmental liabilities and limited enforcement capacity. Communities frequently receive inadequate consultation and compensation, and asset divestment plans often overlook cleanup responsibilities, raising concerns about the transfer of contamination to local operators with fewer resources (The Guardian, 2017; Nkem et al., 2022; Ajayi, 2025). The Niger Delta represents a critical case of compounded environmental injustice. This study applies a qualitative synthesis of peer-reviewed literature, environmental data, and health outcomes to explore how oil spillage disproportionately affects marginalized communities. Using the lenses of cumulative impact and precautionary frameworks, it investigates avenues for more equitable and preventative governance in the region.

## **Problem Statement**

The Niger Delta region of Nigeria, endowed with abundant oil and gas resources, remains paradoxically one of the most environmentally degraded and socio-economically

marginalized areas in the country (Adindu et al, 2024). Since the discovery of oil in the late 1950s, the region has witnessed incessant oil spills resulting from pipeline vandalization, equipment failure, and poor operational practices by multinational oil companies (Omokaro et al, 2025). These spills have destroyed farmlands, polluted rivers, and devastated aquatic life, thereby threatening the livelihoods and health of millions of people who depend on the natural environment for survival (Nkem et al., 2024). Despite the economic significance of the oil sector to Nigeria's national revenue, the environmental costs borne by host communities are immense and persistent (Omokaro et al, 2025).

Efforts by both government and corporate actors to address the consequences of oil spillage have largely been inadequate, inconsistent, or poorly enforced (Omokaro et al., 2025). Weak institutional frameworks, corruption, and lack of political will have hindered effective environmental governance (Nkem et al, 2024). Consequently, communities affected by oil pollution are often denied timely remediation, fair compensation, and meaningful participation in environmental decision-making processes (Nkem et al., 2024; Omokaro et al., 2025). The resultant effect is imbalance injustice, where the burdens of environmental degradation fall disproportionately on marginalized rural populations, while the benefits of oil extraction are concentrated elsewhere (Adebangbe, Dixon & Barrett, 2025; Omokaro et al., 2025). The persistence of these injustices highlights the need to critically examine the nexus between oil spillage and environmental justice in the Niger Delta. Understanding this relationship is crucial to identifying the socio-political and institutional barriers that perpetuate inequality and environmental harm. This study, therefore, seeks to explore how oil spillage undermines environmental justice in the region, the effectiveness of existing regulatory frameworks, and the pathways through which equity, accountability, and sustainability can be strengthened in Nigeria's oil-producing communities.

### **Research Objectives**

This study is generally built to critically examine the relationship between oil spillage and environmental justice in the Niger Delta region of Nigeria, with a focus on how environmental degradation, governance structures, and corporate accountability affect the well-being and rights of local communities. Specifically, the study seeks to:

1. Assess the socio-economic and ecological impacts of oil spillage on local communities in the Niger Delta.
2. Evaluate the effectiveness of existing legal, policy, and institutional frameworks in addressing oil pollution and promoting environmental justice.
3. Examine the extent to which affected communities have access to justice, compensation, and participation in environmental justice.
4. Identify the major challenges hindering the realization of environmental justice in oil-producing areas.
5. Propose strategies and policy recommendations to enhance environmental justice, corporate responsibility, and sustainable development in the Niger Delta.

### **The Nexus: oil Spillage and Environmental Justice**

Environmental justice addresses fair distribution of environmental benefits and burdens in the Niger Delta, where oil wealth benefits corporations and the federal state while poor rural

communities suffer pollution and exclusion. Procedural injustice persists as locals lack participation in decisions affecting their environment, and recognition of injustice manifests in disregard for cultural ties to land and water (Nkem et al, 2024; Omokaro et al., 2025).

### **Impacts of Oil Spillage**

Oil spills destroy mangroves, contaminate rivers, and render farmlands infertile. Health impacts include respiratory illness, cancer risks, and poor reproductive outcomes. Socio-economic losses from declining fisheries and agriculture fuels unemployment and unrest (Omokaro et al., 2025).

### **Research Methodology**

This study utilizes a qualitative secondary-data review and thematic analysis of peer-reviewed literature, environmental health reports, and policy studies to examine the link between oil spillage and environmental justice in the Niger Delta.

### **Research Design**

A systematic thematic synthesis was undertaken, using established review methods outlined in oil spill research literature. The analysis focused on identifying core themes including spill causation, environmental degradation, health outcomes, socio-economic impacts, institutional responses, and forms of community resistance.

### **Literature Search and Inclusion Criteria**

Sources were selected through systematic searches of databases like PubMed, ScienceDirect, and ResearchGate. Search terms included "oil spillage," "Niger Delta," "health impact," and "environmental justice". Inclusion criteria mandated: (a) peer-reviewed articles published between 2022 and 2025, (b) empirical or scoping studies with original data or systematic review methodology, and (c) relevance to oil spill impacts or governance in the Niger Delta.

### **Data Extraction and Thematic Coding**

Data were extracted using standardized templates to capture study aims, methodology, and findings. Extracted information was coded into themes such as spill causation (e.g. sabotage, corrosion), ecosystem impact (e.g. loss of mangroves), health effects (e.g. neonatal mortality, respiratory illness), livelihood disruption, and governance gaps.

### **Focus on Health, Livelihood and Community Exclusion**

Special attention was given to qualitative studies that centered on community perceptions and lived experiences. For instance, the Ogoni community study by Nkem et al. (2024) explored economic exclusion, health vulnerabilities, and lack of benefit access due to environmental degradation.

### **Ethical and Quality Considerations**

All sources were checked for publication authenticity, peer-review status, and DOI-accessibility. Summary findings were cross-validated across multiple studies to reduce bias. No original human-subject data were collected.

## **Results and Discussion**

### **Drivers of Oil Spills and Response Delays**

Recent literature highlights that sabotage, including illegal refining and oil theft accounts for over 70% of all spill events in the Niger Delta, while pipeline corrosion and operational failure are also common causes (Ezeh et al., 2023). These spills accumulate over time, causing persistent contamination. Furthermore, joint investigation visits (JIVs) for spill events often average 4 days to report and 21 days to respond, with 18% of incidents lacking any formal response at all (Ezeh et al., 2023). These findings illustrate systemic lapses in spill detection, response, and accountability structures. Additionally, response delays stem from insufficient stakeholder coordination, regulatory and legislative constraints, inadequate technological and logistical capacities, lack of industry accountability, and socio-economic factors that undermine effective response and remediation effort (Adindu et al., 2024). It is further spilled out that Nigeria's response strategy is characterized by several challenges, including regulatory loopholes, inadequate enforcement, insufficient technological resources, and a lack of preparedness that exacerbate the consequences of oil spills on the environment and local communities (Adindu et al., 2024).

Environmental justice is another critical theoretical lens through which oil spill impacts and responses can be examined. Vulnerable and marginalized communities often bear disproportionate burdens from environmental disasters, including oil spills (Bullard and Wright, 2009, cited in Adindu et al., 2024). Research in this area calls for equitable response strategies that prioritize the needs and voices of these communities. De Stefani (2023), adduced that mismanagement of expectations can profoundly impact the outcomes of an oil spill, affecting not only the responsible party's reputation but also financial costs, clean-up efforts, and even the development of new regulatory frameworks. Transparency and engagement are crucial for building public trust and managing expectations effectively. The unfortunate reality is though that oil spills often become political events. When response efforts become distracted by misguided politics, the environment and communities are the losers. Both citizen journalists and traditional media play a significant role in shaping public perceptions of oil and gas industry events.

For De Stefani (2023), oil spills often intersect with natural disasters, extreme weather events, or conflicts, creating complex scenarios that demand multifaceted solutions. However, a collaborative approach becomes imperative as oil spill incidents and surrounding environmental sensitivities increase. Relying solely on a single company for comprehensive oil spill response capabilities may not be sufficient in navigating the evolving industry landscape (De Stefani, 2023). Leaning on De Stefani lens of assertion, oil spills require a wide range of expertise, including technical, environmental, regulatory, and logistical knowledge. Collaborative alliances bring together experts from diverse fields, enabling a more holistic assessment of the situation and a more informed response strategy. This collective knowledge enhances the effectiveness of response efforts and provides diversity of perspectives leading to better outcomes (De Stefani, 2023). For the purposes of integrity and acceptability, independent observation of the data entered in form C by all appropriate stakeholders would be preferable. At the very least, national Oil Detection and Response Agency (NOSDRA) and

Environmental Ministry staff should be in place for all spills over a certain size to monitor the cleanup and remediation process, and this oversight role would be well documented and recorded. Preferably it would also be attended by legitimate community representatives at every stage (Stakeholder democracy, 2014).

### **Ecological and Microbial Impacts**

Oil contamination has severely disrupted soil microbial ecosystems. A 2024 study by Muhammad, Boothman, Song, Lloyd & Van Dongen (2024) in *Science of the Total Environment* showed that petroleum hydrocarbons significantly altered microbial community composition in Niger Delta soils, favoring hydrocarbon-degrading species while reducing overall microbial diversity, a signifier of reduced soil resilience and impaired ecosystem functioning (Ezeh et al., 2023). This microbial shift impedes normal nutrient cycling and hampers natural restoration, further compromising ecological health. At its core, microbial ecology explores the complex web of relationships that exist between bacteria, archaea, fungi, viruses, and other microscopic life forms, and how these intricate connections shape the overall functioning and resilience of ecological systems (Idowu, 2024). Idowu (2024), also viewed that microbial communities, with their remarkable diversity and adaptability, are the unseen architects of ecosystem stability, driving essential nutrient cycling processes, supporting plant and animal growth, and contributing to the regulation of global climate systems. Hence, the study adduces the indispensability of organisms and intricacies of microbial interactions and their broader ecological impacts (Idowu, 2024).

Microbial communities are intrinsically linked to the global climate system, as they play critical roles in the cycling of greenhouse gases, such as carbon dioxide and methane. However, Mohei (2023), asserts that microbes play crucial roles in bioprocessing, bioremediation and the production of biofuels and pharmaceuticals. Understanding how microbial communities' function can lead to more sustainable and efficient biotechnological applications. Accordingly, disruption in aquatic microbial communities can affect water quality and the safety of seafood. Harmful algal blooms, for example, can produce toxins that accumulate in shellfish, posing a risk to consumers (Mohei, 2023).

### **Livelihood Disruption and Socioeconomic Exclusion**

Environmental contamination translates into socioeconomic inequalities. Anyanwu et al. (2023) documented sustained pollution of soils and water, which adversely impacted fishery and agricultural livelihoods. Seasonal variations in hydrocarbon and heavy metal loads were strongly correlated with declines in crop yields and fish stocks across impacted communities (Fenibo et al., 2024). In alignment, Nkem et al. (2024) found qualitative evidence of economic exclusion as residents of Ogoniland described escalating hardship tied to lost income, poor compensation practices, and exclusion from benefit-sharing mechanisms.

The consequences of this sustained pollution are profound. Terrestrial and aquatic ecosystems have been contaminated, resulting in biodiversity loss, soil infertility, water pollution, and compromised air quality (Omokaro et al., 2025). Mangrove forests and inland waterways have been particularly affected, with hydrocarbon accumulation disrupting

ecological balance and threatening numerous species. Airborne emissions from gas flaring such as PM2.5 and PM10 routinely exceed international safety standards and are linked to elevated respiratory illness rates in exposed populations (Omokaro et al., 2025). However, Omokaro et al (2025), further affirmed that environmental degradation in the Niger Delta is not merely a consequence of industrial activity but a reflection of entrenched governance failures, institutional inertia, systemic inequities. Hence, unchecked petroleum extraction has stripped one of Africa's most bio-diverse regions of its ecological integrity, transforming wetlands and mangroves into contaminated wastelands. Oil spills, gas flaring, and regulatory non-compliance have deeply eroded the environmental fabric while also destabilizing livelihoods, undermining food systems, and exacerbating public health vulnerabilities.

Chijioke (2022), highlighted the pains of farmers in Ikarama, a community in the southernmost Nigerian state of Bayelsa, as most locals had this to say: “this is what we have been dealing with since oil spills started,” the 51-year-old mother of five said. “It makes it difficult for me to feed my family and train my children in school because that (farm) is the only thing I do”. “It is better we don't even cultivate because our crops die after planting and we must replant repeatedly,” she said. “As we dig the soil, we find crude oil during planting”. “Some species of cocoyam have disappeared”. Nkem et al (2024) revealed that, “in Ogoni land, oil wells have taken over the entire place. The presence of oil wells in the land has made it impossible to farms”. In the same stead they further ascertained alongside the residents' vociferous revelations stating “A very vast portion of our land is taken. Before now, we had good land and rivers. And when pollution came, the whole thing got damaged beyond. We no longer drink good water, we no longer have fish, and we no longer have farms” (Nkem et al., 2024).

Omokaro (2024) explored the interconnectedness of political, economic, and environmental factors contributing to the ongoing crisis in the region. It emphasizes the need for a thorough evaluation of the forces that drive environmental degradation and offers insights into potential policy reforms aimed at achieving sustainable development in resource-rich areas like the Niger Delta. Omokaro et al (2025), in furtherance revealed widespread soil, water, and air contamination, biodiversity loss, and adverse health outcomes driven by regulatory lapses and poor enforcement. Traditional livelihoods have collapsed, gender-based vulnerabilities have intensified, and community displacement has become more frequent. Mulade, Clark, & Ikenga, (2025) found that oil spillage has exacerbated socio-economic instability in the region. The persistent environmental damage, coupled with the lack of adequate remediation, has fueled grievances among local communities, leading to protests, youth restiveness, and in some instances, violent confrontations with state authorities and oil companies.

### **Health Outcomes and Community Vulnerability**

Communities exposed to oil pollution reported heightened rates of health burdens. Bruederle et al (2019) identified a doubling of neonatal mortality among infants conceived within a 10 km radius of spill sites, an effect comparable in scale to adverse outcomes typically attributed to armed conflict (Ekeu-Wei & Ekeu-Wei, 2024). Although direct health data from more recent years remain limited, the connection between oil spill exposure and adverse

health outcomes, including skin ailments, respiratory issues, and psychological distress has been repeatedly echoed in stakeholder interviews and community surveys (Nkem et al., 2024).

Oil spillage, an odious conceptual phenomenon creates devastating health outcomes, including respiratory illnesses, waterborne diseases, and cancer, due to contaminated air, water, and food, disproportionately affecting vulnerable communities whose livelihoods from fishing and farming are destroyed. Omokaro et al (2025) posited that hazardous concentration of heavy metals like lead, cadmium, and chromium have been detected in water and agricultural soils, further exacerbating public health risks. The Niger Delta's vulnerability to oil spillage is further compounded by weak regulatory enforcement and outdated infrastructure. Studies have shown that oil companies operating in the region often delay response to spill incidents, leading to prolonged exposure to pollutants (Mulade et al, 2025).

According to Mulade et al, (2025), oil spillage has caused extensive environmental degradation in the Niger Delta, severely affecting both terrestrial and aquatic ecosystems. Mangrove forest, farmlands, and water bodies have been polluted, resulting in the loss of biodiversity and the destruction of natural habitats. Communities dependent on farming and fishing have witnessed a sharp decline in productivity, leading to widespread poverty, food insecurity, and displacement. These environmental consequences have not only threatened the region's ecological balance but have also compromised the health and livelihoods of the local population, with cases of respiratory and waterborne diseases becoming increasingly prevalent (Mulade et al., 2025). So much has transpired among the residents of Niger Delta region whose health have been driven to the edge of faith due consequently to nefarious persistence of oil spills detrimental to their health, practically in the midst of silenced aching voice yearning for attention yet unattended to. In their study on the health of local communities, a respondent in Nkem et al (2024) lamented that there is no good healthcare. The findings concluded by showing a significant influence of oil spills on their health, environment, and the entire sources of livelihood structure.

Crude oil exposure causes numerous and significant health issues for children, pregnant women, and adults. Exposure occurs through inhalation, ingestion (of liquid droplets in the air), and direct skin contacts. Some of the health effects will be long-term diseases and may last for a lifetime, and it can even affect the future generations (Nanadeinboemi, Uju, Christopher, Hakeem & David, 2024). They further posit that crude oil has benzene that is recognized as carcinogen. There are several health impacts associated with breathing crude oil vapors, including headaches, nose irritation, dizziness, sleepiness, throat, fatigue, nausea, labored breathing, lungs, chemical pneumonia, as well as coordination problems (Nanadeinboemi et al., 2024). The people of Oporoma community complained about health issues including, breathing problems, skin diseases, headaches, dizziness, and sleepiness, people dying frequently (Nanadeinboemi et al., 2024). Oil spills, gas flaring, and regulatory non-compliance have deeply eroded the environmental fabric while also destabilizing livelihoods, undermining food systems, and exacerbating public health vulnerabilities (Omokaro et al., 2025). Other effects include psychological disorders, lower respiratory tract symptoms and

reduction of lung function, genotoxicity and alterations in hormonal status have also been described, neurological, haematological and irritation symptoms in inhabitants from a community where the main source of drinking water is contaminated with refined oil products (Shehu, 2023).

### **Institutional Deficits and Cleanup Failures**

Analysis of remediation efforts reveals serious governance failures. An AP News investigation confirms that Hydrocarbon Pollution Remediation Project (HYPREP), the Nigerian agency charged with cleanup in Ogoniland, fell short of its mandate as contractors were poorly vetted, soil testing labs lacked proper equipment, and auditors were obstructed, leading the UN to conclude the effort was effectively “a total failure” (Nkem et al., 2024). These systemic issues reflect broader structural weakness in environmental regulation and implementation in the Niger Delta. For Mulade et al (2025), remediation strategies by both the government and oil multinationals have often been reactive rather than preventive. Initiatives such as the Hydrocarbon Pollution Remediation Project (HYPREP) have faced criticisms over slow progress and lack of transparency. Community engagement in policy formulation and implementation has also been minimal, leading to the imposition of top-down solutions that often fail to address the specific needs of the affected areas. The study concludes that without a holistic, inclusive, and strictly enforced regulatory regime, the Niger Delta will continue to suffer from the devastating effects of oil spillage. Omokaro et al., (2025), affirmed that the environmental degradation in the Niger Delta is not merely a consequence of industrial activity but a reflection of entrenched governance failure, institutional inertia, and systemic inequities. Meanwhile, community voices are largely absent from remediation planning and environmental governance. These issues are further compounded by the inefficiencies of regulatory bodies and the persistent influence of multinational corporations in shaping both policy and enforcement.

### **Theoretical Framework**

This study is anchored on Ulrich Beck's Risk Society Theory, supported by the concepts of cumulative causation and the precautionary principle to analyze oil spillage and environmental justice. Risk Society Theory explains how modern societies are increasingly organized around the production, distribution and management of risks produced by human activities such as technology, industrialization and globalization (Beck, 1992). Unlike traditional risks, which were often natural and localized, contemporary risks arise from technological and economic processes such as oil exploration. These risks are frequently invisible, long-term, and difficult to manage, particularly in developing regions. In oil-producing areas, spillage represents a form of “manufactured risk” that threatens ecosystems, public health, and livelihoods. Importantly, Beck argues that such risks are not shared equally; rather, they disproportionately affect marginalized communities, thereby raising concerns of environmental injustice.

To complement this perspective, the study incorporates the idea of cumulative dynamics, rooted in the theory of cumulative causation developed by Gunnar Myrdal. Myrdal (1957) posits that social and economic processes tend to reinforce themselves over time, creating

cycles of advantage or disadvantage. Applied to oil spillage, repeated environmental degradation leads to long-term ecological damage, loss of livelihoods, and declining health outcomes. These effects accumulate over time, making recovery increasingly difficult for affected communities. Thus, environmental harm is not a one-time occurrence but a progressive and reinforcing process. In addition, the study adopts the Precautionary Principle as a lens for understanding institutional responses to environmental risk. The precautionary principle emphasizes the need for proactive action to prevent environmental harm, even where scientific certainty is incomplete (United Nations, 1992). In principle, governments and oil companies are expected to implement strict environmental regulations, maintain infrastructure, and respond promptly to spills. However, in many oil-producing regions, regulatory enforcement is weak, and responses are often delayed or inadequate. This failure of precautionary measures allows environmental risks to persist and intensify.

By integrating these perspectives, the study provides a comprehensive explanation of oil spillage and environmental justice. Risk Society Theory explains the production and unequal distribution of environmental risks, cumulative dynamics highlight the gradual accumulation of environmental and social harm, and precautionary dynamics reveal the institutional failures in preventing or mitigating such harm. The interaction of these processes results in a situation where vulnerable communities bear a disproportionate share of environmental costs, thereby reinforcing patterns of environmental injustice.

### **Institutional and Policy Gaps**

Policy Area	Existing Framework	Key Gaps
Environmental Regulation	NOSDRA Act (2006), DPR guidelines	Weak enforcement, political interference
Compensation and Remediation	HYPREP, SPDC cleanup initiatives	Slow implementation, lack of transparency
Legal Access	Nigerian Judiciary, foreign Courts (e.g., UK Shell cases)	Costly, time-consuming, limited local access
Community Participation	Niger Delta Development Commission (NDDC)	Tokenistic engagement, corruption issues
Data and Transparency	NOSDRA online spill Portal	incomplete, non-real-time, Inaccessible to locals

### **Conclusion**

This study confirms that oil spills in the Niger Delta represent a chronic environmental and social injustice. The cumulative effects of persistent pipeline sabotage, corrosion, and operational failures have injected hundreds of thousands of barrels of crude oil into critical ecosystems, severely degrading soil, water, and mangrove habitats (Anyanwu et al., 2023;

Muhammad et al., 2024). Soil microbial studies reflect a collapse in ecological resilience, as revealed by shifts favoring pollutant-degrading bacteria and declining biodiversity (Muhammad et al., 2024). Health impacts remain grave: neonatal mortality risk is doubled among infants exposed in utero to nearby spill events (Bruederle et al., 2019), while disrupted access to safe water and farmland drives deep socioeconomic exclusion, especially among women and subsistence growers (Nkem et al., 2024; Anyanwu et al., 2023). These outcomes align with environmental justice theory, illustrating how cumulative impact produces interwoven environmental, health, and livelihood vulnerabilities, and how the precautionary principle is generally absent in governance practice.

Institutional response has been consistently weak. Assessments of HYPREP's Ogoniland cleanup show contractor mismanagement, inadequate transparency, and lack of internationally accredited laboratory verification (Kabari, Zabbey & Onyena, 2022), culminating in a leaked UN assessment declaring it a “total failure” (AP News, 2024). Meanwhile, Shell's proposed divestment of onshore assets without clear remediation obligations raises fears of abandoned liabilities and further resource burdens on host communities (The Guardian, 2024; Reuters, 2024). The Niger Delta's oil pollution crisis is a product of interlinked environmental and justice failures. It cannot be solved through cleanup efforts alone but requires systemic reforms that restore dignity, rights, and equity to affected communities. By embracing cumulative and precautionary dynamics, Nigeria can transition from reactive to preventive environmental governance thereby ensuring that oil wealth no longer translates into ecological poverty. True environmental justice in the Niger Delta will come only when pollution ceases, accountability is enforced, and communities become equal partners in shaping their environmental future. Taken together, these findings underscore entrenched environmental injustice rooted in structural inequality, governance deficiencies, and lack of corporate accountability. Without urgent transformation, this crisis will persist across future generations.

### **Recommendations**

Based on the evidence above, the following interventions and recommendations are proposed accordingly:

1. Mandate full cleanup and decommissioning prior to asset divestment:  
Shell and other operators must be legally required to complete site remediation and dismantle aging infrastructure, with independent oversight, before transferring ownership
2. Operationalize host community benefit-sharing and inclusive governance:  
Mechanisms under the Petroleum Industry Act (2021), such as Host Community Development Trusts, must ensure genuine participation of women and marginalized residents in planning and resource management.
3. Strengthen institutional capacity and oversight of remediation efforts:  
Agencies like NOSDRA and HYPREP must adopt international environmental standards, engage accredited laboratories, and be subject to independent audit and public accountability to reverse failed cleanup regimes (Kabari et al, 2022; AP News, 2024).

4. Adopt cumulative impact assessment and precautionary protocols:  
Environmental regulation must shift from reactive cleanup to proactive risk assessment, aging-infrastructure monitoring, and pollution prevention. Applying cumulative impact frameworks would better protect community resilience.
5. Expand legal empowerment and rights-based frameworks:  
Communities must have funded access to legal resources, including domestic tort claims, to pursue corporate liability. Transnational litigation and local case successes (e.g., Ogale/Bille) offer models for accountability (News on Shell trial accountability, 2025).
6. Support ecological restoration and livelihood diversification:  
Restoration programs should include soil bioremediation, mangrove rehabilitation, and support for sustainable livelihoods such as agroforestry and community-based aquaculture.
7. Health and livelihood Recovery: provide safe drinking water infrastructure in all contaminated communities; establish community health centers to monitor hydrocarbon exposure and treat related illnesses and; invest in alternative livelihoods such as aquaculture, green agriculture, and solar energy as to diversify local economies.
8. Furthermore, this collaborative model aligns with the increasing emphasis on corporate social responsibility and sustainability within the oil and gas industry. By engaging with a diverse array of stakeholders, these companies can build trust, enhance their reputation, and demonstrate their dedication to minimizing the impact of oil spills on both local ecosystems and global climate goals.

### **Implementation Roadmap**

Timeline	Priority Actions
Short-Term (1-2 years)	Provide clean water and Mobile health units; Publish public spill database
Medium-Term (3-5 years)	Establish Remediation fund; Complete UNEP Ogoniland Phase II cleanup
Long-Term (5-10 years)	Achieve full ecosystem restoration; Implement regional diversification plan

## References

- Adindu, D. O., Ozowe, W., & Ikevuje, A. H. (2024). Oil spill response strategies: A comparative conceptual study between the USA and Nigeria, *GSC Advanced Research and Reviews*, 20(1), 208–227. <https://doi.org/10.30574/gscarr.2024.20.1.0262>
- Adebangbe, S. A., Dixon, P. D., & Barrett, B. (2025). *Evaluating contaminated land and the environmental impact of oil spills in the Niger Delta region: A remote sensing-based approach*, *Environmental Monitoring and Assessment*, 197(10), 1149. <https://doi.org/10.1007/s10661-025-14584-4>
- Ajayi, O. (2025). The PIA and host communities' development: Spotlight on the Midstream Host Communities Regulations, *OALP Oil and Gas Newsletter*. <https://www.olaniwunajayi.net>
- Anyanwu, I. N., Beggel, S., Sikoki, F. D., Okuku, E. O., & Unyimadu, J.-P. (2023). Pollution of the Niger Delta with total petroleum hydrocarbons, heavy metals and nutrients in relation to seasonal dynamics, *Scientific Reports*, 13, 14079. <https://doi.org/10.1038/s41598-023-40995-9>.
- Beck, U. (1992). *Risk society: Towards a new modernity*, London: Sage Publications.
- Bruederle, A., & Hodler, R. (2019). Effect of oil spills on infant mortality in Nigeria, *Proceedings of the National Academy of Sciences of the United States of America*, 116(12), 5467–5471. <https://doi.org/10.1073/pnas.1818303116>
- Chijioko, A. (2022). *Niger Delta Oil spills bring poverty, low crop yields to farmers*. *Al-jazeera*, Retrieved October 15, 2025, from <https://www.aljazeera.com/features/2022/9/9/niger-delta-oil-spills-bring-poverty-low-crop-yields-to-farmers>
- De-Stefani, V. (2023). *Navigating the Evolving Landscape of Oil Spill Response*, <https://www.osrl.com>
- Ekeu-Wei, B. F., & Ekeu-Wei, I. T. (2024). *Crude oil spillage in the Niger Delta – Causes, Impact and Detection Approaches [Preprint]*. *Preprints*. <https://doi.org/10.20944/preprints202408.0329.v1>
- Ezeh, C. C., Onyema, V. O., Moneke, A. N., & Obi, C. (2023). A systematic review of the impacts of oil spillage on residents of oil-producing communities in Nigeria, *Environmental Science and Pollution Research*. <https://doi.org/10.21203/rs.3.rs-2564019/v1>
- Fenibo, E. O., Nkuna, R. & Matambo, T. S., (2024). Impact of artisanal refining activities on bacterial diversity in a Niger Delta fallow land, *Scientific Reports* 14(1), 3866, 2024.

- Idowu, E. (2024). *Microbial Ecology: Understanding the dynamics of microbial communities and Their Impact on Ecosystems*. <https://doi:10.20944/preprints202412.0527.v1>
- Improving Oil Spill Response in Nigeria (2014). *Comparative analysis of the forms, data and related processes of the joint investigation Visit (JIV) and Suggestions to How These Could be Improved*, <https://www.stakeholderdemocracy.org>
- Kabari, S., Zabbey, N., & Onyena, A. P. (2022). Implementing contaminated land remediation in Nigeria: Insights from the Ogoni remediation project, *Land Use Policy*, 115, 106051. <https://doi.org/10.1016/j.landusepol.2022.106051>
- Living with Extraction. (2023). Environmental injustice, slow observation and the social life of soil, *International Social Science Journal*, 73(249), 83–98. <https://doi.org/10.1111/issj.12480>
- Mohei, H. (2023). Microbial ecology in changing environmental implications for public health ISSN:2161-0703, *Mini Review* 12(5). <https://doi:10.37421/2161-0703.2023.12.422>
- Muhammad, R., Boothman, C., Song, H., Lloyd, J. R., & Van-Dongen, B. E. (2024). Assessing the impacts of oil contamination on microbial communities in a Niger Delta soil, *Science of The Total Environment*, 926, 171813. <https://doi.org/10.1016/j.scitotenv.2024.171813>
- Mulade, S., Clark, E. V. & Ikenga, F. A. (2025). Oil Spillage in the Niger Delta: Government and oil companies remediation activities, *International Journal of Research Publication and Reviews*, 6(5), pp 7436-7442 May 2025. Journal page: [www.ijrpr.com](http://www.ijrpr.com) ISSN 2582-7421
- Myrdal, G. (1957). *Economic theory and underdeveloped regions*, London: Duckworth.
- Nandinboemi, O. A., Uju, M. L., Christopher, C. N., Hakeem, O. O., & David, D. S. (2024). Environmental and health influences of crude oil spills in Niger Delta, Nigeria: Case study of Oporoma community, *Journal of Health and Environmental Research*, 10(2), 29–40. <https://doi.org/10.11648/j.jher.20241002.11>
- Niger Delta, Marginalization and Marginal Oil Fields (2017). *The Guardian*, April 25, <https://guardian.ng>
- Nigerian agency 'failed completely' to clean up oil damage despite funding, leaked files say (2024). *AP News*. <https://apnews.com/article/8c7533ad31d1aad5c0e3933a41891579>

- Nkem, A. C., Devine, S., Ogaji, D. S., & Topp, S. M. (2024). Economic exclusion and the health and wellbeing impacts of the oil industry in the Niger Delta region: A qualitative study of Ogoni experiences, *International Journal for Equity in Health*, 23, 183. <https://doi.org/10.1186/s12939-024-02248-7>
- Nkem, A. C., Devine, S., Ogaji, D. S., Topp, S. M., & Li, W. (2022). The impact of oil industry-related social exclusion on community wellbeing and health in African countries. *Frontiers in Public Health*, 10, 858512. <https://doi.org/10.3389/fpubh.2022.858512>
- Omokaro, G. O. (2024). Oil extraction and the environment in Nigeria's Niger Delta: A political-industrial ecology (PIE) Perspective. *Asian Journal of Advanced Research and Report* 18(11):161-69. <https://doi.org/10.9734/ajarr/2024/v18i11784>.
- Omokaro, G. O., Efeni, O. S., Adeyanju, O. I., Obomejoro, J. & Efe, A. (2025). Oil Spillage in the Niger Delta: Impacts, Institutional Failures, and Policy reforms, *Academia Environmental Sciences and Sustainability*. 2(3). <https://doi.org/10.20935/AcadEnvSci7827>
- Shehu, P. (2023). Impacts of unsustainable oil and gas extraction: Niger Delta experience, *Bokkos Journal of Science Report*, 2(2), 1–2. <https://doi.org/10.47452/bjasrep.v2i2.59>
- Shell must clean up pollution before it leaves Niger Delta, report says (2024). *The Guardian*. <https://www.theguardian.com/environment/2024/feb/28/shell-must-clean-up-pollution-before-it-leaves-niger-delta-report-says>
- Shell faces calls to safely decommission old assets before Nigeria exit.” Reuters. (2024). <https://www.reuters.com/business/energy/shell-faces-calls-safely-decommission-old-assets-before-nigeria-exit-2024-03-06/>
- Tonghan-Ekpemupolo, E. & Gasiokwu, P. I. (2024). The Legal challenges of Combating Oil Spillage in the Niger Delta, *Global Journal of Politics and Legal Research*, 12, (5), pp.52-66. <https://doi.10.37745/gjplr.2013/vol12n55266>
- United Nations. (1992). *Rio declaration on environment and development*, Rio de Janeiro: United Nations.
- Wikipedia Contributors. (2025). *Environmental issues in the Niger Delta*. In Wikipedia, [https://en.wikipedia.org/wiki/Environmental\\_issues\\_in\\_the\\_Niger\\_Delta](https://en.wikipedia.org/wiki/Environmental_issues_in_the_Niger_Delta)