



The Niger delta development commission and Its strategies for addressing environmental challenges to sustainable development in the Niger Delta Region, Nigeria

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Abstract

This paper is an examination of the strategies adopted by the Niger Delta Development Commission (NDDC) in ameliorating the impacts of environmental challenges on sustainable development in the Niger Delta region of Nigeria. In the face of socio-political and economic complexity, the paper evaluated how well the NDDC has addressed environmental deterioration and promoted sustainable development in the Niger Delta. It examined how the commission's goals of mitigating the impacts of oil spills, gas flaring, deforestation, and biodiversity loss on the ecology of the oil producing areas. This paper utilized a qualitative approach and drew data from secondary sources including relevant texts, journal, reports, and periodicals. The paper explained the power dynamics affecting ecological governance in the Niger Delta using the theoretical framework of political ecology. Political ecology looks at the connections between environmental, political, and economic concerns, it stresses how institutions, power relationships, and social structures affect how resources are distributed and how environmental concerns are shaped. In its analysis, the paper showed that although the NDDC had started several projects, such as programs for afforestation, pollution control, and coastline protection, a lack of inter-agency coordination, insufficient stakeholder participation, and financial mismanagement frequently hindered these efforts. The paper concluded that structural changes were required for the NDDC to successfully carry out its mandate. In addition to highlighting the need for alternative livelihood programs to lessen local reliance on oil-related activities. In its recommendations, the paper emphasised the need to enhance inter-agency collaboration, enforcing environmental regulations, ensuring transparency in project execution, and adopting community-based sustainability initiatives.

Keywords: Climate Change, Environmental Degradation, Niger Delta Region, Pollution, Sustainable Development

Introduction

Nigeria's Niger Delta is a biologically diverse area rich in natural resources, such as gas and oil. The Niger Delta is rich in natural resources, but it also faces serious environmental problems that endanger both the region's viability and the way of life for its residents. For many years, the Niger Delta has been plagued by environmental deterioration, pollution, and socioeconomic inequality, which have hampered development attempts and caused conflicts and instability.

The discovery and development of the region's oil and gas reserves is the primary cause of the environmental issues in the Niger Delta. Due to oil spills, gas flaring, and other activities related to the oil industry, the Niger Delta has seen significant environmental degradation since the discovery of oil in the late 1950s. The socioeconomic well-being, livelihoods, and health of the local inhabitants have all suffered greatly as a result of these environmental effects.

Environmental politics, which seriously harm the environment, are one of the biggest issues the Nigerian Niger Delta region faces. Formal investigations of the environment and its effects on the populace, such as pollution, constitute environmental politics. When the environment is unable to properly absorb and neutralise the toxic byproducts of human activity without causing structural or functional impairment to its system, pollution results. Pollution happens when man fails to artificially break down these pollutants, or when the natural environment is unable to break down the elements that are produced. This has detrimental effects on essential environmental services that are necessary for life as we

know it, like the availability of clean water, air, and arable land.

Pollution of the environment is an issue in both developed and developing nations. Urbanisation and population increase are two examples of factors that always put more strain on the environment and require the greatest number of natural resources. Degradation of nature is frequently the outcome of such exploitation of natural resources. The following components make up the human environment: the technological, social, political, economic, and physical. Air, land, and water make up the physical environment; relationships between them make up the social environment; experiences and practices necessary for ongoing adaptation and survival make up the technological environment; and the degree of authority exercised by some over others defines the political environment.

Apart from the natural obstacles, the Niger Delta is confronted with governance problems including resource mismanagement, corruption, and inefficient policies (Okpebenyo *et al*, 2023) [28]. The region's environmental issues have gotten worse as a result of these governance shortcomings, and attempts to accomplish sustainable development have been hampered. To address these issues, the Nigerian government created the Niger Delta Development Commission (NDDC) in 2000, whose goal is to support the region's sustainable development. Through community outreach, infrastructural development, and environmental cleanup programmes, the NDDC was entrusted with meeting the socioeconomic and environmental demands of the Niger Delta. But even with such good intentions, the NDDC has had a difficult time carrying out its mandate. Corruption, political meddling,

inadequate institutional frameworks, and low community engagement have limited the NDDC's impact on the ground by impeding the effectiveness of its operations.

Thus, the purpose of this paper is to evaluate the Niger Delta Development Commission's (NDDC) performance in addressing environmental issues and advancing sustainable development in the Niger Delta area. This study looks at the NDDC's policies, programmes, and procedures to pinpoint the issues that have limited its efficacy and offer suggestions for improving it. By offering insights into the institutional arrangements, policy frameworks, and governance mechanisms that influence the region's environmental results, this thesis adds to the body of knowledge already available on environmental politics and sustainable development in the Niger Delta region. Policymakers, practitioners, and stakeholders may create more effective strategies for promoting environmental sustainability and inclusive development in the Niger Delta and other similar contexts by having a better grasp of the potential and problems facing the NDDC.

Literature Review

The conceptualization of environmental politics has a long history. It dates at least as far back as the era of European colonisation, during which time settlers took over native lands, dug extensive mines, converted healthy ecosystems into agricultural plantations, and brought flora and fauna from all over the world. Some of this was done overtly in the name of "conservation," such as when people were forced to leave their land to make way for parks in eastern Africa or when it was illegal for them to exploit Indonesia's woods (Neumann, 1998) ^[22].

In another sense, modern environmentalism, with its focus on the "environment" as a matter of concern, is the source of environmental politics, which dates back fewer than 40 years. Fears of "global" population expansion, worries about the consequences of industrialization, and pictures of Earth from space all contributed to the rise of this idea in the public consciousness, especially in the United States.

Eckersley (2004) highlighted the necessity for international collaboration and governance systems as well as the global nature of environmental politics and how environmental concerns are interconnected across national boundaries. To handle global environmental concerns, Eckersley claimed that environmental politics includes not just domestic policies but also international agreements like climate treaties and conventions. Environmental politics is a multifaceted field that involves the involvement of companies, international actors, civil society organisations, and state institutions. He placed a strong emphasis on how ideologies, power relationships, and interests shape environmental practices and regulations. Understanding these power dynamics is essential for sustainable development and good governance in the Niger Delta, where environmental degradation caused by oil exploitation has gotten worse.

According to Carter (2001) ^[6], environmental politics is a complex topic that deals with disputes and agreements on sustainability, environmental protection, and natural resources. They contend that a variety of players, from small towns to multinational companies, are included in environmental politics. Each of these actors has different interests and power relationships that affect how environmental decisions are made. For Conney *et al.* (2012),

official and informal processes of environmental decision-making and resource allocation are included in environmental politics. Formal processes include policy development, legislative activities, and enforcement measures carried out by governmental organisations such as the Niger Delta Development Commission. Conversely, informal procedures encompass community-based initiatives, advocacy groups, and grassroots movements that seek to impact environmental policies and make the government and corporate entities responsible for their deeds.

Gordon (2012) ^[11] highlighted how environmental challenges are interconnected across national boundaries, emphasising the global dimension of environmental politics. In the Niger Delta, where multinational firms possessing worldwide reach dominate oil extraction, cooperation and coordination among diverse stakeholders at local, national, and international levels are necessary to tackle environmental concerns. This involves initiatives to support impacted communities, encourage sustainable practices, and control corporate activity. The notion of sustainable development has garnered noteworthy interest in the past several years owing to its significance in tackling environmental, social, and economic predicaments. Numerous academics have added to our understanding of sustainable development by providing their distinct viewpoints and observations.

Sachs (2015) ^[33] described sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs." This concept places special emphasis on sustainability's intergenerational component, emphasising how crucial it is to protect ecosystems and resources for coming generations. For him, achieving sustainable development necessitates striking a balance between social inclusion, economic progress, and environmental preservation.

Building on this notion, the World Commission on Environment and Development (WCED) (1987) contended that social justice, environmental preservation, and economic growth must all be integrated into sustainable development. This point of view highlights the necessity of methods and policies that support environmental preservation while simultaneously addressing social injustices and promoting economic growth. The Brundtland Report, a report by the WCED, is still regarded as a seminal work in the field of sustainable development and has played a significant role in influencing the global discourse on it.

Meadows *et al.* (2004) ^[20] presented a systems approach to sustainable development, considering the environment, society, and economy as interdependent systems that impact one another. They present the idea of "limits to growth," arguing that unbridled economic expansion may result in social inequity and environmental deterioration. Meadows *et al.* push for a change to a more egalitarian and sustainable economic model that values human welfare over material consumption and respects planetary boundaries.

Raworth (2017) ^[31] offered a visual framework called the "doughnut economics" model that clearly and simply explains the idea of sustainable development. The social base and the ecological ceiling are represented by the two concentric rings that make up the model. In the "doughnut" shape created by these circles, according to Raworth, sustainable development takes place when people's basic requirements are satisfied without going overboard in terms

of the environment. She stresses the necessity to strike a balance between planetary limitations and human well-being to provide a fair and safe environment for humanity to flourish.

Adger (2000) ^[2] highlighted resilience's role in accomplishing sustainable development objectives. Resilience is defined by him as "the capacity of social-ecological systems to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change." Adger's viewpoint emphasises how dynamic sustainable development is and how important it is to develop resilience to endure shocks to the environment, society, and economy.

According to Daly (1990) ^[8], sustainable development necessitates understanding and respecting the Earth's natural resource boundaries. He presented the idea of "steady-state economics," which promotes an economy that stays at a fixed size to prevent going over environmental carrying capabilities. Daly argued that to achieve sustainable development, ecological stability must take precedence above unrelenting economic growth. In his analysis of the governance component of sustainable development, he emphasised the significance of strong institutions and inclusive decision-making procedures. Strong governance frameworks that support cooperative management of natural resources and give local populations a voice are necessary for sustainable development.

Theoretical Framework

Political ecology is the theoretical framework that clarifies how environmental politics and sustainable development issues interact in the Niger Delta region. A theoretical framework known as political ecology looks at the connections between environmental, political, and economic concerns. It looks at how institutions, power relationships, and social structures affect how resources are distributed and how environmental concerns are shaped. Joan Martinez-Alier is a well-known political ecology proponent who highlighted the significance of comprehending environmental issues within larger socio-political settings (Martinez-Alier, 2002) ^[19].

Fundamentally, political ecology draws attention to the unequal distribution of environmental costs and benefits, which undermines traditional environmental narratives. It makes the case that political and economic interests frequently drive resource exploitation and environmental deterioration, which results in social inequities and ecological injustices. Political ecology examines these power relations to identify the fundamental causes of environmental change and to promote more just and sustainable methods of resource management.

Within the Niger Delta, where socio-political concerns and environmental degradation coexist, political ecology provides insightful analysis of the obstacles facing sustainable development. Numerous environmental problems affect the Niger Delta, mostly as a result of oil extraction operations. Widespread pollution, deforestation, and biodiversity loss are the results of these operations, which are driven by multinational corporations and made easier by legislative measures. Local communities suffer from negative health effects, job loss, and social disintegration as a result.

The focus of political ecology is on how power shapes environmental outcomes. The allocation of resources and decision-making processes in the Niger Delta are influenced by the power relations among the government, oil firms, and local communities. For example, the political-economic interests of the Nigerian government are reflected in its preference for oil money over environmental protection, frequently at the cost of environmental sustainability and community well-being. Political ecology also emphasises the significance of marginalised people's contestation and resistance. Communities in the Niger Delta have taken to the streets in protest of social inequality and environmental damage, and they have organised at the grassroots level. These movements try to recover sovereignty over their lands and resources while contesting prevailing narratives.

Among the main players in the area, the Niger Delta Development Commission (NDDC) is in charge of solving developmental issues. However, political meddling, poor administration, and corruption limit its efficacy. Analysing how these institutional shortcomings worsen socioeconomic inequality and sustain environmental deterioration is made easier with the aid of political ecology. This study attempts to decipher the intricate relationship between politics, ecology, and sustainable development in the Niger Delta by using a political ecology paradigm. It looks at how community resilience, resource management, and environmental governance are shaped by power dynamics. It also looks at several approaches to sustainable development that emphasized ecological restoration, community involvement, and environmental justice.

NDDC Responses to Environmental Challenges to Sustainable Development in the Niger Delta

Numerous environmental issues that the Niger Delta region faces are directly related to decades of oil exploration and production. One of the most prevalent and harmful of these issues is oil pollution, which has a significant impact on the environment, nearby communities, and the biodiversity of the area. Examining the environmental effects of oil spills and gas flaring is crucial, and this article looks at the Niger Delta Development Commission's (NDDC) efforts to clean up oil spills and the environment.

1. Oil Pollution and Remediation Efforts

Two of the biggest environmental problems facing the Niger Delta are oil spills and gas flaring, which have a disastrous effect on the ecosystems and communities there. Oil spills have contaminated farms, rivers, and mangrove forests; these incidents are frequently the result of equipment malfunctions, pipeline vandalism, or operational carelessness. For example, Shell's Trans-Niger pipeline leaks triggered the 2008 Bodo oil spill, which released more than 500,000 barrels of crude oil and devastated local ecosystems and livelihoods (Amnesty International, 2009). Since farming and fishing are the main sources of income for many families in the area, the contaminated soil and water bodies caused by the spills are unfit for use.

Eni *et al* (2017) highlighted the fact that despite the projects of the NDDC, oil spill incidents and the incessant gas flaring in the area are still going on unabatedly. The Commission has not recorded any success in the area of cessation of gas flaring and oil spillage – the two most difficult problems faced by households in the oil-bearing communities. Empirical evidence from several studies has

confirmed that oil spillage has been largely responsible for the loss of soil fertility in the area. The implication of this is the gradual but persistent fall in crop yield from the farm and the concomitant loss of household incomes.

Burning natural gas for oil extraction, or gas flaring, is another significant environmental problem in the Niger Delta. The Niger Delta is the primary source of gas flares in Nigeria, making it one of the world's most gas-flaming nations. According to Nwilo and Badejo (2005) ^[23], gas flaring contributes to air pollution, climate change, and health issues like cancer and respiratory disorders by releasing dangerous chemicals like carbon dioxide, methane, and sulphur dioxide. Gas flares' heat and light also disturb nearby ecosystems, which has an impact on wildlife and plants. Many fish, birds, and plant species are in danger of going extinct in the area as a result of the combined effects of oil spills and gas flaring, which have resulted in a major loss of biodiversity.

The Ogoni Cleanup Project is a comprehensive environmental remediation project that aims to restore oil-impacted sites in Ogoniland, and the NDDC has contributed to its implementation in accordance with the United Nations Environment Programme's (UNEP) recommendations (UNEP, 2011). Even though the Federal Ministry of Environment's Hydrocarbon Pollution Remediation Project (HYPREP) is largely in charge of overseeing the project, the NDDC has offered logistical and technical assistance to guarantee the cleanup's success.

To lessen reliance on gas flaring, the NDDC is also making a major effort to promote alternate energy sources. The commission has pushed for the implementation of gas-to-power projects, which use flared gas to generate energy instead of releasing it into the atmosphere (Ebeku, 2013) ^[9]. Nigeria's commitment to the Paris Agreement on Climate Change, which calls for a decrease in carbon emissions and the use of cleaner energy sources, is in line with this strategy. However, inadequate infrastructure, lax enforcement of environmental laws, and oil firms' unwillingness to invest in sustainable energy alternatives have all restricted the efficacy of these measures.

Along with cleanup activities, the NDDC has started projects to lessen gas flaring and stop future oil spills. The National Oil Spill Detection and Response Agency (NOSDRA) and the commission have partnered to improve oil spill response systems and guarantee prompt action in impacted communities. The Commission has pushed for oil corporations to follow best practices and harsher enforcement of environmental laws. For example, by mandating that oil companies catch and use related gas, the Nigerian government's Zero Gas Flaring Policy seeks to eradicate gas flaring, and the NDDC has backed its implementation.

2. Deforestation and Biodiversity Conservation

Oil exploration, urbanisation, illicit logging, and agricultural encroachment are some of the causes of deforestation, which is a serious environmental problem in the Niger Delta. Degradation of soil, significant biodiversity loss, and disturbance of the natural hydrological cycle—all of which worsen coastal erosion and flooding—have resulted from the destruction of forest ecosystems (Mafiana *et al*, 2022) ^[18]. Mangrove forests in the Niger Delta, which are among the biggest in Africa, have suffered greatly from industrial operations and uncontrolled deforestation, which has

destroyed habitat for many species and reduced the ecological benefits these forests offer.

The Niger Delta Development Commission (NDDC) has carried out several conservation and afforestation projects to stop deforestation and support biodiversity preservation. The Green Initiative is one of its noteworthy initiatives, which aims to repair degraded landscapes through extensive tree planting and mangrove restoration. To enable locals to take charge of afforestation initiatives and save threatened ecosystems, the commission has also worked with them to create community-based conservation programs (NDDC, 2004). To increase public understanding of the significance of sustainable land-use practices and forest conservation, the NDDC has also implemented environmental education initiatives (Ebeku, 2013) ^[9]. These initiatives are in line with international frameworks like the Convention on Biological Diversity (CBD) and the Sustainable Development Goals (SDGs) of the UN, as well as Nigeria's more comprehensive environmental protection regulations.

3. Waste Management and Pollution Control

Rapid urbanisation, industrial activity, and a lack of proper infrastructure for disposing of trash make waste management and pollution control in the Niger Delta ongoing environmental concerns (Onuoha, 2020) ^[29]. Domestic garbage, industrial effluents, and toxic oil exploration byproducts cause significant pollution in the area, contaminating water sources, lowering air quality, and endangering the health of nearby residents. Open dumpsites proliferate in many urban and rural areas due to inadequate waste disposal systems, worsening soil degradation and aiding in the spread of waterborne illnesses.

The NDDC has launched several waste management and pollution control initiatives to address these issues and enhance the region's environmental quality. The creation of integrated waste management systems, which prioritise recycling, waste segregation, and the construction of sanitary landfills to replace unsustainable open dumping methods, is one of its main tactics. The commission has promoted the use of contemporary waste treatment technologies through public-private partnerships, such as waste-to-energy initiatives that turn organic waste into biofuel, thereby lowering pollution levels and advancing renewable energy sources.

Another top concern on the NDDC's environmental agenda is water cleanliness. Untreated sewage, oil-related pollutants, and industrial discharges cause the region's water to become severely contaminated (UNEP, 2011). To increase access to clean drinking water, especially in areas impacted by oil spills and industrial pollution, the commission has responded by implementing water purification and supply projects (NDDC, 2015). To lessen the negative effects of industrial effluents on rivers and streams, efforts have also been made to establish wastewater treatment facilities in specific urban areas (Ebeku, 2013) ^[9]. Due to the continued existence of oil-related pollution and the insufficient scope of these projects, many communities continue to face limited access to safe drinking water despite these interventions.

NDDC's pollution control efforts have also prioritised improving air quality, particularly in light of the pervasive effects of industrial emissions and gas flaring on the environment and human health. Common oil extraction methods like gas flaring generate dangerous pollutants

including sulphur dioxide, carbon monoxide, and particulate matter, which aggravate respiratory conditions and accelerate climate change (Richard *et al.*, 2022) ^[32]. As a result, NDDC has backed policy discussions and advocacy efforts to encourage the use of cleaner energy technologies and ensure adherence to gas flaring laws. Among the programs are those that encourage oil companies to use technologies that catch and use related gas instead of releasing it into the environment, such as gas re-injection and flare reduction.

4. Climate Change Mitigation and Adaptation

The Niger Delta region faces serious environmental and socioeconomic problems as a result of climate change, which exacerbates pre-existing vulnerabilities like flooding, coastline erosion, and harsh weather. Because of its low-lying coastal landscape, the area is especially vulnerable to storm surges and rising sea levels, endangering infrastructure, agricultural lands, and human settlements. According to Ikehi *et al.* (2014) ^[15], unpredictable rainfall patterns have also upset conventional farming cycles, lowered agricultural production and raised food insecurity. Widespread deforestation, oil drilling, and gas flaring all contribute to greenhouse gas emissions and ecological degradation, which exacerbates these climate-induced changes.

Recognising climate change as a serious concern, the Niger Delta Development Commission (NDDC) has taken several steps to improve adaptation techniques and lessen its effects. The creation of programs aimed at increasing knowledge, strengthening institutional capacity, and encouraging sustainable land-use practices is one of the main interventions for climate resilience. To help communities get ready for extreme weather occurrences, the commission has collaborated with academic institutions and environmental groups to identify climate vulnerability and create early warning systems.

In order to lower greenhouse gas emissions, NDDC has also pushed for stronger enforcement of gas flaring laws and cleaner energy alternatives (Uchebulam *et al.*, 2022) ^[34]. Because flare reduction methods like gas re-injection and liquefied natural gas (LNG) conversion can drastically reduce carbon emissions, efforts have been undertaken to persuade oil corporations to implement them. The commission has also backed reforestation and afforestation initiatives to improve carbon sequestration and repair damaged ecosystems (Ebeku, 2013) ^[9].

Notwithstanding these efforts, NDDC still faces several obstacles in its efforts to mitigate and adapt to climate change. Climate change projects have been less successful due to a lack of finance, lax enforcement of environmental laws, and a lack of coordinated policy implementation (Onuoha, 2020) ^[29]. Additionally, local populations' adoption of climate-resilient practices has been slowed by a lack of public awareness and insufficient community engagement. A more multi-stakeholder and integrated approach is needed to address these problems, one that includes closer cooperation with state and federal agencies, the private sector, and civil society organisations.

In the Niger Delta, flooding and coastal erosion are two of the most urgent environmental hazards that cause infrastructure devastation, livelihood loss, and displacement. Rising sea levels, inadequate drainage systems, and heavy rainfall have made recurrent flooding worse, especially in

urban areas like Port Harcourt, Yenagoa, and Warri (Amangabara & Obenade, 2015) ^[4]. Land subsidence has also been a result of oil and gas extraction, making communities even more susceptible to flooding. To stabilise the coastline, lessen the effects of tidal surges, and prevent further deterioration of vital infrastructure, NDDC has undertaken shoreline protection programs, employing sand-filling and mangrove restoration techniques to combat coastal erosion, as well as flood control and erosion management projects, which include the construction of embankments, levees, and drainage systems in flood-prone areas (Zabbey *et al.*, 2019) ^[38].

Nevertheless, there has been inconsistent success with these therapies. While some initiatives have offered short-term respite, corruption, poor upkeep, and subpar building techniques have ruined many. Furthermore, current flood and erosion control infrastructure is under more stress as a result of the frequency and severity of extreme weather events rising as a result of climate change (Ighedosa, 2019) ^[14]. Prioritising long-term planning, incorporating nature-based solutions like wetland restoration, and enhancing stakeholder engagement in the planning and execution of climate adaptation initiatives are all necessary for NDDC to increase resilience.

5. Infrastructure Development for Environmental Sustainability

A major element of the Niger Delta Development Commission's (NDDC) plan to advance environmental sustainability and raise living standards in the Niger Delta is infrastructure development. In addition to prioritising ecological restoration to combat environmental deterioration, the Commission has carried out several initiatives targeted at improving physical infrastructure, such as roads and drainage systems. With the use of credible examples and outside sources, this section evaluates the NDDC's infrastructure development projects, paying particular attention to their planning, execution, and effects on environmental sustainability.

To increase connectivity and support economic activity in the Niger Delta, the NDDC has carried out several road construction and restoration projects. To lessen the effects of flooding, a significant environmental issue in the area, these projects frequently incorporate drainage systems. For instance, in states like Rivers, Bayelsa, and Delta, the Commission has built and renovated rural and urban roadways, adding drainage channels to control stormwater and lower the risk of flooding. The building of the 3.65-kilometer Okrika-Borokiri Road and three bridges in 2012 to link the Port Harcourt metropolis with Kolabi, Abatoru, Okpoka, and other coastal communities is one noteworthy project. By reducing traffic and facilitating access between Okrika and Port Harcourt, the project may benefit locals and boost business in the area. The project was, however, shelved for several years due to major delays. According to recent reports, the NDDC has made the project a priority under its current administration and has pledged to resume and finish it (Okonkwo, 2025) ^[27].

Ibunge (2024) ^[13] reported that the NDDC has built and restored 42 bridges, thousands of hydraulic structures, 87 jetties, and 5141.3 km of roads through woods and wetlands throughout the area. Dr. Samuel Ogbuku, the NDDC's managing director, expressed the organization's dedication to seeing all ongoing projects in the Niger Delta region

completed and put into service. According to him, the significant projects in Abia, Edo, Ondo, Bayelsa, Rivers, and Akwa Ibom were evidence of the renewed zeal with which the NDDC was carrying out its duty. The 600-meter Ibeno Bridge, the 6.87-kilometer Iko-Atabrikang-Opolom-IwuoAchang Road, the 9-kilometer Obehie-Oke-Ikpe Road in Ukwa West LGA of Abia, and the 25.7-kilometer Ogbia-Nembe Road in Bayelsa, which we completed in collaboration with Shell Petroleum Development Company (SPDC), he explained. The Port Harcourt-Owerri Road, the Atani/Amuvi Road in Arochuku, Abia, Uquo-Akpautong-Odoronkit-Ntak-Inyang-Etebi, Ugilaimai-Ogume, Abbi, Onicha-Ugbo, Udumuje-Ugboko-Ewohimi Bridge and Roads in Delta, and Ididep Ekpenyong Ikot Etim Afaha Itiat were among the other roads that were restored and opened (Ibunge, 2024) ^[13].

However, research by Akukwe (2014) indicated that poorly maintained drainage systems in the Niger Delta frequently become clogged with debris, limiting their efficacy over time. This highlights the importance of community involvement and appropriate maintenance for the longevity of such projects. As part of its infrastructure development strategy, the NDDC has also given ecological restoration top priority. The Commission has undertaken programs to restore damaged environments, including mangrove forests, wetlands, and riverbanks, in recognition of the vital role ecosystems play in preserving natural balance and sustaining livelihoods. The Niger Delta Mangrove Restoration Project, which aims to restore mangrove ecosystems harmed by logging, urbanisation, and oil spills, is one noteworthy project. Planting mangrove saplings, eliminating invasive species, and involving local populations in conservation initiatives are all part of this project. For example, the area has documented substantial restoration initiatives. Notably, in Ogoniland, Niger Delta, the NDDC and the Centre for Environment and Human Rights Development have restored around 3,500 hectares of mangroves (HRD, 2024)

Furthermore, a joint project between Serendib Capital, Eight Versa, and the Foundation for Partnership Initiatives in the Niger Delta (PIND) intends to replant 20,000 hectares of mangroves and stop the deforestation of 250,000 hectares, making it the second-largest mangrove restoration project in the world. These initiatives demonstrate the Niger Delta region's continued dedication to mangrove restoration. Carbon sequestration, coastal protection, and biodiversity conservation are just a few of the many environmental advantages of mangrove regeneration. According to Akankali and Jamabo (2012) ^[3], fisheries resources are negatively impacted by coastal erosion and floods, which results in habitat loss and decreased fish availability. The livelihoods of the local fishing people are in jeopardy due to these environmental changes.

Additionally, IUCN (2020) reported that sustainable inland fisheries can support ecosystem health, poverty reduction, and food security. The inclusion of inland fisheries services in development initiatives promotes the advancement of many SDGs. Additionally, a 2013 GIS study examined the potential of oil-exposed mangroves to recover in two contaminated Niger Delta locations. According to the study, oil caused a decrease in vegetation area and health; however, after remediation, health largely recovered when compared to unremediated sites.

Therefore, fish populations have increased and local fisheries have been supported thanks to the restoration of mangrove forests in the Bodo Creek area, which was severely damaged by oil spills. These projects coincide with global best practices in ecological restoration, as noted by the International Union for Conservation of Nature (IUCN), which underlines the importance of mangrove restoration for coastal protection and biodiversity conservation. However, consistent funding and community participation are necessary for these programs to succeed. The continued presence of hydrocarbon pollution in the soil and water, a lack of money, and a lack of technical know-how frequently impede the long-term effectiveness of mangrove restoration in the Niger Delta. It takes a more integrated strategy that incorporates ecological restoration, larger development plans, and community involvement to address these issues. Environmental activists and community-based organisations' perspectives provide a more complex understanding of the NDDC's environmental governance initiatives: The government's intentions to begin oil drilling in Ogoniland without holding thorough consultations with the local population have drawn criticism from Nigerian environmental organisations. Such plans have drawn criticism from more than 20 organisations, including Environmental Rights Action/Friends of the Earth Nigeria and the Health of Mother Earth Foundation, for failing to acknowledge the social and environmental harm that the Ogoni people have experienced. In addition to the full execution of the United Nations cleanup recommendations, they have demanded a cleanup and reparation fund (Owolabi, 2025) ^[30].

Local authorities have drawn attention to the serious environmental damage brought on by the oil extraction operations, including King Godwin Bebe Okpabi of the Ogale community. Although there was some initial progress following the discovery of oil in Ogale, operations by multinational oil firms soon caused serious environmental impacts. Community leaders have expressed serious concerns about the total upheaval of the local environment and way of life (Adeoye & Wilson, 2024) ^[11].

6. Community-Based Sustainable Development Initiatives

The Niger Delta Development Commission (NDDC) has made community-based sustainable development projects a key component of its strategy for tackling environmental issues and encouraging equitable development in the Niger Delta. Understanding the value of local involvement in development processes, the NDDC has put in place several initiatives to involve communities in resource management, environmental governance, and sustainable livelihoods. To guarantee alignment with regional goals and promote sustainable development, these programs place a strong emphasis on the active participation of local communities in project planning, execution, and monitoring.

Adopting a participatory approach to development, the NDDC places a strong emphasis on local people's involvement in project planning, execution, and monitoring. The foundation of this strategy is the conviction that communities must be actively involved and given the authority to take charge of development projects for sustainable development to be accomplished. Ogaboh *et al* (2021) stated that the Community Development Committees (CDCs) initiative is one of the Commission's hallmark

projects in this area. It creates local committees to reflect community concerns and work with the NDDC on project implementation. These groups are essential in determining project priorities, determining community needs, and making sure development projects are in line with regional priorities.

For instance, the NDDC worked with the CDCs to carry out a community-driven water supply project in Imo State's Ohaji/Egbema and Oguta. As part of the project, community members designed and oversaw the building of water purification facilities and boreholes. This strategy encouraged a sense of accountability and ownership among community members in addition to guaranteeing the project's survival.

The NDDC has carried out initiatives to support sustainable livelihoods and economic empowerment in local communities in addition to infrastructural projects. These initiatives concentrate on giving communities the knowledge, tools, and assistance they need to participate in economically viable, ecologically friendly endeavours. To increase food security in the nation, for example, the International Fund for Agricultural Development (IFAD) and the Niger Delta Development Commission (NDDC) have started the Livelihood Improvement Family Enterprises, LIFE-ND Project for Akwa Ibom, Imo, and Rivers States (John, 2024) ^[16].

Conclusion

There challenges faced by the Niger Delta Development Commission (NDDC) in implementing its environmental and sustainable development programs. These challenges border on governance issues, community perspectives, and policy and institutional weaknesses. It is thus important to provide a comprehensive analysis of the factors that have limited the effectiveness of the NDDC's initiatives.

1. Governance Challenges

Significant governance issues have hindered the Niger Delta Development Commission's (NDDC) capacity to accomplish its goals of advancing community development and environmental sustainability in the Niger Delta. These issues, which include political meddling, poor management, and corruption, have made it more difficult to carry out projects successfully and damaged public confidence in the Commission. These governance concerns show how they affect the NDDC's activities.

2. Corruption and Mismanagement

Since there have been multiple claims of embezzlement, a lack of transparency, and financial mismanagement, corruption has been a recurring problem inside the NDDC. One such instance is the 2020 COVID-19 relief efforts' N6.25 billion theft (Elumoye, 2021) ^[10]. Allegedly, the money that was intended to give medical supplies and palliative care to Niger Delta communities was misappropriated for private use. According to a forensic assessment, certain payments were made to phoney businesses, and contracts were awarded without following the proper procedures (Babatunde, 2020) ^[5].

The East-West Road project, a 657-kilometre dual road meant to link important oil-producing states in Nigeria's Niger Delta, is another example. Since its commencement in 2006, the project has been beset by serious delays and financial mismanagement. Due to several issues, such as poor design and poor administration, the project's initial

estimated cost of ₦211 billion increased to ₦726 billion. According to estimates, mismanagement and inefficiencies were to blame for the cost overruns and delays, which increased to an estimated ₦1 trillion in 2021. In June 2020, the Niger Delta Development Commission (NDDC) accused Senator Peter Nwaoboshi of using 11 companies as fronts to secure ₦3.6 billion in contracts from the commission in September 2016. NDDC spokesperson Charles Odili described this as the "biggest single case of looting of the Commission's resources" (Ukpong, 2020).

According to a 2016 audit by the Office of the Auditor-General of the Federation (OAGF), the Niger Delta Development Commission (NDDC) has serious financial irregularities. According to the audit, some 1,733 contractors received N70 billion in mobilisation payments without ever starting their projects. A forensic investigation of the NDDC also revealed 13,777 abandoned projects and many unreconciled bank accounts, underscoring the commission's widespread financial mismanagement (Ojo, 2021) ^[26].

As Okinono *et al* (2016) put it, the NDDC has 'failed to leave (sic) up to expectation of the people due to several factors' High-level corruption in the NDDC is a key factor to blame for poor performance and failure of the agency. They further stated that NDDC failed due 'partly to... corruption, misappropriation, and mismanagement of available fund by the rapacious ruling cabal'. Within the organization, corruption manifests in different forms, including the award of bogus contracts.

According to the Ministry of Finance and the Budget Office, the Niger Delta Development Commission (NDDC) received N832.93 billion between 2001 and 2020; nonetheless, the nine Niger Delta states have a history of project failures and abandonment. Key infrastructure projects, such as building roads, supplying water and electricity, building schools and hospitals, dredging rivers and building bridges, were either inadequately carried out, abandoned completely or left unfinished after the foundation was set, according to investigations conducted by Johnson *et al.* (2020) ^[17]. In many cases, even after receiving full or partial payment, contractors did not mobilise to the project sites.

In states like Rivers, Abia, Bayelsa, Edo, and Ondo, where abandoned projects have exacerbated infrastructure degradation, erosion, and floods, the effects of these failures are most evident. The NDDC headquarters in Rivers, which was started more than 20 years ago, is still unfinished, and many housing and road projects have either been abandoned or are of poor quality. Similar patterns may be seen in Bayelsa, where neglect and contract duplication have left vital infrastructure like the Amassoma shore protection project and the Biseni Water Scheme in Imbo, and Abia, where abandoned projects have made gully erosion worse (Johnson *et al.*, 2020) ^[17].

Poor planning, incomplete road networks, and abandoned projects have been hallmarks of NDDC's initiatives in Edo and Ondo states, where the situation is no different. Former

3. Political Interference

A significant obstacle for the NDDC has also been political meddling, as political agendas frequently affect project prioritisation and resource distribution. The unequal allocation of projects, when certain communities are given disproportionate attention while others are ignored, is one

example. The NDDC's project allocations have raised issues, according to a NEITI assessment. The commission, for example, purportedly collected ₦755.96 billion between 2017 and 2019, while spending ₦882.3 billion during that time. However, some have questioned how these investments affect fair development in different communities. Disparities in the distribution of resources resulted from the frequent allocation of projects based on political factors rather than developmental needs (Ukpe, 2022) ^[35].

The frequent leadership changes, which are motivated more by politics than by merit, are another example. Based on their political connections, the NDDC has four different Managing Directors from 2019 to 2020. This volatility made it difficult for the Commission to continue its programs and interfered with its functioning (PLAC, 2020). Furthermore, contracts awarded to politically connected people or businesses are frequently the result of political meddling. According to a 2020 Nigerian Senate probe, firms connected to political elites received more than 60% of NDDC contracts, many of which lacked the necessary skills to complete the projects. For instance, the commission charged Senator Peter Nwaoboshi in 2020 with using 11 businesses as fronts to obtain contracts worth ₦3.6 billion in 2016 (Ukpong, 2020).

Additionally, the former Minister of Niger Delta Affairs, Godswill Akpabio, alleged that numerous lawmakers were beneficiaries of NDDC contracts, highlighting the deep political entanglement in the commission's operations (Gsong, 2020) ^[12]. These examples illustrate how political interference has compromised the NDDC's ability to function effectively and impartially. The capital dearth of the Nigerian political class and its quest to use access to State institutions to remedy this dearth has played a crucial role in subverting state development interventions in the region. What has emerged from state efforts at developing the oil rich region is a long chain of patron-client relationship; this chain stretches from the Federal Government, through the states, to Local and Community levels. This relationship allows mostly those who have direct access to state power and those sufficiently close to them to benefit from the funds allocated to the agencies of development through corrupt practices.

The process of appointment of NDDC Governing Board members lays foundation for political interference. Most of the Board members are appointed by the President as a reward for political loyalty or as a political patronage. In this situation, the appointees strive to feather their nests, while paying scant respect to the statutory mandate of the agency. Moreover, powerful politicians pressurize NDDC Governing Board to award contracts to incompetent contractors.

Closely associated with political interference is faulty composition of the NDDC Governing Board. Specifically, the so-called state representatives in the Board are in reality representatives of the FGN or other political interests and not the people. It is common knowledge that the NDDC is like automatic teller machine (ATM), used by politicians to further their political interests and those of their masters. This point was restated recently by the Minister of Niger Delta Affairs (Ukpong, 2019) ^[36]. Importantly, this may be regarded as an inherent problem of the agency which configured it for failure. According to Former Governor Wike of Rivers State, 'NDDC has collapsed. NDDC has

become a cash cow for politicians... the immediate past Board of the NDDC expended N10 billion during the 2019 election to stop [me] from getting a second term, but they failed' (Ofiebor, 2019) ^[24].

To overcome or at least reduce the internal challenges to the effectiveness of NDDC's strategies for addressing environmental problems in the Niger Delta, this paper recommended:

1. Strengthening Institutional Governance and Transparency

Institutional inefficiencies brought on by financial mismanagement, corruption, and a lack of transparency are a significant problem for the NDDC. To keep an eye on project execution, financial accountability, and budgetary allocations, the NDDC ought to set up an impartial monitoring organisation. Public disclosure of spending and more transparent reporting procedures would aid in re-establishing credibility. Additionally, regular external audits and community-led monitoring frameworks should be enforced to minimize resource mismanagement.

2. Enhancing Stakeholder Engagement and Community Participation

Poor community engagement is one of the reasons why several NDDC programs have failed. Incorporating participatory governance and local knowledge produces more lasting and efficient results. To ensure that local communities are involved in the selection, design, and implementation of projects, the NDDC should set up community consultation committees at the state and local government levels. The NDDC can make sure that its initiatives are in line with the goals and requirements of the communities it serves by taking a bottom-up approach.

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