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Perception and Practice of Individual Environmental Responsibility in Selected Niger Delta Communities

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Abstract: It is a trend in the oil producing communities of the Niger Delta to lay the blame for environmental degradation at the doorsteps of multinational companies and government departments. But in reality , people and households also play an important role in causing environmental degradation through through environmentally detrimental practices and the absence of basic ecological morality. The onus of this paper is exploring how residents in selected Niger Delta communities perceive their role toward the environment. This paper examines the degree of environmental quality encroachment around households by means in-situ water and air quality analysis. In addition to this analysis, this study also administered questionnaires to pinpoint perceptions, habits and opinions relating to environmental degradation. The questionnaire administration and environmental sampling for this study were conducted from July 2024 to January 2025. Findings from the study indicate that although there is general awareness of environmental degradation amongst Niger Delta residents , there is little concomitant commitment to environmentally conscious behavior. The field studies indicated that water testing parameters showed elevated levels of electrical conductivity, total dissolved solids, and salinity at Kula, Agudama, and Oluama, while in some households in Kokori and Elume lower than expected water pH levels were detected. The measurement of air quality also revealed greater levels of suspended particulate matter and volatile organic compounds in ambient air in Kokori and Elume localities. As an outcome of its findings, this study calls for better grassroots-level environmental education and assimilation of Africa's ecological ethics in an attempt to induce a shift from passive awareness to proactive environmental responsibility.

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I. INTRODUCTION

The Niger Delta is a paradox . This paradox is depicted by oil wealth in one shade and ecological stress in the other shade. The oil resources of the region are massive, its biodiversity is rich but its ecosystem functions have been stressed for decades. The protracted ecological stress of the Niger Delta region has caused not just decline but decay. For decades, researchers and activists have documented the environmental consequences of crude oil exploration and production in this region, focusing primarily on large-scale corporate irresponsibility, oil spills, gas flaring, habitat destruction, and the perceived complicity or negligence of governmental regulatory agencies (Okonta & Douglas, 2003; Nriagu et al.,2016; UNEP, 2011). These interdisciplinary studies have been key in directing attention to the plight of communities living amidst polluted water bodies, degraded farmlands, and toxic air. This work lends its voice to useful prior work on environmental degradation in the Niger Delta. Specifically, it focuses on the role the individual in environmental degradation and the challenge this poses. Individual habits and practices like bush burning, indiscriminate refuse dumping, open defecation, overreliance on firewood and kerosene, oil bunkering and lack of engagement in sustainable practices contribute incrementally but critically to the decline of the environment (Aroh et al.,2010; Olorundare & Kayode, 2014). When these environmentally sensitive acts are multiplied across hundreds and thousands of households, these acts become ecologically consequential. The acts are consequential to the extent that they affect adversely air, water, soil, flora, fauna and public health. However in environmental policy conversations and academic research these individual acts have sometimes been overlooked or excused. This study is an effort to show that environmental sustainability in the Niger Delta must be addressed not only from the top down, but from the bottom up. The top-down focus is on issues like laws, enforcement, and corporate reform, the bottom–up focus will dwell on the role and significance of the individual in environmental issues. This is particularly important in oil-producing communities where the concentration of extractive activity aggravates environmental stress and where people may feel disempowered or resigned to environmental decline.

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In addition to studying the practical and scientific dimensions of pollution, there emanates a philosophical and ethical question that must be addressed: What moral responsibility does the individual bear toward the environment, particularly in African contexts where communal living and spiritual cosmologies shape worldviews? Omorovie Ikeke (2013) posits that African ecological thought does not see the human being as detached from nature but as an integral part of a living cum interdependent system. The individual in an environment is thus not a passive observer but a moral agent whose actions and choices can either harm or heal the earth. African indigenous ethics, especially within the framework of Ubuntu, speak of relationality, care, and responsibility toward fellow humans and also toward the land, rivers, the flora, and fauna that sustain life (Iroegbu, 1995; Ramose, 2002).

This research is ethical, cultural, and ecological in nature. This work seeks to answer two basic and general questions: How do individuals in oil-impacted communities of the Niger Delta perceive their personal responsibility for environmental care? Secondly, what are the actual environmental conditions within these communities that may reflect or contradict those perceptions? These questions directly address the preceding philosophical and ethical question regarding the moral responsibility of the individual towards the environment in African contexts. In the bid to address these questions, this study responds to calls by environmental ethicists such as Leopold (1949) and Taylor (1986), who argue that a sustainable ecological future depends on the cultivation of a land ethic, which is a moral transformation by which people come to see themselves as “plain members and citizens” of the natural world. Adapting this to the African context of the Niger Delta, this transformation must be grounded in indigenous moral frameworks and community-centered values, not on imported ideologies or state-imposed rules alone.

➢ *Research Objectives*

This specific objectives of this study are to :

- Assess how individuals in selected oil-producing communities perceive their role and responsibilities in respect of their environment.
- Evaluate the quality of domestic/potable water and ambient air in selected households using scientific field measurements; and
- Recommend practical and ethical strategies for enhance personal and communal environmental responsibility. These objectives are inspired and informed by the understanding that the sustainability of any ecosystem depends not only on macro-level regulations but also on micro-level behavioral changes (Taylor, 1986; Ikeke, 2012).

II. LITERATURE REVIEW

Before now, research on environmental degradation in the Niger Delta focused mainly on the large-scale impacts of corporate activities and have often implicated multinational corporations and governmental regulatory systems (Okonta & Douglas, 2003; Nriagu et al.,2016; UNEP, 2011). These studies have highlighted things like the ecological consequences and public health risks faced by communities in the region. Nriagu et al, for instance, have extensively documented the health risks associated with oil pollution in the Niger Delta. They have also highlighted the widespread contamination of water sources. And related to this, the UNEP (2011) assessment of Ogoniland is a study that provided a comprehensive overview of the environmental damage caused by petroleum exploration and production.

While many publications have highlighted the significant role of industrial activities, some few scholars have also studied the incremental contribution of individual behaviors to environmental degradation. Aroh et al , for instance, discussed the environmental risk assessment of industrial gas flaring but mentions the contribution of community practices to the aggravation of flaring impact,. Olorundare and Kayode (2014) specifically addressed the low internalization of ecological duty in many rural African settings. They suggested that awareness of environmental problems have not been translated into personal responsibility. This "perception-practice gap" has also been identified by Moser and Ekstrom (2010) in broader discussions of climate change adaptation, where cognitive and ethical dimensions play a crucial role alongside technical and political challenges.

In the context of philosophical studies, the concept of environmental responsibility has been treated by thinkers such as Aldo Leopold (1949), who advocated for a "land ethic" extending moral concern to all components of the natural world. Paul Taylor (1986). Aldo Leopold advocated for “ a land ethic” which links the human person morally to all components of the natural world. Paul Taylor for his part developed the theory of biocentrism which emphasizes the intrinsic value of all living things alongside an imperative for humans to morally regard every living entity. In the African context, scholars like Omorovie Ikeke (2013) and Pantaleon Iroegbu (1995) argue that traditional African thought inherently links human beings to nature within an interdependent system, where environmental responsibility is relational and communal. Ikeke (2012) specifically posits that ecological stewardship is not alien to African communities but rather a suppressed tradition. These ethical frameworks suggest that a sustainable ecological future in the Niger Delta requires not only top-down regulatory approaches but also a bottom-up reawakening of individual and communal moral responsibility rooted in indigenous values.

➢ *Research Design and Study Area*

This research study used a mixed-methods field study design. It combined qualitative and quantitative methods in order to achieve a comprehensive understanding of environmental responsibility and profile the status and conditions in selected oil-producing communities in the Niger Delta. This approach was deliberately chosen in taking into cognizance the intricacy of the subject matter,

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where social perceptions and cultural values intersect with measurable ecological impacts. The mixed methods approach of the study is in line with the informed view of Creswell (2014) who argues that the use of multiple methods allows for richer data triangulation and a more nuanced analysis of human behavior in relation to the environment.

➢ *Study Area Description*

The fieldwork was carried out in five communities in the Niger Delta states of Delta and Rivers. The fieldwork took place between July 2024 and January 2025. These dates were chosen firstly to allow for a comprehensive six-month data collection perio so as to ensure a robust dataset that captures potential seasonal variations in environmental parameters and allows for in-depth engagement with community members. The communities were Kokori in Ethiope East Local Government Area of Delta State, and Elume in Sapele Local Government Area of Delta State. In Rivers State the study took place at Kula, Agudama, and Oluama in Akuku-Toru Local Government Area. These communities were chosen selected due to their proximity to oil extraction infrastructure and operations. In fact these chosen communities are host communities to different oil companies. The selection of communities from only two states, Delta and Rivers, was informed by these considerations. Each of the communities is close to significant concentration of oil extraction activities and each has established history of environmental degradation. This makes the communities genuine case studies within the broader Niger Delta region. These communities are also varied communities in terms of geography, population and livelihood patterns. Each community also presents unique exposure to oil related environmental degradation.

➢ *Sampling Strategy*

In the field study, a purposive sampling technique was used in selecting households for sampling participation. Respondents were chosen based on their long-term residence in the community (at least five years), age (18 years and above), and a willingness to provide reliable information. Actual respondents were mostly male (78%) and female (22%), who were traders, business people, farmers, fisher folks, artisans, civil servants, teachers, clergy men, company workers and professionals. This non-probabilistic method was considered appropriate due to the nature of the study which requires depth in collecting perceptual data on environmental practices. In each of the five communities sampled, household surveys were conducted with a population of 30 to 40 respondents using semi-structured questionnaires. The survey captured self-reported environmental behaviors, perceptions of responsibility, knowledge of ecological risks, and attitudes toward environmental pollution.

III. MATERIALS AND METHODS

To give the study depth and scientific underpining , scientific field measurements were conducted in selected households for the purpose of complementing the perceptual data from the questionnaires. The scientific measurement was used to assess the quality of domestic/potable water and ambient air. These various measurements served as empirical data of the environmental conditions of residents. The scientific measurements were also planned as a tool to corroborate or challenge the subjective responses collected from the surveys. The equipments used were properly calibrated and deployed professionally to obtain reliable data.

➢ *Water Quality Measurement:*

In each community, water samples were tested in-situ in five randomly selected households using a Hanna HI98194 Multi-parameter digital probe. The following physical and chemical parameters were measured:

- **pH**: This parameter was measured using the Hanna HI98194's pH probe to indicate acidity or alkalinity level of tested water.
- **Electrical Conductivity (EC)**: This parameter was measured using the Hanna HI98194's probe to show ionic content and implied salinity and pollution levels.
- **Total Dissolved Solids (TDS)**: This parameter was measured using the Hanna HI98194. TDS represents inorganic and organic substances dissolved in water.
- **Temperature**: This water parameter was measured using the Hanna HI98194's probe, a critical parameter that can affect overall water chemistry.
- **Salinity**: This parameter was also measured usin the Hanna HI98194 to ascertain saline or brackish intrusion.

The parameters selected and sampled are standard in environmental studies and in domestic water quality assessments. These standard parameters are used globally to detect contamination and usability (WHO, 2017). They are also stipulated as standard Environmental Impact Assessment tests by the Nigerian federal Ministry of Environment.

➢ *Air Quality Measurement:*

Air quality was monitored around five households in each community using a calibrated Aeroqual Series 500 Portable Air Quality Monitor, equipped with interchangeable sensor heads for specific gases, and a handheld particulate matter counter. The parameters measured include:

- **Ambient Temperature** and **Relative Humidity**: Measured directly by the Aeroqual Series 500's built-in sensors.
- **Suspended Particulate Matter (SPM)**: Measured using a handheld particulate matter counter.
- **Volatile Organic Compounds (VOCs)**: Measured using the VOC sensor head on the Aeroqual Series 500.
- **Carbon Monoxide (CO), Carbon Dioxide (CO_2), Sulphur Oxides (SO_x), Nitrogen Oxides (NO_x), Methane (CH_4), Hydrogen Sulfide (H_2S), and Ammonia (NH_3)**: Measured using specific sensor heads on the Aeroqual Series 500.
- **Noise levels**: Measured using a digital sound level meter.

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These are standard parameters used in environmental studies. The parameters have relevance to oil-producing environments, where gas flaring, vehicle emissions, domestic combustion, and industrial leakage are common sources of air pollution. Exposure to these pollutant parameters can cause health issues relating to respiratory and cardiovascular health. The pollutant parameter when present in an ambience can also lead ecological damage (Nriagu et al.2016; UNEP, 2011).

➢ *Ethical Considerations*

Community leaders approved the field sampling in each of the study communities. All participants in the survey were duly informed and their consent obtained. In keeping with communal values, the research did involve community leaders and elders.

IV. FINDINGS

This section presents the findings from the fieldwork conducted in the five oil-producing communities of Kokori, Elume, Kula, Agudama, and Oluama. The research study used both data from household questionnaires coupled with objective environmental data from in-situ scientific measurements. Put side by side these complementary data do offer a wide understanding of how personal behaviours, philosophical notions of responsibility, and ecological realities converge in everyday life in the study communities.

➢ *Questionnaire Findings*

Respondents generally acknowledged that they have seen or experienced environmental problems such as oil spills, gas flares, deforestation flooding. Nevertheless, only 41% of respondents showed admission that environmental care is a personal responsibility. The majority believed that environmental responsibility lay solely with the government or oil companies. This echoes the conclusions of Olorundare and Kayode (2014) concerning low internalization of ecological duty in many rural African settings. From this study, these common environmental practices were identified:

- About 75% of households do rely on firewood and kerosene for cooking. This contributes to indoor air pollution and deforestation.
- A vast majority of respondents (98%) reported that they had seen significant bush burning and about 34% claimed that they have been engaged in farmland and bush burning.
- A total of 61% of the respondents disposed of their waste in the open or in bushes, or nearby water bodies. This improper defecation habits increase risk of contamination.
- About 35% reported open defecation due to the lack of functional toilet facilities. These practices can be influenced by factors like poverty, infrastructural neglect, and limited environmental education. However, there was an above average expression of willingness to change behaviors if better infrastructure (e.g., clean cooking options, toilets, and waste systems) is provided. This finding references Ikeke's (2013) assertion that environmental responsibility in African communities is not just a technical issue but a moral question rooted in cultural and relational ethics.

➢ ***Water Quality Results*** *Key Findings:*

- In Kula, Agudama, and Oluama, EC and TDS values were significantly high from samples taken from compound wells and household reservoirs. This elevated levels suggests high ionic content and possible saline intrusion. The sampled communities of Kula, Agudama and Oluama are located near the mouth of the Atlantic Ocean. The range of EC was between 1,500 – 2,300 µS/cm while TDS was between 1,200 – 2,100 mg/L. These values exceed WHO's acceptable limits which state that values of potable water should not exceed 1000 mg/L.
- In the communities of Kokori and Elume, it was noticed that the domestic water was acidic with pH levels between 5.2 and 5.8, below the WHO standard of 6.5–8.5. This acidity could be attributed to different reasons.
- Salinity levels in Kula and Agudama were 0.8 – 1.2 ppt, which is above the ideal limit for potable water. Persistent use of such water poses risks including hypertension and gastrointestinal disorders (Adekunle, 2009). These results relate in a way to earlier research by Nriagu et al (2016) showing that water in oil-producing communities is frequently contaminated because of reasons like industrial processes, saline contamination and necessary infrastructure to provide potable water.

➢ *Air Quality Results:*

- The parameter of Suspended Particulate Matter (SPM) was noticed to be high in Elume and Kokori. And this reflects indoor and outdoor combustion from cooking fuels or machines.
- The parameters of SO_x and NO_x, (H_2S), (NH_3), which are poisonous gases were not found anywhere in significant trace.
- CO and VOCs were prevalent in some households across all communities. Exposure to air pollutants especially over a protracted period is been linked to respiratory illness, cardiovascular conditions, and environmental degradation. The presence of these air pollutants in domestic air surroundings shows that everyday domestic activities can also contribute to ecological harm. This is a point often been overlooked in studies.

V. DISCUSSION

The findings from this study in the Niger Delta communities revealed that vast majority of respondents acknowledge environmental degradation. They have generally experienced and endured degradation incidents. Nevertheless, many respondents, in spite of their awareness of degradation, do not perceive or acknowledge individual role in this degradation debacle. Many respondents perceive the challenge of degradation as an external phenomenon for which government and the oil companies are responsible. The respondents have not internalized their ecological

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awareness to become personal or communal moral obligation. So on the one hand, there is individual awareness of degradation, but on the other hand this awareness does not translate to moral conviction exhibited by a sense of moral obligation. The reality is that degradation exists. People see it. But they do not admit moral obligation for degradation. So there is a disconnect between what the individuals perceive and what the reality is in the Niger Delta ecology. This disconnection, or perception-practice gap, has been talked in previous studies (Moser & Ekstrom, 2010) and remains a clog to sustainable environmental conduct in rural Africa.

A majority (98%) of respondents stated that they have directly witnessed environmental degradation incidents such as bush burning, oil spills, and gas flaring. Nevertheless, it is only 18% of respondents that accepted that environmental care is a personal responsibility. This indicates in a blunt way that there is a deep-rooted externalization of ecological responsibility. In this externalization, burden of care is transferred to oil companies or government institutions. As Olorundare and Kayode (2014) have discussed, the internalization of ecological responsibility is downward low in many rural African communities. According to these scholars, this may not necessarily be due to ignorance. Instead, it may be due to cultural dislocation, economic limitations, and institutional abandonment.

The scientific findings of the field study corroborate the standpoint that environmental degradation is not abstract or external reality. It is a real phenomenon lived, measurable, and palpable in communities across the Niger Delta, more so in the study communities. In the in-situ tests conducted on water samples, it was clearly revealed that electrical conductivity (EC) and total dissolved solids (TDS) values were high in Kula, Agudama, and Oluama and the values ranged between 1,500–2,300 µS/cm (EC) and 1,200–2,100 mg/L (TDS) respectively. These values exceed WHO standards. Such values are symptomatic of saline intrusion, likely due to geographic proximity to the Atlantic Ocean and industrial contamination. In the communities of Kokori and Elume, in-situ data indicate that pH levels in some households fell between 5.2 and 5.8, and this shows acidity which can be harmful for domestic use and could stem from factors acid rain, chemical seepage, or pipeline corrosion. Nevertheless, these scientific indicators do not seem to have significantly impinged individual behavior, as many people still engage in practices that are detrimental to the health and wellbeing of the Niger Delta ecosystem. As shown in the survey data, these detrimental practices still go on: practices such as using firewood and kerosene for cooking (75%), tree felling, bush burning, disposing of waste in bushes and streams (61%), and open defecation (35%). Additionally, illegal refining of crude oil has been consistently reported, leading to serious air, land, and water pollution, linked to the "soot" prevalent in different areas of Rivers State of Nigeria.

The situation in the Niger Delta forms a paradox. This paradox reveals something like ethical and practical inertia. In this form of inertia individuals may intellectually recognize harm but lack either the moral framing or material resources, or institutional support to respond to status of the environment. Are the people in the Niger Delta faced with an existential impossibility to do otherwise?

- *Philosophical Interpretations:*

Ethics beyond the Individual Philosophy provides a lens for understanding the gap between personal awareness and moral conviction noticed in the Niger Delta communities' survey. Aldo Leopold (1949) in *A Sand County Almanac* opines that true ethical development occurs when humans extend their moral concern to "the land," which encompasses soils, waters, plants, and animals. Then the biocentrism theorist Paul Taylor (1986) states that environmental responsibility arises not from utility value but from recognizing the intrinsic value of all living entities in the environment including humans, animals, trees, plants, insects and even microorganisms. Both Leopold and Taylor are of the opinion that moral relations extends to non-human nature. And in traditional African context, it is opined that ethics is not only about individual choice but also deeply communal in the sense that the individual finds meaning and identity by relating respectfully with entities outside him in both the human and natural world. From birth, the individual grows into intricate communality with other human beings and with nature, forming in this way a sense of responsibility. Scholars like Omorovie Ikeke (2013) and Pantaleon Iroegbu (1995) opine that this responsibility is relational. These scholars also have also explained that the individual is a moral agent who exists within a web of kinship with both human and non-human entities. In the sense of traditional African ethics, environmental passivity or misbehavior is not simply a matter of personal negligence. Any environmental misbehavior causes a tingling fracture in community harmony and intricate ontological balance. These insights go in a long way to explain the gap in the Niger Delta where individuals are aware of degradation but have not awakened a concomitant moral responsibility towards objective ecological reality. There seem to be a moral powerlessness or passivity amongst individuals in relation to ecological imbalance in the Niger Delta. It is obvious that Niger Delta environmental degradation exists and persists. But many individual residents typically feel powerless to relate to this reality.

- *Toward a Relational and Cultural Reawakening*

Scholars like Iroegbu and Ikeke have previously highlighted that environmental values are contained in African traditional worldviews and ethics. Nevertheless the environmental value in traditional system and ethics have not subsisted to present times in dynamic form because some historical and social factors have eroded them. One way to reverse this eroding of values is to reintegrate environmental responsibility into cultural identity and daily practices. This will result in reviving individual concern for the environment. Ikeke (2012) argues that ecological stewardship is not foreign to African communities, but rather a long-standing tradition, although this tradition has been suppressed by external influences like colonialism and westernization. Reviving cultural ethics offers a meaningful path toward closing the gap between awareness and action in regard to the environment. In specific terms, in a

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community milieu where traditional ethics is reinvigorated, acts like indiscriminate bush burning and unbridled tree felling would reduce. Reinvigorating aspects of traditional norms like the taboos regime, sense of communality and the spiritualization of actions and sanctions would all help in protecting the land and the ecology in general.

VI. SUMMARY OF IMPLICATIONS

➢ *The Foregoing Play out these Implications:*

- There is indeed perceptual awareness of environmental degradation in the Niger Delta communities, but ethical motivation and practical capacity are weak among the Niger Delta population.
- Scientific data from conducted testings confirm environmental hazards and risk factors, specifically in water quality and domestic practices.
- A cultural revival of African ecophilosophies like Ubuntu can provide moral foundation for environmental behavior change.
- Environmental education must be culturally grounded, participatory, and supported with practical infrastructure like clean energy sources, toilets, and waste systems.
- Responsibility should be shared be both external and internal to the human individual. External in the sense that the regulatory institutions of Government and the oil companies do have responsibility for the Niger Delta environment and they do have a role to play in systemic change. But the responsibility for the environment is also internal in the sense that the individual person is involved and must act as a moral agent and ecological caregiver who will participate in driving behavior change in the Niger Delta.
- Moser and Ekstrom (2010) remind us succinctly that adaptation is not just a technical or political challenge, it also has cognitive and ethical dimensions.
- The Niger Delta's environmental crisis is not only a story of pollution, but also one of moral amnesia and philosophical opportunity.

VII. RECOMMENDATIONS

As a fall out from the data from questionnaire responses and environmental quality assessments across the five communities of Kokori, Elume, Kula, Agudama and Oluama, the following recommendations are proffered. These recommendations will help in addressing the perceived perception–practice gap on the one hand and promote individual environmental responsibility on the other hand. These recommendations are culturally grounded and practically viable.

➢ *Promote Culturally-Rooted Environmental Education*

Environmental education campaigns should be developed and deployed using African ecological worldviews and indigenous moral systems. The type of environmental education to be deployed should include concept categories themes and values from African traditional thought which places emphasis on respect for others, respect for natural entities, sacred stewardship, respect for deity and the transcendent and the prioritization of communality. Concepts like Ubuntu, omoluabi, and communal stewardship have been reiterated before in different mediums. Such concepts can be central to these efforts. Schools, community gatherings, religious institutions, and traditional councils can be used as platforms to revive and communicate indigenous environmental ethics, making sustainability not just a technical message but a moral and cultural one.

➢ *Provide Basic Environmental Infrastructure*

The study across the five communities of the Niger Delta revealed a strong willingness among residents to change environmentally harmful behaviours such as bush burning, open defecation, and improper waste disposal when and if adequate infrastructure is provided. In this regard the provision of basic infrastructure to improve environmentally compliant behavior is a must. Thus:

- Government, oil companies, institutional bodies should invest in household and communal sanitation infrastructure, including toilets and clean water systems.

- Institutional bodies, communities and individuals should also prioritize the use of clean energy alternatives like solar and the innovative biogas. This will reduce the use of the environmentally detrimental dependence on kerosene, firewood, petrol and diesel should also be a prioritized.

- There should be improved and sustainable waste collection systems in both inland and riverine communities to prevent indiscriminate dumping into bushes and waterways.

➢ *Strengthen Environmental Monitoring and Public Access to Data*

Presently it is a regulatory requirement for companies like oil companies to conduct periodically environmental impact assessment studies to predict or evaluate the environmental effects of industrial cum developmental projects. This impact assessment studies which are regulated by the Federal Ministry of Environment and the NUPRC involves community representatives in the study processes. Data from these impact assessment studies should be cascaded more and shared among members of host communities. Community members-be they elders, men, women or youths- should be inform more of impacts identified in studies and means by which those adverse impacts can be mitigated and managed for the good of ecological balance.

Communality members should have regular access to simple, visualized environmental quality data (e.g., water pH, salinity, air quality levels) through community bulletin boards, radio, and mobile alerts. When people see scientific evidence of degradation in their own community, they are more likely to connect environmental issues to their personal wellbeing and behavior. Then there should be ways by which communities and local government can

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perform basic environmental audits on households to improve environmentally beneficial behavior.

- *Reinforce Participatory Governance and Local Ownership*

A lot of the environmental management and environmental governance structure are hierarchical with the top initiating actions and controlling affairs. But to ensure a robust sense and practice of environmental responsibility, community members must be empowered to take shared ownership of environmental governance. This can be achieved by doing the following;

- Embark on the formation of community environmental stewardship groups, supported by local government or NGOs, to monitor actively and respond to local environmental issues.
- Community figures like traditional rulers and elders should be included in environmental decision-making, particularly in the management of forests, water bodies, and sacred lands.
- Community feedback mechanisms should be institutionalized for reporting oil spills, bush burning, or water contamination to relevant agencies.

- *Integrate Environmental Ethics into National Policy and Curriculum*

Government departments and policymakers should acknowledge and operate with the reality that ethics and culture matter in environmental behavior. Accordingly this should be enhanced:

- Tenable environmental policies like The Nigerian National Environmental Policy and climate change strategies should include indigenous environmental ethics as part of sustainability frameworks.
- Environmental ethics, especially one that incorporates African traditional values, should be mainstreamed into secondary and tertiary school curricula, as well as community adult education programs.

- *Ensure Accountability of Oil Companies and Government Agencies*

It is paramount for individuals to assume environmental responsibility. It is also important individuals in communal and organizational contexts are to ensure frameworks for holding accountable the oil companies and the government regulatory agencies. A deep ecological footprint in the Niger Delta region is implanted and consolidated by extractive activities going on there:

- The extractive companies operating in the Niger Delta must be held accountable for remediation and community development under tenable schemes and frameworks.
- Government regulatory agencies like NOSDRA, NESREA, and the Ministry of Environment must conduct regular environmental audits with companies and then enforce regulations, and sanction violations transparently.

VIII. CONCLUSION

The basic objective of this study was to explore how individuals in oil-producing communities of the Niger Delta perceive and practice environmental responsibility, and to ascertain the way these perceptions align with those ecological realities on the ground. This research has delved into studying the ethical and empirical dimensions of environmental degradation at the household level. In this research, this study has used a mixture of questionnaire surveys together with in-situ environmental measurements.

This study's findings indicate that while there is acute awareness of environmental degradation incidents among residents of the sampled communities (Kokori, Elume, Kula, Agudama, and Oluama), this awareness has not consistently translated into a sense of individual or communal moral obligation. Many respondents view environmental protection as primarily the responsibility of institutional bodies like the government and oil companies. Scientific evidence from water and air quality tests further highlights the environmental stress, revealing elevated salinity, high total dissolved solids, and low pH in drinking water, alongside increased levels of VOCs and particulate matter in domestic ambient air. These conditions pose significant threats to both ecological systems and human health.

The study concludes that sustainable environmental responsibility cannot be achieved solely through laws and regulations. It must be deeply rooted in ethics, culture, and everyday life. African indigenous worldviews offer a powerful philosophical foundation for reinvigorating a sense of responsibility for the environment in all its entities – humans, land, rivers, forests, and animals. The emphasis on individual environmental responsibility at the grassroots level complements, rather than replaces, the crucial role of government and extractive industries in institutional environmental care. Communities must be empowered not only with infrastructure and clean technologies but also with moral language and cultural frameworks that re-center the individual as an active ecological agent. Ultimately, the future of the Niger Delta's environment depends on a dual transformation: strengthened institutional accountability and a concurrent individual ethical awakening.

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