

# **Evaluation of the Impacts of Oil Pollution and a Sustainability Assessment: A Focus Group Case Study of Ogoniland, Nigeria**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

The growing impact of climate change has piqued public interest in determining the effects of people's actions on future generations. However, while environmentalists continue to advocate for accountability, most people in the places where the majority of these pollutions occur, particularly in oil-producing communities, have no say in their future. The study proposes a qualitative approach and the creation of a focus group environmental matrix as a unique technique for oil spill management that considers people's perceptions. This study takes a qualitative approach, relying on a focus group discussion of 12 open-ended questions about oil spills effects on the ecosystem. The questions were all about the spills' impact on residents. The qualitative study was performed between March and May 2018 in Gio, Ogale, Kwakwa, and KeDere Local Governments in Ogoniland. Gender-based strategies were studied with pre-determined questions and a total of 48 participants. Participants were indigenous who were conversant with the chosen topic and were asked leading questions. Finally, matrix analysis was used, which matched the people's perspectives. As a result, the total environmental components were affected. The following are the

effects of oil pollution recognised by the focus group matrix: unsustainable income, devalued economy, devalued culture, weathering mangrove, respiratory disorders, inaccuracy in reaction, communication barrier, and economic deterioration. It ascertained that the focus group technique to promote environmental restoration and sustainability is vital. It allows for a more direct connection with the most vulnerable and provides policymakers with potential solutions.

*Keywords: Oil pollution; sustainability; economy; focus group; environment; matrix.*

## 1. INTRODUCTION

The petroleum sector worldwide collaborates in energy solutions and economic development [1]. [2] recognised it as a source of carbon emissions, environmental degradation, and sectarian violence. This induced factor accounts for why the masses, especially the oil-producing communities, questioned the oil and gas industry's credibility and trust in terms of economy and sustainability [3]. However, artificial intelligence for environmental management is deemed attractive, but [4] looked into its usage in the upstream oil and gas sector, which isn't well-known due to its capital-intensive. In a developing country like Nigeria, due to this oil conflict, the oil-producing region, in particular, is notorious for frequent disputes and destabilization [5,6,7]. This conflict generally hampers the relationship between oil firms, the government, and indigenous peoples. Oil pollution has also created agitation, communal commotions, and instability for five decades, according to [8]. Nigeria has degenerated into one of the world's most insecure and petroleum-polluted countries in recent years [9]. In her Niger Delta region, oil exploration and production have resulted in considerable human and habitat destruction and illegal oil bunkering. Spillage, gas flaring, and effluent discharge from the oil refinery were the primary sources of environmental contamination. The community is the most vulnerable to oil activities, as it is the one that bears the brunt of the consequences. Hardship, lack of good health, and an unimproved life-supporting system are some of the environmental repercussions mentioned. As a result, oil pollution within the oil-producing zone violates people's human rights [8].

In addition, despite the amount of oil extracted from the Niger Delta, the region remains underdeveloped due to the Federal Government's ownership of the oil industry, which pays little or no attention to the territory's indigenous people's long-term viability [10]. Due to this discrepancy, the people who generate the oil have suffered from community dissatisfaction,

disease or maltreatment, neglect, and underdevelopment as a minority [10]. Moreover, this underdevelopment leads to oil disputes [11]. Table 1.1 shows the distribution of spilt oil in the Niger Delta.

### 1.1 The Concept of Focus Groups in the Research

A Focus group is a qualitative research method for gaining deep insight into people's perspectives and behaviours. A group of six to eight people is interviewed for deliberate research that focuses on a pre-selected focused subject. It encourages a more in-depth examination of specific societal issues. The method does not aim to collect data from a statistically representative general population sample but rather to communicate with a selected group of people [12].

This intimate contact engagement with the participants is typical in marketing, networking, and health care services. Focus group basic principles are stated below [12].

- Group Dynamic: Social interactions in groups are permitted.
- Group Synergy: The combined power of a group working together is greater than the whole ability of each individual.
- Homogeneous: A collection of people who come together for the same reason and share the same values.
- Applicability: All participants should know the study area.
- Group Dynamic: Group social interactions are allowed.
- Group Synergy: The combined power of a group working together is more significant than each member's total capacity.
- Homogeneous: A group of people coming together with the same purpose and character.
- Reporting: Rather than numbering, this strategy is a reporting technique (quantitative).

- Group size: Selected group size ranges from 5 to 10 people.
- Adequately permissive environment: The atmosphere is conducive to avoiding split attention.
- Group Summary: Appropriate writing tools, note-taking, video, photo, and a summary of each group were provided.

According to [13], applying the basic principles of a focus group entails considering the group's characteristics. A disciplined procedure, systematic steps, a specified protocol, verified outcomes, and various feedback loops are thus essential factors to consider during focus group analysis. In addition, data validation was also based on a thorough explanation of all analytical methodologies.

"A strategy involves the use of in-depth group interviews in which participants are selected because they are purposive, but not necessarily representative, a sampling of a specified community, this group being 'focused' on a given topic," according to [14]. As a result, selected participants in a robust discussion can express themselves freely and comfortably. This choice is bolstered even more by having a mindset for the subject matter and their distinct points of view. As a result, a focus group is a group of people who share the same interest and get together to communicate how they are affected. A careful examination of these diverse viewpoints contributes to developing sustainable policy declarations, standards, and guidelines. Furthermore, [14] stated that the concept of 'applicability' is helpful to identify participants in a focus group interview. This concept encourages participants to have a broad understanding of the research topic.

Although different scholars approach the concept of a focus group in different ways. [15] defined focus group as "a research technique for collecting data through group interaction on a topic selected by the researcher." "Focus groups study approach is committed to data collection," he continued. Second, it "locates the interaction in group discussion as the central theme." Third, "it recognises the researcher's active engagement in facilitating group discussion and collecting data." Therefore, focus group analysis serves a specific purpose. It encourages participants to interact in a relaxed environment. The demonstrator facilitates the discussion and keeps everyone on track by monitoring the group

and asking leading questions to keep everyone focused on the subject at hand.

## 2. MATERIALS AND METHODS

This investigation uses a focus group approach to evaluate the challenges faced by oil and gas communities [16]. The essential purpose of focus group research is to elicit respondents' ideas, thoughts, opinions, viewpoints, and replies. Other methods, such as evaluation, one-on-one interviewing, or questionnaire surveys, would not do. Such behaviours, feelings, and values may be partially independent of a group or its social environment. Still, they are more likely to be exposed in a focus group through social interaction. In addition, individual interviews, which seek to learn about personal attitudes, values, and feelings, produce various views and emotional processes within a group.

In contrast, focus groups have a range of opinions and dynamic processes within a group. Thus, a focus group allows the researcher to acquire more information in a shorter amount of time. In addition, focus groups are particularly beneficial when there are power imbalances between participants and decision-makers or specialists.

### 2.1 Approach to a Focus Group Survey

In line with [15], the focus group design used was a group-level design issue. Based on procedures, discussion conduct, and group dynamics, the approach effectively obtained facts from each group. Furthermore, the design used in the focus group exercise met all of the requirements set forth by [13].

The four sites chosen were selected to guarantee that the focus group study included all four Ogoniland Local Government Areas. As a result, the four communities' decision is based on their previous proximity to oil spills incidents. Furthermore, the economies of these chosen communities are different, allowing the economic implications to be determined. Finally, the selected sites address oil pollution in all-natural resources, including land, water, and air pollution. Therefore, biotic and abiotic parameters in these communities were modified.

Significantly, responses to the effects of the oil spill in these four towns could be replicated to address similar challenges in other parts of the area. Fig. 1 A local map depicts the qualitative analysis of Focus Group locations.

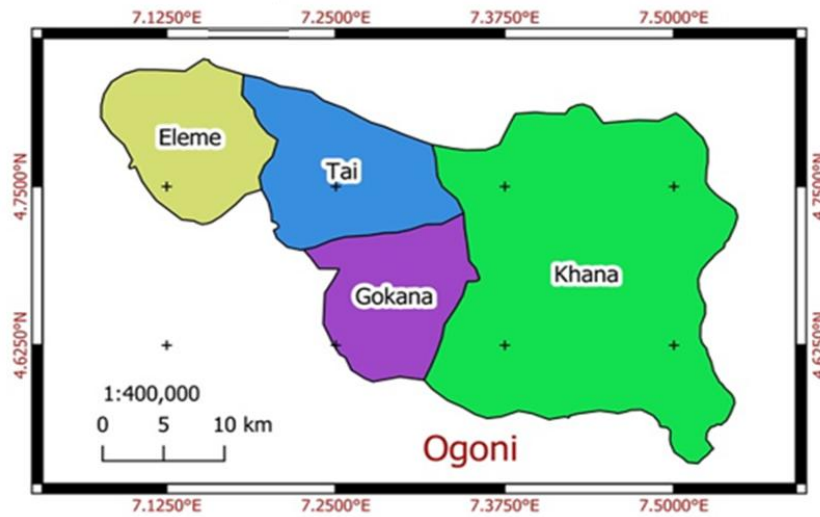


Fig. 1. Map of the Study Area, Ogoniland

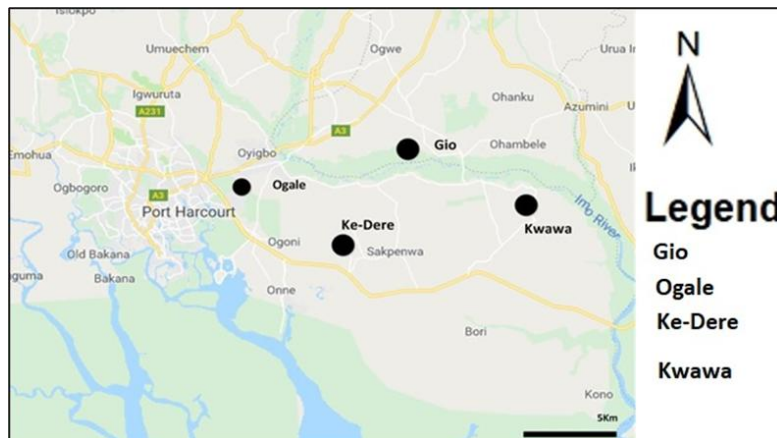


Fig. 2. Map of Ogoniland indicating the Focus Group Locations

Another factor contributing to the research's success was the inclusion of two groups in each neighbourhood, gender-based. The formation of this group was part of the planning process. It allows each community to express their fundamental views as well as their agitations. Their intense desires were unstoppable. It enables many people with a variety of thoughts, suggestions, and facts. The questions were chosen based on the problems or the research objective, even though they were open-ended. These were questions in which the communities always speculated as to who would provide the correct answers. All the participants were interested and captivated by the examined questions. The amount of time allotted to each question was recorded. One query led to another, and so on. It improves flow dynamics, and a summary of each reaction allows for verification.

## 2.2 Work on the Preparation

The process involves sending letters to Government regulators such as DPR, NOSDRA, and Shell. DPR followed up with a letter to Shell, the owner of the oil facilities in Ogoniland, as a standard practice. In addition, letters were addressed to the chiefs of the communities, with a follow-up visit scheduled before the interview day. The four communities were chosen to reflect the vulnerable people of Ogoniland's four Local Government Areas. Therefore, it was vital to gain consent from all stakeholders to boost awareness of the research study.

"Ethical consideration is an accumulation of values and principles that answer concerns of what is good or wrong in human affairs," according to researchers [17]. Ethics looks for

reasons to act or refrain from doing; to approve or disapprove of behaviour; to believe or reject something about virtuous or wicked behaviour or excellent or evil rules." Obtaining permission from all stakeholders was required to ensure ethical consideration of the qualitative investigation; most importantly, it needed one-on-one engagement with people.

National Oil Spill Detection and Response Agency (NOSDRA) Abuja; NOSDRA Port Harcourt; Department of Petroleum Resources (DPR); Shell Petroleum Development Company; Ogoniland Community Chiefs, and Ogoni Youths were among the stakeholders visited in that order. It was critical to obtain the approval of government regulators. In addition, it allows for the identification of urgent needs and how to incorporate them into the research.

Nevertheless, finding common ground and discussing how the research will benefit the government, oil corporations, and host communities piqued their attention. The purpose of the meeting with the Oil Company was to raise awareness and acceptance of the situation. The host communities are always eager to hear how they can make their voices known. These contributed procedures and accomplishments aid in the formulation of yet-to-be-established policy. Other Niger Delta states, in addition to the Ogoni, will benefit from the research findings. Effective communication that includes all stakeholders broadens people's perspectives and perceptions. The study's restriction was the time it took to acquire approval from government regulators and Shell, the owner of the Ogoni oil facilities [18,19]. Persistence requests avoided bias and allowed the qualitative study to go smoothly.

In terms of stakeholder importance, raising community awareness in the research study was critical. Referring to the community as a shareholder, for example, acknowledges their natural heritage. It goes hand in hand with the development of traditional conventions and ways of attracting an audience. Addressing and impacting these norms and values, they agreed to have the study survey conducted in their respective areas. Gender grouping enables a discussion on the social status of oil pollution and its impacts on males, females, and their cultural beliefs. The Moderator uses an enthusiastic and empathic attitude which encourages communities to participate in the conversation openly and unbiased.

Furthermore, the research plan and activities and sending official letters to the Department of Petroleum Resources (DPR) and the National Oil Spill Detection Agency (NOSDRA) are qualitative procedures. Before the scheduled date for the community engagement exercise, there were two follow-up visits. Earlier to the start date, the local interpreter was notified. All this planning resulted in a friendly and successful qualitative survey.

### **2.3 The Focus Group's Goals**

As a group of people from Ogoniland with distinct characteristics, the goal of the focus group discussion was to generate narrative data during the robust debate [15,20]. Interactions and group dynamics were critical components. It is based on the group dynamic theory, which depends on the level of the group vibrant. Subsequently, each group's internal facts and sentiments, expressed facts and feelings, non-formal communication, how they make meaning in the group, and their interaction influenced each other. It enables group interactions, correct understanding among members, how the group operates, improved communication, and a better grasp of what may cause difficulties. Thereby, the group's cohesiveness is strengthened. The success rate in each group as a collection of social systems corresponded to notions from dynamic group theory [21]. It emphasises the social structure, interactions, and aspects that built the ties between community members. One of the qualitative designs, group discussion, proved to be the most effective research sample technique. It probes people's thoughts and expands the variety of possible responses. Sharing the same experience from various perspectives increased undivided attention. The ability to communicate common knowledge from the viewpoint of other people makes for a more attentive environment. The group dynamics, through offered views, help to recall information that has been lost. The group exchange makes all four categories feel more relaxed when community members discuss their phenomenon. The study's success based on all participants' motivations, values, involvement, and contributions. The four communities visited in Ogoniland were Gio, Ogale, Kwawa, and Kedere.

### **2.4 Designing Focus Groups**

The focus group design involves three vital stages: deciding on the participants, the

environment, and the Moderator. These stages are described in brief.

### 2.4.1 Participants

The participants were indigenous and enabled a thorough examination of the oil spill's effects, planned actions, and the existing system. The community members' social interactions were a significant source of concern. These allow for assessing oil impacts and socioeconomic status while considering aspects contributing to long-term development [22]. The host communities are the oil-producing villages, and they are seen as vulnerable people with a direct impact from oil spillages. Because of the sample size and homogeneity, the individuals were chosen randomly [22]. Participants formed a social group with various backgrounds but a shared interest [21], grouped into two males and women. Each group had six people in it, with a total of twelve people in each community.

### 2.4.2 Environment

Some of the meetings took place in an open space beneath a community gathering spot, while others were in community town halls. The seating was arranged in a circular pattern to encourage interactive engagement. In each gathering, all participants were video recorded, and photos were taken. All participants approved the video recording. In addition, during the site characterisation, which was led by community leaders, video and photographs of the

contaminated site were taken as suggested by researchers [23].

### 2.4.3 Moderator

The Moderator's ability determines the success of the group discussion. First, it's a systematic skilled discussion that involves knowing the subject matter, the environment, the history, the norms, the culture, and the people's problem, as well as demonstrating empathy for the people's concerns [24] and how the Moderator feels like a member of the host communities. The crucial factors were maintaining eye contact and ensuring that the group dynamics flowed. These were the skills that contributed to the group discussion's success. The questions were pre-determined. These were questions that attracted the participants' interest. Finally, it was critical creating a permissive environment through the help of an interpreter, and all participants felt at ease. The choice of language, which considers their original tongue, fosters a welcoming atmosphere during the group discussion.

## 3. DATA COLLECTION

The data collection approach used, one-on-one interviews has triple effects on all participants. First, it was decided based on how well the participants were connected and understood. Second, the following factors contributed to the data collection's success: Discussion Guide, Sequence, Writing Item, Recording and Questioning, Moderating Skills, and Data Continuity.

## 3.1 Sample Size

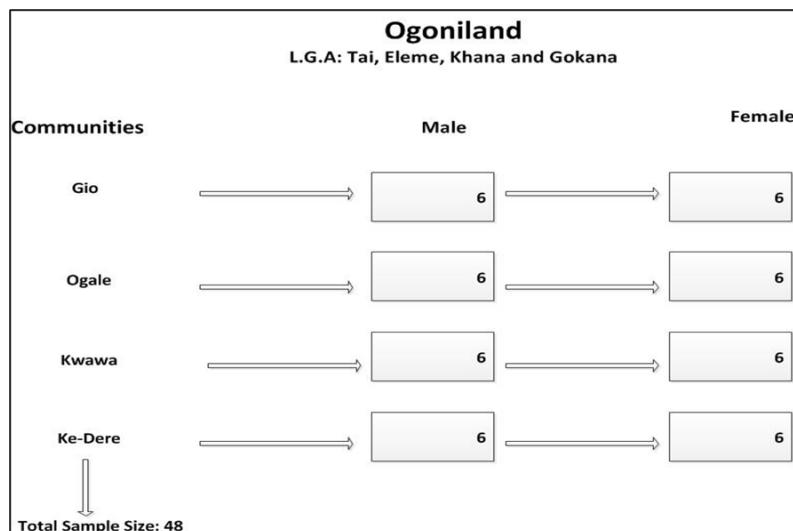


Fig. 3. Focus group sample size

#### 4. ANALYSIS AND REPORTING

It took a narrative inquiry form 2,25]. The Ogoni communities and their experiences are studied in a series of patterns. The focus group discussion inquired about specific incidents, going to the field to connect with community members, cross-checking the effects of oil pollution as site characterisation, text/data documentation, and data analysis/evaluation. The harmful effects of oil contamination on the host populations were their main worry. A comparison of the physical environment, social environment, economic situation, and health status was conducted. A logical conclusion was reached by comparing past and current conditions.

#### 5. RESULTS AND DISCUSSION

A skilled and systematic approach was required to get many people to participate in the qualitative survey. In each of the communities, however, it amounts to a late start. The people were not always on time, which caused the meeting to start late. Even though the exact number of individuals in attendance is unknown, some indigenous people still wish to participate in the conversation. Everyone expected a check at the end of the meeting, which was a problem for all locations. Having a guest speaker among them was as though an oil company representative was addressing them; as a result, they made it clear that they require remuneration. Shell refused to allow site visits, but all four communities eagerly rushed to the sites to learn more about the spill's tremendous impact. Thus, the community-approved areas became the focus of the site studies. Most of the site locations were not accessible by car, necessitating several kilometres of walking to reach the spill site. The most experienced participants dominate discussions, and disagreement among the participants almost produces divisions. Females were a little hesitant to speak up.

The focus group discussion focused on the key elements affecting oil spill repercussions in the host communities. Socio-ecological, economical, socio-cultural, and health challenges are among them. It might also be described as the Ogonis' social interaction with oil spill repercussions. Gio-Tai LGA, Ogale- Eleme Local Government, Kwawa- Khana LGA, and K-Dere – Gokana LGA were the four communities in Ogoniland for community involvement and site visits. The success of the community participation was

made possible by meticulous planning, adhering to tradition, honouring the exciting customs, and being proactive in every manner. In each village, two sets of interviews were undertaken. One of the research goals was to inform the host communities on the social impacts and effects of oil spills, the government's and the oil company's existing scientific measures. Separating males and females into various groups was productive. However, all of the female sets were difficult. Women did not merely agree to join the workshop even while waiting for the demonstrator. To proceed, they required more confirmation from the elders. Women valued time above all else; thus, all correspondence was kept to a strict time limit. The women's communication skills were lacking because the majority of them did not speak English. However, the interpreter filled the gap, and they happily participated. Because they comprehended English, Broken, and the Native Language, the means of communication were effective.

The importance of the UNEP study from 2011 and the Niger Delta Panel Report from 2013 was emphasised. In addition, the importance of bioremediation was emphasised and how it contributes to our daily lives and promotes environmental sustainability, particularly in oil pollution clean-up and agriculture.

The effects of oil exposure were comparable in all four localities. The consequences were felt in the aquatic environment, land, and even in the air quality. The entire area is blanketed in black, which is a result of released gases. On rivers, creeks, wetland, and death mangroves, oil sheen and black tar were visible. The Ogale Community was severely harmed because refined materials such as kerosene, fuel, petrol, and condensate contaminated practically all of the community's well water. During the site visits, they were evident. Oil exposure had similar effects in the Kwawa and Ke-Dere populations. The host villages are driven into communal war by oil politics laws enacted by the government and the oil business. The solution, as indicated, was to restore the host community to its former splendour by adopting the UNEPA report from 2011.

##### 5.1 Interviews with Experts in the Field of Stakeholder Management

The author contacted key professional stakeholders in the Niger Delta as part of this study. It was vital to acquire access to any data

that was accessible and to guarantee that all parties involved were communicating clearly. DPR, NOSDRA, and Shell were the organisations in question. Due to this engagement, the DPR Head Office was needed to attend multiple follow-up meetings for documentation and approval. DPR was intrigued by the study, recognised its significance, and directed the author to their Port Harcourt regional office, which backed the project. It entailed writing to Shell and requesting funding for the study. Despite receiving consent from DPR NOSDRA to share some of the secondary data for oil spill control in Ogoniland, Shell did not grant access for experimental sample collection as scheduled due to an ongoing court injunction. However, the communities were eager to engage, providing their full consent and accessing the community-affected locations.

## 5.2 Interviews and Focus Groups

The usage of focus group discussions within the host groups aids in the communication of group opinions. It establishes the community's trust and intimacy as a means of expressing their views. These perspectives can assist in informing key stakeholders and developing a practical oil spill management strategy. These methods are answers from communities to what needs to be done to better their environmental situation. The impact of abrupt environmental changes imposed in each geographical area was underlined [26]. As a result, a solution can be found through Governance Theory and adequate communication within the existing system. This chapter contains the essential questions that were asked of the eight groups that were interviewed. Most of the significant conclusions concern the following topics: Ecology, Culture, Economy, Agriculture, Oil Politics, Communication, Sustainability, and Health.

The study does not look at air pollution as a practical investigation from flared gases; instead, the impacts of air pollution are examined through focus group discussions. When utilising white cloth on any hard surface, each group member shared a similar experience. The accumulation of black soot on the roofings of buildings and plants confirmed air pollution in the area.

## 5.3 Summary of Focus Group Results

The critical conclusions of the focus group discussion were that all eight groups' comments were comparable. The points of view of the

various groups were intertwined. Hydrocarbon contamination was a problem that affected entire towns. The harmful effect of these toxins, according to the group, is the dramatic effects on all host communities. However, as viewed by the groups, the impact of oil pollution on the coastal barrier island, rainforest swamp, wetland, mangrove, farmland, groundwater, and freshwater was a threat to their healthy living and socioeconomic status. The Ogoni people's social values have been perverted and degraded; underdevelopment is due to oil politics. The economic standard is at an all-time low, rising in poverty due to agricultural output imbalances. These hinder their socio status economic, cultural, ecological, and health.

## 5.4 Results of the Interview

The National Oils Spill Detection Agency (NOSDRA) Abuja; NOSDRA Port Harcourt Office; the four Local Government Areas of Ogoniland, namely Gio, Ogale, Kwawa, and Ke-Dere; and Shell Petroleum Development Company of Nigeria, were among the stakeholders visited. The first step was at the NOSDRA office in Abuja. Feedback and collecting pre-existing data for oil spill control in Ogoniland took five visits in a row. It was followed by four trips to the NOSDRA Zonal Office in Port Harcourt. It is the main zonal area in which Ogoniland is located, and complete data were available. I went to the DPR Zonal Office in Port Harcourt four times. They oversee the operations of all Nigerian oil companies. DPR sends a letter of authorisation to Shell, allowing them to help with the research's permitted requirements. This data collection's effectiveness was made possible by repeated calls and patience, in addition to being physically present around the office.

All stakeholders' approval was necessary to be aware of the research's goal and sufficient documentation. DPR and NOSDRA are two government regulators, whilst Shell owns the oil facilities in Ogoniland. Ogoniland is the research area, with impacted sites in each of the four LGAs. Meeting with the village Chiefs and Youths recognised them as Ogoniland indigenous people. As a result, it was critical to get their acceptance and be accessible. Fulfilling the ethical obligation of the research is remarkable, as it involves all stakeholders. It's crucial because the study involves resources, human and animal lives, and site characterisation and evaluation.



**Table 1. Focus group matrix for oil pollution assessment, host-community's views**

<b>No.</b>	<b>Group Question</b>	<b>Gio Community Male/Female</b>	<b>Ogale Community Male/Female</b>	<b>Kwawa Community Male/Female</b>	<b>Ke-Dere Community Male/Female</b>	<b>Remark</b>
1	What changes have you seen in Ogoniland since it began operating as an oil zone in the 1950s?	Losses in agricultural, economics, and revenue.	Losses in the ecosystem, ecological values, and the economy.	Declined economy and agriculture.	Devalued economy, declining population, ecosystem imbalance and ecological destruction.	Un-sustainability
2	What do you have to say about job availability?	No Employment	No Employment	No Employment	No Employment	Un-sustained Income
3	Have these reforms influenced the Ogoni people's economy?	Negative impact	Negative Impacts	Negative Impacts	Negative Impacts	Devalued economy
4	How would you grade the Ogonis' cultural and social interactions?	Dead cultural values	Declined in cultural values	Declined in cultural values	Low Cultural values	Devalued Culture
5	What can you say about the mangrove and the wetland in particular?	Withered, decayed, and deforested mangroves.	Depletion in fish population, and deforested mangrove.	Shrivelled mangrove and loss of life-supporting mechanism	Reduction in aquatic lives deforested mangroves and eviction of wildlife.	Withered Mangrove
6	Is there any risk to one's health because of oil pollution?	Respiratory sickness, cough, and skin diseases.	Black soot inhalation	Oil pollutants are linked to high a high prevalence rate	Through constant inhalation, exposed trapped oil pollutants have an impact on community health.	Respiratory Diseases
7	What are the oil industry's	Negative promises that are both hopeless and	Encourages communities to divide and rule, as well	Inaccurate replies, responses that do not	There are no real solutions that consider	Inaccuracy in Response and

No.	Group Question	Gio Community Male/Female	Ogale Community Male/Female	Kwawa Community Male/Female	Ke-Dere Community Male/Female	Remark
	reactions to the local environment?	unattainable.	as neglects by stakeholders.	meet expectations, and responses that take too long.	the passage of time, only hopeless promises.	Communication
8	How would you assess the government's credibility in terms of community responses to spill impacts?	No assurance and inconsistency.	No viable remedy, and Oil-Politics	Inaccuracy in responding, promises that aren't kept, and oil politics.	Inaccurate communication	Inaccurate response
9	How does the community interact with the government?	Constant communication but slow in government response.	Due to a lack of feedback, there is constant repetitive dialogue and a lengthy court order.	The community's constant communication, neglects, and oil politics	Responses were insufficient, and there was no positive feedback.	Communication Barrier
10	What suggestions do you have for ensuring the host communities' long-term viability?	Supports the (UNEP) 2011 recommendation and community empowerment.	Adopting UNEPA 2011, community development, international aid, care system	UNEPA 2011 compliance, empowerment, job creation and free education,	Implementing the UNEP 2011 report for long-term empowerment.	Sustainability
11	Could you back bioremediation following the UNEP study of 2011?	Bioremediation, soil excavation, and replacement are recommended by the UNEPA 2011.	Bioremediation and on-the-field remediation should be combined with Agric Sustainability.	In terms of ecosystem restoration and agricultural practice, bioremediation is appropriate.	Bioremediation, land restoration, green environment, and agricultural practice.	Sustainability
12	Do you plan to use local consultants to help with the bioremediation?	Local consultants, job creation, soil fertility, farming, economy, and agriculture are all beneficial.	Job creation, local contractors for remediation, and agricultural opportunities are all possibilities.	Because of their inexperience and self-interest, indigenous contractors should be avoided.	Only bioremediation experts, not necessarily indigenous contractors, should be selected.	Declined Economic

**Table 1.1 Volume of oil spilt (Litres) attributed to different causes from 2007-2015. Source: [27]**

<b>Year</b>	<b>Sabotage</b>	<b>Operations</b>	<b>Other</b>	<b>Total</b>	<b>%</b>
2007	8,998,188	2,092,804	294,216	11,385,208	13
2008	8,634,108	1,835,652	120,868	10,590,628	10
2009	3,762,652	2,348,152	379,824	6,490,628	7.2
2010	4,444,400	1,263,292	1,046,320	6,754,012	8
2011	4,492,780	7,428,052	154,652	12,075,484	14
2012	5,783,624	544,644	115,456	6,443,724	7.2
2013	8,973,588	788,184	47,888	9,809,660	11
2014	7,370,160	11,141,996	41,328	18,553,484	21
2015	7,026,416	243,376	225,336	7,495,128	8.6
Total (over entire period)	59,485,916	27,686,152	2,425,888	89,597,956	
% (over entire period)	66.4	30.9	2.7		100

It is vital to have knowledge of the impacted areas as well as photographs of them. The qualitative study's success was made possible by raising critical awareness and following the right processes. Putting all of this together allows for close collaboration, contribution, and support. The communities felt confident in the exercise, and they all agreed to participate after being informed of the need for community participation. Table 1. is the findings of the focus group analysis.

The focus group discussion in the Ogoniland was organised with participants of common interest on the spill impacts on their livelihood. All the group members agitated the unsustainability in terms of the economy and the deteriorating environment. The people's income was unsustainable due to regular oil spillages that deprived businesses. As such, the devalued economy was not measured up to expectations. In addition, the uncontrolled inflow of leaked oil into the community sacred places of worship is a significant concern. However, inconsistency in cultural practice limits the standard procedures resulting in neglect. All the group supported that they are surrounded by withered mangroves resulting in loss of wetland and a life-supporting system within the area. Respiratory diseases stand to be the predominant disease in the Ogoniland, primarily due to flared gas from the Eleme Refinery, which is located among the community's vicinities. Another reason for violence occurs due to inappropriate responses either from the government or the oil company. Communication Barriers existed when the people did not get the correct information either from the government when due. The people seek total sustainability, like sustain agriculture, economically, infrastructure, free education for all the economy, free health care and accessible health facilities, etc.

## 6. CONCLUSION

Environmental management research requires focus groups as a critical tool that connects existing information to real-life scenarios, gathering participants' perspectives on effective practices. Furthermore, oil pollution management shows the extent of the damages, consequences, impacts, alongside comparing the previous and present scenarios of spill accidents with remedies to protect the public. It can also be used as a model for an environmental framework that environmental professionals might use in the event of spills, as it enables effective handling of an artificial

environmental disaster, particularly in community settings. Furthermore, the strength of allowing the people's voice to be heard in decision making facilitates harmonious coexistence among businesses, governments, and stakeholders. As a result, using focus groups in environmental studies that deal with people and projects' social status will enhance the overall management practices, primarily to manage the crisis.

## DISCLAIMER

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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