ASSESSMENT OF THE CLEAN UP EXERCISE OF THE OIL SPILLS IN OGONI LAND AND THE IMPACT ON THE COMMUNITY

BY

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Abstract
Oil spill and its clean-up exercise has been a challenge to all oil spill communities in the Ogoni and the method of clean-up depends on the type of spill, the volume of spill, the location and weather at the time of clean-up. Generally, while the clean-up of oil spill on the sea involves the use of standard oil boom, and dispersion system mounted on an airplane, spill on land can be cleaned with high-pressure system, scooping, and burning. In Ogoni, the clean-up was through in-situ burning that is clean up at the point of occurrence, scooping and burying the oil. The communities participated in the clean-up as voluntary services and sometimes for financial gains. A mixed approach was adopted, and questionnaires were used as well as interviews. The findings show that communities in Ogoni actively participated in oil spill clean-ups in their localities whenever there was a spill and at the end of it, they suffered great psychological, health and other socio-economic impacts.
Keywords: Communities; Stakeholders Oil Spill Clean-Up; Participation.

Introduction
Recently, oil spillage has been a serious problem in areas where oil drilling is prominent and also at the various sea routes through which ships sail and crude oil are transported through oil vessels. The severe impacts of spillages have alerted various governments, organizations, private bodies and individuals as well as the stakeholders in the oil industries on the need to control the rate of spillages if it cannot be stopped. Studies are continually investigating previous and recent oils pillages all over the world especially on their impacts as oil spill impacts lingers for long period even up to 50 years despite the clean-up (United Nations Environment Programme UNEP, 2020). Notable oil spills include the Gulf of Mexico spill, Venezuela, Alaska in California, the Gulf war spill, the spill in Netherlands, the spills of New Zealand, Turkey, Guimaras in Philippine, Hebei Spirit Oil Spill in South Korea, etc.

Oil spill is the uncontrolled release of crude oil into the environment (Rim-Rukeh, 2015). When oil of any type is released into the natural environment, the result is termed an “Oil Spill” (Sholeye et al., 2019). Similarly, Etkin (2015) gave a broader definition as he defined oil spill as “discrete event in which oil is discharged through neglect, by accident, or with intent over a

relatively short time. It does not include an event in which oil leaks slowly over a long period of time, nor does it include operational spillages allowed by international or national regulations or that occur over a relatively long period of time, even if those discharges violate pollution regulations". Oil spills come from tankers, pipelines, oil wells, storage tanks and vessels cleaning out tanks. The type of spill, the quantity spilled, the location, the weather and the response determine the subsequent impact in the location or community. It becomes arguable by the researcher that the socio-cultural and economic conditions of the people of Ogoni land and the Niger Delta region of Nigeria intercalate the purported destructive tendencies on the oil pipeline and this is not prevalent in other locations of the world.

Statement of problem

Oil is any form of petroleum, such as crude oil, fuel oil, sludge, residue, and refined commodities by the 1990 International Convention on Oil Pollution Preparedness, Response, and Co-operation. The spilled oil brings severe pollution (i.e., devastating adverse effects) to the marine ecology and damages the environment with the risk of fire. Timely and reasonable dispatching of oil spill emergency supplies is crucial to reduce potential safety hazards and damage to the marine ecology caused by oil spill accidents. Ogoniland has witnessed recurrent social unrest during the past several decades over concerns related to oil industry operations, its revenue and petroleum-related contamination. This article sets out the background and context to the present-day conditions in Ogoniland, provides a synthesis of UNEP's findings, and gives a set of overarching recommendations to deal with the multi-faceted environmental challenges currently facing the Ogoni people.

Purpose of the study

The objective of the study is to

i. Assess the cleanup exercise of oil spills in Ogoni land and the impact on the community.
ii. The influence of the cleanup exercise on the health of the community participant

Research questions

Following the objectives of this study, some research questions were posed which include:

i. To what extent does cleanup exercise of oil spills in Ogoni land affect the community?
ii. How does the cleanup exercise influence the health of the community participant?

Hypothesis

There is no significant influence of cleanup exercise on the health of the community participant.

Review of literature

The Exxon Valdez oil spill into the waters in Ogoni was estimated to 11 million gallons (260,000 barrels) on 24 March 1989 accident (Palinkas *et al.* 993). The Ixtoc 1 oil spill of June 3, 1979, by a Mexican oil company PEMEX was the largest offshore oil spill incident before the Deep water Horizon spill of 2010. In the Ixtoc spill, about 475,000 metric tons of crude oil

was spilled. Likewise, Christopherson (1992), argued the collision of the Exxon Veldez caused 240,500 barrels (10.9 million gallons) out of the 53 million gallons of oil to leak into the water and this affected the whole range of the coastlines covering about 1,100 miles in Ogoni.

Pipeline leakage is one of the causative sources of spillages as reports have it that on July 26, 2010, a pipeline released approximately 800,000 gallons of crude oil into Michigan's Talmadge Creek, a waterway that flows into the Kalamazoo River. Moreover, on July 1, 2011, an ExxonMobil pipeline ruptured and released oil into the yellow stone River near Billings, Montana and discharged an estimated 42,000 gallons (Ramseur, 2012). In a study, Steiner (2010) compared the oil spill in the Gulf of Mexico and Nigeria, estimated 4.1 million barrels spilled in the Gulf while about 9 to 11 million barrels spilled in the Niger Delta Region for the over 50 years of oil exploration with its adverse harmful effects and emission of flaring gas into the atmosphere. Whereas the Gulf spill continues to be cleaned up, and receive enough funding and government attention, that of the Niger Delta Region were left without the required attention. Oil spill is a regular occurrence in the Niger Delta recording about ten times a week and these spills are traceable to oil installations (pipelines, flow lines, well-heads, flow stations, storage tanks etc.) (Kate, 2011). However, in recent time some of the spillages in the Nigerian environment are allegedly traceable to sabotage and illegal bunkering activities (Adelana et al., 2011). Amnesty International (2013) stated "oil spills in the Niger Delta are caused by corrosion, poor maintenance of oil infrastructure, equipment failure, sabotage and theft of oil". The Nigerian National Oil Spill Detection and Response Agency (NOSDRA), wrote that oil companies reported 2,054 cases of oil spill incidents (spills of more than one barrel) between June 2006 and June 2010, these figures have been arguably posited to be a "protective" figure and below the actual.

Amnesty International Head of Business and Human Rights; Audrey Gaughran, summarized the oil spill impact in the Niger Delta region thus: "People living in the Niger Delta must drink, cook with and wash in polluted water. They eat fish contaminated with oil and other toxins–if they are lucky enough to be able to find fish still. The land they farm on is being destroyed. After oils pills, the air they breathe smells of oil, gas and other pollutants. People complain of breathing problems and skin lesions – and yet neither the government nor the oil companies monitor the human impacts of oil pollution" (Kate, 2011). The effects of oil spill include, the beauty or the aesthetics of the ecology is distorted and destroyed, gross biological harm, physiological impacts on the biota (both plants and animals) and a lot of ecological changes, cellular, organismic and ecosystems also witness great changes, the toxic substances affect organism while the water pollution affects tourism and human uses of the water including using it as means of transportation and trade (Rim-Rukeh, 2015).

The Nakhodka tanker oil spill in Japan showed that the clean-up participants and residents initially suffered back pain and leg pain, headache, and symptoms of eyes and throat (Morita et al., 1999). Likewise, much harm caused by the dispersants leads to the release of toxic

particles which harm the planktons and marine organisms (Whitehead et al., 2012). Air pollution by oil spill affects respiration and other health hazards in both humans and non-human organisms causing irritations, cough, rashes and eye problems (Nriagu, 2011; Egwu, 2012; Ajugwo, 2013; Adelana et al., 2011). The impact of oil spill on land where humans reside differs from the impact when the spill is on the high sea, such spills on high sea includes the Deep water Horizon Gulf spill in Mexico (2010), the Ixtoc1spillin Mexico (1979), Exxon Valdex oil spill in Alaska California (1989), Korea oil spill (2007), Odyssey spill in Nova Scotia Canada (1988), Prestige Tanker oil spill in Spain (2002), Funiwa 5 spill in Nigeria (1980), Nagasaki Spirit at Malacca Strait Malaysia (1992) etc. Usually, such spills impact on the coastlines, the aquatics in the water, environment, and businesses including tourism.

However, spills on both water and land have greater impacts and the Niger Delta region of Nigeria is a good example where such spills occur and that is why the impacts are so pathetic and rare occurrence. The residents of the Niger Delta smell oil, eat oil and very sick, no good drinking water, no social amenities, loss of means of livelihood as they are traditionally farmers. The land and farms covered with oil, the water with oil slick, complete disarray and occupational displacement. All these have multiplier effects on health, income and other socio-economic variables. These impacts are in congruence with similar studies in other locations where the spill occurred (Ha et al., 2012; Kwok et al., 2014).

Research design

The survey research design was adopted for this study because sample that can represent the whole population of the study was chosen and inferences drawn from the results of analysis of available data. It involved the collection of data using observational method such as questionnaire. In survey design, Isangedighi (2012) in his contribution to the text “essential of research and statistics” recommended observational method such as the use of questionnaires and personal interview as means of data collection for data analysis and interpretation of results.

Area of the study

Ogoni is a region covering some 1,000 km in the south-east of the Niger Delta basin. It has a population of close to 832,000, according to the 2006 National Census as projected to 2022, consisting mainly of the Ogoni people. The region is divided administratively into four local government areas: Eleme, Gokana, Khana, and Tai. Traditionally the area is formed by six kingdoms (Babbe, Eleme, Gokana, Ken-Khana, Nyo-Khana and Tai) with His Majesty King Godwin N.K. Gininwa as the area’s Paramount Ruler. While to the outside world the communities of Ogoniland may appear similar, they have distinctive differences, including traditional institutional structures, languages and cultural features.

Population of the study

The population of the study comprised of all males and females above the age of Eighteen (18) in Ogoni communities in River state Nigeria. It has a population of 832,000, according to the 2006 National Census as projected to 2022, consisting mainly of the Ogoni people.

Sampling technique

Mixed method approach was used in data collection; meaning both questionnaires were administered, and interview was conducted. The qualitative data for this study is part of the data collected for a larger study on socio-economic impact of oil spill in Ogoni communities in River State. A purposive approach was used in selecting informants for the qualitative study. The use of the unstructured interview style helped the informants to open up freely in releasing more supplementary and complementary information that was relevant in the research. This approach was used to select informants with adequate experience, knowledge and willingness to give accurate information on the oil spill in the location of study and descriptive statistics, coding used in the data analysis. The choice of location was because frequent occurrence of oil spills in the area (Table 1.1)

Table1: Oil spillage, volume and causes from 2016 to 2021 in the Ogoni.

Year	No. of spills	Vol. of spills/barrels	Major causes
2016	190	10,000	Sabotage - 95%
2017	180	20,000	Sabotage and operational 50% each
2018	240	30,000	Operational 70% sabotage 30%
2019	180	100,000	Operational and sabotage 50% each
2020	170	110,000	Sabotage 90% and operational 10%
2021	200	28,000	Sabotage 80% and operational 20%

Source: Amnesty International (2022)

Sample

The study was conducted in Ogoni communities in River state Nigeria as there is frequent oil spillages in these communities whose occupation are mainly farming and fishing. The oil spill in these locations occurs both on land and water which pollutes the water making it unsafe for community use while the fishes and aquatics are destroyed. The farmlands are destroyed, leading to little or no yield at all.

A total of 247 respondents who answered the questionnaires correctly out of 300 questionnaires administered and 13 informants were interviewed. Respondents in this study were chosen conveniently from the population as the inclusion criteria were residency (male and female) in the locations of study within the ages of 18 through 86 and above.

Instrumentation

The instrument (questionnaire) titled "cleanup exercise of oil spills in Ogoni land and the impact on the community, Rivers State, Nigeria.

Result and discussion

There is no significant influence of cleanup exercise on the health of the community participant. In the hypothesis, the independent variable was clean up exercise and the dependent variable was health of the community participant. The statistical tool used in testing the null hypothesis was One Way Analysis of Variance. The Analysis on table 2 shows that the calculated P – level of 0.000 was found to be less than the Critical P – level of 0.05 level of significant with the degree of freedom (Df) 2,247 indicating that cleanup exercise significantly influenced health of the community participant, Thus Null Hypothesis was rejected which the alternate hypothesis was accepted (see Table 2).

Table 2: Analysis of Variance to determine the influence of cleanup exercise on health of the community participant.

Source of variance	Sum of Squares	Df	Mean Square	F- ratio	P-level
Between	8,658.092	2	4,329.046	154.084	0.000
Within	6,939545	247	28.095		
Total	15,597.637	247			

P > 0.05: df 2,247:

Communities' involvement in oil spill clean-up in Ogoni and its effect on the environment and health.

In the first instance, community see it as a volunteer service to help in cleaning their environment and keep it free from oil, and the second, some participate in the clean-up as a source of employment to generate money for their living expenses since the spill has destroyed their farms, business and sources of revenue. The cash payment to the participants in the clean-up is when the contract for the clean-up is awarded to cleaning companies who then employ some members of the community. The informants emphasize that the oil companies play a warm look attitude in events of oil spill and the communities most times start the clean-up by scooping and burning the oil on the surface and digging pits where the oil was collected and covered with the soil.

The study also revealed that communities participate in oil spill through the clean-up which is done as voluntary service or paid service. But the clean-up is not every time, most times the spill are not cleaned, the oil are left to sink into the soil and then dry upon the land surface. The community or owners of the farms would then set it on fire to burn the oil and leave the farm

fallow for some years praying that the vegetation would grow back but even when the vegetation gets back the crop yield was very poor".

It's also noted that Ogoni environment has been polluted and oil is seen everywhere even in hour residential areas. Hard to get good drinking water here as the rivers and streams have been polluted and you see oil on the water surface (oil slick). Even when you try to sink private borehole you discover that the water underneath has mixed with oil. All over, land, sea and air are all polluted and that is why we have various types of illnesses here including stomachache, headache, skin diseases, respiratory diseases and infections, kidney and lungs diseases and more and more". "We discover the oil spill location seven before the oil workers are brought to try to seal the spot, it takes at times weeks before they could complete the sealing of the spill".

The study in table 2 revealed acute health symptoms on clean-up participants includes neurologic (headache, dizziness, nausea, fatigue, insomnia, hot flushing), respiratory (sore throat, dry mouth, runny nose, cough and sputum), and the dermatological symptoms itching and red skin; ophthalmic symptoms include sore eyes, red eyes, and watery eyes while the general symptoms include back pain and general ache. The individuals who participated in the clean-up suffered various symptoms including headache, respiratory disorders, various skin diseases, itching and sore eyes, pains, tiredness and general body weakness. Some also suffered itchy eyes, teary eyes, eye mucus, running nose, poor vision, diarrhea, anxiety, injuries and body pains, bruises, blisters, nausea and vomiting. There were cases of sore feet and pealing of the feet due to non-wearing of protective booths during the clean-up. It was discovered that the peeling of the skin, palms and feet were due to contacts with the oil as many of the participants in the clean-up did not wear hand gloves and adequate body protective clothes and eye covers. The clean-up participants complained that they were treated in a nearby hospital outside the spill area and they paid for the cost of their treatments. Similarly, participants in the clean-up interviewed said they had direct contact of the oil on their legs and some on their hands as they did not wear complete cleaning equipment, and all agreed they inhaled the oil mist. There were no medical experts to clean up the participants rather they used soap and water to wash off the oil while few accept reducing chemical agents to remove the oil. The task performed by the clean-up participants and communities during the clean-up involved scooping up oil by the sea with the help of boats, scooping up oil by the land and farmland with containers, distribution of materials used in clean-up, organization of workforce in the clean-up, transportation of fuel/oil through trucks etc., and cleaning of people who participated in the clean-up by washing their hands and feet.

The study shows that communities in Ogoni actively participated in oil spill clean-ups in their localities and at the end of it suffered great socio-economic, psychological and health impacts. Even residents who did not participate in the clean-up suffered some of the symptoms due to the proximity of the spill to their houses, the contaminations of the environment and water they

use for their daily activities. The result of the interviews also shows that participants in the spill clean-up were not only doing the mas voluntary humanitarian services but also saw it as a means of earning income.

Similarly, people that participated in the clean-up of oil spill after seven years showed that they experience persistent alterations or worsening of their hematological, hepatic, pulmonary, and cardiac functions. In addition, these subjects experienced prolonged or worsening illness symptom seven years after their exposure to the oil spill. This goes to explain the harmful health effects of oil spill since the harm persists years after and residents in the study area also complained of persistent health problems. The participants in this study did not show nor explained any issues of high or changes in aggressiveness after participation in the clean-up as their only complaint was the psychological trauma and other socio-economic impacts. Remembering the spill incidents, the cash and economic crops that were destroyed, the dead fishes at the water shores, animals trapped dead in the oil and other harms caused by the spill continue to cause nightmare to them.

Conclusion

It is obvious that the people who participated in the clean-up operations suffered various ill-health like cough, vomiting, diarrhea, general pain, running nose, eye irritation, blisters, fever and other symptoms as is the case of other oil spill locations over the globe. The effects of oil spill are devastating to both plants as well as animals and efforts should be made to handle the clean-up quickly and efficiently using professionals and modern technologies. The communities should be trained on how to handle oil clean-up operations using modern gadgets so as to reduce the hazardous impacts of clean-up on the participants.

Recommendations

- Experts in the field of community development, sociology, psychology and related disciplines should be consulted and utilized a top-bottom approach toward solving the problem.
- Mixed methods approach directed and monitored by community development experts in handling the issues emanating from oil spills should be adopted.
- An equipped private oil clean-up companies should be hired in event of oil spill in these Niger Delta communities so as to ensure effective and efficient clean-up operations. Such companies local or international should be made to register with the Federal Government of Nigeria and have their offices located in Nigeria so that once there is an oil spill, such company/companies would be notified and their services hired by the authorities responsible for the clean-up.
- Government should also make it mandatory on the communities to send their clean-up assessment report to the oil companies and government after the clean-up as this would be like a watchdog on the cleaning companies and the authorities can make policy decisions on the level of work and perfection based on these reports.

- Companies whose activities caused the spill should be monitored by the government and made to adhere strictly to the implementation of the existing legislations and there should be a fixed remunerate on to the community that identifies and notifies the oil spill to the government or the oil companies since the power of money can increase vigilance.

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