

Ecomusicology and Effects of Environmental Degradation in Ogoni Ethnic Nationality of Rivers State, Nigeria

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Abstract

The study investigated ecomusicology and effects of environmental degradation in Ogoni ethnic nationality of Rivers State, Nigeria. Some literatures were reviewed from expert opinions, in line with the demands of the topic. Two objectives guided the study. It highlighted how music was used to narrate deteriorated effects of environmental degradation in Ogoni ethnic nationality of Rivers State, Nigeria. The study considers health challenges, loss of soil fertility and water pollution which cause serious inflammation diseases to the inhabitants. The people means of livelihood was damaged. The conceptualization of ecomusicology, indigenous knowledge, community music and Koromuu musical group. The study adopted interview method in field survey. The study used primary and secondary data sources published materials to enhance the desired goal. In addressing the problem on half of the study of ecomusicology in Ogoniland, it therefore recommend amongst others that both the indigenous people of the area, oil communities and government should not dispose any harmful materials in the environment of Ogonis in Rivers State.

Keywords: *Ecomusicology, Ogoni People, Indegenous Knowledge, Community Music, Koromoo musical group.*

1. Introduction

Environmental degradation raises pertinent questions about the safety of human lives, aquatic lives, farm produce, environmental pollution and related health hazards. Recent research reveals that pollution created by incessant, prolong oil spillage and gas flaring are becoming more widespread around the globe (Ajala, 2011). One clear example is the Ogoniland, which has recorded one of the highest incidents of environmental pollution in Nigeria over the years. There are several studies on environmental degradation in Ogoni from anthropological, historical and medical perspectives (Saro-Wiwa, 1995, Omoleke, 2004, Areola and Akintola, 1980). These publications have explained the comprehensive need for halting the degradation of the environment from a scientific point of view. The justification for looking at Ogoniland is based on the prolong devastating effects of environmental pollution occasioned by activities of multi-national oil companies (Shell Oil Company, a subsidiary of Royal Dutch Shell), when in 1957 its Nigerian operations, Shell Nigeria, known as Shell Petroleum Development Company of Nigeria Limited (SPDC), struck oil in the Niger River Delta (Saro-Wiwa, 1995).

Ogoni communities of the Niger Delta region which had sustained their economy on farming and fishing saw the takeover of their land by multinational oil companies was causing devastating environmental degradation. Saro-Wiwa call it an 'ecological war' (Saro-Wiwa, 1995).

Saro-Wiwa (1995) asserted that the Ogoni country has been completely destroyed by the search for oil... Oil blowouts, spillages, oil slicks, and general pollution accompanied by the

search for oil... Oil companies have flared gas in Nigeria for the past thirty-three years causing acid rain... What used to be the bread basket of the delta has now become totally infertile. Furthermore, everyone now sees and feels around death. However, little scholarly engagement has been done on the engagement of indigenous music for environmental justice and sustainability.

The United States Environmental Protection Agency (n.d) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, colour, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the following:

*The same degree of protection from environmental and health hazards, and
Equal access to the decision-making process to have a healthy environment in which to live, learns, and works.*

Other definitions include: equitable distribution of environmental risks and benefits; fair and meaningful participation in environmental decision-making, recognition of community ways of life, local knowledge and cultural difference; and the capability of communities and individuals to function and flourish in society Schlosberg, (2007). An alternative meaning used in social sciences of the term “justice” is “the distribution of social goods” Schlosberg, (2002). Up to now, scholarly attention has not been directed towards the engagement of popular music with the environmental pollution in Ogoni. This paper addresses this lack and, in the process, provides an informed assessment of Ogoni popular music on environmental pollution, marginalization, environmental justice and sustainability.

2. Objectives of the Study

The objectives refers to the goals one hope to achieve through the study of ecomusicology and environmental degradation in Ogoni nationality of Niger Delta, which are as follow:

To examine the deteriorating effects of crude oil exploration by multinational companies in Ogoni nationality of Niger Delta.

Identify linking ecomusicology to community development and environmental impact assessment in Ogoni nationality of Niger Delta.

Linking Ecomusicology to Community Development and Environmental Action

During the first interviews conducted by the student researchers with their elders, it became evident that the legacies of problems like ocean degradation, land pollution, oil spillage and the related health hazards that are prominent among the Ogoni ethnic group in Niger Delta of Nigeria. This paper also engages with the way in which popular music increases an awareness of social responsibility among urban Nigerians in Ogoni. The objectives of this paper are to test the viability of an emerging discipline referred to as ecomusicology; to present an ecomusicological approach to the research which draws on the value and significance of spiritual beliefs and to examine the connections between environmental pollution and spiritual beliefs by the Koromuu music dance group. The songs are a reminder of not only the environmental pollution and the loss of life caused by environmental pollution, but also of a ritual that is rarely, if ever, performed. Thus, the pollution is perceived as an act of environmental injustice inflicted by the multinational oil companies who do not consider the human health, economy well-being and livelihood of Ogoni people. The significance of the songs is magnified by the chanting of the war songs, marginalization songs, and societal ills songs by the Koromuu music dance group. Examining environmental degradation in the form of pollution tests the application of an ecomusicological approach because ecomusicology emphasises the triangularity of culture, environment and human beings (Allen and Dawe 2016).

Ecomusicology is invoked not only in the context of music about the environment, but also because the music is an admonishment to people/government who had neglected their responsibilities to the Ogoniland. The music is a reminder to people of how they had abandoned their communities, and about how pollution had devastating effects on the environment and their livelihoods. Studies on music, nature, culture and the environment, as an evolving area of scholarship, are increasing rapidly.

The ecomusicological trajectory is well articulated in Feld (2012), Titon (2013), Allen (2011), Taylor and Hurley (2011), and Impey (2008, 2013, 2018). These scholars view ecomusicology as the study of music, sound and nature in a period of environmental crisis. Taylor and Hurley (2011: 8) argue that ecomusicology is the intersection of music and environment and it provides new opportunities and challenges to music creators, new sonic experiences to audiences, and new objects of study. They note that discourse on music and environmental degradation, pollution and health hazard, is a focus with which scholars need to engage in order to enlighten the society.

The relationship between environmental studies and popular music as a necessary area of scholarship has gained momentum (Pedelty 2012, 2013, 2016, Rees 2016, Rehding 2011, Guy 2009, Ramnarine 2009, Silvers 2015, 2018). These scholars emphasise the urgent need to engage with popular music which focuses on environmental issues because popular music has wider appeal and is more easily consumed than many other styles of music. This paper follows in the wake of those cited above.

Primary data was obtained through interviews with musicians and selected members of the community in the affected areas of Ibadan. Interviews were based on the reception of selected songs. Secondary sources included the use of the internet, books and journals. The analyses of lyrics and descriptions of environmental pollution-related songs were categorised as educational tools, alongside historical accounts, and coping and relief mechanisms considered as a response to environmental pollution, health hazards, and marginalization of Ogoniland. My discussion will draw upon the popular music of four Koromuu music dance group. Generally, the musical practices, compositions, and performances of the musicians are culturally situated within the Ogoni worldview.

Saro-Wiwa (1985), opined that these are songs from an active mind, an intellect that would distil order from the cacophonous sounds of different emotions demanding attention and implementation. Any wonder then that the poet is able to adopt various attitudes: the cynical, the symbolic, and the harshly critical-all these underscored by a mind that can mock the foolishness of man in sardonic poetry that can make the mind ping. Below are some songs by the Koromuu music dance group:

Meaning

Pia Shell neakeh I li mii	Nigerian government and Shell kill us with their gun
Dee sor mm mii dee sor	And also use their army drag us from the land
Basu naa I tamah basu noli	Just because we demanded our percentage
nor I gb o a ab e I cor nemenanu	

Ziinu a naa tee I lo a dere
Pia mene – ziinu a naa tee I lo a dere
Pia mene ziinu a naa tee lo a dere
Pia mene ziinu a naa tee I lo a dere

This mean that when some of our chiefs collected bribe from Shell and Nigerian government, their name was sing in the music and called them vulture.

Meaning

Let anything happen to us.

When this particular song was released, some of them withdrew themselves and some ran to Abuja and USA for the fear of killing them by the Ogonis

Aakeh aakeh Pia Ogoni

Aakeh ii le yirana kor nyor-ue a zia I

Mean: Arise arise, we will not allow the world to cheat us.

This was as a result of when our waters, crops, sickness, land were destroyed by the oil pollution in Ogoni.

Ogoni and its Environmental Degradation

Environmental degradation, which mirrors the decline or deterioration in the quality of the natural environment and the disruption of life-sustaining ecosystems, is the lot of Ogoniland due to the fallouts from oil exploration and exploitation.

Although Nigeria is among the leading nations which has ratified various international conventions for the protection of human rights and fundamental freedoms, more emphasis is on civil and political rights entrenched in the Constitution than on the 'third generation rights' which include the right to a clean and healthy environment.

The activities of some oil multinational companies, especially the Shell Petroleum Development Company, had started in Nigeria in 1958. However, the present unbearable level of environmental degradation in the major oil producing areas of Nigeria, especially the Ogoniland of Rivers State, has seriously sensitised the people to embark on protests to defend their rights even in the face of government stiff opposition. It was in the course of the people's struggle in Ogoniland that Ken-Saro Wiwa and eight other Ogoni human rights activists were arrested, tried, condemned to death and executed. It is true that the Nigerian Government cannot afford to toil with the production of crude oil since it is the major source of revenue for the country, our contention is that total neglect of the right of the people to a clean and pollution-free environment will be more disastrous to all economic gains which exploitation of crude oil can consolidate (Idowu, 1999).

Water contamination of local water supply resulted in fish kills and ruinous effects on farmland. A Human Rights Watch interview with Uche Onyeagocha, staff attorney, Civil Liberties Organisation (Port Harcourt), Washington, D. C., May 12, 1995, documented that members of minority groups in the Niger Delta, whose land is the source of over 90% of Nigeria's oil, especially opposed the prevailing revenue allocation formula, under which the federal, state, and local governments had almost complete discretion over the distribution of oil proceeds. 80% of Nigeria's federal government revenue comes from this resource rich region. The World Bank estimates this accrues to only 1% of the general population.

The Ogoni people will make representation to the World Bank and the International Monetary Fund to the effect that giving loans and credit to the Nigerian Government on the understanding that oil money will be used to repay such loans is to encourage the Nigerian government to continue to dehumanise the Ogoni people and to devastate the environment and ecology of the Ogoni and other delta minorities among whom oil is found. The Ogoni people will inform the United Nations and the Organisation of African Unity that the Nigerian Constitution and the actions of the power elite in Nigeria flagrantly violate the UN Declaration of Human Rights and the African Charter of Human and Peoples Rights; and that Nigeria in 1992 is no different from Apartheid South Africa. The Ogoni people will ask that Nigeria be duly chastised by both organizations for its inhuman actions and uncivilized

behaviour. And if Nigeria persists in its perversity, then it should be expelled from both organizations.

This paper also examines the impact of two significant oil spills in the Niger Delta which occurred in 2008. It focuses on the Bodo community in Ogoniland. The paper adheres to Ken Saro-Wiwa's belief that 'the environment is man's first right' and that the environment should be viewed as the foundation and basis for other rights—such as social, political and economic. The environment is thus regarded as integral to the existence of a community. This innovative research sheds light on the impact of the oil spills on the economic, social and cultural institutions through a case study on Ogoniland. The environmental degradation is clearly visible through the creeks and network of swamps; however, what is 'less visible' and equally important is the 'cultural erosion' of indigenous institutions. It is argued that the impact of the oil spills in 2008 have been so severe that they have not only significantly altered the environmental landscape but they also have the potential to alter the ethnographic landscape of Ogoniland. In recognition of Ken Saro-Wiwa, it is argued that the cultural human rights of marginalized and excluded groups, such as the people of Ogoni, must be preserved. In consonant with the foregoing Ken Saro-Wiwa compose a song titled "Epitaph for Biafra" to draw the attention of government and entire global village on marginalization and environmental degradation.

Epitaph for Biafra

(i)

Where will they go now?

Nowhere, nowhere.

Where can they go now?

Nowhere, nowhere.

Nowhere

Where the young men lost their bones

In lonely trenches

In a plain of agony.

Marching to nowhere

Where nothing waits upon nothing

Where the bones await the bones

In a dance of death.

(ii)

What will they do now?

They'll have toads for super

They had snakes for lunch

And lizards for breakfast.

Reptiles are a delicacy

On the survival menu.

The cooks of Europe will praise

Their ingenuity

In the survival game!

(iii)

They will play at Rebels

And Vandals

Fill the nation with blood

And scandal.

Then they will return as agents

And angels

Laughing and weeping and begging

For minor mercies.

(iv)

Didn't they know that bones are brittle
The matchet swing a bloody path?

Didn't they test the hardness of the egg
On the skin of their teeth
Before dashing it against the rocks?

Didn't they know that water turned wine
But once in days of yore?

So they should stop their foul breath
From infecting God's good air.

Ogoniland is characterized by typically deltaic features: uneven terrain, numerous creeks, shallow brackish water bodies and a variety of vegetation types including swamp forest. The following section describes in detail Ogoniland's environmental setting and oil industry operations.

It focuses specifically on the Bodo community in Ogoniland. This paper adheres to Ken Saro-Wiwa's belief that 'the environment is man's first right' and that the environment should be viewed as the foundation and basis for other rights - such as social, political and economic. The environment is thus regarded as integral to the existence of a community. This novel research sheds light on the impact of the oil spills on the economic, social and cultural institutions through a case study on Bodo. The environmental degradation is clearly visible through the creeks and network of swamps; however, what is 'less visible' and equally important is the 'cultural erosion' of indigenous institutions. It is argued that the impact of the oil spills in 2008 have been so severe that they have not only significantly altered the environmental landscape but they also have the potential to alter the ethnographic landscape of Bodo. In recognition of Ken Saro-Wiwa, it is argued that the cultural human rights of marginalized and excluded groups, such as the people of Bodo, must be preserved.

Decades of oil exploitation, exploration, and production activities in the Niger Delta have led to severe environmental degradation that has created complex problems in the region. Environmental exploitation has been a major point of contention between the Nigerian governments, multinational oil companies (MOCs) – the Shell Petroleum Development Company (SPDC) in particular—and the communities affected by oil pollution. Many years of struggle between Ogoni communities and Shell to clean up oil spills from their operations have brought practically no change – of the 27 United Nations Environment Program (UNEP) specific recommendations including change in regulatory framework, monitoring, operational, technical, and public health, only three have been partially implemented. Of utmost importance, were the eight emergency measures requiring urgent necessary action, and for which UNEP specifically assigned priority framework for redress. They were meant to address such matters as immediate supply of drinking water especially for people of Nsisioken Ogale community, whose drinking water supply was detected to have been contaminated with benzene at levels 900 times above World Health Organization's (WHO's) recommendation. Although a 2013 - 2014 study suggests that provisions for portable water were made at certain locations, supply was however epileptic and short-lived. Community members resorted to purchasing water from retailers and using rainwater. For the poor who could not afford it, they resorted to use of the polluted water, seeing they had no alternative. In fact, at some point the water tankers responsible for dispensing drinking water to Ogale and Obolo communities were observed to be empty. Some of them were perpetually parked at some other locations within Eleme. Investigations revealed that some households spent about 150 - 200 Naira to get daily clean water supply. This constitutes a substantial strain particularly in a country where approximately 60.9 percent of the population live in "absolute

poverty”, and about 100 million live on less than a \$1 a day. Much worse for Ogoni and other affected communities, is the fact that dwellers suffer heightened deprivation of livelihood means due to severe oil pollution and associated consequences.

Both the Nigerian government and Shell have paid little attention to the cry of these people whose ecosystems, ecology, and consequently, means of livelihood have been severely impacted. The relentless efforts channeled towards environmental justice by the impoverished Ogoni people culminated in the birth of the Movement for the Survival of the Ogoni People (MOSOP). MOSOP-led protests sustained the continued struggle to end the prevailing environmental degradation in the Niger Delta. The complicatedness of issues entrenched in the disagreement among people, politics, and the MOCs severely hindered the successful furtherance of MOSOP’s principal goal of ending further ecological damage, and the revitalization of the polluted environment - years of negotiations and protests failed to bring about the desired solutions. Finally, in July 2006, with a view to progressing from decades of standstill, the Nigeria federal government invited the UNEP to conduct an environmental assessment (EA), and propose lasting solutions to the environmental problems created by Shell, thereby ending the prolonged feud among involved parties. Meanwhile, as part of its undying relentlessness to pursue environmental justice in the Niger Delta, and ultimately, the restoration and sustainability of the environment, on 19 January 1993, MOSOP joined the Unrepresented Nations and Peoples Organization (UNPO). The UNPO is an international democratic organization whose membership includes indigenous peoples, minorities, and isolated or uninhabited territories. Their central goal is to assure and uphold cultural and human rights, as well as to safeguard their environments by way of applying nonviolent conflict resolutions. MOSOP faced horrendous challenges meted out by the military dictatorship, including various degrees of mistreatment, arrests, detention, and even killing of its members, including the execution of Ken Saro-Wiwa, MOSOP founder. Nevertheless, their unswerving efforts facilitated the eventual ejection of SPDC from Ogoni in 1993, enhancing the popularity of the entire Ogoni situation within the international community. The Ken Saro-Wiwa-led MOSOP peaceful protest involving approximately 300,000 Ogoni people brought about this successful eviction on 4 January 1993. Ken Saro-Wiwa was executed on 10 November 1995.

Overview of Oil Exploration in Ogoniland

On 3 August 1956, oil was discovered in commercial quantities in Oloibiri, Ogbia local government area (LGA), in Bayelsa State of the Niger Delta. This discovery placed Nigeria among the group of oil-producing nations, which today remains Africa’s largest producer. It is estimated that Nigeria has a daily production of 2.4 million barrels, making it the 13th largest producer of oil worldwide. Also, Nigeria has the second largest proven oil supplies in Africa and the 10th largest in the world. Interestingly, amidst the complexity of ethnic, environmental, political, and social problems besetting this highly valuable resource, it remains the principal export, and largest source of foreign earnings. Petroleum has accounted for 80% of Nigerian federal government’s revenue and 95% of the country’s export earnings. Apparently, oil discovery signified the dawn of Nigerian’s transformation both in economic and political terms. Besides being a major contributor (together with the offshore fields) to the nation’s petroleum resources, the Delta buoys African’s most extensive wetland-one of the largest in the world. Situated in the South geopolitical region of the country, the Niger Delta is considered one of the most densely populated African regions, also serving as habitat to certain very rare species. It has the largest mangrove forests in Africa, and is the third largest in the world. It represents the most abundant part of the country in terms of petroleum resources, and diverse natural ecosystems, supportive of numerous species of terrestrial and water-living organisms.

Regrettably, this primeval natural resource has suffered incalculable ravages by oil prospecting for decades, significantly affecting host communities and their dwellers. According to research, oil spills have had long-term devastating effects on the locals, particularly those who are directly affected. Much worse is the effect on dry lands and freshwater swamps, which hold the means of livelihoods for millions in the region. In these environments, impacts were determined to be concentrated, thus exerting more chronic and catastrophic environmental and health effects. Furthermore, research suggests that the mangrove forest is notably susceptible to hydrocarbon contamination due to its soil properties. Oil is absorbed, retained, and re-liberated once the rainy season starts, thus aggravating the extent of pollution. In the event of oil spills which is usually gushed over a large area from source, arable crops including cassava (*Manihot esculenta*), corn (*Zea mays*), and vegetables; shrubs and highly economically valuable trees like oil palm (*Elaeis guineensis*); fish farms, as well as other valuable assets are destroyed. The overall impact potentially deprives households of as much as an annual supply of food or income. This may impose a ripple effect in that for some, the implication apart from the health impacts is some socioeconomic consequences, including pupils missing school. In some cases, it takes more than a few months and up to a few years to recover from such havoc.

This all boils down to the fact that oil production involves severe environmentally destructive activities, especially exploration and exploitation. They entail tree-felling, installation of drilling equipment and pipelines. Among these, seismic activities and drilling constitute the most severe environment-damaging activities. The former involve deforestation and the application of explosives to generate sub-surface maps. In the process, the ecology is impacted: soil structure, vegetative cover, areal fauna and flora populations are critically altered. Additionally, the soil is exposed and consequently its vulnerability to erosion is heightened. Drilling on the other hand, involves “bush clearing” for creating access roads and waste pits. In situations where exploration and exploitation occur in the mangrove area, dredging (removal of sand, silt and mud) is carried out using a dredging machine to provide access routes. The adverse environmental effects include hydrological changes and groundwater pollution. Worse still, oil production activities generally pollute both surface and groundwater with benzene, toluene, ethylbenzene and xylene (BTEX) as well as other toxic chemicals including toxic polyaromatic hydrocarbons (PAHs). The environmental health consequences are far reaching, particularly in most areas of the Niger Delta where residents are dependent on very shallow wells connecting aquifers. Offshore oil exploration/exploitation is also in practice, and accounted for as much as 30% of total oil production in the 1980s. To date, it is still employed and constitutes a principal source of revenue. Much as its contribution to the national oil yields is significant, and so are its environmental consequences.

Unquestionably, the oil industry has had very grave and consequential impacts on the Niger Delta and its people. Some specific major disasters include the killing of 180 people, which occurred as a result of the extensive 1980 Texaco spill that poisoned streams serving as drinking water sources, and those that have killed children, leading to the hospitalization of about a hundred other villagers, due to the consumption of water contaminated by oil leaks. Furthermore, the ruinous and shocking effects of environmental pollution are depicted in results obtained from analysis of water samples from Luawii community in Ogoni, in 1997. Water used for drinking and other domestic purposes was sampled from water sources within communities where oil production had ceased for the past 4 years. Samples were then analyzed in the US. The result showed that hydrocarbon content of the samples was 18 parts per million (ppm), 360 times the tolerable limits for drinking water by the European Union

(EU) standards. In addition, the samples from Ukpeleide, Ikwerre contained even higher amounts - 34 ppm, 680 times the acceptable limits by the EU specification.

Ogoniland

Ogoniland has a population of close to 832,000, and a population density of 1250 km². The region administratively has four LGAs, namely: Eleme, Gokana, Khana, and Tai. Covering around 100,000 km² in Rivers State, Ogoniland is one of the prominent areas in the Niger Delta region, and has been the site of oil industry operations since the late 1950s. It has a calamitous history of pollution from oil spills, gas flares, and oil well fires.

The area is naturally endowed with an abundance of rivers, creeks, and streams. Consequently, it has predominantly traditional fishers and farmers. In the past, it was referred to as the “food basket of the Niger Delta” because it produced cash crops for neighboring Niger Delta regions as well as subsistence agriculture. This traditional practice enhanced sustainable management of the abundant natural resources.

Oil Conflict

Undoubtedly, the history of oil operations in the Niger Delta is one characterized by continued dispute among the people and the oil industry, on the one hand, and strong discord between the people and the government, on the other. This led to a morbid atmosphere of animosity, buck-passing, and distrust over the years. The situation was further fueled by a military dictatorship ruling at the time. Unfortunately, in Nigeria’s 57 years of existence as an independent nation it has been ruled by a democratic government for no more than 18 years. Military interference resulted in six successful coups that ended three democratically elected governments between 1966 and 1993. Military rule was characterized by fundamental human rights abuse facilitated by the suspension of federal constitution. Lamentably, Nigeria has been ruled by the military for 39 years.

Amidst the continued “despoliation” of Ogoni’s natural resources, anthropological environmental degradation, persistent poverty due to deprivation of livelihood means, and utter disregard for culture and tribal language, the Ogonis presented the “Ogoni Bill of Rights” (OBR) to the government and people of Nigeria in 1990. The same bill was concomitantly presented as an appeal to the International community through MOSOP. OBR mainly demanded political autonomy of the Ogoni people as a recognizably separate division to partake in the dealings of its “Republic”, assuring direction, and exercising restraint politically over the affairs of the Ogonis. It was also suggested that this autonomy would authorize the use of a significant portion of Ogoni economic resources for the development of Ogoniland, acceptable delegation in national institutions in terms of rights, and of utmost importance, the prerogative to preserve the ecology and environment from additional destruction. This was presented against the backdrop of the huge economic benefits (30 billion USD, at the time) that the Nigerian state has gained from Ogoniland, yet the people gained nothing, lacking basic amenities including pipe-borne water, electricity, job opportunities, federal government projects, and representation in federal government institutions. The OBR has been described not only as a novel effort containing Ken Saro-Wiwa’s ingenious ideas, but also an unprecedented bill that was directed to both the Nigerian government and MOCs (Shell in particular). It is a veritable representation of the original development, since inception, of a self-determination movement. It also provided the template for other minority and disenfranchised groups to crop up and pursue their own recognition, social justice, and human rights. These include the Kaiama Declaration of the Ijaw Youth Council (IYC), and the Movement for the Emancipation of the Niger Delta (MEND).

The ensuing years of Shell's eviction from Ogoni and in 1993 was marked with various unfruitful negotiations and protests no proffered solution seemed to work, either to favor or meet the prospects and demands of any of the parties involved.

Oil Production-Related Environmental Health Problems

Air Quality

The environmental pollutants discharged from the continued flaring of gas in communities of the Niger Delta, severely impacts air quality. This has detrimental consequences on the people. Sadly enough, even though legislation regulating gas flaring has been passed with the aim of completely phasing it out, including the 1984 complete prohibition target, the operation continues in other parts of Niger Delta, having stopped in Ogoni. Although, there seem to be a dearth of studies aimed at evaluating the health impact of poor ambient air quality on humans in the Niger Delta, it may be fair to say that there is still a reasonable number of published articles disclosing substantial (adequately sufficient to motivate necessary action) information related to the fact.

Natural Gas is Currently mostly Disposed of either by Flaring or Venting

Gas flaring refers to the process of burning the gas on reaching the ground surface during exploration and exploitation processes. Venting, on the other hand, involves discharging the gas into the air without burning. In addition, Emam describes flaring as the controlled combustion of unprocessable (due to technical or economic reasons) natural gas that may otherwise be sold or used. Both practices involve atmospheric discharge of hazardous substances and are therefore environmentally unfriendly, constituting major source of air pollution that has had very severe environmental and public health consequences in the Niger Delta. Research indicates that over the past decades, over 75% of associated gas produced has been flared, representing an equivalent of 45 million tons of carbon dioxide per day. According to Agbola et al., an estimated 45.8 billion kilowatts of heat are emitted from flaring, an average of 1.8 million cubic feet of gas per day. Similarly, the Fridtjof Nansen Institute and Nriagu posit that gas flaring in the Niger Delta adds an approximate 35 million metric tons of carbon dioxide and methane, annually. The issue is further aggravated by the inefficiency of the flare systems, which leads to incomplete combustion of the gas, giving rise to the formation of various hazardous organic products such as volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), and a number of inorganic pollutants. The result of this is a complex interaction of thermal pollution and air pollutants, which can give rise to further complex substances that are harmful to human and environmental health. Owing to incomplete combustion, a larger percentage of the flared gas released is methane. This has, over the decades, increased the amount of greenhouse gases (GHGs) in the atmosphere, hence increasing the global warming potential of the region. Having over 123 flaring sites, Nigeria is known to be the largest gas producer in Africa and one of the highest emitters of GHGs globally, along with Russia and Iran. Although records show a 29% reduction in gas flaring in the Niger Delta between 2005 and 2010, it is nonetheless described as "still" consequential as it did not change the country's situation as one of the worst offenders in gas flaring, second only to Russia.

One major observable lifestyle of the Ogoni people is the fact that most of their daily activities such as farming, fishing, bathing, cooking, and most other domestic chores are outdoor-related. Hence, they are being exposed to the "too numerous to count (TNTC)" toxic chemicals, including benzene, dioxin, and benzopyrene. The quantities of these emissions far exceed both local and international standards, and have had various severe health consequences such as asthma, respiratory difficulties, premature deaths, cancer, and miscarriages among pregnant women.

Food Quality/Supply

Due to the prevailing widespread pollution, agricultural lands have been severely impacted causing a reduction in the quantity of harvest. In addition, because of the direct contact with plants, or indirect contact via the absorption of nutrients from contaminated soils, the quality of food is severely impacted. Notable among these are the high reduction in the ascorbic acid content of vital vegetables like water leaf (*Talinum triangulare*), spinach (*Spinach oleraceae*) and garden egg (*Solanum melongena*), whose vitamin C contents were reduced by 36%, 40% and 19% respectively. Along the same line, the major staple, cassava (*Esculenta* spp.) planted in oil polluted soils had its crude protein content reduced by 41%. Although, according to UNEP's 2011 findings, fish contamination was not as high as expected, they discovered that they had migrated to safer and cleaner water. This is forcing fishers to travel very long distances from their localities. In terms of health impacts on the locals, Gobo argue that the prevalence of diarrhea in the Niger Delta is on the rise because of the consumption of fish and other animals contaminated by hydrocarbons contained in the spilled oil. Furthermore, it has been determined that bioaccumulation of benzo (o) pyrene, other hydrocarbons, and heavy metals, has occurred in toxic amounts in major high protein content sea foods, such as periwinkle (*Tympanotonus fuscatus*) and the Mudskipper (*Periophtalus papillio*). Additionally, accumulation of oil in plants' roots causes them to wilt thus substantially reducing harvests of cash and food crops.

Waste Disposal/Hazardous Chemicals

Produced water is the major waste product generated from petroleum exploration and production activities. Others include spent drilling muds, and drilling cuttings. Produced water is known to be a complex composition of numerous hazardous chemicals, including large quantities of heavy metals, inorganic, and organic substances, including naturally occurring radioactive materials (NORMs). According to Telleza et al., the two main disposal methods for produced water are environmentally unfriendly. The array of hazardous chemicals contained in petroleum waste streams and their unwholesome disposal has resulted in untold damage to environmental media that are unyielding to known remediation technologies.

In its 2011 Assessment of Ogoniland, the UNEP project team detected the indiscriminate disposal of numerous industrial packing bags containing 1000–1500m³ of waste, suspected to be cuttings from oil drilling operations. These were dumped at an open site where they constituted severe human and environmental health risks. Such open waste disposal in unlined pits is an indication of how compliance with environmental regulations is severely contravened by all the parties involved, including the waste generator, transporter, as well as disposal agents.

Water Quality

Oil spills end up in the environment including water, contaminating waterways, imparting a significant detriment to marine life and sources of water for domestic use. Further, discharged oil often sinks into groundwater, contaminating it. It has been established that such polluted ground water is usually difficult to remediate, and the process of remediation can take many years. Once underground, the polluted water system is transported within and between water systems that end up in wells and streams that supply the surrounding communities. These communities depend on such water resources for their only source of drinking water.

References

Idowu, A. A. (1999). Human Rights, Environmental Degradation and Oil Multinational Companies in Nigeria: The Ogoniland Episode. Available online from

- Fentiman, A.; Zabbey, N. Environmental Degradation and Cultural Erosion in Ogoniland: A Case Study of the Oil Spills in Bodo. *Extr. Ind. Soc. Int. J.* 2015, 2, 615–624.
- United Nations Environment Program (UNEP). Environmental Assessment of Ogoniland. Available online: http://postconflict.unep.ch/publications/OEA/UNEP_OEA.pdf (accessed on 29 December 2016).
- Environmental Rights Action/Friends of the Earth Nigeria; Center for the Environment, Human Rights and Development; Friends of the Earth Europe. Amnesty International No Progress: An Evaluation of the Implementation of UNEP’s Environmental Assessment of Ogoniland, Three Years On. 2015. Available online: https://www.amnesty.org.uk/files/unep_briefing_2014_niger_delta.pdf (accessed on 25 February 2017). Platform. Polluted Promises: How Shell Failed to Clean Up Ogoniland. Available online: [http://platformlondon.org/wp-content/uploads/2014/05/Polluted Promises FINAL low res.pdf](http://platformlondon.org/wp-content/uploads/2014/05/Polluted_Promises_FINAL_low_res.pdf) (accessed on 24 December 2016).
- BBC News. Nigerians Living in Poverty Rise to Nearly 61%. Available online: <http://www.bbc.com/news/world-africa-17015873> (accessed on 6 March 2017).
- Frynas, J.G. (2000). *Oil in Nigeria: Conflict and Litigation between Oil Companies and Village Communities*; LIT Verlag: Hamburg, Germany.
- Unrepresented Nations and Peoples Organizations. Available online: <http://unpo.org/section/2> (accessed on 29 February 2017).
- Agbonifo, J. Territorializing Niger Delta Conflicts: Place and Contentious Mobilization. *Interface J. Soc. Mov.* 2011, 3, 240–265.
- Saro-wiwa, K. (1995). Complete Statement by Ken Saro-Wiwa to Ogoni Civil Disturbances Tribunal. Available online: <https://ratical.org/corporations/KSWstmt.pdf> (accessed on 1 March 2017).
- Frynas, J. G. (2001). Corporate and State Responses to Anti-Oil Protests in the Niger Delta. *Afr. Aff.* 100, 27–54.
- Manby, B. (1999). *The Price of Oil: Corporate Responsibility and Human Rights Violations in Nigeria’s Oil Producing Communities*; Human Rights Watch: New York, NY, USA; pp. 1–193.
- Pegg, S. (2015). Introduction: On the 20th Anniversary of the Death of Ken Saro-Wiwa. *Extr. Ind. Soc. Int. J.*, 2, 607–614.
- Tamuno, S.; Felix, J. M. (2006). Crude Oil Resource: A Blessing or Curse to Nigeria—The Case of the Niger Delta. *J. Res. Natl. Dev.* 4, 53–58.
- African Vault. Top 20 Oil Producing Countries in Africa. Available online: <http://www.africanvault.com/oil-producing-countries-in-africa/> (accessed on 13 December 2016).
- Pitkin, J. Oil, Oil, (2013). *Everywhere: Environmental and Human Impacts of Oil Extraction in the Niger Delta*. Bachelor Thesis, Pomona College, Claremont, CA, USA.
- Balouga, J. *The Niger Delta: Defusing the Time Bomb*. International Association for Energy Economics, 2009. Available online:

<https://www.iaee.org/documents/newsletterarticles/109balouga.pdf> (accessed on 27 December 2016).

- Barbier, E.B.; Acreman, M.C.; Knowler, D. (1997). *Economic Valuation of Wetlands, a Guide for Policy Makers and Planners*; Ramsar Convention Bureau: Gland, Switzerland.
- Wetlands International. *Conserving and restoring wetlands in Nigeria's Niger River Delta*. Available online: <https://www.wetlands.org/casestudy/conserving-and-restoring-wetlands-in-nigerias-niger-river-delta/> (accessed on 28 December 2016).
- Ite, A. E.; Ibok, U. J. (2013). Gas Flaring and Venting Associated with Petroleum Exploration and Production in the Nigeria's Niger Delta. *Am. J. Environ. Prot.*, 1, 70–77.
- Okonkwo, C.N.P.; Kumar, L.; Taylor, S. (2015). The Niger Delta Wetland Ecosystem: What Threatens It and Why Should We Protect It? *Afr. J. Environ. Sci. Technol.* 9, 451–463.
- Ogri, O.R. (2001). A review of the Nigerian petroleum industry and the associated environmental problems. *Environmentalist* 21, 11–21.
- Godson, A. R.; Sridhar, M.K.; Bamgboye, E.A. (2009). Environmental Risk Factors and Health Outcomes in Selected Communities of the Niger Delta Area, Nigeria. *Perspect. Public Health* 129, 183–191.
- Ndubuisi, O.L.; Asia, I.O. (2007). Environmental Pollution in Oil Producing Areas of the Niger Delta Basin, Nigeria: Empirical Assessment of Trends and People's Perception. *Environ. Res. J.*, 1, 18–26.
- Bestoyin, K.O. (2015). Democracy and Development: A Comparative Analysis of Nigeria and Malaysia. *Am. J. Humanit. Soc. Sci.*, 3, 70–82.
- Tijen, D.; Scott, P. (2015). Razed, Repressed and Bought Off: The Demobilization of the Ogoni Protest Campaign in the Niger Delta. *Extr. Ind. Soc.*, 2, 654–663.
- Senewo, I. (2015). The Ogoni Bill of Rights: Extent of actualization 25 years later? *Extr. Ind. Soc.*, 2, 664–670.
- Europe-Third World Centre (CETIM); Environmental Rights Action/Friends of the Earth Nigeria (ERA/FoEN). *Cases of Environmental Human Rights Violations by Shell in Nigeria's Niger Delta*. Available online: <http://www.cetim.ch/wp-content/uploads/G1404473.pdf> (accessed on 26 December 2016).
- Barry, F.B. (2010). *Environmental Injustices: Conflict and Health Hazards in the Niger Delta*. Master's Thesis, American University, Washington, NW, USA.
- Buzcu-Guven, B.; Harriss, R. (2012). Extent, Impacts and Remedies of Global Gas Flaring and Venting. *Carbon Manag.* 3, 95–108.
- Emam, E. A. (2016). Environmental Pollution and Measurement of Gas Flaring. *Int. J. Innov. Res. Sci. Eng. Technol.* 2, 252–262.