

## **'WHEN WE NOTICE THESE, CALAMITY IS COMING: SOOT, MATERNAL HEALTHCARE AND THE CHALLENGES OF SUSTAINABLE DEVELOPMENT GOALS IN NIGERIA'S NIGER-DELTA**

Olasupo THOMPSON,  
Peace and Development Studies, Institute of  
Communication and General Studies,  
Federal University of Agriculture Abeokuta

Olayinka AJEWOLE,  
Department of Architecture,  
Anchor University, Ayobo, Lagos.

Bamidele Judenson JINADU  
Graduate Student, Peace and Development Studies,  
Institute of Communication and General Studies,  
Federal University of Agriculture Abeokuta

Phoebe D. AWANGE  
Founder, Break the Silence Initiative  
Nigeria and PhD Candidate,  
Nassarawa State University, Keffi

Emmanuel O. ADEMOLA,  
Peace and Development Studies,  
Institute of Communication and General Studies  
Federal University of Agriculture Abeokuta

Surajudeen O. OLADOTUN,  
Graduate Student, Peace and Development Studies,  
Institute of Communication and General Studies  
Federal University of Agriculture Abeokuta, Ogun State.

### **Abstract**

*The study investigates the impact of soot pollution on maternal healthcare in Port-Harcourt, Rivers State, Nigeria, located in the oil-rich Niger-Delta region. Maternal healthcare in Nigeria faces significant challenges, with high rates of maternal and infant mortality that are among the highest globally. As of 2020, Nigeria accounted for 12% of global maternal, neonatal deaths, and stillbirths, with 540 deaths per thousand births. The study addresses several key questions: What are the causes and effects of soot pollution in Port-Harcourt? How has soot pollution affected maternal health? What responses have been implemented to address the soot issue in Port-Harcourt, and why have these efforts not been fully effective? The study employs a qualitative methodology, drawing sources from media reports and interviews with pregnant and nursing mothers in Port-Harcourt. It identifies soot pollution as stemming from illegal bunkering, gas flaring, and activities of fertilizer plants, adversely affecting pregnant women, nursing mothers, and infants. Despite responses from governmental and non-governmental entities, significant progress remains elusive, hindering the achievement of Sustainable Development Goals (SDGs). Recommendations include addressing root causes such as unemployment and poverty, emphasizing the necessity of political commitment among stakeholders to combat these illegal activities effectively.*

**Keywords:** maternal mortality, infant mortality, health, women, sustainable development goals

## **Introduction**

There is no doubt that the global community has been under immense threat from the programmes, policies and activities of man. These activities have led to war, conflicts, ignorance and superstitions leading to deaths, ill health, and loss of means of livelihoods, food and nutritional insecurity and almost extinct of the human race and traces from the earth. These threats have gained global discourse. One of the global responses is the sustainable development goal. The Sustainable Development goal (SDGs) is an internationally driven blueprint for the world to be a better place. It is a plan of action for people, planet and prosperity in order to bring peace through a sustained partnership to the human race (UN, 2022). However, the activities of human beings have made these goals almost a chimera as the entire target which is people, planet and prosperity is under immense threat (UN, 2022; Osborn et al 2015).

There is a linkage between pollution, maternal healthcare and sustainable development goals. Pollution in whatever form be it water or air or land has enormous negative effects on human health and well-being. The United Nations and the World Health Organisation states that [2.2 billion](#) people lack access to safe drinking water and that while over half the global population do not have safely managed sanitation services; half the world's population will live in a water-stressed environment by 2025 (Medical News Today, nd). The UN further states that [approximately 297,000](#) children under five die from diseases linked to poor sanitation, poor hygiene, or unsafe drinking water every year (UN, 2019). A Report noted that the PM2.5 concentration in Port Harcourt is four times the WHO annual air quality guideline value (The Guardian, 2023). Analysts have warned that residents may as a result of the environmental pollution experience chronic respiratory diseases, skin disease, heart problems and an increase in mortality rate in spite of the interventions so far by the major stakeholders. A UNEP (2011) report on the assessment of Ogoniland found among other things that there is a severe and widespread contamination of soil and ground water across Ogoniland and that in a number of locations public health was severely threatened by contaminated drinking water and carcinogens. The report also found that the Delta ecosystems such as mangroves had been utterly devastated. The report also found that institutional control measures in place both in the oil industry and the Government were not implemented adequately. The report proposed the establishment of a restoration authority with an explicit mandate to clean up Ogoniland and restore the ecosystems as well as the establishment of an Ogoniland Environmental Restoration Fund with an initial capitalization of 1 billion dollars to cover the clean-up costs. Nwachukwu et al (2012) examined the impact of air pollution in Port Harcourt Rivers State. They found that unsafe levels and concomitant health risks and that air pollution has direct impact on health of the people. They recommend that the intensification of environmental education, especially among rural dwellers in the state is very essential to overcoming the health as well as pollution problems. Yakubu (2017) examined the impacts of soot epidemic in Port Harcourt and the various interventions by the federal government. He found that the epidemic having been discovered in 2016; causes cancer, respiratory and intestinal diseases among other vagaries of diseases and that in spite of the efforts of government through policies and acts, much has not been achieved. Maternal health is the overall well-being of pregnant women. It is a gamut of stage ranging from pregnancy to after birth. While child birth should be an interesting time for mothers and babies, the case in most developing countries or underdeveloped countries is an opposite even when most of these cases are preventable particularly with regular visitation for antenatal care (ANC). Thompson (2021) traced the history of maternal healthcare in Nigeria to pre-colonial era. He further stated that during this period women and professional traditional birth attendants provided healthcare services to women seeking the fruit of the womb, pregnant women and nursing mothers and that while the services of the women within each compound were free; that of the professional midwives were upon the payment of a token. Sam and Zibima (2023)

advances the need for women to be involved in the management of environmental issues in the Niger Delta in spite that lack of trust and confidence in drivers of the environmental decision-making process could affect women's participation and involvement in environmental management. Thompson et al (2023) reveal that public policies affect the quality of maternal healthcare. While a lot of attention has focused on maternal healthcare, pollution; adequate attention has not been dedicated to soot and maternal healthcare. However, the linkage between pollution and maternal health is still not sufficiently addressed in the literature.

Therefore, this paper examines the impact of environmental pollution on maternal healthcare in the Niger-Delta region of Port-Harcourt, Rivers State, Nigeria. The questions that this paper seeks to answer are: What are the causes and impact of soot pollution in Port- Harcourt? How has soot pollution affected maternal health? What have been the responses to the soot phenomenon in Port-Harcourt and why have these responses faired? The answer to these questions will be of immense benefit to policy makers, donor countries and healthcare practitioners, researchers as well as to experts monitoring and evaluating the successes of the SDGs. The study is in line with SDGs 3 (health and well-being), 7 (affordable and clean energy) 11, 14 and 15.

### Understanding the Niger-Delta and the Healthcare System in Nigeria

The Niger Delta is a very densely populated region sometimes called the Oil Rivers because it was a major producer of palm oil. After the Berlin Conference of 1884/1885, the area became the British Oil Rivers Protectorate from 1885 until 1893, when it was expanded and became the [Niger Coast Protectorate](#). After the discovery of crude oil in Oloibiri in 1956, Port Harcourt exported the first shipload from Nigeria in 1958.

The Niger Delta is the largest in Africa and the third-largest in the world, with a total area of 112,106 km<sup>2</sup>. The region has the largest freshwater swamp in Africa and is a biodiversity hot spot because of its rich variety of plant and animal species (Oyegun et al, 2023). The predominant settlement type in the Niger Delta is small and scattered hamlets. The vast majority of settlements comprise largely rural communities in dispersed village settlements. In total, there are 13,329 settlements in the Niger Delta Region. Extrapolations from the 1991 National Population Census showed that at a growth rate of 2.9% the population of the Niger Delta Region by 2004 was about 30 million. Projected to 2015, it is expected that the population will be 41.5 million people

**Figure 1: Estimated Population of the Niger-Delta**

State	2005	2010	2015	2020
Akwa Ibom	3,343,000	3,895,000	4,537,000	5,285,000
Bayelsa	1,710,000	1,992,000	2,320,000	2,703,000
Cross River	2,736,000	3,187,000	3,712,000	4,325,000
Delta	3,594,000	4,186,000	4,877,000	5,681,000
Rivers	4,858,000	5,659,000	6,592,000	7,679,000
Total	28,856,000	33,616,000	39,157,000	45,715,000

**Source:** <https://www.nigerdeltabudget.org/the-niger-delta/>

The Niger Delta, which is also an oil producing region, is made up of seven out of the 36 states of Nigeria. The region includes Delta, Bayelsa, Cross River, Rivers, Akwa Ibom, Edo, Ondo and Imo states. But a combined Delta, Bayelsa, Cross River, Rivers and Akwa Ibom states occupy a landmass of 70 000 square kilometres, an area of high ecological value.

The Delta is a petroleum-rich region and has been the [center of international concern](#) over extensive pollution which is often used as an example of [ecocide](#). The principal cause is major [oil spills](#) by multinational corporations of the petroleum industry (Bubaraye, 2021). Fishing is an important activity along the length of the river system, especially during the dry season when the deep-sea and coastal fish catch is smallest and their major means of transportation is usually water as many of the people have settlements along the bank of the rivers and on these water ways Thus, the water serves as not just source of drinking, transportation and livelihood but cultural aspect of their existence. Since the discovery of oil, the resource has become a two-edged gift to the people and the Nigerian State. While the region continue to earn a strategic place among the western world and its contribution to the vast of the country's foreign exchange and oil to Nigeria and its neighbours; it has failed to manifest in the appearances and posture of the region and its people. Apart from the fact that the country still exports most of its crude oil top foreign countries for refining, the four refineries in the country are moribund. This explains the deep seated corruption in Nigeria's extractive sector (Donwa et al, 2015; Perouse, 2018)

Bloated population, unemployment, government failure, rural-urban migration among other challenges have driven many of the youths to take part in illegal bunkering, artisanal mining and extractive tasks among other illegal jobs that not only affect the environment but also humanity. Most importantly, some government cronies and officials including law enforcement agencies are also involved in some of these illegal activities. To be sure, some militants and stakeholders have pointed out that the Nigerian military is involved in the illegal activities. While the military has denied these accusations, efforts have not been made to apprehend the culpable law enforcement agencies.

The advent of the Christian missionaries in the mid-19<sup>th</sup> century brought about a change and introduction of western healthcare system. Indeed, most of the missionaries were not skilled medical practitioners; but with time, they started coming with medical doctors. This was the beginning of the medical missions anchored on the belief that one can win the indigenes through medicalization and goodwill and not just to preach. With the advent of colonialism, the British colonial government which was initially reluctant to provide western healthcare to women began to have a change of heart by first, collaborating with the existing missionaries and later setting up its own hospitals and healthcare centres. Nevertheless, these facilities were inadequate to address the teeming population who were now interested in patronizing western healthcare facilities together with the indigenous institutions. After colonialism, the post-colonial state embarked on several programmes and policies to increase healthcare facilities and practitioners. They include the Development plans, National Health Act 2014, National Guideline for Maternal and Perinatal Death Surveillance and Response , 2015, Nigeria Every Newborn Actions Plan of 2016, National Health Insurance Scheme now National Health for all among others (Thompson, 2021). International interventions and partnerships are also included in the development of the Nigeria's healthcare system. In spite of international interventions and blueprint such as the Alma Ata



Declaration and Health for All protocols as well as the millennium Development goals (MDGs).

Healthcare falls into the concurrent list of the constitution of the federal republic of Nigeria. By this it is open to both the private and government. As for the government, the healthcare system in Nigeria is organized in three tiers (Federal, State and Local). The Federal Government manages federal teaching hospitals, federal medical centres and national laboratories. It also manages and regulates national health policies and programmes and gives technical supports. The States are responsible for secondary care including comprehensive health centres, district, specialists and general hospitals while the local governments are responsible for primary healthcare which operates at the community level. It is supposed to be the first contact for patients (Equal Evidence and Impact for Mothers and Newborns living in Conflict, 2023). It is reported that Nigeria's health workforce falls short of these targets with four physicians and 15 nurses/midwives per 10, 000 people in 2019.

Nigeria still strives to make healthcare adequate and universal. Thus, the healthcare services of the State can best be described as underdeveloped or developing as it is battling with inadequate facilities, lack of adequate personnel, dependence on importation of equipment and drugs, dilapidated buildings, poor welfare, low pay and low morale, incessant strike actions, and brain drain.

### **Methodology**

The study adopts a qualitative methodology. It has been widely touted that when investigating a relatively unknown phenomenon, a qualitative study is usually appropriate if there are sufficient resources for review (Hancock & Algozzine 2017). It is an exploratory approach, which allows for a phenomenon to be studied within its context. A qualitative study allows for data from multiple sources to synthesise wide perspectives and allows for an in-depth investigation.

Data for the study was elicited from both primary and secondary sources of data collection. The primary sources were purposive selected in-depth interview (IDI) of pregnant women and nursing mothers. The rationale for IDI was to gather new knowledge on a subject matter (Adams and Cox, 2008). The interviews were done via phone and one-on-one. The questions were earlier sent to the respondents after identifying them and they gave their consents to take part in the study. The rationale for the phone was for convenience of both the interviewer and the interviewee who opted for it. The primary data was supported with secondary data such as literature, books from international and non-governmental organisations, media reports and journals.

The study location is Port-Harcourt, River State. Present day Port Harcourt was known as Rebisi before the then Governor-General of Nigeria, Sir Frederick Lugard, in 1913, changed the name. The study location was purposively selected because apart from being part of the Niger-Delta region, the soot phenomenon is common there. It also ticks the criteria of a city as described by the Sustainable Development Goal. The current metro area population of Port Harcourt in 2023 is 3,480,000, a 4.7% increase from 2022.

The data was interpreted through thematic analysis and narrative description. Ethical approval for the study was collected from the Department of Communication and General Studies (FUNAAB/CGNS/2023/Soot).

### **Results**

#### **What are the Root causes of Soot and its Impact?**

The environmental issues affecting the people of Port-Harcourt ranges from water pollution, air pollution to land pollution. These pollutions are caused by the activities of man and multinational oil companies operating in the region. It varies from oil spillage, desecration of ancestral lands and

religious grounds, contamination of water and air to soot.

What are the causes of soot? It has been reported that the root causes of soot in Rivers State are refineries, illegal refiners, setting ablaze of illegally refined petroleum products, tyres burning, gas flaring, meat roasting with used tyres, emissions from asphalt plants, refuse burning, fertilizer companies and others (Godwin, 2021). Other causes are decades of gas flaring by oil corporations, burning of tyres for roasting meat in abattoirs and during celebrations, and emissions from asphalt plants.

### **How Has Soot Affected Maternal Health in Port Harcourt?**

A Report noted that the PM2.5 concentration in Port Harcourt is four times the WHO annual air quality guideline value (The Guardian, 2023). There is no doubt that this is frightening considering respiratory infection offshoots such as influenza and pneumonia are some of the leading causes of death in Nigeria. The routes of entry into the human body include ambient and indoor air inhalation, ingestion of contaminated food, and dermal contact. The soot epidemic has effect on the populace: As Dr. Bieye Renner Briggs, a Public Health Physician and an Environmental Advocate in Port Harcourt put it:

Most people living in the affected communities know that soot is bad, but just how worse things can get is what is unknown to them. Nigerians in Port Harcourt are daily being diagnosed with and dying from soot-related illnesses like birth defects, cancerous growths, miscarriages and irritations of the eye, nose, throat and skin (The Guardian, 2023).

A respondent noted, 'Sometimes we cannot fetch water as our waters are usually dark or oily. In fact when we drink it, we feel some strange taste (IDI, Female, 33 years, Port Harcourt). Another one stated that she has been battling asthma since child birth and her parents told her that it was caused by the environmental hazards and in spite of the monies she has spent to cure the ailments, she fears that her children may inherit the disease (IDI, female, 32 years, Port Harcourt). Indeed while the issue of soot has affected the entire population, one vulnerable population that appears to be most affected or excluded are maternal health. This group is important because of their peculiarities during pregnancies. Apart from the fact that they populate the earth; they are always vulnerable during pregnancies as a result of inactive immune. Women as a result of their vulnerability are one of the most affected people. The categories of these women stems from those looking for the fruit of the womb, pregnant to nursing mothers or women. An expert observed that one of the ways by which soot affects is when it is transmitted through blood from mother to child thereby having a negative influence on the developing foetus in the womb. It may lead to a miscarriage, and if the baby is given birth to, it may now affect some of its physical features, which will be something similar to a birth defect which may in the future lead to cancer (Ujorha, 2018). A respondent stated that she had catarrh (running nose) during one of these soot epidemic (IDI, female, 25, Port- Harcourt). According to another respondent:

When we got to the hospital, I was already breathing very high. The doctor administered aminophylline injection, administered to asthmatic patients when the asthmatic attack is very serious. This injection, if not administered properly, kills the patient instantly. I have seen so many people die from having quack nurses administer this injection; so I am always scared whenever I have to take it (Okafor,

2022)

Some of these pregnant women are also affected by the impact of soot epidemic in Port-Harcourt. And while some of these women use insecticide treated nets to prevent mosquitoes from infecting them or their babies, the challenge of soot necessitated that they needed to wash the nets. And in the absence of spare nets and sunlight to dry these nets, they are further exposed to what they try to prevent. As a woman posits:

Everywhere in the house is covered by black smoke. Catarrh has become a regular occurrence for my children and me. Even when one spits, it comes out black. If you put your hand inside your nose, it is black. Our environment has become so polluted and it doesn't matter whether or not the windows are closed, air will always find its way into the house. All our furniture, electronics and sanitary ware are affected. I wash our mosquito nets every two days; otherwise once the children sleep in it, it would give them catarrh. Meanwhile, we can't stop using the nets because of mosquitoes.

A woman stated that she almost lost her pregnancy during the first trimester as a result of the soot. As she puts it, "when I started noticing black stool, I didn't take it seriously until I visited the hospital. The doctor made me to understand that if I had not come earlier, I would have lost the pregnancy" (IDI, female, 37years, Port-Harcourt). However, some were not lucky. As a respondent noted,

I lost my pregnancy after 6months. After visiting the clinic, I was told that my food and water were poisoned with zinc and other dangerous particles. I was amused as I never noticed. The only thing I noticed when we fetch water is that it is usually black sometimes and sometimes the air. Even when we blow catarrh, we notice that the handkerchief turns black. I just thought it was a minor thing until I lost my pregnancies. Since then, I usually travel out of my area whenever I am pregnant. Today, I now have two kids (IDI, 33 years, Port-Harcourt).

Nevertheless, women are not the only victims. From fetus, neonates to children; these vulnerable group are also affected by the effect of soot epidemic. This is so as a result of their tenderness, fragile nature and growing organs. To be sure, a respondent noted that she did not know that her baby was suffering inside her womb until when she visited the hospital. In her words, I dint know my baby was suffering. Anytime he moved, I was so happy and when the movement was getting too much, I thought it was excitement until it became painful and I was forced to visit the hospital. To my surprise, I was told that the fetus was uncomfortable with what it's been fed with like water and food. I had to relocate before I got myself back and gave birth to my beautiful baby (IDI, 21years, Port Harcourt).

The neonates also suffer after birth. A woman stated that she noticed that her baby after birth had blackish substance around her and it was the medical team that confirmed to her that it was as a result of what the woman inhaled as well as what she took either as water to drink or bath (IDI, 39 years, Port-Harcourt). Another noted that her baby **Appearance, Pulse, Grimace, Activity, and Respiration** (APGAR) score was low and one noticeable deficiency was respiratory. She feared that the baby may suffer from heart related diseases as he grows (IDI, 29years Port Harcourt). Another noted that her baby was born with rashes. And that while many people around her told her that it could be normal, the doctors said the rashes on the baby was excessive ad must

have been caused by air and water pollution (IDI, 28 years, Port-Harcourt). Children especially under 5 are also affected. According to a victim:

It was invisible before but now it has become visible. We've lived with environmental destruction, we know the air is polluted but we're seeing its effects in a more alarming way. My own daughter, she sometimes struggles to breathe. Sometimes you'll blow her nose and see her nostrils have black substances. It's a daily reality (Akinwotu, 2022)

A respondent stated that her baby had poor breathe until she and the husband took him to the hospital. She said, "Until we spent money for surgery to correct the breathing problem, we became a regular at the hospital and this affected our purse" (IDI, 33 years, Port-Harcourt). Another woman stated that she lost her twin to soot. She said she did not know on time as the two children kept struggling to eat and after buying blood tonic to boost their appetite, it was late for her to detect that they were suffering from respiratory issue (IDI, 35 years, Port-Harcourt). As Eugene Abels, the founder of The Extra Step Initiative, an NGO based in Port Harcourt, puts it:

After 60 years of Rivers State being the hub of the hydrocarbon industry and with the damaging activities of non-state actors, the Rivers State government, with external support must lead the charge to audit the damage to our flora and fauna, particularly the respiratory health of the residents of Port Harcourt and other host communities, from the activities of legal and illegal refining of crude oil so as to curb the rate of cancers and renal failure among children, indigent people and pregnant women (Anuforo, 2023).

Any wonder then that a respondent who has lost three pregnancies before she eventually had two children stated that any time the skies, water and air are dark....we know that a calamity is knocking our door (IDI, 43 years).

### **What have been the Responses to Soot Pollution in Port-Harcourt?**

There have been efforts from state and non-state actors. To salvage this imminent threat of pollution on maternal health, several international and local blueprints have been designed. These ranges from conventions to local laws, public policies and use of force.

At the international level, conventions and global policies such as the millennium development goals and the sustainable development goals have been employed to ameliorate the effect of soot or pollution on the environment. For example, SDG 11, 14 and 15 makes case for sustainable environment, life under water and life on the land respectively.

### **Federal Government**

The Federal government has also made some laws and policies. For example, Harmful Wastes (Special Criminal Provisions) Act of 1988 banned transporting, depositing, and discarding of harmful waste in air, land, or water, void of preapproved legal authorization, within the Nigerian state. Also, the Environmental Impact Assessment (EIA) Act 1992 was enacted to ascertain projects' likely significant impacts (positive or negative) and suggest potential mitigation



measures where necessary. The National Environmental Standards and Regulation Enforcement Agency (NESREA) Act was also enacted in 2007 to create and revise air and water quality legislations; limitations of effluents; and, control of various harmful substances. The National Oil Spill Detection and Response Agency (NOSDRA) was established by an Act of the parliament Act No 15 of October 2006. It is an Agency under the Federal Ministry of Environment to coordinate the implementation of the National Oil Spill Contingency Plan (<https://nosdra.gov.ng/about-us-2/>). The National Oil Spill Contingency Plan (NOSCP) is the National Institutional Framework describing and officiate the entire national spill preparedness and response system, including both the public and private resources for responses to emergencies resulting from spillage of oil.

Aside from laws and policies, the federal government also made promises of cleaning up oil spills (Ogoni clean-up) in recent past. For example in 2016, the Federal Government led by the former vice president Professor Yemi Osinbajo on behalf of President Muhammadu Buhari set in motion a \$1 billion clean-up and restoration programme of the Ogoniland region in the Niger Delta, announcing that financial and legislative frameworks had been put in place to begin implementing recommendations made by the United Nations Environment Programme (UNEP) (UNEP, 2016). At the presidential visit to Ogoni land to mark the clean-up, Professor Osinbajo held that

The experience that I am describing was almost 38 years ago. It is therefore extremely discomfiting to know that we are still confronted with the very same situation. An unedifying lack of development and access to basic amenities in the abundance of plenty. A situation typified by continued environmental degradation and a disturbing lack of opportunities for those who can no longer carry out traditional occupations like fishing and farming (Osinbajo, 2017).

The coordinator of the Hydrocarbon Pollution Remediation Project (HYPREP), Mr. Malvin Dekil also noted that the agency had been empowered to coordinate the implementation of the clean-up. In May 2023, the Federal Executive Council under President Buhari approved the sum of N129.8bn for various projects in the Ministry of Niger Delta, particularly the mandate of the United Nations Environment Programme on Ogoni cleanup (Angbulu, 2023). The Board of Trustee, BOT, of the Hydrocarbon Pollution Remediation Project, HYPREP, which is also the Ogoni Trust Fund, expressed satisfaction with the level of work done in the ongoing Ogoni clean up, noting that the remediation work has been conquered after having received a total of US\$360 million so far for the exercise (Iheamnochor, 2023). President Bola Ahmed Tinubu has also been commended for continuing from his predecessor for the clean-up (Folorunsho-Francis, 2023). Aside from these carrot approaches, the federal government had also adopted confrontations through the bombardments of illegal oil refineries and other illegal activities (Udoma, 2023). The military has not ceased bombarding and destroying suspected local refineries. However these bombardments not only contribute to the soot epidemic but also result in waste of resources that can be channeled into other violent conflicts and threats such as terrorisms.

### **State Government**

In 2017, the Rivers state government commenced the seizure and collection of used tyres, as well as closed down some asphalt power plants in Ikwerre and Obio/Akpor local councils of the state for causing air pollution and breaching environmental laws. The then governor, Nyesom Wike

also blamed the Federal Government for failing to move against and bring to book those behind illegal oil bunkering and artisanal crude oil refiners in the State.

The State Ministry of Environment at that time also set up an expert committee to investigate the composition of the soot and its sources. As preliminary investigations were ongoing, some companies were shut down, including a Chinese firm, which was one of the major sources of the black substance (Godwin, 2020).

### **The Civil Society**

The Civil Society has also intervened. For example, about 420 activists signed and sent a petition to the WHO and the United Nations (UN) asking them to intervene in the soot epidemic in Rivers State. One of the civil society group, the Extra Step Initiative (ESI), in August 2019, sued the Federal Government and the Joint Military Task Force (Operation Delta Safe) for the continuous pollution of environment in the state.

Some individuals also staged peaceful protests and also sued the federal and state governments requesting the Federal High Court in Port Harcourt to order governments to use their powers and end the pollution immediately (Godwin, 2020). Perturbed by the failure of the government to address this challenge, some residents teamed up, and organised a workshop at the University of Port Harcourt to x-ray the problems and develop clear action points. Some even set up WhatsApp platforms all in a bid to chart the way forward, but all these efforts appeared stagnated (Ibrahim, 2021). Some of the media used included the social media platforms, radio stations. Yet, nearly a decade since black residues emanating from the illicit operations of makeshift artisanal refineries by oil bunkers was first reported in Port Harcourt, an end to the activities remains a pipe dream.

### **Discussion of Results**

The paper has revealed that soot apart from first being discovered in 2016, is caused by illegal bunkering and oil refining activities. It further reveals that other causes are decades of gas flaring by oil corporations, burning of tyres for roasting meat in abattoirs and during celebrations, and emissions from asphalt plants.

This has had tremendous implications on the wellbeing of the population. One of the ways it affects human beings is through inhaling the substance which affects respiratory organs, skin, reproductive and other life-threatening diseases. Aside from respiratory damages, there have been reports of cholera outbreak as a result of the water and food. Evidences have also shown that it affects women and babies thereby causing birth defects, cancerous growths, miscarriages and irritations of the eye, nose and throats as well as skin. There is no doubt that the cost of treatment by the State or individuals would have been channeled into other meaningful ventures and to further expand the State Healthcare services. The Nigerian State has dedicated little or nothing to the health of its population and this has negative effect on its healthcare. As Alao (2023:2) puts it:

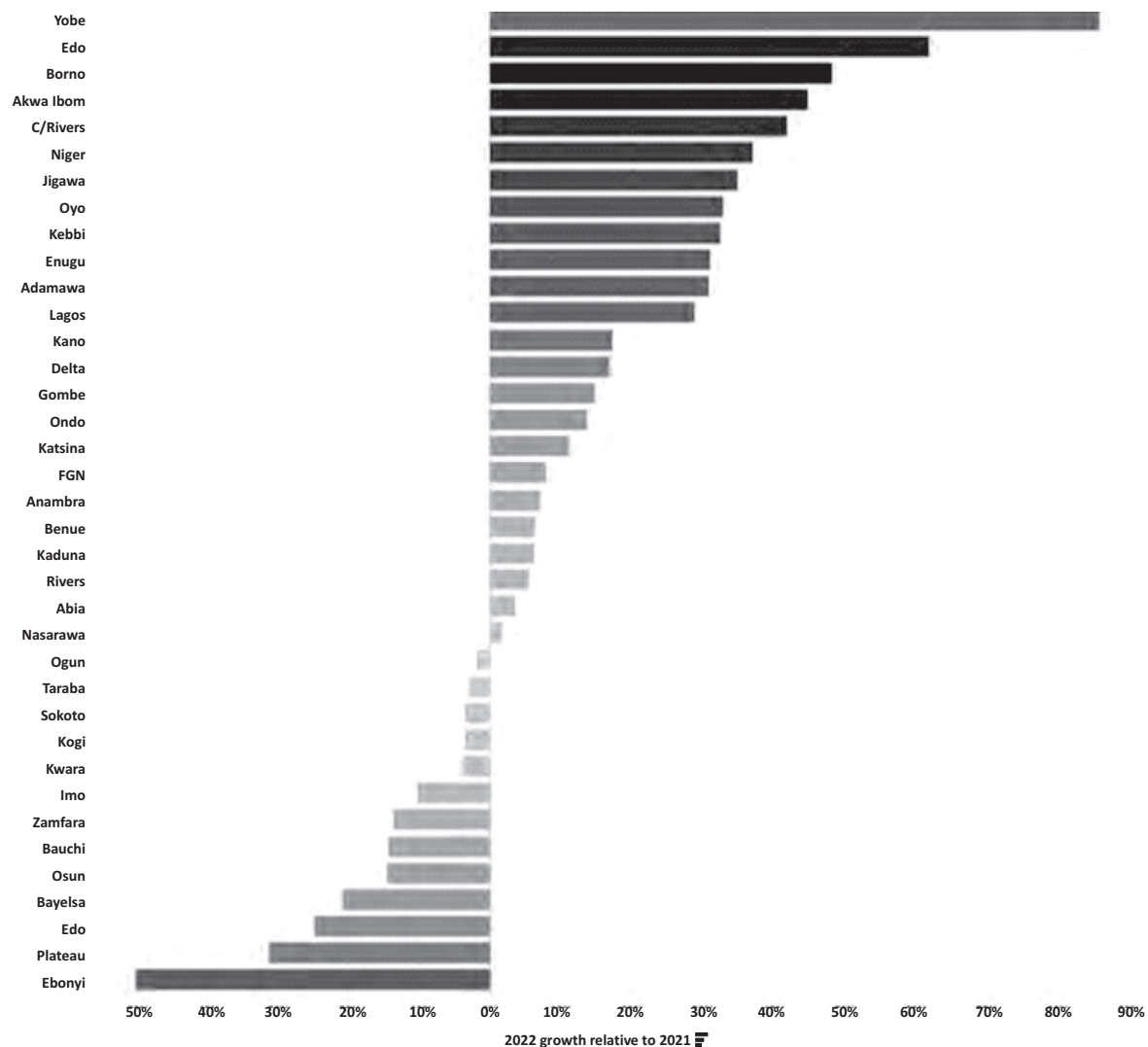
The dilapidated state of public hospitals, the high mortality rate from easily curable diseases, the frequent industrial action by medical personnel and the mass exit of medical doctors culminating in a brain drain from the country make the issue of health one of constant concern

This is indeed worryingly because apart from the fact that Nigeria still has one of the smallest budget allocated to the health sector in Africa and the world at large, Rivers State is not different despite these health challenges. For example, the ONE Report (2022) stated that:

Between 2020 and 2022, twenty-three (23) states have at least increased their health budgets. 13 states (Akwalbom, Anambra, Benue, Edo, Enugu, Jigawa, Kano, Katsina, Kebbi, Lagos, Niger, Rivers and Yobe) consistently increased budgetary allocation to the health sector in the fiscal year 2021 and 2022

While the State is among the highest allocators to healthcare, it is still insufficient based on its predicaments and level of environmental degradation and pollution in the state. One of the groups that the soot phenomenon has affected are maternal patients. These are pregnant and nursing

Figure 2: Change in Health Budget, 2020- 2022



**Source: ONE (2022)**

Secondly, the study revealed that maternal health patients were affected by the phenomenon of soot. This led to several health issues for pregnant women, nursing mothers and babies. Additionally, women die as a result of complications during and following pregnancy and childbirth. The major complications that account for nearly 75% of all maternal deaths are: severe bleeding, infections, complications from delivery, high blood pressure and unsafe abortion (WHO 2019). Other victims are infants and children under the age of five.

Third, the study found that in spite of government response in curbing the threats of soot pollution among the population, the threat remains unabated. Thus most of these responses have not succeeded. Why Has Responses Not Succeeded? One of the first factor or reasons responsible for failure is the lack of political will. One will be surprised that in spite of the promises by the last administration, nothing has been done. Any wonder then that Ibrahim (2021) noted that the move by the APC led government on Ogoni clean-up under former president Muhammadu Buhari administration may have been another promise cancelled. After more than four years of the presidential visit and evidence that nothing was forthcoming, the coordinator of the HYREP, Malvin Dekil on July 14, 2020, called for bids for water projects in Ogoni. It was reported that no less than 40 firms bided to construct borehole to generate portable water in the four local government areas in Ogoniland. Be that as it may, nothing had been heard of the project of completion of the water project. UN (2022) reports that only 9% of households had access to all three WASH services (water, sanitation and hygiene). This is partly because of the politicization of the clean-up exercise and corruption. For example, the government policy stopping oil companies from flaring has not been implemented over thirty years since the policy was introduced. Oil companies activities responsible for gas flaring, oil spillages on farm lands and water bodies, indiscriminate dumping of waste chemicals are still ongoing thirty years after policies seeking to control them was introduced leading to the loss of farm lands, marine and aquatic lives and the exposure of the people to acid rain and soot etc. According to the immediate former governor of the State, Mr Nyesom Wike:

The Federal Government has been playing politics with the Ogoni environment remediation programme recommended by UNEP. Ogoni, having played a pivotal role in the economic development of Rivers State and Nigeria, deserves more than what is currently being offered in the area. When elections come in 2023, they will start another cleanup talk. You people don't ask questions. Why is it that it's a year of election that Ogoni cleanup always commences? Now that there is no election, are they doing the cleanup (Godwin, 2021)?

While he may have predicted that the need to win the 2023 general election might endear the federal government to begin the project, nothing of such happened as the Federal Government did not make any attempt in spite of the coming elections. The implication of this is that gone are the days when the government implements projects to win the hearts of the electorates before an elections. It appears that the government in recent times does not depend on the votes or they have discovered other alternative means to win the hearts of the electorates other than trying to rush a project. There is also the lack of political will. Government at all levels has not shown sufficient interest in cleaning up the Ogoni. Poor or lack of adequate funding has also been another major constraint to the cleaning up exercise. Though the money is much, inflation and bad economy triggered by bad governance and leadership as well as obnoxious government policies have made the money or even a fraction very hard to be deployed for the project. Another factor is that of

saboteurs who gain from the oil spills and pollution. Aside from making enough monies from the pollution, some have come to see the situation in the Ogoni or Niger-Delta as a milk cow where they continue to feast in spite of the impact of the pollutants on the society and citizenry. Thus, every stakeholders in the Niger-Delta must not stop in actualizing the sustainable goals for the region and the country at large. All hands must be on deck.

### **Conclusion**

The paper has been able to extrapolate the danger of environmental degradation and how it affects maternal health. The Sustainable Development Goals (SDGs) has a critical role to play in the promotion of sustainable development and the promotion of maternal health. The paper concludes that even though government at all levels and other developmental partners have responded to the threats that affect maternal health and sustainable development, more needs to be done if the SDGs must be achieved. The paper recommends that regulations that seek to control the activities of the oil companies as well as criminal syndicates involved in crude oil theft must be implemented. Also, the root cause of illegal oil activities such as poverty, unemployment and re-orientation must be implemented. Rather than destruction or bombardment of illegal refineries, government can develop them and improve on the crude ways of production. By doing that, jobs will be saved and exportation of crude oil for refining will stop as local content will be developed. This will in turn safe the country scarce foreign exchange and improves the economy. Decisive government policies that aim to promote the welfare of women and children must be aggressively pursued to make for lost times. The world won't wait for us.

### **References**

- Adams, A & Cox, A. L. (2008). Questionnaires, in-depth interviews and focus groups. In: Cairns, Paul and Cox, Anna L. eds. *Research Methods for Human Computer Interaction*. Cambridge, UK: Cambridge University Press, pp. 17–34
- Alao, A. (2023). *Religion, Public Health and Human Security in Nigeria*. London and New York: Routledge.
- Angbulu, S. (2023, May 11) FEC approves fresh N129bn for Ogoni cleanup. *Punch*.
- Anuforo, C. (2023, February 7) Deadly black soot: Port Harcourt residents, stakeholders call for govt's action. *The Sun*. [https://sunnewsonline.com/deadly-black-soot-port-harcourt-residents-stakeholders-call-for-govts-action/?expand\\_article=1](https://sunnewsonline.com/deadly-black-soot-port-harcourt-residents-stakeholders-call-for-govts-action/?expand_article=1)
- Bubaraye, D. (2021). The Riddle of the Oil Thief. Lagos: Purple Shelves.*
- Donwa, P. A., Mgbame, C. O., & Julius, O.M. (2015) Corruption in the Oil and Gas Industry: Implication for Economic Growth. *European Scientific Journal*. vol.11, No.22: 212-230
- Equal Evidence and Impact for Mothers and Newborns living in Conflict. (2023, March). Nigeria: Maternal and Newborn Health Country Profile. Nigeria
- Godwin A (2020, January 5) Four Years After, pall of soot still overs over Rivers State. *The Guardian*. <https://guardian.ng/sunday-magazine/four-years-after-pall-of-soot-still-hovers-over-rivers-state/>
- Godwin, A. (2021, January 20). How politics, inexperience combine to stall Ogoni clean-up. *The Guardian*. <https://guardian.ng/politics/how-politics-inexperience-combine-to-stall-ogoni-clean-up/>
- Hancock, D. R., & Algozzine, B 2017, *Doing case study research: A practical guide for beginning researchers*, Teachers College Press, New York.
- Ibrahim B. O (2020) Another Failed Promise or Another Food for the Boys? Oil Spillage, Impact



- and (un) cleaning up Responses in Ogoni Land, Niger Delta in Osakwe, C. C. C. & Odeh, L. E. (Eds.) *The History and the Niger Delta: Oil Politics and Culture*. (23) 355-368. Festschrift in Honour of Professor Samuel Ovuete Aghalino. Kaduna: NDA, Pp. 355-368
- Iheamnachor, D. (2023, August 6) Ogoni cleanup receives \$360 million, as BOT/OTF says project conquered. Vanguard. <https://www.vanguardngr.com/2023/08/ogoni-cleanup-receives-360-million-as-bot-otf-says-project-conquered/>
- Medical News Today (nd) What effects does water pollution have on human health? <https://www.medicalnewstoday.com/articles/water-pollution-and-human-health>
- Okafor, C. (2022, July 19). INVESTIGATION: Respiratory illnesses worsen, water pollution confirmed as Port Harcourt residents battle with soot. *Premium Times*. <https://www.premiumtimesng.com/investigationspecial-reports/543451-investigation-respiratory-illnesses-worsen-water-pollution-confirmed-as-port-harcourt-residents-battle-with-soot.html>
- ONE (2022) Post-Pandemic Health Financing by State Governments in Nigeria 2020 to 2022. [https://cdn.one.org/pdfs/ONE\\_2022\\_Nigeria\\_Budgetary\\_Health\\_Report.pdf](https://cdn.one.org/pdfs/ONE_2022_Nigeria_Budgetary_Health_Report.pdf)
- Osborn, D., Cutter, A and Farooq Ullah (2015, May) Universal Sustainable Development Goals: Understanding the Transformational Challenge for Developed Countries. New York: UN. [https://sustainabledevelopment.un.org/content/documents/1684SF\\_-\\_SDG\\_Universality\\_Report\\_-\\_May\\_2015.pdf](https://sustainabledevelopment.un.org/content/documents/1684SF_-_SDG_Universality_Report_-_May_2015.pdf)
- Osinbajo, Y (2017, February 13) **Speech delivered to the rivers state oil-producing communities stakeholders meeting held at the government house banquet hall, Port Harcourt.**
- Oyegun, U. C., Lawal, O., & Ogoro, M. (2023). The Niger Delta Region. In: Faniran, A., Jeje, L.k., Fashae, O.A., Olusola, A.O. (eds) *Landscapes and Landforms of Nigeria*. World Geomorphological Landscapes. Springer, Cham. Pp. 107–121. [https://doi.org/10.1007/978-3-031-17972-3\\_7](https://doi.org/10.1007/978-3-031-17972-3_7)
- Perouse M. M (2018) Oil Rent and Corruption: The Case of Nigeria. *Etudes de L'Ifri*. [https://www.ifri.org/sites/default/files/atoms/files/oil\\_rent\\_and\\_corruption\\_the\\_case\\_of\\_nigeria.pdf](https://www.ifri.org/sites/default/files/atoms/files/oil_rent_and_corruption_the_case_of_nigeria.pdf)
- Sam, K., & Zibima, T. (2024) Inclusive Environmental Decision-making in a Developing Nation: Insights from the Ogoni Remediation Project, Niger Delta, Nigeria. *Environmental Management* 73, 323–337. <https://doi.org/10.1007/s00267-023-01885-y>
- The Guardian (2023, February 11). Inside latest push to save Port Harcourt residents from deadly soot pollution. <https://guardian.ng/features/inside-latest-push-to-save-port-harcourt-residents-from-deadly-soot-pollution/>
- Thompson, O. O. (2021) "A History of Maternal Healthcare Services in Abeokuta, 1895-1987" Unpublished PhD Thesis, University of Ilorin, Ilorin, Kwara State, Nigeria.
- Thompson, O.O., Bukola Kanumuangi, Aduradola, R. R & A. N Rahmee 2023. 'He Would Have Been Born If Not for Emefiele': Impact of Currency Redesign on Maternal Healthcare Services in Abeokuta, Southwest Nigeria. *Advances in Women's Studies*. 5(2), 31-37.

- Udoma, M (2023, August 30) 'Stop bombing artisanal refineries with fighter jets' Sweet Crude. <https://sweetcrudereports.com/stop-bombing-artisanal-refineries-with-fighter-jets/>
- Ujorha, T. Y (2018, July 14). Port Harcourt Soot Darkens Skies, Endangers Lives. Daily Trust. <https://dailytrust.com/port-harcourt-soot-darkens-skies-endangers-lives-260868/>
- UN (2015) Sustainable Development Goals. New York: UN.
- UN (2019, June 17) Billions globally lack 'water, sanitation and hygiene', new UN report spells out. <https://news.un.org/en/story/2019/06/1040701>
- UN (2022, February) Common Country Analysis. New York: UN. <https://nigeria.un.org/en/190049-common-country-analysis-2022>
- UNEP (2016, June 3) UNEP: Nigeria Launches \$1 Billion Ogoniland Clean-up and Restoration Programme. <https://www.ctc-n.org/news/unep-nigeria-launches-1-billion-ogoniland-clean-and-restoration-programme>
- Yakubu, O. H (2017) Particle (Soot) Pollution in Port Harcourt Rivers State, Nigeria—Double Air Pollution Burden? Understanding and Tackling Potential Environmental. Public Health Impacts.