

BETWEEN LIVELIHOOD AND LIABILITY: SOCIOECONOMIC COSTS OF ARTISANAL REFINING IN RIVERS STATE, NIGERIA

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Abstract

This study examined the relationship between the socioeconomic impact of artisanal refining and its implications for economic opportunities in Rivers state. Specifically, the study examined the effect of how the socioeconomic impact of artisanal oil refining implicate economic development in Rivers State. Thus, the central questions of this study is: How does socioeconomic impact of artisanal refining implicate economic opportunities in Rivers State? The theory of the Resource Curse was adopted as our framework of analysis and data was gathered through the documentary method of data collection and Key Informant Interview. Our data analysis was based on qualitative descriptive analysis and the time series research design was adopted. The study found that destruction of natural means of livelihood, problem of poverty alleviation and revenue loss, infrastructural deficit and the health impact of social dynamics resulted to loss of economic opportunities in Rivers state. The implication of our findings is that the activities of artisanal oil refiners result to grave socioeconomic impacts through revenue loss, infrastructural deficit and worsening health condition of the people in Rivers state.

KEYWORDS: *Socioeconomic impact, Artisanal Refining, Economic opportunitie, Resource Curse, Revenue loss.*

Introduction

The artisanal oil refining industry in Rivers State, poses a significant challenge to the economic development efforts in the state. This informal sector has negative economic, environmental, and social implications, exacerbating the issue of lack of economic opportunities. The lack of regulation and enforcement, coupled with limited alternative livelihood options and inadequate infrastructure, contribute to the persistence of this problem. These challenges hinder the success of poverty alleviation programs and hinder the prospects for economic development in the state. Understanding the impact of artisanal oil refining on socioeconomic development is crucial for developing effective strategies and interventions to address this issue.

There have been a number of government initiatives to combat illegal artisanal refining, but the most recently well-known was Yemi Osinbajo's tour, during which he persuaded refiners representatives to sign a memorandum of understanding in the presence of representatives of

civil society in order to construct modular refineries, increase the capacity of refiners, open up access to raw materials like crude oil, and integrate refiner services. Fyneface (2019) claims that the goal was to lessen oil theft and spills, which had become a problem over time as a result of shoddy production methods. Nevertheless, six years after that intervention, more artisanal refining sites appeared in various Rivers state communities and expanded even further than before. As a result, Rivers state and its environs are experiencing soot from massive air pollution, constant conflicts arising from security clampdown and health challenges amongst others.

Nigeria has been forced to import due to outdated infrastructure and poor turnaround maintenance, which have prevented the country from finding a long-term solution to its oil exploration and local refining. Claims that NNPC and an American-Nigerian joint venture would construct six modular refineries at a cost of \$4.5 billion, as well as promises to build operational Greenfield refineries locally, have all collapsed, Ogbuigwe (2018).

Ogbuigwe (2018) further opined that there are four significant refineries in Nigeria. The first is the 60,000 bpd Old Port Harcourt Refinery, which was constructed in 1965. The second, with a 125,000 bpd capacity, is the Warri Refining and Petrochemical Company, which was founded in 1978. The Kaduna Refinery and Petrochemical Company was established in 1980 and has a capacity of 110,000 barrels per day. Meanwhile, the New Port Harcourt Refinery was established in 1989 and has a capacity of 150,000 barrels per day. Yet, Nigeria is the third largest importer of petroleum products in Africa. In order to meet Nigeria's demand for petroleum products, there is plenty of space for new facilities to be constructed and for existing ones to be upgraded. In 2017, the country's total petroleum product demand was estimated to be around 750,000 bpd.

During the Nigerian Civil War, primitive refining technology was utilized to supply fuel and money to the Niger Delta. This technology was resurrected and exploited between 2005 and 2009. Following the 2009 Presidential Amnesty Program for Militants, individuals in militant camps who had not received scholarships or the Oil Pipeline and Surveillance Protection (OPSP) contract returned to their communities, bringing their expertise in oil refining with them. Due to the substantial financial incentives involved and the inability to halt it early, the trade continued and grew more ingrained in Rivers communities. Consequently, the majority of the newly formed militant groups that were not included in the (OPSP) contract went back to the creeks, armed only with small-scale bunkering and oil refining enterprises.

However, the artisanal oil refinery sector is marked by serious threats to stabilization, which will worsen if the industry's driving forces are not adequately addressed. These include unfavorable working conditions, pollution of the environment, health risks and increasing loss of government revenue. The state's oil industry's mismanagement and actions have resulted in economic underdevelopment, environmental degradation and insecurity, all of which are contributing factors to the current problem of loss of economic opportunities.

There are many scholarly explanations on the main problems and factors that led to artisanal oil refining. Mezie-Okoye, (2022) explained that one common argument in literature is Poverty: he opined that a large number of those engaged in illicit oil refining are extremely poor. If they have no other means of support, they might turn to illegal activity to make ends meet.

Scholars like (Ikelegbe, 2005; Katsouris & Sayne, 2013; Brock, 2012; Okere, 2013, Okoli & Orinya, 2013 and Igbuku, 2014) have identified and explained the following problems and factors: Unemployment: People who experience high unemployment rates, especially in areas with oil resources, may turn to illicit oil refining as a means of making a living. Limited Economic Opportunities: Despite its risks, illegal oil refining may be seen as a more viable source of income in places where there are few legal economic opportunities. Corruption in Authorities: Illegal refining operations may continue to exist as a result of corrupt activities within regulatory and law enforcement organizations. Officials may be bought off by those engaged in the trade so that they will ignore their actions. Absence of Environmental Regulations: Illegal oil refining is more common because environmental regulations are either nonexistent or inadequately enforced. The operators frequently partake in destructive activities for the environment, like the improper disposal of waste and the spilling of crude oil. Simple Access to Petroleum Resources: Living close to oil-producing regions gives people easy access to crude oil, which makes it convenient for them to refine it illegally. Market Demand: Illegally refined products may find a home on the black market due to high demand for petroleum products and a lack of supply from authorized sources. Acceptance in Local Communities: Illegal oil refining may be supported by the community in some areas where it is accepted as a cultural practice. Weak Government Presence: Due to a lack of regulatory oversight and law enforcement, illegal activities may continue in areas with a low level of infrastructure and government presence.

The Niger Delta's decades-long oil and gas operations have brought in billions of dollars for the government, but the bulk of the 30 million residents there continue to live in poverty and without jobs, which has caused unrest throughout the area. Communities have turned their backs on energy companies' operations, demanding better public services and a larger share of government revenue, feeling frustrated by the industry's apparent lack of benefits from oil production. The unrest has given rise to alarming criminal movements that prey on large-scale crude oil thefts. Obenade & Amangabara (2012). Due to the consequences of illicit bunkering and artisanal refining, in addition to equipment malfunctions that contaminate their water and land and pose major health risks during the refining process, entire communities have lost their traditional means of subsistence as farmers and fishermen. On the other hand, those who run artisanal refineries and pilfer oil do not feel the same way. Many see illegal oil refining as a free market, entrepreneurial response to socioeconomic pressures, local economic dysfunction, persistent fuel shortages in the Niger Delta, and the government's inability to provide basic public services (SDN, 2013; UK Niger Delta Working Group, 2013; IPELP, 2011). These artisanal refineries have such cheap startup costs and enormous profit margins that, in a matter of weeks, unscrupulous refiners establish new camps.

There are differing opinions regarding the economic effects of artisanal refining on the oil sector. During a roundtable discussion on oil theft in the Niger Delta (UK Niger Delta Working Group, 2013), some representatives of the oil industry contended that the economic impact of artisanal refining on their operations was negligible. They minimized the economic effects in favor of highlighting the detrimental effects on the environment and health and safety concerns. Both highly organized oil theft and artisanal refining come at a significant financial cost. The connection is that small-scale tapping led to forced pipeline shutdowns, which in turn created a vicious cycle that made it easier to commit large-scale oil theft by depressurizing pipelines to maintain pipeline integrity. Obenade&Amangabara (2012).

The Nigerian nation faces significant challenges from artisanal refining and crude oil theft, to the point where financial interest is taking precedence over state function. The illicit trade has hindered the growth of a modern economy. It is important to highlight that because of the natural boom in oil-producing communities, some of their citizens are involved in the illegal industry. However, everyone suffers greatly from the socioeconomic effects of illegal refining.

Theoretical Framework

There is hardly any valid research that is devoid of a theoretical construct. The essence of theorizing in research is to provide explanations that lead to generalization, prediction, and control. In line with this understanding, the Resource Curse Theory was adopted as the theoretical foundation for this study. The notion that natural resource abundance might serve as a *bane rather than a boon* to economic development first emerged in the 1950s and 1960s during debates about the economic challenges confronting low- and middle-income countries. Contrary to conventional expectations, nations endowed with vast natural resources were observed to experience slower economic growth compared to those with limited resource endowments. This paradox arises because resource-rich countries often fail to effectively utilize their wealth to promote sustainable economic development. The theory of the resource curse was formally articulated by Richard Auty (1993), who argued that resource dependence can hinder diversification, foster rent-seeking behavior, and weaken institutional capacity, thereby constraining long-term growth.

The Resource Curse, also referred to as the *paradox of plenty*, describes a situation in which countries endowed with abundant natural resources often fail to achieve sustainable economic growth and development. Despite the expectation that resource wealth should enhance development outcomes, many resource-rich nations experience slower economic growth, higher levels of corruption, conflict, and authoritarianism, and weaker institutions. This paradox arises because resource dependence can distort economic structures, weaken governance, and reduce incentives for diversification and innovation.

Political scientists and economists contend that the non-renewable nature of oil, mineral, and gas wealth, combined with its high upfront costs, long production timelines, site specificity, large-scale rents, price and production volatility, and pervasive industry secrecy, makes it distinct from other types of wealth. Humphreys et al. (2007) identify two major distinctions. First, natural resources require extraction rather than production. This means that wealth derived from natural resources can be generated relatively independently of broader economic processes and contributes minimally to employment creation, since it is not rooted in productive activity. Moreover, resource extraction industries such as oil and gas are among the most capital-intensive sectors globally, yielding few jobs relative to the amount of investment required, and the skills demanded rarely match those of the unemployed in resource-dependent

nations (Karl, 2007). Second, as Humphreys et al. (2007, p. 4) note, many natural resources—particularly oil and gas—are non-renewable. From an economic perspective, therefore, “natural resources are thus less like a source of income and more like an asset.”

In principle, natural resource endowments should provide developing countries with three key economic advantages. First, revenues generated from resource extraction can raise real living standards by enabling higher levels of public and private consumption. Second, resource extraction can serve as a catalyst for increased investment, both directly—through reinvestment of resource revenues—and indirectly—by improving a country’s creditworthiness and capacity to borrow. Third, since resource income often accrues to the public sector, it can help address a critical constraint to development: the shortage of funds required to provide essential public goods such as infrastructure (Sachs, 2007).

However, over the past few decades, it has become evident that the mere possession of natural resources does not guarantee economic success. Many resource-rich countries, particularly in the Middle East and Africa, continue to experience low living standards and modest per capita incomes despite their wealth in oil, gas, and minerals. This paradoxical situation has been described as the “natural resource curse” by Auty (1993), referring to the empirical observation that countries endowed with abundant natural resources often exhibit slower economic growth and poorer development outcomes than those with fewer natural assets.

The following are some of the most prominent findings and hypotheses regarding how these unique features of natural resource revenues present new difficulties for nations:

Democracy: Over the past 30 years, the likelihood of governments becoming or staying authoritarian has increased with the wealth of natural resources, especially oil. Taxation provides the explanation for this. Political scientists generally discover that when citizen taxes are used to fund government expenditures, governments become more responsive to their constituents and are more likely to move toward democracy. Large revenue streams from natural resources allow governments to rely less on taxing their populace, which reduces public support for the national budget. Additionally, there is a less direct connection between government officials and citizen requests or demands. Furthermore, citizens lack a clear understanding of whether resource revenues are being spent effectively when they are kept secret. This clearly explains why the government is not responsible for the welfare of the citizens of Rivers state that contribute majorly to the national resource revenue and what is

gotten from the people is not accounted for, reason the people will source for alternative means of livelihood to cater for their welfare.

Dutch disease: By causing inflation or exchange rate appreciation and moving labor and capital from the non-resource sector to the resource sector, a significant increase in natural resource revenues can harm other economic sectors, especially export-based manufacturing. We call this "Dutch disease." The effects of inflation and exchange rate appreciation can last for decades, even though they can damage significant portions of the economy in a matter of years. Natural resource-based economies have shown to have a negative impact on other industries in Nigeria, experiencing a sharp fall in manufacturing and agriculture. This explains the situation of the dying Nigerian economy and its attendant effect of unemployment in Rivers state.

Patriarchy and gender-based issues: Women appear to be disproportionately affected by wealth in natural resources. According to recent research, women's representation in government and the workforce are generally lower in oil-rich nations. One reason for this could be that Dutch disease makes it harder for women to succeed in sectors like export-oriented manufacturing, which are typically easier for them to enter in resource-rich nations. Furthermore, research has demonstrated that women in resource-rich areas frequently have greater incidences of HIV/AIDS and other serious illnesses. An increase in the prevalence of gender-based violence has also been linked to the significant influx of men into the communities surrounding a mine. This pattern is especially alarming since research after research demonstrates that gender reforms are essential to sustainable development. This explains the high rate of health risk and the unbearable rate of poverty in Rivers state.

Application of the Theory

Situation as we have it in literature about socioeconomic impact of Artisanal refining and economic opportunities in Rivers State could receive scholarly explanations via the instrumentality of the central thesis of the theory, namely: that 'resource curse' constitute difficulty in Democracy: Over the past 30 years, the likelihood of governments becoming or staying authoritarian or manipulating the system has increased with the wealth of natural resources, especially oil. Taxation provides the explanation for this. Political scientists generally discover that when citizen taxes are used to fund government expenditures, governments become more responsive to their constituents and are more likely to move toward true democracy. Large revenue streams from natural resources allow governments to rely less

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Methodology

The study used qualitative method of inquiry. In this qualitative research, first-hand information was obtained through one-on-one interviews and Key Informant Interviews (KII) to produce non-numerical data. Documentary data is obtained from previously published materials (secondary source). Both the survey and the documentary methods of data collection were used in this study. The KII and one-on-one interviewing method are the survey instruments used. Chiefs, Community Development Committee (CDC) Chairmen, former Agitators, and Security Experts were among our informants. The selection of these stakeholders occurred due to their direct impact on the artisanal oil refining operations in Rivers State.

Purposive sampling was used to choose the respondents for the study. When choosing units to be studied, such as individuals, occasions, and data points, purposeful sampling depends on the researcher's judgment. Purposive sampling's primary goal is to concentrate on a specific population characteristic of interest that will best help the researcher address his research questions (Smith, 1983). Additionally, the study adopted the expert sampling, which is a purposive sample method used when the researcher needs information from respondents who possess specialized knowledge. The field data was complemented by secondary data generated through the documentary method.

Data Analysis

This study used content analysis, a qualitative-descriptive technique for analyzing data. Content Analysis was used to examine the information gathered from the documentaries and key informant interviews. The expediency of this data analysis method stems from its analytical technique, which is free from the theoretical personal bias of the researcher and is unhindered by facts realized from the documents. It is also not influenced for the researcher's personal benefit alone. The textual and contextual analysis of existing information or data on the social

phenomenon studied is adopted in the method, which involves the reading, presentation, prognosis, analysis, critique, and discussion of necessary data collected from different sources as indicated above from which valid conclusions will be realized (Fraser, 2004). Its simplicity informed my adoption of this method of analysis, on grounds that it exposes, summarizes, and interprets the indicative relationships found in a given data by the provision of a qualitative description of the variables under study.

Livelihood and Dependency on the oil sector

Affected rural households may devise ways to diversify their sources of income when resources start to decline as a result of threats to their livelihoods. Nigeria's economy has historically been highly unstable due to its significant reliance on oil revenue and price volatility. The 1970s oil boom resulted in the public sector growing, agriculture and other non-oil sectors being neglected, and financial accountability and discipline declining. Nigeria's reliance on oil has exposed the country to fluctuations in oil prices, resulting in a chaotic state of public finances in recent times. Recent incidents of illegal bunkering, pipeline vandalism, and crude theft have caused disruptions to. Before the beginning of oil exploitation, fish and other animals were frequently found in the Niger Delta. Today, their populations are either completely gone or severely reduced. Because of acid rain and oil spills, some types of bush meat have virtually completely vanished. The loss of marine resources such as shellfish, crabs, and oysters that the local women used to collect from streams and mangroves for both personal use and commercial purposes has a substantial impact on them. While scale fish, which were once common in natural fishponds, have vanished, moon fish have become scarce in coastal communities.

The populations of tilapia and catfish are depleted, and fishermen must travel far out to sea for their catch which is often small and contains fish that smell of crude oil and are not safe for consumption.

Locals find it challenging to obtain staple foods that are native to the area and were frequently consumed in their communities as food production declines. Cassava is used to prepare most of the indigenous food that is eaten in the oil communities. The traditional meal of Upata Kingdom communities is garri and fufu, which is made from fermented cassava and is typically consumed with fish pepper soup or banga. The impact of oil pollution on soil nutrients is responsible for the decrease in cassava yield, which in turn impacts the accessibility of these

regional foods. Cassava leaves are impacted by oil spills on soil nutrients; if they grow at all, they do so slowly and only produce small tubers.

Activities that cause loss of livelihood opportunities and impacts on income in the Niger Delta

S/No.	Activity	Lost opportunity	Effect	Impact
1	Deforestation	Wild life/ game keeping / hunting.	Elimination of rabbits, bush rats, etc.	Subsistence and income loss
2	Deforestation	Boat making	Lost tourist attraction.	Income
3	Deforestation	Research	Loss of research opportunities.	Income
4	Tree loss	Basket and raffia palm weaving	Elimination of trees and plants	Income
5	Tree loss	Logging	Job loss	Income
6	Tree loss	Boat making / trawling	Elimination of tree	Subsistence and income loss
7	Tree and animal loss	Herbal medicine	Plant and animal species loss	Income
8	Tree loss	Dying	Local craft	Income
9	River dredging	Shell fishing	Fishery loss	Subsistence and income loss.
10	Industrial operation	Communal festival: wrestling matches, boat regatta	Job losses and loss of tourist attraction	Income
11	Industrial operation	Communal life	Lack of unity, communal strife, eg., wars	Subsistence, income loss and loss of homes

Source: (Numbere, 2021) Impact of Urbanization and Crude Oil Exploration in Niger Delta Mangrove Ecosystem and Its Livelihood Opportunities: A Footprint Perspective. Retrieved from 347650276_Impact_of_Urbanization_and_Crude_Oil_Exploration_in_Niger_Delta_Mangrove_Ecosystem_and_Its_Livelihood_Opportunities_A_Footprint_Perspective on 17/03/2024.

Safety issues and their impacts on livelihood opportunities in the Niger Delta

S/No.	Safety Issues	Groups affected	Type of impact	Livelihood opportunity
1	Crude oil spillage (offshore)	Personnel and natives	Fish kills, water contamination, marine transportation	Marine transporters, fishermen
2	Crude oil spillage (onshore)	Personnel and natives	Land pollution, death of crops,	Farmers
3	Deforestation	Personnel and natives	Biodiversity loss, habitat loss	Local craft, hunter herbalists, traditionalists
4	Explosion (methane)	Personnel and natives	Injury and death, loss of jobs, loss of man-hour	Industrial work
5	Rig fire	Personnel	Property loss, injury and death, loss of jobs, loss of man-hour	Industrial work
6	Burns	Personnel	Injury and death, loss of jobs, loss of man-hour	Industrial work
7	Noxious fumes	Personnel and natives	Injury and death, loss of jobs, loss of man-hour	Industrial work, farmers and fishermen
8	Fall	Personnel	Injury and death, loss of jobs, loss of man-hour	Industrial work

Source: Numbere, A. (2021). Safety issues and their impacts on livelihood opportunities in the Niger Delta. Retrieved on https://www.researchgate.net/figure/Safety-issues-and-their-impacts-on-livelihood-opportunities-in-the-Niger-Delta_tbl2_347650276 on 21/03/2024.

Poverty alleviation and Government revenue loss

Poverty Alleviation programs in Nigeria between 2012 and 2023

S/No.	Programme	Administration	Year of establishment	Cost	Impact
1	Subsidy Reinvestment and Empowerment Programme	Goodluck Jonathan	2012	500 billion naira	Low
2	N-Power (Nigeria) program	Mohammadu Buhari	2016	279 billion naira	Low
3	Conditional Cash Transfer Program	Mohammadu Buhari	2016	1 Trillion Naira	Low
4	Government Enterprise and Empowerment Program	Mohammadu Buhari	2016	150 billion naira	Low
5	Home Grown School Feeding Program	Mohammadu Buhari	2016	93 billion naira	Low

Source: Authors compilation from different government reports and broadcast.

A critical evaluation of the policies is warranted if, despite the government's massive commitment of financial and material resources to poverty reduction initiatives, no appreciable progress seems to have been made. This position also has bearing on the responses of another participant in our one-on-one interview, who opined that:

Successive administration have come up with different policies initiated to tackle poverty such as the National Poverty Eradication Programme (NAPEP) of Olusegun Obasanjo's administration, The Adolescents Project (TAP) of Peter Odili's administration, Rivers State Micro Finance Agency of Rotimi Amaechi's administration, the Songhai Farm, Buguma Fish Farm, Allu Aquaculture, etc, most of these lofty programmes have been abandoned and where it does exist, you must be connected to someone in power to have access. Basically, because they were not established with sincerity of purpose and there is no political will to actually eradicate or alleviate poverty but for political patronage. He continued by saying that the non-implementation of these poverty alleviation policies result in revenue loss for the government because the huge funds invested in these programs do not serve the purpose, some were diverted to private pockets (Nigerian Civil Defense Corp, Rivers State Command Headquarters, Olu-Obasanjo On 5th march, 2024).

Infrastructure deficit in the local economies

Rivers state socioeconomic and geographical vulnerabilities make it susceptible to the negative effects of infrastructure strain and climate change. There is also a high susceptibility to storm surges, freshwater salinization, river flooding, coastal erosion, and species migration. The region has fallen into disrepair as a result of oil exploration activities.

It is anticipated that the state would have experienced social well-being, environmental rejuvenation, and economic revival due to the significant contributions of the state to the Nigerian government and the presence of the oil companies through their Corporate Social Responsibility initiatives. But there is no comparable effect to what the region produces, particularly in terms of infrastructural development. The activities of artisanal oil refiners does not help matters as the existing infrastructures are constantly strained because they are over stretched.

The establishment of agencies and department like the Niger Delta Development Commission and Ministry of Niger Delta to address the Niger Delta issue is not sufficient to solve the problem of infrastructural deficit in the region.

Allocation to Niger Delta Development Commission in the statutory transfers between 2016 and 2020

S/No.	Period	Amount (N'Bn)
1	2016	41.05
2	2017	64.02
3	2018	81.88
4	2019	100.2
5	2020	45.9

Source: Authors compilation retrieved from <https://m.facebook.com/budgitng/photos/a.670066496394863/3053636071371215/> on 20/03/2024.

Contributing to the infrastructural deficit in the state is the activities of artisanal refiners which attracts influx of people and other mining equipment. On the infrastructural deficits a participant commented:

The influx of people and equipment to our localities for artisanal refining contribute largely to the fast decay of existing infrastructure in these areas, because their first mission is to destroy existing critical infrastructure in our communities especially to frustrate the penetration and operations of security agencies. And the frequent movement of heavy equipment and

human movements strain existing infrastructure to a great extent (Bdere community in Khana on 7th march, 2024).

In an interview with a participant who is an Ex-Agitator, narrated that:

Artisanal oil refining attracts influx of illegal workers and equipment. A lot of people have migrated to communities like Bile, Soku, Tuoma, Ka, Okporowo, Okoma etc most of these communities and the surrounding hamlets are dominated by external faces who engage in illegal oil bunkering, especially large artisanal refinery sites. There is high movement of fabricated equipment into these communities such as boats, pumping machines, reservoirs constructed with metals, oven or pot for boiling, pipes connected to pots from the source of crude oil, speed boats, big wooden boats commonly called Big cotonou or pour put with some having the capacity to fill up a truck, generators, vandalizing machines, drums, sacks or cellophane, drilling equipment, industrial tank for water storage (Portharcourt residence on 4th march, 2024).

Social dynamics and Health impacts

The interactions / relationship between groups or individuals who live in Rivers communities as a result of artisanal oil refining impact their health to a great extent. The state presents a multifaceted range of social dynamics shaped by its varied ethnic makeup, political structure, economic pursuits, and past events.

However, our main focus in this section is economic activities which basically is production and exploration of crude oil and gas that gave rise to illegal oil bunkering in the state. The health risk associated directly and indirectly with this activities are enormous as people are attracted from every part of the globe to these Rivers communities where this activities take place.

Living close to petroleum production facilities and oil spills can be a stressful environment that negatively impacts one's health, happiness, and quality of life (Nriagu et al., 2016). Human lives are impacted by the effects of air pollution. It may worsen the symptoms of pre-existing diseases and have an effect on the respiratory system (Ikezam et al., 2021a). Onakpohor et al. (2019) state that the majority of air pollutants have the potential to damage human DNA, impair respiratory function, and cause problems with breathing and reproduction. Furthermore, specific petroleum product components have particular effects on human health. For instance, system toxicity from exposure to naturally hazardous substances such as polycyclic aromatic

hydrocarbons in crude oil can have an impact on one's health. But there may be a way to mitigate the negative effects of poor health outcomes by acting indirectly through perceptions of danger, anxiety, annoyance, and chronic stress.

Exposure to oil pollution has been linked to significant physiological health effects, such as abnormalities in hematologic, hepatic, respiratory, renal, and neurologic functions. These abnormalities have been linked to symptoms such as headaches, dizziness, back pain, nausea, diarrhea, sore eyes, sore throats, coughs, itchy skin, rashes, respiratory issues, and general malaise (Nriagu et al., 2016; Onakpohor et al., 2019). Furthermore, when humans are exposed to high concentrations of the hydrocarbon chemicals extracted from crude oil, they may cause mutations and cancer (Onakpohor et al., 2019).

The practices of artisanal oil refining may have detrimental effects on the health of those engaged directly as well as the communities in which they are located.

Detrimental effects on the health of residents

S/No.	Health condition	Impact	Victims
1	Respiratory Issues	Burning crude oil in open pits or crude distillation units during the refining process releases particulate matter and harmful fumes into the atmosphere. These toxins can aggravate asthma and lead to respiratory issues like coughing and wheezing.	Those directly involved and the communities.
2	Skin irritation	Those working in the refining process may experience skin irritation and dermatological issues as a result of direct contact with crude oil and its byproducts.	Those directly involved.
3	Water Contamination	When waste products from artisanal oil refining are improperly disposed of, water sources become contaminated, which has an impact on aquatic ecosystems and drinking water supplies. People who depend on contaminated water sources for drinking or bathing may be	Those directly involved and the communities.

		seriously at risk for health problems from contaminants like heavy metals, polycyclic aromatic hydrocarbons (PAHs), and other harmful substances.	
4	Cancer risk	Releasing certain chemicals during artisanal oil refining, like benzene, can raise your chance of getting cancer in the long run. Serious long-term health effects may result from prolonged inhalation or ingestion of these substances.	Those directly involved and the communities.
5	Neurological Effects	A few of the compounds present in crude oil and its byproducts are neurotoxic, which means they can have a negative impact on the nervous system. Chronic exposure to these substances may cause headaches, lightheadedness, and cognitive impairment, among other neurological symptoms.	Those directly involved and the communities.
6	Occupational Hazards	Artisanal oil refinery workers are frequently exposed to a variety of occupational hazards, such as burns from chemicals, fire and explosion risks, and injuries from handling machinery and equipment without the necessary safety precautions.	Those directly involved
7	Environmental health	Artisanal oil refining leads to deforestation, soil contamination, and air pollution, in addition to the direct health effects on individuals. Because of the destruction of natural resources and disturbance of ecosystems, these environmental changes may	Those directly involved and the communities.

		have an indirect impact on human health.	
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Source: Researcher's compilation

There is a consensus among participants that the interactions / relationship between groups or individuals who live in the communities as a result of artisanal oil refining can impact their health. The relationship has been very toxic and not in any way of benefit, a lot of youths have dropped out of school for quicker means of making money. They engage in drug abuse that have resulted to increase in mentally deranged people in our communities; some of them go into illicit sexual relationship resulting to sexually transmitted diseases within the locality. The extents that even the very air we breathe are now very dangerous to human health. The little fishes we get from our ponds and river are also contaminated and have become cancerous in human bodies. These communities are prone to quick spread of communicable diseases and other forms of ailments. For instance,

These people come to make money and once they make this money they engage the locals into illicit relationships that mostly spread sexually transmitted diseases because most of these people who come in from other areas may not even be aware of their health status. Most of these illegal refiners also engage in drugs that cause damage to their brains and that is why you have a lot of mentally deranged youths around us. This poses very great danger to our future (one-on-one interview with a Participant who is Community Development Committee Chairman at Okoma 1 in Ahoada East on 2nd March, 2024).

Also, another participant argued that:

The interactions / relationship between groups or individuals who live in our communities as a result of artisanal oil refining can impact their health because the health status of those migrating to the communities are not ascertained and their interactions and relationship can lead to illicit sex which can in turn result to the spread of sexually transmitted diseases (STDs). Congested environments spread communicable diseases faster and most of the communities lack presence of health facilities and the ones that are most times overwhelmed. These activities are associated with high degree of prostitution and consumption of drugs which equally lead to the spread of diseases (One-on-One interview at Rumuolumeni in Obio/Akpor on 10th march, 2024).

Conclusion

The study concluded that destruction of natural means of livelihood, problem of poverty alleviation and revenue loss, infrastructural deficit and the health impact of social dynamics resulted to loss of economic opportunities in Rivers state.

Recommendation

The economy of Rivers state should be intentionally diversified by the government through investments in industries other than oil and gas. To combat poverty and create jobs, promote entrepreneurship, draw capital to non-oil sectors, and assist small and medium-sized businesses. The government should create and carry out long-term sustainable development plans that give equal weight to social justice, economic growth, and environmental preservation. Participate in decision-making with the local communities and make sure that development projects are inclusive and advantageous to all parties involved. Expand the state's access to essential services like clean water, electricity, healthcare, and education. Improved infrastructure can lessen the incentive to engage in criminal activity and support socioeconomic development.

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