

Safeguarding the Food Basket from Oil Spills/Pollution in Nigeria: Post-Oil City Perspective

Olusola OLUFEMI, Independent Consultant, Canada
Oluwafisayo OGUNMODEDE, Ph.D. Candidate, Nigeria

Abstract

The ecological and health damage of oil spills and pollution in Nigeria is unquantifiable. Systemic and systematic degradation of the environment, health, livelihoods and food system of people residing in oil spill areas is visibly inexcusable. This paper using secondary data discusses impact of oil spills and contends the impotency or ineptitude of environmental policy significantly contributes to oil spills and impoverishes the food basket and people's health in Nigeria. Paper suggests that in the post-oil city an inclusive approach that detoxifies the environment, preserve livelihoods and health, and restores human dignity will help rebuild and safeguard water and food security.

Keywords

Food Basket, Oil Spill, Detoxification, Safeguarding, Decontamination, Sustainable Food Production

1. Introduction

Oil pollution in the Niger Delta is an ongoing chronic disaster and an environmental adversity with no end in sight, and entails little or no support for communities and individuals that are affected (Ovadia, 2013; Obi, 2010). The oil industry in the Niger Delta is run by joint ventures involving the Nigerian government and subsidiaries of multinational companies such as Shell, Eni, Chevron, Total and ExxonMobil (Amnesty International, 2018). Shell has been pumping oil from the Niger Delta since 1958 and it remains the largest multinational oil company operating there. Oil pollution impacts on both mental, physical and environmental health. Frequent and extensive oil spills occur in the Niger Delta area and these spills are under-reported. Independent estimates indicate at least 115,000 barrels of oil are spilled into the Delta each year, making the Niger Delta one of the most oil-impacted ecosystems in the world (Steiner, 2008). With these spills, drinking water is polluted, fishing and farming are significantly impacted, soils are polluted and ecosystems degraded. Oil spills significantly affect the health and food security of rural people living near oil facilities. Oil spills disaster have gone unnoticed over several decades and this demonstrates the appalling state of environmental management in Nigeria (Agbonifo, 2016). This paper using secondary data discusses oil spill incidents and its significant contribution to impoverishing the food basket and people's health in Nigeria. Paper suggests that in the post-oil city, an inclusive approach that detoxifies the environment, preserve livelihoods and health, and restores human dignity will help rebuild and safeguard water and food security.

2. Geo Context

The Niger Delta is Africa's most important oil-producing region, and one of the most polluted places on earth because for decades oil spills have been damaging the environment and devastating lives in this part of Nigeria (Amnesty International, 2018). The Niger Delta, comprises of nine states cutting across three geopolitical zones in Nigeria (Akwa Ibom, Bayelsa, Edo, Cross Rivers, Rivers, Delta-South south; Abia, Imo-south east; and Ondo-south west; Figure 1) and it is inhabited by over 30 million people.



Figure 1: The Niger Delta Region, Nigeria; Source: <https://www.premiumtimesng.com>

The region occupies 7.5% of Nigeria's land mass, cuts across over 800 oil producing communities with a vast network of pipes connecting numerous oil and gas fields traversing the region, many of which run close to people's homes, farmlands, through swamps and waterways where people fish. The region holds 95% of Nigerian oil reserves which account for 90% of Nigerian government revenue and 95% of its export receipts (Adishi and Hunga, 2017).

3. Oil Spill

Nigeria is Africa's largest oil producer and crude oil is very important to the economy (OPEC, 2018). The Crude oil export accounted for 70.84% of total exports in the third quarter of 2019, making it the most exported product in Nigeria while its contribution to the Gross Domestic Products (GDP) was 9.77% (Adebayo, 2019). Despite this, the oil-producing communities suffer from numerous oil spills. Oil spills emanate from petroleum trucks accidents due to bad road infrastructure or poor truck maintenance or trucks that are not roadworthy; offshore platforms, drilling rigs and wells, refined petroleum products (such as gasoline, diesel, kerosene) and their by-products, and heavier fuels used by large ships. Ageing and poorly maintained pipelines spill oil regularly. Oil spills have caused contamination of water bodies, endangered aquatic life, and destroyed farmlands. Oil spills can be categorized (Amnesty International, 2018) as:

- **Operational spills** refer to spills resulting from corrosion, poor maintenance and equipment failure occurring along the main pipelines, smaller flowlines, and at the wells operated by both Shell and ENI.
- **Third-party interference refers to oil spills** caused by deliberate interference with wells, pipelines and other infrastructure by armed militant groups, criminal gangs and others. Some

groups seek to disrupt oil production to put pressure on the government for political or financial reasons while some tap the pipelines to steal oil or intentionally create spills.

Oil spills continue to occur in alarming proportion in the Niger Delta communities, particularly in Ogoniland where people are living in a chronic state of pollution (UNEP, 2011). Years of neglect, marginalization and underdevelopment of the Niger Delta by the Federal Government and the Multinational Oil Companies (MNCs) operating in the region have further exacerbated the operations of illegal and criminal oil merchants in the black market. Causes of oil spills include natural disasters, accidents, poverty, greed, youth unemployment, oil thefts, illegal bunkering, pipeline vandalism, operational error, pipeline corrosion, mechanical failure, and sabotage mostly from militant groups, and corruption. Corruption has contributed to the high costs of operations, repairs, unnecessary purchase of items, overstocking, and payment for items not supplied. These illegal acts involve a convoluted and complex web of relationship spanning all levels of the society and diverse interests such as highly connected people in and outside government, oil companies, businessmen, retired and serving military officers, militants, politicians, Niger Delta Youth and community leaders, foreign nationals and countries (Asuni, 2009).

Nigeria is Africa's largest oil producer and the country's crude oil production—estimated at over 300 million liters per day—makes up 70 per cent of the Nigerian government's revenue. However, there are no consistent figures on the quantity of oil spills in the Niger Delta (Ordinoha and Brisibe, 2013), but it is estimated that oil spill accounts for as many as 546 million gallons of oil into the Niger Delta environment over the last five decades, equivalent of about 11 million gallons annually (Amnesty International, 2011). Between 2005 and 2010 there were about 1,110 oil spill incidences resulting into 298,000 barrels of oil from sabotage and operational problems (Tables 1 and 2). It is estimated in some quarters that crude oil theft in Nigeria costs us about 400,000 barrels per day and this is equal to a revenue loss of about \$1.7 billion per month and \$20.4 billion annually (WetinHappen, 2020).

Table 1: Major Source of Oil Spills in the Niger Delta (1998-2007). Source: NNPC (2013).

Year	Equipment Failure	Human Error	Sabotage/Theft	Total
1998	28	12	65	105
1999	19	28	55	102
2000	34	39	40	113
2001	46	15	64	125
2002	39	20	67	126
2003	41	53	63	157
2004	38	32	96	166
2005	49	27	127	203
2006	37	39	187	263
2007	31	29	209	269
Percentage	22.2%	18.1%	59.7%	100%

Table 2: Oil Spill, Volume and Causes (2005-2010). Source: Amnesty International (2011).

Year	Number of Spills	Volume of Spills/Barrels	Major Causes
2005	180	10,000	95% Sabotage
2006	170	20,000	Sabotage and Operational (50% each)
2007	250	30,000	Operational 70%; Sabotage 30%
2008	170	100,000	Operational and Sabotage 50% each
2009	150	110,000	Sabotage 90% and Operational 10%
2010	190	28,000	Sabotage 80% and Operational 20%

Although Shell has not pumped oil from its oil wells in Ogoni since 1993 when Ogoni activists led protests against the oil company for destroying the environment, halting its operations, its pipelines still carry crude oil worth 150, 000 barrels daily through the region to its export terminal at Bonny Island on the coast.

The basis of environmental policy in Nigeria is contained in the 1999 Constitution of the Federal Republic of Nigeria. Section 20 of the Constitution stipulates the State is empowered to protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria. The Environmental Impact Assessment (EIA) Decree of 1992 is an environmental instrument not just for the oil and gas Industry in Nigeria, but also for all other industries in the country. The National Environmental Standards Regulation Agency, (NESREA) has the responsibility for the protection of the environment, biodiversity conservation and sustainable development in Nigeria. Seemingly, none of these environmental policies or standards are enforced in the oil spill region due to bureaucratic inefficiency, poor auditing, lack of regulatory body, poor information and record keeping. In spite of the legal framework created for the control and mitigation of oil pollution large multinational oil companies operating in the Niger Delta employ inadequate environmental, public health, and human rights standards; hence the continued degradation of the environment.

4. Impact of Oil Spills on the Food Basket

Food basket comprise of nutritious food meant for a healthy, active, and productive well-being of a people, whether in emergency, celebration, as a monitoring tool or agricultural food production in a region.

The Food basket could be used as a:

- #1: Monitoring tool for healthy eating. The Nutritious Food Basket (NFB) serves as a tool to monitor the cost and affordability of healthy eating and it has approximately 60 foods that represent a nutritious diet for individuals in various age and gender groups (Proof, 2020).
- #2: Basket of food produce for a region or the pool of food production in a particular area or region has significant impact on other dependent regions. For example, food baskets in Nigeria include the Middle Belt, Shaki/Oke Ogun and Kaduna/kebbi/Borno/Adamawa in the north, all producing variety of food crops that serves the rest of the country.
- #3: Basket of food or food basket/food hamper. Food basket as a gift during celebrations e.g. religious, personal or institutional.
- #4: Food Basket as a collective food package or food aid in emergency situations. The food that World Food Program (WFP) distributes depends on the needs of the groups and a suitably composed food basket is critical to maintaining the nutritional status of affected people, especially when they are fully dependent on food aid. The size and composition of the



food basket is tailored to local preferences, demographic profile, activity levels, climatic conditions, local coping capacity and existing levels of malnutrition and disease. It is designed to meet the nutritional requirements of a population rather than individuals (WFP, 2020) in emergencies or refugee situations.

The Niger-Delta region is one of the productive food baskets (**definition #2**) in Nigeria but the main source of livelihoods (farming and fishing) of the people are completely contaminated by oil spills and undeniably have a long-term devastating impact on the lives and livelihoods. Oil companies operate with impunity in the oilfields and to pollute, destroy and dislocate the very basis of survival of the people (Bassey, 2013). Oil spill impact presents in two ways:

Contamination and Toxicity

Crude oil extraction has effectively uprooted the people from the soil, polluted the waters and poisoned the air (Bassey, 2013). Oil spills damage both the soil and water system of the Niger Delta. The United Nations Environment Programme (UNEP, 2011) report revealed an appalling level of pollution, including the contamination of agricultural land and fisheries, drinking water, and the exposure of hundreds of thousands of people to serious health risks. It revealed drinking water from wells in communities in Ogoniland were contaminated with benzene, a known carcinogen at levels over 900 times above the World Health Organization guideline. Residents health are failing due to release of harmful chemicals (Benzene and Toulene) into the food systems. Oil spills also cause fires, which release toxic fumes that causes respiratory problems. Niger Delta residents have to drink, cook with, and wash in contaminated water; consume fish and food crops contaminated with oil and breathe in malodorous air reeked of oil, gas and other pollutants. Thus, there are complaints of breathing problems, skin lesions and other health problems.

Oil spills are a source of heavy metal contamination of aquatic and terrestrial environments, especially in oil-producing regions (Egbe and Thompson, 2010). Petroleum hydrocarbons can enter the body through the air, food, and water or when one accidentally eats or touches soil or sediment that is contaminated with oil (Olurounbi and Iruoma, 2020). Contamination of the environment with heavy metals is associated with oil spillage because crude oil contains heavy metals and toxicity risk is high. Residents of the Niger Delta region may be at risk of heavy metal toxicity because of the large amount of oil being spilled in the region (Chinedu and Chukwuemeka, 2018).

Degradation of Ecosystems and Food insecurity

The Niger Delta is a diverse region with rich mangroves and fish-rich waterways. Many residents try to make their livelihoods from fishing and farming. The livelihoods and health of people and communities across the Niger Delta are closely linked to the land and environmental quality, and hence are vulnerable to oil contamination. The oil spills had devastating impacts on the forests and fisheries that the people depend on for their food and livelihoods. People inhale chemicals from the smell of benzene, and people are diagnosed with respiratory disease which sometimes lead to death. Nothing grows or survives on the land because of the slick oil in the soil and water. Residents dig boreholes for water, but as soon as the taps are tuned on, a smell emerges similar to used engine oil and cooking gas. Fish ponds, farmlands and agricultural productivity are diminishing due to environmental degradation and the inveterate ecological buoyancy are being eroded daily by oil spills. Farmers and fishers find it impossible to conduct their daily work because the water and soil are polluted and they are increasingly moving out of the region to find livelihoods elsewhere.

Oil spills could lead to reduction of household food security, malnutrition and undernutrition as well as the nutrient value/contents of the food produced and consumed. Besides the contamination of rivers and farmlands, the communities' sources of drinking water, which are mainly underground water and streams, have also been contaminated or poisoned. Ogoniland is a high rainfall area and the spill has been carried across farmlands and into creeks. Thus, water and food insecurity are

pervasive in the region. The consequences of oil spills include poverty, unemployment, productivity loss, rural-urban migration, population displacement and conflict. The collapse of the local economy, loss of income, truncated productivity, and the dispossession of local people from farming and fishing due oil spills have displaced many people from their homes, livelihoods, land and community.

5. Post-Oil Perspective

5.1 Clean Up

There is a continuous systemic and systematic degradation of the environment and ecosystems due to oil spill incidences in the Niger Delta area. Amnesty International and other organizations have repeatedly exposed how, despite regulations, the Nigerian government is failing to enforce its own rules on how firms should prevent and respond to oil spills. UNEP (2011) noted environmental restoration of Ogoniland was possible but could take 25 to 30 years if a comprehensive clean up exercise could begin immediately. It recommended the creation of an Environmental Restoration Fund (ERF) for Ogoniland with a capital of 1billion USD, to be co-funded by the federal government, Nigeria National Petroleum Corporation and Shell for the remediation of polluted sites in Ogoniland and restoration of livelihoods of people in impacted communities.

The Hydrocarbon Pollution Remediation Project (HYPREP) was set up with the mandate to Remediate the Environment and Restore the Livelihood of the People. In 2018, the remediation phase of oil impacted sites in Ogoniland and procurement processes commenced for remediation in line with the Federal Government Public Procurement Act of 2007. HYPREP has carried out water quality assessment of all drinking water sources in the four local government areas of Ogoniland and the assessment of the water sources has enabled HYPREP to determine areas most needed for the emergency water supply scheme. HYPREP has also carried out a survey of the water reticulating distances in the four LGAs for the supply of potable water in the communities. Delay in the implementation of the recommendations will not only undermine the livelihoods of the Ogoni communities but it will also cause the pollution footprint to expand, requiring a fresh investigation to rescope the place and determine the extent of the contamination. The Nigerian government established HYPREP as an agency under the ministry of the environment with the mandate to implement the environmental clean-up programme in Ogoniland but this clean up project has been very slow and even slower due to COVID-19 pandemic.

5.2. Safeguard the Food Basket

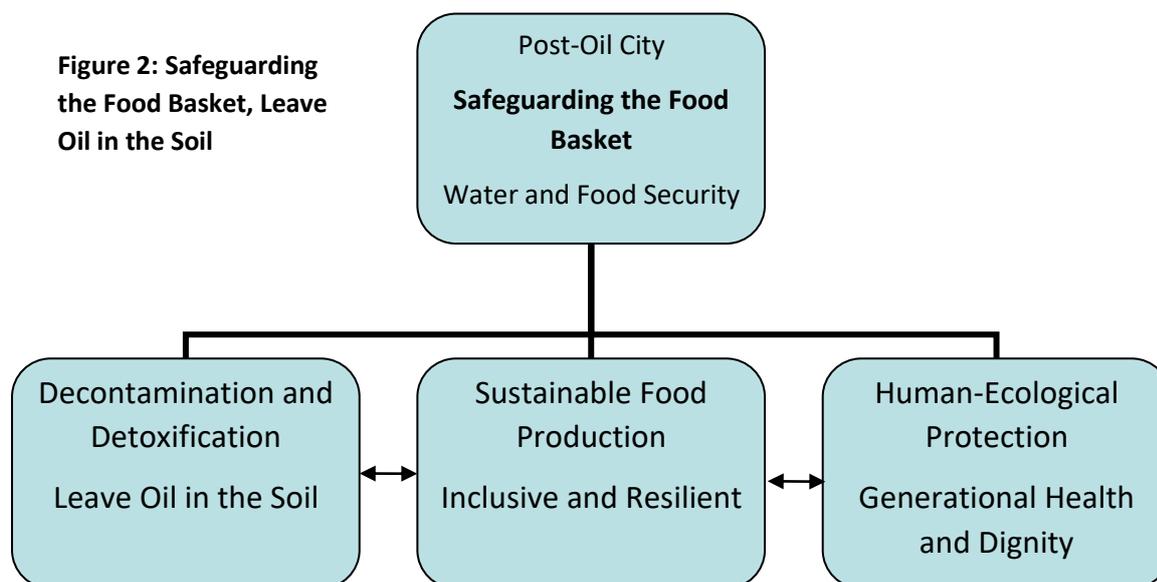
Oil spills have a significant impact on the natural resources upon which many poor Niger Delta communities depend. Drinking water is polluted, fishing and farming are significantly impacted, and ecosystems are degraded. Oil spills significantly affect the health and food security of rural people living near oil facilities. Soil damage, climate change, water and energy availability are all challenges for farming, soil degradation and they make the food basket unsustainable. Detoxifying the food landscape and decontaminating the soil, putting an end to oil block licensing, leaving oil in the soil and continuous auditing of oil spill incidents are pertinent to safeguarding the food basket. An inclusive and sustainable food production approach is integral in safeguarding the food basket in a post-oil city (Figure 2). Sustainable food production is a method of production using processes and systems that are non-polluting, conserve non-renewable energy and natural resources, are economically efficient, are safe for workers, communities and consumers, and do not compromise the needs of future generations (Foresight, 2011). While SDG #2 (Target 2.4) and SDG#15 (Target 15.5) emphasise sustainable and resilient food production systems (Table 3), SDG (2015, Para 34) indicates the reduction of the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment, including through the environmentally sound management and safe use of chemicals, the reduction and recycling of waste and more efficient use of water and energy. Embedded in this approach is the

protection of the ecosystem, that is, a dynamic complex of living communities and their nonliving environment. This integrated approach ensures proper management of oil spills and emphasises livelihood, health and food security. The integration of human-ecological systems works together to promote life, livelihoods and human well-being resulting in healthy food, water, soil, people and environment.

Table 3: Sustainable Development Goals and Safeguarding the Food Basket

- SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- SDG 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- SDG 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

Figure 2: Safeguarding the Food Basket, Leave Oil in the Soil



6. Conclusion

Oil spills have both environmental and social impacts on the livelihood, food security, physical and mental health, and the ecosystem. Protecting and preserving the natural habitat is critical for the post-oil city. It is paramount to protect and preserve lives and livelihoods of the present and future generations; and protect the ecosystems (land, water sources and the soil) from further degradation, pollution, contamination and exposure to toxic substances.

Safeguarding the food basket in a post-oil city through sustainable food production system is germane to revitalisation of any region/community experiencing oil spills. There is an urgent need to speed up the clean up efforts to protect and preserve the people and their environment. The Post-Oil City must adopt inclusive and sustainable food systems that leaves the oil in the soil, minimises damage to the ecosystems and ensures water and food security. Leaving the oil in the soil, the coal in the hole and the tar sands in the land, preserves the environment; restores polluted streams and lands; brings dignity that only comes about when we stand away from the pull of the barrel of crude oil and understand that the soil is more important to our people than oil and its spoils (Bassey, 2013). To restore dignity and health, it even becomes more imperative to leave the oil in the soil in the post oil city especially with the fall in oil prices per barrel, deregulation of the petroleum sector and removal of petroleum subsidy, limitations in transportation fuel consumption and teleworking/remote working due to COVID-19 pandemic disruptions.

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