International Journal of Innovative Social Sciences & Humanities Research 14(2):102-108, April-June, 2026

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doi:10.5281/zenodo.19607971

Illegal Refining, Pipeline Explosions, And Human Security In ONELGA, Rivers State: Challenges For Oil Infrastructure Governance

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ABSTRACT
This study examined the persistence of pipeline vandalism, explosions, and crude oil theft in Ogba/Egbema/Ndoni Local Government Area (ONELGA), Rivers State, within the operational environment of the Nigerian Agip Oil Company Ltd (NAOC), now part of Oando Plc. The study investigated how these activities affect human security, environmental sustainability, and the livelihoods of host communities in the Niger Delta. The research adopted a Human Security theory as theoretical construct and qualitative approach, relying on secondary data from scholarly publications, policy reports, and documented incidents of pipeline vandalism and illegal refining activities in the region. Findings revealed that pipeline vandalism and crude oil theft remain widespread in ONELGA despite security operations and regulatory interventions. The study found that these activities have resulted in frequent pipeline ruptures, explosions, oil spills, and environmental degradation, thereby threatening the safety of residents and undermining agricultural and fishing livelihoods. The findings further showed that unemployment, poverty, ageing oil infrastructure, weak enforcement of environmental regulations, and limited community participation in oil governance contribute significantly to the persistence of illegal refining and pipeline vandalism in the area. The study concluded that the continued sabotage of oil infrastructure represents a major threat to human security and sustainable development in ONELGA. Based on these findings, the study recommended modernization and proper maintenance of pipeline infrastructure, stronger community engagement in resource governance, youth employment and economic empowerment programmes, and improved enforcement of environmental protection regulations. Implementing these measures will help reduce pipeline vandalism, protect oil infrastructure, and enhance human security and environmental sustainability in the Niger Delta region.
Keywords: Crude oil theft, environmental degradation, human security, illegal refining, oil pipeline vandalism, oil infrastructure governance.

INTRODUCTION

Oil pipeline vandalism, illegal refining, and crude oil theft have continued to pose significant threats to oil infrastructure, environmental sustainability, and human security in Nigeria's Niger Delta region. The problem is particularly pronounced in Ogba/Egbema/Ndoni Local Government Area (ONELGA) of

Rivers State, where oil exploration and production activities have been ongoing for several decades. The Nigerian Agip Oil Company Ltd (NAOC), now acquired by Oando Plc, operates several pipelines and oil facilities within the area that transport crude oil and gas to processing plants and export terminals. However, these facilities have frequently been exposed to sabotage, corrosion, illegal tapping, and explosions, resulting in severe economic losses and environmental degradation (Amnesty International, 2023; Nwajiaku-Dahou & Ukeje, 2020).

The persistence of pipeline vandalism in the Niger Delta has been linked to a combination of socio-economic grievances, weak governance structures, environmental injustice, and criminal networks involved in oil theft. Studies have shown that Nigeria loses substantial quantities of crude oil daily due to pipeline vandalism and illegal refining activities, leading to billions of dollars in lost revenue and increased costs for pipeline security and maintenance (Dataphyte, 2021; NNPCL, 2024). These challenges are particularly evident in ONELGA, where oil infrastructure installed several decades ago continues to operate despite increasing exposure to corrosion, ageing, and sabotage. Consequently, pipeline ruptures and explosions have become recurrent events that threaten both oil production and the safety of surrounding communities.

Recent incidents in ONELGA illustrate the magnitude of the problem. In January 2024, a gas pipeline owned by NAOC reportedly exploded in the Obagi community, destroying nearby farmlands though fortunately no fatalities were recorded. Local authorities attributed the explosion to equipment failure associated with ageing and obsolete pipelines (Independent Newspaper, 2024). Similarly, in November 2023, a pipeline rupture occurred near the Grace Orphanage Home in Omoku, causing widespread panic among residents and highlighting the vulnerability of pipelines installed as far back as the 1960s (Vanguard, 2023). These incidents demonstrate how deteriorating infrastructure can increase the risk of catastrophic accidents within oil-producing communities.

In addition to infrastructure failures, illegal refining and crude oil theft have become widespread in ONELGA and other parts of the Niger Delta. Illegal refining involves the artisanal processing of stolen crude oil using makeshift equipment, often located in remote creeks or forest areas. While these activities provide income for some local residents, they also generate severe environmental pollution and safety hazards. For example, on 14 June 2025, the Nigerian Navy reportedly dismantled several illegal refining sites in ONELGA containing numerous ovens, reservoirs, and dug-out pits used for refining stolen crude oil. The operation recovered tens of thousands of litres of stolen crude oil and illegally refined petroleum products (The Guardian, 2025). Similar security operations conducted in Obiafu community in 2024 led to the destruction of clusters of illegal refining sites and the recovery of large quantities of stolen oil products (Nigerian Telegraph, 2024). These activities not only deprive the Nigerian state of valuable revenue but also contribute to environmental contamination, fire outbreaks, and community insecurity.

The human security consequences of these recurring incidents are severe and multifaceted. Human security refers to the protection of individuals and communities from threats to life, health, livelihoods, and environmental well-being (United Nations Development Programme [UNDP], 1994). In ONELGA, oil spills and pipeline explosions have resulted in polluted water sources, degraded farmland, and declining agricultural productivity, thereby undermining the livelihoods of communities that depend heavily on farming and fishing. Environmental degradation caused by oil pollution has been widely documented across the Niger Delta, where contaminated soils and waterways have reduced food production and increased health risks among local populations (Akpomuvie, 2021; UNEP, 2011).

Furthermore, explosions associated with illegal refining and crude oil theft have led to fatalities and injuries among community members. In April 2025, an explosion at an illegal petroleum storage site in Omoku, ONELGA, reportedly killed five individuals and raised concerns about the increasing dangers associated with the storage and transportation of illegally refined petroleum products (The Guardian, 2025). Such incidents highlight the direct human cost of pipeline vandalism and illegal refining activities. In addition to fatalities, pipeline ruptures and explosions often cause panic, displacement, and long-term psychological stress among residents living close to oil infrastructure (Vanguard, 2023).

Despite ongoing security operations by government agencies and regulatory oversight by oil companies, the persistence of pipeline vandalism suggests that current interventions remain insufficient. While

security forces have continued to dismantle illegal refining camps and arrest suspected oil thieves, underlying structural factors such as youth unemployment, poverty, environmental neglect, and limited community participation in resource governance continue to fuel illegal oil activities in the region (Nwajiaku-Dahou & Ukeje, 2020). Moreover, ageing pipelines that have remained in use for decades without adequate replacement or modernization increase the likelihood of leaks and ruptures, thereby exacerbating environmental risks.

Consequently, this study examined the persistence of pipeline vandalism, explosions, and crude oil theft in Ogba/Egbema/Ndoni Local Government Area (ONELGA) under the operations of Nigerian Agip Oil Company Ltd (now Oando Plc), and to assess their implications for human security, environmental sustainability, and the livelihoods of host communities.s.

Theoretical construct: Human Security Theory

The Human Security Theory was popularized by the United Nations Development Programme (UNDP) in its 1994 Human Development Report, which significantly broadened the concept of security beyond traditional state-centered military protection to include the protection of individuals and communities from threats to their well-being (UNDP, 1994) was adopted for this study. Although the concept evolved earlier in development studies and international relations, the UNDP report provided the most comprehensive framework by introducing the idea that security should focus primarily on people rather than the state. Scholars such as Mahbub ul Haq and Amartya Sen, who contributed significantly to human development thinking, also influenced the emergence of the human security approach by emphasizing the importance of safeguarding human dignity, livelihoods, and freedoms (Tadjbakhsh & Chenoy, 2007).

The core assumption of Human Security Theory is that security threats are multidimensional and affect individuals directly, rather than being limited to military conflicts between states. The theory identifies several dimensions of human security, including economic security, food security, health security, environmental security, personal security, community security, and political security (UNDP, 1994). These dimensions emphasize that threats such as environmental degradation, poverty, unemployment, and social instability can be as dangerous to human survival as armed conflict. The theory therefore advocates policies that protect individuals from chronic threats such as hunger, disease, and environmental hazards while also safeguarding them from sudden disruptions such as disasters, violence, and industrial accidents.

Within the context of natural resource exploitation, Human Security Theory explains how extractive industries can generate significant risks for communities living near resource production sites. In resource-rich regions where oil production occurs, environmental pollution, infrastructural failures, and socio-economic inequalities can threaten the safety and livelihoods of local populations. Scholars have argued that when environmental and economic insecurities are not properly addressed, they may lead to social unrest, conflicts, and criminal activities (Akpomuvie, 2021; Nwajiaku-Dahou & Ukeje, 2020). Consequently, the theory provides a useful framework for analyzing the social and environmental consequences of oil production activities in regions such as the Niger Delta.

The situation in Ogba/Egbema/Ndoni Local Government Area (ONELGA) of Rivers State illustrates how threats associated with oil production can undermine human security. Illegal refining and pipeline vandalism have become widespread in parts of the Niger Delta due to a combination of poverty, unemployment, and grievances over environmental degradation. These activities involve the unauthorized tapping of crude oil pipelines and the artisanal processing of stolen crude oil using makeshift equipment. Although illegal refining provides short-term income opportunities for some local youths, it generates severe environmental and safety risks. For instance, security agencies have frequently dismantled illegal refining camps in Rivers State. In June 2025, the Nigerian Navy reportedly destroyed several illegal refining sites in ONELGA and recovered thousands of litres of stolen crude oil and refined petroleum products (The Guardian, 2025). Such operations demonstrate the scale of illegal oil activities and their implications for infrastructure governance and community safety.

Pipeline explosions represent another critical human security threat in oil-producing communities. These explosions often occur when vandalized pipelines leak petroleum products that later ignite due to sparks or other ignition sources. In December 2023, a pipeline explosion in Rivers State reportedly killed several

individuals involved in oil bunkering activities, highlighting the deadly consequences of illegal pipeline tapping (Vanguard, 2023). These incidents illustrate how oil infrastructure sabotage can lead directly to loss of life, destruction of property, and displacement of communities.

Environmental degradation resulting from oil spills and illegal refining further intensifies human insecurity in ONELGA. Oil pollution contaminates farmland, rivers, and groundwater, thereby undermining the agricultural and fishing livelihoods of local populations. The United Nations Environment Programme has documented the extensive environmental damage caused by decades of oil exploitation in the Niger Delta, including soil contamination and destruction of ecosystems (UNEP, 2011). Such environmental degradation reduces agricultural productivity and threatens food security in rural communities that depend heavily on natural resources for survival.

Human Security Theory also highlights the economic dimensions of insecurity in resource-producing communities. Many youths in oil-producing areas face high levels of unemployment despite living in regions that generate substantial national revenue from petroleum resources. As a result, some individuals turn to illegal refining and pipeline vandalism as alternative sources of income. Scholars have noted that socio-economic marginalization and environmental injustice have contributed to the persistence of oil theft networks in the Niger Delta (Nwajiaku-Dahou & Ukeje, 2020). In ONELGA, the combination of economic hardship and environmental degradation has created conditions that enable illegal oil activities to flourish.

The relevance of Human Security Theory to this study lies in its ability to explain how oil infrastructure failures and illegal oil activities threaten multiple aspects of community well-being. Pipeline explosions, oil spills, and illegal refining not only damage oil infrastructure but also expose communities to environmental pollution, health hazards, and economic instability. By focusing on the safety and welfare of individuals rather than solely on the protection of oil infrastructure, the human security perspective highlights the need for policies that address the broader socio-economic and environmental drivers of insecurity in oil-producing communities.

In conclusion, Human Security Theory provides a comprehensive framework for understanding the complex relationship between illegal refining, pipeline explosions, and community safety in ONELGA. The theory demonstrates that oil infrastructure governance should extend beyond protecting pipelines and corporate assets to include the protection of human lives, livelihoods, and environmental sustainability. Effective policy responses must therefore combine improved pipeline maintenance, environmental remediation, community development initiatives, and employment opportunities for local youths in order to reduce the human security risks associated with oil exploitation in the Niger Delta.

Pipeline Vandalism, Explosions, and Crude Oil Theft in ONELGA: Implications for Human Security, Environmental Sustainability, and Livelihoods

The persistence of pipeline vandalism, explosions, and crude oil theft in Ogba/Egbema/Ndoni Local Government Area (ONELGA) of Rivers State represents a significant challenge to oil infrastructure governance and community security in the Niger Delta. ONELGA is an important oil-producing area where the Nigerian Agip Oil Company Ltd (NAOC), now part of Oando Plc, operates extensive pipeline networks and oil facilities. Despite the enormous economic value generated from petroleum production in the region, oil infrastructure has frequently been targeted by vandals and illegal refiners, leading to environmental degradation, economic losses, and threats to human security. The persistence of these problems reflects the complex interaction between resource governance challenges, socio-economic marginalization, and environmental injustice in the Niger Delta (Nwajiaku-Dahou & Ukeje, 2020; Obi, 2010).

Pipeline vandalism is a major driver of oil theft and infrastructure damage in the Niger Delta. It involves the illegal tapping or destruction of pipelines in order to siphon crude oil or refined petroleum products. According to Nwajiaku-Dahou and Ukeje (2020), oil theft networks in the Niger Delta involve multiple actors, including local youths, organized criminal groups, and intermediaries who transport stolen crude oil for illegal refining. In many cases, the stolen crude oil is transported to illegal refining camps located in creeks and forests where it is processed into diesel, kerosene, and other petroleum products using crude

refining methods. These artisanal refining operations are highly dangerous and environmentally destructive because they lack modern safety standards and frequently discharge toxic waste into surrounding ecosystems.

Empirical research has shown that pipeline vandalism has significant implications for human security in Rivers State. For example, Wilcox, Egobueze, and Ogele (2022) examined crude oil pipeline vandalism and human security using the Port Harcourt Refining Company pipeline network as a case study. Their study revealed that pipeline vandalism contributes to environmental pollution, loss of government revenue, scarcity of petroleum products, and rising fuel prices. The study further demonstrated that vandalism often results in destruction of property and loss of human lives, thereby posing serious threats to the security and well-being of communities living near oil infrastructure (Wilcox et al., 2022).

Recent incidents in Rivers State illustrate the magnitude of these risks. Pipeline explosions have occurred repeatedly as a result of illegal tapping activities and poorly maintained infrastructure. For instance, an explosion along the Trans-Niger Pipeline in Rivers State in 2024 raised concerns about the vulnerability of oil infrastructure and the environmental consequences of pipeline sabotage (Arise News, 2024). Such incidents demonstrate how sabotage and technical failures can disrupt oil production while simultaneously exposing surrounding communities to environmental hazards.

Security agencies have also uncovered numerous illegal refining sites across the Niger Delta. During anti-oil-theft operations in Rivers State, security forces dismantled several illegal refining camps and confiscated thousands of litres of stolen crude oil and refined petroleum products (The Whistler, 2025). These discoveries indicate that illegal refining has become an organized underground economy that undermines the governance of Nigeria's petroleum industry. In addition to causing financial losses for the Nigerian state, these activities create severe environmental and safety risks for host communities.

The human security implications of pipeline vandalism and illegal refining are extensive. Human security refers to the protection of individuals from threats to life, health, and livelihoods. Explosions at illegal refining sites have caused fatalities and injuries in several communities across the Niger Delta. These incidents not only destroy lives and property but also create long-term fear and insecurity among residents living near oil facilities. The risk of accidental explosions is particularly high in areas where stolen crude oil is stored or transported using unsafe methods.

Environmental degradation resulting from pipeline vandalism further undermines human security in ONELGA. Oil spills caused by damaged pipelines contaminate soil, rivers, and groundwater, thereby destroying ecosystems and reducing agricultural productivity. Environmental studies have documented the widespread ecological damage caused by oil pollution in the Niger Delta, including soil infertility, destruction of fisheries, and contamination of drinking water sources (United Nations Environment Programme [UNEP], 2011). These environmental impacts threaten the livelihoods of communities that depend heavily on farming and fishing for survival.

In addition to environmental damage, the socio-economic consequences of pipeline vandalism are severe. Many communities in the Niger Delta remain impoverished despite the vast oil wealth generated from their land. According to Obi (2010), the marginalization of local communities from the benefits of oil production has contributed to resentment and conflict in the region. High levels of youth unemployment and poverty often push individuals toward illegal refining and pipeline vandalism as alternative sources of income. Consequently, economic inequality reinforces the cycle of oil theft and infrastructure sabotage.

Institutional weaknesses also contribute to the persistence of pipeline vandalism in ONELGA. Regulatory agencies responsible for monitoring oil infrastructure often face logistical challenges due to the vast network of pipelines spread across remote creeks and forests. This makes it difficult to detect pipeline breaches and illegal tapping activities in real time. Furthermore, weak enforcement of environmental regulations and occasional corruption among security personnel have been identified as factors that enable oil theft networks to operate in the region (Nwajiaku-Dahou & Ukeje, 2020).

The persistence of pipeline vandalism and crude oil theft therefore represents a multidimensional challenge involving security, environmental governance, and socio-economic development. Addressing this problem requires comprehensive strategies that combine stronger security measures with sustainable development initiatives. Improved pipeline surveillance technology, community participation in resource

governance, and employment opportunities for youths could significantly reduce the incentives for engaging in illegal oil activities.

In conclusion, the persistence of pipeline vandalism, explosions, and crude oil theft in ONELGA has profound implications for human security, environmental sustainability, and the livelihoods of host communities. Empirical evidence shows that these activities contribute to environmental degradation, economic losses, and social instability across the Niger Delta. Studies linked to Egobueze and other scholars demonstrate that pipeline vandalism is not merely an economic issue but a significant threat to the safety and well-being of communities in Rivers State (Wilcox et al., 2022). Addressing this challenge requires stronger governance of oil infrastructure, environmental protection measures, and inclusive development policies that ensure host communities benefit from the resources extracted from their land.

CONCLUSION

The study examined the persistence of pipeline vandalism, explosions, and crude oil theft in Ogba/Egbema/Ndoni Local Government Area (ONELGA), Rivers State, particularly within the operational environment of the Nigerian Agip Oil Company Ltd (NAOC), now Oando Plc, and assessed their implications for human security, environmental sustainability, and the livelihoods of host communities. The findings revealed that pipeline vandalism and illegal refining activities remain widespread in the area despite regulatory frameworks and security interventions aimed at protecting oil infrastructure. These activities have resulted in repeated pipeline ruptures, explosions, environmental degradation, and economic losses, thereby posing serious threats to community safety and sustainable development.

Empirical evidence presented in the study demonstrated that vandalized pipelines and illegal refining operations often lead to fire outbreaks, oil spills, and accidental explosions that endanger human lives and destroy property. Such incidents not only disrupt oil production but also expose surrounding communities to environmental hazards, including polluted water sources, contaminated farmland, and declining fish stocks. Consequently, the livelihoods of residents who depend primarily on agriculture and fishing have been severely affected. The study also found that the persistence of oil theft and illegal refining is partly driven by socio-economic challenges such as unemployment, poverty, and perceived marginalization of host communities from the benefits of oil production.

Furthermore, the findings revealed that ageing oil infrastructure and weak enforcement of environmental and security regulations contribute significantly to the frequency of pipeline leaks and explosions in ONELGA. Pipelines installed several decades ago are often susceptible to corrosion and technical failure, making them vulnerable to sabotage and operational accidents. At the same time, inadequate community engagement and limited socio-economic development initiatives in host communities have fueled resentment and encouraged some individuals to participate in illegal oil activities. These dynamics collectively undermine human security by exposing communities to environmental pollution, health risks, economic instability, and social conflict.

Based on these findings, the study concludes that pipeline vandalism and crude oil theft in ONELGA represent a multidimensional challenge involving environmental governance, infrastructure management, and socio-economic development. Addressing the problem requires comprehensive and collaborative strategies involving government agencies, oil companies, and host communities.

RECOMMENDATIONS

To mitigate these challenges, the following recommendations are proposed:

First, oil companies operating in the area, particularly NAOC/Oando Plc, should prioritize the modernization and regular maintenance of oil pipeline infrastructure. Replacing ageing pipelines with modern corrosion-resistant materials and installing advanced monitoring technologies such as leak detection systems and satellite surveillance would help reduce the risk of pipeline rupture, vandalism, and explosions.

Second, there is a need for strengthened community engagement and participatory governance in oil-producing areas. Oil companies and government agencies should actively involve host communities in

decision-making processes related to resource management, environmental protection, and local development initiatives. Greater community participation can enhance trust, reduce grievances, and discourage local involvement in pipeline vandalism and illegal refining activities.

Third, the government should expand economic empowerment programmes and employment opportunities for youths in oil-producing communities. Skills acquisition initiatives, vocational training, and local content employment policies within the oil and gas sector would provide alternative livelihoods and reduce the economic incentives that drive some individuals to engage in crude oil theft and illegal refining.

Fourth, regulatory agencies such as the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) and environmental authorities should strengthen monitoring and enforcement of environmental protection laws. Strict enforcement of regulations governing oil exploration, pipeline maintenance, and environmental remediation would help reduce the environmental damage associated with oil spills and illegal refining activities.

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