

Gas Flaring Cessation In Nigeria: Challenges, Contentions & Controversies

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Abstract: *The study attempt to interrogate the curious issues of gas flaring within the Niger Delta region of Nigeria and the hardships being suffered by the citizens of the region. In portraying the true and dire situation, the authors adopted theoretical and anecdotal mechanics to calibrate the challenges of continued gas flaring in the region. It x-rayed the extant contentions and controversies surrounding the continued gas flaring and the economic losses, not forgetting the environmental and health hazards it inflicts on the indogenous peoples of the Niger Delta. A cronology of feeble government regulatory frameworks and even the 2021 passage of petroleum industry act (PIA) which was left to freeze for over fifteen years since the advent of democracy (1999), underscored the lack of political will of the Nigerian State and its actors to stop gas flaring in the region by Oil producing Corporations. The study concluded that not until the authorities and its actors rescend graft, theft and inducement from Oil firms, the extant regulations, codes and best practices in the industry globally will never see the light of day in Nigeria. The study recommended continued agitations by peoples of the region including CSOs, NGOs and faith-based organizations, to enable attention be drawn to this criminal anomaly of gas flaring. Also the citizens of the region and their leaders should engage the UN and its Security Council to the genocidal intension of the Nigerian government against minority peoples of the Niger Delta.*

Keywords: Gaas flaring, challenges, contentions, controversies, environmental haszards, Oil corporations, Niger Delta.

INTRODUCTION

Globally, the Oil and Gas industry is a money spinner and accounts for a large percentage of economic earnings of countries that are endowed with it. Therefore leaders of nations deploy its valuable capacities to fire socioeconomic development. The oil and gas industry has been desccribed by Ekakitie and Ehimen (2016) as the ‘heartbeat’ of economies like Nigeria, Venezuela, Angola, Saudi Arabia, etc. Thus, there is a huge dependence on crude and its exports to earn revenue; neglecting painfully other sectors to their own peril. These types of economies and their leaders can best be described as preferring to eat of the ‘bread of idlness’ which translates later into the ‘bread of sorrow’ as they sooner than they know it, suffer ‘Curse of Oil’ jinx. The leaders’ lack of vision, tendency for waste, corruption and maladministration soon lead to citizens poverty and general national economic collapse. They neither develop technological capabilities to extract the oil and gas, they also fail to build refining capacities. Thus, like Nigeria, they begin to import variants of catalized crude and even gas to drive their domestic and industrial operations.

The giant corporations and countries that have the technological knowhow and hi-tech capacities to carry out the exploration and exploitation are the true ‘big boys’ as they earn almost everything merely paying royalties for barrels of crude drawn from the Oil blocs and Wells. The Oil and Gas industry is an impartful one in several dimensions. Aside from the crude, Gas has become, in recent decades, a huge commodity of global trade and commerce spanning Africa, America, Middle East, South America and Russia. To underscore the huge impart of the industry on the global economy, it would be worthwhile to deocument and emphasize how huge and powerful top actors and players in the industry truly are; many have their activities shrouded in transparency and accountability deficits, albeit in connivance with currupt governments (Ekakitie, 2019).

Documenting the top ten (10) Oil and Gas corporations in the globe, Muspratt (2019) gives a chronology in order of assets and profitability network. Sonopex posts a 2018 revenue of \$337 bn, it is a State owned (China) and had net income of \$9.1bn producing 4.88m bpd (barrels per day). Saudi Aramco comes second posting in 2018 revenue of \$355.9, it is State owned (Saudi Arabia) and had a net income of \$111.1bn, with a capacity to produce 13.6m bpd. China National Petroleum (CNPC) also State owned, posted a revenue of \$324bn with a net income of \$5.4bn and capacity for 1.9m bpd. The Royal Dutch Shell (Shell) come 4th. Shell, a publicly quoted corporation is jointly owned by UK-Netherlands, it posted a revenue of \$322bn in 2018 with a net-income of \$23.9bn and capacity for 3.7m bpd. This is followed by Bp Oil, UK-owned and publicly quoted with revenue of \$303.07 and a profit (net) of \$9.58bn producing 4.1m bpd. ExxonMobil, US owned and publicly quoted had a 2018 revenue of \$241.1b and a net income of \$20.844 with a capacity of 4.91m bpd. This compnay has vast operations in Nigeria. The 7th biggest global actor is Total Oil, French owned, with a \$156bn revenue and a net income of \$13.6bn producing 2.8m bpd. It also has vast operations in Nigeria. Valero, another US owned corporation is quoted too and posted \$117bn as revenue in 2018. Its net incoem is in the region of \$4.1bn and capacity to produce 3.1m bpd. GazProm is a Russian owned firm, it ranked 9th in 2018 with \$112bn revenue, net income of \$5.8bn

and a capacity to produce 9.7m bpd. Lastly is Phillips66, also US owned and publicly quoted. Phillips66 raked in \$111bn as revenue, with a net-income of \$5.106m and a capacity to produce 2.2.m bpd. In the Muspratt (2018) categorization, corporations such as LukOil and Eni were not listed. But these play active roles in the Nigerian Oil and Gas industry posting \$251 and \$131 revenue respectively in 2017.

The logic of this chronology is to pinpoint the vast amount of funds generatable from the industry and underpin the fact that none of the above firms are Nigerian owned, or for that matter African continent owned. Yet all the Oil corporations that operate in Nigeria engage in the act and practice of gas flaring, a practice not tolerated in their home countries. Reports from the Worldbank (2022) <https://blogs.worldbank.org/impact>, aver that Nigeria is one of the top 7 gas-flaring counties. It estimated that about 2m people live less than 4km away from a flare-site. The effects is both economical (loss of revenue) and harm to human health. In its Briefing Notes, Shell Managing Deirector, Mr. Osumbor, shied away from Shell’s gas flaring records and activities, rather he resorted to praise-singing Shell’s over 60 years of operations in Nigeria. This is not helpful.

Alimi & Gibson (2022) defines gas flaring as burining off natural gas during production. They opine that flaring gas has negative impact on human health and incidented that the practice is maily prevalent in Sub-Saharan Africa (SSA) countries and Nigeria with the largest proven gas reserves in Africa contributes the most flaring on the continent. The negative/harmful consequences are myriad in emissions: carbon monoxide comes first, then followed by carbon dioxide, volatile organic compounds, sulphure dioxide, polycyclic aromatic hydrocarbons and soot. Western nations that have their firms operating in Nigeria use unconventional oil production (fracking) in their operations. Fracking is not allowed in Western countries even by the top 10 firms earlier documented. The difference is a matter of regulation and leadership. Fracking releases other air pollutants that do not result from flaring alone, (Alimi & Gibson, 2022). Nigeria’s regulatory agency, the National Oil and Gas Spill Detection and Ressource Agency and the Nigerian Ministry of environments, have responsibility for gas flaring regulations/restrictions and geographic coordinates activities. None of them is lving up to dictates of their charter. Gas flaring is still going on without let or hinderance, graft is touted as the reason. The impunity of of it all is underscored by the statement (Alimi & Gibson, 2022) and their researched graph outcome underscoring the magnitude of gas flaring, its statistics and data trend.

The study try to draw attention again and reemphasize the damages to communal ecology, loss in revenue, and health afflictions oil bearing communities of the Niger Delta suffer in the midst of affluence of the Nigeian State actors. Alimi & Gibson (2022) captures the statistics and regulatory failure in the brief statement below:

“The limitation of official statistics becomes apparent when comparing estimates from the two sources over time. Prior to the introduction of new regulations that raised penalties for flaring, data from both sources was relatively aligned. After new regulations with significantly increased fines for flaring came into force in 2018, official estimates became over 30% lower than the satellite estimates”.

Figure 1: Flaring Volume Estimates: Official (Self-Reported) vs. Satellite

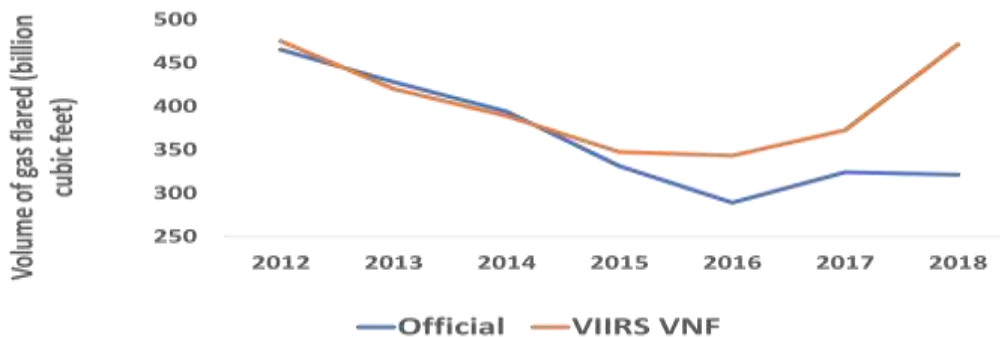


Figure 2: Community-level impact of flaring on child health outcomes

Impact of flaring on the incidence of diseases, child nutrition, and deaths in Nigeria

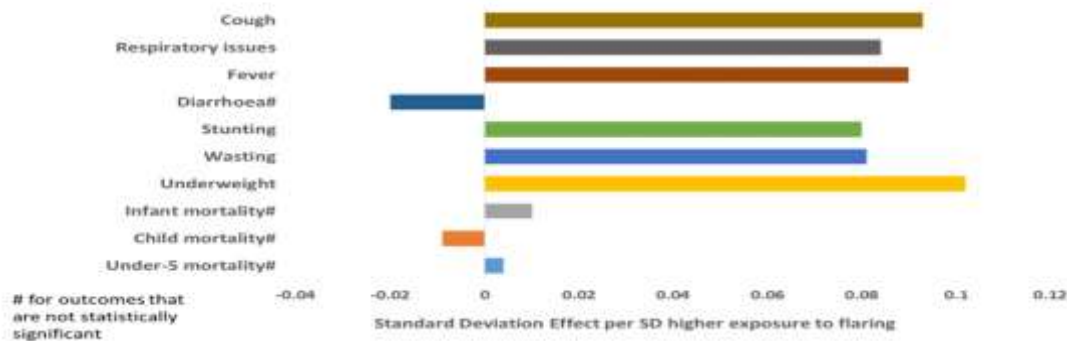
According to the authors,

...at both the individual and community level, we find significant positive associations between flaring and community-wide rates of children having a cough, respiratory illness, and fever, along with the rates of stunting, wasting, and being underweight. Effects that include controls for household and community characteristics are slightly larger than the unconditional effects. At the community level, one Standard Deviation (SD) higher volume of gas flaring is associated with about 0.1 SD higher rate of stunting, wasting, and being underweight, and also 0.1 SD higher rates for respiratory illness symptoms.”

These arguably reflects the problem of the study. However, from the above statistical outlay and researcher’s anecdotal reports, lies and untruths are being peddled by the Nigerian State through their regulatory agency saddled to monitor and sanction gas flaring by defaulting firms. In the second revelation below, researched outcomes suggest potent and present dangers to health and life of citizens living in the environment and communities of gas flaring. None of these recommends the Nigerian State and its leaders for commendation.

...Our individual-level results corroborate these patterns: the probability that a child has a cough, other respiratory issues, or a fever is three percentage points higher per SD with greater exposure to flaring (equivalent to one-sixth of the mean risk for these disorders). The probability of being underweight or wasted is one percentage point higher per SD with higher flaring exposure, which is about one-tenth of the mean risk. We find no significant relationship between flaring and death.

Community level estimates (rates per PSU)



These issues, contentions and controversies that are surrounding gas flaring in Nigeria’s Niger Delta and the unsavory implications is the crux of this study.

LITERATURE REVIEW

GAS FLARING IN NIGERIA: AN OVERVIEW

The discovery of oil in the Niger/Delta region was a delight to Nigeria as it ushered in a period of rapid economic growth for the nation. However, its production has been accompanied by the flaring of associated gas which has constituted a serious menace, posing threats and danger to the area. Flaring of gas is the mechanism that companies in most oil producing regions of the world use to destroy gas that could otherwise be used as a source of energy for domestic and industrial purposes. Figure 1 shows the flaring of associated gas from an oil well site in Nigeria. While the act is condemned in some regions of the world, several reasons have however been given for the flaring of gas.

It is argued that gas is flared for safety reasons, that gas flaring is a strategy that oil and gas production companies employ to protect operational sites against the dangers of over-pressuring industrial plant equipment. Farina (2011) opined that it is the lack of immediate and economic options for the associated gas, coupled with the desire to accelerate and maximize oil production that drives significant amounts of gas flaring. According to Coker (2007), in industrial plants, flare stacks are primarily used for burning off flammable gas released by pressure relief during unplanned over-pressuring of plant equipment’. By this means, the oil production companies in the oil industry get rid of waste gas released by drilling for oil (Ekakitie, 2020). Be that as it may, gas flaring in its entirety has dire environmental degradation effects that pose threats to human lives, natural and marine habitats, businesses, et cetera.



Figure 1: Flaring of associated gas from an oil well site in Nigeria

Source: https://upload.wikimedia.org/wikipedia/commons/thumb/d/da/Niger_Delta_Gas-Flares

Indeed, in the Nigerian situation, gas flaring in the Niger Delta region ruins lives totally in all aspects, for human beings, crops, marine habitats, et cetera. The Niger/Delta region in Nigeria is Africa's largest oil field and it is estimated that gas worth several trillion Naira or about a billion US dollars is burned and wasted yearly (Ekakitie and Ehimen 2016). Going by World Bank report, the Estimated Flared Volumes from Satellite Data, 2007-2011 shows that Nigeria is one of the top ten leading contributors to world gas flaring. The nations (in declining order) include: Russia (27%), Nigeria (11%), Iran (8%), Iraq (7%), United States (5%), Algeria (4%), Kazakhstan (3%), Angola (3%), Saudi Arabia (3%) and Venezuela (3%) (Wikipedia).

These data reveal that Nigeria is second in gas flaring in the world. By implication, it means that the problems associated with gas flaring in Niger Delta region are enormous and may be worst than other sites in the world considering the poor and outdated technology been used. The problem of outdated technologies will be more appreciated if we consider the fact that though we have oil and refineries, Nigeria today depend on the importation of petrol for domestic consumption for same reason. So, gas flaring in the Niger/Delta region have depressing consequences for businesses, health issues, homes resulting from acidic rains and diverse environmental problems, majorly on Agricultural activities that constitute the mainstay, the central cohesive source of support for the citizens of the region.



Figure 2: Niger Delta: Nigeria's oil-rich region

Source: <http://www.dw.com/en/gas-flaring-in-the-niger-delta-ruins-lives-business>

These, off course are serious challenges. As a result of these challenges and perhaps, the benefits that could be derived from the usage of gas as energy if flaring is reduced, there is a global call for the reduction of the activity in nations where oil is produced and gas flared. Governments of some oil producing nations have somewhat agreed that there are benefits that will emerge from reduction or cessation of gas flaring. In line with the arguments in favour of gas flaring cessation, Activist Alagoa Morris of the 'Niger Delta Resource Center' who has been fighting against environmental damage by the oil industry in Nigeria for decades noted that gas flaring has been made illegal in Nigeria since 2005 by Nigeria's Supreme Court ban.

However, the ban though exist, gas is still being flared in Nigeria with persistent damages being incurred. Globally, efforts are made at least to reduce gas flaring activities. For instance, Global Gas Flaring Reduction Partnership (GGFR) is a public-private initiative comprising of international and national oil companies, national and regional governments, and international institutions that work towards reducing gas flaring in nations. The aim of GGFR is to increase domestic and industrial use of natural gas associated with oil production. GGFR helps to conduct researches, disseminate best practices, and develop country-specific gas flaring reduction programs. Prominent amongst international institution members in GGFR is the World Bank Group. The World Bank group plays key leadership role in gas flaring reduction and provides a wide range of financial and technical assistance to nations facing challenges. The World Bank group also share and apply innovative knowledge to provide solutions to these challenges. We discuss below major challenges associated with gas flaring activities in oil producing nations. Though these challenges are common to nations, our focus is on the Nigerian situation in particular.

GAS FLARING IN NIGERIA: THE CHALLENGES AND PROSPECTS

Every region in the world where oil is produced and gas flared is faced with numerous and onerous challenges on one hand. On the second hand, arguments abound that there are possible economic opportunities that could be derived from the usage of the gas being flared to enhance national income if the flaring is ceased or at least reduced, meaning that there are possibilities of gains or prospects for gas flaring cessation. In this section, we shall attempt to delve into the challenges gas flaring posses to the communities hosting oil companies in the Niger Delta region of Nigeria and explore the possibility of benefits – the prospects of its cessation.

Challenges

Considering the degree of danger, it is not an over statement to emphasize that the Niger Delta region of Nigeria hosting companies involved in exploration and production of oil are faced with numerous challenges associated with gas flaring activities. These challenges are vast, burdensome and off course, common to regions of the world where oil is being produced. The undesirable or negative effects of these challenges on citizens of nations are some of the core causes for global agitation for gas flaring reduction and or cessation. Indeed, these challenges are some of the core reasons for the conflicts, tension and anarchy – the state of lawlessness and disorder in the region that result from government failure to provide necessary infrastructures or give commensurate compensation to the indigenes. While outright confrontation may not be encouraged globally in polite societies, the obvious fact is that demeaning marginalization can force people to act in an unseemly manner. To give an elaborate discussion on these onerous challenges, they are categorized into three broad headings, namely:

- i. Human/Health hazards
- ii. Economic and Environmental degradation hazards and
- iii. Institutional challenges.

We wish to reiterate that beside the challenges which constitute dangers to humanity and core reasons for the call for gas flaring cessation, the other side of the coin is the ‘Prospects’ the benefits that nations can derive. Our discussion shall therefore focus on these areas.

Human/Health hazards

The health hazards and the negative consequences of gas flaring activities on humans cannot be overemphasized. It may not even be fully imagined or comprehended because the invisible destructions caused to human, living mammals and organisms that aid agricultural produce cannot be determined. The reason is not farfetched, the natural gas being burnt contain toxic substances that hamper the existence living things generally as a result of air pollution, In the words of Mba (2015), the emission of hazardous pollutants during the flaring of associated gas have adverse effects on human health as the inhalation and contact with these gases causes health problems such as cancer, deformities in children, lung damage, anemia, leukemia and even skin diseases. The living situation that gas flaring presents negates the right to live and be healthy, thus, it is against fundamental human rights and indeed the prospects of socioeconomic wellbeing for inhabitants of the Niger Delta region (Ekakitie and Alagba, 2022).

At large-scale flare sites, natural gas being extracted from oil production creates emissions that contain chemicals dangerous to human health. According to Farina (2011) chemicals such as methane, nitrogen oxides, sulfur dioxide, and a number of other harmful emissions are extracted. Assessments have shown that larger concentrations of nitrogen oxide are found within one to three kilometers of flaring sites. Sulfur Dioxide, Carbon Monoxide and various unburned hydrocarbon emissions can be present within five to 15 kilometers from flare sites. Sulfur and nitrogen emissions are known to create acid rain problems that can poison watersheds and vegetation, and corrode buildings. Beside the production of chemicals, the large volume of hot, reddish and noisy flame heats the air perpetually causing unbearable heat around flaring sites. It has been observed that in large flare sites in Nigeria, farmers dry up fishes courtesy of the red flames that replace ovens (Ekakitie, 2019). Could this be an advantage? No, not at all because as the heat from the hot flames dry up fishes, they have equal consequences of dehydration, depletion of bodily fluids or extraction of moisture from human. According to Farina (2011), gas flaring creates thermal and noise pollution near the flare. Heat

from flares can damage soil and vegetation within 10 to 150 meters around the flare site, while light pollution from actual flares create places and environments ‘where the sun never sets’. The overall consequences of the flares are that the right to healthy living is denied and thus life spans of human are shortened.

Economic/Environmental degradation hazards

Apart from the human hazard consequences of gas flaring, there are adverse environmental, weather and climatic problems. The combination of emission of chemicals and substances of various degree of toxicity and the heat emissions from intensely hot red flames do greatly deplete the ozone layer, a layer in the stratosphere that contain a concentration of ozone sufficient to block most ultraviolet radiation from the sun. It is on this note that gas flaring is described as one of the world's *worst climate sins* because it affects weather and climate conditions terrifically adversely.



Figure 3: *Flaring gases from an oil platform in the North Sea.*

Source: https://upload.wikimedia.org/wikipedia/commons/thumb/d/da/Niger_Delta_Gas-Flar

The adverse effects on climate and weather conditions lead to environmental degradation with significant consequences on the surrounding population living around flare sites. Mba (2015) contends that gas flaring has caused severe environmental damages both in the oil producing areas of the country and the nation at large. It is a major contributor to climate change through the continuous emission of carbon monoxide and consequently global warming and acid rain which acidifies our water bodies – the water ways, damages vegetation, and water creatures as well as accelerates the decay of building materials. In the opinion of Omoniyi and Ubale (2015), the Niger Delta region is agrarian in nature being sustained by means of fishing and agricultural farming. The flaring of natural gas releases toxic materials into rivers, streams, ponds and estuaries killing untold amounts of marine life, not forgetting telecommunications which serves as a means of support for many residents of the region (Ekakitie and Odanibeh, 2016).

Beside water pollution, flaring of gas kills wildlife. Several cases of birds and insects being killed by the flare of gas have been reported in some locations globally. For example, online *CBC News* reported that approximately 7,500 migrating songbirds were attracted to and killed by the flare at the liquefied natural gas terminal in Saint John, New Brunswick, Canada on September 13, 2013. A brochure published by the Secretariat of the Convention on Biological Diversity describing the Global Taxonomy Initiative describes a situation where:

‘a taxonomist working in a tropical forest noticed that a gas flare at an oil refinery was attracting and killing hundreds of these [hawk or sphinx] moths. Over the course of the months and years that the refinery was running a vast number of moths must have been killed, suggesting that plants could not be pollinated over a large area of forest’

Institutional challenges.

It is obvious that gas flaring is harmful in all its ramifications. In this section, we look into some institutional challenges that may have hampered the reduction/cessation of gas flaring in Nigeria. These are challenges arising from, legal framework, divergence of political interest, and lack of appropriate technical expertise and oil companies’ laxity on issues of gas flaring. A number of bills and policies have been passed and formulated respectively on the reduction/cessation of gas flaring in Nigeria. Adejugbe and Onamade (2014) posit that the first regulatory framework aimed at promoting anti-gas flaring policies in Nigeria was the ‘Associated Gas Reinjection Act, 1979’.

The Act provided for the deadline for gas flaring in Nigeria as stipulated by the Federal Government to be 31 December 1974. This deadline has however been extended a number of times from 1974 through a succession of bills and amendments of laws and the final deadline remains uncertain as of date’. Also, Petroleum Industry Bill (PIB) is another legal frameworks targeted at gas flaring

reduction/cessation in Nigeria. According to Mba (2015), this bill stipulates that natural gas shall not be flared or vented in any oil and gas production operation, oil block, field, onshore, offshore, or gas facility, unless under exceptional and temporary circumstances. The enactment of this bill was aimed to end gas flaring in oil company's sites operating in Nigeria. Even though, this bill was passed into law, it appears it could not be effectively enforced as gas flaring still persists in Nigeria till present day. We deduced from the foregoing that the major challenge to gas flaring reduction/cessation is government inconsistency in implementing Nigerian laws and policies on the issue. Obviously, policy implementation and follow up have become controversial as it appears for lack of commitment on the part of government and off course, oil company officials.

Farina (2011) argued that the challenge in Nigeria is to enact effective policies that simultaneously build a dynamic energy sector, foster local economic development, improve security, and enhance government commitment to regulation and enforcement. In addition, there is a strong need to develop new gas infrastructure across the entire value chain, including the power sector. Clearly, the situation in Nigeria is complex'. Over the years, there have been conflicting jurisdictions of different government policies governing the petroleum sector. The situation has been sort of chaotic, lacking a visible order or organization, thus it has been a kind of misery to effectively implement anti-flaring regulations in Nigeria. Mba (2015), affirmed that in November 2014, the Federal Government launched a gas flaring tracker system which monitors the volume of gas flared by oil firms as well as amount of fine due to be paid by facility owners. However, most of the defaulting firms fail to comply with the fine either as a result of ineffective monitoring of the tracking system or ineffective enforcement of the penalties by the appropriate agencies'.

Another identified major challenge to gas flaring reduction in Nigeria, though it could be global is lack of industry best practice. Most countries of the world where oil is produced and gas flared have fallen under serious criticisms on these issues. Farina (2011) opined that the issue of lack of industry best practice is global, not local. While some countries, such as Russia, Nigeria, and Iran are often singled out for criticism, significant levels of flaring and venting occur on every continent, and global failures in both governmental policy and industry practice have allowed the issue to remain unresolved. Governments with non-transparent policies and weak environmental regulations are particularly likely to flare large amounts of gas. The problem is exacerbated through policy distortions, oversights and ineffective enforcement measures (Ekakitie, 2017). Besides, another major challenge arises from the desires of powerful political leaders in affected communities. Their personal interest and political will determine where their loyalty lies, whether to truly fight for the cessation of gas flaring or to be settled by the exploring oil companies or to make cheap political point. The inconsistency of these political leaders have overtimes empowered oil companies to ignore calls for gas flaring cessation. This affirms the laxity of these companies on issues relating to gas flaring cessation.

Conclusively from the foregoing, we can deduce that gas flaring creates health hazards, economic and environmental challenges on the populace and there are institutional challenges that hamper the cessation of the activity. The physical challenges of lack of developed infrastructures in the Niger Delta create anarchy. Overcoming all these constraints in order to develop gas projects defines the Nigerian challenge. That-not-withstanding, cessation of gas flaring or at the worst, reduction of it is possible; but the key to success hinged on a number of factors such as good governance, organized and good security outfit, operational best practices, new partnerships, and commitment to investment. It is based on this ground that we discuss the Prospects of gas flaring in Nigeria.

Prospects of Gas Flaring Cessation

The economic and financial benefits to be derived from gas flaring cessation are enormous, though several arguments hold sway as to why gas is flared. While some argue that gas is flared for safety reasons as a strategy used by oil and gas production companies to protect operational sites against the dangers of over-pressuring industrial plant equipment, others have opined that it is the lack of immediate options for the associated gas in the desire to accelerate and maximize oil production that drives significant amounts of gas flaring. Whichever may hold true, the fact remains that the associated gas could be processed to serve as a source of energy for domestic and industrial purposes. For the oil producing companies, oil production appears paramount.

Despite the seeming accrued benefits, diversification to gas productions in large economic quantity like petrol appears difficult to achieve and the most convenient way of taking care of it is getting rid of it through flaring. Some reasons may obviously be responsible for the preference for gas flaring. The fact is that it may either be as a result of the extra-large cost involved in mounting installations for large commercial quantity of gas production or it could be that the concurrent production of large quantities of oil and gas may involve some incompatible technicalities and complexities dangerous to the environment or may just be a kind of distraction from the primary petroleum products – oil sort for. This is a clear indication that investing on the production of large commercial quantity of gas for export purposes has not been fully exploited. Indeed, Farina (2011) averred that reaching investment targets will be difficult. Nigeria is a place where risk premiums on financing are high and the government's track record on driving investment has been patchy.

The apparent difficulties notwithstanding, investing in large commercial production of gas for export purposes will certainly boost revenue earnings for Nigeria (Ekakitie 2019). Diversification into gas production will end the mono-product era with over dependence on oil. It is obvious that insufficient investment in gas production has been made over the years such that the natural gas

emanating from oil exploration has remained untapped for commercial gains. Mba (2015) opined that government should encourage oil companies to invest adequately in gas infrastructure so as to enable them harness and convert the natural gases into useful products that will serve the needs of the populace, bring in additional foreign exchange, improve electricity generation as well as minimize environmental degradation. In his investigation Mba (2015) asserted that NNPC in its Annual Statistical Bulletin for 2014 revealed that oil and gas firms in Nigeria flared 289.6 billion SCF of gas between January and November 2014, representing 11.47 per cent of the total gas produced in that year. Using the Nigerian Gas Company (NGC) price of \$3 per 1,000 SCF of gas and the exchange rate as of that time, the flaring of 289.6 billion SCF of gas translated to a loss of \$868.8 million, an equivalent of N173.76 billion lost revenue which could have been utilized to solving the country's numerous social-economic problems'. Considering the fact that billions of cubic meters of natural gas is flared annually at oil production sites around the world and in Nigeria in particular that rank seconds amongst gas flaring nations, large revenue could be derived from the cessation of the activity.

Besides deriving huge sum of money from its commercial production for exports, natural gas resources could constitute a means of livelihood for sustainable energy path to boost prosperity domestically. Indeed, the losses from gas flaring are extremely difficult to quantify considering the amount of money that may be involved in curing sicknesses and diseases associated with inhaling toxic gasses, drinking polluted water in the Niger Delta region. The long list of losses continues with actual lives lost to air pollution and environment degradation in the region. The losses extend to agricultural products as farms of diverse crops in the flaring zones cannot yield their maximum as a result from continuous emission of heat from extremely hot flames of gas being burnt. There is therefore a significant and measurable economic cost in terms of lost revenue that could otherwise be derived from the cessation of gas flaring. It is on this note that Farina (2011) contended that calculating costs in terms of health impact on local populations or lost output from degraded agricultural output and fisheries are somewhat more difficult'.

Nigeria could cease the opportunity of being endowed with natural gas of becoming an emerging market such that the sale and distribution of domestic gas for exports and to private investors could create room for more investors to participate in the power sector and generate substantial revenue. Though, it is understood that the Federal Government in a bid to boost the gas sector has set up the Gas Master Plan as a strategic framework towards achieving a wholly competitive market driven domestic gas sector and for the implementation of gas grid infrastructures, the commencement and or completion date is still unforeseeable. More efforts is needed to be put in this direction to actualize the project particularly as a powerful source of energy in view of the increasing demand for electricity and more power generation capacity in Nigeria.

GAS FLARING: REGULATORY FRAMEWORKS

As regards to legal regulations against the gas flaring debacle, it must be put on record that laws and international conventions are not in short supply both locally and globally. Several of these laws and regulatory frameworks seem to have been done on the Nigerian side merely to tell the world that rules and procedures are there on paper but they will not be implemented or for that matter, if ever implemented, it will be haphazard as a matter of deliberate default (Ekakitie and Agbada, 2017); its resulting effect is harsh on health, habitation and even housing (Agbada and Ekakitie, 2016). Currently, the Petroleum Industry Act (PIA) has continued to be a deliberate challenge laden with lots and lots of political will deficit. This constitute a perfect example of having or crafting laws against the backdrop of host community pressure and international best practices desirability, not necessarily because successive governments are truly desirous of bringing competency and optimality into the Oil and Gas sector of the Nigerian economy.

Global Framework: At the global level several regulatory laws and protocols have been enacted and agreed on to regulate and guard practices to get rid of gas flaring. This is because gas flaring has macro and global effects on climatic conditions. A foremost regulatory framework is that of United Nations Framework on Climate Change (UNFCCC, 1992). It was first adopted in 1992 at the Earth Summit in Rio de Janeiro, Brazil. Its main thrust is to regulate green gas emissions, cause to evolve national policies and best practices, information sharing, technological and financial support etc. The aim of UNFCCC was to regulate and stabilize greenhouse emissions from dangerous to ambient levels. Nigeria in June 13th 1992 became a signatory to the convention and ratified same in August 29th 1994. This bill has not been passed into law at the National Legislative Houses.

Another initiative to guard and regulate gas flaring is the Global Gas Flaring Reduction Initiative (GGFR) framework. This framework is an initiative of the WB with a private partnership edge and came to being at the Summit on sustainable development in Johannesburg, South Africa in 2002. According to Adhekpukoli (2015).

"This partnership which is led by WB includes gas producing countries, major gas companies, and international organizations involved in oil and gas business. The partnership has the mandate to catalyze the reduction of gases that would otherwise be flared through policy change, stakeholders' facilitation, projects implementation and the supports of oil producing nations and companies to increasing the use of associated gases. The partnership also envisages promoting effective regulatory frameworks, and tackling gas utilization constraints such as poor access to local and international markets, insufficient infrastructure particularly developing countries like."

The NNPC, the Nigerian oil regulatory and governing body is a major partner to this initiative. This initiative expected member nations to have political, social and economic will and power to evolve laws and statutes that will help nations best utilize their gas resources and optimize same against the backdrop of manifest weaknesses in gas flaring monitoring, compliance and enforcement levels deficits in most oil and gas producing countries.

The initiative is also geared towards encouraging countries to invest in gas conversion and utilization infrastructure and optimizing a proper gas policing policies to incentivize stakeholders including industrial and domestic users. It is in this economic import and thrust that Adhekpukoli (2015: 39) again, narrates the tangible benefits of the initiate:

“The GGFR provides opportunity for all stakeholders to discuss ways to address the disastrous effects of gas flaring and seize the economic, financial and environmental opportunities associated with gas utilization. The GGFR encourages cooperation on awareness, technology dissemination, policy, dialogue and regulation development to tackle gas flaring. The WB advocates that before gas flaring is adopted, feasible alternatives for the use of the gas should be evaluated and integrated into production and design to the maximum extent possible.”

For member nations adopting this initiative, a mechanism (which is standardized in practice) should be installed to accurately measure, record and report volume of gas flared per period. In Nigeria, no such mechanism is in place by oil producing firms to report on levels of gas flared across oil bearing communities. These currently pose serious environmental hazard and air pollution challenges which impart negatively the health conditions of community dwellers.

Domestic Framework: On the Nigeria side, domestic regulatory frameworks are few and far between and lacking in serious political will to optimize gas opportunities and to curtail negative gas flaring effects. The first regulatory framework is the Associated Gas Re-Injection Act 1979. This Act seeks companies to outline their programme of gas re-injection and submit same to the Minister of Petroleum Resources. This law is objected towards prohibiting flaring that is associated with oil. It requires a re-injection of the gas but stipulate that firms that would flare due to technical and operational reasons must obtain permission from the Petroleum Minister.

This makes the process subjective and the Minister too powerful. This subjective Act necessitated a re-work. This brought on-board the Associated Gas Re-Injection (continued gas flaring) regulation of 1985 which required issuance of a certificate to oil firms for gas flaring. The certificate is issued under the following conditions:

1. Where more than 75% of the gas produced is effectively utilized or conserved.
2. Where the purchased gas contains more than 15% impurities which render the gas unsuitable for industrial purposes.
3. Where an on-going utilization programme is interrupted by equipment failure provided the period of interruption is not more than three (3) months.
4. Where the Minister in appropriate cases as he may deem fit, orders the production of oil from a field that does not satisfy any of the conditions specified in the regulations.

Much as any rational assessor may applaud the above conditions, many gas producing and flaring companies do not observe them. Worst still, penalty imposed on defaulters i.e. that the defaulting company forfeit their concessions and leases; the penalty has scarcely been imposed or enforced. These are latent controversies inherent in this domestic framework. Thus, gas flaring has continued with impunity and regulators now stand out as conniving agents with oil producing companies after alleged heavy inducements as graft, side payments, etc. have all combined to cheat the nation and undermine environmental and communal health.

Perhaps the most beneficial Act that has led to the creation of substantial economic benefits to Nigeria is the Nigerian Liquefied Natural Gas (fiscal incentives, guarantees and assurances) Act, 1989. This Act initiates the pioneering status of gas and created the NLGN limited with a tax relief period of 10 years to commence first commercial gas delivery. And it did so in October 9th 1999. The exemption from all duties, levies and charges (including tax) was to allow payments on loans secured to build the NLNG Ltd. Since then Nigeria has earned much from gas export.

To facilitate and mature the gas export and supply business, the National Domestic Gas supply and Price Regulations 2008 was established to midwife the Department of Gas with a mandate to announce annual domestic gas demand requirements. According to Adhekpukoli (2015):

“The Department of Gas is also empowered to maintain surveillance over indices relevant to gas pricing, identifying macro-economic factors with relation to the prices of gas and advice the Nigerian government on appropriate strategies. It also allocated the Domestic Gas supply obligation to every producer of petroleum and sets the aggregate price used by the gas aggregator Regulation 3 of the Regulations provided that Department of

Gas shall collaborate with suppliers of gas to establish a domestic gas aggregator to monitor the demand and supply of gas in the domestic market and act as intermediary between suppliers and purchasers of gas”.

Lofty as the NLNG Ltd. Company is on its economic benefits, it is trite that Associated Gas and its Act have not been fully tapped resulting in continued flaring of gas with impunity by oil producing firms. It is the lack of political and legal will to sanction erring companies that has led to gross underdevelopment of the gas sector. This is why private investors have not been incentivized to establish own gas conversion plants and the nation has had to (and continue to) loss humongous amount of economic benefit and also inflict environmental and health hazard on oil bearing communities. The lack of strong regulation is replete in the Oil and Gas Industry where there exist actors and regulators who conspire to subvert the statutes for corrupt gains. It will appear that the continuous flaring has been sustained via the twin practices of connivance and graft and corrupt manipulation by government in power and their foreign cronies.

SUMMARY & CONCLUSION

Gas flaring has been identified as a major source of economic loss often ignored by governments of developing countries, including Nigeria. Most international companies or Oil corporations do not engage in the brazen flaring of Gas in their countries. They have laws that regulate Gas a huge economic commodity for domestic and industrial use. The problem with the continued flaring of Gas in Nigeria despite years of ‘blowing hot’ by successive government regimes is the lack of political will to enforce its own laws and enforcing the various spurious time lines and targets for cessation of the flaring exercise. Graft and inducement from the Oil giants operating in the Niger Delta of Nigeria with regulatory agencies is at the root cause of seeming ‘deafness and dumbness’ of actors that collude to enable continuation of gas glaring.

On the side of Oil corporations, they have taken advantage of the lack of seriousness of government of Nigeria and the so-called condensation facilities deficit to continue in the gas flaring; hence, in their judgment, crude fetches more money globally than gas. So in their contention why would they bother much if the governments of Nigeria and their agencies are unserious and for that matter, it is not their environment that is being degraded. It is not their own citizens that are gradually being killed by noxious gases being emitted into the air as a consequence of ignoring timelines and outright cessation of the flaring exercise due to the so-called prohibitive cost of building condensation facilities.

CONCLUSION: The conclusion that can be drawn from the study’s analyses is that government and its agencies, by their insensitivity and deliberate foot-dragging, have encouraged the continued criminal gas flaring exercise and are therefore complacent. They care less about the lives of the Niger Delta people simply because the people of the region are minorities in the ethnic configuration of the country Nigeria. In early 2022, gas flaring, so-called illegal crude refining etc, (for which government agency actors are involved) occasioned observance of thick black smoke in the BRACED States of the region. This made the Governor Wike administration raise alarm. As usual the federal government cared less about the deliberate air pollution. The Nigerian government’s continued neglect of the Oil bearing region simply because of their minority status is a sad commentary in the sociopolitical equation of Nigeria. This neglect has been at the root of self- determination agitation of the indigenous peoples of the Niger Delta.

RECOMMENDATIONS: In the light of the succeeding discourse, the authors make bold to recommend the following:

Citizens and civil society organizations (SCOs and NGOs) in the Niger Delta should bootstrap for increased agitation and strong advocacy to draw and provoke government into action by engaging needful policy action that is different from the feeble ones of the past. Should the government continue to ignore these calls, the UN and its Permanent Security agencies be engaged to see this action of the Nigerian government as a ‘brazen act of genocide’ to eliminate the over 23m Niger Delta peoples from the planet, and hence force the Nigerian government to do the needful.

The passage of the PIA law, despite its deliberate flaws by the connivance of the national assembly) be fastly implemented. This should be followed by strong amendments to the PIA law to remedy flaws traded into the Act to cheat the people of the region. These actions among others are strong areas of remediation to truly endear the people of the region to feel as part and parcel of the Nigerian State. As the late UN Secretary-General Koffi Annan had said, ‘what causes conflict in any region in the world is the insult, injury and denial of rights of a people.’ A stitch in time saves nine.

REFERENCES

Adejube A. and Onamade B (2014) *Nigeria: Gas Flaring In Nigeria: Challenges & Investment Opportunities*. <https://www.google.com/aclk?sa=l&ai=DChcSEwi9i5ncjI>; Retrieved 2018.

Agbada O. A and Ekakitie, E. S. (2016) Empirical Analysis of Primary Mortgage Institutions Fundamentals and Gross Domestic Product Increase in Nigeria. *International Journal of Applied Finance and Accounting*. (2)1, 89-100 <http://afa.redfame.com>; DOI:10.11114/afa.v2i1.1257

Alimi O. & Gibson (2022). The impact of gas flaring on child health in Nigeria. Lets talk development, Sept 14th so, world bank blogs. <https://blogs.worldbank.org/impact>,

Coker A.K (2007). *Ludwig's Applied Process Design for Chemical and Petrochemical Plants*, Volume 1 (4th Ed.). Gulf Professional Publishing. pp. 732–737. ISBN 0-7506-7766-X.

Ekakitie E. S. and Odanibeh, J. A. (2016) Mobile Marketing in a Digital Age: Application, Challenges & Opportunities *British Journal of Economics, Management and Trade*, (11). 1 www.sciencedomain.org. DOI:10.9734/BJEMT/2016/19924

Ekakitie E.S. (2019) Accountability, Transparency & Nation Building: The Antitheses of Corporate Theft & Regulatory Agency Graft *The Academy of Management Nigeria* (TAMN, September 25th -26th 2019).

Ekakitie E.S. and Alagba O. (2022) Customer Relationship Marketing & Enterprise Performance: Empirical Evidence from Leading Banks in South-South Nigeria *Linguistic & Culture Review* 6(S1), 106-120 <http://doi.org/10.21744/lingcure.v6nS1.1978>

Ekakitie, E.S. (2017) Development Initiatives (DI) and Peace Building: Nature, Scope & Mechanics. (Governance, Security and Peace Building in the Niger Delta.) *Society for Peace and Strategic Studies*, University of Ibadan, Zenith Bookhouse, Ibadan.

Ekakitie, E.S. (2019) Managing Turbulent Business Environment in Nigeria: A Model Approach. *Journal of Education and Behavioural Science*, 29(3), 1 – 11: No. JESBS, ISSN: 2456-981X <http://www.sdiarticle3.com/review-history/22092>

Ekakitie, E.S. (2020) Optimizing Enterprise Resource Capacities in Conflicted Business Environment: A Functional and Enterprise Systems Approach. *KOGI Journal of Management, Faculty of Management Sciences*, 6(3), 49-69, Kogi State University, Anyigba, Kogi State, Nigeria

Ekakitie, E.S. and Agbada, A. (2017) Civil Society, Non-Governmental Organizations & Peace Building. (Governance, Security and Peace Building in the Niger Delta.) *Society for Peace and Strategic Studies*, University of Ibadan, Zenith Bookhouse, Ibadan.

Ekakitie, E.S. and Ehimen, S (2013) Petroleum Products Distribution in Nigeria: Nature, Mechanics and Challenges. *Nigerian Journal of Oil and Gas Technology*, <https://rsustnjogat.org>

Farina M.F. (2011) *Flare Gas Reduction: Recent global trends and policy considerations* Gas https://www.google.com/Flaring/Flare_Gas_Reduction.pdf; Retrieved 2018.

Mba. E. (2015) *How to Stop Gas Flaring in Nigeria*; [https://www.google.com/Gas_Flaring/How to Stop Gas Flaring in Nigeria - Information Guide in Nigeria.htm](https://www.google.com/Gas_Flaring/How_to_Stop_Gas_Flaring_in_Nigeria_-_Information_Guide_in_Nigeria.htm); Retrieved 2018.

Omoniyi O. A and Ubale M.(2015) The Impact of Gas Flaring in Nigeria. *International Journal of Science, Technology and Society*. 3(2), 40-50.

The Global Taxonomy Initiative - The Response to a Problem (pollinating moths); Online Retrieved 2018.

Wikipedia : *Gas flare*; https://en.wikipedia.org/w/index.php?title=Gas_flare&oldid=826472850; Retrieved (2018).