

Corporate Activities, Gas Emission and Quest for Environmental Justice in South Africa and Nigeria

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Abstract

The presence of petro chemical industries and activities in Niger Delta in Nigeria and South Durban in South Africa has subjected the two locations in Africa to massive and unmitigated dangerous gas emissions. The paper is a discussion of the environmental impact of these activities and the struggles of the people in the location for environmental justice. The existing legal frameworks for control of emission in the two countries are examined comparatively. The paper identified different challenges to attainment of environmental justice in the two regions and made a case for remedies to address the challenges.

Keywords: Corporate activities, Oil and gas production, Gas Emission, Environmental Justice.

1. Introduction

Emission in the environment includes gas and particles that are introduced into the atmosphere through different sources. Gas emission from fossil oil, oil and gas in particular poses a local and global environmental problem. An analysis is done of emission situations in Nigeria and South Africa. These include incidents, nature, sources and impact of gas emission, and the challenge that these pose to environmental justice in the two jurisdictions. This paper address issues such as the impact of oil and petro-chemical activities in the two countries, the restiveness and agitations within host communities to the above activities, the challenge posed by emission to the environment and people of the host communities, and proffer recommendations towards mitigating and eliminating the impact of emissions in both countries.

2. The Challenge of Emission Control

Control of gas emission refers to measures or the processes of discouraging, preventing and remedying or mitigating the impact of the discharge of gas into the environment. It refers to the process of actively applying the relevant legislative instruments and frameworks to control gas emission in order to prevent adverse health conditions. This further includes protection for the atmosphere and securing the wellbeing of humans and the environment in general.

In the respective countries,¹ the process of emission control involves the following steps:

- (1) Meeting the international commitments of the two countries on emission control.
- (2) Attaining each country's individual constitutional aspirations towards securing the wellbeing of their citizens and people within their borders.
- (3) Securing and guaranteeing the rights of the individuals and people as enshrined in the different international and national Bills of Rights.
- (4) Promoting the enforcement of both primary and subsidiary legislation, policies and voluntary initiatives considered relevant to emission control. Here different technical details like nature and type of technologies, location of facilities, mode of production, and level of tolerance of substances are considered.
- (5) Ensuring sustainability in the respective industrial activities that generate gas emission and other pollutants.

The above measures, however, place the two countries under the pressure and the challenge of looking beyond economic gain. There is the obligation to comply with measures designed to promote environmental sustainability and the welfare of the people likely to be affected by industrial activities.²

The effect of the measures suggested above is viewed through the two countries' national efforts to control gas emission. It is made manifest in the content, application and the success of the existing national legislation, international agreements, regulations and policies on environment, air quality and gas emission control. They provide essential tools to achieve emission control, environmental protection and sustainability in general.

The significance of the situation in Niger Delta and South Durban should be understood from the peculiarities of the two locations. They are significant first, because as locations of industrial activities and petrochemical operations, they are considered crucial to the national economies of the two countries.

Second, because both have sparked similar environmental protest groups and struggles for environmental

¹ Though each country has its unique challenges, the points raised here are therefore amongst the peculiar and different political, economic and social policies and decisions that are taken on a daily basis by the respective countries.

² The Brundtland commission: Report of the World Commission on Environment and Development: Our Common Future. UN Documents; Gathering a body of Global Agreements. Available at <http://www.un-documents.net/wced-ocf.htm>. Accessed on 10-05-2012.

justice by community members against industrial and oil related pollution.

Third, they are significant in the global environment. Nigeria and South Africa are major contributors to the 400 million tonnes of greenhouse gas emission every year across the world.¹ These emissions are generated by different activities. In South Africa, for instance, the electricity, transport and metal industrial sectors are identified as major sources of emission in the country.² In Nigeria, on the other hand, different sources of emission have been identified. The emission from Niger Delta has placed a huge burden on the local people and the environment, and as a result it is expected that stringent measures will be made to control emission from energy operations to ensure that the environment is secured from toxic substances.

Fourth, different measures have been suggested or applied towards addressing the problems of air pollution in the areas, particularly in South Durban. The writer is of the view that a solution in one country may be applied in addressing similar situation in the other.

The factors above provide a basis for the selection of the two locations as a case study for the purpose of analysis of the operation and enforcement of the legislation of the two countries on control of gas emission. The two locations in Niger Delta in Nigeria and South Durban in South Africa are important locations for major industrial activities. South Durban is home to about 300 heavy industries³ and two major oil refineries which refine petroleum products. Likewise, production of oil and other petrochemicals is carried out in different locations in the Niger Delta region in Nigeria. Thus, gas emission from oil production is a common element in the two locations.

The implications of the impact of the release of the different types of emission from oil and gas operations on the global environment and the local people in the two areas are highlighted and discussed. Issues like environmental justice and violations of the rights of the local people are also raised. What follows is a critical application of the laws of the two countries to the solution of these issues. In particular the research attempts to answer the following issues: the issue of sources, of the state and impact of gas emission, whether there are available legal frameworks, the scope of the constitution and the environmental legislation of the two countries to address the problem of emission, the extent to which the people in the two countries can rely on these provisions to safeguard their health, rights and address the risks posed by gas emission, and the level of success of the legislations in the respective countries.

Emission control through legislation, like other environmental issues, involves the application of different internationally agreed norms and principles on the one hand, and national legislation and policies, on the other. National and international standards guide nation states to fulfill their obligations towards the sustainability of the global and local environments, and, thus, ultimately protect their citizens from the diverse problems associated with the pollution of the air medium and the atmosphere.

3. Oil Industry and Gas Emission in the Niger Delta

Nigeria boasts oil deposits which were ‘at a recoverable reserve of 34 billion barrels’⁴ by 2003, while ‘over 900 million barrels of crude oil of recoverable reserves have been identified.’⁵ Despite the large deposits, with a total of 606 oil wells operational in the Niger Delta area at present, the search for more oil fields is carried on daily in Nigeria with an additional ‘28 exploratory oil wells’⁶ already drilled outside the traditional oil producing area of Niger Delta such as the Chad basin, Anambra and Benue area. There is ongoing prospecting for oil in around Benue River up to Chad basin in the middle belt and northern part of the country. The intensity of this search for more oil field discovery in the northern part of the country has been bolstered by the discovery of oil in Chad Republic,⁷ Nigeria’s neighbour in the northern part. Additionally, Nigeria’s rich natural gas deposit is estimated

¹ Global Gas Flaring Reduction Initiative, accessed online on 13 June 2011 at <http://www.sustainableenergyforall.org/actions-commitments/high-impact-opportunities/item/28-global-gas-flaring-reduction>. South Africa is acknowledged officially by the government of South Africa as “a relatively significant contributor to global climate change with significant GHG emission levels from its energy – intense, fossil –fuel powered economy”. See The Government of the South Africa’s National Climate Change Response Policy (October 2011) 8 General notice 757 of 2011. South Africa’s high profile GHG emission can be attributed to the massive production of liquid oil from Coal in other locations like Secunda and Hghvield sin addition to refinery and other petrol chemical operations in South Durban. Also, different reports point at the massive release of greenhouse gases from the Niger delta region.

² Government of South Africa, *Reducing Greenhouse gas emission: The Carbon Tax option* (National Treasury Department, December 2010). Available online at <http://www.treasury.gov.za/public%20comments/Discussion%20Paper%20Carbon%20Taxes%201210.pdf>

³ *Flaring at oil refineries in South Durban and Denmark: SDCEA-DN Local Action Project 2004-2005: Output 1* (SDCEA) 15

⁴ Nigeria National Petroleum Corporation: Development of Nigeria’s Oil Industry. Accessed online at <http://www.nnpcgroup.com/NNPCBusiness/BusinessInformation/OilGasinNigeria/DevelopmentoftheIndustry.aspx>, on 18 July, 2011.

⁵ Nigeria National Petroleum Corporation. Development of Nigeria Oil Industry <http://www.nnpcgroup.com/NNPCBusiness/BusinessInformation/OilGasinNigeria/DevelopmentoftheIndustry.aspx> visited last on 27, June 2011.

⁶ Nigeria National Petroleum Corporation, Development of Nigeria Oil Industry. <http://www.nnpcgroup.com/NNPCBusiness/BusinessInformation/OilGasinNigeria/DevelopmentoftheIndustry.aspx>. Visited last on 27, June 2011

⁷ Oil was first discovered in Chad in 1967, but commercial exploitation did not commence until 2004 as a result of political unrests and civil wars. See Alexander Karin and Gilbert Stefan, *Oil and Governance, a case study of Chad, Angola, Gabon and Sao Tome e Principe* (Idasa,

at 159 trillion cubic feet.¹ In general, over half of Nigeria's surface area of 357 000 square meters is covered by 'sedimentary basins where oil bearing rocks are located.'²

The Niger Delta with its vast vegetation and rich aquatic environment³ accounts for Nigeria's onshore oil production. Apart from the onshore deposits, Nigeria boasts a large oil deposit through its continental shelf in the Gulf of Guinea⁴ which is predicted to be the future leading offshore oil production centre.⁵

3.1 Oil Production

Prior to commercial production of oil, Nigeria had a thriving agricultural sector, which was the main foreign exchange earner between the 60's and 70's. Oil production activities that followed the discovery of crude oil in commercial quantity gradually relegated agriculture and other sectors of the economy to a secondary position, while oil became the mainstay of Nigeria's economy accounting for 95 per cent of the country's gross earnings.⁶ From a total production of 16,801,892 thousand barrels in 1961⁷ there has been a sharp rise in oil production in the country. In 1999, the total production was 773,677,520 barrels, reaching the pick in 2005 at 918,660,619 barrels, going down from the 2006 figure of 869,196,506 to 780,347,940.00 barrels in 2009⁸ as a result of outbreak of violence and militancy by different groups in protest against environmental degradation and demand⁹ for improvement in living conditions of communities living in the oil producing areas of the Niger Delta.

Today, the different spheres of government in Nigeria depend on oil revenue for public finance. There is a total neglect of other natural resources, many of which abound in the country. Beyond loss of revenue from other sectors, there is a manifest compromise in the regulation of the environmental aspect of the production of oil, hence the continuing problem of gas emission and environmental problems associated with oil such as oil spillages in the Niger Delta region. In addition, the situation is seen by different opinion leaders as unhealthy for the economy of the country. For instance Olusegun Obasanjo¹⁰ views Nigeria's dependence for public expenditure solely on oil 'as unsustainable and unrealistic since oil is non-renewable.'¹¹

3.2 Ownership and Control of Oil and Gas

The exploration and production sector of the industry is dominated by multinational corporations like Shell, Chevron, ExxonMobil, Total and Agip Eni.¹² However, indigenous producers are beginning to emerge, for instance oil production from this sector is projected to hit 500,000 barrels per day by the year 2020.¹³ The non-participation of the Nigerian state in the direct exploration and exploitation of petroleum resources, however, leaves the sector in the hands of major national and multinational corporations, while the Nigerian state remains, what Omorogbe called, 'a tax collector'.¹⁴

The implication of the dominance of the multinationals is that the oil majors are self-accounting in practice. Supervision has been difficult particularly in communities around areas of oil production operations and activities. The companies own virtually everything that is needed in the industry, including environmental monitoring equipment.¹⁵ As a result, such companies dictate policies to the government or postpone implementation of government policies at will. State apparatus and machineries are deployed to their services at

2010) 38.

¹NNPC, *ibid*.

²Madujibeya S. A, *African Affairs*, Vol. 75, No. 300. (Jul., 1976) 284

³Okonta, Ike and Douglas, Orontos. *Where Vultures Feast: 40 years of Shell in the Niger Delta*. (2001) 33

⁴The Gulf of Guinea 'spans the Atlantic littoral from Nigeria to Angola according to Traub-Merz it includes West Africa (Nigeria), Central Africa (Cameroon, Gabon, Congo, Equatorial Guinea, Sao Tome & Principe), and Southern Africa (Angola) and Chad'. see generally, Traub-Merz, Rudolf and Yates, Douglas. *Oil in the Gulf of Guinea: Security & Conflict, Economic Growth, Social Development*. (2004) 12

⁵Gary, I and N Reisch, *Chad's Oil: Miracle or Mirage? Following the money in Africa's newest Petro-State* (2003, 9). Cited in *GroundWork Report 2005*, whose energy future? *Big Oil against People in Africa*, 37

⁶OPEC, *Nigeria: Facts and Figures*. Accessed online on 13 November, 2013 at http://www.opec.org/opec_web/en/about_us/167.htm

⁷Nigerian National Petroleum Corporation, *2009 Annual Statistical Bulletin*.

⁸Nigerian National Petroleum Corporation, *2009 Annual Statistical Bulletin*. The decline after 2005 was due to obstruction of production activities by outbreak of violence and militancy in protest against degradation of the environment in the oil producing area in Niger Delta.

⁹This series of uncoordinated violence involved attacks on oil installations and kidnapping of different oil companies officials

¹⁰*A former President of Nigeria, in Obasanjo Decries Over dependence on Oil Revenue available online at <http://economicconfidential.net/new/news/national-news/861-obasanjo-decries-over-dependence-on-oil-revenue>*

¹¹Olusegun Obasanjo *ibid*

¹²See Amnesty International report: *NIGERIA: PETROLEUM, POLLUTION AND POVERTY IN THE NIGER DELTA* (2009) 11.

¹³See *Oil Production by Independent E&P firms to hit 500000bpd*, *The Nation newspaper* (Nigeria) Tuesday May 27, 2011.

¹⁴Omorogbe Yinka, *The Legal Framework for the Production of Petroleum in Nigeria*. *5 Journal of Energy & Natural Resources Law*. (1987) 237

¹⁵Findings from interviews conducted at the ministry of environment at the Delta State ministry of environment and at the Rivers State Ministry of environment and non governmental organisations established the fact that the government agencies do not have monitoring stations and even appropriate laboratory for analysis of pollutants. The agencies collaborate with the multinational corporations who double as the pollutants for monitoring and most of the times depend on their data.

will.¹ Since government depends on accrued revenue from the industry, the government is always careful not to stifle the “investors”. Unfortunately, the multinational operators of these licenses have been blamed for damage to the once bristling good vegetation of the Niger Delta. For instance, the United Nations Environment Programme Assessment of Ogoni Land Report² released in 2012 singled out the Royal Dutch Shell and the Nigerian government partnership to blame for the wanton degradation of Ogoni land in Niger Delta for about 50 years. The report identified the huge damage done to the fragile ecological system of the region.

In addition, the report revealed that it would take 25 years to clean up the polluted area and restore the natural environment at an initial cost of \$1 billion.³ Unfortunately, this report came twelve years after 1990 when the Ogonis, one of the largest ethnic groups in the Niger Delta, decried the poor state of the environment, massive damage from oil operations, and its huge impact on the people in the area. The group then alleged that :
“...the search for oil has caused severe land and food shortages in Ogoni one of the most densely populated areas of Africa (average: 1,500 per square mile; national average: 300 per square mile)⁴...neglectful environmental pollution laws and substandard inspection techniques of the Federal authorities have led to the complete degradation of the Ogoni environment, turning our homeland into an ecological disaster.”⁵

In the downstream sector, the Nigerian state operates four refineries located in Port Harcourt,⁶ Kaduna and Warri. The four refineries boast a total production capacity of 445,000 barrels per day.⁷ These are identified later in the work as major sources of emission in the Niger Delta.

As will be seen later, the overbearing position of the multinational corporations counts as a factor in the intractable problem of mismanagement of emission issues and continuing degradation of the environment in general in the region.

3.2.1 Oil Production and Emission in Niger Delta

The oil and gas industry in Nigeria is a mixed blessing. While the industry is reputed to bring regular revenue to fund the public sector, it has equally brought along with it misery for the large population in Niger Delta. It is often qualified regretfully as a “resources curse.”⁸ This is due to the unabated environmental degradation which has brought poverty in terms of loss of farmlands, fishing rights and other traditional economic activities. This is in addition to the restive and violent reactions to the degradation of the environment in the region.

Pollution and environmental damage caused by the oil industry have resulted in serious human rights violations. The United Nations Environment Programme (UNEP) specifically identified violated rights in the region to include the ‘right to an adequate standard of living which includes the right to food and water and the right to gain a living through work for hundreds of thousands of people.’⁹ These violations equally raise the question of environmental justice considering the fact that the environmental burden is imposed on relatively few people within the Nigerian federation.¹⁰

Importantly, the release of gaseous pollutants through different types of emission is identified as one of the sources of air pollution in the upstream sector.

3.2.2 Emission from oil upstream activities

Gas flaring is one major source of gas emission in the Niger Delta. At the different flow stations located in different parts of the region, gas is flared regularly in the course of separating oil, water and gases from extracted crude, in order to produce oil. The consequence is that gases like methane and ethane, carbon dioxide, hydrogen sulphide are released regularly from the flow stations in the form of flares.¹¹ This carries with it numerous negative consequences that impact on the health and rights of the people in the region.

In Ogoni land alone in Niger Delta, there are flow stations in Alesa, Bornu, Bodowest/ Patrick waterside, Ebubu, New Ebubu 1, Elenlewa/ New Elenlewa, Bodo West, Botem, Horo and Yorla. It is estimated that about

¹ Several attempts to visit some of the flow stations in Niger Delta were frustrated by stern looking soldiers who on each occasion ordered us the researcher and accompanying community members back. The few accessed ones at Iwherekhan community were carried out through the careful and risky ingenious efforts of the community youths

² See the full report.

³ Vidal J. Nigeria: Oil-polluted Ogoniland could Become Environmental Model, *The Guardian* Tuesday 9 August 2009

⁴ Paragraph 16 Ogoni Bill of Rights Presented to the Government and the People of Nigeria (October, 1990)

⁵ Paragraph 17, *Ibid*

⁶ Port Harcourt 1 and Port Harcourt 2 Refineries

⁷ Sulaimon Salau, Pangs of ropy in the petroleum downstream sector on Nigeria’s economy. *The Guardian*, Wednesday, January 18, 2012. 46.

⁸ Interview conducted in December 2010 at Ekpan community in Niger Delta near Warri Petroleum refinery.

⁹ UNEP report above

¹⁰ Majority of the Over 12 million people that live in the oil producing parts of the nine states that constitutes the Niger delta in Nigeria are mostly members of minority ethnic groups in Nigeria, whose means of lively hood rests heavily on peasant farming and fishing activities in the over 140 million populated Nigerian state. (See Bassey Nnimmo, *The Oil Industry and Human Rights in the Niger Delta: A Testimony before the United States Judiciary Subcommittee on Human Rights and the Law* 24 September 2008). The area is one of those identified by the willkins commission in the build up towards the Nigerian independence as minorities whose interest must be protected under the emerging decolonised state of Nigeria. Oil operations in the area have led to the building and installation of different facilities like oil well heads, oil rigs, miles of pipelines, refineries, and many other related facilities that are sources of serious poisonous gas emissions to the area.

¹¹ UNEP. *Environmental Assessment of Ogoni Land* (2011, United Nations Environment Programme) 45.

2.5 billion cubic feet of associated gas¹ are flared per day from about 250 oil wells scattered in the Niger Delta Region.²

This practice remains unabated despite the huge loss of revenue, because Nigeria's oil fields lack the infrastructure to produce and market associated natural gas. The loss in revenue is placed at US\$ 2.5 billion per year by the Nigerian National Petroleum Corporation. In 2010, about 536 BCF of natural gas was flared. This figure represents 'about a third of the gross natural gas produced in the year.'³

Gas flaring poses serious threats to human health in the communities, as flares run for 24 hours nonstop in some locations causing serious discomfort like noise and diseases for people living near the sites where flaring occurs.⁴ In June 2011, in a petition to President Jonathan, the Environmental Rights Action contended as follows:

"Gas flaring causes acid rain which acidifies the lakes and streams and damages crops and vegetation. It leads to low farm yields and affects the health and livelihoods of the local people. Gas flaring increases the risk of respiratory illnesses, asthma and cancer, amongst other ailments. The flare stack is often located in the heart of the community a few meters away from homes. According to a conservative World Bank report in 2005, Nigeria loses US \$ 2.5 billion annually through gas flaring."⁵

The release of dangerous chemicals into the atmosphere in Niger Delta has not moved environmental policy makers to action despite the fact that gas emission impacts on poor and vulnerable residents. The economic development comes at a high price to health and environmental wellbeing. At the Iwherekhan Community in Delta state, five years after a Federal High Court in Nigeria declared gas flaring illegal and a violation of the right to life and dignity of human persons in the case of *Jonah Gbemre v Shell Petroleum and others*, gas flaring still continues unabated. Jonah Gbemre, the plaintiff in the case, expressed the frustrations of the community on the continuous flaring of gas in their community by saying: that –

"It is obvious that the government of Nigeria does not have regard for its own courts, they don't value our lives, if they cannot respect court decision, then my people are hopeless. Who will help us⁶?"

Many houses in the community have been abandoned by the owners who could not cope with the impact of the gas flaring from the flow station in the community.⁷

The Nigerian government has set several deadlines⁸ for phasing out gas flaring. The last deadline was 2008. In short, the expected reversal of pollution from this source has eluded the people.

3.2.3 Refinery Emission

The three refineries in Niger Delta⁹ produce fuel oil and gasoline, while the Kaduna refinery produces Lube oil with wax, moulding, Tin/Drum, Manufacturing and sulphur making units, in addition to fuel oil and gasoline.¹⁰ All the refineries are major sources of emissions which pose serious threats to human health and environment. Major emissions reported from the refineries include particulates, SO_x, CO, NO_x, Carbon Black Dusts/pellets (CB Plant), Hydrocarbons (BTEX & VOCS and PAHs), Polypropylene dust (PP Plant), and Chlorinated Hydrocarbon.¹¹ These particulates and gases are emitted regularly through the flare towers, process heaters and boilers, while hydrocarbons are released through general fugitive emissions from sources like storage tanks, FCCU, boilers and process heaters, blow-down systems, process drains, vacuum jets pump leakages and cooling towers, tail gas from the acid gas treating plant, and the sludge incinerator.

In the liquefied natural gas operations emission of gas and particulate substances are released through boilers, gas turbines, gas process heaters, regasifiers (LNG), process leaks/other leaks at pump seals, vents from compressor seals, pressure reliefs (i.e. flares and vents) and storage facilities.¹²

Refinery emission is widely unreported, as the main discussion about gas emission in the Niger Delta is usually centred on gas flaring activities. A study by Ndiokwere and Ezihe¹³ near Warri, the base of one of Nigeria's four refineries, found elevated levels of metal concentrations in soils and plants. They found:

¹ Associated gas is gas produced as a byproduct in oil production fields, while non associated gas refers to hydro carbon reservoirs that contain only gas and no oil.

² World Bank Energy Section Management Assistance Programme, Nigeria Strategic Gas Plan, *Report 279/04, February 2004* 30

³ US Energy Information Administration: Nigeria (2012), accessed online 18-04-2013 at <http://www.eia.gov/countries/cab.cfm?fips=NI>

⁴ Amnesty International Report: Petroleum, Pollution and Poverty in the Niger Delta (2009) 36.

⁵ Petition: for A Real Gas Revolution, Stop Gas Flaring by *Environmental Rights Action/Friends of the Earth, Nigeria* on Wednesday, June 29, 2011 at 12:58pm <http://www.facebook.com/notes/environmental-rights-action/friends-of-the-earth-nigeria/petition-for-a-real-gas-revolution-stop-gas-flaring/10150307699038529>. (Accessed on 14 -10-2011)

⁶ Interview at Iwherekhan community January 2011.

⁷ Gathered from interaction with the Iwherekhan Youth Association

⁸ The targeted dates being 1969, 1979, 1984 and December 2008

⁹ Located at Warri, Port Harcourt 1 and Port Harcourt 2

¹⁰ see EGASPIN Part V, A. 2.2

¹¹ See EGASPIN Part V, A. 3.1.1.1.

¹² EGASPIN. Part V A. 3.1.1.2

¹³ Ndiokwere, C.L., Ezihe C.A. The occurrence of heavy metals in the vicinity of industrial complexes in Nigeria *Environment International* Volume 16, Issue 3, 1990, 291-295

“High concentrations of the metals were recorded in all the samples from the sites close to the emission sources and the levels decreased with distance away from the sources. Considerable amounts of the metals found in the crops and plants were mainly due to aerial deposition.”

The implication of the above is that the people and the environment around the Warri refinery are susceptible to the hazardous emissions from the facility. The disappointment of the community members about the hazards and the elusive development of the area is captured in the words of a community leader at Ekpan¹ who lamented as follows:

“After our land was taken as the location of oil facility, there were serious rancour and fight among the villages over claim of ownership of the location because of our expectations that the facility was going to bring transformation and development to our land and people, unfortunately, we did not know that we were struggling for gradual and permanent poisoning of our homeland and generations unborn”. Instead of jobs our fishing and farming occupations have been wiped out the release of black and smelly air each time the refinery is in operation.”

Emissions from Warri Petrochemicals and refinery plants are a major threat to the survival of the residents of the surrounding communities. At Uboji, a community of about 4000 people² where the refinery and Nigeria Gas Company are directly located, there has been growing distrust and disaffection between the refinery operators and the community over the impact of gas emission from the facilities at the refinery. The community members complained³ of the pollution of the air medium through the release of poisonous gases and pollution of what used to be a river but has now become predominantly weed as a result of the release of effluent wastes from the refinery into the river. Kuke Edede, a school certificate holder who is the community public relations officer states as follows:

“Whenever the refinery is in operation, there is usually a yellow chemical which is blown into the air, whenever this is blown we usually feel the impact in our breathing and it is usually followed by a serious odious smell.”

Steven Edeki, 64, the village Adviser to Ubeji Community trust said that

“During our childhood, we were happy to welcome the refinery, there were serious fight among communities around here on the ownership of the land where the refinery is located now, we did not know that it was a dangerous thing they were bringing to our land, we the community regret the presence of the refinery in our land.”

There is a clear indication that governments at all levels in the country have abdicated their responsibility to the people of the area. Despite the outcries of the community, government and oil corporations have not given serious attention to the problem of environmental degradation particularly emission problems in the area. Expressing the frustrations of the people of Ubeji, Edeki said:

“We have spoken to several people including the local government and the environment ministry in Sapele, they often come but no report again from them, several independent bodies have also come on their own promising to do something but as usual nothing happens... our people no (sic) good, they no care whether we live or not, even our representatives in the parliament don't come here, they no feel what we feel⁴. We have been condemned to our present condition of life, to sacrifice our health and those of our unborn children to support other Nigerians and people in power who are enjoying the money from the refinery.”

The community leaders in Uboji noted that they were aware of the need for an environmental audit but that nobody had ever informed them about any audit being carried out since the refinery was built in 1975.⁵

The traditional, social and economic lives of the Uboji community have been impacted by the presence of the refinery in the area. The economic life of the community which is water based has suffered greatly owing to the activities at the refinery through different releases in the form of waste and gaseous emissions into the environment of the village. The community complained that the refinery does not operate a waste management facility with the result that the river in the area, the Obite aja river, and the creeks are used by the refinery as a waste pit (“our river serves as their waste pit”).

This practice has serious consequences on fishing which is the main source of food security for the people in the area. The community Public Relations officer lamented that -

“If you eat any fish you will be tasting kerosene or petrol, we cannot drink water from the wells as black water like charcoal would be coming out, we only drink pure water.”⁶

The same community public relations officer further voiced concern that the children also could no longer

¹ Interview with Ugbaye John an elder of Uboji community at Uboji village January 28, 2011.

² George Amatesiro Secretary to the council of elders of Ubeji village at an interactive meeting at the village on January 28 2011.

³ At a meeting with community leaders on a research visit to Uboji Community on 11th day of January 2010.

⁴ The state capital of Delta State in Nigeria.

⁵ Research meeting with the council of elders of the committee at Ibeju on 11 January 2010.

⁶ A local name for processed water that is produced for sale in sachets – pack”

swim in the riverside as they did in the past.

On a visit to the refinery and the surrounding communities in 2012, the House of Representatives Committee on Petroleum, Downstream, called for the immediate closure of the Warri Refining and Petrochemical Company (WRPC) due to the dangerous emission of Carbon Black Soot on the environment. The committee chairman,¹ who acknowledged a 'lingering crisis between WRPC and the Ekpan community', considered the closing down of the plant 'in order to avert imminent health hazards associated with such emission.'

The negative consequences of gas emission particularly from gas flaring in oil production activities in the Niger Delta have been well articulated in the case of *Jonah Gbemre v Shell Petroleum Development Company and Nigerian National Petroleum Corporation*.² In the case the court upheld the arguments of the plaintiffs who were the representatives of the Iwherekhan community in which a Shell gas flaring facility is located. They argued that exploration and production of crude oil and other petroleum activities in the Iwherekhan community in Niger Delta seriously pollutes the air, causes respiratory diseases and generally endangers and impairs the health of members of the community. In upholding the claims of the plaintiffs, the court held that these activities give rise to the following:

- (1) Poisoning and pollution of the environment as it leads to the emission of carbon dioxide the main greenhouse gas and a cocktail of toxins that affect their health, lives and livelihood.
- (2) Exposure to risk of premature death, respiratory illness, asthma and cancer.
- (3) Contribution to adverse climate change as it emits carbon dioxide and methane which causes warming of the environment, pollutes their food and water
- (4) Health complications like painful breathing, chronic bronchitis, decreased lung function and death.
- (5) Reduction of crop production and adverse impacts on their food security.
- (6) Acid rain, corrosion of corrugated house roofs by the composition of the rain that falls as a result of gas flaring. The primary causes of acid rain are emission of sulphur-dioxide and nitrogen oxides which combine with atmospheric moisture to form sulphuric acid and nitric acid respectively.
- (7) Acidification of community lakes and streams and damages to vegetation.

Earlier in 2001, in the *Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria*,³ the African Commission on Human and Peoples Rights found that the Nigerian government violated Articles 2 (non-discriminatory enjoyment of rights), 4 (right to life), 14 (right to property), 16 (right to health), 18 (family right), 21 (right of peoples to freely dispose of their wealth and natural resources), and 24 (right of peoples to a satisfactory environment) of the African Charter on Human and Peoples Rights. The Ogonis had complained about environmental degradation and health problems from oil operations in their land in the Niger Delta. They alleged that the Nigerian State did not monitor the operation of the multinational oil corporations.

The uncontrolled daily release of unhealthy gases has been described as 'serious, under reported and so far received little attention from the governments and the Oil Corporations.'⁴ The attitude of government has left the people helpless in the face of unmitigated violations of their rights.⁵

Against the tenets of the Nigerian constitution and its preamble, the environmental objective under section 20 of the Constitution of the Federal Republic of Nigeria, 1999, the fundamental rights provisions, its international obligations, among others, a conclusion can be drawn that there is a clear case of government apathy towards gas emission control in the Niger Delta.

4. Oil industry and Emission in South Africa

As an emerging economy and leading industrialised country in sub-Saharan Africa, South Africa relies heavily on oil production as one of its energy sources. Though it is not a crude oil producing nation,⁶ commercial oil activities in the country date back to 1884 when the first oil import and trading company was established in Cape Town.⁷ As a thriving industry, oil operation at present involves about 20 million tonnes of imported crude oil that feeds the refinery and petrol chemical operations in the country.⁸

¹Dagugu Peterside in Okojie George (reporter) Reps want NNPC to Shut Down Warri Plant Over Carbon Emission. Leadership in Nigeria 28 May 2012 (online edition) available at http://www.leadership.ng/nga/articles/25942/2012/05/28/reps_want_nnpc_shut_down_warri_plant_over_carbon_emission.html

² Suit No FHC/B/CS/53/05.

³ Communication 155/96, <http://www.cesr.org/text%20files/nigeria.PDF>

⁴<http://www.amnesty.org/en/appeals-for-action/oil-companies-and-the-nigerian-government-must-clean-up-the-oil-industry-in-the-niger-delta> accessed on 01 - 10 - 2011.

⁵ Audrey Gaughran

⁶ South Africa does not have commercial crude Oil deposit in its territory.

⁷ Mbendi Information Services, Oil and Gas in South Africa – History, Accessed online on 29-10-2009 at <http://www.mbendi.com/indy/oilg/af/sa/p0010.htm>

⁸ Oil and Gas in South Africa: Overview. Available online at <http://www.mbendi.com/indy/oilg/af/sa/p0005.htm#5> (visited 29 January, 2012)

Despite intense exploration in different parts of the country, no crude oil has been discovered in commercial quantity. Only few discoveries of gas have been made, particularly in the South coast of the country.¹ As a result of non-discovery of commercial oil, South Africa's crude oil supply for refinery operations and the export market rely on imports from Saudi Arabia, Iran and Nigeria.² Oil activities are carried out mainly in the refineries that are located in South Durban, Cape Town, Sasolburg, Secunda and Mossel Bay. The refineries in Secunda and Mossel Bay depend on coal and gas as primary products while others, such as Calref (Cape Town), Engen (Durban) Sapref (Durban) and Natref (Sasolburg), rely on imported crude oil as basic raw material.³

The ownership of the refineries lies with the multinational corporations which enjoy special privileges from the government. Under the apartheid regime, the operations of the refineries were subsidized in order to keep the companies in business. In the post-apartheid era and under the current democratic dispensation, the oil industry remains classified as a national key point.⁴ This arrangement has been identified as inimical to environmental regulation of the corporations.

4.1 Gas emission in South Durban

The South Durban Basin provides the location of industrial activities in the eThekweni municipality in the Kwazulu-Natal province of South Africa. Apart from being known for oil refinery activities and other industrial activities, the area is equally known as a busy area for international transportation.⁵ It is responsible for the production of 60 per cent of the petrol chemical products consumed in the country.⁶

The community is populated by blacks and coloured people who are mostly poorly paid low income earners. The existing population structure in the area is an outcome of the planning system which deliberately positioned low income earners in between industrial facilities during the apartheid days. The local people are thus susceptible to different forms of environmental hazards, particularly from daily emissions of gaseous and other pollutants from the industries.⁷

Since 1960s, the operations of corporations like the Safref refinery, Engen refinery and others have been identified and blamed for massive air pollution, industrial accidents, death of workers through explosions, and systemic poisoning of the local residents of South Durban as a result of pollution from emissions in the area.⁸

It should be observed here that the blacks, as a result of their locations, have consistently been subjected to continuous inhalation of poisonous gases and are disproportionately bearing the burden of pollution from oil production and other products since the apartheid era. This condition thus imposes an extra cost on health, particularly in coping and treating diseases like asthma, severe chest complaints, and cancer,⁹ together with other burdens on the residents of the basin.

In response to the South Durban situation, the South Durban Community Environmental Association has successfully sensitised and coordinated the members of the different affected communities in the area. The association serves as a common platform against the release of gas emissions and other pollutants to communities by industries in the area. The activities of the association have drawn attention to the situation in South Durban. The collaboration of the organisation with other groups and organisations like Groundwork, the Durban University of Technology and the eThekweni Municipality has facilitated studies on the impact of air pollution in the basin. In addition, the collaboration has opened channels for monitoring and reporting of incidents of severe emission and emergencies from oil operations in South Durban. For instance, a study carried out to establish the impact of emissions in 2001, revealed a high prevalence of asthma among students in a school in South Durban, i.e. 54 times higher than the international average.¹⁰ The report clearly linked ambient

¹ For instance around Mossel Bay, while few discoveries have been made off the coast of Orange river and Namibian border, exploration rights have been granted to corporations like PetroSA, BHP Billiton and Royal Dutch Shell in the Orange river basin. See generally, Overview of Upstream in Africa, <http://www.saoga.org.za/content/overview-upstream-south-africa?destination=node%2F70>, Visited on July 02, 2011.

² *Ibid*

³ Hallowes David, Toxic Futures, South Africa in the Crises of Energy, Environment and Capital (Groundwork, 2011)174.

⁴ *Ibid*.

⁵ See National Key Point Act 102 of 1980

⁶ The Durban sea port is a busy international route for maritime activities, while the Durban international airport was recently relocated from the basin.

⁷ South African Environmental Justice struggles against "toxic" petrochemical industries in South Durban: The Engen Refinery Case. Accessed 17 January, 2012 at <http://www.umich.edu/~snre492/brian.html>

⁸ Observation from the researcher's visit to South Durban in April 2012

⁹ Durban South Community Protests against Engen Emissions <http://cpp.org.za/dedi279.your-server.de/index.php/news/all-news-by-date/37-cpp-news/120-durban-south-community-protests-against-engen-gas-emissions>

¹⁰ *Ibid*

¹⁰ The Settlers Primary School Health Study Summary of Draft Final Report of 9th November, 2002 (accessed 12-10-2011) at <http://www.h-net.org/~esati/sdcea/positionpapers.html>. The study was carried out in Settlers school, South Durban by scholars from Durban University of Technology, University of Michigan, USA and University of Kwazulu – Natal was to determine the relationship between asthma and outdoor air pollution among primary school learners in Durban, South Africa and to investigate whether outdoor air pollutant concentrations of SO₂, NO_x, O₃, TRS, CO and PM₁₀ are associated with increased symptoms of asthma in the study population, available at

air pollutant exposures with acute change in health status 'among students with moderate to severe asthma'. In addition, an increased case of mental illness has equally been reported in the polluted areas in the basin.¹

Pointedly, the refineries in South Durban have been linked with the presence of different chemicals like carbon monoxide, benzene, nitrogen dioxide and ground level ozone (O₃) in the locality. These gases and substances are responsible for health related and other issues like fatigue, mental retardation, kidney problems (in the case of carbon monoxide (CO)), cancer (in the case of benzene), inflammation of lungs bronchial tubes, death of plant tissues (in the case of nitrogen dioxides (NO₂)), and irritation of the eyes, poor visibility and respiratory problems in elderly people and children (in the case of ground level ozone (O₃)).²

Apart from the above, these emissions are known to have direct link with climate change³.

One of the outcomes of the different actions and protests against air pollution in the basin was the introduction of an air quality management programme called the South Durban Basin Multi Point Programme (MPP) by a collaboration of DEAT, Norwegian Pollution Control Agency, South Durban Community, eThekweni Municipality and civil societies like SDCEA and Groundwork. The programme is credited with different innovations that heralded the changes in air quality management in South Durban and ultimately the making of the National Environmental Management: Air Quality Act in South Africa.⁴

In 2004, seven monitoring stations were established in some parts of the area to monitor gases like sulphur dioxide, ozone, nitrous oxide and particulate matters which are regularly emitted from the refineries and other petrol chemical industries in the area. The purpose was to determine the link between emissions and disease in general and to determine the effect of the different gases on the health of the people in the area.⁵ Typical of major refinery operations, regular emission of sulphur dioxide in the area has been linked with 'fossil fuel, coal and oil from power plants, boilers and oil refineries'.⁶ Further study by Kistnasamy confirmed the emitted gases from refineries as a major cause of respiratory problems⁷ in the basin.

In addition to oil production activities, other factors common to both locations tend to exacerbate the problem of pollution. The factors are discussed below.

- (1) Air pollution. Air pollution is linked to release of different gases and greenhouse gases from oil prospecting, crude oil production in different oil fields and refinery operations across Niger Delta. On the other hand, air pollution in South Durban comes majorly from emission sources like gas flaring and other emission sources in refinery operations.
- (2) Poverty and vulnerability of members of the communities. The local populations in South Durban and Niger Delta are made up of poor and low income earners. Many are often jobless as a result of emission related sicknesses. As a result, it becomes clear that unregulated oil production activities bring in train high incidences of ill health that are linked to joblessness as a result of loss of means of livelihood. In Niger Delta, many victims have lost rights and opportunities to carry out traditional occupations like farming and fishing as result of excessive heat from gas flaring that dries up the vegetation and crops. In these areas the impact of acid rains also resulted in the pollution of fishing waters.
- (3) Unequal enforcement of laws. The inequitable and inefficient application of laws, regulations, policies and guidelines in the two countries is responsible for the exposure of the people in south Durban and Niger Delta to high volumes gas emission. In both countries, financially able residents are settled in environmentally healthy sites safe from the threats of pollution. For instance locations like Ikoyi, Abuja, Sandton and Cape Town are homes to senior public officials, influential people, and the "very important personalities" who do not experience pollution or gas emission. The later situation can be ascribed to effective enforcement of laws in the areas.
- (4) Proximity of oil facilities to the communities. By contrast in South Durban, the two refineries are located close to residential areas and schools. Similarly in the Niger Delta, oil production facilities are located in close proximity to local villages and sometimes directly on farmlands. At Iwherekhan community the blow station for constant gas flaring activities is placed within a distance of 500 meters to the village, while the station is surrounded by subsistence peasant farm lands. The situation therefore calls for action on the part of the different governments to address the issue of gas emission in the

<http://inchesnetwork.net/p2.pdf>. (accessed 05-10-2011)

¹Ibid, see also SDCEA-DN Local Action Project 2004-2005 35. Available at <http://www.h-net.org/~esati/sdcea/appliedmet6.pdf> accessed on 05-10-2011.

²Ibid

³Thambiran T, Diab RD. A review of scientific linkages and interactions between climate change and air quality, with implications for air quality management in South Africa, *S Afr J Sci.* 2010;106(3/4), Art. #56, 8 pages. DOI:10.4102/sajs. v106i3/4.56

⁴Act 39 of 2004

⁵DEAT, South Africa Country Report, Fourteenth Session of the United Nations Commission on Sustainable Development. (September 2005) para5.5

⁶SDCEA-DN Local Action Project 2004-2005 35. Available at <http://www.h-net.org/~esati/sdcea/appliedmet6.pdf> accessed on 05-10-2011

⁷See Kistnasamy Joy, The relationship between asthma and outdoor air pollution among primary school learners in Durban, South Africa available at <http://inchesnetwork.net/p2.pdf>. (Accessed05-10-2011).

locations.

- (5) Interlink between emission from the two areas and global climate change
The two countries have been identified by different reports as Africa's largest contributor of emissions to climate change from Africa.

5. The Challenge of Environmental Justice in Niger Delta and South Durban

The prevalence and constant release of emission in the two locations point to the failure of government to regulate polluters through effective legislation to prevent pollution and enforce relevant laws where a facility is already in place. Environmental justice seeks to prevent exposure of people, particularly the vulnerable to the risk of pollution and 'other environmental threats before they occur.' It aims to secure equitable access to clean air, water and other natural resources.

Environmental justice requires activism, which is the organisation of different affected communities and civil society to safeguard aggrieved communities against industries and unfair policies or decisions by government agents in the location of facilities that pollute or threaten to pollute the environment. The principle is rooted in equality and emphasises fairness in the distribution of the burden of economic activities in the society.

Beyond the ordinary meaning of environmental protection, environmental justice addresses issues like social justice, human rights and equity. Bullard submits that an environmental justice framework aims at 'uncovering the underlying assumptions that may contribute to and produce unequal protection.' He identifies three categories of equity.

- (1) Procedural equity - that is the extent of application of 'the rules, regulations evaluation criteria and enforcement' in environmental issues without discrimination. According to Bullard, certain practices like non-scientific and undemocratic exclusionary practices, public hearings in remote locations at inconvenient times and the use of languages which are alien to the local people are defective and at best compromises consultation and results in defective protection.
- (2) Geographical equity: location and closeness of communities to polluting facilities. This is usually identified with decisions on land use and planning in general.
- (3) Social equity: race, ethnicity, class, culture, lifestyles, political power and others, which often determine the location of pollution-generating facilities. Pollution infested locations across the world are often occupied by low income earners who, therefore, are politically not influential.

In particular, Bullard identifies discriminatory practices in 'housing, land use, industrial planning, health care, and sanitation practices' as foundational to the contemporary environmental justice movement. Bullard's view aptly speaks to the situations in South Durban and Niger Delta where poverty and social disintegration are promoted by pollution, ill health, loss of occupation and means of livelihood, lack basic infrastructures.

6. Conclusion

In the paper, the impact of the release of gas emission in Niger Delta in Nigeria and South Durban in South Africa on people's health and environment through the impairment of air quality and the global atmosphere is discussed. This pollution in turn raises different pertinent issues. These include securing people's wellbeing, access to environmental justice and the constitutionally guaranteed environmental rights, other rights under international conventions and national frameworks in the two countries and control of greenhouse gases associated with climate change.

It is also noted that despite the availability of different legal instruments, emission control has proven difficult and environmental justice weak in the two locations in the two countries. This position is reinforced by continual agitations by the communities and the civil society over recurring incidence of gas emission from the two locations. The problem situation raised in this paper indicates that despite available legislation and regulatory mechanisms in both countries, gas emission continues to pose a threat not only to the environment but also to the health of the people and economy of both countries.

Addressing the various challenges raised in this paper by government of both countries will help in no small measure in overcoming the problem of gas emission. The continual agitations by the communities and the civil society over the recurring incidence of gas emission and other sources of pollution in the Niger Delta and South Durban indicate the inadequacies of the legal provisions to bring about effective control of gas emission in the two countries. Hence, efforts should be made towards enforcing environmental laws and regulations towards putting an end to the challenge of gas emission in Nigeria and South Africa.

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List of Abbreviation and Acronyms

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