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## GAS FLARING IN NIGERIA AND THE ACHIEVEMENT OF THE MILLENNIUM DEVELOPMENT GOALS

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By

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### **Abstract**

*The focus of this paper is on gas flaring in Nigeria and the achievement of the Millennium Development Goals (MDGs). Gas flaring and the challenges it brings to environmental sustainability were x-rayed. It is revealed that tremendous environmental degradation has occurred in the Niger Delta, due to gas flaring in the region. The people of the region are presently disenchanted with the presence of the oil companies, because of the apparent damage to their environment. It is therefore recommended that in line with the best practices, gas flaring should be phased out immediately in Nigeria. Additionally, remediation of the Niger Delta environment should be carried out to restore its sustainability.*

### **Introduction**

The environmental challenges confronting the world presently, are attributes of various unsound environmental practices which man engaged in (Osibanjo, 1999; and Dibie & Dibie, 2007). In an attempt to address these critical challenges facing member states, the United Nations posited eight

developmental objectives otherwise called the Millennium Development Goals (MDGs) with specified targets (Table 1), and endorsed by the leaders of member states. Amongst the Millennium Development Goals is Environmental Sustainability (7<sup>th</sup> Goal). This obviously emphasizes the relevance of a "healthy" environment to man's existence.

Gas flaring with its deleterious environmental, health and economic consequences, could be a threat to the achievement of the Millennium Development Goals. Consequently, in this work the effects of continuous gas flaring in Nigeria have been studied vis-à-vis the achievement of the Millennium Development Goals. In particular, environmental aspects of gas flaring were discussed. Also, a time series table indicating the pattern of gas production, utilization and flaring in Nigeria (1970-2006 ) is provided. These are relevant information that should assist stakeholders in the formulation of phase out plan for gas flaring in Nigeria, as well as remediation plan for the affected region.

The portion of work on MDGs status in Nigeria is a scorecard meant to enlighten stakeholders on the accomplishments made so far. Additionally, it is hoped that such information will be relevant to re-strategizing for the accomplishment of more Millennium Development Goals. The paper ends with conclusion and recommendations.

**Table 1 : The Millennium Development Goals**

S/N	GOALS	TARGETS
1	Goal 1: Eradication of extreme poverty and hunger	(1a): Halve between 1990 and 2015, the Proportion of people whose income is less than a dollar a day. (1b) Achieve full and productive employment and decent work for all including women and young people. (1c) Halve between 1990 and 2015, the proportion of people how suffer from hunger
2	Goal 2: Achieve universal primary education	(2a) Ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
3	Goal 3: Promote gender equality and empower women	(3a) Eliminate gender disparity in primary and secondary education preferably by 2005, and in all levels of education not later than 2015
4	Goal 4: Reduce child mortality	4a) Reduce by two thirds between 1990 and 2015, the under-five mortality rate.
5	Goal 5: Improve maternal health	(5a) Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio. (5b) Achieve by 2015, universal access to reproductive health
6	Goal 6: Combat HIV/AIDS, malaria	(6a) Have halted by 2015, and begun to reverse the spread of HIV/AIDS.

	and other diseases	(6b) Achieve by 2010, universal access to treatment for HIV/ AIDS for all those who need it. (6c) Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.
7	Goal 7: Ensure environmental sustainability	(7a) Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environment resources. (7b) Reduce biodiversity loss, achieving by 2010 a significant reduction in the rate of loss. (7c) Halve by 2015, the proportion of people without sustainable access to safe drinking Water and basic sanitation.
8	Goal 8: Develop a global partnership for development	(8) Develop further, an open rule-based, predictable non-discriminatory trading and financial system. Including a commitment to good governance, development and poverty reduction— both nationally and internationally. (8b) Address the special needs of the least developed countries. Including: tariff and quota free access to least developed countries exports; enhance programme of debt relief for HIPC, and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction. (8c) Address the special needs of land locked developing countries and small island developing states (through the programme of action for the sustainable development of small island developing states and the outcome of the twenty second special session of the general assembly) (8d) Deal comprehensively with the debt problems of developing countries through national and international measures, in order to make debt sustainable in the long term

Source: Adapted from Okogu, (2009).

### Critical Issues Pertaining to Gas Flaring in Nigeria.

Gas produced alongside oil otherwise called associated gas has been flared by oil companies operating in Nigeria since the extraction of oil from the nation's soil began. Diverse environmental, economic and health consequences are associated with gas flaring. With Nigeria flaring about 24 billion cubic meters of associated natural gas every year (Ahianté, 2008), the negative consequences of such action on the communities around the flare sites and the world climate in general, can not be over emphasized.

Economically speaking, gas flaring is disastrous when viewed from the amount wasted, and loss opportunities which gas flaring brings. Kalu (2009) remarked that associated gas wasted during flaring is estimated to cost Nigeria, US \$ 2.5 billion on a yearly basis. Such enormous amount if channelled into accomplishing the Millennium Development Goals especially in the areas where the nation is judged to have performed poorly (Table 2); could have improved the lots of many Nigerians. Suffice it to say that poverty, hunger, lack of access to safe drinking water, and inability to afford good health care services, are still prevalent in the Nigerian society,

Some health disorder could be promoted by gas flaring. Additionally, the deteriorating environment caused by gas flaring is significantly contributing to the persistently increasing socio-economic dislocation in the Niger Delta.

Initiatives to phase out gas flaring in Nigeria have severally been promoted with deadlines set. Regrettably, each deadline has passed without actualization of the flare phased out exercise. Currently, a bill forbidden oil industries operating in Nigeria from flaring gas after 31 December 2010 is in the making. It is unfortunate that while countries all over the world are making frantic efforts to embrace green energy and reduce carbon dioxide emission, Nigeria appears to be revolving in a vicious circle of gas flaring.

According to climate specialists, Nigeria with a proven gas reserves of about 183 trillion cubic feet and the seventh gas producer in the world accounts for 13 percent of gas flared world wide (Kalu, 2009). Amongst others, gas flaring generates carbon dioxide which through green house effect contributes to climate change. Additionally, carbon dioxide causes acid deposition (Mason, 1993).

Despite the unfortunate contribution of Nigeria to known causes of environmental problems with varying national and international dimensions, there appears to be a resistance to the adoption of measures that will ensure sustainable development of the nation's natural gas resource, for the benefits of all stakeholders. Evidently, whenever the issue of gas flaring phase out comes under focus, oil companies operating in Nigeria wriggle out, emphasizing that phasing out flaring requires time and money.

The loss opportunities which continuous flaring of gas is causing Nigeria is worrisome, especially when they are not factored into the costs of producing crude oil. As shown in Table 2, Nigeria's performance in the attainment of the Millennium Development Goals is low. The various opportunities lost to gas flaring could probably have been harness to create wealth. This is in addition to the revenue that the country would have gotten, if the flared gas was processed and sold.

**Table 2: MDG Status in Nigeria**

STATUS AT A GLANCE						
GOAL	1990	2000	2007	Target 2015	Progress towards Target	
1 Eradicate Extreme Poverty and Hunger	Absolute PPI (US\$/day)%	-	-	-	21.4	Slow
	Relative PPI (%)	42.7	66.0	54.4	21.4	Slow
	Population (million)	91.5	91.5	140.0		Slow
	Population under poverty (million)	39.1	39.1	67.1		Slow
	Percentage of population below minimum level of dietary energy consumption	13.0	13.0	-	5.2	Good
	Percentage of underweight under-5 children	35.0	31.0	25.0	18	Slow
2 Achieve Universal Education	Net enrolment ratio in primary education	68.0	95.0	89.6	100	good
	Proportion of pupils starting Grade 1	67.0	97.0	74.0	100	good
	Primary six completion rate	58.0	76.7	67.5	100	good
	Literacy rate of 15 to 24 years old	70.7	64.1	81.4	100	good
3 Promote Gender Equality and Empower woman	Ratio of girls to boys in primary education (girls per 100 boys)	76.0	78.0	93.6	100	Good
	Ratio of girls to boys in secondary education (girls per 100 boys)	75.0	81.0	97.6	100	Good
	Ratio of girls to boys in tertiary education (girls per 100 boys)	46.0	66.0	-	100	Good
	Share of women in wage employment in the non agriculture sector	66.3	79.0	-	100	Lack of data
	Seats held by women in national parliament	1.0	3.1	7.7	30	slow
4 Reduce child mortality	Infant mortality rate (per 1,000 live births)	91.0	81.4	110.0	30.3	Worsening
	Under 5 mortality (per 1,000 live births)	191.0	183.8	201.0	63.7	Worsening
	Percentage of 1 year olds fully immunized against measles	46.0	32.8	60.0	100	Good
5 Improve Maternal Health	Maternal mortality ration	-	704.0	800.0	100	Worsening
	Births attended to by skilled health personnel	45.0	42.0	36.3	100	Worsening (data problem)
6 Combat HIV & AIDS, Malaria and other disease	HIV prevalence among pregnant young	-	5.4	4.3	-	Slow

	women aged 15 to 24					
	Young people aged 15 to 24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission.	-	-	25.9	100	Slow (lack of data)
	Young people aged 15 to 24 reporting the use of a condom during sexual intercourse with non-regular sexual partner.	-	-	-	100	Lack of data
	Children orphaned by HIV & AIDS	-	-	2.0		Lack of data
	Prevalence and death rates associated with malaria.	-	-	-		Slow (lack of data)
	Prevalence and death rates associated with tuberculosis	-	-	-		Slow (lack of data)
7	Ensure Environmental Sustainability					
	Land area covered by forest	-	14.6	12.6	20	Worsening
	Gas flared	68.0	53.0	34.0	0	Slow
	Energy use (kg oil equivalent) per US\$ GDP (PPP)	-	-	1.5		Slow (lack of data)
	Carbon dioxide emissions (per capita)	-	4799.0	2500.0		Improving
	total population with access to safe drinking water (%)	54.0	54.0	49.1	100	Worsening
	total population with access to basic sanitation (%)	39.0	42.9	42.9	100	worsening
	people with access to secured tenure (%)	-	38.4	61.2	100	improving
	residential housing construction index (ACI) (proxy)	-	53.0	31.0	100	worsening
8	Develop a Global Partnership for Development					
	Per capita official development assistance (in US\$)	3.0	1.5	81.7		Improving
	Debt services as a percentage of exports of goods and services	-	9.0	1.2		Good
	Private sector investment (US\$ million)	50.0	75.0	8100.00		Improving
	Tele-density (per 1,000 people)	0.5	0.7	27.4		Good
	Personal computers (per 1,000 people)	-	6.4	6.7		Lack of data
	Internet access (%)	0.1	0.1	1.9		slow

Source: Okogu, (2009).

### Gas Flaring And The Nigerian Environment

Gas flaring has serious negative implications on the environment. According to Jyoha and Adamu (2002), gas flaring produces perhaps the most serious negative environmental impact of oil and gas exploitation in the Nigerian context. The continued practice of gas flaring thus places the Nigerian environment to more serious forms of degradation.

Orubu, et al (2004) identified gas flaring as one of the sources of environmental diseconomies associated with petroleum operation in Nigeria. According to them, some of the green house gases such as methane and carbon dioxide emitted from gas flares contribute to global warming, which could accelerate the problem of climatic change and harsh living conditions on earth, if not checked. The World Bank's concern (World Bank, 1995; 2000/2001; and

Ahiante, 2008) over gas flaring in Nigeria can be explained from this perspective.

It is the opinion of Dibia (2009) that the severe air pollution associated with gas flaring and the heat generated at the flare sites adversely affect the surrounding ecosystem, leading to biodiversity losses and depletion of farm and habitable lands. This is consistent with the remark of Kalu (2009), when he opined that in Niger Delta, as a result of gas flaring, the air has been polluted; rainwater has been rendered acidic and therefore undrinkable, with further adverse effects on the streams and rivers; as well as farm lands. Significantly, in the Niger Delta, the traditional economic activities of the natives including hunting, fishing and farming can no longer be sustained by their deteriorating environment. It should be emphasized that oil and gas productions are the main business activities taking place in this region.



Table 3: Gas Production, Utilization and Disposal (Million Cubic, Meters, MCM),

Year	Gas Produced	Quantity Utilized	Quantity flared	% flared
1970	8,039	72	7,957	99
1971	12,975	185	12,790	99
1972	17,122	274	16,848	98
1973	21,882	295	21,487	98
1974	27,882	323	26,776	99
1975	18,656	659	15,333	98
1976	21,276	972	20,617	97
1977	21,924	1,866	20,952	96
1978	2,306	1,546	19,440	91
1979	27,619	2,951	26,073	94
1980	24,551	3,442	22,904	93
1981	17,113	3,244	14,817	83
1982	15,382	3,438	11,940	78
1983	15,192	3,723	11,946	79
1984	16,255	4,822	12,817	79
1985	18,569	4,794	14,846	80
1986	17,085	5,516	13,917	74
1987	20,253	6,323	12,291	72
1988	25,053	6,343	14,737	73
1989	28,163	7,000	18,730	75
1990	28,163	7,058	21,820	77
1991	31,587	7,536	24,588	78
1992	32,465	7,058	25,406	78

1993	33,445	7,536	25,908	77
1994	32,793	6,577	26,216	80
1995	32,980	6,910	26,070	79
1996	36,970	10,150	26,820	73
1997	36,755	10,207	26,548	72
1998	35,937	10,877	25,050	70
1999	37,613	17,904	19,709	52.4
2000	44,233	20,303	23,930	54.1
2001	N/A	N/A	N/A	N/A
2002	48,192	23,356	24,836	44.70
2003	51,192	27,249	23,943	41.70
2004	58,964	33,873	25,097	40.50
2005	57,369	34,448.89	22,920.50	39.95
2006	57,753	39,374.80	18,378.90	31.82

Sources: (i) Central Bank of Nigeria (CBN) Statistical Bulletin 1998,  
(ii) Central Bank of Nigeria (CBN) Annual Report and Statement  
of Accounts, (Various Issues)  
N/A = Not Available

Table 3 shows the pattern of gas production, utilization and flaring in Nigeria (1970-2006). Though there appears to be a decline in the percentage of gas flared in recent years; the enormous quantity of gas flared over the years has caused severe environmental degradation in the Niger Delta region. Since air pollution is trans-boundary in nature, there are possibilities of associated gas flared in Nigeria contributing to overall global environmental problems.

### Conclusion

The practice of gas flaring in Nigeria has been studied in relation to its environmental consequences. It is clear that the environment of the Niger Delta has adversely been affected by gas flaring.

Securing the environment of the Niger Delta through urgent phase out of gas flaring and implementation of remediation measures are imperative, if the region must regain its sustainability status.

### Recommendations

- ❖ Gas flaring should urgently be phased out in Nigeria because of its deleterious consequences.
- ❖ Various remediation measures including soil re-conditioning and re-forestation should be carried out in the Niger Delta region. This will help to re-generate the sustainability properties of the Niger Delta environment.
- ❖ Considering the tremendous losses which the host communities have suffered, it is recommended that corporate social responsibilities of the oil industries doing business in the Niger Delta be improved upon

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