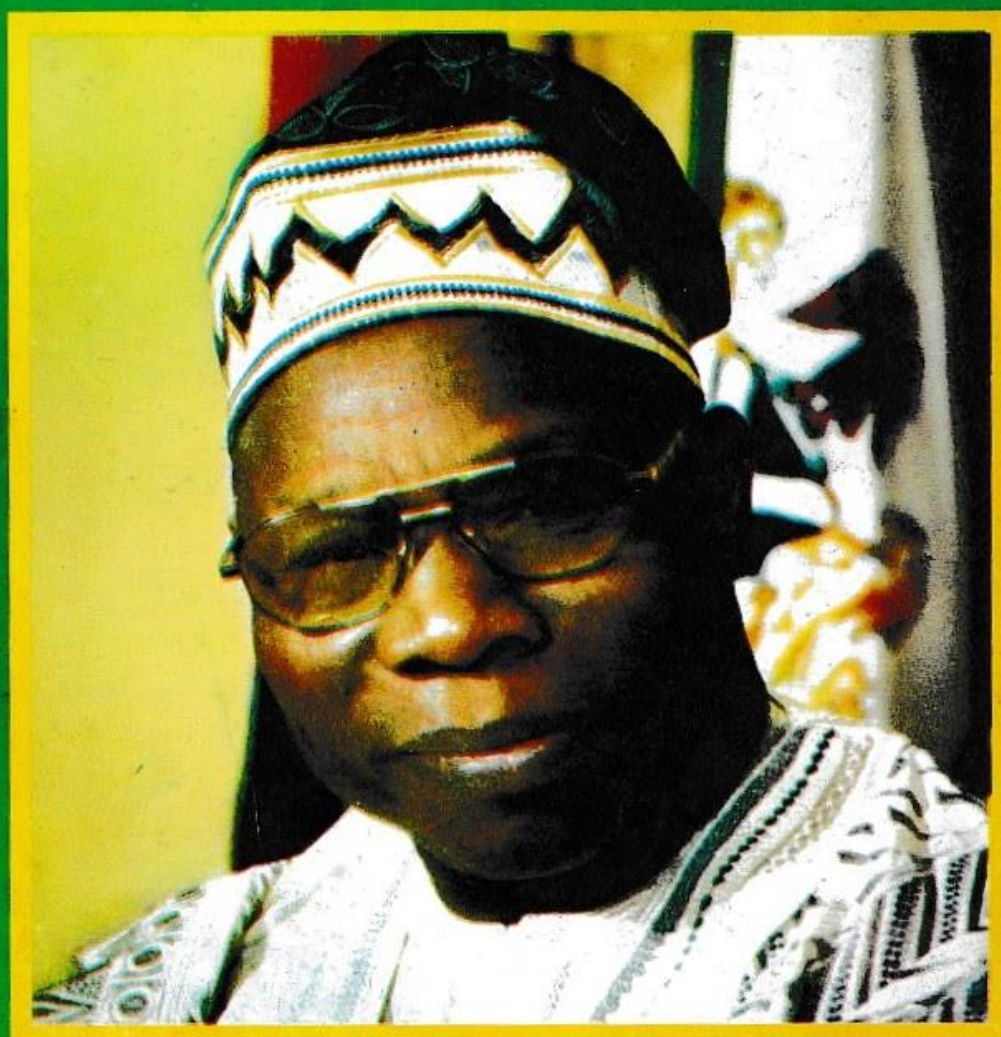


# The Environment & Sustainable Development



**ESSAYS IN HONOUR OF  
OBASANJO'S ENVIRONMENTAL  
LEGACY FOR NIGERIA**



## **Chapter Nine**

# **Towards Proper Administration of Oil Activity and Pollution in the Niger Delta**

### **Introduction**

**I**n the traditional development literature, environmental issues were not considered important. However, more recently, environmental issues have become relevant and poignant in the development calculus. In an economy such as Nigeria's where the oil industry is the driving sector, development initiatives must be environmentally sensitive. Given that it may not be easy to have an oil sector in Nigeria which is totally devoid of negative externalities in terms of pollutions and environmental degradation, this paper advocates adequate maintenance of environmental protection laws to reduce such adverse externalities to the barest minimum. Moreover, given the market impact of oil activities and the tragedy of the commons which these activities impact, oil companies need to undertake their activities in such a way that sustainable development of their activity in the environment is maintained. It is

reckoned that various abnormalities in the administration of oil activities specially as it affects the Niger Delta has continued to perpetuate poverty and social crises in the affected communities. This paper also addresses some of the abnormalities and injustices which need urgent attention to ensure peaceful co-existence of oil companies and host communities in order to engender sustainable development of the Niger Delta.

### **Particulars of the Niger Delta**

Since the discovery of vast reserves of petroleum in Nigeria in the 1950s, oil has become the mainstay of the nation's economy especially since the 1970s. The Niger Delta, comprising Akwa Ibom, Rivers, Bayelsa, Delta, Edo, Imo, Cross River and part of Ondo State in Nigeria constitutes the reservoir of petroleum and gas resources in the country. The Niger Delta which has a 70,000 square kilometer region in Nigeria's South-Western Coast occupies about 70 percent of Nigeria's 800 kilometre coastline. It contains Africa's largest wetland and is also one of Africa's largest coastal mangroves forests. In fact this region holds one of Nigeria's largest surviving rain forests and constitutes the world's third-largest mangrove forest as well as the greatest extension of freshwater swamps in Africa.

The Niger Delta contains an estimated oil reserves of 225 billion barrels of the best quality crude oil and an estimated 124 trillion cubic feet of natural gas. There is, therefore, no wonder that this region is home to several oil exploration, drilling and service companies including shell, Exxon-Mobil, Chevron, ELF, Ashland, Texaco and Agip.



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The traditional development literature perceived development to be a multi-dimensional process involving some acceptable level of reorganization and reorientation of an entire economic and social system. Therefore, in addition to improvement in the economic status of incomes and output, radical changes in institutional, social and administrative structure as well as popular attitudes were desirable. More recently, however, an analysis of development without environmental variables and issues is deemed incomplete and lopsided. Therefore, environmental factors have taken important position and have been given considerable attention in the development calculus. All development initiatives, including developments in the oil industry must, therefore, be environmentally sensitive. It has become imperative, that to achieve sustainable development especially in an economy, which is driven by the oil sector, environmental issues must be adequately addressed. This paper attempts to proffer ideas towards better administration of activities and consequences in the Niger Delta of Nigeria (Ekpo and Umoh 2001.)

## **2. Oil Activity and Pollution in the Niger Delta**

Oil production in Nigeria has had considerably severe environmental and human impact for the people of the Niger Delta unfortunately activities in the Nigeria Oil Industry have left in its trail negative impacts on the immediate activity environment. Such environmental degradation from oil production and the lack of adequate regulations on multinational companies has impoverished the people as they become vulnerable to food shortages, health hazards, land loss, pollution, forced migration and unemployment.

A study of eight countries, including Nigeria by Dabbs (1996) indicates instances in which the desire for oil resources and the actual exploitation of oil have negatively affected the environment. These negative impacts are due to oil extraction, accidents, terrorism, or conflicts. Table 1 shows that most of the countries have their environments degraded from oil production pollution, and conflict damage with their attendant negative human impact.

Umoh (1998) notes that oil exploration, refining and storage have brought a lot of environmental problems on the socio-economic life of the people of the Niger Delta Region. Table 2 below summarizes the environmental impacts of fossil energy resources in Nigeria. Specifically, oil exploration, refining and storage have impacted a lot of environmental problems on the ecosystem. For instance oil spillage causes loss of aquatic animals, eutrophication of water bodies, devegetation and other forms of ecological damage. Gas flaring, gas emissions and fumes are hazardous to human and human health.

Table 1: Cases of Environmental Damage From Oil Resource

Case	Production pollution?	Human Impact?	Conflict Damage?
Ecuador	Yes	Yes	No
Nigeria	Yes	Yes	Yes
Colombia	Yes	Yes	
Azerbaijan	No	No	Yes
Kazakhstan	Yes	No	Yes
Falkland Islands	Maybe in Future	No	Maybe in Future
Kuwait War	No	Yes	Yes
Spratly Islands	No	No	Maybe in future



**Table 1** shows a sample of 8 oil producing countries in which oil production has had adverse environmental impact. In the case of Nigeria, there are production pollution, human impact and conflict.

**Table 2: Environmental impacts of Fossil, Energy Resources in Nigeria**

Activity	General Effects	Specific Impact
Exploration	Landscape disturbance	Aesthetic deterioration of Landscape
Extraction	Land degradation and ecosystem destabilization	Land surface devastation, disruption of drainage system, deforestation, excessive water draw down, lowering and contamination of water table.
Processing transportation, storage and consumption	Gas leaks, oil spills, noise and pollution of the air, soil and water	Thermal loading of waterways, increase in $\text{CO}_2$ and $\text{C}_0$ , ozone layer depletion, acidification of air, soil and water, weather modification, toxicity hazard to plants and animals, death of terrestrial and marine life, loss of crops and livestock, impairment of atmospheric visibility, damage to buildings and machinery, nervous disorders, respiratory disease, cardiovascular illness, cancers and food poisoning.

**Source:** U. M. Igbozurike (1983): "Energy Development and Energy crises with special reference to Nigeria" Department of Geography, University of Nigeria, Nsukka, p. 13.

**Table 3: Oil Spillage in Rivers State of Nigeria (1991-1994)**

Years	ALL COMPANIES		SHELL	
	No of Spills	Quantity Spilled (Barrels)	No of spills	Quantity Spilled (Barrels)
1991	98	5,103	86	4,214
1992	223	21,480	143	1,390
1993	232	8,101	248	3,251
1994	-	-	203	18,527
<b>Total</b>	552	29,679	680	27,382
Average /year	184	9,893	170	6,845

**Source:** Shell Petroleum Development Company

**Table 4: Gas Flaring in Port Harcourt and Warri (1991-1994)**

YEAR	FLARED GAS (MILLION M <sup>3</sup> /YR) PORT HARCOURT	WARRI
1991	7072	-
1992	7439	-
1993	7139	3728
1994	6217	3925
AVERAGE	6967	3826

**Source:** Shell Petroleum Development Company



**Table 5: Flaring of Natural Gas in Major Producing Countries (% of Gross Production in 1991)**

COUNTRIES			
USA	0.6	NIGERIA	76.0
HOLLAND	0.0	LIBYA	21.0
BRITAIN	4.3	SAUDI ARABIA	20.0
EX-USSR	1.5	IRAN	19.0
MEXICO	5.0	ALGERIA	4.0
		OPEC TOTAL	10.0
		<b>WORLD TOTAL</b>	<b>4.8</b>

**Source:** Escravos Staff Appraisal Report, 1993

Table 3 above shows the amount of oil spilled in River State of Nigeria during the period 1991-1994. The table indicates that all the oil companies operating in the state jointly contributes 552 spills amounting to 29, 679 barrels with an average of 184 spills and 9,893 barrels per year. However SPDC contributed 680 spills during the four-years period amounting to 27, 382 barrels of oil with a yearly average of 170 spills and 6,845 barrels. Table 4 indicates that an average of 6967 cubic metres of gas was flared in Port Harcourt per year during the same period while an average of 3826 cubic metres of gas was flared in Warri yearly between 1993 and 1994.

Table 5 indicates that 76 percent of gas production of gas by Nigeria was flared in 1991. This trend has only improved marginally over time. The fact that gas flaring increases global warming informs the urgent need to internalize such negative externality by the oil industry. Such gas flaring takes place in Akwa Ibom State, Delta State,

Rivers State among others. These oil companies should borrow a leaf from other countries like Holland where no gas was flared at all, U.S.A. 0.6 percent, Britain 4.3 percent, Ex-USSR 1.5 percent and Mexico 5 percent gas flaring in 1991.

Table 6 indicates oil pollution sources. Patin (1993) maintains that the main anthropogenic flows of oil pollution into the marine environment come from land-based sources like refineries, municipal waters, river run off etc; transportation activity and shipping. Polycyclic aromatic hydrocarbons (PAHS), especially benzo (a) pyrene, enter the marine environment mainly through deposition in the atmosphere.

**Table 6: Sources and scale of oil pollution input into the marine environment**

Types of sources of input	Environment Scale of distribution and Environ-ment Impact				
	Hydro-sphere	Atmosphere	Local	Regional	Global
Natural: Natural seeps and erosion of bottom sediments	+	-	+	?	-
Biosynthesis by marine organisms	+	-	+	+	+
Anthropogenic: Marine oil transportation (accidents, operational discharges from tankers, etc.)	+	-	+	+	?
Marine non-tanker shipping (operational, accidental, and illegal discharges)	+	-	+	?	-



Offshore oil production (drilling discharges, accidents etc.)	+	+	+	?		-
Onland sources: sewage waters	+	-	+	-		-
Onland Sources: Oil Terminals	+	-	+	+		-
Onland sources: rivers, land runoff	+	-	+	-		?
Incomplete fuel combustion	-	+	+	+		?

**Note:** +, -, and ? mean, respectively, presence, absence and uncertainty corresponding parameters.

**Source:** Patin (1993)

**Table 7: Oil Producing Tropical Countries**

World Rank	Country	Oil Production (barrels per day)	Date of Estimate
6	Mexico	3,460,000	2004
11	Venezuela	2,600,000	2004
12	Nigeria	2,356,000	2004
17	Brazil	1,788,000	2004
21	Angola	980,000	2004
22	Indonesia	971,000	2003
24	Malaysia	785,000	2004
30	Columbia	531,100	2004
32	Ecuador	523,000	2004

34	Vietnam	359,000	2004
35	Equatorial Guinea	350,000	2004
36	Gabon	264,900	2004
40	Congo, Rep. of	227,000	2004
41	Thailand	225,000	2004
42	Brunei	204,000	2003
49	Peru	95,500	2004
50	Cameroon	94,000	2004
59	Papau new Guinea	46,200	2004
63	Bolivia	39,000	2004

The table includes only countries with significant tropical forest.

**Source: CIA World Factbook.**

Table 7 shows countries whose primary oil production is offshore with significant tropical forest. Columbia, Ecuador, Peru, Bolivia and Nigeria (Niger Delta) have substantial oil activities in rainforest areas. The implication is that pollution due to oil production, spills and gas flares, ruin crops, deplete fishing grounds, and deteriorate lives.

Two important principles explain the impact of oil activities on the Nigerian environment: the “market impact” and the “tragedy of the commons”.

- (i) **The Market Impact:** The trend in Nigeria is that economic motive prompts government and oil companies in their exploration and sales of oil. More oil is extracted and processed than is needed for domestic use. As a result of trading and the monetized nature of our economy oil



is produced beyond local needs so that the criteria for production are both for subsistence and market demand.

- (ii) **Tragedy of Commons:** Oil exploration and processing without adequate conservation traditions have rendered land resources in oil activity areas degraded. Examples in Nigeria abound in Iko and Akwa Ibom State as well as Ogoni land in River State. The tragedy which has befallen these communities manifest in the loss of land and water which constitute their sources of livelihood. (See Umoh 1997, Ashton – Jones 1994).

### **3. Towards Proper Administration of Oil Activity and Pollution**

One of the international environmental agreements to which Nigeria is a signatory is the International Convention on Oil Pollution Preparedness, Response and Co-ordination (OPRC). This convention aims at the prevention of marine pollution by oil, through the precautionary adoption of adequate response measures in the event of occurrence of oil pollution as well as the provision for mutual assistance and co-operation between states in this regard. Moreover, the Federal Ministry of Environment has in place the following guidelines and standards among others, which states must also adopt for environmental pollution control.

- (i) National environmental protection effluent limitation regulation which makes it mandatory for industry to install

- anti-pollution equipment for the treatment of effluents they generate.
- (ii) Pollution abatement in industries and facilities generating wastes regulation, stipulates restrictions on the release of toxic substances into the environment and gives the requirements for environmental audits as well as penalties for default.
- (iii) Management of solid hazardous wastes regulation, provides a comprehensive list of dangerous and hazardous chemical and wastes, and the prescriptions for environmentally sound disposal of these wastes.
- (iv) There is also an Environmental Impact Assessment (EIA) law which makes Environmental Impact Assessment mandatory for new major industries in the vital sectors of the economy including mining and petroleum. (Umoh, 1997).

From the above stated facts, is it obvious that the problem of oil pollution and the attendant conflicts that it perpetuates in the Niger Delta is not due to the absence of laws and policies. Rather the problem is inability of governments especially at the Federal and State levels to enforce the proper management of oil related activities by oil companies engaged in oil drilling and other activities without compliance with the pre and post Environmental Impact Assessment, Social Impact Assessment studies as well as environmental monitoring and surveillance. It is this sub-optional level of enforcement of existing environmental protection laws and the structural deformity in environmental policy implementation that



have engendered mass poverty and social restiveness in the Niger Delta Communities.

On this note, we proffer the following suggestions towards proper administration of oil activity and pollution in the Niger Delta.

- (i) **Prevention of Blowouts:** In the course of oil drilling it is always necessary to keep underground pressure in check. The relevant regulatory agencies must ensure that oil drilling companies ensure well control through rig Blow-Out Prevention System (B. O. P.). This is a set of hydraulically operated valves and other closure devices which seal off the well, and route the well bore fluids to specialized pressure control equipment. The employment of trained personnel to operate such highly reliable equipment would minimize the possibility of blow-outs as well as uncontrolled fluid flow from oil wells.
- (ii) There is an urgent necessity to cap all the burning flared gases in the Niger Delta and channel the flared gases to other useful purposes. This would greatly mitigate the prevailing reduced crop yield and plant growth, disruption of wildlife, damage to buildings and other structures by acid rain as well as photogenic pollution which causes a nuisance and the loss of sources of livelihood.
- (iii) Oil companies operating in the Niger Delta as well as the Federal Government should exhibit great societal and environmental concern when oil multinational has inadvertently contaminated the water, land and even air resources upon which the population depends. Pollution



which directly effects human well being and livelihood must always be dealt with, with urgency and empathy.

- (iv) A means of reducing the amount of oil production, increasing the price of oil, reducing the world demand for oil, reducing amount of gas emissions and, therefore the environmental damage stemming form oil production, is the imposition of an increased oil tax. However, in implementing this policy the discovery and production of a new and alternative energy resource to supplement oil is imperative. The new energy resource must, however be environmentally – friendly, cheap and accessible.
- (v) Pollution should be prevented rather than abating or mitigating its impact. Such pollution prevention encompasses source reduction, equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, maintenance and inventory control. Moreover, pollution prevention also involves the elimination or reduction of all discharges to land, air or water in the course of oil exploration, extraction, processing, transportation, storage and consumption. These can be achieved either by source reduction or closed loop recycling. Oil companies operating in the Niger Delta must be wiling to invest in funding pollution prevention.
- (vi) Oil companies operating in the Niger Delta should maintain and implement the highest international operating, environmental, ethical, workplace and business practice standards. They should maintain efficient and effective communication with their host communities. They must be also address and invest in rehabilitating the impact of their past activities on the environment and on people.
- (vii) The proper administration of oil activity in the Niger Delta calls for an integrated approach to resource management.



Examples include integrated coastal zone management which would address broad range of social, economic and environmental issues.

- (viii) Finally, oil companies in the Niger Delta must be regulated to internalize their negative externalities which constitute cost to the society. This can be implemented by making them pay tax per unit of waste produced.

## **Conclusion**

In the administration of oil activity and pollution in the Niger Delta, oil industry practitioners, while pursuing their profit motive, must also be conscious of conserving the environment in the process. It is by so doing that their activities in the Niger Delta will be both profitable and sustainable.

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