CRUDE OIL PIPELINES VANDALIZATION: IMPLICATION ON ECONOMIC DEVELOPMENT OF NIGERIA.

E. N. Nwalado
Department of Social Science Education,
Delta State University,
Abraka.

S. Obro
Department of Social Science Education
Delta State University,
Abraka.

J. N. Ofuasia
Department of Social Science Education
Delta State University,
Abraka.

Abstract

This study examined crude oil vandalization and its implication for economic development of Nigeria. The study was a descriptive survey research. One hundred staffs drawn from Nigeria National Petroleum Corporation Pipelines Products Marketing Company Limited (PPMC), Warri Area Office, were sampled. The main instrument was the questionnaire. The data collected were analyzed using Chi Square. The result showed that there was no significant relationship between pipelines vandalization and economic development of Nigeria; there is significant relationship between human loss resulting from pipelines vandalization and their expected contribution to economic development of Nigeria; The study recommended that the right of ways (ROW) of the pipelines system should be cleared to at least a width of 25 meters and monitored both land and air; oil pipelines should be buried deeper while communities, and not individuals, should be contracted to protect oil pipelines.

Since the discovery of crude oil in Nigeria in 1956, it has been a source of mixed blessing to the country. As one of the leading oil-producing countries in Africa, Nigeria loses billions of dollars to the activities of vandals of petroleum products pipelines. According to Pipelines Products Marketing Company (PPMC), a subsidiary of NNPC, Nigeria has a total network of 5,001 kilometres of oil

pipelines, consisting of 4,315 km of multi-product pipelines and 666 km of crude-oil pipelines. These pipelines criss-cross the country and inter-link the twenty-two petroleum storage depots strategically dispersed across the country, the refineries at Port Harcourt, Kaduna and Warri, the off-shore terminals at Escravos and Bonny, and the four jetties at Okrika, Atlas Cove, Warri and Calabar (Sule, 2004).

In recent times Nigeria has witnessed crude oil pipelines vandalization. The country recently has witnessed cascading incidences of oil pipelines vandalization which are a major threat to human security and the socio-economic development of Nigeria. Crude oil pipelines vandalization poses an immense challenge to the Nigerian state, harming its economy and fuelling a long-running insurgency in the Niger Delta. This situation has threatened the economic foundation of the Country (Nwachukwu, 2005).

Pipelines vandalism has continued to be more prominent especially in areas like Port-Harcourt, Warri and Mosimi axis (Niger Delta Regional Development Master-plan, 2006). Product losses incurred through vandalism in 2000 was 397,600 Metric Tonnes or 10.121 billion Naira and 647,632 or 42.102 billion naira in 2005. In the first half of 2006, there were 2059 cases of vandalism. Okowa, (2007) opined that there have been series of fire outbreaks, destruction of properties, massive deaths and economic loss as a result of oil pipelines vandalism in Nigeria. Stealing of crude, white products from vandalized and ruptured pipelines, illegal bunkering and smuggling of petroleum products is causing so much damage to the country's economy (Orubu, 2004). Nigeria loses billions of naira to these private pockets. In 2000 the loss was calculated to be N10.121 billion while the losses stood at N42.102 in 2005.

Roberts (1998) observed that increase in the vandalization of oil pipelines generate system wide adverse effects on the economy through its multiplier effects on the destruction of property, lives and the environment. Due to crude oil pipeline vandalization, pipelines are shut, leading to reduction in production of petroleum products. This in turn encourages massive importation of petroleum products causing petroleum products' scarcity with the attendant hardship suffered by Nigerians, un-official increases in pump prices of petroleum products putting more financial burden on Nigerians and enriching foreign economies at the detriment of the Nigerian economy because we virtually import all we consume (Ogbeifun, 2007). Increased costs of goods and services and the costs of repairs of vandalized pipelines further reduce the amount of money accruable to Federal Government for other developmental purposes.

Akpieyi, (1997) observed that crude oil pipelines vandalization, even though illegal, is another thriving business in Nigeria especially in the Niger Delta region of the federation where there are oil

installations or wherever the petroleum products pipelines run through. Aside the fact that the activity of the vandals is taking its toll on the economy of Nigeria, the revenue that accrues to the nation from the sales of crude oil keeps nose diving on a daily basis. Also, private individuals, especially motorists are counting their losses on a daily basis with the influx of adulterated fuel (Adebowale, 1996). The fact today is that the activities of vandals of petroleum products pipelines affect Nigeria's economy. Many times, they result in shortage of petroleum products for end users, product scarcity, and often frustrate government effort at ensuring stability in the oil sector. Also, the continued activity of vandals on the high sea has robbed the nation of billions of dollars annually.

The vandalization of oil pipelines has caused significant amounts of shut-in production, environment degradation and as well as economic wastage and loss. Energy Information Administration (EIA) (2005) estimated Nigeria's effective oil production capacity to be around 2.7 million barrels per day (bbl/d) but as a result of vandalization of oil pipelines, monthly oil production ranged between 1.8 million bbl/d and 2.1 million bbl/d. In 2008, Nigerian crude oil production averaged 1.94 million bbl/d, making it the largest crude oil producer in Africa. If current shut-in capacity were to be back online, EIA estimates that Nigerian production could have reached 2.7 million bbl/d in 2008. Statistics on oil pipeline vandalization remain staggering. In 1999, there were 524 cases of oil pipeline rupture, 27 of which were due to natural causes, namely, wear and tear arising mainly from corrosion, while the rest, 497, were due to vandalization. In the first six months of 2008, 400 oil pipeline ruptures had occurred, 382 of which were due to wilful vandalization. By the end of the 2008, according to PPMC, cases of oil pipeline vandalization was as high as 764. According to data from the NNPC, a total of 16,083 pipeline breaks were recorded between 2000 and 2010. Of the lot, 398 pipeline breaks (2.4per cent) were as a result of ruptures. Pipeline vandals accounted for the remaining 15,685 breaks (97.5 per cent) of the total number of cases. Oil industry operators blame a substantial part of oil spills on oil pipelines vandalization. For example, the SPDC blamed 40 percent of oil spills resulting from its operations in 2000 on oil pipelines vandalization (SPDC, 2000). Although local communities dispute such claims, the fact of the matter is that such incidents do take place. But what are the implications for economic development? The answer to this question has elicited differing views.

Objectives of the Study

1. To find out the extent to which crude oil pipelines vandalization has adversely affected the economic development of Nigeria.
2. To find out PPMC staff on opinion crude oil pipelines vandalization and its implication for economic development in Nigeria with regard to sex

Research Question/ Hypotheses

Based on the need to find out crude oil pipelines vandalization and its implication for economic development in Nigeria, the following research question and hypotheses were formulated:

R.Q.: Is there any relationship between crude oil pipelines vandalization and economic development of Nigeria?

HO1: There is no significant relationship between pipelines vandalization and economic development of Nigeria.

HO2: There is no significant relationship between human losses resulting from pipelines vandalization and their expected contribution to the economic development of Nigeria.

HO3: There is no significant difference between male and female PPMC staff's views on crude oil pipelines vandalization and its implication for economic development of Nigeria.

Method

The study adopted the descriptive survey research design. It sought to elicit the opinions of the Pipelines Products Marketing Company Limited (PPMC) Warri area office staff on crude oil pipelines vandalization and its implication for economic development in Nigeria. The population consisted of 238 PPMC staff. The stratified random sampling technique was adopted for the study.

Table 1 Distribution of respondents according to staff characteristics used for the study

S/N	PPMC Staff Characteristics	Group	Frequency	%
1	Gender	1. Males	86	86
		2. Females	14	14
2	Rank	1.Senior Staff	60	60
		2.Junior Staff	40	40
			100	**100**

Senior Staff – As ranked by the Corporation.

Junior Staff- As ranked by the Corporation.

The instrument for the study was the questionnaire, made up of two sections, section 'A' and 'B'. Section 'A' contained personal information of the respondent, while section 'B' consisted of twenty (20) questions based on crude oil pipelines vandalization and its implication for economic development in Nigeria. The respondents were required to agree or disagree. The instrument had a reliability coefficient of 0.78. The statistical tool used for the computing and analysing the response scores was the chi-square. All tests were carried out at the 0.05 level of significance.

Table2: Relationship Between Pipelines Vandalization and Economic Development of Nigeria.

Table 2

Variables	Agreed	Disagreed	Total	Df	X^2 Cal.	X^2 Crit
Pipelines Vandalization	75	0	75	1	2.37	3.84
Economic Development of Nigeria	24	1	25			
Total	**99**	**1**	**100**			

$p < 0.05$ (critical X^2 value= 3.84)

Table 2 shows that the relationship between pipelines vandalization and economic development of Nigeria is not significant. This is due to fact that the calculated value of X2 2.37 is more than the X2 critical value of 3.84. This result implies that there is no significant relationship between pipelines vandalization and economic development of Nigeria.

Table 3: Relationship between Human Loss Resulting from Pipelines Vandalization and their Expected Contribution to the Economic Development of Nigeria.

Table 3

Variables	Agreed	Disagreed	Total	Df	X^2 Cal	X^2 Crit
Human loss resulting from pipelines vandalization	65	2	67	1	5.08	3.84
Expected contribution to economic development of Nigeria.	32	1	33			
Total	**97**	**1**	**100**			

$p < 0.05$ (critical X^2 value= 3.84)

The result as contained in table 3 also revealed that there is a relationship between human loss resulting from pipelines vandalization and their expected contribution to the economic development of Nigeria and X^2 value (5.08) indicated that there is a significant relationship between human loss resulting from pipelines vandalization and their expected contribution to the economic development of Nigeria.

Table 4: Differences in the views of female and male PPMC staff on crude oil pipelines vandalization and its implication for economic development of Nigeria.

Table 4

Respondents	N	$\frac{(fo-fe)^2}{Fe}$	Df	Cal. Value	Crit. Value
Female staff	14	0.67	1	1.37	3.84
Male staff	86	0.70			

$p < 0.05$ (critical X^2 value= 3.84)

The result of the chi-square for the difference in male and female views on crude oil pipelines vandalization and its implication for economic development of Nigeria is not significant. This is due to the fact that the calculated X^2 value of 1.37 is less than the X^2 critical value of 3.84.

Discussion

For Ho1, on the relationship between pipelines vandalization and economic development of Nigeria apparently showed no significant difference, hence the hypothesis was accepted. Adeyemo (2002) supported the negative impact of oil pipelines vandalization on economic growth by noting that oil pipelines vandalization destroy and hinder economic growth and development and that the costs of repairs of vandalized pipelines further reduce the amount of money accruable to Federal Government for other developmental purposes as well as increased costs of goods and services. Ikelegbe, (2006.) opined that problems related to oil pipeline vandalization have caused severe financial losses and environmental pollution. The financial losses to vandalism run into billions of dollars. Oil pipelines vandalization stall developmental processes, for it increases overhead cost, which ultimately is passed on to Nigerians who are the end users and down sizing of employees involved in the chain of oil production thereby increasing the incidence of unemployment. Thus, with these problems being a general one, the relationship between pipelines vandalization and economic development of Nigeria could therefore not be significant.

For Ho2 on relationship between human losses resulting from pipelines vandalization and their expected contribution to the economic development of Nigeria was found to be significant, hence the rejection of Ho2. Akintola (2006) supported the result of hypothesis two in a study done to assess pipeline vandalization and oil scooping in the Niger Delta. The findings revealed that the views of the respondents were adequate. This is because those that died as a result of explosion from vandalized pipelines could have contributed in one way or the other to the economic development and growth of the country. Thus, by destroying the ecological balance that sustains life, pipeline vandalization threatens the life-support system that sustains economic development and exacerbates the level of poverty of the poor. This agrees with Onuoha (2006), Ogbeifun (2007), Akpomera (2008) and Nwachukwu (2008).

For Ho3 gender was found not to have significant difference on PPMC staff view on crude oil pipelines vandalization on economic development of Nigeria, hence the retention of Ho3. Crude oil pipelines vandalized only encourages massive importation of petroleum products causing petroleum products' scarcity with the attendant hardship suffered by Nigerians, un-official increases in pump prices of petroleum products putting more financial burden on Nigerians and enriching foreign economies at the detriment of Nigerian economy because we virtually import all we consume. Therefore, with these problems affecting all Nigerians, sex differences cannot bring any change in their opinions on oil pipelines vandalization and its implication on economic development in Nigeria. This

was in agreement with Ekeng (1999), Olusola (2010) and Nwachukwu (2008).

Conclusion

This paper has been able to relate what could be referred to as crude oil pipelines vandalization to economic development of Nigeria looking at such factors as pipelines vandalization, economic development, causes of pipelines vandalization and oil pipeline vandalization and Nigeria economy. From this background, it is therefore important to conclude that the impact of pipelines vandalization on economic development in Nigeria cannot be quantified but we make bold to say that incalculable damage is being done to economic development in Nigeria. As a result of inferno, residents lose not only their source of income, but also their dietary balance and sources of drinking water. Important economic crops such as palm trees, rubber, cocoa, plantain, and coffee are usually destroyed during fire disaster and spillage caused by vandalised pipelines. Also, contaminated marine animals such as fish, periwinkles, crayfish and polluted water can cause serious health problems for human beings when consumed. Thus, by destroying the ecological balance that sustains life, pipeline vandalization threatens the life-support system that sustains economic development and exacerbates the level of poverty of the poor.

Recommendations

1. The route of the pipelines system should be cleared to at least a width of 25 meters and monitored through both land and air.
2. The frequency of inspection by the inspection group and numbers that make up the group should be increased to three times of what it is now.
3. Integrate the communities into the oil economy, so that they will have proprietary interest in the protection of oil installations.
4. Oil pipelines should be buried deeper while communities, not individuals, should be contracted to protect oil pipelines.
5. There should be better protection of oil pipelines through improved surveillance and introduction of aerial/satellite monitoring and casing of oil pipelines.
6. There should be continuous involvement of the local communities in security of pipelines with a caveat that any community where there are no spillages or pipeline vandalism shall be entitled to a form of economic benefit(s), royalties or project(s). This will also serve as a source of employment for the local population.
7. There should be increased enlightenment on the negative effects of vandalism on our economy, environment and the disaster of fire outbreaks when scooping fuel from vandalized pipelines.
8. Government should give immediate attention to the

indigenes of the region where crude oil is being extracted from. This will reduce the unrest in that region;

9. Electronic gadgets, such as microwave and ultrasonic sensors, infrared alarms, closed circuit television and sophisticated alarm systems should be used to safe guard oil pipelines.
10. There should be re-evaluation of the nation's value system.

References

Adebowale, Y. (1996, July 5). Oil Woes: A Four-Year record of fuel scarcity shows a worsening crisis in Nigeria. *Newswatch Magazine*. P.10.

Adeniyi, Olusegun (2007, 18 January). Playing with fire (1). *Thisday.* P. 8.

Adeyemo, A. M. (2002). The Oil Industry, extra-ministerial institutions and sustainable agricultural development*:* A Case Study of Okrika L.G.A. in Rivers State, *Nigeria. Journal of Oil and Politics*, 2(1),60.

Ali, A. (2006). Pipeline *sabotage in Nigeria and oil pollution damage out of context*. Retrieved October 21, 2006, from http://www.amanaonline.com/ art_pipeline.htm.

Akintola, T. (2006). *Pipeline vandalization and oil scooping in the Niger Delta and Others*. Retrieved October 21, 2006, from http:www.african conservation.org/dcforum/DC Forum ID29/11.html.

Akpakpan, E. B. (1993). *Crossroads in Nigerian development*. Port Harcourt: New Generation Publishers.

Akpieyi, J. J. (1997). *Pipeline Network-Its impact on petroleum. distribution in Nigeria*. Lagos: PAD NNPC

Akpomera, E. (May 29, 2008). *Pipeline vandalism and crude oil theft; the ecological and economic impact*. A paper presented at a media seminar organized by Shell Petroleum Development Company (SPDC) on pipeline vandalism and illegal oil bunkering in Benin City, Edo State.

Amanze-Nwachukwu, C. (2009, 2 January). Boxing day tragedy: It is time for solution. *Thisday*. P. 12.

Brume, F. (2006). *Oil pipeline vandalization in the Niger Delta: the way out*. Retrieved October 21,2010, fromhttp://www.nigerdeltacongress. com/ oaricles/oil.htm.

Energy Information Administration, U.S Department of Energy (2005). *A profile of Nigeria*. Retrieved October 21, 2010 from http://www.eia.doe. gov/emeu/cabs/Nigeria/Oil.html.

Egberongbe, F. O. A. (2006). *Oil Spill Disaster monitoring along Nigerian coastline*. Paper presented at 5th FIG Regional Conference: Promoting Land Administration and Good Governance. Accra, Ghana.

Ekeng, E. E. (1999). *The Impact of environmental degradation on economic growth and development in Nigeria.* Unpublished project, Department of Economics, Bayero University, Kano (BUK).

Ikelegbe, A., (2006). The economy of conflict in the oil rich Niger Delta Region of Nigeria. *Journal of Asian and African Study*. 5(1).

NDRDMP (Niger Delta Regional Development Master-plan) (2006).– Facilitated by the Niger Delta Development Commission (NDDC) in partnership with the nine states' governments, L. G. As, Oil Companies, Civil Society Organizations and Communities in the Niger Delta.

Nwachukwu, M. U. (2008). The Impact of pipeline related problems on petroleum products distribution in Nigeria. *Nigerian Journal of Renewable Energy*. *20,10.*

Ogbeifun, L. B. (2007). *Effects of petroleum products' pipelines vandalism on society, employee and organizational productivity: The Dilemma of downstream operations in Nigeria*. Retrieved October 25, 2010,fromhttp//www.louisbrownogbeifun.com/?

Onuoha, F. (2006). *Poverty, pipeline vandalisation/explosion and human security: Integrating disaster Management into Poverty Reduction in Nigeria.* Nsukka: Great AP Express Publishers.

Olusola, B. (2010). *Pipeline vandalism still threatens human lives, economy* Retrieved October, 25, 2010, from http://www.businessdayonline.com/index

Orubu, C.O. (2006). Water resources, environment and sustainable development in Nigeria. *Journal of Human. Ecology.*, 19(3): 169-81SPDC (2002). People and the environment. Annual Report.

Twumasi, Y. & Merem, E. (2006). GIS and remote sensing applications in the assessment of change within a coastal environment in the Niger Delta Region of Nigeria. *International Journal of Environmental Research & Public Health.* (3)1, 98-106.