Effects of Oil Exploration on Agricultural Development in Nigeria, 1990-2017

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Abstract
The study researched the effect of oil exploration on agricultural development in Nigeria. Oil exploration has led to environmental problems in the producing communities. This has adversely affected livelihood activities in agriculture leading to low income. The purposes of the study include examining the effect of gas flaring on agricultural output; determine the effect of oil spill on agricultural output; examine the effect of soil pollution on agricultural output in Nigeria. Information was gotten from the Central Bank of Nigeria (CBN) bulletin and World Bank Environmental and Growth Index from 1990 to 2017. Descriptive statistic and the Vector Error Correction Method of analysis were used to analyze the data. The Johansen co-integration test carried out found that a long run association occurs among the considered variables. The outcome showed that air pollution (AP) is negatively and significant related to agricultural development, proxied by agricultural output, in Nigeria; and also there is a negative and significant relationship between agricultural development and water pollution (WP). The result also showed that an undesirable and important association occurs amongst agricultural development and soil pollution (SP). The result of the VECM indicated that the coefficient of determination is 0.53. This means that approximately 53 percent change in the dependent variable AGRO is explained for by the independent variables (AP, WP and SP), whilst the remaining 47 percent is explained for by other variables not included in the model. The F-statistic indicates the VECM estimate is statistically significant. The ECM (-1) -0.676 is rightly signed. This shows the speed of adjustment of the variables. This implies that the variables move quickly to convergence. The study calls for a strict enforcement of environment laws governing oil exploration and exploitation in Nigeria. Government should promote and initiate intervention programs such as investment in research and development, carbon tax policy and other regulation policies to mitigate the activities of oil companies in Nigeria. That government at all levels in collaboration with oil companies should endeavor to put adequate security in place to check the nefarious activities of those who vandalize oil installations.

Keyword: Oil, Exploration, Agriculture, Development

Introduction

Crude oil a major global resources with its contribution to contemporary global economic activities. The primary phase in the crude oil chain is exploration. Oil exploration is the quest and drilling of crude oil by oil geologist and geophysicist for oil reserves underneath the earth's surface. Oil exploration negatively affect the earth's biosphere, it discharges toxins and ozone harming substances into the air in this way corrupting the biological system due to the discharge of hazardous wastes into the environment

The discovery of oil in 1956 in Oloibiri then in Rivers State but now in Bayelsa State marked the commencement of oil exploration in Nigeria. The beginning of oil exploration came with its attendant environmental consequences and consequently disrupted the economic configuration of the oil bearing communities.

Oil exploration has prompted environmental issues for oil bearing communities. This has unfavorably influenced agriculture which hitherto was the major occupation of the people, thereby compelling the people to search for alternative ways to earn a living and sustenance.

The discharge of oil substances or items into the streams, lakes, waterways, shorelines, oceans, seas and land can be identified as the major cause of restiveness in the Niger Delta, which arises from the neglect of the environment resulting in extreme impoverishment of the peoples of the region. When oil spill occurs, it becomes lethal and thus makes water and land contaminated and threatens the rich coastal habitat. The fish in the water is a major carrier of trace elements that could be detected in the understanding of pollutants and monitoring the quality of the environment for the survival of species in the aquatic habitat (Plessl *et al.* 2017).

Nwankwo and Irrechukwu (1981) reported that the people on whose land the crude oil is extracred has not benefited significantly despite oil exploration in their area for over fifty years.

Oil exploitation involves land acquisition by the multinational companies for pipelines and other installations, these results in the displacement of farm settlements and destruction of water bodies occasioned by alteration of the peoples' way of life (Okoli, 2006). .

Omuta (1985) stated that vegetal destruction due to construction of oil installation and infrastructure such as offices, camp sites, platforms, gas plants, flow stations etc is one of the major ways in which oil exploration has impeded agricultural output.

Okonta et al (2004) evaluated the socioeconomic and environmental effect of oil exploration in Edjeba and Kokori communities in Delta state. 100 respondents drawn from crop, animal and fish farmers formed the population of the study. The findings highlighted that oil exploration has greatly damaged farm lands and water bodies occasioned by oil spillage with its resultant effect on agricultural output thus reducing the farmers' annual farm income.

Objective of the Study

The broad objective of the study is to examine the effect of oil exploration on agricultural development in Nigeria. Specifically, the study was to:

i Examine the effect of gas flaring on agricultural output;

ii Determine the effect of oil spill on agricultural output;

iii Examine the effect of soil pollution on agricultural output

Theoretical Literature

Resource Curse Theory

The resource curse alludes to the conundrum that those nations with a bounty of common assets (like oil, jewels, gold, different minerals) have less financial development than nations that do not have these regular assets. This may occur for some, various reasons, incorporating a decrease in the intensity of other economic segments, under-interest in education and mismanagement of revenues gotten from the natural resources. Notwithstanding, there is some degree of contradiction with regards to the genuine reason for the resource curse among scholars.

Ecological Modernization Theory

Ecological Modernization theory propounded by Joseph Huber (1991) posits that there is a greater potential to bring about ecological sustainability and that the most viable panacea to the ecological crisis lies in innovation.

Joseph went further to say that industrial components can be altered to be environmental friendly to avoid longterm consequences, through the innovation of modern environmental practices coupled with economic reforms with a view to introducing effective environmental policies.

The theory further holds that through appropriate innovative conditions, business people will be attracted to environmentally dependable systems when there is market for them. The environment and the economy of the state ought to be treated as one element because environmental protection should not be seen as a barrier to economic development as both goals are mutually attainable. .

Ecological Modernization theory is important to this study as it is crucial to explaining the need to preserve of the environment as well as the need of the oil producing company, not only to explore and produce petroleum but also at the same time ensure that the environment is protected against degradation.

Empirical Literature

Yasuo (2006) evaluated the effects of oil exploration on agriculture in oil bearing communities in Bayelsa State using survey design. The population of the study included 500 farmers from the communities and 40 extension service agents covering the three zones in the state. The investigation clearly highlighted the debilitating effects of soil exploration on soil fertility, surface soil and soil texture. The study also showed how oil exploration has led to poor water infiltration, poor soil aeration, destruction of microorganisms, and increase in soil erosion occasioned by poor crop growth and yield.

In 2004, Igbatoyo surveyed the effect of oil exploration on agricultural development in Nigeria with Illaje an oil producing community in Ondo state as area of study. 100 farmers were selected as respondents using 48 item questionnaires to elicit responses from the farmers. The study stated that the over dependence on oil occasioned by the oil boom has massively affected agricultural development in Nigeria, and also established that oil exploration has severely destroyed the socioeconomic configurations of the oil bearing communities.

In 2004, Agbogidi, Okonta and Dolor evaluated the socioeconomic and environmental effect of oil exploration in Edjeba and Kokori communities in Delta state. 100 respondents drawn from crop, animal and fish farmers formed the population of the study. The findings highlighted that oil exploration has greatly damaged farm lands and water bodies occasioned by oil spillage with its resultant effect on agricultural output thus reducing the farmers' annual farm income.

Chidi Grace Okoli in 2006 did an examination the effect of oil exploration on the livelihood framework of rural households in Ogba/Egbema/Ndoni local government area of Rivers state the study specifically laid emphasis on the economic activities of the people prior to and after oil exploration started in that area.

Methodology

Research Design

The quasi-experimental research design is adopted in this study. It uses quantitative methods to establish the cause-effect relationship between variables and to control external variables effectively (Fraenkel & Wallen, 2006).

Data Collection Methods and Sources

This dissertation relies on secondary data from the Central Bank of Nigeria (CBN) Statistics bulletin and the National Bureau of Statistics (NBS). As a result of availability, the data for the study covered the period from 1990 – 2017. This method of data collection and the quasi-experimental research design fit into this dissertation as the study relies on secondary data sourced from different sources.

Data Analysis

The Vector Error Correction Model (VECM) was used to analyze the long term relationship among the variables under study. More so, some econometric tests were carried out. The statistical tests used in this study include: unit root test, Cointegration test, serial correlation test and heteroscedasticity test.

Model Specification

The model stated in this section is used to evaluate the relationship between variables that served as proxies for oil exploration and agricultural development. The functional relationships of the models are stated thus:

AGRO = f(AP, WP, SP) 1

Specifically, the econometric form of equations 1 is presented as follows:

Linear Form:

$AGRO_t = a_0 + a_1AP_t + a_2WP_t + a_3SP_t + e_{1t}$ 2

Log Form:

$AGRO_t = a_0 + a_1 LogAP_t + a_2LogWP_t + a_3LogSP_t + e_{1t}$ 3

The vector error correction model (VECM) is stated as:

$$\Delta AGROt = \pi_0 + \sum_{i-1}^{b} \pi_1 \Delta \log AP_{t-i} + \sum_{i-1}^{b} \pi_2 \Delta LogWP_{t-1} \sum_{i-1}^{b} \pi_3 \Delta logSP_{t-1} + et \quad 4$$

Where:

AGRO = Agricultural Output

AP = Air Pollution proxied by gas flared

WP = Water Pollution proxied by oil spillage

SP = Soil Pollution

$\pi_1 - \pi_3$, = Measure of short-run coefficients of the lagged explanatory variables

b = maximum lag length

Δ = first difference operator

Log = natural log

e_t = Random error term

RESULT AND DISCUSSIONS

DATA PRESENTATION

Table 1: Annual Summary Data on Agricultural Output, Air Pollution, Water Pollution, and Soil Pollution from 1990 – 2017.

Year	Agricultural	Air Pollution (CO2	Water Pollution	Soil Pollution

	Output (=N=m)	**in Metric Tonnes)**	**(in Million Tonnes)**	**(Chemical Waste in Million Tonnes)**
1990	106.63	300.00	217	126.45
1991	123.24	308.1	221	122.33
1992	184.12	311	224	126.34
1993	295.32	314	252	154.34
1994	445.27	337	247	149.54
1995	790.14	322	247	147.88
1996	1,070.51	332	249	148.75
1997	1,211.46	348	224	149.71
1998	1,341.04	370	249	151.53
1999	1,426.97	361	253	151.54
2000	1,508.41	379	252	152.23
2001	2,015.42	377	250	151.34
2002	4,251.52	373	252	153.43
2003	4,585.93	382	252	153.21
2004	4,935.26	381	253	154.25
2005	6,032.33	402	254	155.78
2006	7,513.30	427	276	160.01
2007	8,551.98	499	257	159.21
2008	10,100.33	459	261	161.23
2009	11,625.44	458	264	164.88
2010	13,048.89	446	267	167.00
2011	14,037.83	442	267	167.09
2012	15,816.00	442	261	168.42
2013	16,816.55	451	279	180.18
2014	18,018.61	453	298	194.77
2015	19,636.97	456	291	198.54
2016	21,523.51	458	287	189.82
2017	23,673.23	479	293	190.32

Source: Central Bank of Nigeria, other source

Trend Analysis

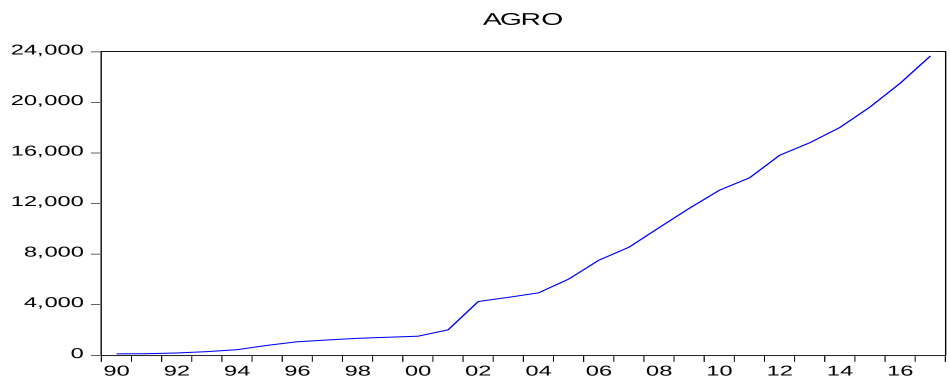

Figure 1: Trend of Agricultural Output (AGRO) from 1990 – 2017
Source: Author's presentation

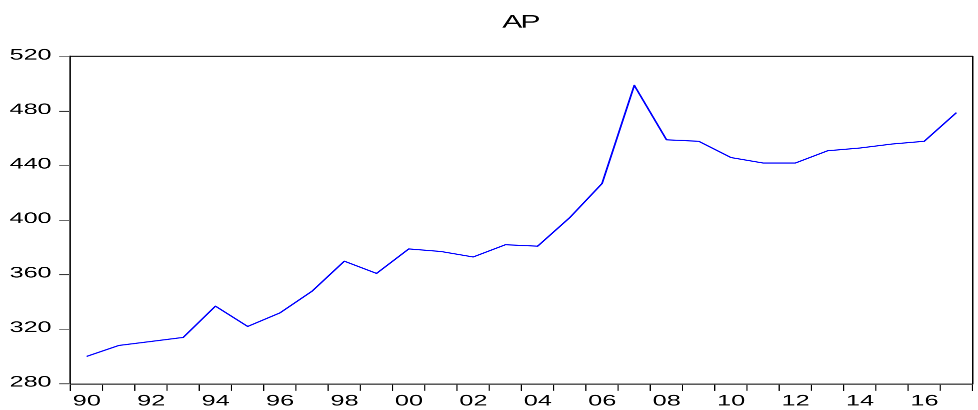

Figure 2: Trend of Air Pollution (AP) from 1990 – 2017
Source: Author's presentation

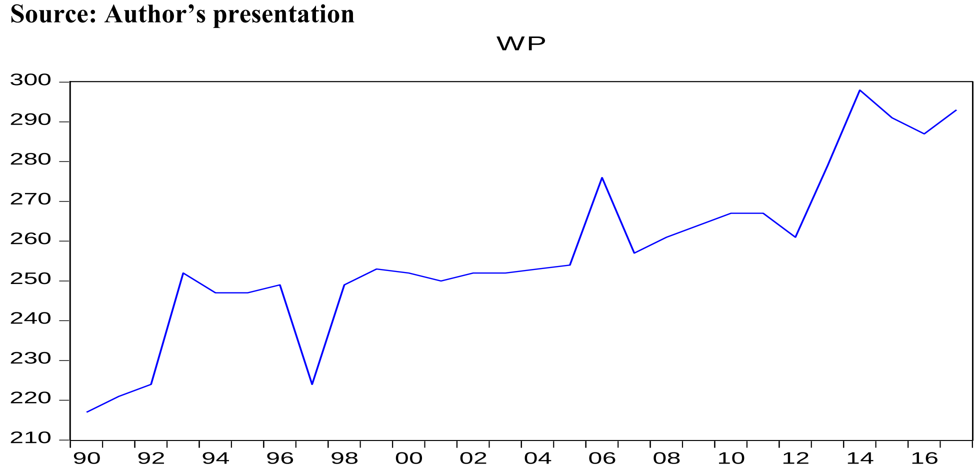

Figure 3: Trend of Water Pollution (WP) from 1990 – 2017

Source: Author's presentation

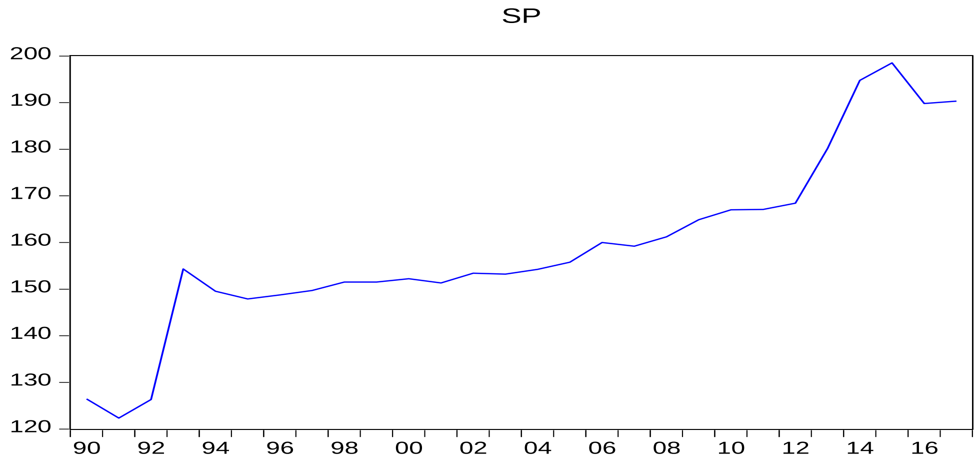

Figure 4: Trend of Soil Pollution (SP) from 1990 – 2017
Source: Author's presentation

The trend analysis for the variables of Agricultural Output (AGRO), Air Pollution (AP), Water Pollution (WP), and Soil Pollution (SP) are presented graphically in figure 1-4. Figure 1 above shows the trend of AGRO, evidence from the graph shows that AGRO remain steady over the period under investigation where AGRO recorded the highest rate in 2017.

Figure 2 represents the trend of air pollution (AP). It is observed that AP trend upward over time with the highest rate recorded in 2005. Figure 3 above shows the trend for water pollution from 1990 – 2017. Pictorial evidence from the graph explains that WP fluctuated over the period under consideration where WP recorded an all-time high in 2015 while recording all time lowest in 1996. Figure 4 above shows the trend of soil pollution, evident from the figure above shows that SP is mean reversal. As depicted in the graph above, the pollution rate peaked in 2015 while its lowest was recorded in 1991.

Unit Root Test

One of the tests conducted on the variables under investigation is the unit root using the Augmented Dickey-Fuller approach. The unit root test is instrumental in ascertaining the order of integration of the underlying series. The outcome of the test is presented in table 4.3 below:

Table 2 Results of ADF Stationary Test on the Variables

Variable	Level/ First/ Second diff.	Calculated ADF t-stat	ADF Critical value at 5%	Order of Integration
AGRO	Level	-3.334334	-2.981038	I(0)
AP	Level	-1.324632	-2.981038	
	First	-5.341222	-2.986225	I(1)
WP	Level	1.678417	-3.012363	
	First	-5.334592	-2.986225	I(1)
SP	Level	-0.562671	-3.114841	
	First	-4.276711	-2.991878	I(1)

Source: Author's Computation from E-views 9

From table 2, it was discovered that AGR is stationary at level. This is evidenced on the fact that the t-statistics in absolute value (-3.334334) is higher than the critical value (-2.981038). This implies that, the value of AGRO evolve around a zero mean at level. In addition, AP, WP, and SP were not stationary at level but became stationary at first difference. The reason for the non-stationary attribute previously found in AP, WP, and SP might be due mainly to the characteristics of time series data. Haven provided proof that the variables are integrated using the ADF test, Granger and Newbold (1974) opined that such integrated variables are liable to exhibit long run relationship. On the backdrop of this, the Johansen test of Cointegration was conducted to estimating the long-run convergence of the variables used in the model.

Co-integration Test

The Cointegration test conducted mainly to ascertain if the variables exhibit long run relationship is divulged in table 3 below:

Table 3 Johansen Cointergration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.724920	65.93645	63.87610	0.0332
At most 1	0.546316	33.66907	42.91525	0.3039
At most 2	0.366297	13.91021	25.87211	0.6650
At most 3	0.095374	2.505840	12.51798	0.9293

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.724920	32.26738	32.11832	0.0479
At most 1	0.546316	19.75886	25.82321	0.2572
At most 2	0.366297	11.40437	19.38704	0.4725
At most 3	0.095374	2.505840	12.51798	0.9293

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Author's Computation from Eviews 9

The Cointegration test was conducted to ascertain if the variables have long term convergence. The Johansen Cointegration test result is presented in table 3. This is based on the Trace and Maximum Eigen value statistics. The result as displayed in table 3 showed that the computed values of Trace statistics have 1 cointegrating equation. This implies that the considered variables move together in the long run, thus depicting the presence of Cointegration. The result of the trace test suggests that at most 1 Cointegration equations exist. The Eigen value test also affirms to the presence of long run association between the considered variables. The Trace test and the Eigen value test suggest that at most one (1) Cointegration equation is statistically significant. In summary, both the Trace test and the Eigen value test confirm the presence of Cointegration or long-run relationship among the variables, thus necessitating the conduct of ECM.

Regression Estimation Result

Regression Result (Static Regression Analysis)

The conservative long run regression analysis chosen is the log linear specification and the result of the undertaken analysis is captured in table 4 below:

Table 4 Static Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.70837	24.66243	-1.326243	0.1978
AP	-0.238443	0.165433	-1.441324	0.2721
WP	-0.218737	0.139004	-1.573602	0.5475
SP	-0.303188	0.112512	-2.694717	0.0001

R-squared	0.647780	Mean dependent var	61.91852
Adjusted R-squared	0.613455	S.D. dependent var	10.02382
S.E. of regression	6.331065	Akaike info criterion	6.636454
Sum squared resid	996.1591	Schwarz criterion	6.828430
Log likelihood	-75.39210	Hannan-Quinn criter.	6.693539
F-statistic	24.58250	Durbin-Watson stat	1.966413
Prob(F-statistic)	0.000023		

Source: Own computation via Eview 9.

The long run regression analysis chosen is the log linear specification of the ordinary least square and the result of the undertaken analysis is presented in table 4 above. With reference to the regression result shown in the table above, the coefficient of determination (R^2) is 0.647. This means that 64.7 percent change in the dependent variable (AGRO) is explained by the change in the independent variables (AP, WP and SP). The remaining 35.3 percent change in AGRO is explained by variables not included in the model, which is accounted for by the stochastic term. Focusing on the coefficients of the independent variables, the coefficient of AP (-0.238) means that the relationship between AGRO and AP is negative. This means that a unit change in the air pollution necessitates or produces a 0.238 unit change on the agricultural output holding other independent variables constant. A negative relationship was found to exist between water pollution and agricultural output as indicated by the coefficient of WP of -0.218. This by extension signifies that, a unit change in WP will result in a 0.218 unit decrease in AGRO. The relationship between SP and AGRO was discovered to be inverse by reason of the conducted analysis. The coefficient of SP divulged that a unit increase in SP by -0.303 decrease the AGRO by 30.3 percent. The Durbin-Watson statistic value of 1.9 is quite close to 2 showing autocorrelation.

The probability values presented in table 4.2 indicates that the coefficients of AP and WP are not statistically significant but SP is significant at 5 percent level of significance. This by implication means that table 4 can be relied upon in making predictions concerning soil pollution and agricultural output. The Durbin-Watson statistic indicates that the model is adequately specified and not spurious. Further analysis carried out revealed that the entire model is statistically significant at 5 percent level of significance as given by the Prob (F-Statistic) of 0.000023.

Table 5: Estimated VECM

Cointegrating Eq:	**CointEq1**			
AGRO(-1)	1.000000			
AP(-1)	-0.129454 (0.03780) [-3.42438]			
WP(-1)	-1.137442 (0.57794) [-1.96811]			
SP(-1)	-1.220231 (0.65642) [-1.85893]			
C	-111.0336			
Error Correction:	D(AGRO)	D(AP)	D(WP)	D(SP)
CointEq1	-0.676009 (0.21186) [-3.19088]	1.106693 (0.90708) [1.22007]	-1.135428 (0.29417) [-3.85971]	-0.365174 (0.23459) [-1.55666]
D(AGRO(-1))	0.442052 (0.34587) [1.27811]	-0.971724 (1.48084) [-0.65620]	0.257813 (0.48025) [0.53683]	-0.305260 (0.38297) [-0.79708]
D(AGRO(-2))	0.838790 (0.27880) [3.00859]	-0.187642 (1.19369) [-0.15719]	1.379396 (0.38713) [3.56317]	1.071178 (0.30871) [3.46983]
D(AP(-1))	-0.045343 (0.05972) [-0.75932]	0.009060 (0.25567) [0.03544]	-0.057831 (0.08292) [-0.69745]	-0.014995 (0.06612) [-0.22678]
D(AP(-2))	-0.011579 (0.05521)	0.099770 (0.23639)	0.039599 (0.07666)	-0.010394 (0.06113)

	[-0.20973]	[0.42206]	[0.51653]	[-0.17002]
D(WP(-1))	-0.523204	-0.976271	0.216891	0.509425
	(0.20601)	(0.88202)	(0.28605)	(0.22811)
	[- 2.53976]	[-1.10685]	[0.75823]	[2.23326]
D(WP(-2))	-0.147061	0.049020	-0.129186	0.116589
	(0.17625)	(0.75464)	(0.24474)	(0.19516)
	[- 0.83437]	[0.06496]	[-0.52785]	[0.59739]
D(SP(-1))	-0.491369	1.994000	0.150709	-0.058520
	(0.28851)	(1.23528)	(0.40061)	(0.31947)
	[-1.70311]	[1.61421]	[0.37620]	[-0.18318]
D(SP(-2))	-0.515535	-0.912073	-0.643763	-0.955209
	(0.24911)	(1.06656)	(0.34590)	(0.27583)
	[-2.06954]	[-0.85515]	[-1.86114]	[-3.46298]
C	0.641639	6.068323	1.431317	2.438744
	(1.39472)	(5.97159)	(1.93665)	(1.54437)
	[0.46005]	[1.01620]	[0.73907]	[1.57912]
R-squared	0.531810	0.274799	0.709606	0.603380
Adj. R-squared	0.330831	-0.191401	0.522925	0.348409
Sum sq. resids	368.6433	6757.872	710.7746	451.9939
S.E. equation	5.131439	21.97055	7.125280	5.682014
F-statistic	2.766932	0.589445	3.801159	2.366471
Log likelihood	-66.83583	-101.7394	-74.71414	-69.28190
Akaike AIC	6.402986	9.311620	7.059512	6.606825
Schwarz SC	6.893842	9.802476	7.550368	7.097681
Mean dependent	1.179167	6.125000	2.625000	2.645000
S.D. dependent	5.850974	20.12853	10.31593	7.039063
Determinant resid covariance (dof adj.)		8356924.		
Determinant resid covariance		967639.6		
Log likelihood		-301.6095		
Akaike information criterion		28.80079		
Schwarz criterion		30.96056		

Source: Author's Computation fromEviews 9.0

Based on the confirmation that the variables under investigation have long run relationship, the error correction mechanism was brought into the fray to assist in scrutinizing the dynamic and long run convergence of the variables. The estimated VECM is reported in table 4 above.

The result of the VECM as presented in table 4 indicated that the coefficient of determination is 0.53. This means that approximately 53 percent change in the dependent variable AGRO is explained for by the independent variables (AP, WP and SP), whilst the remaining 47 percent is explained for by other variables not included in the model. The F-statistic indicates the VECM estimate is statistically significant. The ECM(-1) -0.676 is rightly signed. This shows the speed of adjustment of the variables. This implies the variables move quickly to convergence.

From the VECM result presented in table 5, it could be observed that agricultural output and air pollution (AP) are negatively related in both the short run and long run given the signs of the coefficient. In a similar finding by Ewubare and Okadigwe (2016) who examined the effect of environmental emission and dispersion of pollutants from black carbon on the income of rural farmers in Etche in Rivers State. It was reported that gas flaring has negative impact on farm produce and on their income as well. This connotes that increasing air pollution leads to a decrease in agricultural output in Nigeria. The t-statistic indicates that air pollution has no statistically significant effect on agricultural output in Nigeria. Therefore, we conclude by rejecting the null hypothesis which states that there is no significant relationship between agricultural output and air pollution in Nigeria at 5% level of significance.

Agricultural Output and Water Pollution

The relationship between agricultural output and water pollution was found to be negative given the negative sign of the coefficient. This connotes that increasing water pollution will result in a decrease in agricultural output and vice versa. This means that poor agricultural output in Nigeria can be attributed to water pollution evident in the coastal areas of Nigeria where fishing is the main stay of their economic activities. Studies by Ojimba (2012), despite the negative effect of water pollution on agricultural output in Nigeria, it statistically confirmed that water pollution and agricultural output in Nigeria has statistically significant relationship in the long run. Therefore, we conclude by rejecting the null hypothesis which states that there is no significant relationship between agricultural output and water pollution in Nigeria at 5% level of significance.

Agricultural Output and Soil Pollution

The empirical findings of the study as shown in table 5 disclosed that the relationship between agricultural output and soil pollution is negative given the negative sign of the coefficient. This implies that increase in soil pollution from the manufacturing companies, oil companies in oil producing communities, domestic waste can lead to reduction in agricultural output in Nigeria. The finding conforms to the investigation conducted by Ekpenyong and Udofia (2015) who reported the consequences of oil spill on sea-food safety in some coastal areas in Akwa Ibom. Similarly, the findings of Paul (2015) also confirm the outcomes of the current study. Oil companies operating in Nigeria have contributed to increasing the level of soil pollution. This goes further to show that most economic activities, especially agriculture depends on the level of soil pollution. The t-statistics indicated that soil pollution has significant effect on agricultural output in Nigeria based on the 5% significance level. Therefore, we conclude by rejecting the null hypothesis which states that there is no significant relationship between soil pollution and agricultural output in Nigeria at 5% level of significance.

Conclusion and Recommendations

Oil exploration has been advanced in the literature, mostly by economists and environmentalists, as a major challenge to economic development. Its effect is based on the notion that an increase in air, water and soil pollution particular from gas flaring and oil spillage will reduce the level of agricultural activities, and disrupts agricultural development. Consequently, the study attempted to examine the impact of oil exploration on agricultural development in Nigeria with concentration on the effect of air pollution proxied by gas flaring, water pollution and soil pollution proxied by oil spillage on agricultural output. The study concluded that oil exploration has negative effects on agricultural development during the period under study from 1990 – 2017. It was recommended that there should strict enforcement of environment law governing oil exploration and exploitation in Nigeria. Government should promote and initiate intervention programs such as investment in research and development, carbon tax policy and other regulation policies to mitigate the activities of oil companies in Nigeria and government at all levels in collaboration with oil companies should endeavor to put adequate security in place to check the nefarious activities of those who vandalize oil installations.

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