Environmental impacts of gas flaring essay

Technology, Development

Results and Discussion

4. 1Introduction

In environmental Chapter Four this study will analyze the secondary data from the Dow Jones as reported in the Wall Street , the Nigerian National Petroleum Statistical Bulletin found in the “ Nigeria Gas Production and Use 1970 to 2008” table from ECONOMIC ANALYSIS OF WASTAGES IN THE NIGERIAN GAS INDUSTRY. It will go on to combine elements of the two creating a more comprehensive picture of the environmental impacts of gas flaring in Nigeria and the Nigerian Delta region. (See: ADDENDUM D - 1995 to 2008 Comparison Chart) Then it will further utilize a Qualitative Analysis to draw out and make generalizations based upon the information structure created from the Quantitative Research and the data sets provided by the various information sources. These information sources include, but are not limited to: ” Brief Summary of the Nigerian Crude Oil and Gas Integrity” Group, 2012), IMPACT OF PETROLEUM DEVELOPMENT ON THE ENVIRONMENT: A CASE STUDY ON THE NIGER DELTA , and Gas Flaring in the Niger Delta: the Potential Benefits of its Reduction on the Local Economy and Environment. .

4. 2Political

The finding of a” Brief Summary of the Nigerian Crude Oil and Gas Integrity” , shows that many of the prime contracts for exploitation of petroleum resources were granted to Shell Oil Development in the 2nd round of contract assignments. These contracts were granted in spite of Shell’s abysmal record in reducing flaring. The implications of corruption of the bidding system are made clear by a review of ADDENDUM E - Winners of the

Second Round Concessions, ADDENDUM B - Nigerian Gas Production & Use, and ADDENDUM E - Value of Gas Flared. This review demonstrates that oil companies did not reduce gas flaring until the market value of gas increased. Their overwhelming concern for corporate profit at the cost of the Nigerian people and in violation of their laws is used by Shell Oil Development Company itself as a reason why they did not make greater efforts to end the flaring process. In its corporate report on Gas Flaring it states that it is necessary to " create demand for Nigeria's gas to encourage further investment." . This is in complete disregard of the laws mandating that the practice of flaring stop at all costs and the moral consideration that it is wrong to place corporate profits above human life.

This disregard for law and morality has not gone unnoticed and legal actions have been instituted in a variety of forums including International and United States Courts. . . The government's failure to enforce its own laws in favor of pandering to the oil exploitation companies has resulted in deep political unrest within Nigeria as well. . A review of the amount and percentage practices regarding gas flares reveals that flaring practices dropped off sharply as the World Justice Systems began to address these legal and human rights issues, (See: ADDENDUM D - 1995 to 2008 Comparison Chart).

4. 3Agricultural and Soil Quality

The study regarding the IMPACT OF PETROLEUM DEVELOPMENT ON THE ENVIRONMENT: A CASE STUDY ON THE NIGER DELTA , looks at the impact of oil exploitation and gas flaring upon the agro-industry in Nigeria. Prior to the discovery of oil in 1956, Nigeria was poised to be a prominent world agricultural exporter. Until 1970 Nigeria not only produced sufficient

agricultural products for its own use, agricultural exports also made up 75% of the country’s export earnings. Subsequently, oil has taken over as the primary national product. This is in regards to local consumption practices as well as exportation of agri-business products. The pollution caused by the oil industry and their flaring practices polluted the environment and made unsuitable for agricultural use. As a result, Nigeria is now primarily a food importer instead of an exporter. These lost revenues resulting from this aspect of flaring and oil exploitation usually escape the calculations when the cost of flaring is evaluated. . The failure to consider these financial losses does not dispel the reality that they are real. This was the finding by The Hague regarding the landmark case filed there by the Friends of the Earth on behalf of Nigerian farmers and fishers who lost their livelihood because of Shell Oil Leaks. . This problem was examined for the Akwa Ibom State in2002 and reported on in Perception on Effect of Gas Flaring on the Environment, This study concluded that “ soils of the study area are fast losing their fertility and capacity for sustainable agriculture”, “ There is a need to stop gas flaring to save the physical environment from total degradation.” and ” procedures should be put in place to rejuvenate those lands that have been degraded by gas flaring.” .

This study only addresses the losses and destruction of a small region. The table in ADDENDUM D - 1995 to 2008 Comparison Chart shows that 75772 million cubic meters was flared in Nigeria in 2002. Accordingly, the damages in lost agricultural benefits must be multiplied to account for the vast areas degraded by flaring. Agriculture adds to the value of the real property in the region where it is situated instead of diminishing it. This effect of reduced

adjacent property value is another factor that remains unaccounted for.

4. 4Human Health

The most tragic result of the irresponsible gas flaring practices employed by the oil exploitation companies is the effect on human health and life spans. . This is why the United States Courts repeatedly ruled in favor of the plaintiffs in actions brought forward into their justice systems. . . . The Friends of the Earth analyzed data from the World Bank and concluded that in one year in the Bayelsa State gas flaring would likely cause 49 premature deaths, 4, 960 respiratory illness among children, and 120, asthma attacks. . That is in only one year in one region. The extent of the impact of flaring must take into account the entire nation of Nigeria. To put this in a greater perspective, in 2005, the year this study was released 23429 million cubic meters was released in Nigeria. (See: ADDENDUM D - 1995 to 2008 Comparison Chart). Therefore the data in the Bayelsa report is data must be multiplied over the nation and across the span of years in which flaring has been practiced in order to understand the full implications. This same study also reported that “ according to the U. S. EPA ‘ It has been clearly established and accepted that exposure to benzene and its metabolites causes acute non-lymphocytic leukemia and a variety of other blood-related disorders in humans’” .).

4. 5Climate Change

As has previously been noted, the damage created by Nigerian gas flaring is not just an effect felt in Nigeria Delta region. This practice has contributed to the overall Climate Change affects felt around the globe. These exploitation practices have far-reaching effects that are only now beginning to be fully realized. As studies on atmospheric structure, air quality, temperature

changes, sea level changes and water resources progress it becomes increasingly evident that further climatic devastation is inevitable. .

The most recent data released on Global Warming proves that the use of nitrate fertilizer contributed to an increase in nitrous oxide in the atmosphere. Nitrous oxide effects global warming 286 times more than carbon emissions. . Converting natural gas to fertilizer as proposed by the Ossiomo Ammoni-Aurea Project would increase the levels of nitrous oxide and increase the effects of global warming in a 286 to 1 ratio over carbon dioxide. . The presence of this greenhouse gas exacerbates the effect of global warming and the rise in ocean levels. . Because the Nigerian Delta region incorporates large areas of tidal estuaries it is directly influenced by rising sea levels. , .

There are times when “ errors” in data are attributable to deliberate misinformation provided by the governments and oils companies. Keith R. exposed this practice when he updated the Temas Blog. Using satellite imagery he showed how flaring as monitored from space. This procedure provides a way to confirm the government or corporate reports on flaring. The satellite analysis was “ commissioned by the World Bank’s Global Gas Flaring Reduction partnership (GGFR), the alliance launched by the Bank and Norway at the World Summit on Sustainable Development in 2002 . While the GGFR includes 14 oil-producing nations and 10 oil & gas multinationals” “ The satellite study was actually executed by scientists at the US National Oceanic and Atmospheric Administration (NOAA). The US is both donor and country member of GGFR.” . One of the results of this study was the discovery that although “ most experts thought Nigeria was the world’s

biggest gas flaring culprit; the study showed that the dubious honor actually belongs to Russia (which flares more than twice what Nigeria does).” . The following graphic shows how the gas flares in Trinidad and Tobago are seen from space. Although this is not a graphic of Nigeria it is illustrative as to how the gas flares in Nigeria and around the world are viewed and monitored by satellite.

4. 5Research Gaps in Gas Flaring Studies

The need for a consistent data review system has not escaped the notice of the oil resource exploitation industry and Shell Oil Development in particular. In A Prototype Environmental Data Management GIS for Shell Petroleum Development Company of Nigeria Limited, the writers observe three problem areas. These are

- difficulties in tracking and utilizing existing data
- inconstant data storage systems, including data only available in hard copy; and,
- Limited data sharing and linkage possibilities.

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They propose a database system in the Microsoft Access framework to address these existing problems, and provide future data management resources. This would allow them to produce a secure relational database to manage data along with the flexibility to search, select and present data in meaningful information reports. The data flow chart provided in this report provides for multi-user access and allows for a variety of data resource input, storage and reporting formats. (See Flow Chart as Follows).

This prototype EDM-GIS is described as “ a pioneering attempt by any oil and

gas corporation operating in Nigeria.” . Hopefully, a successful database resource will enable the oil exploitation industry to effectuate more efficient controls and management to reduce the effects of the environmental damage they create and mitigate the damage already created by their prior practices.

1995 to 2008 Comparison Chart