



## **Evaluation of the Socioeconomic Impacts of Okobo Coal Mining Project on Host Communities in Anpka Local Government Area, Kogi State, Nigeria.**

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### **Abstract**

*There is increasing mineral exploitation activities, that has led to increased environmental and socioeconomic effects as well documented. The positive and negative impacts of Okobo Coal Mining Project on host communities were evaluated. Field survey was conducted to assess the impact using questionnaire, observation, interview and focus group discussion. It was observed that Okobo coal mining project had positive and negative impacts on the communities. On the positive aspect, the company employed ninety-five people from the host communities, constructed 11Km feeder road from Ankpa to Okobo, drilled one borehole, and rehabilitated the existing one in Enjema. They also built a clinic and one block of three classrooms for the host communities in Okobo. Despite these benefits, all the predicted negative socio-economic impacts of the project manifested. Approximately seventy-nine per cent (78.78%) respondents recognized the negative socioeconomic impacts of the mining project. There was variation on the various impacts. For example, socio-economic impacts such as 'increase in community unrest and increase in respiratory diseases' had hundred percent (100%). Deprivation of farm lands, loss of employment, alteration in age-sex distribution, increase in cost of living/inflation, increase in communicable diseases and stress on existing security structures had 89.29%, 83.94%, 50.86%, 65.20%, 73.23%, 72.85% and 84.32% respectively. It was concluded that Okobo coal mining project had significant positive and negative socioeconomic impacts on the host communities. Although, the socioeconomic contribution of the Okobo Coal Mining Project may outweigh the negative to the nation at large, its negative impacts on the host communities outweighed the positive impacts currently.*

**Keyword: Coal, Mining, Socioeconomic impacts, Host Community,**

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### **1. Introduction**

The mining sector worldwide is greatly important for income generation, employment, economic growth, development and competitive advantage (Oelofse *et al*, 2008 cited in Oladipo *et al.*, 2014). The contribution of mining to economic development is immense; mining has an essential foundation for human development through creation of wealth (Akume, 2014). It has been noted that "since mining projects are usually located in remote sites, mining companies have had to invest in physical and social infrastructure such as roads, schools, hospitals, electricity and water supplies. Communities within mine locations have generally been beneficiaries of some of such infrastructural

development. The general importance of the mining sector has been documented to include foreign exchange, employment and economic development (Nwajiuba, 2000). Coal is mined for a variety of reasons. For instance, coal has been assessed to be suitable for coke in steel manufacture because it has high calorific values and heat rising (Obaje *et al.*, 2005). Thus, there is a growing trend in mining sector and increasing mineral production. However, increasing mineral production has led to increasing environmental and socioeconomic effects which the formal has been well documented (Adekoya, 2003; Ghose 2004; Aigbedion, 2005; Ajakaiye, 2005; Aigbedion and Iyayi, 2007; Dung-Gwom, 2007; Mohapatra and Goswami, 2012; Kundu

and Ghose, 2016ab). The impacts of mining have led to most of the world's nations adopting regulations like Environmental Impact Assessment (EIA) to moderate the negative effects of mining operations on the environment and socioeconomic well-being of host communities. However, mining has continued to have significant effects on both the physical and socioeconomic environment despite the importance of in EIA in mitigating impact of mining activities.

Mining operations alter a site's soil and water quality thereby disrupting the ecological balance, natural landscapes, agricultural lands, forests, plantations and vegetation as well as the economic food and tree crops. Coal mining for instance has posed serious negative impacts on the physical, biological, and social aspects of the environment which have not be adequately addressed because of the 'purported' economic benefits which are associated with coal mining (Cashmore *et al.*, 2018). According the report of US EPA et al (2011) the social and economic impacts of a mining project can be both positive and negative. Socio-economic impacts can vary by location and size of the mine, length of the project from construction to closure, manpower requirements, the opportunities the mining company has for the local community employment and involvement, and the existing character and structure of the community.

Singh (2008) has it that coal mining, despite the very substantial benefits it **bestows** on society, stir **stronger motions**. A great ongoing social challenge for the mining industry is sustainable development and community acceptance of its role in society. The problem of mining-induced displacement and resettlement (MIDR) poses major risks to societal sustainability as follow:

(i) **Landlessness:** MIDR raises the significant risk of landlessness by removing

the foundations upon which productive systems, commercial activities, and livelihoods are articulated.

#### (ii) **Joblessness**

Princewill *et al.*, (2014) determined the views of respondents in Akwuke and Iva mine communities concerning the impact of coal mining activities on animal and plant species, pattern of settlement, pollution effect and health of people living in these two mined areas in Enugu, Nigeria. Data were generated through sample survey using a well-structured questionnaire and personal observation in the field. Khayaivorensis (mahogany) was the major tree species that had gone extinct (72% of respondents), and Geochelonesulcata (tortoise) was the major animal species that has gone extinct (80% of respondents) in the two mined areas. Sixty-five percent of the respondents said that water pollution was the most severe environmental impact of mining in Akwuke. The major health hazard caused by mining in Akwuke (55% of respondents) and Iva (65% of respondents) was blindness. Indeed, 82.5% of respondents indicated that mining affected the pattern of settlement in the two mined areas. Emphatically, coal mining negatively affected some of the socio-economic activities of the inhabitants of the mined area through removal of vegetation to access coal deposit vis-à-vis blasting, quarrying and crushing of coal.

The current economic diversification plans of the Nigerian government is predominantly on improving agriculture and mining of solid minerals. However, adequate attention has not been given to sustainability of coal mining and the implementations of environmental and social management plan (E&SMP) in an EIA are usually done haphazardly leading to manifestation of predicted impacts. This suggest why Okobo community has continued to seek for help over deplorable environmental and socio-economic conditions created by coal mining company in the community despite carrying

out an EIA with detailed mitigation measures in the E&SMP (TVC News, March 22, 2017). However, little or no study has evaluated the manifestation of the predicted socioeconomic impacts of Okobo Coal Mining Project on host communities. This study in a bid to bridge this gap aimed

## 2. Materials and Methods

Material used in this study include EIA report of Okobo coal mining project. Methods used for data collection are: questionnaire survey, observation interview and focus group discussion. This study reviewed the EIA reports of Okobo coal mining project and identified the predicted socio economic impacts, project stakeholders. Then field survey was conducted to assess the impact using questionnaire survey, observation, interview and focus group discussion.

The mining project has six (6) host communities (Okobo, Enjema, Okobo Ate, Okobo, Okpiko, Ejiga and Ofugolo) all in Ankpa Local Government Area in Kogi State. Four (4) communities (Okobo, Enjema, Okobo Ate, and Okobo Okpiko) were purposely selected based on their high vulnerability to the project than others. For representativeness, sampling considered the household spatiality. Thus, systematic sampling technique, a probability sampling method was used to select households to be sampled. As a result, three household intervals were used in household selection. Secondly panel sampling technique was used to select stakeholder's samples from the EIA process attendance list for focused group discussion.

Total samples of five hundred and twenty-three households were selected from the four (4) selected communities for the administration of questionnaire. The

to evaluates the predicted socioeconomic impacts of Okobo Coal Mining Project on host communities in Ankpa Local Government Area of Kogi State, Nigeria. To achieve this aim, the positive and negative impacts Okobo Coal Mining Project on host communities were evaluated.

distributions of questionnaire across these four communities were based on their population size obtained in the EIA (2011) report and projected to 2018 (Table1). Sample sizes were determined by Yamane (1973) a standard statistical formula:

$$S = \frac{N}{3 + N(ME^2)}$$

where S = sample size N = population  
ME = margin of error allowed (0.05).

**Table 1: Sample Size for Questionnaire Administration**

Selected Communities	Population in EIA in 2011	Projected Population to 2018
Okobo	800	996
Enjema,	5000	6225
Okobo Ate	900	1089
Okobo <u>Okpiko</u>	600	747
<b>Total</b>	<b>7300</b>	<b>9057</b>

Field observations were also undertaken to independently assess the various project affected communities and evidence of impacts. Focus Group Discussions (FGDs) were conducted to supplement the findings from the quantitative result. Consultations were held at various levels with stakeholders and representatives of host communities.

It was observed that Okobo coal mining project has both positive and negative impacts on the communities. On the positive aspect, the interview with the stakeholders

## Results and Discussion

### The Socio-Economic Impacts of Okobo Coal Mining

revealed that the four communities (Enjema, OkoboOkobo Ate, and OkoboOkpriko) nearest to the mine project site have benefited from the mining company. Benefits include employment (direct and indirect), improvements in infrastructure and expansion of businesses. It was discovered that the company employed ninety-five people from the host communities,

constructed 11Km feeder road from Ankpa to Okobo and have drilled one borehole, rehabilitated the existing one in Enjema, built a clinic and one block of three classrooms in Okobo for the host communities (Plate 1-5). However, interview with members of the host communities shows that the two boreholes are currently not functional.



**Plate 1: 11km Feeder Road from Ankpa to Enjema and Okobo constructed by the Coal Mining Company**  
Source: Field Survey, 2019



**Plate 2: A Non- Functional Borehole in Enjema Community Built by the Coal Mining Company**  
Source: Field Survey, 2019





**Plate 3: A Borehole Rehabilitated by the Coal Mining Company in Enjema**  
**Source: Field Survey, 2019**



**Plate 4: A three Classroom block in Okobo Built by the Coal Mining Company**  
**Source: Field Survey, 2019**



**Plate 5: Health Centre at the Site Built by the Coal Mining Company in Okobo**  
**Source: Field Survey, 2019**

Despite this benefits, all the predicted negative socio-economic of Okobo Mining Project like deprivation of farm lands and encroachment on community, increase in community unrest, increase in local population, alteration in age-sex distribution, increase in cost of living/inflation, increase in communicable diseases including STIs,

stress on existing security structures, increase in respiratory diseases, change in employment and income levels and loss of employment manifested in the communities given the recognition of impacts by respondents (Table 2). Table 2 present the frequency of socioeconomic impact recognition by respondents.

**Table 2:Negative Socio-Economic Impacts of Okobo Coal Mining Project**

<b>Impacts</b>	<b>Frequency</b>	<b>Percent (%)</b>
Deprivation of farm lands and encroachment on community	467	89.29
Increase in community unrest	523	100
Loss of employment	439	83.94
Alteration in Age-sex Distribution	266	50.86
Increase in cost of living/inflation	341	65.20
Increase in social vices	383	73.23
Increase in communicable diseases (incl. STIs)	381	72.85
Stress on existing security structures	441	84.32
Increase in respiratory diseases	523	100
Change in employment and income levels	446	85.28
Increase in local population	322	61.57
<b>Mean</b>	<b>412</b>	<b>78.78</b>
<b>Standard Deviation(SD)</b>	<b>74.53</b>	
<b>Coefficient of Variation</b>	<b>96</b>	

Table 2 showed that four hundred and twelve (412) respondents representing approximately seventy-nine per cent (78.78%) recognized the negative socioeconomic impacts of Okobocoal mining project. It also showed variation on the various impacts. For example, socio-economic impacts such as 'increase in community unrest due to the environmental and socioeconomic impacts experienced by the host communities and also Community Development Agreement (CDA) was not signed at the inception of the project in 2011 to enable the transfer of socio-economic benefits to the host communities, what existed between the mining company and the host communities from 2011-2017 was an oral agreement. It was gathered that CDA was signed with the 4 host communities in March, 2018. Legislatively mandated CDAs are likely to be more effective than voluntary CDAs because they provide an assurance not only that companies and communities will negotiate CDAs but also that the parties will meet their agreed commitments. Also, by establishing a common CDA framework, legislatively mandated CDAs help to ensure consistency of standards in approach to community development throughout the country, which may in turn help to promote equity in the way companies relate to their various host communities (Nwapi, 2017). For Dike (2017), the legal provisions of section 116 of the Nigerian Minerals and Mining Act (NMMA) 2007 are, therefore, a creditable attempt to prevent a repeat of the mistakes made in the Niger Delta in failing to provide a structured legal framework for community engagement and development.

The CDA is aimed at delivering sustained improvement in the quality of life to the host communities in line with sustainable development goals of ending poverty,

ensuring healthy lives and promoting well-being, empowering women and youths, providing access to water, promoting inclusive and sustainable economic growth and employment amongst other things. The CDA is a legally binding documents which according to the NMMA should address issues such as educational scholarships, training and job opportunities for indigenes of the communities; financial or other types of support for infrastructure development and maintenance of services like education, health, roads, water, and power; assistance in creating small scale/ micro enterprises; advertising agricultural products; and mechanisms for "environment and socio-economic management," as well as "local governance enhancement" (s. 116). Such agreements can provide project stakeholders with an agreed understanding of the attributes of project-assisted development, in ways that help manage expectations, reduce company-community conflicts, and facilitate mining companies to obtain their social license to operate.

Increase in respiratory diseases' had hundred percent (100%) due to the discharge of airborne particulate matters into the environment. All the respondents recognized that the coal mining project in Okobo has caused increase in community unrest and respiratory diseases. Socio-economic impacts such as deprivation of farm lands, loss of employment, alteration in age-sex distribution, increase in cost of living/inflation, increase in communicable diseases including. STIs, stress on existing security structures, change in employment/income levels and increase in local population had 89.29%, 83.94%, 50.86%, 65.20%, 73.23%, 72.85%, 84.32%, 85.28% and 61.57% respectively. Moreover, the standard deviation and coefficient of variation being 74.53 and 96 respectively shows disparity in the various impacts. The



result also showed that increase in community unrest and respiratory diseases are the most recognized socio-economic impacts of Okobo Coal Mining Project while socio-economic impacts such 'alteration in age-sex distribution and

increase in local population had least affirmations 50.86% and 61.57% respectively. The high recognition of respiratory diseases is obvious from observation of coal dust on the untarred road in the study area (Plate 6).



**Plate 6: Untarred Road Littered with Coal Dust in Okobo**

According to Akabzaa and Darimani (2001) "the discharge of dusts poses health threats to the people in mining communities and its surroundings". This probably explains the hundred percent (100%) recognitions of respiratory diseases in the communities. Despite the EIA conducted by the coal mining company, all the predicted impacts manifested suggesting that the mitigation measure to prevent or minimize such impacts were not implemented.

### 3. Conclusions

Okobo coal mining project had significant positive and negative socioeconomic impacts on the host communities. Data from the survey showed that host communities have benefited from the mining project in terms of infrastructure provision and employment but several socioeconomic effects have also resulted from the Coal Mining Project which the most significant adverse impacts are community

unrest and respiratory diseases. Although, the socioeconomic contribution of the Okobo coal mining project may outweigh the negative to the nation at large, its negative impacts on the host communities outweighed the positive impacts currently. Thus, the coal mining project accounts for the significant manifestation of negative impacts that the communities are seeking for help. Thus, the company should improve on their responsibility in terms of social responsibility to reduce the negative socio-economic impacts of the coal mining activities.

The Federal Government of Nigeria in its quest to diversify the Nation's economy has identified Agricultural sector and Mining sector as the two most probable sources of income to complement or boost the GDP for national growth and development.



Conflict is one of the most important factors that can frustrate the gains of mining if not properly tamed.

Conflicts across mine fields in Nigeria are mainly as a result of breach of social licensing between the people and mining companies. There is lack of environmental education between the environmental regulation and enforcement. Mineral Title holders should be educated on their environmental obligations to their host

communities, and general awareness be given to the host communities on the nature of mining operations or legal knowledge to effectively negotiate and ensure that the CDAs do provide for social and economic contributions to promote the sustainability of the community. This usually affect the bargaining power on the side of the Community.

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