

Assessment of Development Indices in Nigeria's Bitumen Communities

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Abstract Nigeria is well endowed with bitumen, with its potentials of wealth generation and prosperity. It becomes imperative to ensure socio-economic development of the host communities in order to avoid a repeat of the crises that have characterized the Niger-Delta petroleum enclave where the inhabitants felt needs are not met in the provision of infrastructure and social services. This study assessed the inhabitants' perception of the availability of development indices in the bitumen communities, such that a framework for the provision of infrastructures along the needs of different communities can be developed. The sample was 1147 inhabitants. Data were collected using a questionnaire. ANOVA, MCA and Scheffe were used to analyse data. Findings showed variations in the indices of development and development needs of different communities. Infrastructures and social services should be provided according to the felt needs of different communities and local governments in the region.

Key Words: *Infrastructural Facilities, Social Services, Sustainable Development, Exploitation.*

1. Introduction

Tar sands or bituminous sands were discovered in Nigeria in the beginning of the 20th century around 1900. The Nigeria's tar sands rank among the five largest deposits in the World. It is suggested to be second only to the deposits in Venezuela and compatible with the large tar sands deposits in Alberta Canada and Trinidad (Adegoke, 2000).

The Nigeria's bitumen has the capacity to yield income higher than what accrues from petroleum industry. Besides the potential of saving the country's hard currency, its exploitation will provide jobs for Nigerians and give rise to the emergence of allied companies (Ebisemiju, 2000). The consequent development of the bitumen sector can through export earnings fetch Nigeria over six times the total revenue presently accruing from petroleum development (Nwosu, 2000).

Adequate supply of infrastructure is the bedrock of all development activities in any region (Nyong & Oladipupo, 2003). The greatest developmental programme that can be carried out in a mineral bearing community is to open it up-economically, socially, politically and technologically – to the outside world ((Nyong & Oladipupo, 2003)). This should be geared towards enhancing better housing; more secured tenure; greater access to water; sanitation, and waste management services and cleaner fuels; reduced urban pollution; and easier access to safe transport services (World Bank, 2002:17). This should embrace the community development approach to infrastructural development where the households in the communities are the target group, and that is why all development activities must be directed at them ((Nyong & Oladipupo, 2003)). Hence, projects need to be human – centred and aimed towards the development of the people. Sustainable community development programmes are contingent upon long-term strengthening of community viability. In mineral bearing communities, sustainability can be supported by mining practices that help convert natural resource capital into another local asset, sustainable human capital.(ESMAP, the World Bank, and ICMM, 2005). This may be in the form of skills and capacities that training, employment and education programmes can provide for local people.

2. Statement of the Problem

One of the greatest problems facing mineral activities in Nigeria and the World over especially in the 21st century is integrating such economic activity with environmental integrity and social concerns. Hence most nations and communities endowed with mineral resources, experience a kind of paradox of poverty amidst plenty. This is borne out of the fact that there is lack of proactive approach to the provision of indices of development in such communities. This is evident in the Niger-Delta petroleum enclave in Nigeria. The situation may not be unconnected with the fact that, the inhabitants of the host communities are not consulted in defining, designing and implementing development programme and priorities, their

felt needs are not elicited before infrastructures and social services are provided, thus the widespread apathy and rejection of such amenities. It is against this background that this study is out to assess the inhabitants' perceived availability of development indices in the bitumen communities in Nigeria, with a view to developing a framework for the provision of infrastructure and social services along the needs of different communities in the region.

3. Objectives of the Study

The main objective of the study is to carry out an assessment of the difference in inhabitant's perception of the availability of indices of development between the local governments areas in the bitumen region.

Develop a framework for sustainable provision of infrastructures and social services in the bitumen region.

4. Hypothesis

Ho1: There will be no significant interaction influence of residence on the perceived availability of indices of development.

5. Sample

The sample for the study was one thousand one hundred and forty-seven inhabitants of the bitumen communities.

6. Delimitation

The study was delimited to bitumen communities in Ondo State. Ondo State is located in the Southwestern part of Nigeria. It is located between longitudes 4.00° E and latitudes 5.45° N .Ondo State covers an area of over 14,595 square kilometers. Ondo State is bounded by Kwara ,Kogi and Ekiti States in the North, Edo and Delta States in the East, . Ogun, and Osun States in the West and by the Atlantic Ocean in the South.The bitumen communities are scattered over Okitipupa, Odigbo, Irele, Ese-Odo and Ilaje Local Government Areas. This area is popularly known as the southern part of Ondo State. The researcher's decision to restrict the study to Ondo State was borne out of the fact that half of the bitumen deposit in Nigeria is in Ondo State.

7. Instrument

Data were collected using a structured questionnaire tagged Indices of Development Questionnaire (IDQ). It was used to collect information from the respondents. It incorporated the four point rating with Very Adequate (VA), Just Adequate (JA), Not Adequate (NA), and Not Available (NA).

8. Data Analysis

Data were analysed using Analysis of Variance (ANOVA), Multiple Classification Analysis (MCA) and Scheffe

9. Findings and Discussion

Table 1: Summary of Analysis of Variance (ANOVA) showing the influence of residence on the indices of development between the local governments in the bitumen communities.

	Sum of Squares	DF	Mean Square	F	Sig. of F	Remark
Main Effects	4168.099	4	1042.025	17.755	.000	Sig.
V006(Residence)	4168.099	4	1042.025	17.755	.000	
Explained	4168.099	4	1042.025	17.755	.000	
Residual	67021.353	1142	58.688			
Total	71189.452	1146	62.120			

Table 1 above shows that there was significant difference in the indices of development between the local governments in the bitumen region ($F(4,1142) = 17.755, P < .05$). The mean scores which dictate the contributions of each of the independent variables to the level of significance is as follows: Irele (47.57), Ilaje (46.15), Okitipupa (43.86), Ese-Odo (43.37) and Odigbo (41.91) respectively. The hypothesis which stated that there will be no significant interactive main influence of residence on the availability of indices of development is rejected. UNDP (2006) held that experts defined infrastructure as the whole physical framework, within which all activity and other forms of development take place. Hence it submitted that the provision of infrastructure will be critical to achieving sustainable livelihoods in mineral bearing communities, and concluded that accessibility is a major livelihood issue. For example, inadequate options for transport, bad roads will practically cut off some communities from the main stream of activities and hence they will be unable to market their produce and often suffer high losses. Without health care or educational facilities within their communities, the local residents have literally no means to improve their welfare or income. Bitumen companies owe a duty of providing some of these facilities, only as corporate social responsibility and as complement to the role of government at all levels. But as is the case in the Niger-Delta oil enclave, according to UNDP (2006) these projects have not been able to make meaningful impact on livelihoods because of ineffectiveness of local governance. These projects, which could have complemented the developmental role of local governments virtually ended up as the only development projects in most of these communities. Again, the projects were implemented on ad hoc basis without any systematic link to any development plan either at the local or state government level. Consequently, in some cases, schools and hospitals were built without any teachers or para-medical staff to operate the infrastructure and hence the consequent unsustainability of such projects. The conditions for economic growth – whether in industry or services – are complex and will require planning and the building of substantial infrastructure (UNDP, 2006).

It suffices to point out that indices of development between the local governments in the bitumen region are disproportionately provided. The reason is not far fetched, the terrain of the region is not uniform, while some local governments are on land, and some are on marshy land. The questions then become how a mining development can assist a region in achieving sustainable development over the long term (Lapalme, 2003).

Leipzig et al. (2003) argue for renewed emphasis on the effectiveness of multi-sectoral linkages and in particular, make a case for multiple interventions in infrastructure as the key to reaching the Millennium Development Goals, and that different infrastructure projects can interact to provide benefits that are greater or lesser than anticipated. These interactions have to be explicitly considered as an essential component of any human poverty reduction strategy. For example, synergies exist between: connectivity infrastructure (roads, bridges, telecommunication, etc.) and fixed-point service infrastructure (schools, hospitals, markets, etc.); connectivity infrastructure and production-enhancing infrastructure (irrigation, land reclamation/improvements); production-enhancing infrastructure and utilities (water, electricity, sanitation, etc.); as well as among different types of utilities projects (electrical pumps needed for water projects) and even different types of water projects (safe drinking water, irrigation, flood control, etc.). Capturing these synergies requires balancing the needs of the individual communities with regional and national project coordination. Jahan and Macleery (2005) found that in the context of the overall infrastructure-poverty reduction- governance nexus, small-scale community-based infrastructure assume a special place. Compared with large-scale infrastructure projects, the small-scale community-based projects may present more insights with regard to poverty reduction and governance. Swada, (2000) posited that because of the nature, location, design and implementation process, small-scale infrastructure may bring more direct impacts on the lives of poor people. Small irrigation projects contribute immediately to agricultural productivity bringing tangible benefits to local farmers. A rural feeder road improves mobility of local communities and reduces transportation costs which have impacts on economic activities. Rural infrastructures create jobs locally. Rural electrification through small-scale electricity generation contributes directly to the well-being of rural households. A small-scale infrastructure facility raises overall productivity of the local economy through the construction and maintenance of local roads, the water supply systems, small bridges and local agricultural electrification projects, et cetera. There may be a high possibility to contribute directly to chronic poverty reduction through improving the average income levels of local communities. Jahan and Macleery (2005) submitted that in cases of small-scale and community-based infrastructure, local communities take part directly in making decisions regarding the nature of the infrastructure (what would serve them best), their locations and designs. In small scale community-based infrastructure, local communities can also take part in the implementation process.

Table 2: Multiple Classification Analysis showing the significant interactive main influence of residence on indices of development.

Variable+Category Grand Mean=44.55	N	Unadjusted Variation	Eta	Adjusted for independent + covariates deviation	Beta
V006: Okitipupa	431	-.69	.24	-.69	.24
Irele	227	3.02		3.02	
Odigbo	182	-1.19		-1.19	
Ese-Odo	142	-1.74		-1.74	
Ilaje	165	-1.59		-1.59	
Multiple R-squared					.059
Multiple R					.242

In the table, the mean scores of the different residence categories are: Okitipupa = 43.86, Irele = 17.57, Odigbo = 41.91, Ese-Odo = 43.37, and Ilaje = 46.15 respectively. Ilaje local government made the highest contribution on the significant difference in the indices of development between the local governments in the bitumen region, followed by Okitipupa, Ese-Odo, Odigbo and Irele respectively.

Table 3: Scheffe Multiple/ Pairwise Comparison of the indices of development of the local governments in the bitumen communities

		Odigbo	Ese- Odo	Okitipupa	Ilaje	Irele
Mean						
41.9066	Odigbo					
43.3662	Ese_odo					
43.8631	Okitipupa					
46.1455	Ilaje	*	*	*		
47.5727	Irele	*	*	*		

The pairwise multiple comparison table shows that there were significant differences between Odigbo and Ilaje, Odigbo and Irele, Ese – Odo and Ilaje, Ese-Odo and Irele Ilaje and Okitipupa and Okitipupa and Irele. This difference is due to the fact that the location and composition of the local government is different from one another. Odigbo is located on land while Ilaje is mostly on the water; Okitipupa and Odigbo are cosmopolitan and heterogeneous while Irele is indigenous and homogenous. Ese-Odo is located by water. The implication is that any developmental project should take care of these diversities in order to ensure sustainability. The characteristics of Odigbo and Ese-Odo, Odigbo and Okitipupa, Odigbo and Ilaje are similar, These local governments are inhabited by people of diverse socio-cultural background and as such are heterogeneous, hence developmental projects carried out in one can be replicated in the others,

10. Conclusion

From the findings of the study, it is evident that in the opinion of the inhabitants, provision of infrastructural facilities and social services has had significant influence on perceived sustainable development. The indices of development of bitumen communities vary from community to community and local government to local government, this finding therefore established that there were variations in the development needs of the different local governments in the bitumen region. Consequently, sustainable development of the region will require eliciting the felt needs of inhabitants of each local government and communities in the region.

11. Recommendations

Infrastructure linkage and multiple interventions should guide efforts at providing infrastructural facilities

Connectivity infrastructure (roads, bridges, telecommunication e.t.c.); fixed-point service infrastructure (schools, hospitals, markets, housing units e.t.c) and production enhancing infrastructure (water, electricity, sanitation e.t.c) should be provided synergiously according to the needs of different communities and local governments in the bitumen region.

Provision of infrastructural facilities in the bitumen communities must be in consonant with the needs of the generality of the inhabitants. Sustainable mining operation requires that engagement with local communities must begin at the exploration stage. Government and companies in consultation with inhabitants who have the right skills and authority develop plans for continuous engagement during the operational life- from exploration through to closure.

The community must be carried along in order to ensure that the mechanisms it proposes are considered appropriate.

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