

# Sustainability of Infrastructural Development Projects By Oil and Gas Multinationals in Niger Delta, Nigeria: The Case Of Water Projects in the OML 58 Communities of Total Exploration and Production Operations

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**Abstract:** Total Exploration and Production Nigeria Limited (TEPNG) is in the business of Exploration and Production of hydrocarbons in Nigeria. These oil and gas activities are carried out in her host Communities. TEPNG had always demonstrated her corporate social responsibility citizenship to communities in her operational domain and beyond. This strategy earned TEPNG the number one position among oil and gas multinationals in Nigeria that had cherish good relationship with her stakeholders. Multinational developmental responsibilities are driven by Memorandum of Understanding (MoU) and Corporate Social Responsibilities (CSR). The former operates on documented framework as working document while the latter is voluntary at the discretion of the operator. TEPNG had expended huge sum of money in the OML 58 Communities to establish and maintain infrastructure to enhance improved standard of living of stakeholders. The water projects in 16 communities attest to this claim. Surprisingly, there had been agitations for upward review of water maintenance contracts. This scenario had bedeviled TEPNG in the midst of increasing insecurity as a result of militancy activities. The youths had pitched tent against each cult group, a situation that had affected Multinational Oil and Gas activities in the OML 58. The crisis notwithstanding, the holders of maintenance contracts had continued to request for contract review. It appeared as information mis-match; hence it became imperative to assess the functionality of 16No water projects at Obagi, Obukegi / Ibewa / Akabta, Obigbor, Ede, Ogbogu, Erema, Obite, Akabuka, Oboburu, Ohali-Elu, Amah, Egita, Obiozimini, Idu, Itu – Ogba and Obiyebe. The objectives of the study were to; Determine Functionality, Effectiveness, SUSTAINABILITY and to justify Value for Money on OML 58 water projects. The study was also to identify the underlying critical success factors or otherwise that affected such infrastructural development project.

Methodology adopted considered volatility of the areas in terms of killings, kidnappings, armed robbery, rape and extortion regardless the presence of military personnel. Thus data was collected through questionnaire, personal interviews, personal observations, photography, security gap analysis, mapping / timing and informants. The respondents were women (mostly involved in the use of water for domestic activities), Youths (agitators for employment or ghost workers), chiefs / elders and the contractor maintenance staff. A total of 210 questionnaires were distributed out of which 160 (76%) were retrieved. Results emerged from descriptive statistical tools used in the analysis. Presentation was in frequency, percentage, pie chart, histogram and pictorials. Likert - type scale was used to quantify degree of Sustainability of OML58 communities' water projects.

Results revealed awareness and acceptability of the project by respondents, though desired purpose had not been met due to irregular supply. Inconsistent power supply as occasioned by vandalization or stolen composite generating sets were identified as major reason. Non maintenance of the water projects was eloquent regardless payments made to indigenous local contractors. This scenario triggered wastages and flooding because the contractors took an average of 14 days to attend to identified faults. When functional, access was never an issue as 72% of respondents had access to water 7 times a week. Sustainability of water projects in the OML 58

became problematic as the project increased high dependency on TEPNG. A total of 60% justified value for money on the projects but there was zero return on investment (ROI). It was recommended that an alternate source of potable water through Mono pump in strategic locations of the communities was ideal to reduce constant vandalizations and stealing in water facilities. Maintenance contract of each water project should be awarded to Community Development Committee (CDC) of each community since they live within the project vicinity and could be reached in the case of faults. This was identified as employment creation opportunity that has potentials of transforming youths and discourages militancy and cultism. There was need to start utility payment on all water projects so that they could be self sustaining.

Conclusively, the project was adjudged partially functional, not effective and not sustainable. Utility payment would justify Value for money while re-awarding contract would require capacity building as change process to usher safe working environment for Total Exploration and Production operations in the OML 58.

**Keywords:** Increased high dependency, Militancy and Cultism, Mono pump, wastages and flooding, Water Project maintenance contract.

#### Acronyms

TEPNG	Total Exploration and Production Nigeria Limited
MoU	Memorandum of Understanding
CSR	Corporate Social Responsibility
NGO	Non Governmental Organisation
OML	Oil Mining License
ROI	Return on Investment
VFM	Value for Money
CBO	Community Based Organisation
CSF	Critical Success Factors
SSI	Semi Structured Interview
PPP	Public Private Partnership
IFC	International Finance Corporation
NDDC	Niger Delta Development Commission
FIAS	Foreign Investment Advisory Service
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
PLA	Participatory Learning and Action
EFCC	Economic Finance Crime Commission
SPDC	Shell Petroleum Development Company
PMC	Project Management Committee
OIDA	Ontario International Development Agency

#### Introduction

Total Exploration and Production Nigeria Limited (TEPNG) is in the business of Exploration and Production of hydrocarbons in Nigeria. These oil and gas activities are carried out in the communities, otherwise called “Host Communities”. TEPNG had always demonstrated her corporate responsibility citizenship to communities in her operational domain and even beyond. It was indeed this strategy that had brought TEPNG to the limelight as number one (first) among oil and gas industries in Nigeria that has positive / cherished relationship with her host communities and beyond. These responsibilities are majorly divided into two major parts; The Memorandum of Understanding (MoU) Associated development and the Corporate Social Responsibilities (CSR) associated development. The former has a documented framework that makes it a working document for execution while the latter is voluntary at the discretion of the operator.

However, both, strategy have a common denominator of budgetary expenditure that should be used to quantify directly or indirectly, the goodwill of the benefitting communities (the Egi communities). Infrastructural development in the Nigerian Niger Delta, the hub of oil and gas production which accounts for over 70% of Nigerian foreign earning had been terrific and indeed a cause of concern to the Niger Deltans. Multinationals that had been at the front burner of agitations, demonstrations and vandalizations of oil and gas facilities decided to help the public sector like the Niger Delta Development Commission (NDDC) and Ministry of Niger Delta to implement

some infrastructural development in order to accelerate the development of the region and boost her economic potentials.

To justify this action like in the 1990s, a number of countries in Latin America including Argentina, Bolivia and Chile, developed policies focused on utility sector liberalization through increased private sector participation. This focus resulted from the recognition that overall quality and availability of services were inadequate. Infrastructure reform is inexorably linked to poverty alleviation and therefore must be carefully constructed and enacted. Recently, there is a new model for reform that consists of three main components – Policies, Regulations and Provisions. It is a truism that most Niger Delta communities lack basic infrastructure especially roads, jetties, portable water and health care facilities. Trade and commerce as goods and services cannot exchange hand easily in the absence of infrastructure as mentioned above. In the same vein, prices of goods and services are equally affected to the extent that they are not affordable by the rural poor. In an evaluation of the Foreign Investment Advisory Service (FIAS), a joint facility of the World Bank and the International Finance Corporation (IFC), it was discovered that governments and foreign investors alike were concerned and frustrated about difficulties in successfully implementing private infrastructure projects. Governments were trying to attract these new types of investment without having established appropriate policy framework. Therefore, there were no institutional structures to resolve impediments effectively and provide clear guidelines for the award of such projects. Legal frameworks were intended to address traditional public sector responsibilities and not investor concerns. Regulatory environments did not exist or did not provide investors / sponsors (TEPNG) enough guarantees that their future operating environment would be sufficiently reliable. Thus, a lesson towards facilitating and encouraging direct investment in infrastructure by the Private sector except through Partnership arrangement (PPP) was established. The volatile environment of the Nigerian Niger Delta in general is an impediment in attracting Private sector investment in infrastructure except as CSR that TEPNG among others had tried; otherwise, this would have been an impeccable way to ensuring rapid development of the region. Conclusively, global dialogue on ways of improving infrastructural development (health facilities and portable water) / service delivery and to serve as catalyst for rapid rural development should be advocated.

It is on record that TEPNG had expended huge sum of money in Egi communities both to establish infrastructures and steps taken to cause the infrastructures functional.

To ascertain the sustainability of these infrastructure that were targeted to improve the living conditions of the entire populace in the benefitting communities, TEPNG has decided to engage FRESH IMPACT RURAL DEVELOPMENT INITIATIVE, a Non Governmental Organisation (NGO) as researcher to evaluate the impact of identified 14No water projects in Egi communities. This study is therefore commissioned to critically against laid down parameters to evaluate the effectiveness and SUSTAINABILITY of these projects towards realizing desired objectives amongst the beneficiaries of Total Exploration and Production, Nigeria Limited stakeholders of Egi kingdom with a view to identifying the Parameters of Acceptability, Functionality, Operability / Maintenance and Durability while identifying the underlying critical success factors or otherwise. Additionally, the Oil and Gas multinational company would want to justify value for money in her budgetary expenditure.

### **Objectives of the Study**

The general objective of the impact assessment study was to assess the FUNCTIONAL and SUSTAINABILITY status or otherwise of the TEPNG assisted water projects in Egi communities under the MoUs with a view to justifying value for money in the face of several accusations of insensitivity.

The specific objectives were to;

- Determine Functionality of TEPNG sponsored water projects in the respective communities of Egi kingdom
- Determine Effectiveness based on established goal
- Determine the SUSTAINABILITY of these water projects based on indices of Acceptability, Functionality, Operability and Durability
- Assess Value for Money of the said projects

### **Scope and Limitations of the Study**

This study was limited in scope in the following areas;

- (a) Identified 14No water projects as enlisted by TEPNG
- (b) It was limited to the locations of these aforementioned projects
- (c) Critical Success Factors (CSFs) that determine effectiveness
- (d) Sustainability of such projects
- (e) The study was also limited by Safety and Security situations within and around the locations of these identified projects that were highly militarized due to presence of warring cults.

## Methodology

### Study Design

The study was designed to x-ray the extent to which TEPNG assisted water projects in Egi communities had affected the lives of the populace towards improved standard of living. It was tailored to encourage the utilization of these facilities along the indices of sustainability, namely Acceptability, Functionality, Operability/Maintenance and Durability. It was a one-time study of the entire 14No Water projects as listed and sponsored by TEPNG in Egi communities that hereinafter referred to as study area.

Systematic steps taken to obtain data for the study included;

- (a) Identifications of Projects' locations / communities
- (b) Identifications of Community Based Organisations of each project community
- (c) Security gap analysis, mapping and timing
- (d) Design / distribution of data collection instruments
- (e) Photography (where possible)
- (f) Retrieval of distributed instruments
- (g) Personal interviews (Semi structured)

Secondary source of data collection, through literature review was deployed. Retrieved instruments for data collection were analysed upon which results were based.

### Study Area

The area of study was Egi communities in the Ogba Egbema Ndoni Local Government Area of Rivers State, Nigeria which situate at the Oil Mining License (OML) 58 of TEPNG operations.

The specific communities involved were;

For Water Projects;

1. Obagi
2. Obukegi / Ibewa / Akabta
3. Obigbor
4. Ede
5. Ogbogu
6. Erema
7. Obite
8. Akabuka
9. Oboburu
10. Ohali-Elu
11. Amah
12. Egita
13. Obiozimini
14. Idu
15. Itu – Ogba
16. Obiyebe

## Population and Sample

### Target population

The target population was all the beneficiaries of the water projects within the locations of the identified projects. These were all the community based organizations including the stranger elements in each of the project located communities. These were categorized as Chiefs / Elders, Women and the Youths and maintenance contractor staff.

### Sampling Strategy, Procedure and Unit

This study was exploratory (discovery of new grounds) in nature and sampling strategy was a combination of purposive and probability. A total of 14No water projects were purposively selected as enlisted by TEPNG. Similarly, locations (OML 58 and communities) were also purposively chosen based on the expected ROI (Return on Investment) and VFM (Value for Money). These are critical success factors (CSFs) that Community Affairs & Development of TEPNG upholds in their tenets of projects' execution.

The second strategy was the stratification of Egi communities into major based organizations namely, Chiefs / Elders, Women and Youths. To authenticate the results of the study, contractor staff that was responsible for the maintenance of the facilities was included in the sample selection. This was as a result of the fact that this category of respondents play very key role towards ensuring functionality of the facilities towards ensuring availability and

sustainability. Most importantly, TEPNG expends huge budget in this regard, hence un-interrupted delivery is expected.

The delivery staff was interviewed using semi structured interview (SSI) schedule to further balance results obtained from the field.

Thus, the identified project locations were segregated into the parameters as identified above namely;

Table 1: **Data collection matrix to show No of Respondents**

Project Type	No	No of Youths interviewed	No of women interviewed	No of Chiefs / Elders interviewed	No of contractor maintenance staff interviewed	Total Questionnaires distributed	Total No of Questionnaires retrieved	Percentage achievement
Water Project	14	5	5	3	2	210	160	76

Source: Field survey 2016

In the 14No water project communities, 5No youths, 5No women, 3No chiefs / elders and 2No contractors’ maintenance staff were selected randomly to represent respondents. The greater ratio of respondents assigned to the Youths and Women was as a result of their being major beneficiaries of the projects while wading greater potentials that could affect (positively or negatively) TEPNG REPUTATION. In addition, two staff of TEPNG were interviewed to obtain seemingly balanced opinion on the sustainability of the projects.

Data were collected with majorly questionnaires and semi structured interviews. The researcher could not deploy Focused Group discussion (FGD) due to continued heightened security challenges n the area.

**Analytical Techniques**

Data generated from the questionnaire, Semi Structured Interviews, Photography and Personal Observations were analyzed using quantitative techniques of descriptive statistics which included averages, percentages, mean and frequencies to produce results that were presented in tables, pie charts and histograms. Additionally, qualitative analysis was used to deduce degree of Sustainability based on already identified indices bearing in mind participation and ownership (Chambers, 1997, 2007, Bischoff and Lambrechts, 2010, Ogueri, 2010).

**Analysis and Results**

**Socio-Economic Factors of the study**

**(a) Age**

Table 2: **Age of Respondents**

Age bracket	Water Project (WP) Freq	Water Project (WP) %age
Below 21	9	6
21 - 30	28	18
31 - 40	33	21
41 - 50	50	30
51 - 60	23	14
Above 60	17	11
Total	160	100

Source: Field survey 2016

Table 2 above indicates that 18%, 21% and 30% of age brackets of 21 – 30 years, 31 – 40 years and 41 – 50 years respectively that represents the vibrant ages that could steer agitations in Egi were actively involved in this study. The implication of this is that findings / recommendations from the study should be taken seriously in order to sustain existing cordial relationship without much vandalization of oil and gas facilities in Egi kingdom.

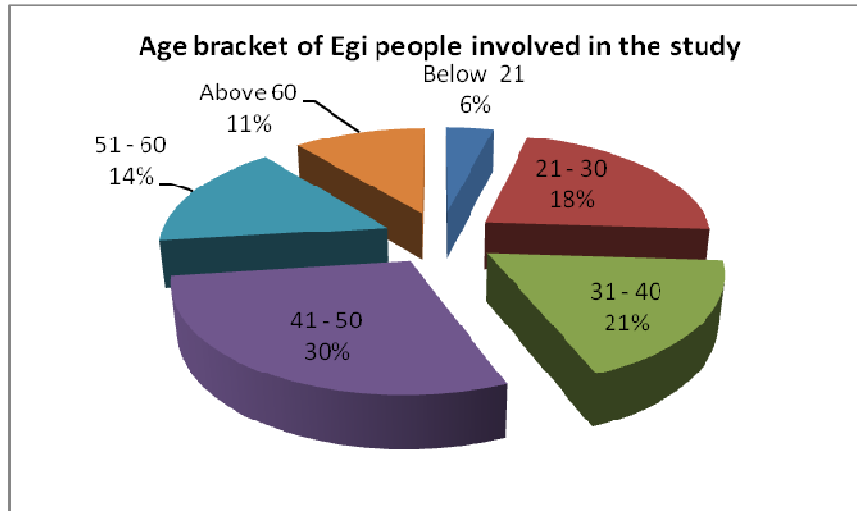


Fig 1: Age of Egi participants in the study

**Marital Status**

Table 3: Marital status of Respondents

Description	Water Project (WP) Freq	Water Project (WP) %age
Married	119	75
Single	39	25
Total	158	100

Source: Field survey 2016

A total of 75% of the respondents for water project assessment was married while 25% was single. Impressively, this shows that more supposedly responsible people were involved in the study as Fig 3 showed result in this regard.

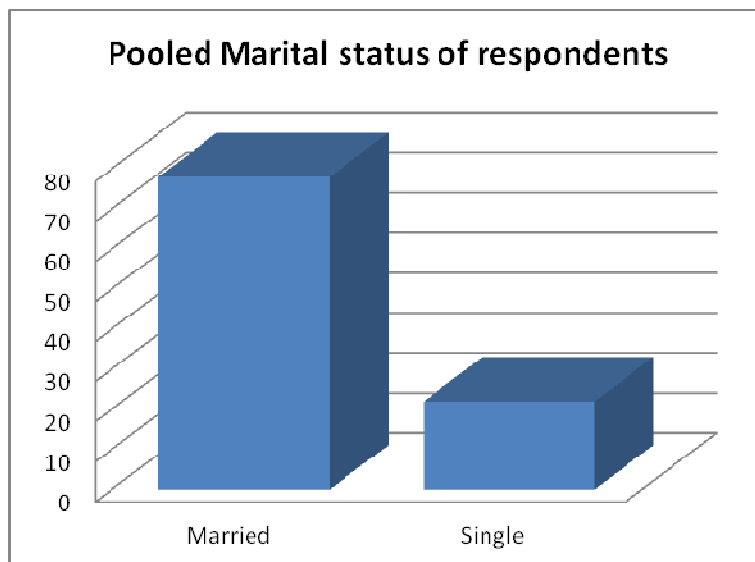


Fig 2: Marital status of respondents

**Highest Educational Attainment**

Table 4: Highest Educational Attainment of Respondents

Description	Water Project (WP) Freq	Water Project (WP) %age
No school Education	26	17
FSLC	24	15
Post Primary	63	40
Post Secondary	44	28
Total	157	100

Source: Field survey 2016

Education liberates the mind and causes it to be critical in their reasoning. It may also be associated with recent celebrated cultism in some institutions in Nigeria; a situation that has served as replacement stock to security challenges in the country. It is against this backdrop that 40% and 28% of Post primary and post secondary educational attainment respectively of the respondents was impressive that the study actually involved educated men and women of Egi kingdom who can speak out their minds without fear of favour or contradictions. Thus, information obtained from this study can be used to influence community relations strategies and policy of multinational oil and gas companies working in the Niger Delta region of Nigeria.

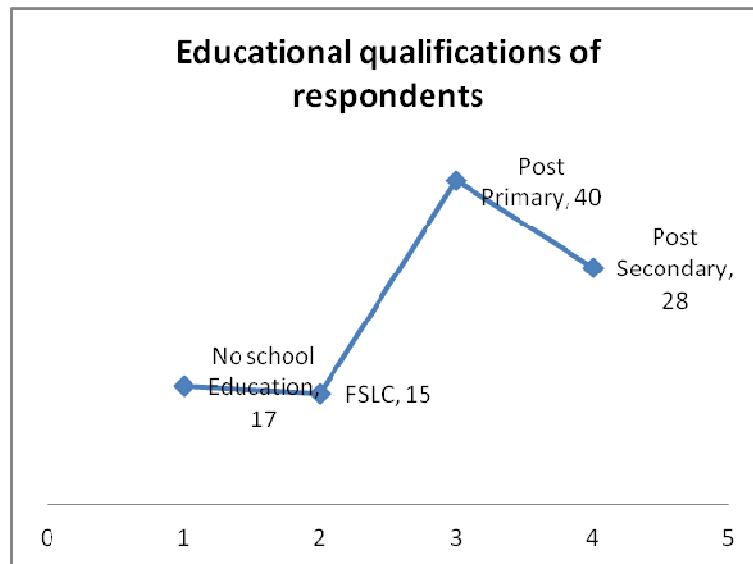


Fig 3. Educational qualification of respondents

**Awareness as a measure of Acceptability of Projects**

Table 5: Awareness Perception of Respondents as a Sustainability Index

Description	Water Project (WP) Freq	Water Project (WP) %age
Aware	155	99
Not Aware	2	1
Total	157	100

Source: Field survey 2016

Acceptability of a development project is an index of sustainability when acceptability of such project cuts across broad spectrum of community membership, based organizations or stakeholders. It is the reverse of a top-down approach where projects of less value to stakeholders are forced down on them for implementation. In the case of TEPNG water projects in Egi kingdom, perhaps due to economic importance, a total of 99% of the respondents was aware of the existence of these development projects. This scenario demonstrated the utility and usefulness of water projects since they are most essential in all human existence.

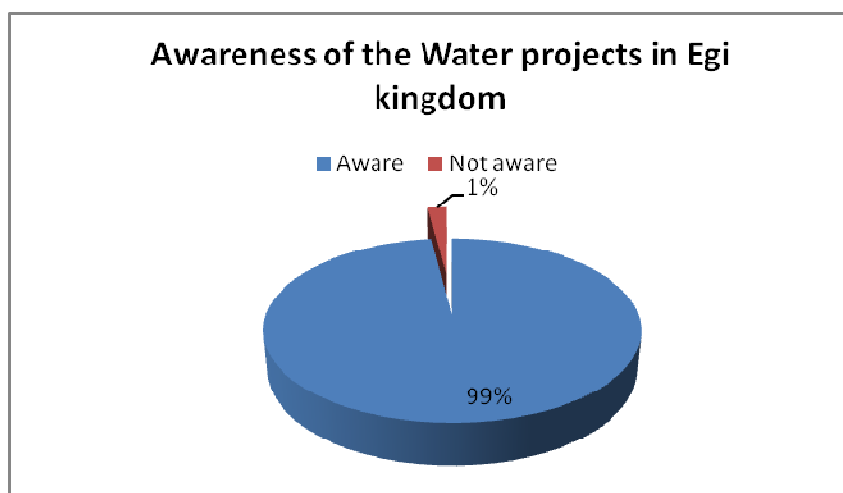


Fig. 4 Claim on awareness by respondents

### Projects Duration as a Measure of Maintenance Contractor's Performance

Table 6: Projects Completion Years

Description	Water Project (WP) Freq	Water Project (WP) %age
2 – 3 yrs ago	4	3
4 – 5 yrs ago	8	5
6 – 7 yrs ago	3	2
Above 8 yrs ago	122	77
No idea	20	13
Total	157	100

Source: Field survey 2016

A total of 77% of the respondents projected that TEPNG had established most of the Egi water projects for above 8 years and should call for serious maintenance sequence that should be monitored by TEPNG periodically. The current maintenance system left much to be desired even as houses have been flooded by uncontrolled run-off from the water heads that were usually faulty and remained unattended to by maintenance contractors regardless monthly payments for such maintenance jobs. The current prevailing security situation in the area had worsened the case of supervision of contractors on assigned jobs.

A more worrisome situation is that about 13% had no idea of the project duration and were not even interested. This means that if the projects stop functioning, it may not be their business. They even mistake the projects to belong to the maintenance contractors. There is need for structured periodic information cascade session like town hall meetings, people's parliament or open forum in order to proactively guide and protect multinational companies REPUTATION. Sometimes, projects delivered by the private sector (Multinationals) will be ascribed to the private sector (governments) and such situation had encouraged misfeasance as politicians will misappropriate funds meant for such infrastructural development projects. In Nigeria, this situation is gradually being put to check by EFCC and whistle blowing policy of the anti corruption crusade of the Federal Republic of Nigeria.

### Sustainability Measurements of EGI Water Projects

#### (a) Functionality based on Projects Key Purpose

Table 7: Perceived serving of purpose of establishment

Description	Water Project (WP) Freq	Water Project (WP) %age
Meet Purpose of establishment	92	58
Does not meet purpose of establishment	67	42
Total	159	100

Source: Field survey 2016



Development projects that are functional always meet the desires or primary objectives of their establishments by the sponsors. While the Egi water projects narrowly meet the desires of their establishment as demonstrated in Table 6 above as 58%, the 42% of respondents stressed that the water project never met desired expectations due to poor / ill maintenance of the projects resulting to constant faults. It is important to note that desirability is indeed dependent on FUNCTIONALITY of projects as community members were not interested in seeing gigantic infrastructure without expected desired output (Chokor, 2004, Ebeku, 2005 and Emeseh, 2009).

In addition, the process of identifying the water projects as priorities was faulty. The project adopted Top-Down approach where the communities (as a whole) did not participate in any form of appraisal (Participatory Rural Appraisal – PRA, Rapid Rural Appraisal – RRA or Participatory Learning and Action – PLA). Thus, from the beginning, the beneficiaries were not involved; hence ownership of Egi water project had continued to be a recurring decimal of infrastructural development in the OML 58 and indeed the Niger Delta region of Nigeria. This phenomenon had led to faster decay of infrastructural development projects assisted by the private sectors especially, the Multinational oil and gas companies in the Niger Delta region of Nigeria. Unfortunately, it had encouraged agitations of neglect and marginalizations, notwithstanding, the huge volume of budgetary expenditures (Chambers, 2007, Chambers 2008, Ogueri, 2010, Escobar and Vrechenburg, 2011). The multinational oil and gas companies in Nigeria as a matter of concern should rely on the services of development experts to identify sustainable development projects / programmes that would encourage / accelerate development in the Niger Delta region by adopting internationally accepted approaches of development.

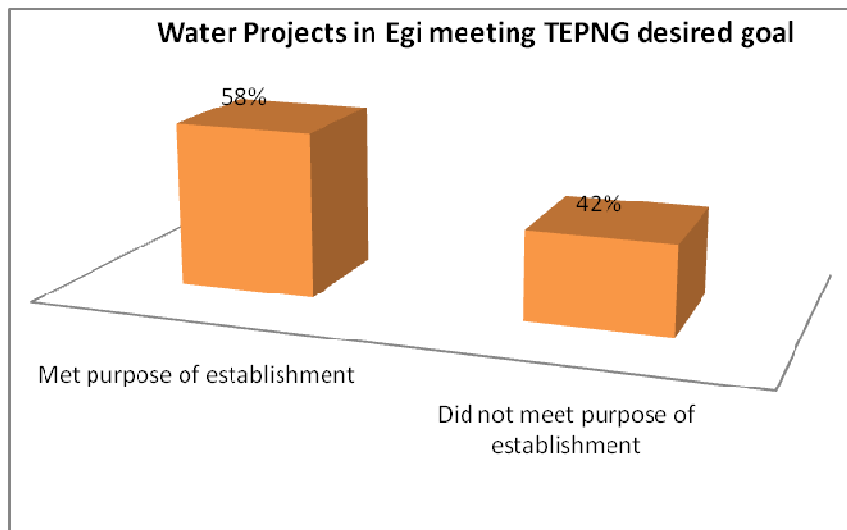


Fig 5: Assessment of Egi water projects meeting desired goal

**(b) Functionality based on weekly ACCESS to Portable water from Egi water project**

Table 8: Functionality of Projects based on perceived accessibility by Respondents

Description	Water Project (WP) Freq	Water Project (WP) %age
2 – 3 times per wk	26	17
4 – 5 times per wk	1	1
6 – 7 times per wk	15	10
Above 7 times per wk	110	72
Not at all	Nil	Nil
Total	152	100

Source: Field survey 2016

Access to developmental interventions or technologies increases utility of such interventions and also has direct relationship with functionality. This is the case where stakeholders had to visit the projects almost daily and even more as shown in table 8 above. It follows a priori expectation as portable water projects are essential rural development projects that address very important needs of stakeholders. As a matter of necessity, every household needs water for domestic use daily. However, due to outages during maintenance or power failures (especially at this era where cultists were busy vandalizing generating sets that power water supplies to various communities in Egi

communities), most community members requested for Mono pumps at strategic positions in the communities as alternate project. According to them, this will continuously allow the people to enjoy portable water with little or no maintenance or power generation.

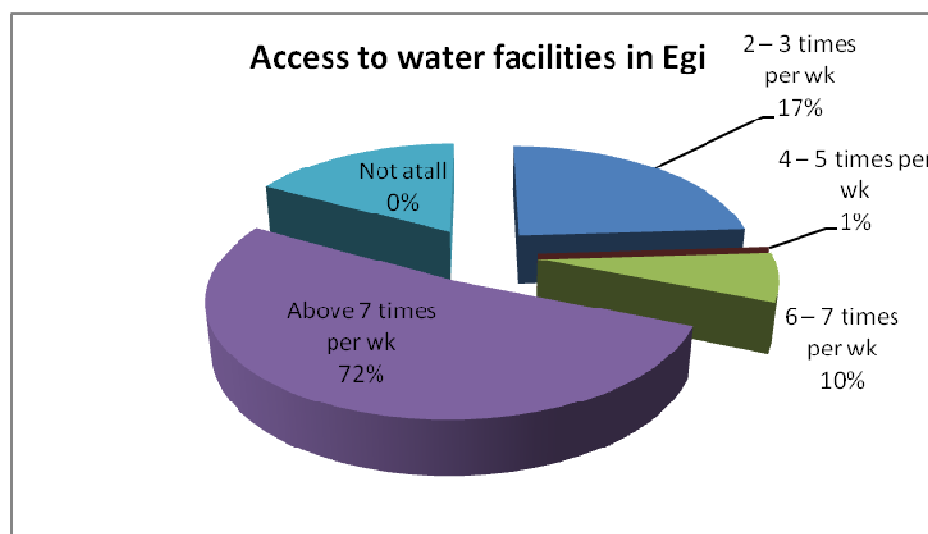


Fig 6: Access to portable water from Egi communities water facilities sponsored by TEPNG

### (C) Four-Point Likert Measurement of Functionality and Acceptability based on usefulness of Projects

Table 9a: Projects Acceptability / Functionality based on perceived usefulness by Respondents

Description	Not Useful (Freq)	Partially Useful (Freq)	Useful (Freq)	Very Useful (Freq)	Total
Water Projects	4	14	5	136	159
Percentage	3	18	3	86	100

Source: Field survey 2016

The combination of sustainability indices of Acceptability and Functionality are key determinants of interventions utility. TEPNG had provided basic needed infrastructure of Water projects for Egi people. The hardware had been in place but their sustainability will largely depend on the people-oriented software of maintenance. The researcher therefore needed to know from the stakeholders, the usefulness of this interventionist projects. The water projects recorded 86% very useful, 3% useful, 18% partially useful and 3% not useful using the Likert scale measurement as analytical instrument. The implication here is that every Egi person understands the usefulness of TEPNG assistance in the provision of water facilities. However, they were worried that the maintenance to ensure sustainability was left in the hands of benefit captors who were paid and jobs not delivered. They sighted instances of broken tap heads and wastages of water to the extent of flooding of houses and communities, delayed response when faults are identified, inability to move round to identify faults, un-kept health environment and vandalism / looting of equipment and others. Finally, the respondents narrowed everything to current security situation that was scary and unsafe as cultists kill, rape and kidnap people. The communities were gradually been deserted during data collection for the study.

From the results of the study, Egi water projects as assisted by one of the leading Oil and Gas Multinationals in Nigeria, Total Exploration and Production Nigeria Limited in her corporate social responsibility programme is adjudged to be partially sustainable. Acceptability was as a result of necessity as it was based on top-down approach. Operability / Maintenance were totally absent. TEPNG paid money for non-maintained projects. The communities' youths or Community Development Committees (CDCs) that would have been empowered by Maintenance or performance monitoring of the water projects felt un-concerned because they were not consulted. Unfortunately, some elements amongst community youths have been instrumental to vandalism and theft of water accessories. If the rising wave of cultism, killings, kidnap, extortion and general insecurity in the study area, is not checked, the multimillion naira water projects in Egi would be totally abandoned. It would be worrisome

because when the dust settles, TEPNG would be accused of insensitivity to the development of Egi communities. This scenario is indeed what had kept the Niger Delta region of Nigeria seemingly underdeveloped

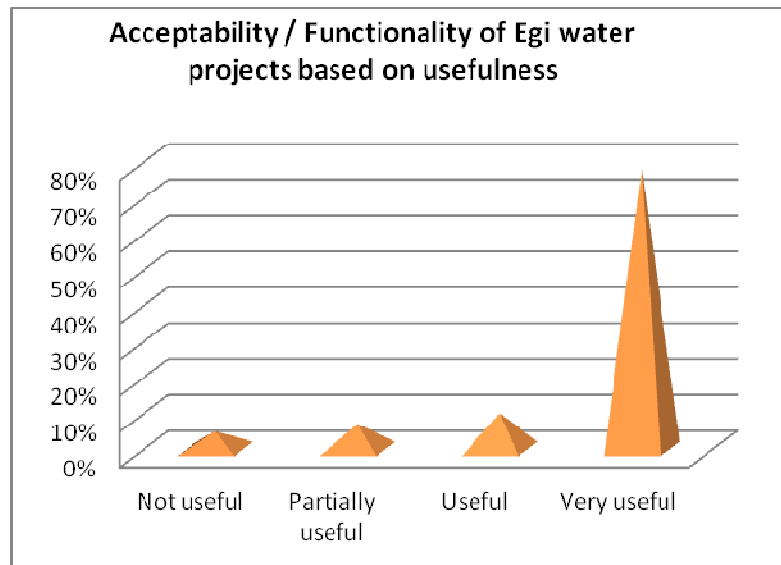


Fig 7: Usefulness of Egi water projects as perceived by respondents



Fig 8: Water wastage from ill-maintained water facilities as donated by TEPNG to Egi communities

**Summary, Conclusion and Recommendations**

**Summary**

There had been poor infrastructural development of the Nigerian Niger Delta regardless concerted efforts of the public and private sectors, especially the oil and gas multinationals. These oil and gas multinationals had through their corporate social responsibilities (CSR) implemented some developmental projects to uplift the standard of living of the Niger Deltans to move out of abject poverty that had been the major characteristics of the region. The more investments that were pushed into the Niger Delta, reverse had been the case with accelerated development.

It had been reasoned by Total Exploration and Production Company Nigeria Limited that provision of portable water for most communities in Egi would address some health challenges that were based on hygiene and other water borne diseases among others. Egi communities in the OML 58 plays host to TEPNG. The latter has her facilities in strategic positions most of the communities. The former decided to form oil and gas producing communities to attract some benefits from the companies. These arrangements had worked until in recent times

when it was perceived that value for money had been derailed due to inefficient maintenance and supervisory system. There were several complaints on Egi water projects such as pipe burst, theft of attached power generating plants, none performance of maintenance contractors. These complaints stimulated this study to evaluate the desirability, sustainability and value for money for the interventionists as CSR.

Insecurity in the area allowed only the use of questionnaires, semi structured interviews and rapid rural appraisal as instruments for data collection. Three groups of actors namely; beneficiaries (Egi communities' members), Maintenance contractor's staff and Interventionist (Total Exploration and Production Nigeria Limited) formed the respondents that totaled 160. Data collected were analysed quantitatively and results presented in frequencies, percentages and charts.

Results showed that sustainability subjected to sustainability indices of Acceptability, Functionality, Operability / maintenance and durability, according to Ogueri, 2010 proved partially sustainable. As a matter of necessity, the water projects were generally desirable and acceptable though the approach in their identification and execution was faulty as it was devoid of empowering the beneficiary communities (Top – Down approach). Most projects were functional but lacked maintenance, hence the communities usually get flooded. Operability was virtually empty as the various communities' CDCs were ignorant of how the water project was operated without regulation. It proves the proverbial goat that is owned by many individuals that is always starved. When faults were reported, the maintenance contractors never cared to rectify them timely and sometimes unattended, yet they will submit bills and be paid. Several attempts to stop this anomaly through none payment were followed by threats of facilities vandalisations, shut down of facilities and threats to lives. It was unfortunate that TEPNG who benevolently provided the water projects were been hand-twisted. Thus, value for money was absent. As a result of ill-maintenance, some community members have resulted to using sticks and ropes to control wastages of water as showed in fig 8 above. It was recommended that TEPNG should review the maintenance contracts to empower the local through youth groups and community development committees (CDCs) to re-engineer OWNERSHIP since this was not achieve during project identification and execution. TEPNG that has mandate for oil and exploration and production should engage development experts to drive their development projects identification and execution. The youths would need to be engaged through employment and empowerment programmes as the government sponsored amnesty programme would not be sustainable, hence the cultists would soon result to intensified kidnap, armed robbery, sophisticated extortion and other social vices.

### **Conclusion**

Conclusively, if Egi water projects maintenance contracts are not reviewed and re-awarded to Community youths and CDCs of various communities where the projects were sited, sooner than later Egi communities would be of no portable water. Stakeholders would turn back to accuse TEPNG of insensitivity to the plight of her host communities and insecurity in the study area would be at the increase. Poverty was at the increase in the Nigerian Niger Delta regardless the high deposits of hydrocarbons and any scenario that triggers agitation, has the capabilities of fueling demonstrations in other oil and gas host communities. Insecurity due to youth cultism and political gymnastics would be increasing geometrically and TEPNG field operations to ensure continued oil and gas production would be grossly affected. Finally, the accusations of neglect and marginalization of her host communities could then have reasonable backup and TEPNG may receive national and international condemnations as was the case with Shell Petroleum Development Company (SPDC) in the Ogoni saga hunting the oil giant.

### **Recommendations**

The study therefore recommended the followings to improve on the sustainability of TEPNG assisted water projects in Egi communities of the OML 58.

- Review current Egi water projects maintenance contracts to be accountable. Develop a monitoring system with KPIs (key performance Indices) to ensure compliance to contract terms.
- Each community water project should have a Project Management Committee (PMC) whose capacity should be built to maintain the water projects in their various communities or alternatively, the maintenance contractors should be made to be accountable to the PMCs.
- Portable water should be made to flow regularly to serve various communities without generator. Solar option should be explored since the generators are often stolen or vandalized. Cease the opportunity to sensitize the project communities in town hall meetings about ownership while building the capacity of PMC members
- Include Egi water project maintenance as part of MoU projects to be maintained. Build capacity of CDCs and PMCs to know their roles in safe-guarding the projects sited in their communities. Each

village / community will develop a strategy to protect them and off their eyes from TEPNG. If TEPNG continues to maintain these projects, it will continue to attract losses based on entrenched high expectations from Egi people due to the presence of TEPNG in the area.

- Mono pumps can be set up in most strategic positions in each community. Once a fault is discovered, the reticulated water should be stopped and mono pump be activated to provide alternative.
- Water maintenance contractors should fill log-books on repairs / work done including locations and submit monthly report to TEPNG upon which payments would be based.
- Having established PMC for the projects, train and charge them to develop mechanism to generate income from the water projects to offset periodic maintenance. Road construction contractors on projects in Egi needing bulk water should pay for it as it is applicable to other projects assisted by TEPNG like Obite civic centre and Egi Women Development centre, Akabuka. By so doing, the water projects could be competitively sustainable.

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