SOCIOECONOMICS IMPLICATIONS AND THE RESETTLEMENT ACTION PLAN OF ALAOJI-ONITSHA TRANSMISSION LINE PROJECT ONPROJECT AFFECTED PERSONS

Abstract:

Resettlement Action Plan (RAP) plays a vital role in managing resettlement-related activities, preventing dispute, agitation and provide necessary component for successful restoration of livelihood of impacted people. Consequently, the study examined the implications of the Resettlement Action Plan (RAP) of Alaoji-Onitsha Transmission Line (TL) project on the socio-economic of the Project Affected Persons (PAPs) in the project corridor using household based questionnaire. The finding on the severity and extent of the project impact on individuals and related socio-economic indicators revealed that 372 households were slated for resettlement, 202 residential buildings, 267 commercial buildings, 11 public buildings, 511.26 hectares of farmland and 42,682 economic trees are impacted by the proposed TL project. The project will medium residual impactsland use. The study therefore recommends that the proposed projects must ensure resettlement and restoration are carried out in a way that will ensure continuous survival of PAPs with better socio-economic status better than the pre-project status.

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Keywords: Alaoji-Onitsha Transmission Line, resettlement, socio-economic impact

1. Introduction

Nigeria is still grappling with the problem of electricity generation, with several locations not on the national grid. Nigeria plans to achieve national supply of about 25 GW of electricity by 2030, which will require and connect about 500,000 to 800,000 households per year in order to achieve maximum operational capacity [1]. Due to the insufficient supply of electricity, many private and public organization are limited in their operations; production capacity is impacted and the economic-related development is generally restrained [1]. To improve power supply and strengthen the economy, the Federal Government of Nigeria (FGN) aspired to render reliable electricity to about 75% of her population at the end of 2020 and achieve a 90% capacity by 2030 coupled with approximately 10% through renewable energy by 2025 [1]. Among such ambitious project is the construction of a double circuit quad conductor of 330 kV DC transmission line with a total length of 138 km, between the existing Transmission Company of Nigeria (TCN) substations at Alaoji in Ugwunabo LGA of Abia State and the substation at Obosi in Idemili North LGA of Anambra State

This project will have resettlement consequences and there is the necessity to extenuate the possibility of displacement-induced impoverishment [2].According to Downing [3], the aftermath of resettlement on a displaced community could lead to “the loss of physical and non-physical assets” which includes their “homes, communities, productive land, income-

earning assets and sources, subsistence, resources, cultural sites, social structures, networks and ties, cultural identity and mutual help mechanisms". Therefore, resettlement substantially increases the risks of impoverishing project-affected individuals, groups, endangering their means of survival and limiting their prospect for sustainable development.The central goal of resettlement action is to make certain that impacted individuals are able to continue to live their lives to appreciable standards after project completion[4,5].

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Resettlement Action Plan (RAP) plays a significant role in all developmental projects that require the people of the project location to be moved due to the project actions or outcome. It is significant that the population to be affected by a proposed project be resettled in a safer environment before the onset of the project actions. The RAP is an all-important instrument in managing resettlement-related actions and is capable of preventing disputes and agitations possible to cause undesired outcome on the successful execution of the project[6-9]. Also, it is a vital instrument for involving impacted individuals and communities of the project.

The scheme of providing financial compensation to PAPs does not, in most instances, suffice or equate with the cost of obtaining farmland, home for their family and other required resources as compared to the forfeited resources. The challenges become more critical for individuals that are majorly dependent on the forfeited assets for their survival such as landless farmers and forest dwellers that are not covered by the criteria for selecting individuals for compensation [10].

This research enquires into the assertion that risk in development-induced forced resettlement can be tackled through sufficient planning actions that consider the desires of PAPs and act upon them. Again, the present research intends to explore the effectiveness of RAP towards the affected population for the proposed reconstruction of Alaoji-Onitsha Transmission Lineproject.

2. Methodology

2.1 Research Design

This study adopted case study research method. The case study here is the effectiveness of employing technology (special towers and accessories) to reduce resettlement cost and other social impacts of the reconstruction of 138 km Alaoji-Onitsha 330 kV single circuit transmission line to 330 kV double circuit quad conductors.

2.2 Study Area

The study area is the 130km x 50m ROW of the existing Alaoji-Onitsha Transmission Line (TL), which also is the ROW for the proposed power transmission line project. This falls within the southeast region of Nigeria. It is located between latitudes 04°17' N and 07°06' N and longitudes 05°23' E and 09°28' E. The southeast region comprises the geographical location of five states namely Abia, Anambra, Ebonyi, Enugu, and Imo. In spatial extent. The study area cuts across 64 communities in 12 Local Government Areas, inAnambra, Imo and Abia States, all within the Southeast region of Nigeria (Figure 1). Based on the population census of 2006, the region has an estimated 12% of the overall population of Nigeria, that is,

16,381,729 [11]. The region comprises the people of Igbo ethnic group with their culture and language, although, the region also has people from other parts of the country residing in it.

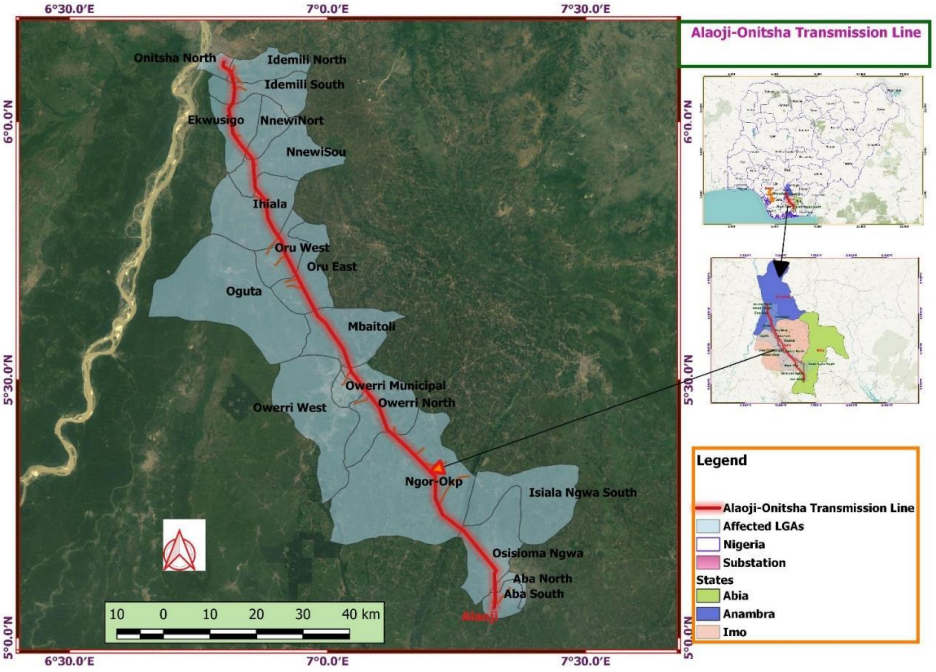

Figure 1: Map of the Transmission Line Route showing LGAs traversed within the three states

Climate of the area is tropical, with abundant rainfall, sunshine (ranges from 6-15 KJ per day) and high [12,13], with mean relative humidity of 75%. Hence, the sun is directly pointing to the surface all year round while the duration of the sunshine determines the length of the day. Rainfall is high in July and September with a little dry season which occurs in August. The geological formation is the coastal plain sands; more than 75% of state soils are coastal plain sands where rivers are very few and in between [14].

2.3 Sample Size

Households within 50 m on both side of the Row were counted to represent the sample size and a total of 500 households were enumerated which cuts across sixty-four (64) communities. The "Household-based Questionnaire" were administered. The questionnaires were self-administered with the support of CSEntry App, electronically.

2.4 Sources of Data Collection

Primary data was obtained by acombination of well-structured questionnaire administered on every PAP, constraint maps in pdf format readable on Avenza Map App, field observation

and interview. Secondary data were obtainedfrom literature on RAP, international statutes on resettlement activities and Environmental and Social Impact Assessment (ESIA) Reports for the previous projects.

2.5 Data Collection Instruments

Questionnaire was adopted in extracting information from participants. The questionnaire was designed to gather information about demographic attributes, activities of RAP and other related information concerning the displacement and resettlement process among the affected people at the project location. The RAP-Household Based was administered to every home within 25m on either of the ROW of the TL. Focus group discussions were held at the community level on various activities surrounding the TL project and specifically on the RAP of the project.

Inhabitants living in areas surrounding the project location are projected to direct impact from various activities; therefore, the study "area of influence" adopted a "2 km wide corridor centered on the line route". The socio-economic impact study adopted the household questionnaire for it assessment.

2.6 Data Analysis

The data gathered through questionnaires were sorted, coded and analyzed. The analysis was carried out using descriptive statistics and the outcome was highlighted in tables and chats which show the frequency counts and percentages in order of extent of occurrence among the variables. These statistics made it certain that findings of the research were presented in easily comprehensible manner. Also, content analysis was adopted for secondary data in order to fulfil the set out objectives. The method allows for analysis of text documents and other related secondary data which can be quantitative, qualitative or both.

2.6.1 Method of Valuation

The study adopted Bill of Quantities (BOQs) in valuation for compensation. Bill of Quantities is for constructing an equivalent replica type of structure within the project area were obtained from three different quantity surveyors. This formed part of the basis used in building up the rates applied for valuation. The affected structures are in the rural areas and predominantly constructed with sancrete blocks were we applied the rate appropriate per meter square for structures.

The method of valuation used, took into consideration the Land Use Act, the African Development bank OS 2 and most importantly the statutory replacement cost method which is according to the dictates of the Nigerian Institution of Estate Surveyors and Valuers and whose body is empowered by law to carryout valuation.

3. Results

3.1 Demographic Details of the Respondents

Table 1 revealed that 79.2% of the gender of head of respondents were males while 20.8% of the respondents were females. 24.8% of the respondents were singles, 48.2% married while 20.2% and 6.8% of the respondents were widowed and divorced respectively.

Table 2 show that 17.8% of the respondents' had no formal education, 36.0% attained primary level education, 20.8% had secondary level education, 13.0% of the respondent attained college and polytechnic education and 12.4% of the respondent attained university level of education.

Table 3 show that 15.1% of the respondents' annual income is less than 100,000, 19.1% of the respondents earned between 100,000-199,999 annually, 27.0% earned between 200,000-299,999 annually, 21.5% earned between 300,000-399,999 annually while 11.5% and 5.8% earned between 400,000-499,999 and 500,000 and above respectively.

Table 4 shows that 11.3% of the respondents' household size is between 1-2, 72.0% had household size between 3-5, 12.5% household size is between 6-10 while 4.0% and 0.2% of the respondent's household size is between 11-15 and >15 respectively.

Table 1: Gender and Marital Status of Head House

State	LGAs	Sex		Marital Status			
		Male	Female	Single	Married	Widowed	Divorced
Anambra	Idemili North	29	6	6	18	7	4
	Idemili South	38	9	9	23	10	5
	Ekwusigo	40	5	8	24	9	3
	Ihiala	35	9	8	23	9	3
Abia	Osisioma	33	7	12	15	6	3
	Aba North	36	7	14	24	6	2
	Ugwunagbo	47	9	14	24	12	3
Imo	Oru West	21	8	13	22	8	2
	Oru East	24	8	5	21	12	-
	Mbaitolu	29	8	15	14	8	2
	Owerri North	32	7	14	20	9	4
	NgorOkpalla	32	21	6	13	5	3
	Total	**396 (79.2%)**	**104 (20.8%)**	**124 (24.8%)**	**241 (48.2%)**	**101 (20.2%)**	**34 (6.8%)**

Table 2: Educational Status of Respondents

	Educational Status				
LGAs	No Formal	Primary	Secondary	CoE and Poly	University
Idemili North	10	11	12	4	5
Idemili South	9	14	10	7	8
Ekwusigo	7	15	10	6	5
Ihiala	7	11	8	4	5
Osisioma	7	14	8	4	6
Aba North	5	19	11	6	5
Ugwunagbo	13	15	9	6	4
Oru West	7	12	11	6	6
Oru East	10	19	8	7	4
Mbaitolu	4	15	7	6	5
Owerri North	5	17	4	5	6
NgorOkpalla	5	18	6	4	3
Total	**89**	**180**	**104**	**65**	**62**

Table 3: Annual Income Level of Respondents (In Naira)

	Income Level (Annual)					
LGAs	<100,000	100,000-199,999	200,000-299,999	300,000-399,999	400,000-499,999	500,000+
Idemili North	20.2	17.6	38.2	12.4	9	2.6
Idemili South	20.2	17.6	38.2	12.4	9	2.6
Ekwusigo	18.5	11.1	28.3	27.4	9.7	5
Ihiala	14.2	14.2	47.9	12.7	9.9	1.2
Osisioma	8.5	10.6	10.5	36.2	21.7	12.5
Aba North	9.2	17.6	11.2	40.5	9	12.5
Ugwunagbo	18.3	16.8	34.3	14.3	9.8	6.5
Oru West	15.2	27.6	19.4	18.5	12.8	6.5
Oru East	13.2	24.8	23.7	20	14.6	3.7

	Income Level (Annual)					
LGAs	<100,000	100,000-199,999	200,000-299,999	300,000-399,999	400,000-499,999	500,000+
Mbaitolu	16.3	28.8	19.2	22.5	9.7	3.5
Owerri North	6.8	19.1	27.2	24.2	13.2	9.5
NgorOkpalla	20	23.2	26.2	16.5	9.8	4.3
Total	**15.1%**	**19.1%**	**27.0%**	**21.5%**	**11.5%**	**5.8%**

Table 4: Household Size of the Respondents

	Household Size (%)				
LGAs	1-2	3-5	6-10	11-15	>15
Idemili North	15.1	69.1	12.3	3.5	-
Idemili South	11.0	70.3	16.1	2.6	-
Ekwusigo	8.4	76.0	13.5	2.1	-
Ihiala	8.6	66.1	19.2	3.4	1
Osisioma	5.3	78.2	14.3	4.1	-
Aba North	20.4	63.1	13.4	3.1	-
Ugwunagbo	6.8	80.2	8.9	4.1	-
Oru West	11.2	69.7	13.9	4.2	1
Oru East	15.7	70.8	8.4	5.1	-
Mbaitolu	12.5	75.0	8.4	4.1	-
Owerri North	8.4	75.1	9.4	7.1	-
NgorOkpalla	11.7	70.9	12.3	5.1	-
Total	**11.3%**	**72.0%**	**12.5%**	**4.0%**	**0.2%**

3.2 The Project Affected Persons across the Project Area

The RAP identified various PAPs across the project location. Table 5 present the details of vulnerable individuals and categories in the project area. The analysis revealed that elderly (19 individuals), women (13 individuals) and land tenants (26 individuals) as the major vulnerable groups.

Table 5: Project Affected Persons across the Project Area

PAPs	Anambra	Abia	Imo	Total
Children	0	0	0	0
Land Tenants	13	5	8	26
Women	3	2	7	12
Non Indigenes	0	0	0	0

Elderly	5	3	11	19
Physically Challenged	0	0	1	1
Herdsmen	0	0	0	0

3.3 Severity and Extent of the Impact on the Socio-economics

From Table 6, the study considered various related activities within the 25 km away from the Transmission Line and the households deemed for resettlement, number of residential, commercial, and public building, farmland size and economic trees affected by the TL project.

Table 6: Severity and extent of impact on individuals and related socio-economics

Indicator	Anambra	Abia	Imo	**Total**
Households for Resettlement	220	123	29	**372**
Residential Building	116	69	17	**202**
Commercial Building	165	23	79	**267**
Public Building	3	4	4	**11**
Farmland size (hectare)	96.07	128.84	286.35	**511.26**
Economic Trees (stands)	9,441	8,577	24,664	**42,682**

3.4Impact Minimisation Alternative for the Proposed Project

From Table 7, three possible options were considered alongside their impact on the project affected persons, structures, farmland and/or economic tree and the estimated RAP budget.

Table 7: Comparison of the impact minimization alternatives proposed for Alaoji - Onitsha T/L

Alternative	**Description**	**Number of PAPs**	**Number of Structures**	**Number of Farmlands / trees**	**RAP Budget**	**Justification**

1	This option would entail reclaiming the existing 138 km x 50 m ROW from encroachers by resettling them with all its attendant constraints and costs.	6882	3,428	3,452	NGN 20+ Billion	This alternative was **rejected** because: It will displace a lot of PAPs and entail enormous cost for resettlement
2	This option would entail abandoning the existing 138 km x 50 m ROW and selecting a greenfield TL ROW which will be a minimum 160 km through a route of uncertain soil properties, given that the area is prone to soil erosion.	4692	168	4126	NGN 5 Billion	This alternative was **rejected** because: Longer time will be needed to conclude feasibility studies, ESIA & RAP The cost is comparable to the sectional constriction option 3. There will be greater ecological impacts and compensation
3	This option would entail reclaiming the existing TL but reducing the ROW to 30m at five heavily built up sections at Onitsha axis, Owerri axis, Aba axis, Ifekala axis and Uli axis for a total length of about 31km, to reduce the number of PAPs, thereby also minimizing social impact and RAP cost	4,862	1,668	3,452	NGN 5.86 billion	This line alternative was **accepted** because it: Saves time of completion of studies Engineering solution for reducing the ROW to 30m for 330 kV TL is available Soil properties are certain, given the existing line Reduces social impact by reducing the number of PAPs and RAP cost.

4. Discussion

4.1 Demographic Details of the Respondents

The socio-demographic details of the households around the project area ROWshows that 79.2% (396) of the head of household's gender was males while 20.8% (104) of the respondents were females. This implies that majority of the head of households were males. The marital status of heads of households showed that majority of the household heads were married and represent 48.2% (241 out 500) of the sampled household. Furthermore, the nature of marriage among the married head of household indicated that majority are monogamous nature of marriage and represent 89.2% (446 out of 500) of the sampled household. The educational status indicated that most of the respondents attained at least

primary level of education and this represent 20.8% (180 out of 500) of the sampled household. According to Ismail and Mustaquim [15], education remains a vital pointer concerning the socio-economic development, extent of occupation and income. Considering the income level of the respondents on annual basis, the finding revealed that majority of the respondents earned between N200,000-N299,999 annually which represent 27.0% (135 out of 500) of the sampled household. This implies that the respondents earn between N16,000 – N25,000 in a month and less than N600/day which shows that they earn less than $2/day and can be regarded to be living below poverty line. This outcome also revealed the extent of vulnerability to external phenomenon such as displacement and resettlement. The household size of the respondents indicated that majority of household between 3-5 which represents 72.0% (360 out of 500) of the sampled household. The ethnicity component deduced that majority of the respondents (71.7%) are of Igbo ethnicity.

4.2 *Project Affected Persons across the Project Area*

The vulnerable groups across the project location identified a total of fifty-eight (58) vulnerable individuals which further indicated elderly (19), women (13) and land tenants (26) were the prominent vulnerable groups in the project area. This implies that most vulnerable groups are the land tenants. This outcome shows similarities with that of Flynn and Vergara [16] which opined that developmental project in many cases unfavourably affect lands and land tenant leading to the loss of home and source of livelihood. Also, Vanclay [9] posited that land needed for projects in many cases leads to resettlement of the individuals living on the land before the project and only few instances allow the people temporarily vacate their land for a period and return after the project is done. The vulnerability aspect of the present study concerns with the attributes and situations that makes the individuals susceptible to the impact of the project. By indication, the people at the project location are susceptible to developmental-project impact such as land loss and emotional trauma but the extent of such impact is determined by the coping capacities provided by those in-charge of the project. According to Muller *et al*., [17], the process by which an organization uses their available resources and abilities could overturn possible disastrous consequence of resettlement action.

4.3 Severity and Extent of the Impact on the Socio-economic

Considering the severity and extent of the project impact on the individuals and other related socio-economic activities, the study observed that 372 households are deemed for resettlement, 202 residential buildings, 267 commercial buildings, 11 public buildings, 511.26 hectares of farmland and 42,682 economic trees are affected by the proposed TL project. At the community level, the most impacted communities are Umuode community in Osisioma LGA of Abia State where 104 households are deemed for resettlement and 58 residential building (including bungalows, flats, single rooms, tenement buildings, multi-floored buildings and duplexes) and 4 public buildings (hospitals mainly) are impacted. Impact on the commercial buildings revealed that Ugwuagba community in Idemili-North of Anambra State is the most impacted where 70 commercial buildings (including office

buildings, warehouse/shop/stores, bakery/restaurants and multifloored buildings) are impacted. The finding deduced that Ozumeri community in Osisioma LGA of Abia State is the most impacted community in terms of farmland size where 18.14 hectares is impacted while Alulu community in Ngor-Okpala LGA of Imo State is the most impacted community in terms of economic tree loss with 5,255 trees impacted.

McDonald-Wilmsen and Webber [18]opined that development-induced resettlement should not be all about the resettlement plan that consisted of resettlement activities only but ought to incorporate other activities that will further ensure livelihood restoration of the impacted individuals. This point must be put into serious consideration in this project.

4.4 Impact Minimisation Alternative for the Proposed Project ROW

The standard ROW for 330 kV TL in Nigeria is 50 m, 25 m on either side of the centre line. The ROW of the existing TL has been heavily encroached, making resettlement cost exorbitant. To solve this problem, three alternative options were considered. The third alternative was accepted because it saves time, readily available data on soil properties; minimize impact on PAPs and RAP cost and importantly, the availability of engineering solution (technology) through staggering of the width of ROW The adopted technology is specially designed towers (slimly built with better height than the normal towers) with electromagnetic field of $\leq$ 30ms. With the special towers, the ROW is reduced to 30m (instead of 50m for normal towers), at five axes along the Transmission Line, totalling 31 km (Onitsha axis (7.5 km), Uli axis (3 km), Ifekala axis (3 km), Owerri axis (11 km) and Aba axis (7 km), thereby reducing the amount of households to be displaced by 1211. Although, the cost of acquiring the special towers is higher compared to the normal towers but the transfer of social cost from RAP cost is taken as trade-off which consequently resulted in a net saving of about N7 billion.

4.5 Legal and Institutional Framework Guiding RAP

The proposed project revealed that several Nigerian legislations and AfDB Operational Safeguards (OS 2) was adopted for the displacement and involuntary resettlement action surrounding the TL project. The legal foundation for resettlement in Nigeria is the Land Use Act of 1978 (modified in 1990) and as stated by the act "*all land in Nigeria is vested in the Governor of each State, to be held in trust for the use and common benefit of all people*". Furthermore, the act only allows for compensation in good-faith (by providing resettlement land), instead of financial support. According to Section 33 of the Land Use Act, once substitute land is provided for party involved, compensation is considered established and the party involved is forbid by law from requesting for further compensation in form of cash. This in many cases as led to agitation or stalling of project because the affected party feels they are not well compensated for their loss [19].

Considering the alternate law, AfDB's OS2, which stated that "affected people are compensated for all their losses at full replacement costs before their actual move; before land and related assets are taken; and, if the project is implemented in phases, before project

activities begin for each particular phase". Aside land-to-land compensation, compensation in kind (in form of cash) is considered when necessary while the affected parties must be aware of the purpose of such compensation to the livelihood. The main difference between national legislation and AfDB's resettlement standards is that Nigerian law focuses on compensation for the deprived assets, whereas AfDB's in addition to compensation, it concentrates on the better livelihood of the affected parties.

The TL project proposed to follow the Nigerian legislation and other supporting legislation measures such as AfDB OS 2 while also highlighting the legislations adopted for several categories of displacement consequences for the TL project. The project adopted AfDB OS2 for the implementation of displacement, resettlement and compensation actions. This implies that the RAP envisaged the possibilities of minimizing the risks associated with development-induced resettlement action and improvement of livelihood of impacted individuals both before and after the project.

5. Conclusion

The proposed expansion of the existing 138 km Alaoji-Onitsha 330 kV single circuit TL to 330 kV double circuit quad conductors has the likelihood to impact livelihood of PAPs. The RAP assessment of the project showed the need forcompensation and resettlement for PAPs as well as implementation process of livelihood restoration among the individuals.

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