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Assessment of the Roles of Women in Quarry Operations in Ekiti State, Nigeria

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Abstract: ***This project shed light on the participatory roles of women in quarry operations. Three quarries were selected as case study and they are: Mac Engineering Construction Limited, Ikere-Ekiti, Hajaig Construction Nigeria Limited, Ikole-Ekiti, and Hajaig Construction Nigeria Limited located in Ifaki-Ekiti, all in Ekiti State, Nigeria. The study made use of fifty structured questionnaires which comprise of quantitative and qualitative questions. The results of the study showed that the level of participation of women in quarry operations is low. Only 24% of the workers in the quarries are female, most of them are married and they are within the age of 18 -40 years. These women who are majorly unskilled are employed as bookkeepers, office assistants, security guards, cooks, cleaners and some operate as service providers. They cope with the plight of gender discrimination, low wages, and poor working condition just to mention a few. There is need for relevant stakeholders to respond to inequalities in access to resources (capital, information, education and training e.t.c.) in order to better position these women to drive positive change in the quarry industry.***

Keywords: Gender, Quarry, Roles, Workforce, Women

1. Introduction

Quarry operations have played an important role in the development of human societies and economies. It is an activity in which humans interface with the environment and development in complex and intertwining ways. From a technical point of view, there are two basic types of mining and quarrying: surface and underground. In an underground operation, the participation of women workers is essentially restricted by international regulations that came into effect in the last century; thus, women tend to seek employment in surface operations. Quarrying is a form of mining distinguished by the fact that the excavated product is used for building or architectural purposes, rather than subjected to further processing, as in the case of an extraction of a metalliferous component of a rock, or the combustion of coal to obtain energy. Stone, such as marble, granite, limestone and sandstone, is quarried by splitting blocks of rock from a massive rock surface. The desired product can take the form of a dimension stone suitable as building blocks and tiles, or can be crushed for use as gravel or aggregate. In 1999, the gross world production of stones was in the range of 55 million tones, with the highest level of production recorded in China, followed by Italy, Germany, USA, Spain, Japan and India; these countries account for just over one half of global production. About 60% of quarried materials are considered useful or marketable. India is the largest producer of dimensional stones (27% of world production), and is a major exporter of stone (Lahiri-Dutt, 2003; GDM, 2000).

Quarrying products are increasingly demanded for industrial, domestic, agricultural and other purposes so as to satisfy the needs of the rapidly growing population. Quarrying operations generally involve removal of over burden, drilling, blasting and crushing of rock materials (Areola, 1991). The quarry industry is vital to the economic and social well-being of every nation. Quarried materials are fundamental input into all major infrastructure and construction projects. Population increase and the need for construction materials have made it necessary for the exploitation and expansion of quarries in many areas. Different authors have established the economic importance of the southwestern basement complex rocks of Nigeria (Elueze, 1981; Dada, 2006). The proportion of women among the workers in small mines and quarries varies from country to country, according to location, nature and value of the mineral, processing techniques used, marketing systems, local social milieu, availability of alternative occupations and other factors. The percentage of women can vary from as low as 10 per cent to as high as 50 per cent (Hinton *et al*, 2003). The results of the questionnaire survey carried out on the quarry workers in three selected quarry sites in Abeokuta Metropolis, Ogun state revealed that over 70% of the entire working force in the quarry was mainly women who work as casual labourers crushing or sorting stones in the quarries. The ages of the female quarry workers ranges between 10 - 60 years, with majority of them having little or no formal education (Gbadebo *et al*, 2012). The role of women on the sustenance of the environment and its resources cannot be over-emphasized even with the growing trends of globalization of the world‟s economies (Boserup, 1989; Hemmati, 2004; Scott, 1988).

The roles played by the women were generally less visible and attract less public recognition than the work men engage in. In education and employment, women have a lower status than men do. Women who constitute about half of the Nigerian population have remained educationally disadvantaged. Literacy rate in Nigeria rose from 59% in 2001 to 70 % in 2006 for male compared to that of the female which was from 41 % to 55 % for the corresponding years (National Bureau of Statistics, 2006). In the quarries, the women are primarily engaged in menial and tedious works which do not require any skill. These women have limited access to critical resources like education, land, technology, and credit; hence, they are often excluded from employment in the formal sector. Although women‟s measured labour force participation has been increasing in many regions around the world, a process sometimes described as „the feminization of labour“, women are still concentrated in lower quality, more precarious forms of paid

work; household vulnerability is increasing (Chant, 2007). Approximately 30% of the world"s artisanal miners are women who occupy a number of roles ranging from labour-intensive mining methods to the processing aspect of artisanal mining. It has been well documented that inequities in political power, distribution of income, capital assets, and access to education and information have resulted in the increased susceptibility of women to chronic poverty. In some cultures, this is exacerbated by the fact that women do not always have control of their earned income or they occupy positions in the unpaid economy (e.g. subsistence agriculture, domestic work). Ultimately, it is crucial that women be empowered to transform their skills and capabilities into well-being (Jennifer *et al*, 2003). As women often work part-time at informal mining operations, and occupy "ancillary roles" (e.g. cooks, service providers), there may be significant discrepancies between the estimated and actual numbers of women involved in artisanal mining (Wasserman, 1999). Further to this, as women are more frequently associated with transporting and processing materials, as opposed to digging, they are not always identified as "miners" (Susapu and Crispin, 2001).

Women who act as "cooks" are particularly significant, not only in terms of food preparation, but also with respect to managing food stocks and related financial resources. They also frequently provide administrative assistance to mine owners and represent a stabilizing factor; this is achieved through maintenance of regular schedules, and provision of emotional and (occasionally) medical support (Rodriguez, 1993; Veiga, 1997). Women also act as goods and service providers, including owner-operators of bars and equipment owners. Lured by the promise of riches and opportunity (and often an initial lump sum of money), many young girls are brought to remote regions to work in "night clubs" as prostitutes. Both direct and indirect involvement of women in artisanal mining is believed to be on the rise. This can be attributed to a number of factors, including: escalation of rural poverty from droughts and/or structural adjustment programmes resulting in a greater need to supplement incomes; outward migration of skilled male miners from artisanal mining areas due to increased large-scale mining development in other regions or in pursuit of other opportunities in urban areas; evolving cultural norms with respect to gender roles; lack of employment in other sectors; and high birth rates and growth of extended families (Jennifer *et al*, 2003). Women"s participation in the mining economy has significantly diminished in recent years with the advent of mechanized technology (Lahiri-Dutt, 2003). Although mines have a masculine image, women have always been employed in mines in productive roles. Jobs in the mines are sexually segregated, which is also referred to as horizontal segregation, offering women and men restricted entry to particular jobs. For example, local transportation of materials is almost always done in head loads of baskets by women, whereas technical jobs requiring skill or use of machines are almost always reserved for men. The typical notion is that women are docile, possessing the proverbial "nimble fingers", and are not supposed to do heavy work. However, in almost all mines and quarries, it is women who head-load the cut mineral ores from the mine site to the crusher, factory or the truck stop and thus one wonders how it is possible for the "nimble fingers" to carry such heavy loads (Gravis, 2010). Employment of women is very popular in opencast mines because they are more regular and dependable and do not indulge in excessive drinking Women are in demand also for hand sorting and blending for improving the quality of extracted minerals which cannot be gainfully carried out mechanically (Chakravorty, 2001).

The objectives of the research are to investigate the numerical strength of women in the quarry and to also examine women"s participatory roles in quarry operations in Ekiti state with the view to address the gender inequality and the high poverty level among them. The work will bring about sensitization of all stakeholders to incorporating a gender lens in related measures which will hopefully lead to policy interventions to formally involve women in the development processes and in achieving sustainable development.

2. Description of the Study Areas

The study areas were selected from three different Local Government Area (LGA) in Ekiti State and they are: Mac Engineering Construction Limited, situated at Km20, Ado-Akure road in Ikere-Ekiti (Ikere LGA), Hajaig Construction Nigeria Limited, Ikole-Ekiti (Ikole LGA) and Hajaig Construction Nigeria Limited, Ifaki-Ekiti (Ido-Osi LGA). The study areas are underlain by the Pan-African older granite series (NGSA, 2006) of the Precambrian Basement Complex rocks of Southwestern Nigeria (Figure 1 shows the map of Ekiti state showing the study areas). Field observations at the survey site revealed that the lithology is the coarse porphyritic granite and the undifferentiated porphyritic granite and granite, gneiss and migmatite rock types. A characteristic feature of the Basement Complex tectonics is the widespread occurrence of fractures (Oluyide, 1988).

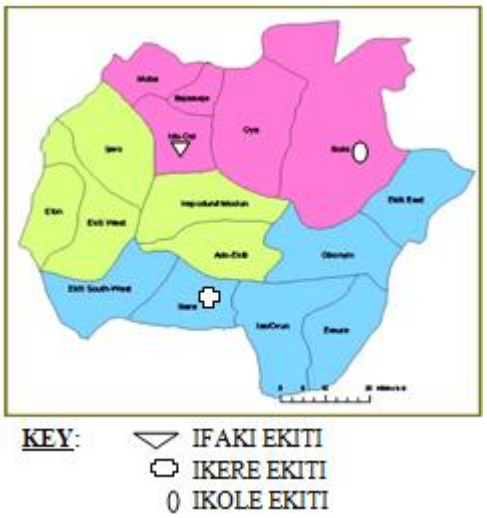

Figure 1: Map of Ekiti state showing the location of the study areas (Ifaki-Ekiti is located within Ido-Osi LGA)

3. Methodology

The study draws information from both primary and secondary data. Primary data were collected by means of questionnaire administration, focus group discussion, personal interviews, direct observation and informal surveys.

The major sources of secondary information are articles from journals, books, scholarly notes, websites and research studies. The surveys dealt with working conditions and activities as well as gender distinctions in quarrying activities and incomes, with particular focus on roles of the women. The major instrument used for data collection is structured questionnaires. Information was collected on the socio-economic characteristics of respondents and the quarry activities engaged in. A purposive sampling method was used in the selection of the study areas, three quarries were selected from three different Local Government Area (LGA) in Ekiti State (Ikere, Ikole and Ido-Osi LGA). Fifty (50) questionnaires which consisted of both open-ended and close-ended questions were administered, some of the questions were quantitative while others were qualitative. The quantitative questions related to family size and setting, no of working hours per day, age, level of education, sex, e.t.c. The qualitative questions were aimed at identifying subjective perception of reasons for engaging in the quarry work, assessment of the quarry job by the women, emotional condition of the women quarry workers and the recommendations of the women on whether the quarry job should be encouraged among women.

4. Results and Discussion

The results obtained from the questionnaires were analyzed to obtain the frequency and percentage distribution of the variables examined and they are presented on Table 1 which summarizes the socio-economic characteristics of the respondents.

Table 1: Socio–economic characteristics of the respondents in the study

S/N	*Characteristics*	*Categories*	*No. of Respondents*	*Percentage %*
1	Sex	Male	38	76
		Female	12	24
2	Age	18 – 40years	36	72
		Above 40years	14	28
3	Educational Level	Adult Literacy	1	2
		Primary level	2	4
		Secondary level	29	58
		Tertiary level	17	34
		None	1	2
4	Marital Status	Single	16	32
		Married	34	68
5	Family Size	Small	16	32
		Medium	27	54
		Large	7	14
6	Level of exposure to Hazard	Very low	10	20
		Low	11	22
		Medium	17	34
		High	9	18
		Very high	3	6
7	Number of Working hours/days	Below 6hours	7	14
		6 – 8hours	38	76
		9 -12hours	3	6
		Above 12hours	2	4
8	Stability of Income	Very stable	4	8
		Stable	28	56
		Average	18	36
		Unstable	-	-
		Very unstable	-	-
9	Feelings about the job	Very satisfied	3	6
		Satisfied	18	36
		Average	23	46
		Unsatisfied	6	12
		Very unsatisfied	-	-
10	Reason for the job	Lack of capital	9	18
		Family purpose	23	46
		Others	18	36
11	Year of working in quarry	Below 5years	26	52
		6 – 10years	19	38
		11 – 20years	2	4
		Above 20years	3	6
12	Can women be encourage in quarry	Yes	30	60
		No	20	40

From this table, 76% of the workers in the quarry are male while only 24% of the workers in the quarry are female. This indicated that the number of female workers in the quarries is low. Majority of the women found in the quarry are not directly engaged in the quarry operations (drilling, blasting, mucking e.t.c.) but they are employed as bookkeepers, office assistants, security guards, cooks and cleaners, some operate as service providers. These women are also deprived and marginalized in terms of wages and working conditions. 72% of the women fall between 18 - 40 years of age, while 28% fall above 40 years. This implies that most of the women working in the quarry are youthful and energetic. The work in the quarry is tedious and requires strength, therefore young and agile employees are usually sourced to form the workforce. Workers above 40years are usually weak and may be prone to sickness and so they are few in the quarry, this group of workers is involved in the less tedious operations of the quarry. On the educational level, 2% of the women had no form of education, 2% of them also had adult education, 4% had primary education, 58% had secondary education and 34% had tertiary education. This means that majority of the women working in the quarry had only secondary education, although most of these women are not stack illiterate, the main operations of the quarry requires professional training. The operations are technical and mechanized and cannot be handled by unskilled personnel. All the women found in the quarry in the course of this study are unskilled and according to them, they cannot afford the cost of acquiring the training needed for the job. Many of the women decided to work in the quarry because they could not get and in more formal organization.

32% of the women are single while 68% of them are married, this shows that majority of the women are married with children. The pressure to provide for the family led most of the women into the quarry industry. These women are married to men that are unable to meet up with the welfare demands of their wives and children, and so they have to look for any available means to complement the efforts of their husbands. 32% of the respondents own a small-sized family, 54% own medium-sized family while 14% had a large family size. 68% of the women are trapped in polygamous homes, where they live in abject poverty and have to fend for themselves and their children by any available means. This phenomenon can be attributed to the patriarchal value system which gives the men supremacy over the women and allow them to marry many wives without making adequate provisions to take care of them. Polygamy also tends to perpetuate women‟s low social and economic status by forcing women to share valuable resources with their husbands, other wives and children. Financial dependence created from a lack of resources can pressurize women into entering polygamous marriages (CEDAW, 1994). Polygamy exacerbates the impoverishment of women by limiting their access to financial resources during the marriage and upon divorce or death of the husband (Gbadebo *et al*, 2012).

42% of the women agreed that the level of exposure to hazard in the course of working in the quarry is low, 34% said the level of exposure to hazard is medium, 24% said it is high. Most of the women working in the quarry are not directly involved in the high risk aspect of the quarry activities; they participate in the ancillary roles where the level of exposure to hazard is low. The health hazard associated to the quarry operations is high. Solid materials in the form of smoke, dust and also vapour generated during quarrying operations are usually suspended over a long period in the air. Moreover, particulate matters in the air are capable of being transported from the point of generation to areas far remote (UNEP, 1991b). Inhalation of fine, crystalline silica dust, which is generated from breaking and crushing rock, can result in silicosis. Silicosis is an incurable lung disease that kills thousands annually (WHO, 2000). Conditions resulting from silicosis include emphysema, lung fibrosis and silica-tuberculosis. The high level of particulates generated at the drilling and crushing areas depicts them as hazard zones. For the working hours per day, 14% of the women work below 6hours per day, 76% work between 6 to 8hours per day, 6% of them work for 9 to 12hours per day while 4% of the women work above 12hours per day. The younger women work in the quarry for 6 - 8hours per day; those that are more energetic work longer hours, 14% of the women that work below 6hours daily are those who cannot withstand the stress in the quarry due to old age or health challenge. These women are casual workers who are paid either per day or weekly, some of them come to the quarry to sell food, drinks and other products for the quarry workers. They are also engaged in other informal activities outside the quarry like trading, housekeeping, land clearing e.t.c to augment the meager wages they receive from the quarry.

64% of the women agreed that the income they get form the quarry is stable while 36% of the women said the stability of their income is on the average. Majority of the women working in the quarry are regular on the job as few of them have other sources of income. Those women who are permanent staff get monthly salary and they accepted that the income is stable while those that are casual workers are paid either daily or weekly and they said the stability of the income is average as they will be paid base on the number of times they come to work. The characteristics of most casuals indicate that this form of employment has more to do with limited choices available to the women and their low skills. Employers use casualisation of labour force as an effective way of reducing cost and maximizing profits and de-unionizing the work force (Gbedebo *et al*, 2012). Gender inequalities are present in many ways in the labour market. Costa and Silva (2008) stressed that two relevant indicators of these inequalities are the ratio between female and male participation in the paid workforce and the ratio between female and male hourly wages. These indicators according to them reflect the fact that women face barriers to enter the labour market and, when they find a job; their earnings are lower than those of men. Women's wages on the other hand are viewed as complementary rather than primary, which explains women's willingness to work for a lower wage. This helps to explain why women's wages often remain barely above 50 percent of male wages in cases where women's productivity is as high, if not higher, than men's (ILO, 1970 &1976).

About 42% of the women said they are satisfied with the job they do in the quarry, 46% of the women are averagely

satisfied with the job while 12% of the women are unsatisfied with the quarry job. The women on this job are trapped somehow and they are contented with what life has offered them. They believed their economic conditions will be worst if they quit the job. Base on the personal observation of the researcher, these women are not satisfied with the quarry job as they are willing to quit the job if they get more rewarding job. From the response of the women they seem to have concluded that they cannot get better job as they do not possess any professional skill and so they are satisfied with what they are doing now. 18% of the women did quarry work because they lack capital to start their business, 46% of them did the work because they need money to cater for their family while 36% did the job for some other reasons. A large proportion of the women said that they took up the quarry jobs in order to sustain themselves and their children, while few of them said that they need the money saved from the quarry jobs to get enough capital to set up a better and less tedious job, some are involved in the quarry job because they do not want to be idle. Ironically, many of these women are unable to gather enough money to start another profitable business because the wages received from the job is small and cannot even sustain the daily basic needs of the women.

52% of the women have worked below 5years in the quarry, 38% have worked for 6 – 10years, 4% have worked for 11 - 20years while 6% have worked for above 20years in the quarry. The total working years of most of the women is below 10years as they are either sacked or laid off once they become pregnant or they are less productive due to repeated illness. Majority of the women work below 5years as those that are not forced out of the job usually quit voluntarily when they cannot cope with the gender discrimination and hardship that they face at the quarry. Majority of the women, 60% of them agreed that women should be encouraged in the quarry operations while 40% believed the quarry work is too strenuous and so it is not a job for women. Life in the quarry can be discouraging at the sight of workers looking dirty, haggard and perhaps looking older than their age due to the pressure of work. The financial reward is also not commensurate to the work done therefore; some women said the quarry job is not feminine. Most women believed if other women could acquire the requisite training and skills needed for the quarry job and the issue of gender inequality that exists in the quarries can be properly addressed, then what a man can do, a woman can also do.

5. Conclusion

From this study, it was observed that the level of women participation in the quarry operations is low. The few women that work in the quarry are mostly engaged in menial works which are secondary to the quarry operations. These women lack requisite education, training and skills required to be involved in the primary quarry activities like drilling and blasting. All the selected quarries visited had few numbers of women in their workforce. Mac Construction Company had more women in their operations compared to Hajaig Construction Company located at Ikole-Ekiti and Ifaki-Ekiti. It is therefore recommended that relevant stakeholders should respond to inequalities in access to resources (capital, information, education and training e.t.c.), mobility and basic human rights. A formal incorporation of gender issues and the promotion of micro-credit and other programmes that provide financing for women should be encouraged. Government should mandate quarry operators as part of their corporate social responsibilities in implementing programmes to train women in various aspects of mining and quarry operations, as well as in marketing, management and bookkeeping. The issues of poor working condition and remuneration of workers in the quarry should also be redressed. Once all the existing barriers that prevent women from fully benefiting from this sector are resolved women will definitely demonstrate capacity to drive positive change in the quarry industry.

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