Researchers in the social sciences have done very little with the issue of empowerment of women through energy sapping and hazardous occupations such as small-scale mining (SSM). This paper basically explores how the participation of women in small-scale mining in the Adansi North District of Ghana may lead to their empowerment. The Cooperative for Assistance and Relief Everywhere (CARE) International Sustainable Livelihood model was adopted for the study. A cross-sectional survey design and mixed method approach were used for the study whilst the probability and non-probability sampling methods were applied for the selection of the sample. The quantitative and qualitative approaches were also used for the study. Descriptive statistics and qualitative techniques were largely used to analyze the results, whilst the Pearson chi square test was used to assess the relationship between income and involvement in SSM. The study observes that women who get involved in small-scale mining enjoy improved income, which gives them access to assets, education and participation in household and community decision-making, among others, which are evidences of empowerment. There is a marked statistically significant difference between incomes earned by women before and after getting involved in small-scale mining; with participants earning more after joining SSM. Within the framework of CARE, this study has strengthened the foundations of geography of gender as well as feminist geography.

Key Words: women; empowerment; Adansi North District, Ghana; income; small-scale mining

INTRODUCTION

Mining in general is expected to result in empowerment and sustainable livelihood for those involved. Hentschel et al. (2003), estimates that 80% of artisanal and small-scale mining (ASM) is considered to be undertaken illegally whilst the remaining 20% is legal. Red International Mujeres Mineria (RIMM 2013) also argues that the dominance of males in the distribution of resources, education, decision-making, asset acquisition among others has hindered the development of women. Furthermore, the disparities in gender roles in the area of mining, specifically of women have not been dealt with well by researchers. For instance, women involved in mining and livelihood issues of women in mining have not been well tackled by researchers and policymakers (Red International Mujeres Mineria (RIMM) (2010).

Currently, there are an estimated 40.5 million people directly involved in small scale mining (SSM) and around 150 million indirectly involved in the activity (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF 2017). Women are believed to constitute up to 30 per cent of the global workforce in artisanal and SSM. However, the women’s contribution to the mining sector is overshadowed by the dominant reflection of the role of men in discussing the mining activity, thus, erasing the role women play (Jenkins, 2014). Cultural barriers and taboos have tended to exclude women from the mining industry (Verbrugge, 2017).

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Women in SSM are exposed to several risks. They are prone to health problems such as lung cancer, skin and eye infections through dust from ore crashing. They also suffer from musculoskeletal disorders from manual lifting and carrying of heavy materials (Lu, 2012). They again suffer from brain, kidney, and lung damage since they often perform ore purification using mercury or cyanide and scavenge tailings. The laborious nature of the mining activity tells heavily on the health of women who engage in it. In view of this, women have been excluded from heavy mining duties in some countries (Latiri-Dutt, 2012). In Tanzania, for example, they perform auxiliary roles, avoiding heavy mining activities in pit areas. Women, due to low remuneration get drawn into sex activities which have health implications (Verbrugge, 2017).

SSM is mostly undertaken as an informal economic activity in the underdeveloped countries. Despite the informal nature of artisanal and small-scale mining, it provides employment for a number of people including marginalized women. Evidence through oral history has it that marginalized women had played an active role in early mining alongside their male counterparts (Gier and Mercier, 2006). The Blacksmith Institute (2011) also stipulates that the economically and socially marginalized are mostly the ones involved in SSM to turn away from unemployment, abject poverty, marginalization and landlessness.

In many mineral-rich countries in Africa, movement towards SSM is believed to have occurred since the 1980s (Hilson, 2010). Researchers have identified that the proportion of female participants in SSM in Africa is greater across the globe between 40% and 50%. In some regions of Africa, women involved in SSM account for about sixty to hundred percent (ILO, 1999; Amutabi and Lutta-Mukhebi, 2001).

In Ghana, the poverty rate is estimated to be on the high side with about 24.2% of the people living below the poverty line (GSS 2012). In the rural areas especially the level of poverty is relatively high because about sixty percent of the economy is agriculturally based (Sackey, 2005). SSM as a primary economic activity is regarded as an activity that is capable of providing its participants with income (Heintz, 2005; Hilson and Potter, 2005). It is estimated that the large scale and small-scale mining contribute a third of the Total Foreign Exchange of Ghana. Again, gold exploitation provides roughly 4% to government tax and about 0.7% of the total workforce in the country (Baah, 2005).

Notwithstanding the long-standing history of small-scale mining activities in Ghana, legalization and formalization only took place in 1989 after ratification of the law (Hilson, 2002). The SSM sector has provided employment and job avenues for a large proportion of poor women. This view is backed by the fact that women make up about 50% of the workforce of the total illegal mining sector and 15% of the legalized work base and serve as the breadwinners in their families (Hinton, Veiga, Hilson and Beinhoff, 2003). This study basically looks at how the participation of women in SSM leads to their empowerment. That is, the study looks at how women can become self-dependent, financially sound and self-assertive through participating in SSM.

The study adopted and modified the CARE International Sustainable Livelihood Framework (Krantz, 2001) to suit the objective of the study. The framework was modified based on the fact that some aspects did not match with the objectives of the study. For instance, direct beneficiaries or actors of the livelihood were not duly considered in the latter’s framework. Again, the framework did not consider individuals and their livelihood but rather focused on households. Furthermore, the framework failed to take into account specific livelihood activities that the households can participate in to be empowered. Lastly, factors that lead to the empowerment of the households were conspicuously missing.

The core mandate of the CARE International is to ensure that aim at programs that can help the marginalized and most vulnerable are pursued. Through activities and programs to move them out of their poor state. Since 1994, CARE has used what it refers to as Household Livelihood Security (HLS) as a framework for program analysis, design, monitoring, and evaluation (Krantz, 2001). CARE International (2001) per the framework defines household livelihood “as capacity-building and development, and involvement of people in their livelihood building than as doormat recipients”. The paper argues, among others, that if bottlenecks to participation of women in SSM were removed it would enhance their empowerment. The proposition that participation in SSM has boosted the income levels of women, thus improved their empowerment, was explored. The null hypothesis that there is no difference between the status of women before and after joining the SSM was tested using the nonparametric chi square test. Income was used as the key determinant of empowerment since with it, one could acquire materials and facilities that could enhance the standard of living and overcome noiselessness. Self-assertiveness which involves ability to make family and community decisions and contribute financially towards the welfare of the family and community, as well as acquire assets and educate children were used as empowerment indicators.

**Women and Empowerment**

Empowerment, according to Kabeer (1999), refers to the increase in one’s ability to strategically make choices in life with regard to rights previously denied. Kabeer considered two things from his definition. They are the idea of gender inequality to gender equality and human choice and agency. The agency in this definition looks at how strategic choices, control of resources and decisions are looked at.
Keller and Mbewe (in Malhotra et al., 2002), refer to the empowerment of women as means by which women come together to improve themselves, and abide by their right to make independent decisions and accept their independent right to make choices which fight against subordination.

Empowerment of women can be experienced based on three tenants including the family, society and afield. The family as a tool for women empowerment refers to making available an ambience that promotes opportunities to improve their living conditions. Thus, women should not be relegated to the kitchen and household chores but be allowed to improve economically, politically and socially. The society as a tenant of empowerment also implies that the society needs to create an avenue for women to be empowered. Things that may impede the empowerment of women in the society need not be tolerated. Lastly, afield refers to the field or at the work place. At the work place women should not be neglected and discriminated against. There should be an equal playing field for both men and women towards their empowerment. Empowerment can be regarded as having economic, interpersonal, legal, political, psychological and socio-cultural dimensions (Malhotra et al., 2002). Development oriented activity may lead to women empowerment in diverse ways without actually exhibiting negative or positive effects against other elements. Considering the problem understudy, the research is aimed at the women and how their involvement in SSM may lead to their empowerment.

Empowerment of women involved in small-scale mining can lead to the improvement of their household and family life. Women involvement in SSM is a tool to their empowerment, in the sense that it increases their ability to be self-assertive, make decisions, generate income, educate themselves and their children and own assets. Thus, tangible and intangible values they lacked previously become accessible to them. The capability of one to take charge of the external world of resources gives the ability for self-control in varying ways.

Furthermore, where women are disadvantaged in terms of water, food, and education, the indirect sanctions affect people around them. Where women lack access to education, health care and financial resources they cannot be assured of their personal development and empowerment. For that matter, to ensure that women are active partakers in development and decision-making at the household and community levels they must not only depend on the family resources which may be dominated by the man but also on other resources for their empowerment.

Notwithstanding, the opportunities that exist in the extractive industry, gender equality and other gender related issues are still not fully dealt with. Some of the issues include women access to resources, taking up leading roles among others. Based on the lack of adequate data to back women participation and roles in the extractive industry, proper accounting on the part of women involvement and empowerment is missing.

**Study Area and Methodology**

The Adansi North is one of the thirty districts in the Ashanti Region of Ghana which came to existence in 2004 through LI 1758. The Adansi North was carved out of the Adansi East, Adansi West, Adansi South and the Obuasi Municipal Assemblies.

The Adansi North lies in an area of 1140 square kilometers making about 4.7% of the total area of the Ashanti Region. The Adansi North is boarded in the South-West by the Obuasi Municipality, the South by Adansi South District, in the South-East by Bosome Freho District and the North-East and West by Bekwai Municipality and Amanse Central District respectively. The capital of the district is Fomena on the Kumasi-Cape Coast highway. The Adansi North is made up of 35 electoral areas and Fomena and Asokwa are constituencies found in the district. One hundred and twenty-five major and minor communities can be found in the district with seven area councils.

According to the 2010 Population and Housing Census (GSS 2012), the district has a population of about 107,091 with a growth rate of 2.6% per year. The population density is 94 persons per square kilometer and male to female ratio is 49.5% to 50.5%. In the working age, the economically active population makes up 71.3%.

The proportions of females and males that are unemployed are 4.6% and 3.9% respectively. Furthermore, the population 15 years and older who make up the economically active population is about 27.7%. In terms of the exact number of people the mining sector employs in the area, it would be difficult to determine because most of the mining activities are carried out undercover, even the registered companies. Whether illegal or legal, the SSM activity provides some sort of livelihood support and empowerment to the people involved: women, men and children alike. Looking at the male-female population ratio (49.5%-50.5%) in the district, it would be unwise to focus on men and their empowerment since they are mostly advantaged when it comes to economic activities and especially extraction of the natural environment. This and other issues like ownership of land, landlessness, unemployment, poverty among others have led to the women participating in SSM activities. The problem becomes more profound when marginalized women desire to be productive but are impeded by socio-cultural factors.

In the Adansi North District, agriculture, mining, quarrying and the fishing industries make up 66.8 percent of the local economy. Proportionally, male to female ratio in the mining industry is 66.1% to 33.9% implying more males in the industry. Other activities such as the services and hospitality industry and financial administrative activity contribute a little over one percent to the local economy (GSS 2012).
This paper adopted the mixed method approach and the cross-sectional design. The cross-sectional design enabled the researcher to collect quantitative data once from respondents using the questionnaire instrument whereas the qualitative method helped the researcher to get an in-depth understanding of the issues. The cross-sectional design was further used for the study because it is suitable for the estimation of prevalence of a behavior in a sample (Sedgwick 2014). The interview guide was used to collect qualitative data which was analyzed thematically.

The simple random and the purposive sampling procedures were used to derive the sample from the communities. The lottery method was used to randomly select the required number of women participants from a pool of names that was obtained from the various SSM companies in their respective communities. The total sample frame for the study was obtained from the population of the registered companies in the mining communities. A list of four registered SSM companies were randomly selected out of the seven companies.
obtained from the District Assembly. The companies were Pelangio Adansi Gold Limited, Star Goldfields Limited, Richrock Minerals Ventures and Emperor Gold Investment. The list contained the number of female miners for each of the companies (Table 1). A total number of 193 women miners was obtained from the four registered mining companies in the district. A sample size of 100 was purposively determined. It was felt that the over 50% of total population was credible enough to undertake a research of this nature. produce results that could be used as representation of reality. Using the proportionate sample fraction method, the samples are as indicated in Table 2. The sample sizes of Richrock Minerals Ventures and Emperor Gold Investment both at Sodua, semi-urban centres were adjusted upwards by 5 and 4 respectively (Table 3) due to their levels of operation. The levels of operation of these two companies were higher than Pelangio Adansi Gold Limited so it was expected that women miners in these companies are more likely to make more meaningful contributions to the operations of SSM than their counterparts.

Table 1: Selected mining companies, towns of operation and female miners

<table>
<thead>
<tr>
<th>Mining company</th>
<th>Towns of operation</th>
<th>Population of Women Miners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelangio Adansi Gold Limited</td>
<td>Adiembra</td>
<td>41</td>
</tr>
<tr>
<td>Star Goldfields Limited</td>
<td>Adumanu</td>
<td>80</td>
</tr>
<tr>
<td>Richrock Minerals Ventures</td>
<td>Sodua</td>
<td>31</td>
</tr>
<tr>
<td>Emperor Gold Investment</td>
<td>Sodua</td>
<td>41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>193</strong></td>
</tr>
</tbody>
</table>

Source: Field Data, September 2016

Table 2: Allocation of the sample to the Companies

<table>
<thead>
<tr>
<th>Mining Company</th>
<th>Towns of Operation</th>
<th>Population of Women Miners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelangio Adansi Gold Limited</td>
<td>Adiembra</td>
<td>21</td>
</tr>
<tr>
<td>Star Goldfields Limited</td>
<td>Adumanu</td>
<td>42</td>
</tr>
<tr>
<td>Richrock Minerals Ventures</td>
<td>Sodua</td>
<td>16</td>
</tr>
<tr>
<td>Emperor Gold Investment</td>
<td>Sodua</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Field Data, September 2016

Table 3: Allocation (Adjusted) of the sample to the Companies

<table>
<thead>
<tr>
<th>Mining Company</th>
<th>Towns of Operation</th>
<th>Population of Women Miners</th>
<th>Sample Sizes of Women Miners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelangio Adansi Gold Ltd.</td>
<td>Adiembra</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Star Goldfields Ltd.</td>
<td>Adumanu</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Richrock Minerals Ventures</td>
<td>Sodua</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Emperor Gold Investment</td>
<td>Sodua</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
<td><strong>109</strong></td>
</tr>
</tbody>
</table>

Source: Field Data, September 2016

In each of the companies, names of women obtained were numbered by the telephone numbers of the participants and put in a fish bowl for a blindfolded person to randomly select. Lastly, the 109 women who were randomly selected were contacted in their respective communities to discuss the study and administer questionnaires. All the women who were contacted agreed to participate in the survey. Some initially showed little interest but were later convinced to participate. They also considered themselves to be economically and socially not empowered. A relative of each of the miners was randomly selected for an interview to confirm the conditions of the primary respondents about their conditions before and after joining ASM. Moreover, some key informants were purposively sampled for interview. These were an officer from the District Assembly, official of the Minerals Commission and three Unit Committee members. These were concurrently selected by the purposive sampling method. It was necessary for the researcher to include these other key informants to ensure comparison and authentication of responses.

The paper employed questionnaires and interview guide for data collection. Each woman was taken through a questionnaire which contained questions generated from the set objectives. The questionnaire was administered by two field assistants who had been trained for the purpose. Under the supervision of the principal researcher and two other assistants the opinions of all the respondents were sought by aiding them to answer the questions as required. An interview session was also scheduled by the researchers to further seek respondents’ knowledge on issues pertaining to SSM and empowerment. Descriptive statistics were used to analyze the results. whilst the nonparametric chi square test was used to test the statistical significance of the relationship between involvement in SSM and empowerment. Income was the main variable used as proxy for empowerment. The Likert scale was used to assess opinions. Data collection was done in September 2016.
The study collected demographic data from the women to help explain the phenomena that the study sought to unravel. Majority of the miners are in the economically-active age group which is not a surprise due to the fact that the work involved energetic youth to undertake. Most of the respondents had educational level below secondary implying they had low skills to perform professional assignments. Indeed, the women miners were involved mostly in odd jobs that did not require processional skills. Secondly, most of them were married and had large family sizes (above 6), implying that they had a large dependency load so might have been compelled to indulge in small-scale mining for the sake of survival. The women involved in the study were aged between eighteen years and above. Those aged between 18 and 25 constituted 31.2% of the total respondents. Those aged between 26 and 30 accounted for 27.5% of the total respondents. Further, 18.3% aged between 31 and 35 and also 9.2% aged between 36 and 40 years respectively. Those who were aged between 41 and 45 accounted for 11%; between 46 and 50 constituted 1.8% of the total respondents and 0.9% aged 51 years and above.

The age of the respondents is a reflection of how economically active women in SSM are. According to the Ghana Statistical Service (GSS 2012), Ghana has a very youthful population of 49.5%. That is, almost one-half of the population of the country falls between the 18 – 45 age group. According to the same source, the Ashanti Region is also made up of a very youthful population (50.9%) just like the Adansi North District which also has a very youthful population of 50.8%. The majority of the women involved in ASM in the district fall within this age group. Evidence from Asgede Tsimbla District in Ethiopia concluded that majority of women involved in SSM fall within the age bracket of 26-35 years due to the excessive strength needed for the activity. SSM has been classified by many to be labor intensive. It is therefore not surprising that the youth mostly form a greater percentage of the population involved in the SSM activity. Moreover, due to the high level of unemployment in the country recently, it is not a surprise to see majority of the women involved in the SSM activity to be within the youthful age bracket.

The educational level of the respondents was the next demographic data collected. The results indicate that 17.4% of the women have not had any formal education. Those who had up to the basic level of education accounted for 45.0% of the total respondents. The remaining respondents, constituting 37.6% have attained Senior High School (SHS) [Secondary] education. Interestingly, none of the women had gone past the SHS education. These numbers are in line with data from the Ghana Statistical Service (2012). According to the Service, illiteracy is more common and prevalent in the rural areas of the country than in the urban areas. The same is the case with the level of education. With respect to the Ashanti Region, data from the Ghana Statistical Service (GSS 2012) reveals a literacy rate of 82.6% of the total population in the region. The literacy rate of the Adansi North District (78.5%) is a bit lower. This can be attributed to the fact that the GSS classified 83.8% of the district as rural. According to the same source, only 13.4% of the population of the district have had education above the SHS level.

The study population had a higher percentage of SHS leavers, based on the fact that, most of the respondents were working to either raise money to pay their admission fees or buy forms for entry into tertiary education. The findings of this study reflect the trend of education in the district. The respondents’ educational background is in line with the outcome of the study of Hoadley et al. (2004) where comparison is made between the Human Development Index (HDI) and the people involved in SSM activities. Their findings revealed that, low HDI leads to the deprivation of people in SSM whilst the opposite is true. Moreover, Afriyie et al. (2016), in their study concluded that majority of operators in SSM were graduates of the basic school and few SHS graduates. Lastly, evidence from Asgede Tsimbla District in Ethiopia also revealed that, majority of the people involved in SSM had a lower

### Table 4: Demographic characteristics of respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>34</td>
<td>31.2</td>
</tr>
<tr>
<td>26-30</td>
<td>30</td>
<td>27.5</td>
</tr>
<tr>
<td>31-35</td>
<td>20</td>
<td>18.3</td>
</tr>
<tr>
<td>36-40</td>
<td>10</td>
<td>9.2</td>
</tr>
<tr>
<td>41-45</td>
<td>12</td>
<td>11.0</td>
</tr>
<tr>
<td>46-50</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>51 and above</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>109</td>
<td>100</td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>19</td>
<td>17.4</td>
</tr>
<tr>
<td>Basic</td>
<td>49</td>
<td>45.0</td>
</tr>
<tr>
<td>Secondary</td>
<td>41</td>
<td>37.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>109</td>
<td>100</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>52</td>
<td>47.7</td>
</tr>
<tr>
<td>Single</td>
<td>30</td>
<td>27.5</td>
</tr>
<tr>
<td>Divorced</td>
<td>16</td>
<td>14.7</td>
</tr>
<tr>
<td>Widowed</td>
<td>11</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>109</td>
<td>100</td>
</tr>
<tr>
<td><strong>Family Size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>10</td>
<td>9.2</td>
</tr>
<tr>
<td>2-3</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>4-5</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>6-7</td>
<td>23</td>
<td>33.0</td>
</tr>
<tr>
<td>8 and above</td>
<td>6</td>
<td>21.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>109</td>
<td>100</td>
</tr>
</tbody>
</table>

**Source:** Field Data, September, 2016

The study collected demographic data from the women to help explain the phenomena that the study sought to unravel. Majority of the miners are in the economically-active age group which is not a surprise due to the fact that the work involved energetic youth to undertake. Most of the respondents had educational level below secondary implying they had low skills to perform professional assignments. Indeed, the women miners were involved mostly in odd jobs that did not require processional skills. Secondly, most of them were married and had large family sizes (above 6), implying that they had a large dependency load so might have been compelled to indulge in small-scale mining for the sake of survival. The women involved in the study were aged between eighteen years and above. Those aged between 18 and 25 constituted 31.2% of the total respondents. Those aged between 26 and 30 accounted for 27.5% of the total respondents. Further, 18.3% aged between 31 and 35 and also 9.2% aged between 36 and 40 years respectively. Those who were aged between 41 and 45 accounted for 11%; between 46 and 50 constituted 1.8% of the total respondents and 0.9% aged 51 years and above.
educational background and therefore, cannot be competitive on the labor market. Inadequate economic opportunities in the district are a major cause of the low educational level. Most parents do not have access to economic activities that can earn them income to cater for their children’s education at the secondary and tertiary levels. This was actually confirmed by a parent during interview as indicated:

My daughter had seven grade ones at the BECE and was placed at the Yaa Asantewa SHS but because of lack of money she is now pregnant (Mother of four who had just started SSM).

RESULTS AND DISCUSSION

Activities of Female Miners

Women small-scale miners engage in several activities as indicated below:
(a) Minor digging, shoveling and collection of mineral bearing ores and quarry materials;
(b) Processing of ores by panning, washing and mineral separation;
(c) Processing quarry materials by crushing stone bearing rocks and curving;
(d) Carrying mineral bearing ores and quarry materials to the milling machine;
(e) Operating the milling machine;
(f) Recording the number of pan-fulls of quarry materials and mineral bearing ores to the milling machine; and,
(g) Catering and laundary services.

A few operate the milling machine. They are confined to mainly the non-machine operating areas. The women miners have been in the small-scale mining business from a period ranging between 3 months and 5 years. Nineteen of the miners have been working for the mining organizations for five years whilst 23 have been with the companies for just three months. Majority of them fall within more than 3 months and less than five years.

Small-scale mining and empowerment of Women

This part of the paper sought to investigate how involvement of women in SSM leads to their empowerment. They expressed that their level of impoverishment before joining SSM was low as indicated by the responses of some respondents below:

“I was nobody before joining SSM. I could not even pay for the small school fees of my children neither could I assist with the chop money. Even my husband had to buy me underwear (Female Miner, Sodua).

My sister’s condition was not good at all before she became a miner. She had to depend upon her husband for all her needs. Things are different for her now (Relative of a Female Miner).

Indeed, the financial condition of the female small-scale miners I knew was not good at all. They are a little better since they became miners (Unit Committee Member).

The variables used as evidences of empowerment were income, assets, child education, participation in community development and decision-making, nutrition, housing. These were as reported by the respondents. After knowing the position of the women regarding the core elements of empowerment, the study took a step further to find out whether the women agree or not that participating in SSM activities had actually helped to empower them. The key indicator of overcoming empowerment was improved income after joining SSM. A number of questions were posed to the respondents in an attempt to identify how their former states had changed upon involving in SSM. Among the questions were: Has your quality of life improved after joining SSM? Do you enjoy better income now than when you had not joined SSM? Are you able to participate in family decision-making now than before? What aspects of family decision-making do you participate in? Do you make more contributions to the family budget now than before? Are you able to cater for your children’s education now than before? Were you participating in community development before joining SSM? To clearly understand the issue of empowerment, the women were first asked if their involvement in SSM had helped to eliminate or at least reduce their level of impoverishment. The second method used was expression of their opinions using the Likert scale.

The women were asked to rank their levels of impoverishment after engaging in SSM. They were given five levels of measurement for that purpose: these are, very low, low, average, high and very high; where very high means, highly impoverished; high, means impoverished; average, minimally financially empowered; low, financially empowered and lastly, very low meaning, highly financially empowered. Financial status was used as the key indicator for empowerment even though other factors were considered in subsequent analysis. Figure 2 Table 5 presents their responses.

Fig. 2: Impoverishment after joining SSM

Source: Field Data, September 2016
The results from Figure 2 show that after engaging in SSM activities, none of the women stated their level of impoverishment was very high or high. This is an indication of the fact that, the participation of women in SSM to a greater extent leads to a drastic reduction in impoverishment. Furthermore, 9.2% of the women considered their level of impoverishment to be average. These women expressed joy and happiness about their participation in SSM. Regardless of the fact that the women had not acquired much through participating in SSM, SSM was ranked high above other rural economic activities. Lastly, the number of women who felt their level of impoverishment had reduced to low and very low accounted for 90.8% of the total respondents. This outcome is a clear indication of the fact that, women participation in SSM has yielded positive results. The women further asserted that SSM pays more than any rural economic activity. The women emphasized enumerated that they will choose SSM over any rural activity like farming, rearing of livestock and fishing. Nevertheless, the women in SSM do not consider the hardships and deprivations they experienced formerly.

The above findings were confirmed by interview responses collected from various people in the Adansi North District including relatives, Unit Committee members, District Officer and some SSM participants. A large number of the interviewees admitted that they do not consider women in the area to be impoverished after engaging in SSM. Claims that women were no more depending entirely on their husbands were common. Some also claimed the women were now mostly in charge of their lives, taking their own decisions and acquiring assets unlike in the past when only males mostly monopolized them. Stories of the women being financially sound and thus do not go borrowing anymore were also common. Some of such responses are captured below:

- I can now see a level of improvement in my finances. (Female miner, Sodua).
- Starvation and borrowing are now things of the past in my life. (Female miner, Adumanu).
- I can now educate my children. I have no problem paying their school fees. My husband is not burdened with payment of our children’s school fees. (Female Miner, Sodua).
- I have been able to acquire assets such as sophisticated cooking utensils, room and furniture. Indeed we have started building a small house. (Female Miner, Adumanu).
- Our meals have improved. We now have more fish and meat to prepare food. (Female Miner, Sodua).
- There has been a major improvement in the quality of life of my cousin since she joined SSM. She has acquired considerable assets and is able to take good care of her children. (Relative of a Female Miner at Adumanu).
- A Unit Committee Member confirmed the responses of the respondents as follows:
- Small-scale mining has brought relief to these women (Unit Committee Member Sodua).
- However, there were also a few dissenting views expressed as follows: We still depend on dad for the provision of everything that we need, my mum doesn’t contribute much (Son of a woman engaged in SSM, Adiembra).
- The women do not know that what they are experiencing is actually marginalization; they see it as part of life (Unit Committee Member, Adumanu).

According to studies such as Paugam (1991), Castel (1994, 1995), Schnapper (2003), Smyth et al. (2006), Strimelle and Frigon (2007), people are usually marginalized as a result of several factors among which are poverty and the inability to provide one’s basic needs, which make one dependent on others. One of the surest ways of eliminating or at least reducing marginalization is the provision of a source of income (Jenson, 2000; UNDP, 2010). When people work and earn income, they do not depend on others anymore for the provision of their basic needs. They are able to provide those by themselves. It therefore makes sense that the women experienced a reduction in marginalization thus empowered after engaging in small-scale mining, an income-generating venture. They now earn income and thus are able to provide their basic needs. Consequently, they are able to overcome fend off marginalization they faced as a result of their dependence on other people.

They were further assessed using a 5-point Likert scale as illustrated by Figure 3. The Likert item was “Women have been empowered by getting involved in SSM”.

![Fig. 3: Responses to whether women have been empowered by ASM](image-url)

Source: Field Data, September 2016.
From Figure 3, Table 6, 78.9% of the respondents agree and strongly agree to the assertion that, their involvement in SSM has made them empowered. This is a clear case of defense for women involvement in SSM and the proceeds derived. This assertion also supports the reason why women will rather go into SSM instead of other petty economic activities. Notwithstanding the cultural and economic hiccups to the empowerment of women, SSM as an economic venture leads to the empowerment of women. Furthermore, 8.3% of the women regard their state as neutral with reference to their empowerment. These women consider themselves empowered but not to their expectations. SSM has provided them with some of the most important things they desire in life but not all. Lastly, 12.9% of the women disagree and strongly disagree to the assertion that their participation in SSM has empowered them. These women believe their purpose for getting into the SSM activity has not been achieved at all. These women have not stopped the activity though, but continue to partake in with the hope of things getting better. Moreover, these women are either having large family sizes, unable to work for a full week or are single parents. The above findings were confirmed by interview responses some of which are stated below:

- Now I don’t have lack for basic needs, I am also somebody (Female miner, Sodua).
- What else can I say? We are building our house as I speak. My wife supports me with what she earns from ASM. The days of our quarrel are over. Give me money for this and that are no more. I love my wife more (Husband of female miner, Adumanu).
- I have been able to acquire a lot of things including expensive household utensils, room furniture, a small television, expensive clothing, a bicycle for my children etc. (Female miner, Sodua).

The results, so far, have confirmed a well-known assertion that participation in ASM activities empower women and give them the opportunity to be free from the shackles of marginalization, a conclusion drawn by researchers such as Hinton, et al. (2003), Gier and Mercier (2006), the Blacksmith Institute (2011), and Hayes and Perk (2012). The above statement presupposes that involvement in ASM has helped women acquire assets.

The idea of women empowerment involves guaranteeing women freedoms such as the freedom to decide for themselves (Petit 2012); the freedom to own assets such as lands, houses, cars, and others (World Bank, 2000); the ability to work and earn income (Hilson and Potter; Beall and Piron, 2005); the right to be consulted when decisions that may affect them are being taken (Whiteman and Mamen, 2002; Whitmore, 2006; Macintyre, 2007; Li, 2009); the freedom to educate themselves or their children (UNICEF, 1987; Commonwealth Secretariat, 1989); the freedom to air their views (Hinton et al., 2003; Endale, 2014) and the freedom to be self-assertive (Benjaminsen and Lund, 2002).

It was based on the above that the study specifically opted to find out how the women fared in these areas after engaging in SSM activities. For instance, it has been the strong view of Batiwala and Fernando (1997), Kabeer (1999), Malhotra et al., (2002), Hilson and Potter (2003), Beall and Piron (2005), Whitmore (2006), Macintyre (2007) and Pett (2012) that, when women get involved in an economic activity, like SSM, that helps them earn an income with which they are able to support their families, they are more likely to be allowed the freedom to decide for themselves.

**ASM and Empowerment of women through Income Generation**

Income generation is considered based on the fact that, empowerment through income generation is the surest way by which the other indicators can be realized. The respondents were asked whether the capacity to generate income had been boosted after joining SSM (Figure 4).

![Figure 4: SSM and capacity to generate income](image)

The results from Figure 4 indicate that after engaging in SSM 26.6% responded that the ability to generate income remains low and very low (26.6% of the total respondents). It is very significant to note that almost one-third of the women after involving in SSM still felt their capacity to generate income was low. This category of respondents believes that they are better off after involving in SSM but have not fully achieved their targets. More so, the mentality of ‘get rich quick’ filled the minds of the women and therefore did not have time to wait. Although, the women told stories of better way of life, so far as they are unable to live luxurious lives as those in the large scale mining companies, they regard their income levels as average. Respondents talked about their ability to save, invest and support the family with their earnings but regard their income level as average. Lastly, 33.1% of the respondents believe their ability to work and earn income after SSM is high and very high. This category of respondents dissuades the mentality that SSM is ‘low income’ and
‘poverty driven’ activity. Their position confirms throws more light on how the involvement of women in SSM has led can lead to their economic empowerment.

In order to actually ascertain the authenticity of the women’s claims, they were asked to state their average income per month before and after engaging in SSM. Table 5 presents their responses.

Table 5: Income earned before and after engaging in SSM

<table>
<thead>
<tr>
<th>Monthly Income (GHC)</th>
<th>Before SSM</th>
<th>Percent</th>
<th>After SSM</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td></td>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td>0-20</td>
<td>9</td>
<td>8.3%</td>
<td>6</td>
<td>5.5%</td>
</tr>
<tr>
<td>21-50</td>
<td>30</td>
<td>27.5%</td>
<td>41</td>
<td>37.6%</td>
</tr>
<tr>
<td>51-80</td>
<td>70</td>
<td>64.2%</td>
<td>62</td>
<td>56.9%</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>100</td>
<td>109</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Field Data, September 2016

Table 5 reveals monthly income earned by the women before and after involving in SSM. Whilst 8.3% of the women earned up to GhC20.00 a month prior to involving in SSM, the minimum monthly income after SSM was between GhC 151-200 as only 5.5% of the women earned such amount. Moreover, 27.5% of the women before involving in ASM earned Ghc 21-50 as their monthly income while 37.6% of the women post ASM earned between Ghc 201-250. Lastly, 64.2% of the women also earned between GhC 51-80 before their participation in SSM while 56.9% of the respondents earned between GhC 251-300 upon involving in SSM. The data is a clear indication of the fact that involvement of women in SSM is a means to financial freedom and empowerment. This data further indicate that prior to the involvement of women in SSM their highest earned income was between GhC 51-80 whilst upon involving in SSM their income rose to between GhC 251-300 indicating close to 500%-over 350% increase in income. Per this outcome, the notion that SSM is ‘low income’ driven cannot stand. Most of the women prior to their involvement in SSM have been peasant farmers for years and earned scanty incomes. The income difference in prior and post SSM is the major reason why most women prefer it to other petty economic activities. Through interviews, the women confirmed that SSM cannot be compared to peasant activities like trading and farming in terms of the returns (income). Although, the women earned some income before engaging in SSM, their state of being was regarded deplorable. This was confirmed by the following interview responses;

I was the one giving her money to cater for her basic needs prior to her involvement in SSM, but now things have changed. (Relative of a female miner, Adiembra).

The women involved in SSM were deprived but now there is improvement in their lives because they are earning some income (Unit Committee member, Sodua).

Empowering women to be Self-Assertive through ASM

The study further explored the impact of SSM on the women in the area of self-assertiveness. Self-assertiveness implies ability and confidence to take part in family and community decisions, contribute to family budget and community projects and vie for leadership positions in the community. It involves attainment of a minimum level of education to enable them to participate in decision-making with confidence. Over 70% of the women reported that before they got involved in SSM they had no voices because they could not make any contributions to the family budget and community development. After joining SSM however when their financial status improved, they had the confidence to speak during family and community discussions. The women were asked to state the level at which they would rate their self-assertiveness after engaging in SSM and the results are presented in Figure 5:

![Fig. 5: Self Assertiveness after SSM](source: Field Data, September 2016)

From Figure 5, 27.5% of the total respondents assert, their level of self-assertiveness is high and very high after involving in SSM. As insignificant as it looks, it shows how issues of self-respect and self-confidence among women is relegated to the background in most rural communities. The women put it, we have not been respected and regarded in some instances and therefore affect our relationship with the male counterparts. Lastly, 31.2% and 41.3% of the total respondents regard their ability to be self-assertive as average and low and very low respectively. The respondents stand by the point that their freedom and ability to be self-assertive has been curtailed by cultural practices which they have lived with for decades. Women assert that, their ability to be self-assertive had always depended on their male counterparts at the work place and home. The women stated categorically that their situation worsens when out of business.
The above information was supported by interviews some responses of which are indicated below:

I am very happy my views are sometimes regarded (32-year old female miner, Sodua).

Our cultural system hinders our self-assertiveness (36-year old miner, Adiembra).

The results, so far, have confirmed a well-known assertion that participation of women in SSM empowers, a conclusion drawn by researchers such as Hinton, et al. (2003), Gier and Mercier (2006), the Blacksmith Institute (2011), and Hayes and Perk (2012).

**Problems facing the Miners**

The female miners expressed some of the problems they are facing in the industry. They referred to the risks they face in their operations. Some grievances they face are captured in their interview responses:

The monetary returns should increase. I am convinced we are not paid well for our services. Even though as women we are not made to go into the very dangerous aspects of the operation, there are some risks involved [Female miner at Sodua].

We need more protective equipment to save our health. We have nothing when we give birth. The processes are energy sapping, too much for women to bear but what else could we do?. We have no choice [Female Miner at Adumawu].

The risks involved must be addressed. There must be rigid enforcement of the WHO standards and those of the Environmental Protection Authority (EPA) to save human health and the environment. The government after data had been collected for this research suspended the operations of small-scale and illegal miners with the view of streamlining their operations to save the environment. Rigid measures must be enacted to ensure sustainability of the environment and also to ensure the welfare and health of women in the industry.

**CONCLUSION**

The issue of women empowerment through their involvement in SSM has not been interrogated much by policymakers and researchers in the field of social science. This study interrogated how women through their participation in SSM could become empowered at the Adansi North District of Ghana. Findings from the study conclude that women participation in ASM is a means by which they get empowered. Their participation in decision making in both the home and community have improved. Other aspects of welfare including nutrition, housing, child education, and assets building have also improved. The District Assembly and Government need to support and protect women involved in SSM from exploitation. It has been established that there is a major improvement in income levels of female miners since joining the small-scale mining industry. Since income is a major source of empowerment, and with the capacity for self-assertiveness, the proposition that the women have been empowered since joining the SSM is justified. The paper has contributed to knowledge in terms of the vindication of the sustainable livelihood framework. It is clear that women could have the capacity to earn income in areas hitherto reserved for men hence, improve their livelihoods. The mixed methods design has also been amply justified and used to bring clarity to the issue interrogated.

**REFERENCES**


Small-Scale Mining and Empowerment of Women in the Adansi North District, Ghana


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